ENVIRONMENT PLAN



GIPPSLAND BASIN DECOMMISSIONING CAMPAIGN #1 EXECUTION

Esso Australia Resources Pty Ltd

DC1-EM-OFS-RPREG-0001



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DOCUMENT REVIEW AND UPDATE

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

In the course of using this document, users may identify opportunities to improve its content. They are requested to suggest these to the Document Administrator.

This document should be reviewed for accuracy and currency on a five yearly basis commencing from the original formal issue date. Major revisions to this manual are to comply with the OIMS System Manual/Process MOC procedures.

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ATTACHMENT 1: Sensitive Information Part

ATTACHMENT 2: Emergency Preparedness and Response Plan (AUGP-PO-EMP-070) includes *Oil Pollution Emergency Plan* (AUGO-EV-ELI-001) and *Bass Strait Operational and Scientific Monitoring Program* (AUGO-EV-EPL-001)

ABBREVIATIONS

Abbreviation	Definition
AHO	Australian Hydrographic Office
ALARP	As Low As Reasonably Practicable
Allseas	Allseas Marine Contractors Australia Pty Ltd
AMOSC	Australian Marine Oil Spill Centre
AMP	Australian Marine Park
AMSA	Australian Maritime Safety Authority
AMSIS	Australian Marine Spatial Information System
ANZECC	Australian and New Zealand Environment and Conservation Council
API	American Petroleum Institute
APPEA	Australian Petroleum Production and Exploration Association (now known as the Australian Energy Producers)
ARMCANZ	Agriculture and Resource Management Council of Australia and New Zealand
ASOG	Activity Specific Operating Guidelines
ATBA	Area To Be Avoided
AUD INJ	Auditory Injury
BIA	Biologically Important Area
BMA	Bream A
BMB	Bream B
BSCZSF	Bass Strait Central Zone Scallop Fishery
CASA	Civil Aviation Safety Authority
CBA	Cobia
CDSP	Closed Drain Skimmer Pile
CEFAS	Centre for Environment, Fisheries and Aquaculture Science
CGS	Concrete Gravity Structure
CH_4	Methane
CHARM	Chemical Hazard and Risk Management

Abbreviation	Definition
CMPBW	*Conservation Management Plan for the Blue Whale*
CO_2	Carbon Dioxide
COLREGs	Convention on the International Regulations for Preventing Collisions at Sea 1972
CoP	Cessation of Production
CSV	Construction Support Vessel
CTS	Commonwealth Trawl Sector
dB	Decibel
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DEECA	Department of Energy, Environment and Climate Action
DP	Dynamic Positioning
DPA	Dolphin
DWCM	Diamond Wire Cutting Machine
EAPL	Esso Australia Pty Ltd (Esso)
EARPL	Esso Australia Resources Pty Ltd
EMBA	Environment That May Be Affected
EMP	Environmental Management Plan
eNGO	Environmental Non-Government Organisation
EP	Environment Plan
EPBC	Environment Protection and Biodiversity Conservation
EPO	Environmental Performance Outcome
EPS	Environmental Performance Standard
ESD	Ecologically Sustainable Development
ESG	Emergency Support Group
ETBF	Eastern Tuna and Billfish Fishery
FLA	Flounder
FTA	Fortescue
G&G	Geophysical and Geotechnical

Abbreviation	Definition
GFAV	Game Fishing Association of Victoria
GHG	Greenhouse Gas
GLaWAC	Gunaikurnai Land and Waters Aboriginal Corporation
GoM	Gulf of Mexico
H_2S	Hydrogen Sulphide
HCA	High Court of Australia
HCTS	Habitat Critical to Survival
HFC	High-Frequency Cetaceans
HFO	Heavy Fuel Oil
HLA	Halibut
HLV	Heavy Lift Vessel
HTV	Heavy Transport Vessel
IACS	International Association of Classification Societies
ICS	Incident Command System
ILUA	Indigenous Land Use Agreement
IMO	International Maritime Organisation
IMR	Inspection, Maintenance and Repair
IMS	Invasive Marine Species
IPA	Indigenous Protected Area
IUCN	International Union for Conservation of Nature
JASCO	JASCO Applied Sciences (Australia) Pty Ltd
JLS	Jacket Lift System
JLST	Jacket Leg Storage Tank
KEF	Key Ecological Feature
KFA	Kingfish A
KFB	Kingfish B
LEFL	Lakes Entrance Fishermen Limited

Abbreviation	Definition
LFC	Low-Frequency Cetaceans
LOC	Loss of Containment
MARPOL	International Convention for the Prevention of Pollution from Ships, 1973 as modified by the Protocol 1978
MBES	Multibeam Sonar
MGO	Marine Gas Oil
MKA	Mackerel
MMO	Marine Mammal Observer
MNES	Matters of National Environmental Significance
MOC	Management of Change
MSL	Mean Sea Level
N_2	Nitrogen Gas
N_2O	Nitrous Oxide
NIW	Nationally Important Wetland
NLPGW	National Light Pollution Guidelines for Wildlife
NMFS	National Marine Fisheries Service
NOAA	National Oceanic Atmospheric Administration
NOPSEMA	National Offshore Petroleum Safety and Environmental Management Authority
NORM	Naturally Occurring Radioactive Material
NO_x	Nitrous Oxides
OA	Operational Area
OCNS	Offshore Chemical Notification Scheme
ODSP	Open Drain Skimmer Pile
ODSP	Open Drain Skimmer Pile
OGUK	Oil and Gas UK
OI	Operations Integrity
OIMS	Operations Integrity Management System
OIW	Oil In Water

Abbreviation	Definition
OPEP	Oil Pollution Emergency Plan
OPGGS	Offshore Petroleum and Greenhouse Gas Storage
ORC	Onshore Reception Centre
OSMP	Operational and Scientific Monitoring Plan
OSPAR	Convention for the Protection of the Marine Environment of the North-East Atlantic
P&A	Plug and Abandonment
PAH	Polycyclic Aromatic Hydrocarbons
PAM	Passive Acoustic Monitoring
PBW	Pygmy Blue Whale (*Balaenoptera musculus brevicauda*)
PCA	Perch
PMS	Preventative Maintenance System
PMST	Protected Matters Search Tool
POB	Persons On Board
PSV	Platform Supply Vessel
PSZ	Petroleum Safety Zone
PTS	Permanent Threshold Shift
Ramsar	Convention on Wetlands of International Importance especially as Waterfowl Habitat
ROV	Remotely Operated Vehicle
RRT	Regional Response Team
SESSF	Southern and Eastern Scalefish and Shark Fishery
SETFIA	South East Trawl Fishing Industry Association
SGSHS	Shark Gillnet and Shark Hook Sectors
SIV	Seafood Industry Victoria
SMPEP	Shipboard Marine Pollution Emergency Plan
SOLAS	International Convention for the Safety of Life at Sea
SOPEP	Shipboard Oil Pollution Emergency Plan
SO_x	Sulphur Oxides

Abbreviation	Definition
SPF	Small Pelagic Fishery
SPJ	Steel Pile Jackets
SPL	Sound Pressure Level
SRW	Southern Right Whale (*Eubalaena australis*)
SSHE	Safety, Security, Health, Environment
TEC	Threatened Ecological Community
TLS	Topsides Lift System
TTS	Temporary Threshold Shift
UCH	Underwater Cultural Heritage
VHFC	Very High-Frequency Cetacean
VMT	Vessel Management Team
VRfish	Victorian Recreational Fishing Peak Body
WKF	West Kingfish
WTA	Whiting
WTN	West Tuna

UNITS

Abbreviation	Unit
"	Inch
µg	Microgram
µPa	Micropascal
API	API gravity – The method used for measuring the density of petroleum as defined in American Petroleum Institute standards
B	Billion
bbl	Standard barrel
cm	Centimetre
cP	Centipose
dB	Decibel

Abbreviation	Unit
g	Gram
GCF	Billion cubic feet
ha	Hectare
Hz	Hertz
kg	Kilogram
kHz	kiloHertz
kip	Kilopound
kJ	Kilojoule
km	Kilometre
km^2	Square kilometre
kn	Knots
ksi	Kilopound per square inch
kW	Kilowatt
L	Litre
m	Metre
m^2	Square metre
m^3	Cubic metre
Mb/d	Thousand barrels per day
Mbbl	Thousand barrels
mg/L	Milligrams per litre
MMbbls	Million barrels
MMscf/d	Million standard cubic feet per day
Mscf/d	Thousand standard cubic feet per day
MSTB	Thousand Stock Tank Barrels
MT	Metric tonnes
nm	Nautical mile
°C	Celsius degrees

Abbreviation	Unit
PJ	Petajoule
ppg	Pounds per gallon
ppm	Parts per million
psu	Practical salinity unit
RMS	Root Mean Squared
Tcf	Trillion cubic feet

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 800km of pipelines. Esso has been producing oil and gas in Bass Strait since 1969 and in this time has supplied over 50% 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. Although the Bass Strait production network has been producing energy for more than 50 years, it remains today the largest single source of gas supply to the Australian east coast domestic market and has the potential to continue supplying one third of southeast Australia's domestic gas demand through to the end of this decade.

After delivering energy to Australia for over 50 years, many of the Bass Strait fields are now reaching the end of their productive life. Esso is well underway in the planning and preparation to remove non-producing platforms during the first Bass Strait decommissioning campaign (Campaign #1). An extensive program of work is currently underway to prepare the facilities for removal, including the plug and abandonment (P&A) of wells that have ceased production and the care, preservation and preparation of topsides and jackets for removal. Production of gas and production fluids from Bass Strait also continues via the interconnected system of platforms and pipelines.

Campaign #1 includes the removal of the topsides of up to 13 offshore platforms (from 10 steel piled jackets (SPJs) and one concrete gravity structure (CGS), the removal of the upper jacket sections of those 10 SPJs and the full removal of two monotowers). Removal of the facilities will be completed by a heavy lift vessel (HLV), supported by one or more construction support vessels (CSVs). The HLV or CSVs will transport the removed topsides and jacket sections to a sheltered location closer to shore within the Operational Area (OA), located in Commonwealth waters, where the removed topsides and jacket sections will be transferred onto a barge or a heavy transport vessel (HTV). Other smaller vessels, tugs and helicopters will provide support during the removal activities. These activities are defined as the 'petroleum activity' and form the scope of this Environment Plan (EP). A detailed description of the activities within the scope of this EP is provided in Section 2.

The SPJ topsides and removed jacket sections will be transported from the OA via barges or HTVs through existing Corner Inlet shipping channels to an onshore reception centre (ORC) located within Barry Beach Marine Terminal for safe dismantling. Segregated materials will be sent offsite for recycling and disposal. These activities will occur outside of Commonwealth waters/onshore and are not within the scope of this EP and addressed with the respective Regulators for those locations.

At the completion of the Campaign #1 activities, the lower sections that are more than 55m below Mean Sea Level (MSL) of some of the SPJs will remain in place. Esso will address these remaining lower sections and other remaining infrastructure (pipelines etc) as part of future decommissioning submissions (refer to Section 1.2.1).

This EP has been prepared to meet the requirements of the Commonwealth *Offshore Petroleum and Greenhouse Gas Storage Act 2006* (OPGGS Act) (Cth) and OPGGS (Environment) Regulations 2023 (Environment Regulations) as administered by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA).

1.1 Bass Strait decommissioning overview

The Esso-operated Bass Strait infrastructure consist of 425 wells, 19 platforms, six subsea facilities and more than 800 kilometres of subsea pipeline. Thirteen of these platforms are no longer producing oil and gas. Esso's priority in progressively decommissioning these assets is to eliminate or reduce the highest impacts and risks arising from these non-producing assets, being well P&A (managed via a separate, accepted Well Operations Management Plan) followed by removal of platform topsides (this Campaign #1 EP). The extent of detailed planning and technical, execution and environmental studies required to safely execute decommissioning of this nature and scale is significant and there has been no comparable decommissioning programs undertaken in Australia to date. Esso also continues to operate the remaining producing offshore platforms and subsea facilities, which are expected to continue production until well into the 2030s.

An assessment was completed during early planning of the decommissioning requirements for offshore infrastructure. The assessment concluded that grouping infrastructure into three common types would enable a review of shared characteristics, environmental impacts, and removal techniques required. The infrastructure groups are:

- Platforms with SPJ substructures and steel monotowers
- pipelines, umbilicals and associated subsea infrastructure
- CGSs.

NOPSEMA's Information Paper Planning for proactive decommissioning (NOPSEMA, 2025a) notes that decommissioning timelines 'will be based on upon sound decommissioning planning outcomes' and that considerations that will inform decommissioning timelines include among others 'adjusting of timelines to enable phased or campaign based decommissioning'.

Decommissioning activities may take several different forms including full or partial removal, subject to various factors including but not limited to the nature and scale of the equipment and achieving an acceptable safety and environmental outcome, subject to permissioning.

The decommissioning approach for Bass Strait facilities is for removal via decommissioning 'campaigns', as the required specialist equipment such as HLVs are not readily available in the Asia Pacific region and will be mobilised by contractors for discrete seasonal periods based on global demand. Campaign #1 is the first decommissioning campaign planned for the Esso-operated Bass Strait facilities. Campaign #1 comprises the removal of topsides from up to 10 SPJs and full or partial removal of those jackets, complete removal of two monotowers and the topsides from one of the CGSs (Bream B (BMB)), as described in Section 1.2.

Planning for the decommissioning of pipelines, umbilicals and associated subsea infrastructure outside of the scope of this EP is well underway, with a structured decision-making process being used to identify and evaluate pipeline decommissioning options. Stakeholder and regulator engagement is being undertaken to identify and discuss potential options, along with technical and environmental studies to assess the impacts, risks and benefits of potential options. Subject to completion of these technical and environmental studies, an EP outlining the proposed decommissioning approach for pipelines, umbilicals and associated subsea infrastructure is expected to be submitted to NOPSEMA in 2026/2028. A separate EP outlining the decommissioning approach for selected non-producing shallow buried umbilicals, flexible pipeline and pipeline flexible jumpers is also being developed and proposed for submission to NOPSEMA in 2026.

There are two CGSs in Bass Strait – BMB and West Tuna (WTN). WTN is still producing and is expected to produce gas until after 2030. WTN is also the host facility for the Kipper subsea development which is expected to produce gas well into the 2030s. The topsides (including the production facilities, day quarters and module support frame) of BMB will be removed as part of Campaign #1 under this EP. The concrete sub-structure of BMB will remain on the seabed until such time as the WTN CGS has ceased production and is ready for decommissioning. Significant technical work, field investigation of the structures and field trials are required to confirm a technically feasible method of decommissioning the concrete sub-structures. No similar sized concrete gravity-based structures have been fully or partially removed to date worldwide, due to substantive technical and execution feasibility issues and risks.

Esso continues to provide updates to stakeholders and regulators on planning and progress of decommissioning in Bass Strait. This is achieved via:

- quarterly meetings held with NOPSEMA to review progress against the requirements of General Direction 817
- issue of an Annual Decommissioning Report, which is provided to NOPSEMA and published on the Esso website each year
- periodic community consultation forums.

1.2 Scope of this Environment Plan

This EP has been prepared to meet the requirements of the OPGGS Act and Environment Regulations as administered by NOPSEMA.

The activities in the scope of this EP are part of the Bass Strait decommissioning program. General Direction 817 requires Esso to "*complete all preparatory decommissioning activities and commence the topside dismantling*

campaign as soon as reasonably practicable, and no later than 30 September 2027, for removal of all structures, property and equipment no longer in use associated with facilities listed in Schedule 3[1] of the Direction".

This EP scope was developed to support progressive and prioritised decommissioning and reflects an optimised consideration of the available execution work window. The scope and methodology described reflects the preliminary engineering and approach proposed by the appointed works execution contractor (AllSeas).

A detailed description of the petroleum activity is provided in Section 2, while the spatial boundary of the activities – the OA - is described in Section 2.2.1.

This EP considers direct and indirect impacts from activities conducted in Commonwealth waters (including off-title areas) within the OA as described in Section 2.2.1. Campaign #1 activities conducted outside of the OA will be subject to applicable approvals under Victorian and Commonwealth environment laws, and are not within the scope of this EP. Where required, Esso will submit referrals under the *Environment Protection and Biodiversity Act 1999* (Cth) to Department of Climate Change, Energy, the Environment and Water (DCCEEW) in relation to activities outside of the scope of this EP including:

- the first stage of the referrals will assess environmental impacts and risks associated with the establishment of the ORC
- the second stage of the referrals will assess environmental impacts and risks associated with the transportation of removed property through State waters and offloading and set down at Barry Beach Marine Terminal
- the third stage of the referrals will assess environmental impacts and risks associated with the processing and disposal of wastes once offloaded on shore.

The Barry Beach Marine Terminal has an existing site operating licence that allows the receival of priority wastes as part of Esso's ongoing operations. Any licence amendments will be referred to the Victorian Environment Protection Authority. Most of the materials in both the topsides and jackets is steel and current estimates anticipate that the majority (>95%) of the total mass of materials processed will be able to be recycled. Remaining materials that cannot be recycled will be disposed of at appropriately licenced facilities. All materials handling, transport and disposal will be managed in accordance with relevant legislation.

An overview of what is included in this EP scope, and what is not included in this EP scope, is shown in Table 1-1. The petroleum titles relevant to this EP are listed in Section 2.2.1.

Table 1-1 Scope of this EP

Included in this EP scope	Not included in this EP scope and where addressed
Activities to prepare facilities for removal which are undertaken by Allseas with a CSV such as the *Fortitude* or similar vessel, including: • topsides preparation works • separation of the topsides and the jacket (final air gapping) • grouting of lift points and air gapping • jacket preparation works - including final surveys, localised seabed displacement, marine growth removal, soil plug removal, removal/pinning of appurtenances, flooded member drilling, pile pinning, cutting • removal of well conductor stubs where these remain above the seabed after P&A activities	Inspection, maintenance and repair (IMR) of the facilities until removal execution commences: • included in the *Bass Strait Environment Plan (AUGO-EV-EMM-012)*. This EP is due for its five year resubmission in May 2026. Facility preparation activities undertaken from the facility, or a vessel in the case of unmanned facilities, including flushing and preliminary air gapping: • included in the *Bass Strait Environment Plan (AUGO-EV-EMM-012)*. Well P&A activities, including well conductor removal:

[1] The facilities listed in Schedule 3 of General Direction 817 are WTA, MKA, FTA, KFA, KFB, FLA, BMA, BMB, DPA and PCA.

Included in this EP scope	Not included in this EP scope and where addressed
and jackets are to be removed to as close as practicable to the seabed • removal of well conductors should this not be achieved prior to Campaign #1 during P&A.	• platform-based P&A included in *Bass Strait Environment Plan (AUGO-EV-EMM-012)* • Jack-Up Rig or Mobile Offshore Drilling Unit (MODU) based P&A campaigns are subject to separate EP submission(s).
Severing of pipeline risers, umbilicals and flexibles (including plugging of pipelines and removal of sections of risers where applicable) in preparation for jacket removal.	Decommissioning of Bass Strait pipelines, umbilicals, flexibles and associated property: • included in future decommissioning EPs, expected to be submitted in line with pipeline/umbilical decommissioning timelines.
Removal of the Perch (PCA) and Dolphin (DPA) monotowers.	
Removal of the topsides and jacket of the Whiting (WTA) and Bream A (BMA) facilities to as close as practicable to the seabed. This may be below, or just above the seabed as described in Section 1.2.1.3.	Decommissioning of the WTA and BMA deep set piles and any jacket section that remains above the seabed, in the event that below seabed removal is not achieved in Campaign #1: • decommissioning of this property to be addressed in a future decommissioning EP which would reflect decommissioning approach (including any agreed alternative arrangement for this property).
One of two removal options for the Fortescue (FTA) facility, depending on the outcome of detailed removal engineering (See Section 2.15.4): • removal of the topsides and the jacket to as close as practicable to the seabed. This may be below, or just above the seabed, or • removal of the topsides and the jacket to a depth of at least 55m below mean sea level (MSL).	Decommissioning of the FTA deep set piles and any jacket section which remains above the seabed, in the event that below seabed removal is not achieved in Campaign #1: • decommissioning of this property to be addressed in a future decommissioning EP which would reflect decommissioning approach (including any agreed alternative arrangement for this property).
Removal of the topsides and upper jacket sections of up to six SPJs in deeper water - Kingfish A (KFA), Kingfish B (KFB), West Kingfish (WKF), Cobia (CBA), Mackerel (MKA), and Flounder (FLA) and optional Halibut (HLA) to a depth of at least 55m below MSL. The HLA option is contingent on the plan for HLA to be retained in use to transport fluids generated by well P&As and flushing activities on the remaining producing platforms from offshore to Longford utilising the HLA600/650 pipeline. In the event this option is not executed as part of this EP, the decommissioning of the HLA facility will be included in a future decommissioning EP.	Decommissioning of the lower jacket sections of the KFA, KFB, WKF, CBA, MKA, FLA and HLA SPJs (deep set piles and lower section if topsides and upper jacket sections removed as part of Campaign #1): • decommissioning of this property to be addressed in a future decommissioning EP which would reflect decommissioning approach (including any agreed alternative arrangement for this property).
Removal of the topsides, including the module support frame of the BMB platform that sits on a	IMR of the BMB CGS navigational aids post removal of the BMB topsides:

Included in this EP scope	Not included in this EP scope and where addressed
CGS. Installation of a navigational aid and supporting structure onto the CGS base.	• IMR activities of producing and non-producing platforms are activities included in the *Bass Strait Environment Plan* (AUGO-EV-EMM-012). Decommissioning of the BMB CGS base: • included in a future decommissioning EP.
Transport of removed property to a location closer to Corner Inlet and transfer of the property from a CSV or the HLV to a barge or HTV. Transport of removed property on barges or a HTV to Barry Beach Marine Terminal (where such transport occurs in Commonwealth waters). Typical marine vessel activities where these activities occur within the activity OA - for activities such as bunkering, provisioning, equipment, waste, cargo transfer, crew changes, operational standby.	Movement of Campaign #1 vessels outside of the OA as defined in Section 3.1. These vessels are deemed to be operating under the *Commonwealth Navigation Act 2012* (Cth) and not performing a petroleum activity. Transport of the property to Barry Beach Marine Terminal (where such transport occurs in State waters), load in at the ORC and dismantling and recycling/disposal of the components onshore. These activities will not occur within Commonwealth waters - hence will be conducted in accordance with State and Commonwealth legislation applicable to onshore and State waters activities.
Post removals surveys: • As left survey.	Post removals environmental monitoring. Activities required to support environmental monitoring are included in the *Bass Strait Environment Plan* (AUGO-EV-EMM-012). Details of proposed arrangements and other information to support an application for surrender pursuant to Section 269 of the OPGGS Act (in accordance with Section 270 of the OPGGS Act). • Any future surrender applications will be the subject of a future EP and will address the requirements of Section 270 of the OPGGS Act, including any agreed alternative arrangements for this property.

This EP will end upon:

- completion of the activities as described in Section 2 of this EP (excluding options that are not selected) and
- submission and NOPSEMA acceptance of the notifications as required under Section 54 (2) (end of activity) and Section 46 (a) (end of EP) of the OPGGS (Environment) Regulations.

1.2.1 Jacket removal scope for this EP

This section of the EP provides the reasoning for the exclusion of removal of particular lower jacket sections from the scope of this EP, as described in Table 1-1. An indicative schedule for decommissioning planning for these lower jacket sections is also provided.

A risk-based approach to progressive decommissioning has been applied which addresses both environmental and safety aspects.

For any petroleum activity, including jacket removal, the Environment Regulations require that Esso carries out such activities in a manner by which the environmental impacts and risks will be reduced to As Low As Reasonably Practicable (ALARP) and will be of an acceptable level.

NOPSEMA's Information Paper *Planning for proactive decommissioning* (NOPSEMA, 2025a) states that, notwithstanding decommissioning targets included in the Information Paper,

"....actual timelines will be based upon sound decommissioning planning outcomes. Considerations that will inform decommissioning timelines (both accelerated and deferred) include:

- *risk assessments and actions required to reduce risks to as low as reasonably practicable and acceptable.*
- *effective maintenance and preservation of property to ensure structural integrity until it is decommissioned.*
- *outcomes of technical studies that support alternative timelines.*
- *adjusting of timelines to enable phased or campaign based decommissioning".*

In line with NOSPEMA's Information Paper, Esso's overall planning for decommissioning Bass Strait property prioritises property with higher potential environmental impacts and risks. Property with higher potential environmental impacts and risks are targeted in Campaign #1 and that scope is included in this EP. Property to be decommissioned in order of risk prioritisation is as follows:

- non-producing wells, both platform-based and subsea (plugged and abandoned outside the scope of this EP)
- platform topsides preparation and removal (included in this EP)
- steel piled jacket upper sections that are situated between MSL and 55m below MSL (included in this EP)
- other remaining infrastructure including SPJ bases more than 55m below MSL, pipelines, umbilicals, flexibles and CGSs (decommissioned outside the scope of this EP in future campaigns).

Safety Regulations require Esso's overall planning for decommissioning Bass Strait property to also consider the most suitable and appropriate vessels, methods, practices and procedures to minimise the risks to the health and safety of persons, while at the same time complying with the environmental obligations.

1.2.1.1 Non-producing wells

Non-producing wells are the first priority for decommissioning both to minimise risk and, in the case of wells on platforms, P&A is a major pre-cursor to the decommissioning of topsides equipment. As per Table 1-1, P&A of platform-based wells is included in the scope of the Bass Strait Operations EP while Jack-Up Rig or MODU based P&A campaigns are subject to separate EP submission(s).

1.2.1.2 Platform topsides

During the historical production phase, platform topsides contained a range of hazardous inventories including petroleum, methanol, diesel, non-hydrocarbon chemicals, lube oils and refrigerants, fire-fighting foam and hydraulic oil. After completion of the P&A of platform non-producing wells, the platform topside inventories can be flushed, isolated and air-gapped where necessary. As per Table 1-1, these preparation activities are included in the scope of the Bass Strait Operations EP. Once topsides preparation is complete for the Campaign #1 platforms, removal, transport and backloading to barges or HTVs in Commonwealth waters is included in this EP.

1.2.1.3 Jacket removal

In balancing the environmental and safety risks of jacket removal together with the requirements of General Direction 817 and decommissioning of Bass Strait property overall, Esso has considered (i) capability of jacket removal equipment; (ii) uncertainties about how the jackets were piled into the seabed decades ago; and (iii) uncertainties that may arise during the execution of activities in the field. These considerations are further detailed below:

(i) The removal vessel Pioneering Spirit HLV is one of the largest offshore construction vessels in the world, designed for offshore heavy lift and is the foundation for the work scopes proposed in this EP. The size and capacity of the Pioneering Spirit HLV allows minimal lifts which contribute to minimising workforce and environmental exposure hours through reducing field execution duration. Factors considered in establishing the current and future campaign based approach to decommissioning are described in Section 1.2.1.4

(ii) For the larger jackets with more piles (KFA, KFB, MKA, WKF, FLA, CBA), Esso has concluded that internal cutting of an individual pile, if feasible, would significantly reduce seabed disturbance for that pile (see Section 6.2.3). For all SPJs, there is uncertainty about the internal condition of the piles that fix each jacket to the seabed. This means that, until the piles are open for visual inspection, Esso cannot be assured that internal cutting can be reliably executed.

Based on visual surveys able to be completed on the 176 piles that are associated with the Campaign #1 facilities, 59 are assumed to have either soil plugs or other internal obstructions which may be able to be removed to allow internal cutting. Each of these 59 piles requires developing a method of intervention for the type of obstruction, to determine if internal cutting is feasible for that pile. Obstructions may include items such as installation aids from original construction of the platform, hard marine growth that has developed over time or sand/shells/ballast material that may be embedded making internal cutting without prior intervention not possible.

To sufficiently understand the uncertainties for each pile and determine whether internal cutting is feasible, the safest and lowest environmental impact option is to remove the upper sections of the jackets and enable detailed inspection of each of the piles. The internal inspections will take some months to scope out and complete. The inspections will allow Esso to determine if there is a safe and environmentally acceptable methodology for the removal of the lower jacket sections in a future campaign, or if alternative arrangements may be considered for this property.

Due to the slow corrosion rates expected (Refer to Section 2.13), there is no risk to the integrity of the remaining structures in the interim period while further decommissioning is considered. The jacket structures are very heavy walled steel tubular members and will take many decades to degrade. Hence this is considered an ALARP approach to decommissioning SPJ based platforms in Bass Strait.

For the jackets in shallower water depths (either less than 55m depth or just over), the objective is to complete full removal down to just below seabed (if internal cutting is feasible) or as close to seabed as practicable through external cutting while minimising dredging of the seabed. This is possible due to the small number of jackets in this category (WTA and BMA and potentially FTA) which enables the investigation and resolution of the above issues to be accommodated within the HLV availability window. Note that PCA and DPA are gravity-based platforms, are not fixed to the seabed by piles and can be fully removed in Campaign #1.

(iii) The removal of each upper SPJ section during Campaign #1 execution may vary from plan because of such factors as weather or discovery of jacket conditions that may arise in the field. If no alternative arrangements are agreed for the lower SJP sections, the future removal of each will depend on the as left condition of each lower jacket section.

For this reason, extensive planning will be required to determine the correct type of lifting configuration, and the correct lifting method for each specific lower jacket section after the upper section has been removed and inspections completed. For example, vessel operators may prefer to use internal lifting tools inserted into the lower structure vertical members, however that method cannot be confirmed until access is provided with the removal of the upper jacket sections.

1.2.1.4 Future decommissioning plans

Planning for the future decommissioning approach for lower jacket sections after Campaign #1 execution is underway, consistent with the risk-based approach described above. For a decommissioning scope the size of the Gippsland Basin, the optimal approach is to aggregate facilities into single projects, or campaigns, for decommissioning execution. The factors considered by Esso when developing a campaign based decommissioning approach include:

- campaigns enable learnings and skill development that can be adopted for each subsequent campaign, hence resulting in the safest approach to the execution of large repeat offshore scopes
- the environmental impact of each campaign compounds due to the need to repeat scope each time a project moves into execution phase. Campaigns enable the number of HLV and support vessel spread mobilisations to be minimized, thereby reducing overall fuel consumption and resultant greenhouse gas and other air emissions. Other impacts related to decommissioning activities such as the potential disturbance of marine life through light and noise are also minimised by aggregating removal of facilities into campaigns
- the interconnectedness of facilities and varying Cessation of Production (CoP) timing throughout the Gippsland Basin makes it important to ensure that the disconnection of non-producing facilities for decommissioning is carefully planned with limited impact to operating facilities, hence ensuring reliable gas supply to Victoria
- the approach attracts contractors with world class expertise, vessels and experience to mobilise to execute work in the safest and most efficient manner, hence also ensuring environmental impacts are minimised

- the remote geographical location and sea conditions of the Gippsland Basin also limits the availability of vessels with suitable size and capability to undertake a work program of this scale. Without a significant scope of work, it is not commercially viable for the optimal vessels to come to Bass Strait from the Northern Hemisphere as they need to forego other work in nearby locations in order to mobilise to Australia
- a campaign based approach minimises cost due to the efficiency associated with combining assets to be decommissioned into a scope of work requiring one vessel spread mobilisation.

The following key milestones are indicative for the future decommissioning campaign(s) relevant to the lower jacket sections and making any satisfactory arrangements and/or separate regulatory approvals:

- During 2028:
  - complete a post topside removal survey of the remaining sections of each jacket
- During 2029:
  - determine the approach to cut each jacket pile either internally or externally and develop a plan for lifting options for each jacket base
  - commence contracting for lower jacket section intervention activities to assess obstruction removal and tooling needs.
- From 2030 to 2032:
  - execute pile intervention activities and ongoing monitoring and assessment of marine life associated with the lower jacket sections
  - develop a detailed scope of work and contracting for lower jacket section cutting and removal.
- From 2032 to 2034:
  - undertake detailed engineering and execution planning with selected HLV contractor
  - prepare and submit execution EP for removal of lower sections of the jackets.
- From 2035:
  - execute the activities to remove the lower jacket sections (unless an alternate end state has been otherwise agreed through an end state EP). This timing will align with Campaign #2 which will include removal of the currently still producing platforms which will have reached cessation of production and require mobilisation of a suitable HLV.

As discussed in Section 2.13, the integrity of each jacket structure has been maintained since installation via the use of a cathodic protection system which has been regularly monitored. Although this system will no longer be in operation following the conclusion of the Campaign #1 activities, given the typical steel wall thicknesses, and combination of the grouted annulus of sleeves and piles, the timeline for steel degradation to be of any significance to the remaining lower jacket integrity is beyond 100 years.

Separate EPs will be utilised to facilitate future decommissioning activities not specifically included in the Campaign #1 scope.

1.2.2 Life cycle of a facility

A titleholder may determine what is involved in a particular stage of a petroleum activity and provide adequately for those activities in an EP. As defined in *When to submit a proposed revision of an Environment Plan* (NOPSEMA, 2024c), a new stage of activity is defined as a change to the spatial or temporal limits of the petroleum activity described in the accepted EP.

The life cycle stages of the Gippsland Basin facilities are shown in Figure 1-1 and Table 1-2.

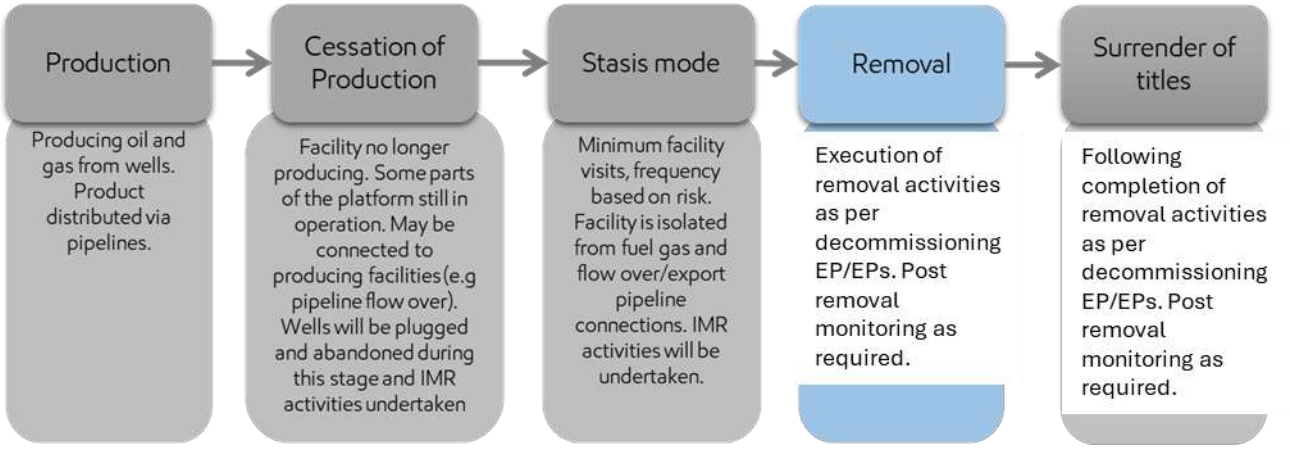


Figure 1-1 Life cycle stages of the Bass Strait facilities

The Campaign #1 facilities included in this EP are currently either in the CoP or Stasis mode life cycle stage (refer to Section 2.5 of this EP for the facility status). Activities carried out by crews that are based on facilities during the Production, CoP and Stasis mode stages, which include P&A of wells and preparation of the facilities for removal are outside the scope of this EP. The activities for these stages are included in the *Bass Strait Environment Plan (AUGO-EV-EMM-012)* and separate well P&A activity EPs as required.

There are limited preparatory activities that need to be completed during Stasis phase that are within the scope of this EP (e.g. preparatory works completed via the *Fortitude* or similar vessel, such as lift point installation and early jacket cuts). The bulk of the activities within the scope of this EP are part of the Removal stage of the facility life cycle. These activities are described in Section 2.

Following the execution of all decommissioning activities and the undertaking of any required post-decommissioning monitoring as agreed with NOPSEMA, the titleholders will apply to the National Offshore Petroleum Titles Administrator to surrender the relevant petroleum titles.

Section 572(3) of the OPGGS Act, requires titleholders to remove from the title area all structures, equipment and other property that are neither used nor to be used in connection with the operations. This may also include entering into a satisfactory arrangement with NOPSEMA for any remaining property within the licence area in accordance with Section 270 (3)(c) of the OPGGS Act. Section 270 sets out the criteria for the Joint Authority to determine whether to give consent to the surrender of a title. The activities described in this EP, consisting of removal of property from the title areas listed in Section 2.2 is a key step toward compliance with Section 270 (3)(c) of the OPGGS Act, however the Surrender of Titles stage is not within the scope of this EP and will be included in a future EP(s).

Section 270(3)(e) and (f) of the OPGGS Act require that the registered holder of the permit, lease or licence has, to the satisfaction of NOPSEMA, made good any damage to the seabed or subsoil in the surrender area caused by any person engaged in the operations authorised by the permit, lease or licence and provided for the conservation and protection of the natural resources in the surrender area. As this EP is not the final EP for the facilities listed in Table 1.1 and the Surrender of Titles stage of the facility life cycle is not within the scope of this EP, details of how the titleholders will address these Surrender of Titles requirements will be included in a future EP(s) and/or as part of a separate application to surrender under s.270 of the Act.

Table 1-2 Bass Strait facility lifecycle

Stage	Definition	Activities within the scope of this EP
Production	Facility is producing oil and/or gas which is distributed via pipelines. In some instances during this stage, production may temporarily be ceased while future development plans are being evaluated. A facility will move to the CoP stage when production has ceased and there is no intention of returning to production in the future.	No
CoP	Key change from prior stage – CoP stage commences when a facility is no longer producing oil and/or gas and all wells are shut-in. There are a number of activities within the CoP stage: • Care and Preservation activities pre well P&A: - systems are being maintained and/or preserved where they are required for future P&A and decommissioning activities and/or to facilitate upstream asset ongoing production - wells continue to be monitored as per the Wells Integrity Management System and risk assessments undertaken as required prior to P&A. Wells may be plugged and secured using a wireline rig to preserve wellbore integrity for the period prior to P&A. Once platforms are temporarily de-staffed, periodic platform visits are conducted as required to complete operations and maintenance tasks (e.g. Wells Integrity Management System testing, well operations, restart equipment that has shut down, top up lube oils, launch/receive pigs, re-establish communications) to facilitate upstream platform operations and/or maintain equipment for future decommissioning activities. Platform visits may be conducted as day trips, or by re-staffing the facility for a period of time (could be weeks/months). • Well P&A and well conductor removal: - wells will be P&A'd during the CoP stage. Timing of P&A is dependent on the risk profile of each well - well conductors will be removed either post-P&A or as part of the SPJ Removal stage - some systems on the platform are still in operation with temporary or permanent connections (e.g. power, air, safety systems, fuel systems, pig launcher/receivers, cathodic protection, etc.). • Care and Preservation post-well P&A (as applicable): - platforms will continue to be staffed to complete operations and maintenance tasks in order to facilitate decommissioning activities such as well P&A campaigns. Various platforms may be periodically de-staffed for short periods (weeks to months) depending on operational resourcing. During these times, platform	No

Stage	Definition	Activities within the scope of this EP
	visits will be conducted as short trips as required to complete various tasks (e.g. restart power generation, top up lube oils, launch/receive pipeline pigs, re-establish telemetry). • Facility preparation for removal: - activities are being undertaken to prepare the platform for removal in parallel with IMR to preserve the facility for the Stasis Mode stage - facilities will be progressively isolated from fuel gas and flow-over/export pipeline connections. The overall duration of CoP is dependent on current and potential future use requirements of the facility. Due to the high level of interconnectedness of the Bass Strait facilities, some platforms continue to be used to facilitate pipeline 'flow over' from other facilities to facilitate the preparation of other facilities for decommissioning such as the flushing of pipelines and umbilicals, and removal of topsides hydrocarbons. At completion of Care and Preservation, the facility will have completed well P&A and facility preparation activities and can be put into Stasis Mode.	
Stasis Mode	Key change from prior stage: • activities to prepare facility for a period of minimal activity and removal are complete • facilities are isolated from fuel gas and flow-over/export pipeline connections • facilities are considered to be 'not in use, nor to be used' in connection with the operations (per Section 572 of the OPGGS Act) when Stasis Mode stage is reached • facility is ready for removal. The duration for which a platform will remain in the Stasis Mode stage is dependent on the current and future use requirements (i.e. to facilitate preparation for removal of other facilities) of the facility and the timing of decommissioning campaigns.	No
	Lift preparation activities including lift point installation and early jacket cuts.	Yes
Removal	Removal decommissioning activities with scopes defined in decommissioning EPs. Removal activities will be undertaken by specialised third-party contractors with the appropriate vessels, equipment and expertise to undertake this work.	Yes.

Stage	Definition	Activities within the scope of this EP
Surrender of Titles	Following the completion of decommissioning and post-decommissioning monitoring, as agreed with NOPSEMA, the titleholders will apply to the National Offshore Petroleum Titles Administrator to surrender the relevant petroleum titles.	No

1.3 Compliance with Section 572 of the OPGGS Act

1.3.1 Section 572 overview

Section 572 of the OPGGS Act imposes obligations on a titleholder regarding maintenance and removal of property:

Maintenance of property

(2) A titleholder must maintain in good condition and repair all structures that are, and all equipment and other property that is:

(a) in the title area; and

(b) used in connection with the operations authorised by the permit, lease, licence or authority.

Removal of property

(3) A titleholder must remove from the title area all structures that are, and all equipment and other property that is, neither used nor to be used in connection with the operations:

(a) in which the titleholder is or will be engaged; and

(b) that are authorised by the permit, lease, licence or authority

Section has effect subject to other provisions etc:

(7) This section has effect subject to:

(a) any other provision of this Act; and

(b) the regulations; and

(c) a direction given by NOPSEMA or the responsible Commonwealth Minister under:

(i) Chapter 3; or

(ii) this Chapter; and

(d) any other law.

1.3.2 Management of property

Before execution of Campaign #1 removal activities starts

Maintenance and repair of structures that are, and all equipment and other property that are associated with the facilities to which this Campaign #1 EP applies are activities described in the accepted *Bass Strait Environment Plan* (AUGO-EV-EMM-012).

After execution of Campaign #1 removal activities finishes

Consistent with NOPSEMA's Information Paper *Planning for proactive decommissioning* (NOPSEMA, 2025a) *"...Property that is no longer in use or in a state of suspension must be preserved, inspected, and maintained in good condition and repair in accordance with section 572(2) of the OPGGS Act to enable decommissioning in the future"*. From a structural integrity perspective, the types of jacket materials used and jacket installation methods together with decades of underwater structural inspections provide evidence that the lower jacket structures are stable on the seabed and degradation rates have been assessed.

The lower jacket structures are made up of carbon steel and cement grout (in the annulus between the jacket and piles), titanium-iron oxide mineral sand and steel shot within some piles and any remaining corrosion protection anodes.

In accordance with Section 572(3) of the OPGGS Act a titleholder must remove from the title area all structures that are, and all equipment and other property that is neither used nor to be used in connection with the operations, subject to the provisions in Section 572(7).

Based on the nature of materials and degradation assessment performed, the scope of works described in this EP will not preclude future removal campaigns.

1.4 Titleholder details

Esso, a wholly owned subsidiary of ExxonMobil Australia Pty Ltd, is the operator for the Gippsland Basin Joint Venture (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/L02
- VIC/L05
- VIC/L07
- VIC/L11
- VIC/L13
- VIC/L14
- VIC/L15
- VIC/L17

The titleholder details for this EP are as follows:

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

The nominated liaison person for this activity is:

Hena Kalam, Australia Major Projects SSHE Manager
Esso Australia Pty Ltd for and on behalf of Esso
Level 9, 664 Collins Street, Docklands VIC 3008
Telephone: (03) 9261 0000
Email: eapl.regulatory@exxonmobil.com

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

1.5 Legislative requirements and industry guidance

The principal offshore legislation for petroleum activities beyond 3nm to the outer extent of the Australian Exclusive Economic Zone at 200nm is the OPGGS Act.

1.5.1 Relevant legislation

As required by Environment Regulation 21(4), the following legislative requirements apply to the activity and are relevant to the environmental management of the activity:

- Table 1-3: legislation applying to the activities within the scope of this EP
- Table 1-4 to Table 1-6: While no part of the activity within the scope of this EP is located within Victorian, New South Wales, or Tasmanian State waters, the State legislation would be relevant under certain circumstances such as in the case of a large hydrocarbon release, as the Environment That May Be Affected (EMBA) (determined in Section 3.2 of this EP) intersects State waters (see Section 3.2).

Table 1-3 Legislation that applies to the activity and is relevant to the environmental management of the activity

Legislation	Description	Relevance to activity	International Convention enacted	Administering authority
OPGGS Act and Environment Regulations	The OPGGS Act addresses all licensing, health, safety, environmental and royalty issues for offshore petroleum exploration and recovery operations extending beyond the 3nm limit. The Environment Regulations ensures that petroleum activities are carried out in a manner; consistent with the principles of ecologically sustainable development (ESD) set out in Section 3A of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (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. Obligations in relation to the removal of property brought onto a title are provided in OPGGS Act Section 572. Obligations in relation to surrender of petroleum titles following the completion of decommissioning activities are provided in OPGGS Act Section 270. Esso acknowledges the requirements of Section 270, however Section 270 matters are not part of the scope of this EP and will be the subject of a future decommissioning EP.	The OPGGS Act applies to the activity assessed under this EP. The removal of structures, equipment and other property that is no longer used, by the undertaking of the activities described in Section 1.2.1 of this EP, is in compliance with Section 572 of the OPGGS Act. The removal of structures, equipment and property no longer in use by the undertaking of the activities described in Section 1.2.1 of this EP is also in compliance with Section 270 of the OPGGS Act, which requires removal of property (or other arrangements as agreed with NOPSEMA) to be undertaken prior to applying to surrender petroleum titles.		NOPSEMA
EPBC Act	The EPBC Act focuses on Matters of National Environmental Significance (MNES), streamlines the Commonwealth environmental assessment and approval process and provides an integrated system	Relevant MNES are covered in Appendix A.	1992 Convention on Biological Diversity & Agenda 21. Convention on International Trade in	DCCEEW For petroleum activities in

Legislation	Description	Relevance to activity	International Convention enacted	Administering authority
	for biodiversity conservation and management of protected areas. MNES include but are not limited to 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. On 28 February 2014, NOPSEMA became the sole designated assessor of petroleum and greenhouse gas (GHG) activities in Commonwealth waters in accordance with the Minister for the Environment's endorsement of NOPSEMA's environmental authorisation process under Section 146 of the EPBC Act.	EPBC Act Protected Matters Search Tool (PMST) utilised to identify relevant data. Approved conservation advice and management plans, including statutory recovery plans for threatened species listed under Part 3 of the EPBC Act, relating to listed species or threatened ecological communities (TECs) have been identified and considered where appropriate. Relevant recovery plans are covered in Appendix A.	Endangered Species of Wildlife and Flora 1973. Convention on Wetlands of International Importance especially as Waterfowl Habitat 1971 (Ramsar). Japan/Australia Migratory Bird Agreement 1974. China/Australia Migratory Bird Agreement 1986. Republic of Korea-Australia Migratory Bird Agreement 2006. International Convention on Whaling 1946. Convention on the Conservation of Migratory Species of Wild Animals 1979 (Bonn Convention). Convention Concerning the Protection of the World Cultural and	Commonwealth waters, NOPSEMA

Legislation	Description	Relevance to activity	International Convention enacted	Administering authority
			Natural Heritage 1972.	
Australian Maritime Safety Authority Act 1990 (Cth)	The main objectives of this Act are to promote maritime safety and to protect the marine environment from pollution from ships and other environmental damage caused by shipping. The Act also establishes the Australian Maritime Safety Authority (AMSA) and a national search and rescue service.	Oil spill preparedness and response plans for dealing with a potential worst case scenario spill is described in Section 7.8 including consultation and coordination of activities with AMSA.	International Convention on Oil Pollution Preparedness, Response and Co-operation) 1990.	AMSA
National Environment Protection Council Act 1994 (Cth) and *National Environment Protection Measures (Implementation) Act 1998* (Cth)	National Environment Protection Council develops (in conjunction with other state authorities) through the Intergovernmental Agreement on the Environment, consistent environmental standards to be adopted between states. These requirements take the form of National Environment Pollution Measures such as National Pollutant Inventory.	Reporting of emissions required by the National Pollutant Inventory is conducted annually for all Esso operated activities.		National Environment Protection Council
National Greenhouse and Energy Reporting Act 2007 (Cth)	Provides for the reporting and dissemination of information related to GHG emissions, GHG projects, energy production and energy consumption.	Annual submission covering Esso's Gippsland activities provided to Clean Energy Regulator.	United Nations Framework Convention on Climate Change,1992, and the Kyoto Protocol, 1997.	Clean Energy Regulator

Legislation	Description	Relevance to activity	International Convention enacted	Administering authority
Protection of the Sea (Prevention of Pollution from Ships) Act 1983 (Cth)	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 the amendments that have been adopted, including the 2022 maritime Legislation Amendment Bill	AMSA
Biosecurity Act 2015 (Cth) and associated regulations including: Biosecurity Amendment (Biofouling Management) Regulations 2021 (Cth)	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. The Biosecurity Amendment (Biofouling Management) Regulations 2021 (Cth) entered into force on 15 June 2022 and requires that vessel operators provide information on biofouling management practices prior to arriving in Australia.	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.	International Convention for the Control and Management of Ships' Ballast Water and Sediments 2004. United Nations Convention on the Law of the Sea 1982. Convention on Biological Diversity 1992.	Department of Agriculture, Fisheries and Forestry
Navigation Act 2012 (Cth)	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, covering maritime safety and marine pollution prevention. 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

Legislation	Description	Relevance to activity	International Convention enacted	Administering authority
Coastal Waters (State Powers) Act 1980 (Cth)	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)
Protection of the Sea (Harmful Anti-fouling Systems) Act 2006 (Cth)	Regulates the use of harmful anti-fouling systems employed on vessels and their effects on the marine environment.	The risk of introduction of IMS is considered and managed for all vessels covered under this activity as described in this EP. This includes consideration of appropriate antifouling systems.	MARPOL International Convention on the Control of Harmful Anti-fouling Systems on Ships 2001.	AMSA
Native Title Act 1993 (Cth)	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 1.5.5.		Attorney-General's Department
Underwater Cultural Heritage Act 2018 (Cth)	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 require a permit.	Shipwrecks, relics, submerged aircrafts or associated artifacts, and protected areas within the OA are identified in Table 3-2 of this EP. Shipwrecks, relics, submerged aircrafts or associated artifacts and protected areas within the EMBA are identified in Appendix A.		DCCEEW

Legislation	Description	Relevance to activity	International Convention enacted	Administering authority
Civil Aviation Act 1988 (Cth) and associated regulations including: Civil Aviation Safety Regulations 1998 (Cth)	The Act sets up a Civil Aviation Safety Authority (CASA) with functions to regulate the safety of civil aviation, including the carrying of dangerous goods, airworthiness standards for aviation, maintenance; general operational and flight rules; and aerial application operations.	Rotary wing aircraft servicing the Gippsland facilities operate under the requirements of CASA. This contributes to safe operation and transport of goods thereby reducing risk of incidents which could have environmental impacts as described in this EP.	Chicago Convention 1944.	CASA
Radiocommunications Act 1992 (Cth)	The Act provides for the management of the radiofrequency spectrum to ensure accurate provision of the spectrum for use by agencies involved in the defence or national security of Australia, law enforcement or the provision of emergency services; and for use by the public or community services.	Radio-communications systems on vessels and aircrafts operate within frequency ranges permitted under the Act. Clear communication channels are required to enable effective controls preventing or limiting potential impacts from incidents (e.g. collision, emergency response) as defined in this EP.		Australian Communications and Media Authority
Hazardous Waste (Regulation of Exports and Imports) Act 1989 (Cth)	This Act regulates the export, import and transit of hazardous waste both within and outside Australia. It requires permits for these activities and sets strict guidelines to protect human health and the environment.	The Act ensures that hazardous waste generated during the activity is managed accordingly. The Act requires that a permit is obtained to transport controlled hazardous waste produced during the campaign. Management measures applicable to hazardous wastes are presented in Sections 6 and 7 of this EP.	The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, 1989 (Basel Convention).	DCCEEW

Legislation	Description	Relevance to activity	International Convention enacted	Administering authority
Aboriginal and Torres Strait Islander Heritage Protection Act 1984 (Cth)	This Act provides a framework to protect areas and objects of cultural significance to Aboriginal and Torres Strait Islander peoples. It supports preservation of cultural heritage by ensuring significant sites or objects are safeguarded during activities in Commonwealth waters.	While no culturally significant areas of objects have been identified within the OA, this Act ensures appropriate measures are in place should culturally significant Aboriginal or Torres Strait Islander heritage (such as objects or remains) be discovered during decommissioning activities.		DCCEEW
Australian Radiation Protection and Nuclear Safety Act 1998 (Cth)	This Act establishes the framework for radiation protection and nuclear safety across Australia. It governs the management, handling, storage, and use of radioactive materials, including radioactive waste, ensuring compliance with safety standards to protect the health of workers, the public and public and the environment.	The Act ensures that any naturally occurring radioactive materials present on offshore facilities are identified and managed to minimise potential environmental impacts. This includes compliance with radiation safety standards to prevent contamination of the marine environment as described in Sections 6 and 7 of this EP.	Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management.	DCCEEW

Table 1-4 Key Victorian legislation

Legislation	Coverage
Environment Protection Act 2017 (Vic) and Environment Protection Regulations 2021 (Vic)	This Act is the key Victorian legislation regulating emissions to the environment within Victoria (relevant for waste transfer and disposal, National Pollutant Inventory reporting). The Regulations support the objectives of the legislation: to prevent or minimise risks of harm to human health or the environment from pollution or waste. The objectives of the Regulations are to further the purposes of, and give effect to, the Act. Administered by the Victorian Environment Protection Authority.

Legislation	Coverage
Environment Effects Act 1987 (Vic)	This Act is the Victorian legislation that provides a framework for the environment impact assessment of projects that may have a significant event on the environment. The Act is administered by the Victorian Department of Transport and Planning.
Pollution of Waters by Oil and Noxious Substances Act 1986 (Vic)	This Act is the Victorian state legislation giving effect to the requirements of MARPOL within State waters. Administered by the Victorian Environment Protection Authority.
Emergency Management Act 1986 and 2013 (Vic)	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.
Port Management Act 1995 (Vic)	The Act sets out the establishment, management and operation of commercial trading and local ports in Victoria and the economic regulation of certain port services. The Act also sets out the functions of harbour masters. Under this Act all managers of local and commercial ports must prepare a Safety Management Plan and an Environmental Management Plan. The Act is administered by Ports Victoria. Gippsland Ports is appointed under the Port Management (Local Ports) Regulations 2015 (Vic) to regulate ports and waterways in Gippsland, including application of the Marine Safety Act and other relevant legislation for port activities.
Marine Safety Act 2010 (Vic)	This Act provides for safe marine operations in Victoria. Administered by Safe Transport Victoria.
Heritage Act 2017 (Vic)	This Act is the Victorian state legislation which protects the heritage values of shipwrecks and relics within State waters. Administered by the Heritage Victoria.
National Parks Act 1975 (Vic)	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).
Radiation Act 2005 (Vic)	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.
Catchment and Land Protection Act 1994 (Vic)	This Act sets up a framework for the integrated management and protection of catchments. Administered by DEECA.

Legislation	Coverage
Marine and Coastal Act 2018 (Vic)	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.
Land Titles Validation Act 1994 (Vic)	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.
Dangerous Goods Act 1985 (Vic) Dangerous Goods (Storage and Handling) Regulations 2012 (Vic)	This Act, the associated Dangerous Goods (Storage and Handling) Regulations 2012 (Vic) and the *Code of practice for the storage and handling of dangerous goods* (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.
Flora and Fauna Guarantee Act 1988 (Vic) and Regulations 2020	This Act and associated Regulations cover the conservation and management of Victoria's native flora and fauna and provides a framework for the protection of threatened species and ecological communities, listing at-risk species, developing action statements and designating critical habitats. This Act is administered by DEECA.
Wildlife Act 1975 (Vic) and Wildlife (Marine Mammal) Regulations 2024 (Vic)	This Act and associated Regulations aim to promote the protection and conservation of wildlife, prevent wildlife from becoming extinct and regulate activities related to wildlife. The Wildlife (Marine Mammal) Regulations 2024 prescribe minimum distances to whales and seals/seal colonies, restrictions on feeding/touching and restriction of noise within a caution zone of a marine mammal (dolphins (150m), whales (300m) and seals (50m)). This Act is administered by DEECA.
Offshore Petroleum and Greenhouse Gas Storage Act 2010 (Vic) and Offshore Petroleum and Greenhouse Gas Storage Regulations 2021 (Vic)	This Act and Regulations apply to petroleum operations effectively within 3nm of the Victorian coast and address licensing, health, safety, environmental and royalty issues for offshore petroleum exploration and development operations. Waters greater than 3nm 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 1-5 Key New South Wales legislation

Legislation	Coverage
Protection of the Environment Operations Act 1997 (NSW)	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
Marine Pollution Act 2012 (NSW)	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.
Ports and Maritime Administration Act 1995 No.13 (NSW)	This Act provides for the provision of marine safety services and emergency environment protection services for dealing with pollution incidents in State waters. Administered by Transport for New South Wales.
Heritage Act 1977 No.136 (NSW)	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.
National Parks and Wildlife Act 1974 No.80 (NSW)	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.
Wilderness Act 1987 No.196 (NSW)	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.
Marine Parks Act 1997 No.64 (NSW)	This Act provides for the protection and management of marine areas. Administered by the New South Wales Marine Parks Authority.

Table 1-6 Key Tasmanian legislation

Legislation	Coverage
Environmental Management and Pollution Control Act 1994 (Tas)	This is the primary environment protection and pollution control legislation in Tasmania. Administered by the Environment Protection Authority Tasmania.
Pollution of Waters by Oil and Noxious Substances Act 1987 (Tas)	This Act is the Tasmanian state legislation giving effect to the requirements of MARPOL within State waters. Administered by Environment Protection Authority Tasmania.

Legislation	Coverage
Emergency Management Act 2006 (Tas)	This Act establishes the Tasmanian emergency management framework which operates at state, regional and municipal levels.
Marine and Safety Authority Act 1997 (Tas)	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.
Historic Cultural Heritage Act 1995 (Tas)	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).
National Parks and Reserves Management Act 2002 (Tas)	This Act provides for the management of national parks and other reserved land. Administered by the Parks and Wildlife Service Tasmania.

1.5.2 Decommissioning guidance documents

1.5.2.1 Offshore petroleum decommissioning guideline

The Guideline: Offshore petroleum decommissioning (Department of Industry, Science, Energy and Resources, 2022) sets out the Australian Decommissioning Regulatory Framework, with the aim of assisting titleholders with planning and approval for decommissioning activities and understanding the expectations of the relevant decision makers.

1.5.2.2 Removal of oil and gas property and sea dumping of infrastructure in Commonwealth waters: draft guidance

The Removal of oil and gas property and sea dumping of infrastructure in Commonwealth waters: draft guidance issued by Department of Industry, Science, and Resources (CoA, 2024) outlines the types of property and infrastructure to be removed and consideration of those that may be permitted to remain in limited circumstances. It addresses considerations for titleholders and operators, clarifies how Australia's offshore decommissioning and sea dumping frameworks connect.

1.5.2.3 NOPSEMA decommissioning policy and guidance

NOPSEMA has issued specific guidance to assist industry in meeting OPGGS Act obligations in relation to decommissioning. The following policies and guidance have informed this EP:

- Section 572 Maintenance and Removal of Property (NOPSEMA, 2025b)
- Decommissioning Compliance Strategy [2024 to 2029] (NOPSEMA, 2024a)
- NOPSEMA decommissioning compliance plan (NOPSEMA, 2021b)
- Complying with your decommissioning obligations (NOPSEMA, 2021a)
- Planning for proactive decommissioning (NOPSEMA, 2025a)
- Section 270 Consent to surrender title (NOPSEMA, 2025c)
- Consultation in the course of preparing an environment plan (NOPSEMA, 2024b)
- Environment Plan Content Requirement Guidance Note (NOPSEMA, 2024c)

1.5.2.4 Industry guidance

NOPSEMA's *Environment Plan Content Requirements Guidance Note* (NOPSEMA, 2024c) highlights instances of industry guidance that an operator should be aware of including but not limited to:

- AS/NZS ISO 14031:2000 *Environmental management – Environmental Performance Evaluation – Guidelines.*
- Australian Standard AS/NZS ISO 14001:2016 *Environmental management systems - Requirements with guidance for use*
- Australian Standard AS/NZS ISO 31000:2018 *Risk management - Guidelines* and HB203:2012 *Managing environment-related risk*; and
- Guidance published by the International Petroleum Industry Environmental Conservation Association (IPIECA) for oil spill risks.

1.5.3 General Direction 817

General Direction 817 made under Section 574 of the OPGGS Act, was issued to Esso and BHP (now Woodside Energy (Bass Strait) Pty Ltd) on 20 May 2021. A detailed implementation plan was subsequently submitted to NOPSEMA in August 2021, outlining Esso's approach to ensuring compliance with this General Direction, which relates to decommissioning. Quarterly meetings are held between Esso and NOPSEMA to measure progress against this implementation plan.

An annual decommissioning report detailing progress with implementing the requirements of General Direction 817 is also submitted to NOPSEMA in December each year and published on the Esso website (exxonmobil.com.au). This report should be referred to for current details on progress against General Direction 817 requirements.

The requirements of General Direction 817 and how they relate to this EP have been summarised in Table 1-7.

Table 1-7 General Direction 817 requirements

Direction	Action required	Relevance to this EP
1a, b and c	Commission, and submit to NOPSEMA, an independent review of the engineering and project management approach to decommissioning activities to identify opportunities and propose measures to reduce the timeframe for commencing and completing all decommissioning activities. Implement reasonable and practicable measures based on this review.	N/A – review completed and submitted to NOPSEMA on 16 November 2021 and was accepted by NOPSEMA on 8 December 2021.
2a	Complete all preparatory decommissioning activities and commence the topside dismantling campaign as soon as reasonably practicable, and no later than 30 September 2027, for removal of all structures, property and equipment no longer in use associated with facilities listed in Schedule 3[1] of the Direction.	Activities to decommission the facilities listed in Schedule 3 of the Direction are included within the scope of this EP.
2b	To plug or close, to the satisfaction of NOPSEMA, all wells associated with the titles listed in Schedule 3, as soon as reasonably practicable and no later than 30 September 2027.	N/A. Well P&A activities utilising platform-based rigs is addressed in the *Bass Strait Environment Plan (AUGO-EV-EMM-012)*. Well P&A activity utilising Jack-Up Rigs or Mobile Offshore Drilling Units are subject to activity specific EP submissions.
3 a and b	Conduct, and submit to NOPSEMA, an integrity assessment of the PCA and DPA facilities to demonstrate that their full removal will not be precluded.	N/A Integrity assessment was submitted to NOPSEMA on 16 August 2021 and was accepted on 28 September 2021.
3 c and d	Conduct, and submit to NOPSEMA, integrity assessments of all equipment structures and property that are in a non-producing state, to demonstrate that full removal of structures, property and equipment will not be precluded.	N/A Integrity assessments were submitted to NOPSEMA on 31 January 2022 and were accepted by NOPSEMA on 10 March 2022.
4	Undertake IMR activities on all property and wells associated with facilities listed in Schedule 3 of the Direction to ensure: • property continues to perform its intended function • approved decommissioning end states are not precluded • occupational health and safety, structural integrity and environmental risks continue to be reduced to ALARP.	N/A IMR activities for facilities listed in Schedule 3 are described in the *Bass Strait Environment Plan (AUGO-EV-EMM-012)*. IMR continues on property as needed so as not to preclude full removal.
5	Submit a decommissioning progress report to NOPSEMA on an annual basis no later than 31 December each year outlining progress with	N/A

Direction	Action required	Relevance to this EP
	implementing General Direction 817 requirements. Report to be published on the Esso website.	As per the obligation under General Direction 817, Esso submits and gains acceptance from NOPSEMA of decommissioning annual reports and publishes these on the Esso website each year.

[1] The facilities listed in Schedule 3 of General Direction 817 are WTA, MKA, FTA, KFA, KFB, FLA, BMA, BMB, DPA and PCA.

1.5.4 Federal Court decisions

On 21 September 2022, the Federal Court of Australia ruled in FCA 1121 (Tipakalippa v National Offshore Petroleum Safety and Environmental Management Authority (No 2), 2022) to set aside NOPSEMAs decision to accept an EP (the Santos Barossa Development Drilling and Completions EP) on the basis NOPSEMA could not be reasonably satisfied that the EP met the criteria specified in the Environment Regulations. This ruling specifically related to the undertaking of relevant person consultation, as required by Regulation 25 of the Environment Regulations. A subsequent appeal to this decision, FCAFC 193 (Santos NA Barossa Pty Ltd v Tipakalippa, 2022), 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 Environment Regulations. Following the Federal Court decisions, NOPSEMA has developed *Consultation in the course of preparing an environment plan* (NOPSEMA, 2024b; NOPSEMA, 2024b; NOPSEMA, 2024b) as a guideline for industry. This guideline and the appeal decision have informed the preparation of this EP.

On 28 September 2023, the Federal Court of Australia ruled in the Cooper v NOPSEMA (No. 2) [2023] FCA 1158 case to set aside NOPSEMAs decision to accept an EP subject to conditions (the Woodside's Scarborough 4D B1 Marine Seismic Survey EP) on the basis NOPSEMA did not have statutory power to make the decision to accept the EP subject to conditions in circumstances where it was not reasonably satisfied that the consultation required by reg 11A(g) of the Regulations had been carried out. From this date, the appeal decision represents the law regarding requirements for consultation in accordance with the Environment Regulations. Following the Federal Court decision, NOPSEMA published an announcement on its website, acknowledging the court's ruling, and informing it is reviewing the reasons for the decision to ensure future regulatory actions are in accordance with the decision.

1.5.5 Native Title

The landmark judgements in High Court of Australia (HCA) 23 (Mabo v Queensland (No 2) 175 CLR 1, 1992) 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* (Cth).

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* (Vic). The agreement between the State and the Gunaikurnai people was the first to be made under the *Traditional Owner Settlement Act 2010* (Vic).

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* (Cth) 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 (Cth), 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* (Cth). 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
- Corringle Foreshore Reserve
- Nooramunga Marine and Coastal Park
- Avon Wilderness Park
- Baw Baw National Park
- Alpine National Park (on Gunaikurnai Country).

1.5.6 Sea Country

In April 2021, the Sea Country Indigenous Protected Areas (IPAs) 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 IPAs 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, 10 successful Sea Country IPAs consultation projects were announced, including the Nanjit to Mallacoota Sea Country IPAs managed by GLaWAC.

The Nanjit to Mallacoota Sea Country IPAs 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 IPAs 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 IPAs consultation project and understands that once the First Nations peoples' consultation phase has completed, commercial participants will be approached.

1.5.7 Minamata Convention

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 or 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 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 quantities of mercury that may be contained within grout. This is addressed in Section 6.6 of this EP.

1.6 Environment Plan Summary

This EP has been structured in accordance with the Environment Regulations, Regulations 35(6) and 35(7) as outlined in Table 1-8.

Table 1-8 Environment Plan summary

EP Summary Requirement	Section of EP
The location of the activity	Section 2.2
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 Section 7
The control measures for the activity	Section 6, Section 7and Appendix H.
The arrangement for ongoing monitoring of the titleholder's environmental performance	Section 8.11

EP Summary Requirement	Section of EP
Response arrangements in the Oil Pollution Emergency Plan (OPEP)	Attachment 2
Consultation already undertaken and plans for ongoing consultation	Section 4
Details on the titleholder's nominated liaison person for the activity	Section 1.4

2 Description of the activity

2.1 Activity summary

The activities described in this EP are part of the broader Bass Strait decommissioning program the priority of which is to progressively eliminate or reduce impacts and risks from the highest hazard aspects of non-producing assets, being well P&A (managed via a separate, accepted Well Operations Management Plan) and removal of platform topsides and jackets on non-producing platforms (this Campaign #1 EP). This Section specifically describes the petroleum activity to be performed as part of Campaign #1. Activities included in the scope of this EP are summarised below, however, as detailed engineering is being performed at the time of writing this EP, specific methods of removal, final cut depths and details around how the structures will be removed is yet to be finalised and is subject to change. Fundamental plans such as mobilising of the *Pioneering Spirit* vessel to complete the majority of the removal scope for example will not change and forms the basis for this document. Ensuring adequate flexibility during detailed planning and execution is a critical element required for safe and environmentally efficient execution of major projects such as the Campaign #1. Proposed changes to activities, assets, equipment, processes or procedures that have the potential to impact on the environment or interface with an environmental receptor will be assessed via the management of change (MOC) process outlined in Section 8.13 (OIMS System 7: Managing Changes). If the process identifies a significant new impact or risk, or a significant increase in an existing environmental impact or risk, then a revision of the EP will be required.

Activities included in this EP are:

- removal preparation at the Campaign #1 facilities
- the removal of the PCA and DPA monotowers and gravity base foundations to seabed
- the removal of WTA and BMA topsides and SPJs, as close as practicable to seabed to a maximum of 3m above seabed with deep foundation piles to remain
- the removal of topsides and upper jacket sections at MKA, WKF, FLA, CBA, KFA and KFB, to a depth of at least 55m below MSL:
    - At KFA and KFB, removal of struts will extend to the lower junction connection at the seabed template at least 55m below MSL.
- the FTA facility has two options for removal:
    - FTA Option 1: Removal as close as practicable to seabed to a maximum of 3m above seabed, with deep foundation piles to remain
    - FTA Option 2: Removal to a depth of at least 55m below MSL.
- the removal of the BMB topsides and module support frame only. The BMB CGS will remain in place and navigational aids will be installed on the remaining CGS
- the option to remove HLA topsides, upper jacket section to a minimum of 55m below MSL and strut to the lower junction connection at the seabed template at least 55m below MSL
    - The option to remove HLA is contingent on a number of operational and logistics conditions including continued use as an alternate flow path for gas supply to Longford Plant which will need to be met within the required Campaign #1 timeframes. If the option is not exercised in Campaign#1, HLA will continue to be in use and decommissioned as part of Campaign #2.
- the option to remove well conductors should this not be achieved during P&A prior to Campaign #1
- post removal as left survey
- topsides and jacket transport, backloading to barges or HTVs, sea-fastening and initial transport of structures to the border of Victorian State waters.

Allseas Marine Contractors Australia Pty Ltd (Allseas) have been awarded the provision of engineering, preparation and removal services for the Gippsland Decommissioning Campaign #1 project. To complete Campaign #1 activities, a HLV and CSVs will be utilised. Other vessels may include barges, tugs, HTVs, platform supply vessels (PSV) and support and survey vessels. See Section 2.6.1 for vessel details and Section 2.3 for timing of activities.

2.2 Location

Esso's operations are located in Bass Strait, off Victoria's Gippsland coast in Australia, as shown in Figure 2-1. The area lies entirely within the southwest Marine Region. The facilities to be removed as part of Campaign #1 activities are located in water depths ranging from 38m (DPA) to 93m (MKA and FLA) and their distance from the coast ranges from 21km (DPA) to 77km (KFB). Refer to Table 2-1. The removal of facilities within the scope of the Campaign #1 activities will take place in Production Licences VIC/L02, VIC/L05, VIC/L07, VIC/L11, VIC/L13, VIC/L14, VIC/L15 and VIC/L17, as shown in Figure 2-1.

2.2.1 Operational Area

The OA, as shown in Figure 2-2, is the area within which all activities described within this EP will occur. The OA encompasses Commonwealth waters both on title and off title, it includes:

- a removal activity area around each facility to be removed (13 in total). The removal activity areas incorporate the existing 500m Petroleum Safety Zone (PSZ) around the facility and an additional 500m vessel exclusion zone radius to allow for safety (creating a 1000m radius). The additional area needed reflects the overall size of the *Pioneering Spirit* HLV. The additional exclusion zone will be communicated as needed through Notices to Mariners
- within the removal activity areas, any Campaign #1 vessel may operate but the predominant vessels will be the HLV, CSVs and possibly a PSV
- the OA includes the transport/transit route that the HLV and other vessels will operate in when transiting between facilities and transporting the removed topsides and sections of jackets from the removal activity areas to a suitable location for transfer onto a transport vessel or barge
- the transfer activity will occur within the OA and is considered part of the petroleum activities included in this EP:
    - the location of transfers will vary within the OA based on the HLV operator's assessment of weather and sea state and other operational and safety factors as described in Section 2.7
    - once the transfer is complete, the HTV or barge will travel to the Barry Beach Marine Terminal where the topsides and jackets will be unloaded for onshore dismantling and offsite recycling
- for removal activities, a 500m vessel exclusion zone is required for the *Pioneering Spirit* HLV during transfer activities to ensure safety. Works exclusion zones will be communicated as needed through Notices to Mariners. The 500m vessel exclusion zone is not needed whilst vessels are transiting, point to point, through the OA with the exception of the transit of the barge or HTV from the *Pioneering Spirit* of CSV towards Barry Beach with a load onboard.

All activities involving the transit of the of the HTV or barge once outside the boundary of the OA and subsequent onshore processing activity are outside the scope of this EP. The activities at Barry Beach Marine Terminal and State waters will be managed under relevant Commonwealth and State legislation and contractor environmental and safety management processes and plans.

The OA as shaded in Figure 2-2 excludes all Victorian Coastal waters including those waters surrounding island groups

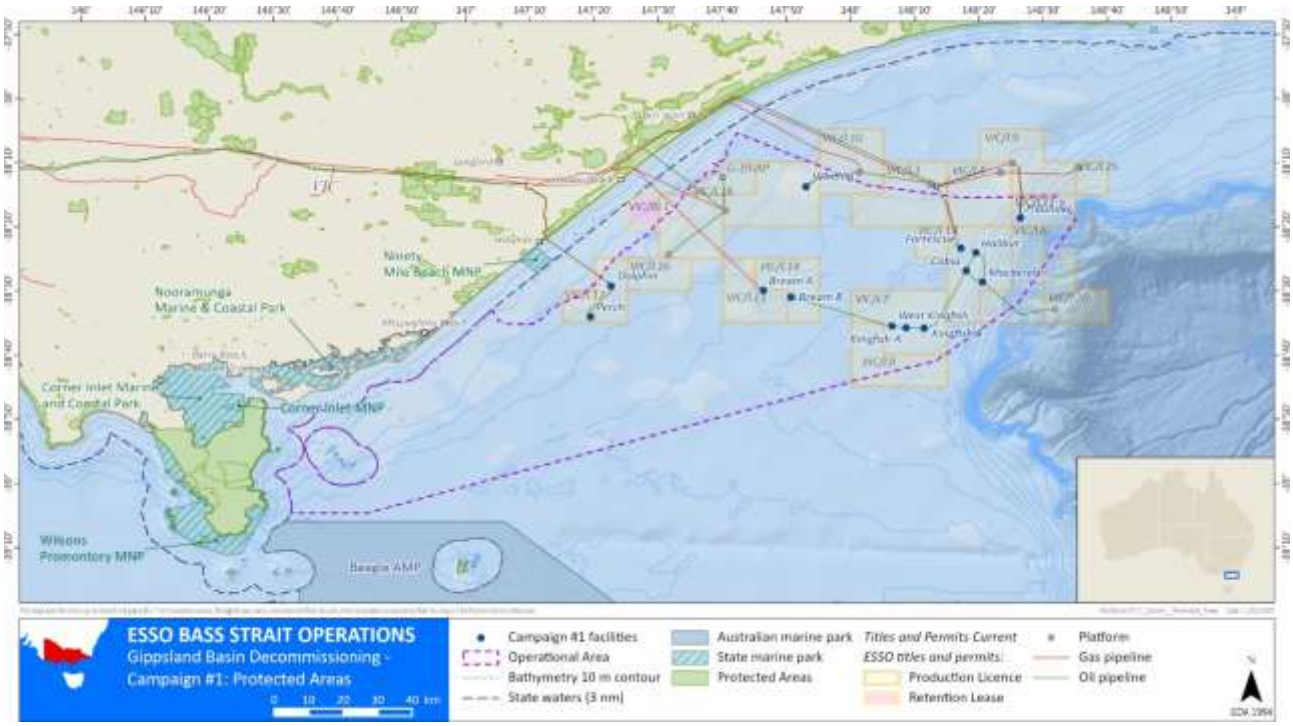


Figure 2-1 Campaign #1 locations, Gippsland Basin

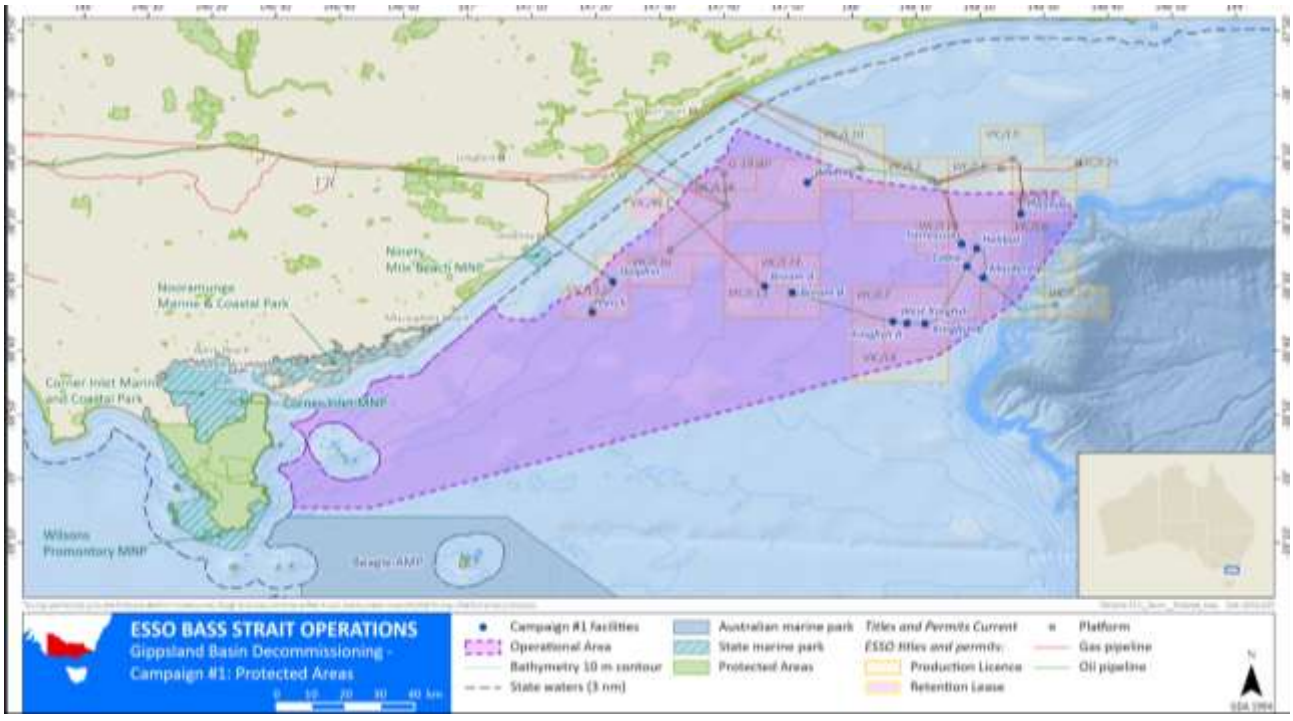


Figure 2-2 Campaign #1 Operational Area

2.3 Timing of the activities

The activities under this EP are expected to commence in the third quarter 2026 and conclude by the first quarter 2028 following the completion of the as left survey. There will be a number of mobilisations required to complete Campaign #1:

- removal preparations are planned to commence in the third quarter 2026 with the mobilisation of a primary CSV (the *Fortitude* or similar vessel) and other support vessels as required

- removal preparations vessels will demobilise around the end of first quarter 2027 and re-mobilise second or third quarter 2027 to continue the removal preparations
- facilities removal is planned to commence third quarter 2027 and will utilise all vessels per Section 2.6.1
- all vessels are expected to demobilise by the end of the first quarter 2028.

These timings are indicative only. Mobilisation and demobilisation dates are dependent on alignment with the overarching Bass Strait Decommissioning program.

This EP may span up to five years as the commencement and duration of activities under this EP may differ in execution to that outlined due to factors such as key vessel scheduling commitments and other required approvals.

Additionally, logistical challenges (such as weather or discovery of unexpected jacket conditions that may arise in the field) may prevent the entirety of the scope as listed in Section 2.1 and detailed in Section 2.15 from being completed within the Campaign #1 timeframe. If any logistical challenges indicate that some scope items may not be achievable, priority will be given to the topside removals consistent with the objective of eliminating or reducing the highest impacts and risks arising from these non-producing assets. Scoped items not able to be safely completed in the allotted vessel execution window will be completed as part of a subsequent planned future campaign which utilises appropriate equipment.

2.4 Property description

2.4.1 Property within the scope of this Environment Plan

Property within the scope of this EP includes 10 SPJ facilities, two monotower facilities and one CGS facility. For Campaign #1, different decommissioning outcomes apply to each facility, as presented in Section 2.14 of the EP. There are early removal preparations of facilities being undertaken as part of the *Bass Strait Environment Plan* (AUGO-EV-EMM-012).

Descriptions in this Section are based on general and typical characteristics of facilities prior to preparations and removal. Section 2.5 details the facilities at handover to Allseas for Campaign #1.

Table 2-1 Facility details - Location, production licence, asset generation, depth and distance from coast (GDA94)

Facility name	Code	Facility type	Year of installation	Facility generation)[1]	Production Licence No.	Distance from coast (km)	Water depth (m)	Latitude	Longitude
Kingfish A	KFA	SPJ	1969 Strut 1989	1st generation	VIC/L07	77	77	38° 35' 46" S	148° 08' 40" E
Kingfish B	KFB	SPJ	1969 Strut 1989	1st generation	VIC/L07	77	78	38° 35' 49" S	148° 11' 17" E
Mackerel	MKA	SPJ	1976	2nd generation	VIC/L05	73	93	38° 28' 45" S	148° 20' 33" E
West Kingfish	WKF	SPJ	1981	2nd generation	VIC/L07	72	76	38° 35' 35" S	148° 06' 20" E
Flounder	FLA	SPJ	1983	2nd generation	VIC/L11	58	93	38° 18' 40" S	148° 26' 22" E
Fortescue	FTA	SPJ	1982	2nd generation	VIC/L05	64	69	38° 24' 26" S	148° 16' 41" E
Whiting	WTA	SPJ	1989	3rd generation	VIC/L02	34	54	38° 19′ 05" S	147° 36′ 57″ E
Dolphin	DPA	Monopod	1989	3rd generation	VIC/L15	21	38	38° 29' 14" S	147° 22' 39" E
Perch	PCA	Monopod	1989	3rd generation	VIC/L17	24	42	38° 34' 09" S	147° 19' 21" E
Bream B	BMB	CGS	1996	3rd generation	VIC/L14	51	61	38° 31' 06" S	147° 50' 21" E

[1] The differences of generation number relate to the year(s) facilities were installed. Facility generations relate to this EP as the method to prepare and remove differ in each facility generation. Second generation facilities were designed within a similar timeframe and have similar layouts. This is not the case for first or third generation facilities.

Facility name	Code	Facility type	Year of installation	Facility generation)[1]	Production Licence No.	Distance from coast (km)	Water depth (m)	Latitude	Longitude
Halibut	HLA	SPJ	1968 Strut 1989	1st generation	VIC/L05	64	73	38° 24' 15" S	148° 19' 12" E
Cobia	CBA	SPJ	1982	2nd generation	VIC/L05	69	79	38° 26' 58" S	148° 18' 33" E
Bream A	BMA	SPJ	1987	2nd generation	VIC/L13	46	59	38° 29' 59" S	147° 46' 20" E

2.4.1.1 Steel pile jacket platforms

SPJ facilities have a tubular steel base structure (or jacket) which is fastened to the seafloor by piles. Figure 2-3 depicts a typical SPJ from the seabed to below the topsides and includes a depiction of different pile types. The jackets support the topsides which include the production facilities, living quarters (if present) for the personnel working on the platform and a helicopter landing pad. A supporting strut is also in place on some SPJs (KFA, KFB and HLA) to provide additional support.

Each platform typically consists of the following elements:

- conductors, connecting the wellheads to the seabed
- pipeline risers connecting the platform to pipelines
- processing equipment/production facilities which typically include:
    - gas separators/scrubbers, oil separators, test separators, slug catcher/receivers
    - open and closed drain systems, including skimmer vessels and open and closed drain piles
    - potable water systems
    - produced water processing facilities, including hydro-cyclones and/or dissolved gas flotation units
    - diesel/methanol/glycol storage and injection systems
    - liquified petroleum gas/condensate reinjection facilities
    - instrument air systems
- living quarters, including:
    - control room, radio room, offices
    - ablutions, laundry and galley
    - macerators for disposal of food scraps and sewage treatment
- helideck
- safety features including evacuation capsules
- variable number of decks, including sea deck and cellar deck
- laydown area and one or more cranes
- pumps, compressors and electricity generators
- maintenance workshop(s)
- flare/vent boom and scrubbers.

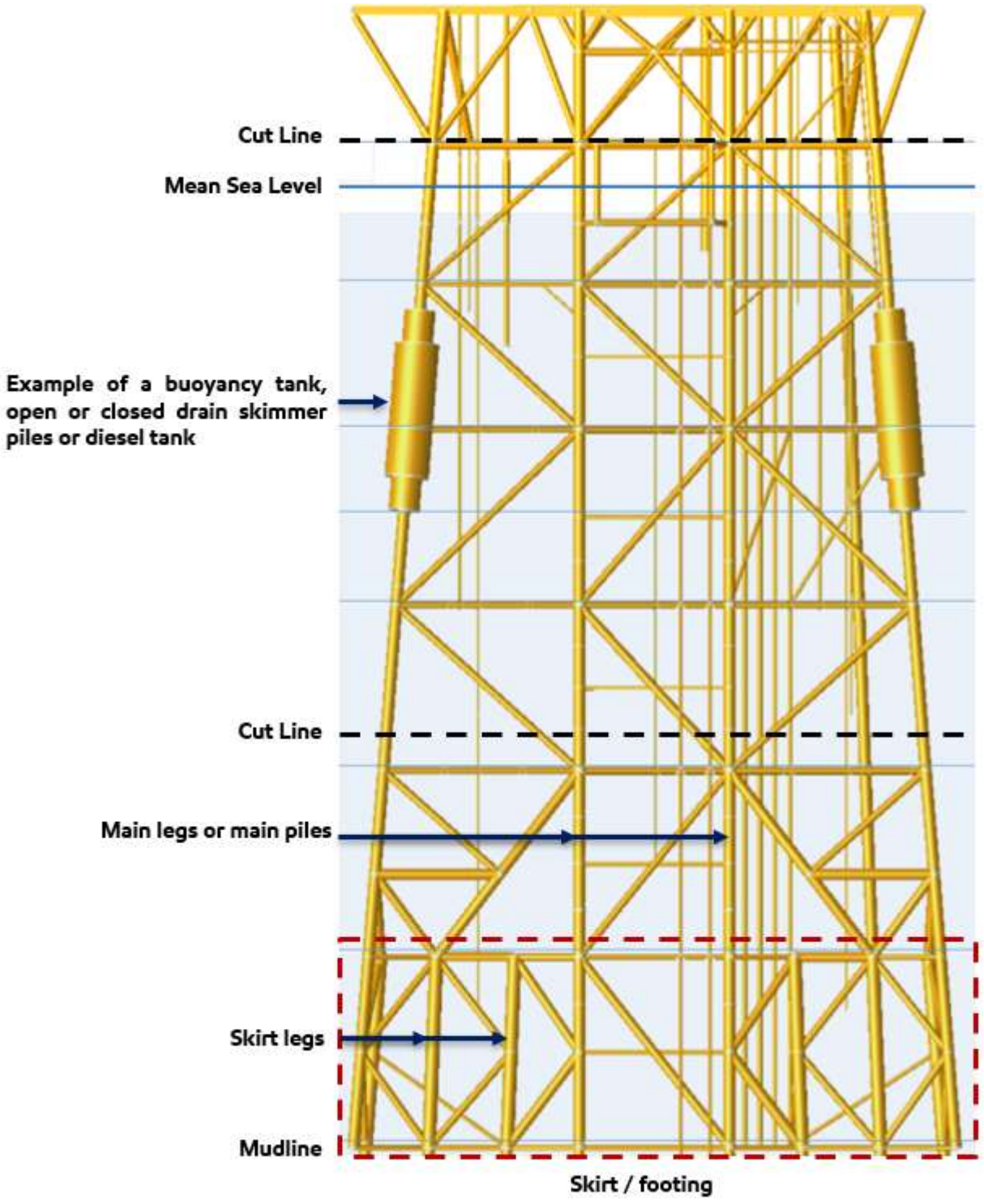


Figure 2-3 Example figure of a typical SPJ with indicative cut lines and other features

2.4.1.2 Monotower platforms

Monotowers, PCA and DPA, are fixed installations consisting of a steel gravity based monotower with three cement iron ore ballast pods supporting minimal, un-staffed topside production facilities. Key equipment on the facility includes the leg access deck, the wellhead deck, the mezzanine deck and the helideck. An overview of the PCA and DPA facility design is shown in Figure 2-4.

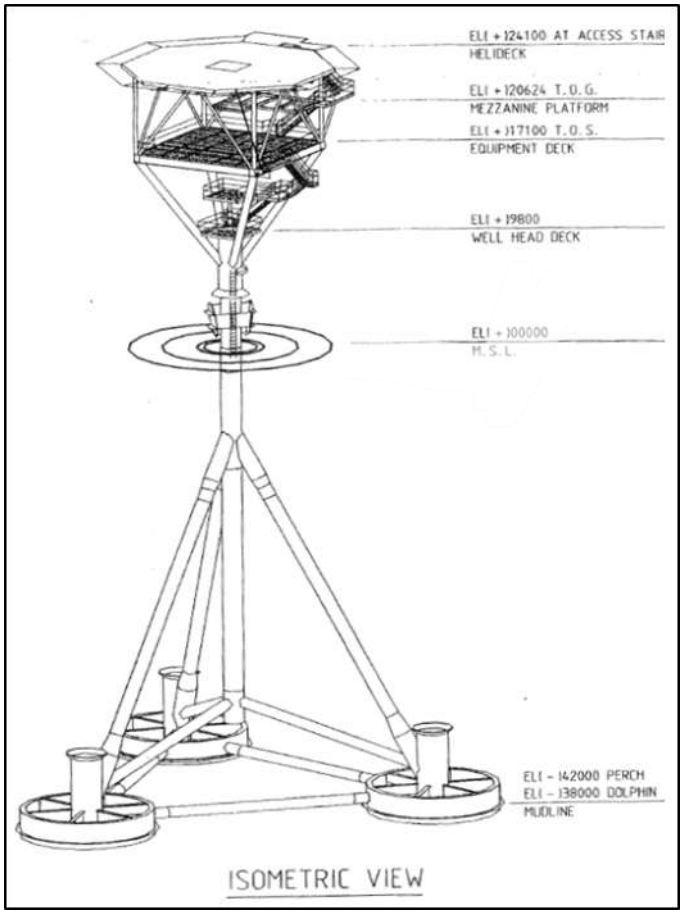


Figure 2-4 PCA and DPA platform configuration represented by one image as the facilities are similar (*Esso Australia – Perch and Dolphin Platforms – Jacket and Deck Design Specification*, 1988)

2.4.1.3 Concrete gravity base platform – BMB

BMB is a fixed installation consisting of a single leg CGS. It holds a module support frame, which supports a single production module containing minimal production facilities and day-only accommodation. The facility is comprised of deck levels, including the sea deck, subcellar deck, cellar deck, mezzanine deck and main deck. An overview of the BMB CGS platform's topside design is shown in Figure 2-5.

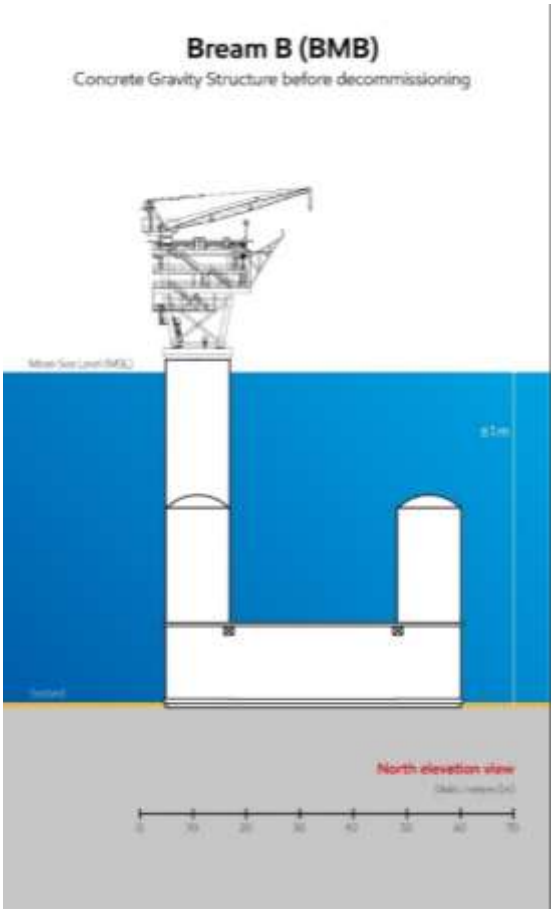


Figure 2-5 BMB depiction indicating the extent of the CGS

2.4.1.4 Description of facilities

The following section includes facility details, images of the topsides of each facility when operational and depiction of facilities relative to overall scale. Weight estimates are based off weight to below the mudline at approximately -1m as installed, it does not account for marine growth. Reference to P&A of each facility is based off the time of submission of this EP, first quarter 2025.

2.4.1.4.1 HALIBUT

HLA specifications are provided in Table 2-2. Figure 2-6 provides a photograph of the facility topsides while Figure 2-7 provides a depiction of the facility.



Figure 2-6 HLA – SPJ (twin), strut and topside

Table 2-2 HLA specifications

Distance from shore:	63km	**Type:**	Twin steel jacket platform and strut
Water depth:	73m	**Height of main deck above MSL:**	21m
Production started:	March 1970	**Dimension of main deck:**	43m x 36m
Well conductors:	23	**Weight of (all) topsides:**	3481MT
Wells:	P&A complete 2027	**Weight of jacket(s) and strut:**	5003MT
Average depth of wells:	2915m	**Total weight:**	8484MT
Production:	Crude oil		
Piles:	(16) main leg jacket piles, (16) jacket skirt piles, (8) strut template piles		
Pipelines oil:	600mm to shore, 300mm from CBA, 300mm from FTA, 300mm from MKA, 500mm from KFB		
Pipelines gas:	Nil		
Fuel gas:	100mm to CBA, 100mm to FTA, 100mm from Marlin-MKA line		
Gas lift:	Nil		

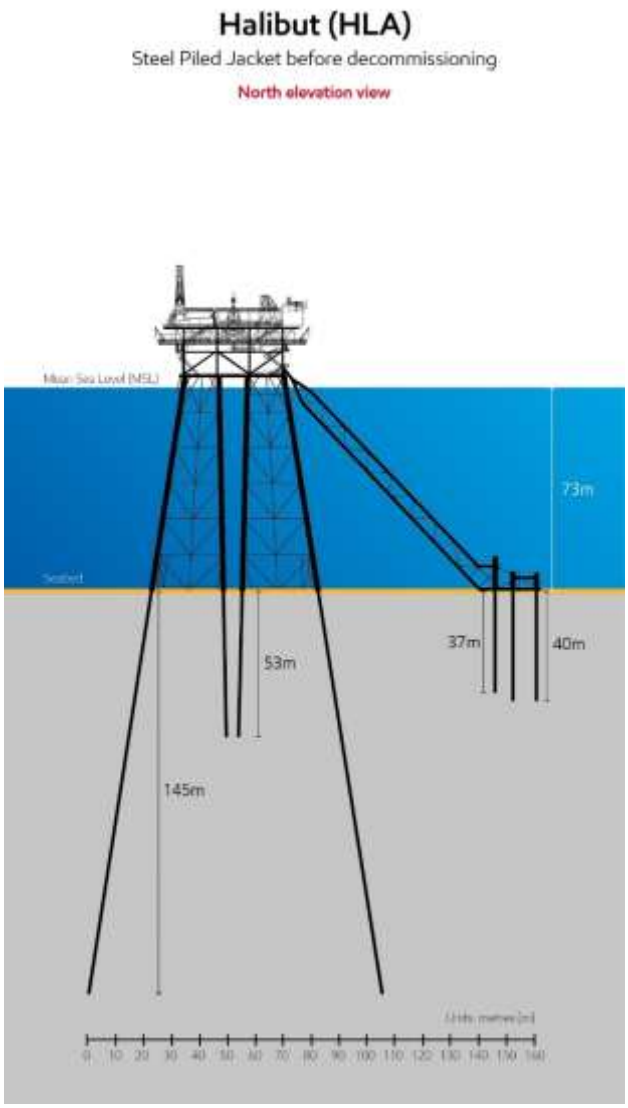


Figure 2-7 HLA north elevation view before decommissioning with topside, jacket, strut and piles in place

2.4.1.4.2 KINGFISH A

KFA specifications are provided in Table 2-3. Figure 2-8 provides a photograph of the topsides while Figure 2-9 provides a depiction of the facility.



Figure 2-8 KFA – SPJ, strut and topside

Table 2-3 KFA specifications

Distance from shore:	75km	**Type:**	Steel jacket platform and strut
Water depth:	77m	**Height of main deck above MSL:**	22m
Production started:	April 1971	**Dimension of main deck:**	52m x 20m
Well conductors:	21	**Weight of (all) topsides:**	2105MT
Wells:	P&A complete 2025	**Weight of jacket and strut:**	3940MT
Average depth:	2881m	**Total weight:**	6045MT
Production:	Crude oil	**Overnight persons on board (POB) capacity:**	42
Piles:	(8) main leg jacket piles, (4) jacket skirt piles, (8) strut template piles		
Pipelines oil:	400mm to KFB, 300mm from WFK		
Pipelines gas:	Nil		
Fuel gas:	From Marlin A (150mm from KFB, 150m to WKF)		
Gas lift:	Nil		

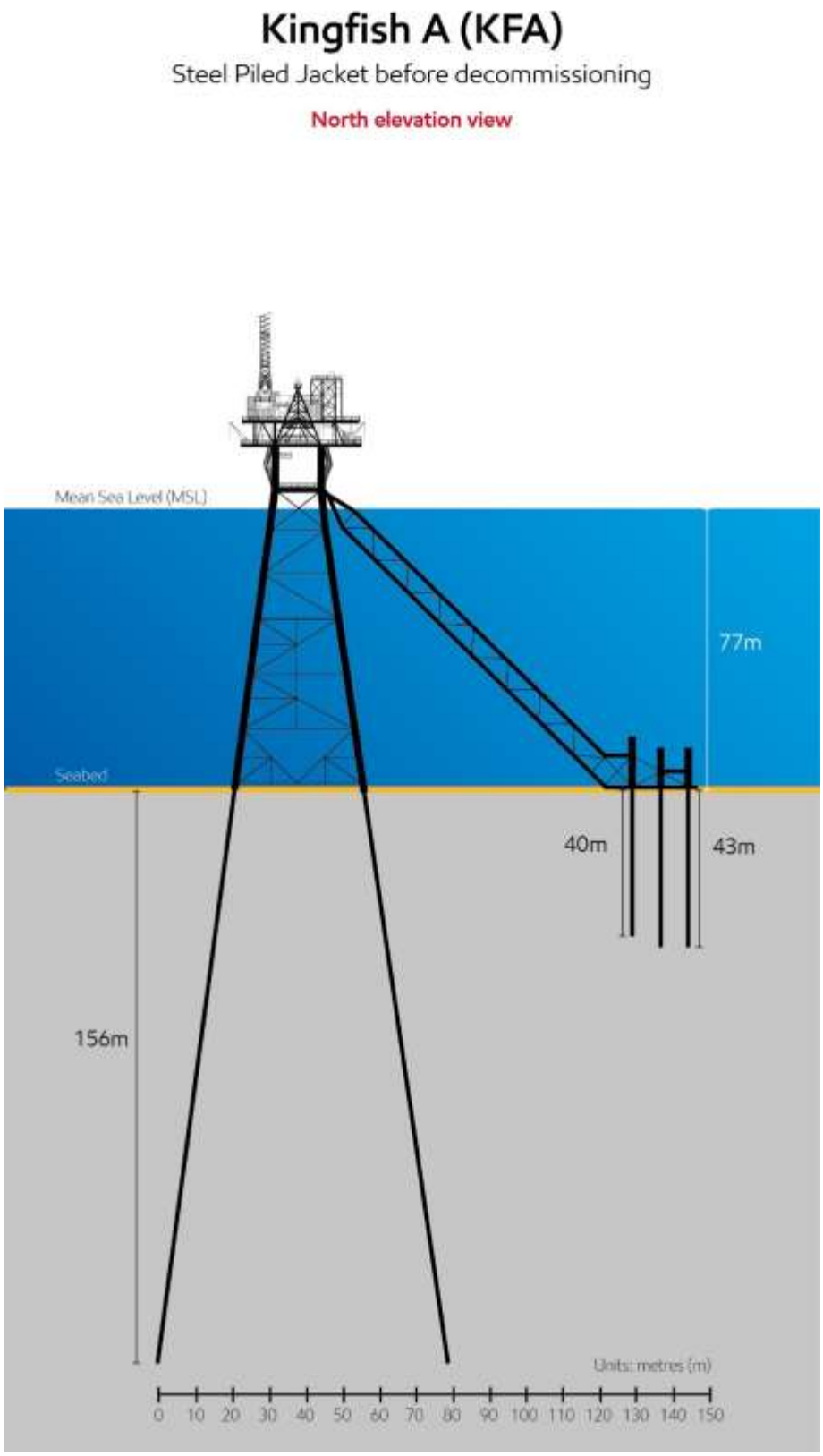


Figure 2-9 KFA north elevation view before decommissioning with topside, jacket, strut and piles in place

2.4.1.4.3 KINGFISH B

KFB specifications are provided in Table 2-4. Figure 2-10 provides a photograph of the topsides while Figure 2-11 provides a depiction of the facility.



Figure 2-10 KFB – SPJ, strut and topside

Table 2-4 KFB specifications

Distance from shore:	78km	**Type:**	Steel jacket platform and strut
Water depth:	78 m	**Height of main deck above MSL:**	22m
Production started:	November 1971	**Dimension of main deck:**	52m x 20m
Well conductors:	21	**Weight of (all) topsides:**	2685MT
Wells:	P&A'd	**Weight of jacket and strut:**	4019MT
Average depth:	2769m	**Total weight:**	6704MT
Production:	Crude oil	**Overnight POB Capacity:**	41
Piles:	(8) main leg jacket piles, (4) jacket skirt piles, (8) strut template piles		
Pipelines oil:	500mm to HLA, 400mm from KFA		
Pipelines gas:	Nil		
Fuel gas:	From Marlin A (150mm from FTA, 150mm to KFA)		
Gas lift:	Nil		

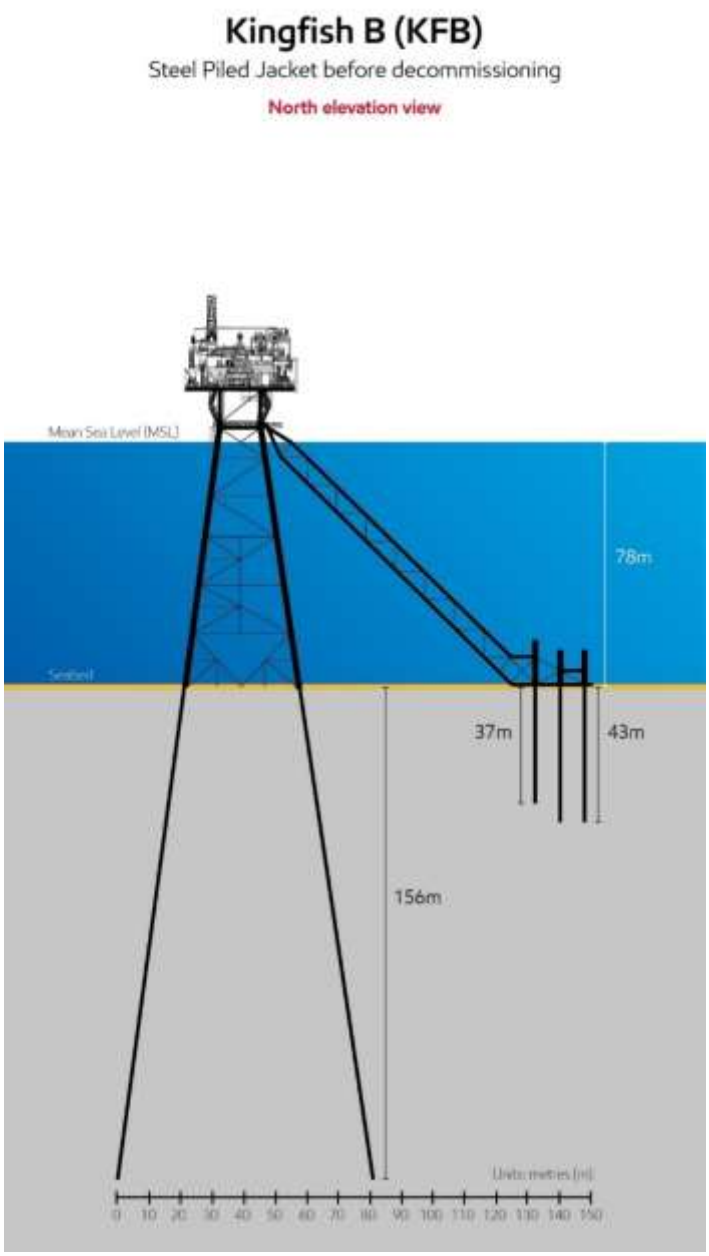


Figure 2-11 KFB north elevation view before decommissioning with topside, jacket, strut and piles in place

2.4.1.4.4 MACKEREL

MKA specifications are provided in Table 2-5. Figure 2-12 provides a photograph of the topsides while Figure 2-13 provides a depiction of the facility.



Figure 2-12 MKA – SPJ and topside

Table 2-5 MKA specifications

Distance from shore:	72km	**Type:**	Steel jacket platform
Water depth:	93m	**Height of main deck above MSL:**	24 m
Production started:	November 1971	**Dimension of main deck:**	59m x 29m
Well conductors:	25	**Weight of (all) topsides:**	3570MT
Wells:	P&A'd	**Weight of jacket:**	5361MT
Average depth:	3563m	**Total weight:**	8930MT
Production:	Crude oil	**Overnight POB capacity:**	55
Piles:	(4) main leg jacket piles, (12) jacket skirt piles		
Pipelines oil:	300mm to HLA, 200mm from Blackback		
Pipelines gas:	Nil		
Fuel gas:	From Marlin A (100mm from HLA)		
Gas lift:	65mm to Blackback		

includes estimate for marine growth

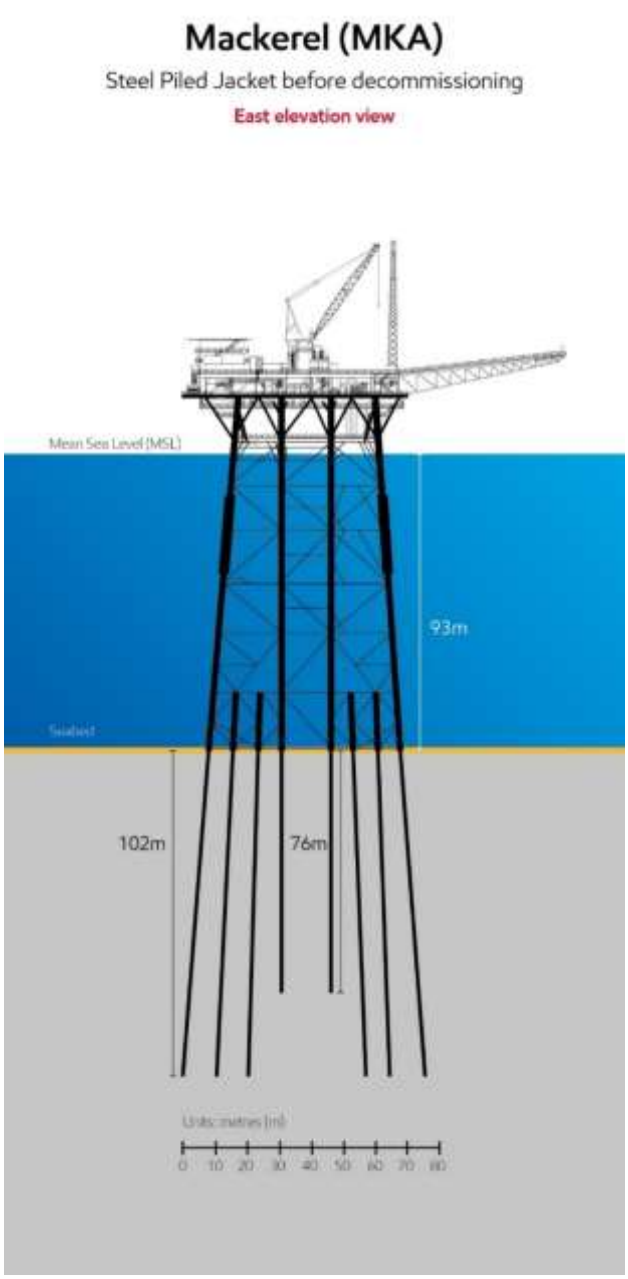


Figure 2-13 MKA east elevation view before decommissioning with topside, jacket and piles in place

2.4.1.4.5 WEST KINGFISH

WKF specifications are provided in Table 2-6. Figure 2-14 provides a photograph of the topsides while Figure 2-15 provides a depiction of the facility.



Figure 2-14 WKF – SPJ and topside

Table 2-6 WKF specifications

Distance from shore:	72km	**Type:**	Steel jacket platform
Water depth:	76m	**Height of main deck above MSL:**	24m
Production started:	December 1982	**Dimension of main deck:**	58m x 29m
Well conductors:	32	**Weight of (all) topsides:**	3328MT
Wells:	P&A complete 2027	**Weight of jacket:**	5005MT
Average Depth:	3127m	**Total weight**	8333MT
Production:	Crude oil	**Overnight POB Capacity:**	56
Piles:	(4) main leg jacket piles, (12) jacket skirt pile		
Pipelines oil:	300mm to KFA, 400mm from BMA		
Pipelines gas:	Nil		
Fuel gas:	From Marlin (150mm from KFA)		
Gas lift:	NIL		

includes estimate for marine growth

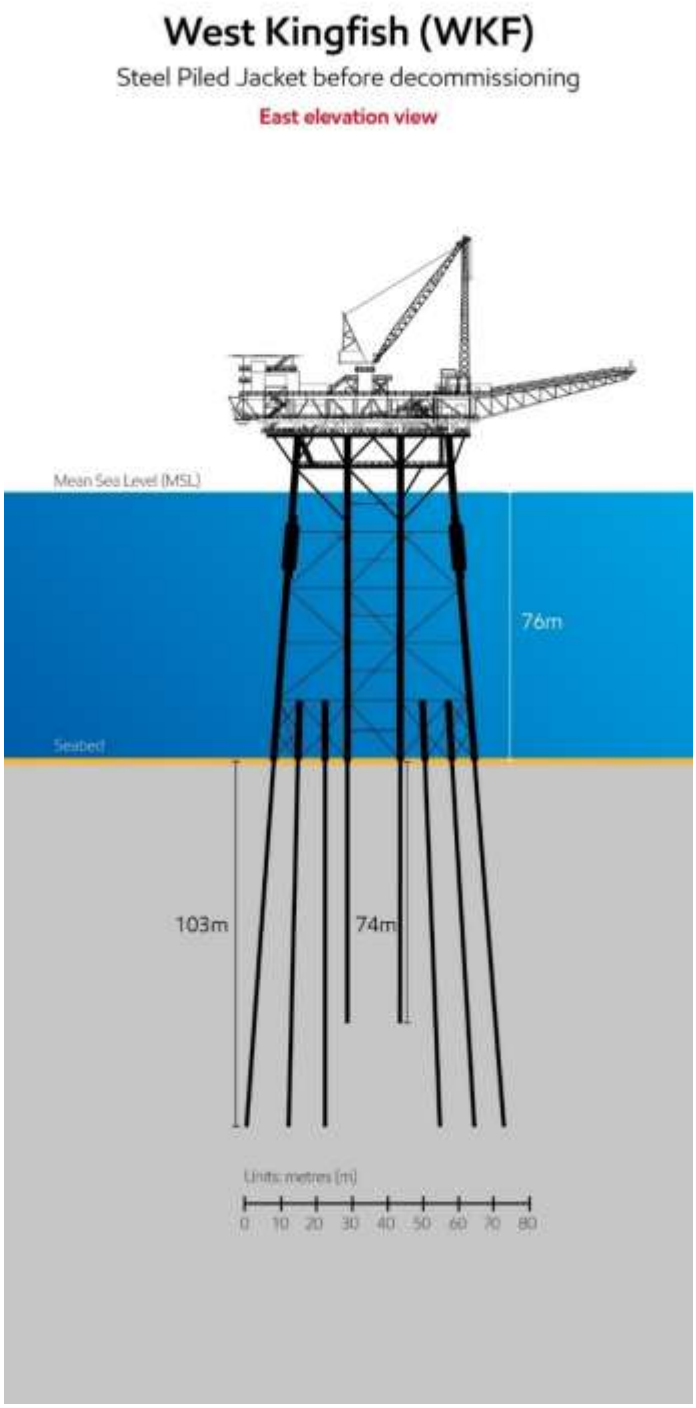


Figure 2-15 WKF east elevation view before decommissioning with topside, jacket and piles in place

2.4.1.4.6 COBIA

CBA specifications are provided in Table 2-7. Figure 2-16 provides a photograph of the topsides while Figure 2-17 provides a depiction of the facility.



Figure 2-16 CBA – SPJ and topside

Table 2-7 CBA specifications

Distance from shore:	68km	**Type:**	Steel jacket platform
Water depth:	78m	**Height of main deck above MSL:**	24m
Production started:	April 1983	**Dimension of main deck:**	58m x 29m
Well conductors:	25	**Weight of (all) topsides:**	2908MT
Wells:	P&A Complete 2026	**Weight of jacket:**	4929MT
Average depth:	3368m	**Total weight**	7837MT
Production:	Crude oil	**Overnight POB capacity:**	56
Piles:	(4) main leg jacket piles, (12) jacket skirt piles		
Pipelines oil:	300mm to HLA		
Pipelines gas:	Nil		
Fuel gas:	100mm from HLA		
Gas lift:	Nil		

includes estimate for marine growth

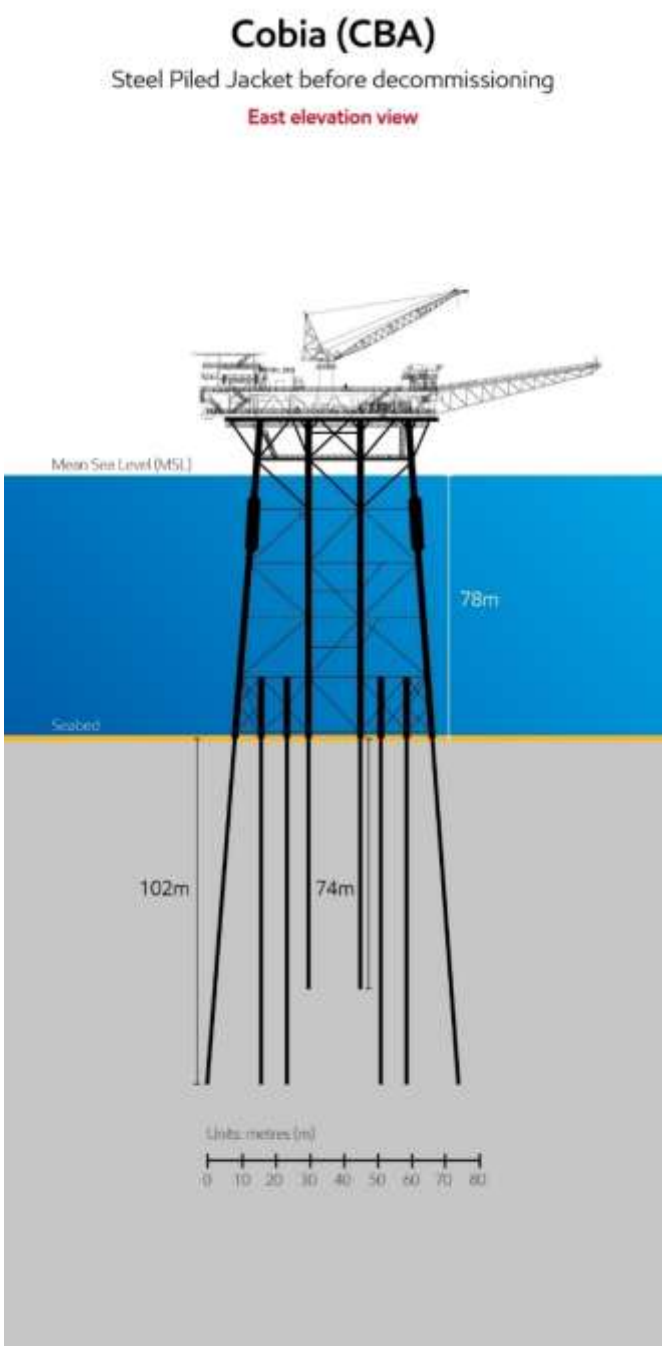


Figure 2-17 CBA east elevation view before decommissioning with topside, jacket and piles in place

2.4.1.4.7 FLOUNDER

FLA specifications are provided in Table 2-8. Figure 2-18 provides a photograph of the topsides while Figure 2-19 provides a depiction of the facility.



Figure 2-18 FLA – SPJ and topside

Table 2-8 FLA specifications

Distance from shore:	58km	**Type:**	Steel jacket platform
Water depth:	93m	**Height of main deck above MSL:**	26m
Production started:	September 1983	**Dimension of main deck:**	59m x 29m
Well conductors:	27	**Weight of (all) topsides:**	3884MT
Wells:	P&A complete 2025	**Weight of jacket:**	5829MT
Average depth:	3758m	**Total weight**	9713MT
Production:	Crude oil and Gas	**Overnight POB capacity:**	72
Piles:	(4) main leg jacket piles, (12) jacket skirt piles		
Pipelines oil:	250mm to Tuna		
Pipelines gas:	Nil		
Fuel gas:	250mm to Tuna		
Gas lift:	Nil		

includes estimate for marine growth

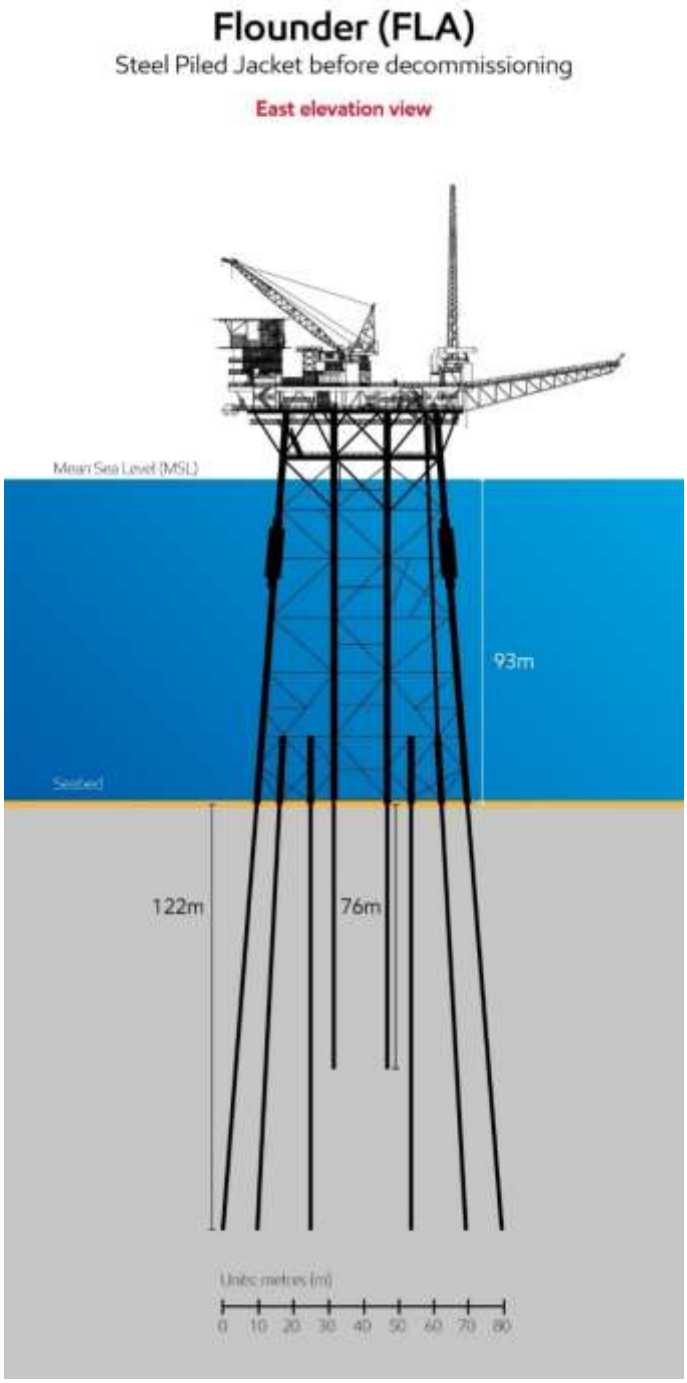


Figure 2-19 FLA east elevation view before decommissioning with topside, jacket and piles in place

2.4.1.4.8 FORTESCUE

FTA specifications are provided in Table 2-9. Figure 2-20 provides a photograph of the topsides while Figure 2-21 provides a depiction of the facility.



Figure 2-20 FTA – SPJ and topside

Table 2-9 FTA specifications

Distance from shore:	62km	**Type:**	Steel jacket platform
Water depth:	69m	**Height of main deck above MSL:**	24m
Production started:	September 1983	**Dimension of main deck:**	58m x 29m
Well conductors:	31	**Weight of (all) topsides:**	3002MT
Wells:	P&A'd	**Weight of jacket:**	5045MT
Average depth:	3744m	**Total weight**	8047MT
Production:	Crude oil	**Overnight POB capacity:**	56
Piles:	(4) main leg jacket piles, (12) jacket skirt piles		
Pipelines oil:	300mm to HLA		
Pipelines gas:	Nil		
Fuel gas:	100mm from HLA		
Gas lift:	Nil		

includes estimate for marine growth

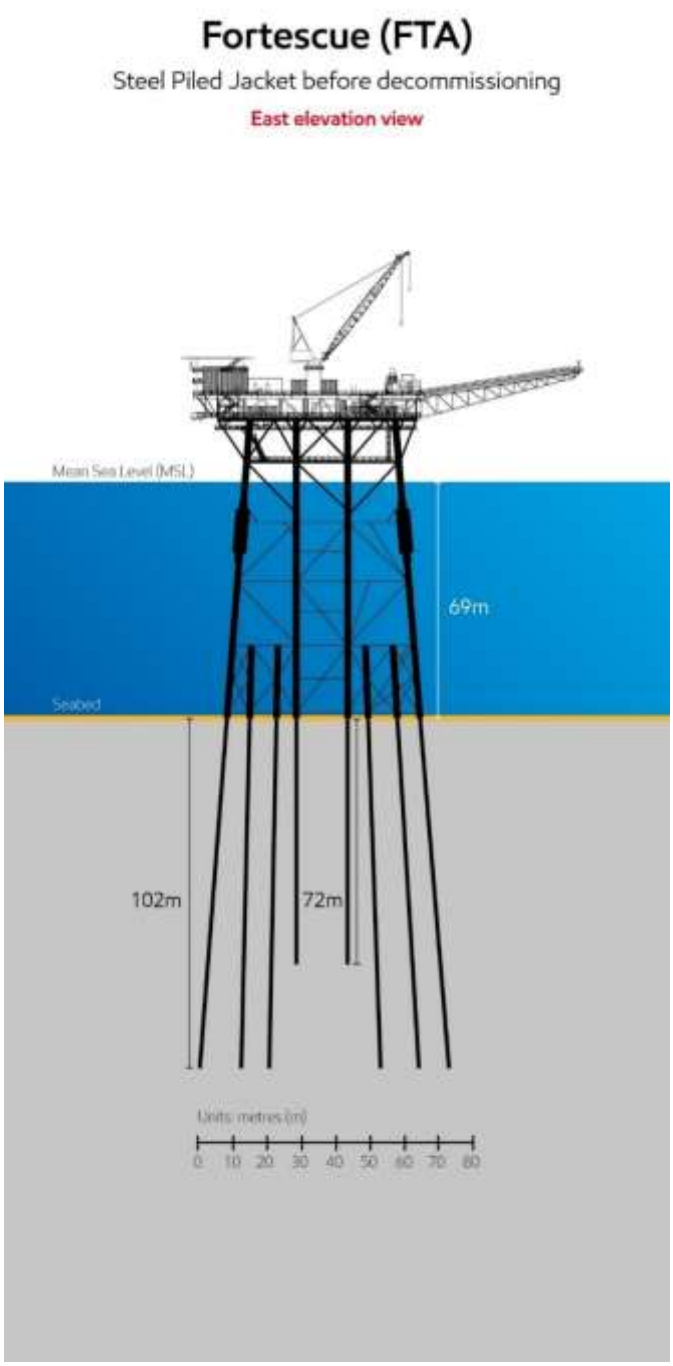


Figure 2-21 FTA east elevation view before decommissioning with topside, jacket and piles in place

2.4.1.4.9 BREAM A

BMA specifications are provided in Table 2-10. Figure 2-22 provides a photograph of the topsides while Figure 2-23 provides a depiction of the facility.



Figure 2-22 BMA – SPJ and topside

Table 2-10 BMA specifications

Distance from shore:	46km	**Type:**	Steel jacket platform
Water depth:	59m	**Height of main deck above MSL:**	25m
Production started:	May 1988	**Dimension of main deck:**	65m x 44m
Well conductors:	27	**Weight of (all) topsides:**	4244MT
Wells:	P&A complete 2026	**Weight of jacket:**	4788MT
Average depth:	2982m	**Total weight**	9031MT
Production:	Crude oil and gas	**Overnight POB capacity:**	75
Piles:	(4) main leg jacket piles, (8) jacket skirt piles		
Pipelines oil:	400mm to WKF, 250mm from BMB		
Pipelines gas:	350mm to shore		
Fuel gas:	250mm to Tuna		
Gas lift:	Nil		

includes estimate for marine growth

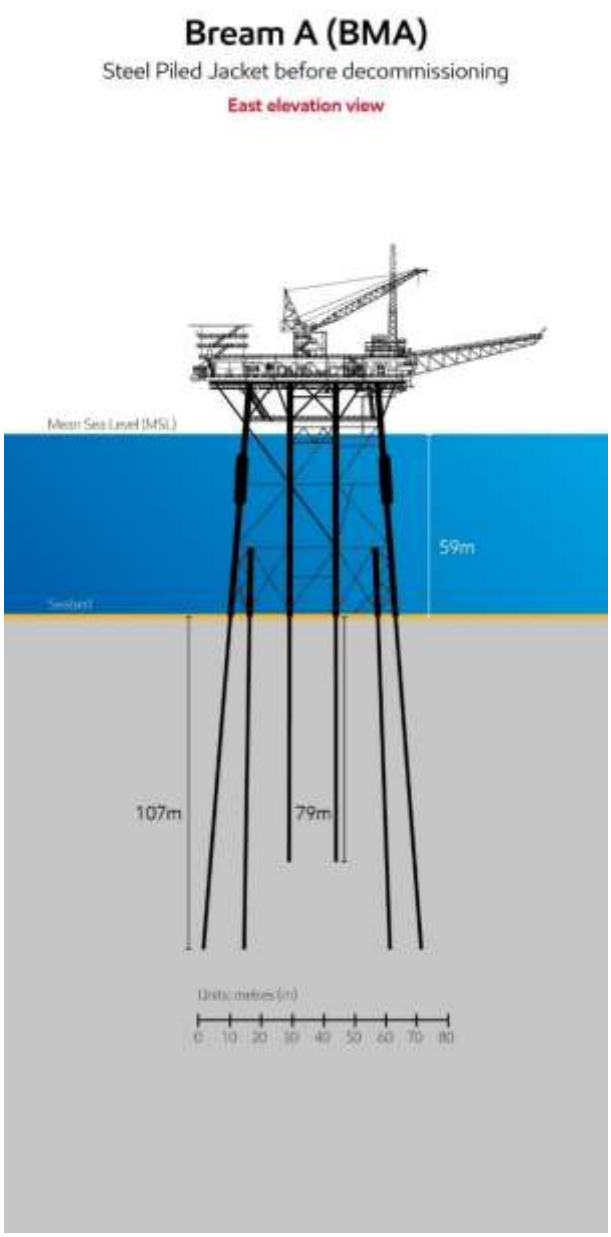


Figure 2-23 BMA east elevation view before decommissioning with topside, jacket and piles in place

2.4.1.4.10 WHITING

WTA specifications are provided in Table 2-11. Figure 2-24 provides a photograph of the topsides while Figure 2-25 provides a depiction of the facility.



Figure 2-24 WTA - SPJ and topside

Table 2-11 WTA specifications

Distance from shore:	34km	**Type:**	Steel jacket platform
Water depth:	54m	**Height of main deck above MSL:**	25m
Production started:	October 1989	**Dimension of main deck:**	33m x 26m
Well conductors:	5	**Weight of topsides:**	1294MT
Wells:	P&A'd	**Weight of jacket:**	1701MT
Average depth:	2699m	**Total weight**	2995MT
Production:	Crude oil and gas	**Overnight POB capacity:**	Nil
Piles:	(4) main leg jacket piles		
Pipelines oil:	250mm to Snapper		
Pipelines gas:	200mm to Snapper		
Fuel gas:	250mm to Tuna		
Gas lift:	Nil		

includes estimate for marine growth

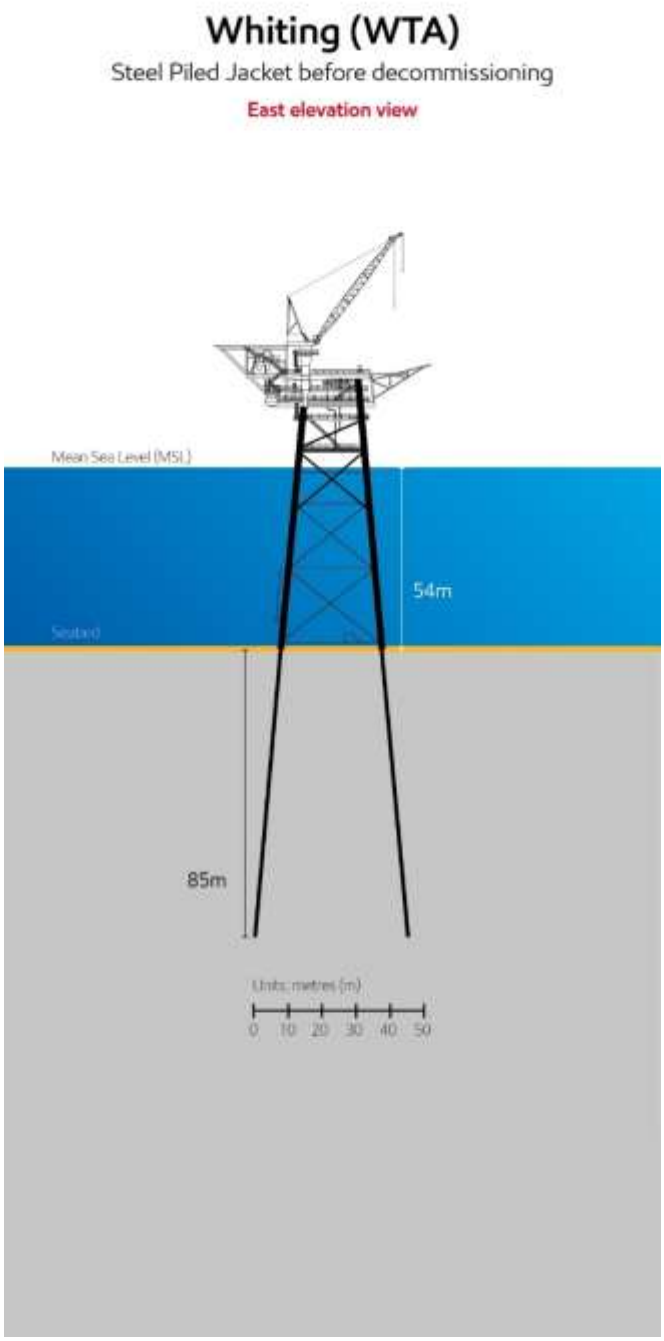


Figure 2-25 WTA east elevation view before decommissioning with topside, jacket and piles in place

2.4.1.4.11 DOLPHIN

DPA specifications are provided in Table 2-12. Figure 2-24 provides a photograph of the topsides while Figure 2-25 provides a depiction of the facility.



Figure 2-26 DPA – Steel monotower, gravity base and topside

Table 2-12 DPA specifications

Distance from shore:	21km	**Type:**	Steel gravity based monotower
Water depth:	38m	**Height of main deck above MSL:**	17m
Production started:	January 1990	**Dimension of main deck:**	10m x 10m
Well conductors:	2	**Weight of topsides:**	189MT
Wells:	P&A'd	**Weight of substructure:**	2132MT
Average depth:	1347m	**Total weight**	2321MT
Production:	Crude oil and gas	**Overnight POB capacity:**	NIL
Piles:	Not applicable. No piles. (3) pods with iron ore ballast		
Pipelines oil:	300mm to shore		
Pipelines gas:	Nil		
Fuel gas:	Nil		
Gas lift:	100mm from shore		

includes estimate for marine growth

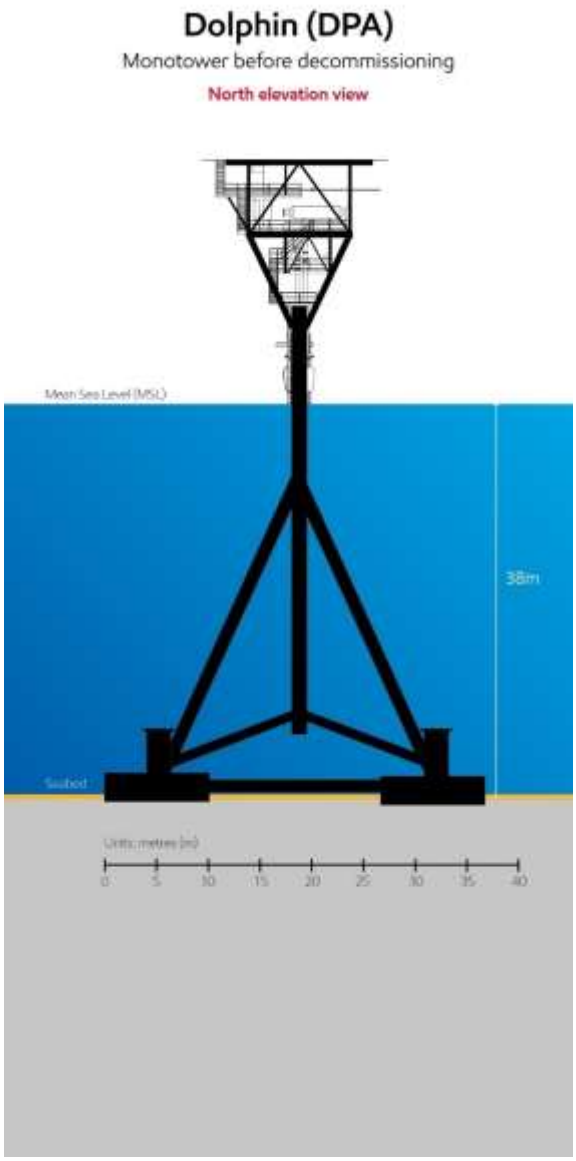


Figure 2-27 DPA north elevation view before decommissioning with topside and monopod

2.4.1.4.12 PERCH

PCA specifications are provided in Table 2-13. Figure 2-28 provides a photograph of the topsides while Figure 2-29 provides a depiction of the facility.



Figure 2-28 PCA – Steel monotower, gravity base and topside

Table 2-13 PCA specifications

Distance from shore:	24km	**Type:**	Steel gravity based monotower
Water depth:	42m	**Height of main deck above MSL:**	17m
Production started:	January 1990	**Dimension of main deck:**	10m x 10m
Well conductors:	2	**Weight of topsides:**	189MT
Wells:	P&A'd	**Weight of substructure:**	2150MT
Average depth:	1692m	**Total weight**	2339MT
Production:	Crude oil	**Overnight POB capacity:**	Nil
Piles:	Not applicable. No piles. (3) pods with iron ore ballast		
Pipelines oil:	300mm to DPA		
Pipelines gas:	Nil		
Fuel gas:	Nil		
Gas lift:	From shore (100mm from DPA)		

includes estimate for marine growth

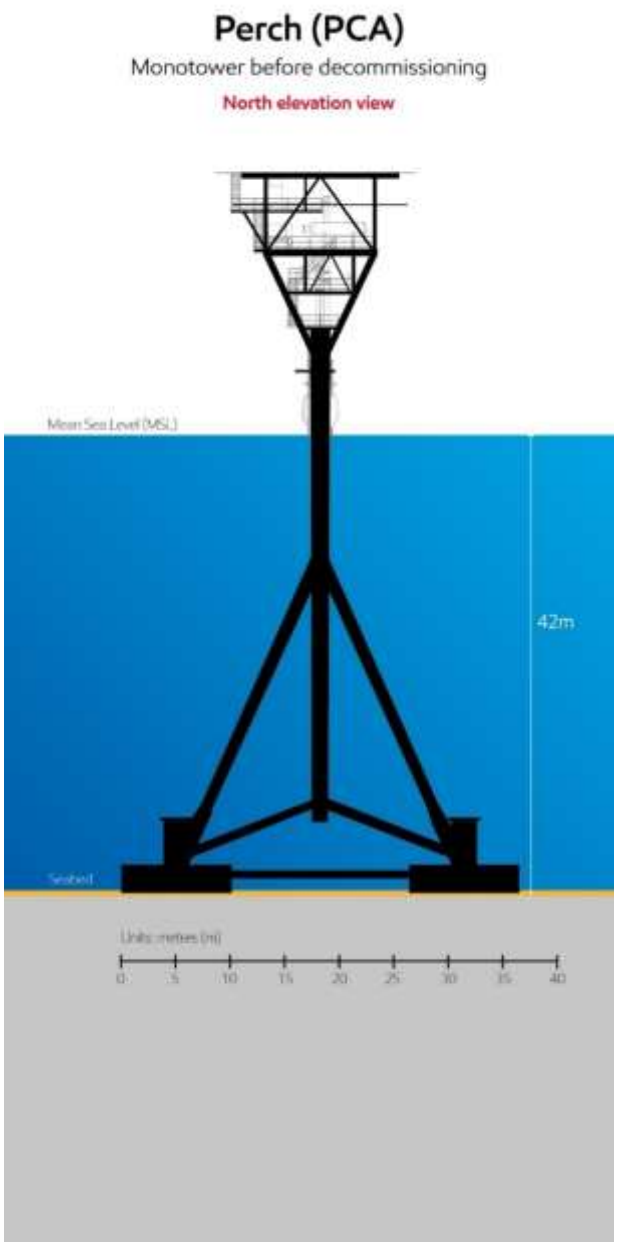


Figure 2-29 PCA north elevation view before decommissioning with topside and monopod

2.4.1.4.13 BMB

BMB specifications are provided in Table 2-14. Figure 2-30 provides a photograph of the topsides while Figure 2-31 provides a depiction of the facility.



Figure 2-30 BMB – Topside (only) - CGS is excluded scope

Table 2-14 BMB specifications

Distance from shore:	51km	**Type:**	Concrete gravity-based platform
Water depth:	61m	**Height of main deck above MSL:**	24m
Production started:	December 1996	**Dimension of main deck:**	17m x 16.5m
Well conductors:	17	**Dimension of base:**	55m x 55m x 15m
Wells:	P&A complete 2025	**Weight of topsides:**	809MT
Average depth:	2889m	**Weight of substructure:**	44,285t
Production:	Crude oil	**Overnight POB capacity:**	21
Piles:	Not applicable. CGS		
Pipelines oil:	250mm to BMA		
Pipelines gas:	Nil		
Fuel gas:	Nil		
Gas lift:	Nil		

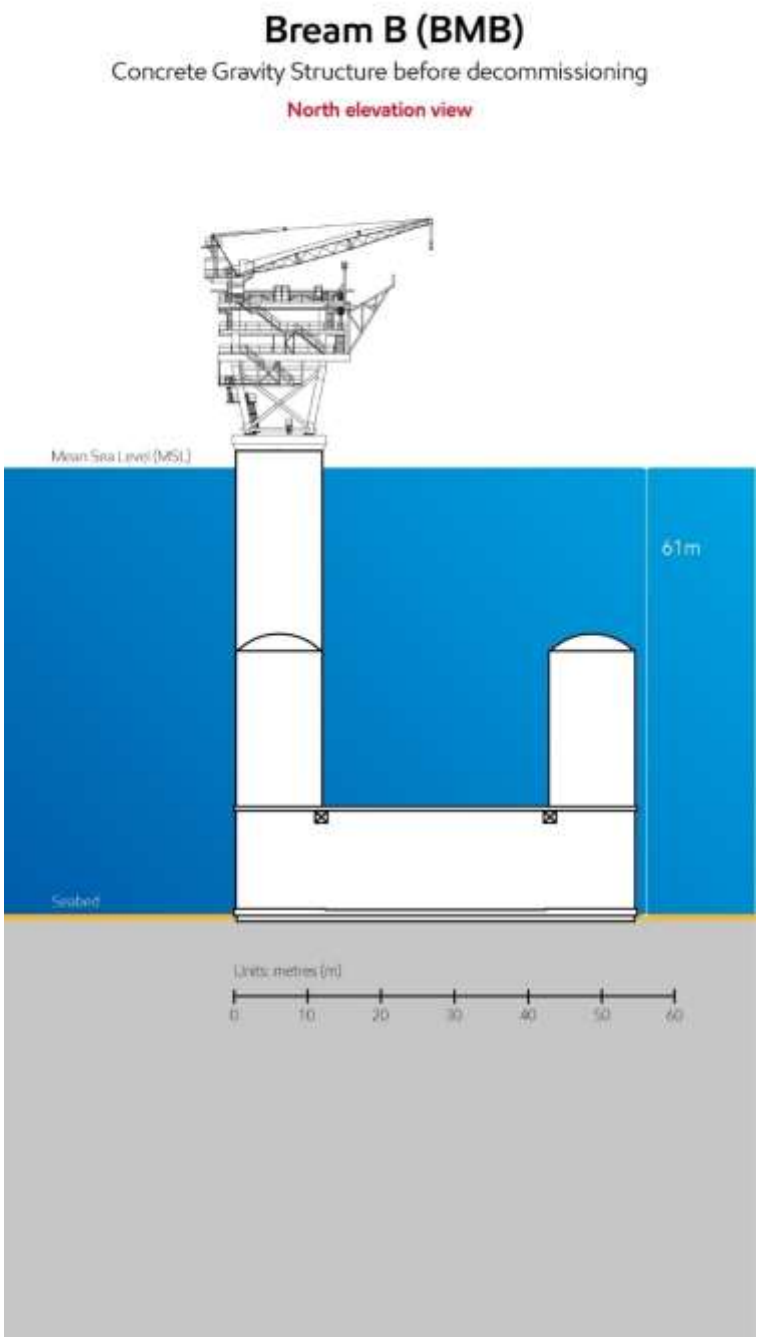


Figure 2-31 BMB north elevation view before decommissioning with CGS in place

2.5 Facility status prior to Campaign #1

Prior to Campaign #1, a range of facility preparation activities will have been undertaken, including but not limited to: flushing, air gapping, demolition, destruction and installation of lifting points. These activities will be performed under the *Bass Strait Environment Plan* (AUGO-EV-EMM-012). The remaining operational systems on the facilities at the commencement of Campaign #1 will include navigation lights and cathodic protection and associated systems.

Prior to Campaign #1, the main hydrocarbon systems on the facilities will be free of bulk hydrocarbons, methanol and diesel. Flushing, purging and/or isolation will have been completed to sufficiently manage hydrocarbons, hydrogen sulfide (H_2S) and pyrophoric risks to allow pipework and equipment to be safely transported. Table 2-15 indicates the status of systems on the BMA, BMB, CBA, FLA, FTA, KFA, KFB, MKA, WKF, PCA, DPA and WTA facilities prior to the commencement of Campaign #1.

Table 2-15 Status of facilities prior to Campaign #1

System description	Status of facilities upon handover to Campaign #1
Petroleum processing Oil production header, surface flowlines, primary separation, crude transfer to export, gas production header, gas re-injection, gas compression, gas lift, vent relief system and flare, produced water, gas blowdown system, fuel gas.	Systems bulk de-inventoried and left isolated to prevent spills during topsides lifting. Targeted cleaning of selected piping as required for air gapping and subsequent topsides removal.
Methanol	Methanol piping bulk de-inventoried and where feasible a nitrogen (N_2) blanket applied. Piping isolated to prevent spills during topsides removal.
Diesel	Diesel piping bulk de-inventoried and where feasible an N_2 blanket applied. System isolated to prevent spills during topsides removal. There will be no temporary diesel generators on the facilities. Facility crane minimal inventory contained.
Non-hydrocarbon chemical injection systems	Bulk de-inventory with systems isolated to prevent spills during topsides removal.
Sealed lube oil and refrigerant	Sealed and de-pressured.
Tubing containing chemicals or hydrocarbon liquids	Drained and de-pressured, isolated or capped to prevent spills during topsides removal.
Foam system	De-inventoried by specialist contractor removed and isolated to prevent spills during topsides removal.
Utility systems Service water, hydraulic system, utility (service) air, instrument air, lubrication system, waste oil recovery, potable water, hot water	Drained, de-pressured and isolated to prevent spills during topsides removal.
Fire-fighting systems	Drained and de-pressured, piping and tubing (that previously contained seawater or air) isolated.
Sewage treatment	Flushed and drained with the system isolated.
Open and closed drain skimmer piles	De-inventoried and cleaned of hydrocarbons to the extent achievable against specified oil in water (OIW) targets and left open to atmosphere.
Jacket leg storage tanks (JLSTs)	JLSTs can contain either diesel, glycol, methanol or potable water. JLSTs that contained diesel, glycol or methanol cleaned and left open to atmosphere. Diesel JLSTs cleaned to a specified OIW target.

HLA presents unique structural and logistics challenges and as such the removal methodology is still being finalised. HLA cleaning targets will need to cover a range of removal options that may be executed in Campaign #1 (single lift through the *Pioneering Spirit*) or a future subsequent campaign (which may involve an alternate removal method). Therefore, for HLA, system piping and vessels may be left open to atmosphere with wildlife ingress protection after they have been flushed and drained and made safe.

Facility status will be documented and communicated to Allseas and other contractors via the Digital Decommissioning Management Tool. Such documentation may include: details of fluids remaining at the facilities; estimated volumes after facility preparation activities are completed and controls implemented to prevent spills from those fluids that are left; air-gapping/demolition records; lifting aid installation records; hazardous materials register and de-energisation records. If and where applicable, information on make-safe measures and controls implemented to prevent spills from minor volumes of residual fluids that may be left within the platforms after facilities preparation activities are completed.

2.6 Support operations

2.6.1 Vessels

As required, vessels can operate on a 24-hours, seven days a week basis. For the removals of topsides, jackets and struts and other components, it is anticipated there will be approximately 20 barge or HTV movements in and out of Barry Beach Marine Terminal accompanied by support tugs over approximately four months.

2.6.1.1 HLV specifications, *Pioneering Spirit*

The *Pioneering Spirit* HLV is one of the world's largest construction vessels (Figure 2-32) which has not been used in the Bass Strait before. It will be used for the removals campaign mobilising around the end of third quarter 2027 and demobilise around the end of the first quarter 2028. It is designed for the single lift installation and removal of large offshore platforms, as well as the installation of subsea pipelines, Table 2-16. The *Pioneering Spirit* HLV can lift and transport entire platform topsides weighing up to 48,000t using the topsides lift system (TLS), which comprises of 16 lifting beams mounted on its split bow.

The main aft deck area is reserved for the jacket lift system (JLS), another heavy lift system, which can remove and install jackets up to 20,000t in a single lift from the stern. A 5000t tub-mounted crane on the aft main deck, port side, can be used for smaller lifts, such as modules, piles, derrick towers, flares, and bridges. There is also a 600t crane port and starboard side. The *Pioneering Spirit* HLV is classified as a dynamic positioning (DP3) class vessel and may have up to two work class ROVs for Campaign #1 facility removal activities.

Table 2-16 lists the vessel characteristics of the *Pioneering Spirit* HLV.



Figure 2-32 Illustration of the *Pioneering Spirit* with a platform transferred to the TLS on the split bow and jacket structure on the JLS at the stern of the vessel

Table 2-16 *Pioneering Spirit* vessel characteristics

Vessel name	***Pioneering Spirit***	
Operator	Allseas	
Design	Platform installation/decommissioning and pipelay	
Built	South Korea (2011–2014)	
Class	+100A1 heavy lift and heavy cargo ship, upper deck aft of frame 43 strengthened for load of 15t/m^2, helicopter landing area, LA, *IWS, LI, EP (B, G, N, O, P, S), ice class 1C FS, LMC, DP (AAA), PSMR* with following descriptive note: pipe laying vessel shipright (BWMP (S+F)), split bow forward of frame 99	
Flag/registry	Malta, Port of Valletta	
Gross tonnage	403,342t	
Principal vessel dimensions	Length overall	477m
	Length hull	382m
	Breadth, moulded	123.75m
	Depth to main deck	30m
	Slot length	122m
	Slot width	59m
	Transit draught	11.50m
	Operating draught (minimum and maximum)	10.00 – 27.00m
	Maximum speed	14kn
	Total installed power	95,000kW
	Engines	8 x 11,200kW diesel generator sets
	Thrusters	12 x 6050kW electric driven non-retractable, fixed pitch, variable speed azimuth type
	Accommodation	571 persons
TLS	The TLS is mounted on the vessel's split bow hull, Figure 2-32, Figure 2-33 and Figure 2-34. The TLS comprises 16 lifting beams, eight on starboard side and eight on portside, and can be used in multiple set-ups. Beams can operate to lift individually or in pairs – a forklift unit. The number of forklift units involved in removal or installation operations varies per heavy lift project. Forklift units are fitted with removable connection tools on their lifting levers to exert their part of the total lifting force onto the topsides. Connection tools are activity-specific structures and can be clamps, horseshoes, yokes or fit-for-purpose designs. A	

Vessel name	*Pioneering Spirit*
	single lifting beam can also be fitted with a connection tool, depending on the heavy lift activity. TLS in general, and each lifting beam in particular, is designed and certified for the specific purpose of lifting and lowering of topsides, and not for any other (marine) application. Each beam is equipped with three main operating drives: X, Y and Z. The X- and Y-drive have active motion compensation. The Z-drive has active motion compensation and passive motion compensation. During TLS operations at sea, the vessel will be subjected to motion, position and angle changes due to heave, draught and tide variations, currents, wind and waves. To react to these changes, *Pioneering Spirit* is equipped with a position reference (and feedback) system, which detects these changes and sends signals to the active motion compensation and passive motion compensation control systems.
JLS	The JLS is designed for jacket installation and removal operations, executed in a single lift, Figure 2-32 and Figure 2-35. The JLS is located at the stern of *Pioneering Spirit* and consists of two beams, which can rotate on hinges (hang-off frames, integrated parts of the hang-off and upend system) on the vessel's stern by means of derrick hoist systems, compound pulley systems with multi-layer winches, located inside dedicated winch rooms. The JLS beams are connected at the top by the JLS connection beam. Each JLS beam is designed with permanent ballast weight aft of the hinge and will additionally have the capability to take in ballast water in the tail section. In addition, each beam is outfitted with an 8000t (17,630kips) upend system (part of the hang-off and upend system), which is a push-pull system with hydraulic cylinders. As a result, the derrick hoist systems will always be under tension during upending and will therefore control the rotation of the beams. With the beams in horizontal position, the ballast water can be pumped to inboard compartments to ensure that the combined centre of gravity of jacket and JLS will be located inboard and that no uplift of the JLS beams will occur during transportation. The top surface of the JLS beams will allow skidding of the jacket either on its launch runners or through support grillages positioned underneath the main hoist blocks. Jackets will be loaded or offloaded on the JLS beams by aligning the JLS beams with the tracks on a barge, Section 2.8.2. The main hoist system can be used to pull the jacket onto the JLS beams.
5000t crane	The *Pioneering Spirit* also has a 5000t special purpose crane, located at the stern portside of the vessel to supports operations and is designed to install and remove modules, structures and jackets.
Fuel type and volumes	*Pioneering Spirit* will utilise marine gas oil (MGO) to power the vessel during decommissioning operations. The volume of fuel the vessel will require for Campaign #1 operations will be defined during the planning stages of the project. Refer to Section 7.8 of the EP for details on MGO volume established for environmental risk assessment purposes. Heavy fuel oil (HFO) will not be used during Campaign #1 but there may be residual volumes of HFO remaining from previous operations. The maximum

Vessel name	*Pioneering Spirit*
	volume of residual HFO in a single tank is estimated to be up to approximately 80m^3.
Vessel ballast control system	The draught, trim and heel of *Pioneering Spirit* can be adjusted by filling and emptying the ballast water tanks. *Pioneering Spirit* is equipped with 87 ballast water tanks and four quick drop ballast water tanks, occupying a total volume of almost 750,000m^3.



Figure 2-33 Typical depiction of the *Pioneering Spirit* approaching a platform to execute a topside lift using the TLS



Figure 2-34 Typical view of the *Pioneering Spirit* highlighting the split bow and lifting beams



Figure 2-35 Typical depiction of jacket lift and jacket transport with *Pioneering Spirit's* JLS on the vessels stern showing the two beams on hinges, the hang-off and upend system, compound pulley systems and the connection atop the JLSs

2.6.1.2 *Fortitude* specifications

A primary CSV will be required to support execution. For the purpose of this EP, the *Fortitude* is nominated as a representative example of the vessel that will be used. The *Fortitude* is a multipurpose CSV equipped with a full DP3 system, see Figure 2-36, for image of the *Fortitude*. The *Fortitude* or similar vessel will be used in both the removals preparation work and facility removal, see Section 2.3 for timing.

Table 2-17 lists the vessel characteristics of the *Fortitude*.



Figure 2-36 Allseas vessel the *Fortitude*

Table 2-17 *Fortitude* vessel characteristics

Vessel name	***Fortitude***	
Operator	Allseas	
Design	Multipurpose offshore construction vessel	
Class	LR 100A1 offshore supply vessel, fire-fighting ship type 2 (7200m^3/h), helideck, *IWS, WDL+, ECO(TOC), Ice class 1C FS at a draught of 9.8m (max/min draughts: Fwd: 9.98/6.74m; aft 9.83/6.75m); power required 4959kW, power installed 10,050kW LMC, UMS, DP(AAA), shipright SRtP.	
Flag/registry	Valetta, Malta	
Built	South Korea, 2018	
Gross tonnage	23,520t	
Principal vessel dimensions	Length overall	151m
	Breadth, moulded	32m
	Transit draught	8m
	Operating draught	10m
	Maximum draught	13.62m
	Maximum speed	13.9kn
	Vessel speed, economical	10.5kn
	Total installed power	22,380kW
	Thrusters	Main azimuth thrusters (stern): 3 x 3350kW (peak) Schottel SRP 4040 LSU non-

Vessel name	*Fortitude*	
		retractable azimuth thrusters with fixed-pitch propellers
	Bow thrusters	2 x 3350kW Wärtsilä retractable azimuth thrusters, 2 x 2500kW Wärtsilä tunnel thrusters
	Stern thrusters	3 x 3350kW Schottel azimuth thrusters
	Accommodation	250 persons
Fuel type and total capacity	MGO: 2654m^3	
Ballast	8494m^3	

2.6.1.3 Second CSV

For the removal campaign, the HLV will be mobilised, supported by the *Fortitude* or similar and a second CSV. The second CSV will be utilised across the OA. Indicative vessel specifications of the second CSV are per Table 2-18.

Table 2-18 Typical specifications of the second CSV

Specification	Details
Length overall	110m
Breadth	25m
Gross tonnage	10,181MT
Dynamic Positioning (DP) system	DP2
Fuel type and total capacity	Fuel type MGO 2416m^3

2.6.1.4 Other vessels

The Campaign #1 marine spread will also include a combination of vessels that may include tugs, cargo barges, heavy transportation vessels, support vessels, PSV, crew transfer vessels and other vessel types. These may operate out of Barry Beach Marine Terminal and other ports as necessary. All vessels will primarily operate on DP when in the PSZ.

All vessels supporting Campaign #1 will be specified and operated in accordance with International and Australian regulatory requirements. All vessels will be subject to Esso review and approval and will be certified as being in compliance with international maritime legislative requirements by a Classification Society registered with International Association of Classification Societies (IACS) or by the AMSA.

Vessel support activities will be required for removal preparations and during the facilities removal works. Vessel activities may include but not limited to:

- bunkering
- supply provisions including bulk chemicals, and fuels, and other cargo and removal of waste to shore
- grouting
- deployment of ROVs or other subsea equipment
- crane operations
- surveys and other subsea activities
- monitoring the PSZ around a facility/removal vessels
- oil spill response as needed

- use of anchors.

2.6.1.5 Barges

There may be approximately five cargo barges to transport the topsides, jackets and other structures such as struts and piles or other items to the ORC. Preparations to make the barge suitable to receive the topsides/jacket will either take place prior to arrival to the OA, or in sheltered waters. Where barges are used, facilities will be transferred from the HLV to a barge within the OA, refer to Figure 2-2. The barges will then be towed to the ORC for offloading. Barges may have on board generators, fuel storage, ballast water systems and other systems to support operations as needed. The indicative barge specifications are detailed in Table 2-19.

Table 2-19 Typical barge specification

Specification	Design (approximate)
Length overall	124m
Breadth	37m
Deadweight tonnage	20,000t
Fuel capacity (for onboard equipment)	40m^3

2.6.1.6 Tugs

There will be approximately six tugs utilised in support and towing operations. Typical specification of tugs planned to be utilised for Campaign #1 is per Table 2-20. During transport operations of items removed from the OA to the ORC, approximately three tugs will be utilised per barge.

Table 2-20 Typical tug specification

Specification	Design (approximate)
Length overall	75m
Breadth	17m
Gross tonnage	2952MT
Fuel capacity	1300m^3

2.6.1.7 Heavy transport vessels

There may be up to four HTVs to transport the topsides, jackets and other structures to the ORC. Where HTVs are used, facilities will be transferred from the HLV to a HTV at a sheltered weather location within the OA, refer to Figure 2-2. The HTV will then sail to the ORC for load in. The indicative HTV specifications are detailed in Table 2-21.



Figure 2-37 Typical HTV the *Bigroll Biscay*

Table 2-21 Typical HTV specification

Specification	Design (approximate)
Length overall	166m
Breadth	40m
Deadweight	19,398MT
Fuel capacity	2033m^3

2.6.2 ROV

During Campaign #1, ROVs such as work class, observation class or mini-ROVs will be utilized for various activities. These may be deployed from the HLV, *Fortitude* or similar vessel, or a second CSV. The ROVs will be fitted with various specialised tools and may work on the seabed, close to structures and in the water column at any depth. Activities that ROVs may conduct or assist with include but are not limited to:

- surveys and inspections
- subsea cutting and removal
- sediment displacement
- removal of debris to surface or temporary placement on the seafloor which may include the use of a subsea basket
- temporary placement of equipment, infrastructure on the seafloor and its retrieval
- marine growth removal
- drilling vent/drain holes in jacket structures such as storage legs and flooded members
- visual inspection (and potential sampling) inside the jacket leg skirt piles
- air lifting inside jacket legs
- installation of caps/plugs on pipes
- installation of caps/plugs on flexibles and umbilicals
- flooded member detection
- conductor cutting

- temporarily support structures such as sleeves or clamps
- other tasks required to assist subsea removal support operations within the capability of an ROV.

2.7 Removal preparations

The removal preparations conducted by Allseas, will prepare topsides and jackets for lifting. These activities will commence with the first mobilisation of the *Fortitude* or similar CSV vessel and continue during facilities removal.

2.7.1.1 Topsides facility preparation

The topsides facility preparation works will include but not necessarily be limited to:

- main and cellar (above) deck equipment demolition/removal
- establishment of utilities such as lighting, air compressors and diesel generators
- grouting of the lift points
- air-gapping, partial removal, or complete removal of pipelines, risers, umbilicals, J-tubes, skimmer piles, caissons or other appurtenances or supports
- removal as required of jacket leg piles
- topsides-jacket separation
- strut – jacket separation (KFA, KFB, HLA) and brace cutting
- lifting and transportation preparation such as removal of objects that may become dropped objects upon lifting and transportation or securing of loose items and sea-fastening
- other tasks required to assist platform removal operations within the capability of the vessel.

2.7.1.2 Grouting

For the generation 1 facilities (KFA and KFB), preparation for lifting points will have been installed under the *Bass Strait Environment Plan* (AUGO-EV-EMM-012). To complete these lifting points, grout will be injected by Allseas from the CSV.

2.7.1.3 Topside – Jacket separation

Cut locations to separate the topsides from the jacket or monopods will be at approximately 5m above MSL. Legs will be cut using either oxyacetylene torch, diamond wire cutting machine (DWCM), abrasive water jetting cutting tool, gouging or similar. All cuts will be engineered to ensure the stability of the facility. Cutting may occur more than a year in advance of removal, but in all cases the residual structural stability will be assessed prior to cutting, to ensure risks are managed. Figure 2-38 provides an example of cut locations on a typical jacket.



Figure 2-38 Example of cut locations on a typical jacket

2.7.2 Helicopter support

Helicopter support will be provided from Allseas preferred location(s) to support the activities as follows:

- personnel transfers between shore and vessels for crew changes
- freight helicopter support
- emergency response, including medevac, and search and rescue.

Helicopter operations are performed in accordance with CASA regulations. Helicopter type, suitability, and performance criteria are contractually controlled, aligned with ExxonMobil minimum requirements, as are minimum flight and engineering crew qualifications and experience levels. Routine helicopter operations will occur during the daytime with the exception of emergency response which may occur at any time as needed.

2.7.2.1 Jacket preparation

Jacket preparations may be undertaken during removal preparations and/or coincide with facilities removal works. Temporary navigation lights will be installed on SPJ structures after topsides removal, prior to Allseas moving out of the PSZ. Temporary work platforms may be installed on the jackets, to facilitate the preparation and installation of the jacket lift points, refer to Figure 2-39.



Figure 2-39 Example of a temporary work platform installed on a typical jacket

Other activities that may occur prior to jacket removal include but are not limited to the following:

- debris survey and removal or relocation as appropriate to enable jacket removal (refer to Section 2.14)
- lift points preparation and installation
- removal of items stuck within skirt piles (refer to Section 2.11.2)
- removal of titanium-iron oxide mineral sand (refer to Section 2.11.5)
- soil plug removal
- small areas of marine growth removal
- jacket cuts (refer to Section 2.7.2.2)
- removal of conductors in full or conductor stubs, (refer to Sections 2.15.2 and 2.15.3)
- removal of subsea appurtenances, such as items attached to pipelines
- cutting and removal of jacket components such as bracing
- subsea cutting and plugging or removal of pipeline risers, umbilicals and flexibles (refer to Section 2.10.2)
- drilling of vent/drain holes in structures or equipment such as jacket storage legs and flooded structural members
- other tasks required to assist jacket removal operations.

2.7.2.2 Jacket cutting process

For cuts to the jacket legs, main piles and skirt piles (see Figure 2-3 that depicts the difference in pile types), the preferred cutting method will be considered on a case by case basis based on assessment of a number of factors such as access/obstructions and likelihood of cut success. Internal cutting is preferred for cuts at or below seafloor to minimise sediment displacement however, as in all cases, the method selection will be based on the pile specific assessment. For smaller diameter jacket members, braces, appurtenances as well as the risers, j-tubes and umbilicals, a shear cutting tool, DWCM, or other alternatives may be used.

To enable the jacket to be lifted, all structural members need to be cut. The cutting of the jacket members can be divided in two phases: green and red cuts.

- green cuts will be made between one and 18 months prior to jacket lifting so that the remaining cuts, red cuts are minimised

- red cuts, being the final cuts before lifting will only be made once a suitable weather window has been found for the jacket lift.

2.7.2.3 Pipelines, risers/j-tubes, umbilicals and flexibles

In preparation for removal of pipelines, risers, j-tubes, umbilicals and flexibles from the jackets, cuts will need to be made between the topsides and at the base of the jackets. The topside cuts will be complete during the facility preparation phase.

All pipelines, risers, flexible flowlines and umbilicals shall be cut approximately 5m from the base of the jacket by Allseas and if required removed individually if not safe to remove with the jacket. A plug or cap will be inserted into the remaining pipeline ends resting on the seafloor. Umbilicals and flexibles may also be plugged after being cut.

In the case for the BMB CGS, the entire riser, clamps and stubs will be removed by cutting close to the scour protection at the subsea end. The pipeline end will be plugged or capped. The j-tube, umbilical and clamps will be cut at the subsea end close to top of the CGS caisson and clamps and stubs removed.

2.8 Removal operations

2.8.1 Lifting

After completing removal preparations, the HLV will be used to remove topsides, jackets and struts and other items as required. The HLV will perform numerous lifts during the campaign and is likely to combine several lifts on the vessel before transporting structures to a sheltered location for transfer. The TLS or 5000t crane will be used to conduct topsides lifts (refer to Section 2.6.1.1 for details on the TLS) in different lifting configurations as required.

The HLV will remove jackets and struts, utilising the JLS or 5000t crane, see Section 2.6.1.1 for details on the JLS and 5000t crane). The *Fortitude* or similar vessel may also conduct topside lifts during Campaign #1.

2.8.2 Transport and transfer operations

Removed structures will be transported by the HLV, *Fortitude* or similar vessel, to a sheltered location within the OA, where the structure will be transferred to a barge or HTV for transit to the ORC.

Topsides will be set down on the barge or HTV. Figure 2-40 is an example of a barge transfer within the slot of the HLV.



Figure 2-40 Example of a topsides transfer from TLS to cargo barge

For jacket transfers where the jacket has been lifted using the JLS, transfer to the barge or HTV will be from the stern of the HLV. Figure 2-41 shows an example of a jacket being set down on a barge at the stern of the HLV.

For structures where the 5000t crane has been used for lifting, transfer to the barge or HTV, will be alongside the HLV.



Figure 2-41 Example of a jacket set down on a barge at the stern of the HLV utilising the JLS

Sea-fastening will be used to secure the removed structures to prevent shift or loss during transit.

2.8.3 HLV mode change

As part of the HLV operations during Campaign #1, equipment on the HLV will need to be rearranged to change topside lift system operating mode. Mode change activities consist mainly of alteration of lift points on the TLS for topside removal. HLV mode change activities may require the assistance of the *Fortitude* or similar vessel, a barge, tugs and/or a support CSV at a sheltered location.

2.9 BMB navigation aids installation

Following removal of the BMB topsides and the module support frame, navigation aids will be installed, consistent with existing maritime requirements. Navigation aids will either be fitted to the remaining concrete structure or deployed on adjacent buoy(s). A structure to support the navigation aids may also be installed following removal of the topsides and, module support frame.

The navigation aids will be designed for sufficient life to minimise maintenance until such time that future decommissioning of the concrete base is carried out.

2.10 Sediment displacement estimates

2.10.1 Monopod removal

In the removal of PCA and DPA there may be a requirement to displace the seabed to remove the monopods. If required, this will be achieved via a water jetting method in a localised manner around the perimeter of each base to expose the underside or skirt. The material at the bottom of the monopods will need to be displaced by approximately 500mm below the current seafloor to expose approximately 100mm below the bottom of the skirt. Table 2-22 is a conservative estimate of the total cubic metres of seabed that may need to be displaced. During lifting, there will be suction between the seabed and the bottom of each monopod. This will also cause disturbance of sediment, also listed in Table 2-22.

Table 2-22 PCA and DPA sediment displacement estimates during water jetting and lifting

Facility	Estimated sediment volume (m^3)
DPA	Perimeter water jetting = 17m^3 total Suction/disturbance from lifting = 83m^3 total
PCA	Perimeter water jetting = 17m^3 total Suction/disturbance from lifting = 83m^3 total

2.10.2 Pipeline and riser removals

Other activities that may displace the seabed are subsea cutting and removal of primary and secondary pipelines and associated appurtenances such as sleds and bracing, risers and umbilicals as described in Section 2.7.2.3. Once cut, pipelines will have a plug installed as soon as practical to the end of the pipeline.

There may also be a need to move any potential debris prior to lifting that may be embedded in the seabed. Estimates of sediment displacement vary based on the diameter of the pipeline or riser and condition of the local seabed (built up or not).

The sediment displacement estimates presented in Table 2-23 are considered conservative because not all pipelines may be cut on the seabed. Table 2-23 is calculated based on cutting pipelines and risers at approximately 5m from the base of the jacket, where sediment displacement is more likely to be required. The estimated total displacement is less than 300m^3.

Table 2-23 Sediment seabed displacement estimate per facility from pipeline cutting

Platform	Displacement estimates (m^3)	Platform	Displacement estimates (m^3)
PCA	5	WKF	27
DPA	5	KFA	27
WTA	5	KFB	47
BMB	Nil	CBA	5
FTA	3	MKA	11
FLA	5	HLA	57
BMA	47	**Total**	**244**

2.10.3 External pile cutting

Where piles are not able to be cut internally, they will need to be cut externally, which may require sediment to be displaced for tooling access. Internal cutting is preferred to minimise sediment displacement however the cutting method will be considered on a case by case basis as described in Section 2.7.2.2.

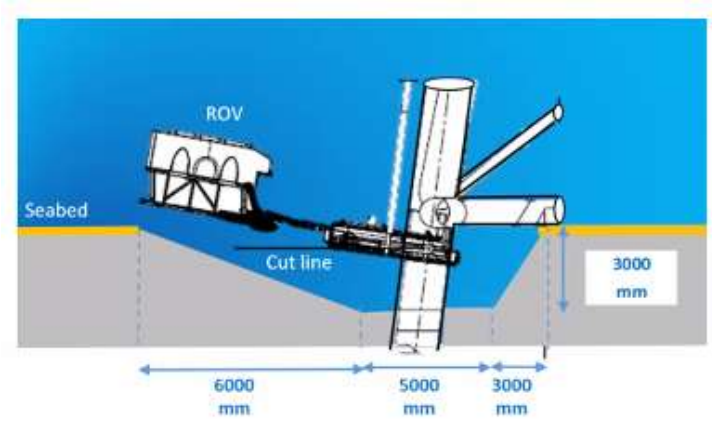


Figure 2-42 Indicative depiction of an external subsea cut below the seabed

Facilities such as FTA, BMA and WTA, may be removed as close as practicable to the seabed and require external cutting. A conservative estimate for sediment displacement for external cutting of piles on these facilities is provided in Table 2-24. This estimate may reduce based on visual internal inspections of piles that will be conducted during the planning of removal operations at each facility. It may also increase by similar ratios if any other structures are decided to be cut as close as practicable to the seabed and internal cutting is not a practical solution.

Table 2-24 Pile cutting sediment displacement estimates for FTA, BMA and WTA

Facilities	Total	FTA	BMA	WTA
Number of piles	20	10	6	4
Estimated maximum sediment displacement (m^3)	4760	2380	1428	952

2.10.4 Anchoring

Vessels may be required to anchor in limited circumstances should environmental conditions require. No anchoring will occur within the PSZ or near subsea infrastructure.

2.11 Planned discharges

All facilities will be free of bulk hydrocarbons from the main hydrocarbon systems; hydrocarbon processing, methanol and diesel systems, see Section 2.5, however there will be residual release of liquid and solid discharges.

Planned discharges will occur from:

- lifting the open drain skimmer piles (ODSPs) and closed drain skimmer piles (CDSPs)
- removal of contents of the skirt piles by the use of an air lift tool
- small areas of marine growth removal during preparation activities (refer to Section 2.12)
- the cutting and removal of umbilicals
- the cutting and removal of pipelines and risers
- release of solids from cutting equipment and activities
- flooded member discharge
- JLSTs draining.

2.11.1 ODSPs and CDSPs and JLSTs

Facilities with ODSPs and CDSPs are KFA, KFB, FTA, FLA, WKF, CBA, MKA, WTA, BMA. The cleaning of the ODSP and CDSP are not within the scope of this EP (refer to the *Bass Strait Environment Plan* (AUGO-EV-EMM-012)). In preparation for Campaign #1, ODSPs and CDSPs are de-inventoried and cleaned of hydrocarbons to the maximum extent reasonably achievable as described below:

- target cleanliness for all ODSPs and Generation 1 CDSPs (KFA/KFB) is 30ppm

  - 30ppm has been selected using the produced formation water discharge OIW limit specified in the Bass Strait Operations EP as a basis
  - a maximum volume lost has been calculated on the conservative assumption that 30ppm is uniform throughout the operating volume of the pile, the total volume is expected to be below 1L
- target cleanliness for Generation 2 CDSPs (FTA, MKA, FLA, BMA, CBA, HLA, WKF) is the point of diminishing returns, with an end target of 250ppm:
  - 250ppm has been selected as a conservative target, acknowledging the increased complexity of the internal configuration of the Generation 2 closed piles
  - a maximum volume lost has been calculated on the conservative assumption that 250ppm is uniform throughout the operating volume of the pile, the total volume is approximately 50L
- based on operational experience to date, it is anticipated that the target cleanliness will be achieved however it is acknowledged that there is a possibility that the target cleanliness concentrations listed may not be achieved in all cases given the internal complexity of the structures. In these cases, a process of diminishing returns will be used to demonstrate that the cleaning of the system is ALARP
- ODSP and CDSP's will be left open to atmosphere and will free drain upon lifting.

Both the ODSPs and CDSPs have subsea windows where seawater can exit via displacement when hydrocarbons enter and where seawater can enter when hydrocarbons are pumped out. Although there is seawater exchange when operational, it is expected that water within the ODSPs and CDSPs will have become anoxic over time and have the potential for some rust deposits. Upon lifting there may be turbid, discoloured water discharged as well as the predicted residual hydrocarbon content.

JLSTs were used to variously contain diesel, glycol, methanol or potable water. Similar to skimmer piles, JLSTs present in facilities to be decommissioned will be cleaned in preparation for removal activities and left open to the atmosphere via a dedicated vent line. After cleaning of the tanks, it is expected that minimal residual volumes of fluids will remain at the bottom of the tanks. JLSTs have a sealed bottom which prevents drainage, therefore, after cleaning is completed, holes will be drilled in the tanks to allow for free flow of water inside the tanks during lifting operations. The reason water may be in the leg tank is that the leg will be left open at the top, approximately 5m above MSL, after the topsides has been removed. This results in an exposure that large waves may enter the open leg prior to the jacket is removed which needs to be drained out during lifting to avoid unintended structural loads being in the jacket. Based on dilution calculations from the cleaning process that will take place prior to Campaign# 1, a conservative volume of residuals fluids within the tanks such as diesel and methanol is estimated to be approximately 10L per tank.

As part of removals preparation activities, the status of structures post cleaning will be documented in a hazardous materials register for each facility. This register will be used to support identification of residual materials for Campaign #1 works planning and execution.

2.11.2 Airlifting

In preparing the jacket leg skirt piles for internal cutting, an airlift tool will be used where necessary to remove obstructions and enable internal cutting. The air-lift tool has been designed to allow for the removal of subsea sediment from within a subsea structure using high pressure air. Compressed air is pumped subsea within the tool, creating a venturi which allows for the sediment to flow up through the airlift tool and be deposited outside the pile. The airlift tool will be deployed via the aid of the vessel crane.

Inside the skirt piles is predominantly marine growth with some debris obstructions and potential for minimal sand and grout. The airlift tool will displace internal materials to the surrounding environment and deep within the piles as particulates settle. Harder materials may be displaced via a different high pressure water jetting tool in which case most of the materials will be captured within the pile. Larger obstructions may be retrieved via a fishing tool or will be pushed down within the pile below the cut height with a clump weight or similar.

It is likely airlifting will be required on FTA and BMA. There may also be a need to use the airlift tool on any other facility as required.

2.11.3 Umbilical cutting

Umbilicals will be cut on the topsides during the facility preparation phase under the Bass Strait EP. Subsea, umbilicals will be cut approximately 5m from the structures and removed. The umbilicals may contain hydraulic

fluids, corrosion inhibitor and pour point depressant. Some of this may be released during cutting and removing a section of the umbilicals. Indicative volumes of umbilical fluids that are likely to be released to the environment are:

- KFA, KFB, WKF: approximately 40L each
- BMA: approximately 100L
- MKA: approximately 215L.

2.11.4 Pipelines and riser residual fluids

Residual fluids within pipelines and risers will consist of seawater and corrosion inhibitor and an OIW target content of <30ppm. 30ppm is an assumption for the purposes of presenting volumes for Table 2-25. This is a target pipeline cleanliness and generally accepted as industry standard and Esso standard as applicable. Although it is expected each pipeline to reach 30ppm cleanliness, there is a risk that this may not be able to be reached in which case an approach of diminishing returns will be used as an ALARP position.

Once cut, pipelines will have a plug installed as soon as practical to the end of the pipeline but expected within seven days of the cut. Plugs will be an environmental cap on the end of the line that can withstand a nominal pressure and have a design life of approximately 10 years. In retrieving pipelines and risers to surface there will be a release of residual pipeline and riser fluids. Table 2-25 assumes a nominal cut location 5m outboard from jacket or pipeline connector, except for DPA, KFA and KFB which will be cut at the base of the monopod or jacket.

Table 2-25 Pipeline and riser fluid release volumes

Facility	Pipeline	Section volume (m^3)	Oil @ 30ppm (L)	Inhibitor @ 2000ppm (L)
PCA	PCA300-LFD	3.06	0.09	6.12
	LFD100-PCA	0.35	0.01	0.70
DPA	DPA300 Riser	2.50	0.08	5.00
	LFD100 Riser	0.29	0.01	0.58
WTA	WTA250-SNA	2.45	0.07	4.90
	WTA200-SNA	1.50	0.05	3.00
BMB	BMB250-BMA	2.88	0.09	5.76
BMA	BMA400-WKF	7.30	0.22	14.60
	BMB250-BMA	2.88	0.09	5.76
WKF	BMA400-WKF	9.09	0.27	18.18
	MLA150-WKF	1.25	0.04	2.50
KFA	WKF300-KFA	5.27	0.16	10.54
	KFA400-KFB	8.75	0.26	17.50
	MLA150 Riser	1.19	0.04	2.38
KFB	KFA400-KFB	8.86	0.27	17.72
	KFB500-HLA	14.42	0.43	28.84

Facility	Pipeline	Section volume (m^3)	Oil @ 30ppm (L)	Inhibitor @ 2000ppm (L)
	MLA150 Riser	1.20	0.04	2.40
MKA	MKA300-HLA	6.12	0.18	12.24
	BKA200-MKA	2.89	0.09	5.78
	MKA65-BKA	0.28	0.01	0.56
	MLA100-MKA	0.61	0.02	1.22
CBA	CBA150-HLA	5.09	0.15	10.18
	HLA100-CBA	0.52	0.02	1.04
FTA	FTA300-HLA	4.80	0.14	9.60
	HLA100-FTA	0.46	0.01	0.92
FLA	FLA250-SNA (O)	4.33	0.13	8.66
	FLA250-SNA (G)	4.33	0.13	8.66
HLA	FTA300-HLA	4.99	0.1497	9.98
	CBA150-HLA	4.71	0.1413	9.42
	KFB500-HLA	13.38	0.4014	26.76
	HLA100-FTA	0.48	0.0144	0.96
	HLA100-CBA	0.48	0.0144	0.96
	HLA600-MLA300 TEE	19.78	0.5934	39.56
	MLA100-MKA	0.48	0.0144	0.96
	MKA300-HLA	4.82	0.1446	9.64

2.11.5 Discharge of solids to sea

There is steel shot and titanium-iron oxide mineral sand mix in several piles at KFA and KFB which has historically been used as structural ballast material. Prior to jacket cutting, the ballast material may need to be removed to allow the abrasive waterjet cutting tool to fit inside the pile. The method to remove the steel shot and titanium-iron oxide mineral sand mix is likely to be via the airlift tool or a suitable alternative. Given the proximity of this material mixed within the pile, it will not be possible to capture the steel shot and titanium-iron oxide mineral sand mix, and it will discharge to sea and dispersed, and will not be able to be recovered. Where external cutting is required, steel shot and titanium-iron oxide mineral sand mix will be released upon lifting where this material extends above the cut height. Indicative volumes are per Table 2-26.

During cutting operations swarf will also be released to sea. Garnet will be used for high pressure water jetting. Indicative volumes of swarf and garnet are indicated in Table 2-26.

Table 2-26 Estimated mass of materials release to the environment as a result of removing facilities

Facility	Steel cuts m^3	Grout cuts m^3	Steel shot and titanium-iron oxide mineral sand mix (MT)*	Garnet m^3
KFA	0.03	0	48	0.9
KFB	0.03	0	27	0.9
MKA	0.03	0	0	0.5
WKF	0.02	0	0	0.5
FLA	0.03	0	0	0.5
FTA	0.04	0.09	0	1.9
HLA	0.04	0	0	1.9
WTA	0.01	0.01	0	0.5
CBA	0.02	0	0	0.5
BMA	0.02	0.07	0	1.9
Totals	0.27	0.17	75	10

*Aggregate composition assumed to be 50wt.% titanium-iron oxide mineral sand, 50wt.% steel shot for the purpose of weight calculations.

2.11.6 Seawater discharge from other jacket structures

Selected structural members, such as legs and braces will have been intentionally flooded with seawater when the jackets where originally set down on the seabed. These members will free drain upon lifting out of the water. Prior to removal, some of these structures will require drilling of drain and vent holes to ensure the entrapped water drains relatively quickly, to limit additional weight of entrapped seawater during lift. Creating drain and vent holes will be assessed on a case-by-case basis. The water within the members is likely to have become anoxic over time. Upon lifting there may be discoloured water discharged.

2.12 Marine growth removal

Narrow bands of marine growth will be removed in the following instances as required to facilitate the safe and efficient removal of subsea materials:

- where subsea cutting or drilling will be performed or where the jacket will be supported by the JLS
- in areas around the cutting elevation of both jacket legs, pipe work and appurtenances to allow installation of cutting tool
- at locations where subsea rigging may be attached
- at the location of the jacket that will make contact with the support saddles on the JLS beams during the lift
- in locations where detailed inspection is required or locations which require additional attention after the visual inspections
- in other locations that may be determined as required based on other potential impacts and risks to dropped marine growth during transportation of structures.

The removal of marine growth will be conducted by an ROV utilising an ROV-held flexiclean tool or marine growth removal tool via high pressure water jetting or other methods that may be identified.

2.13 Inspection, maintenance and repair

Maintenance activities are generally undertaken as required to prevent deterioration and maintain performance of equipment. It is noted that following the completion of Campaign #1 there will be no actively maintained cathodic protection of any remaining jacket portions that have been partially removed. Some facilities may have some residual cathodic protection anodes but for the purpose of assessing corrosion to lower jackets, this residual protection is not considered.

Each jacket structure post installation has maintained integrity through the use of an active impressed current cathodic protection system, which by means of regular monitoring, confirmed the impressed current cathodic protection remained sufficiently active. Given the typical steel wall thicknesses, and combination of grouted annulus of sleeves and piles, the timeline for steel degradation, to be of any significance to the remaining lower jacket portion integrity, is beyond 100 years.

Corrosion of the lower jacket portions is influenced by a range of factors including but not limited to the nature of the construction, water depth, temperature, oxygen levels and the formation of protective scale. Corrosion rates have been established in consideration of:

- *Corrosion in Seawater* (Dexter, 2006)
- *Corrosion of metals and alloys in the deep ocean* (Reinhart, 1976)
- *Materials Selection* (NORSOK, 2014)
- *Long term degradation of offshore structures and pipelines: decommissioned and left in-situ* (OGUK, 2013).

The initial corrosion rates for the lower parts of the jackets in open sea water without active cathodic protection is expected to be <0.15mm/year with long term corrosion in seawater expected to be approximately 0.05mm/year. The maximum corrosion rate of 0.15mm/year requires water exposure on both external and internal surfaces combined around jacket cut locations and is not applicable to the entire structure. Based on this assessment, removal of cathodic protection will not impact the structural integrity required for future full removal to the seafloor as part of the Campaign #2 in the mid 2030's. Based on this assessment, no ongoing IMR is required for the in-place structural stability for the lower portions of jackets. Note that targeted inspections/surveys may be undertaken when planning removal execution, should this be required.

The navigational aids and any supporting structure associated with the BMB CGS will be designed to have a 10-year design life. These systems will be subject to ongoing IMR as deemed to be necessary until such time that future decommissioning of the concrete base is carried out. The navigation aids will be installed with the capability to be remotely monitored via satellite signal in order to be able to confirm correct operation.

The BMB CGS has cathodic protection in the form of installed anodes.

IMR activities undertaken on producing and non-producing platforms are activities included in the *Bass Strait Environment Plan* (AUGO-EV-EMM-012). A management of change process is being undertaken to confirm any potential maintenance activities on Campaign #1 facilities following the completion of the removal campaign are activities covered within the scope of the *Bass Strait Environment Plan* (AUGO-EV-EMM-012).

2.14 Temporary storage

Temporary subsea storage may be required for components that are removed during Campaign #1. Examples include, but are not limited to, subsea equipment, risers, clamps, appurtenances, caissons, conductor sections, and other items associated with the structures. These items may be placed directly on the seafloor or in a basket to aid recovery. Items that require temporary storage will be recorded in the Campaign #1 temporary storage register.

Temporary subsea storage will occur on an as needed basis and may be either planned in advance or unplanned, depending on operational requirements and circumstances. All efforts will be made to ensure that temporary subsea storage is contained within the PSZ of the facility.

Items temporarily stored on the seafloor will be recovered where possible and when safe to do so, prior to completion of the Campaign #1 activities, at a time that is suitable for operational flexibility and simultaneous removal activities. Any dropped objects will also be documented in the Campaign #1 temporary storage register and will be removed at a suitable time.

In the event that objects on the Campaign #1 temporary storage register cannot be recovered within Campaign #1, the details of these items will be added to the Esso Subsea Material Register and will be managed for later removal under the *Bass Strait Environment Plan* (AUGO-EV-EMM-012).

2.15 Optional scopes

2.15.1 HLA removal of topsides and upper jacket sections

The scope of Campaign #1 may also include the removal of the HLA topsides and upper jacket sections (to at least 55m below MSL) which is not a facility referenced in the General Direction 817. This option is contingent on the plan for HLA to be retained in use to transport fluids generated by well P&As and flushing activities on the remaining producing platforms from offshore to Longford utilising the HLA600/650 pipeline. In the event this option is not executed as a part of this EP, the decommissioning of the HLA facility will be included in a future decommissioning EP

2.15.2 Conductor removal

There may be a need to remove conductors as a part of Allseas removal activities to enable lifting of the topsides and jackets where this has not already been done under the *Bass Strait Environment Plan* (AUGO-EV-EMM-012). Prior to the removal of topsides, conductors that were not removed during the wells' P&A activity (covered in the *Bass Strait Environment Plan* (AUGO-EV-EMM-012)) will be cut and removed, either as a single piece or as smaller pieces depending on final rigging and transportation planning.

During removal of the conductors, some external marine growth on the conductors is likely to be scraped off as each conductor passes through its individual guide on the conductor guide frame. A machine may also be positioned above the upper conductor guide frame, to clean out some of the external marine growth from the conductor as each is removed from its position, allowing easier handling during removal.

The conductor sections above sea deck may be lifted out and stored on the platform or pinned to the topside structure to be lifted with the topside. The water within the conductors is likely to have become anoxic over time. Upon lifting there may be discoloured water discharged.

2.15.3 Conductor stub removal

Similarly to conductor removal, there may be a need to remove conductor stubs as a part of Allseas removal activities to enable lifting of the topsides and jackets where this has not already been done under another EP. To cut the conductor stubs an ROV with DWCM will be used to cut close to the conductor guide and be lifted to the surface.

2.15.4 Fortescue removal depth

The scope of Campaign #1 includes two options for the depth of removal of FTA. Option 1 is removal of the topsides and the jacket to as close as practicable to the seabed. This may be below, or just above the seabed, or Option 2 which is removal of the topsides and the jacket to a depth of at least 55m below MSL.

In both cases the depth of removal considers the need to ensure the jacket is removed to a depth safe for navigation. Option 1 allows for further structural engineering considerations for the safety and stability of the jacket lift and transport based on a number of factors including the position of bracing relative to the final cut positions. Further engineering is required before a final decision on the viability of each option can be fully assessed.

2.16 Waverider buoy installation

A temporary waverider buoy may be installed within the OA to provide field measurement of wave height and wave direction in real time. The purpose of a waverider buoy is to provide the Campaign #1 Project Management Team with data to prepare for the removal works and also provide guidance to weather windows for removal activities. The optimal location(s) are yet to be determined but may be in any locations within the OA. A typical waverider buoy arrangement includes a buoy which floats on the ocean surface and a tether from the buoy to a clump weight which would be sitting on the seabed.

2.17 As left surveys

An as left post removal visual inspection of each Campaign #1 removal locations will be undertaken following the completion of removal activities. The as left survey will:

- confirm the infrastructure has been removed as planned
- document the general condition of the infrastructure remaining in place following removal activities
- verify that all pipelines and flexibles have been cut and plugged/capped as required
- identify any objects that may have been accidentally dropped during the removal activities or those documented in the Campaign #1 temporary storage register.

If the as left survey indicates that any infrastructure has not been removed as planned and in accordance with the accepted permissioning documents, plans will be developed to rectify any differences.

The as left survey will be undertaken by a suitable vessel and ROV.

The as left survey will be undertaken as soon as practical after removals with contingency to complete within approximately six months of the completion of the removal activities.

3 Description of the environment

To set the environmental context required to assess impacts and risks associated with the petroleum activities described in this EP, two areas, as shown in Figure 3-1, have been identified:

- **Operational Area (OA)** – the area within which the activities addressed by this EP will be undertaken.
- **Environment that May Be Affected (EMBA)** – Determined by oil spill modelling and is the total area that could be exposed to hydrocarbon, including trace concentrations of oil in the water column, as a result of 100 individual hydrocarbon spill simulations for various scenarios. Then, these results are combined to identify the largest envelope in which a single spill is predicted to occur. This worst-case assessment of a potential spill scenario covers the largest offshore area, extending beyond potential areas that may be affected by other aspects such as noise, and light emissions during Campaign#1 activities.

3.1 Operational Area

As described in Section 2.2.1 and shown in Figure 3-1, the OA for this EP is an area encompassing:

- The PSZ around the facilities that are part of the Decommissioning – Campaign #1 scope, including WTA, PCA, DPA, BMB, FTA, MKA, FLA, BMA, KFA, KFB, WKF, CBA and HLA
- the area within which the HLV and CSVs will operate when transporting the removed topsides and sections of jackets from the PSZs to a sheltered weather location closer to the Corner Inlet shipping channel so that removed topsides and sections of jackets can be transferred from the HLV or CSV to receiving barges or transport vessel.

The OA is situated entirely within Commonwealth waters. Transport of structures to port following transfer to a barge or a transport vessel is not considered a petroleum activity for the purpose of this EP.

3.2 Environment that May Be Affected

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

Using the results of the oil spill modelling report (RPS, 2024a), the boundary of the EMBA is defined as:

The combined extent of oil exposure to the sea surface (≥1g/m^2), accumulated on shorelines (≥10g/m^2), entrained in the water column (≥10ppb) and dissolved in the water column (≥10ppb) as a result of a release of 1665m^3 of MGO (over 12 hours) from the *Pioneering Spirit* using annualised metocean conditions.

The description of the EMBA is provided 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 the range of socioeconomic effects and establishes the 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 the planning area which may be considered for scientific monitoring based on the potential for exceedance of water quality triggers.
In-water (entrained) – Low exposure	10ppb (instantaneous)	Establishes the planning area which may be considered for scientific monitoring based on the potential for exceedance of water quality triggers.

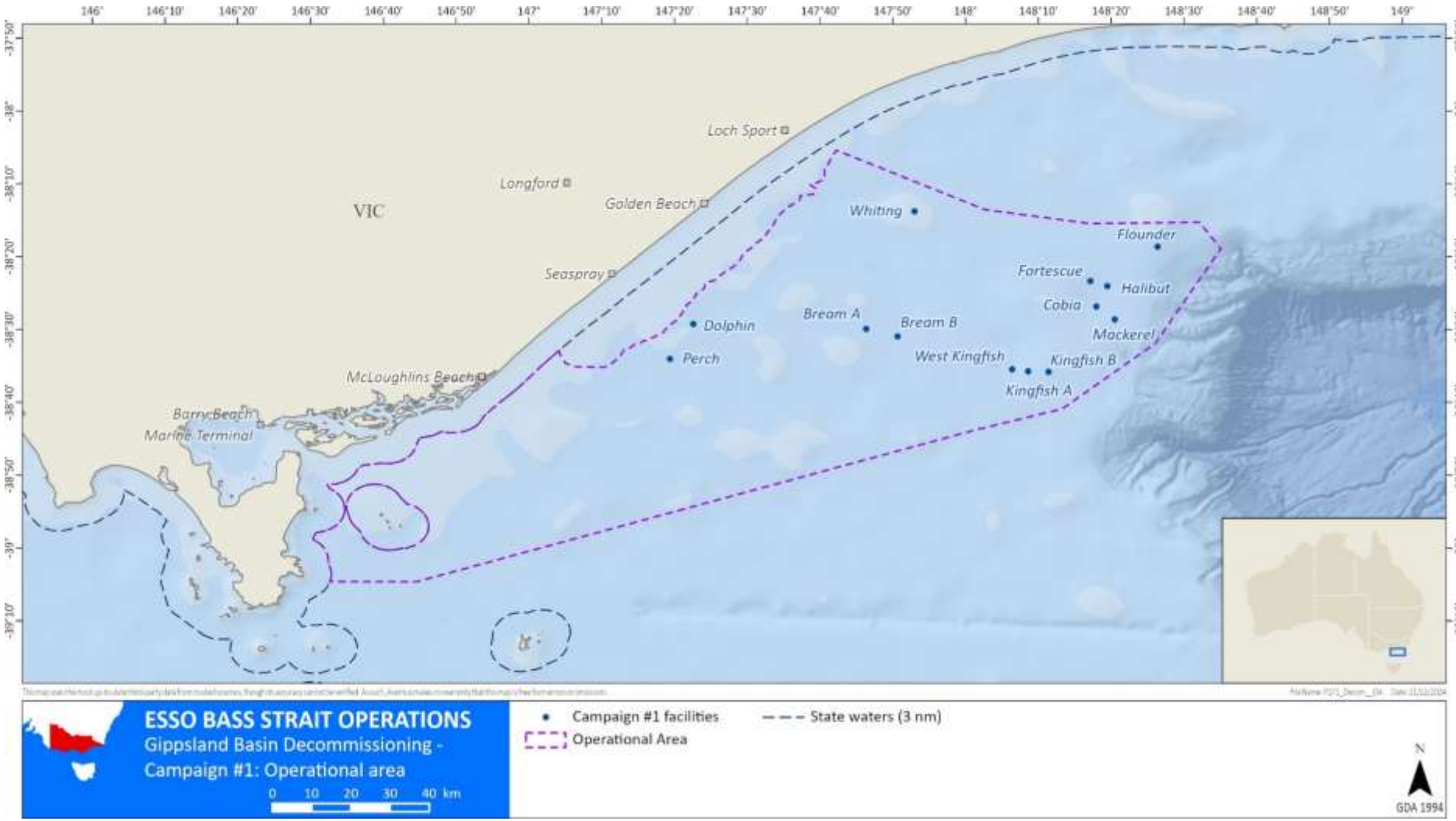


Figure 3-1 Operational Area

3.3 Values and sensitivities

The values, sensitivities and receptors found within the OA 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 OA and EMBA are provided in Appendix B. EPBC Act PMST Reports for the OA and EMBA are presented in Appendix C and Appendix D respectively.

Any receptor listed within the PMST report (Appendix D) that was either outside the extent of the EMBA or a terrestrial feature has not been described within this EP.

Table 3-2 Values and sensitivities within the OA

Value/sensitivity	Receptor	Description
Protected matter		
World Heritage	-	World Heritage Listed Properties are sites that represent the best examples of the world's cultural and heritage values, of which Australia has 20 properties (DCCEEW, 2024a) In Australia, these properties are protected under Chapter 5, Part 15 of the EPBC Act. There are no World Heritage Properties within or adjacent to the OA. The closest World Heritage Property is the Royal Exhibition Building and Carlton Gardens which is located approximately 180km northwest of the OA.There are no World Heritage-listed places intersected by the EMBA, as described Section A.1.1.1 of Appendix A.
National Heritage	-	The National Heritage List is Australia's list of natural, historic, and Indigenous places of outstanding significance to the nation (DCCEEW, 2024b). These places are protected under Chapter 5, Part 15 of the EPBC Act. There are no National Heritage-listed places within or adjacent to the OA. The closest National Heritage Place is the Australian Alps National Parks and Reserves (onshore), which is located approximately 95km north the of OA. There are no National Heritage-listed places intersected by the EMBA, as described in Section A.1.1.2 of Appendix A.
Wetlands of International Importance (Ramsar wetlands)	-	Australia has 67 Ramsar wetlands that cover more than 8.3 million hectares (DCCEEW, 2024c). Ramsar wetlands are those that are representative, rare, or unique wetlands, or are important for conserving biological diversity, and are included on the List of Wetlands of International Importance developed under the Ramsar Convention. These wetlands are protected under Chapter 5, Part 15 of the EPBC Act. There are no Ramsar wetlands within the OA. The closest Ramsar wetland is Corner Inlet, which is located approximately 5.8km north of the OA. Ramsar wetlands intersected by the EMBA are described in Section A.1.1.4 of Appendix A.

Value/sensitivity	Receptor	Description	
Nationally Important Wetlands (NIWs)		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, 2024d). There are no NIWs within the OA. The closest NIW is the Corner Inlet, which is located 5.8km north of the OA. NIWs intersected by the EMBA are described in Section A.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 Critically endangered Endangered Vulnerable Conservation dependent	44 2 10 26 6
		Listed migratory species	
		Total migratory species Fish – Bony (Appendix B Table B-1) Fish – Cartilaginous (Appendix B Table B-2) Birds (Appendix B Table B-3) Mammals – Cetaceans - (Appendix B Table B-4) Mammals – Pinnipeds (Appendix B Table B-5) Mammals – Sirenia (n/a) Mammals – Reptiles (turtles) (Appendix B Table B-6)	45 - 6 25 11 - - 3
Biologically Important Areas (BIAs)	Marine fauna	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, 2024e). The following 14 BIAs are within the OA. The BIAs within the EMBA are outlined in Appendix A.	
		Species	BIA type
		Birds (Appendix B Table B-3)	
		Antipodean albatross (Figure 3-4)	Foraging

Value/sensitivity	Receptor	Description	
		Black-browed albatross (Figure 3-2)	Foraging
		Buller's albatross (Figure 3-2)	Foraging
		Campbell albatross (Figure 3-2)	Foraging
		Common diving-petrel (Figure 3-3)	Foraging
		Indian yellow-nosed albatross (Figure 3-2)	Foraging
		Short-tailed shearwater (Figure 3-3)	Foraging
		Shy albatross (Figure 3-3)	Foraging likely
		Wandering albatross (Figure 3-3)	Foraging
		White-faced storm-petrel (Figure 3-4)	Foraging
		Sharks (Appendix B Table B-2)	
		White shark (Figure 3-7)	Reproduction and foraging
		Whales (Appendix B Table B-4)	
		Pygmy blue whale (PBW) (Figure 3-5)	Foraging
		Southern right whale (SRW) (Figure 3-6)	Reproduction and migration
Listed TECs	-	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, 2024f). There are no TECs within the OA. TECs intersected by the EMBA are described in Section A.1.1.6 of Appendix A.	
Australian Marine Parks (AMPs)	-	AMPs are areas established help conserve marine life. AMPs have natural, cultural, heritage and socio-economic values. The natural values of marine parks refer to the habitats, species and ecological communities within them, and the processes that support their connectivity, productivity, and function (Australian Marine Parks Science Atlas, 2024). There are no AMPs within the OA. The closest AMP is Beagle AMP which is located approximately 2.5km south of the OA. AMPs intersected by the EMBA are described in Section A.1.1.7 of Appendix A.	

Value/sensitivity	Receptor	Description
Key Ecological Features (KEFs)	Upwelling East of Eden (Figure 3-8)	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, 2024e). The Upwelling East of Eden is present along the eastern Victorian and southern New South Wales. Dynamic swirls of the East Australian Current cause episodic productivity events when they interact with the continental shelf and headlands. The episodic mixing and nutrient enrichment events drive phytoplankton blooms that are the basis of productive food chains including zooplankton, copepods, krill, and small pelagic fish. Therefore, the key value of the KEF is its high productivity and aggregations of marine life (Commonwealth of Australia, 2015). The upwelling contributes to regionally high primary productivity which supports fisheries and biodiversity, including top order predators, marine mammals, and seabirds. This area is one of two feeding areas for blue whales and humpback whales, that are known to arrive when significant krill aggregations form. The area is also important for seals, other cetaceans, sharks, and seabirds (Commonwealth of Australia, 2015). KEFs intersected by the EMBA are described in Section A.1.1.8 of Appendix A.
Other protected areas		
Social/cultural/ conservation	National parks and reserves	There are no national parks or reserves within the OA. The closest protected area is Wilsons Promontory National Park, which is located approximately 6km west of the OA. National parks and reserves intersected by the EMBA are listed in Section A.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, 2024g). There are no Commonwealth Heritage Listed places within the OA or EMBA (identified Commonwealth heritage places were identified as terrestrial features or outside of the EMBA).
Historic maritime	Historic shipwrecks (Figure 3-9)	Historic shipwrecks are located all along the Australian coastline, with numerous shipwrecks located within the Gippsland region. The following shipwrecks are within the OA: • City of Hobart (1877) • Dunkeld (1870) • Favourite (1852) • Rembrandt (1861) • Struan (1856)

Value/sensitivity	Receptor	Description
		• *Talark* (n.d). The *SS Glenelg* shipwreck and its protection zone are located just outside the OA (see Figure 3-9). There are no Protection Zones within the OA. Protection Zones intersected by the EMBA are identified in Section A.1.5.2 of Appendix A.
Environmental values – Other		
Physical environment	Climate and meteorology	Climate statistics from 1991-2020 at East Sale (Victoria) (the closest weather station to the OA) 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). Wind speeds for East Sale between 1991-2017 range from 11.1 - 16.3km/hour in the morning and 17.1 - 24.2km/hour in the afternoon, with maximum gusts reaching 152 km/hour. 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).
	Oceanography	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). 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. 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. 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).
	Bathymetry (Figure 3-10)	The seabed bathymetry across the OA is highly variable, ranging mostly from 20 - 70m water depth. It is noted that water depths to the northeastern corner of the OA,

Value/sensitivity	Receptor	Description
		towards the continental slope that leads to the Bass Canyon, range between 70 - 300m.
	Benthic habitat	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, with poor light and low energy conditions away from shallow waters (Esso, 2009). Benthic fauna present on the soft sediment can be broadly divided into two groupings (Parry, Campbell, & Hobday, 1990): • 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 A.1.6 for description of fisheries)	Commonwealth fisheries overlapped by the OA: • Bass Strait Central Scallop Zone Fishery (BSCZSF) - 2.00% overlap with the OA (see Figure 3-11) • Eastern Tuna and Billfish Fishery (ETBF) – 0.17% overlap with the OA (see Figure 3-12) • Small Pelagic Fishery (SPF) – 0.19% overlap with the OA (see Figure 3-13) • Southern and Eastern Scalefish and Shark Fishery (SESSF) - 0.19% overlap with the OA (see Figure 3-14). Section A.1.6.2 of Appendix A details the subsectors of the Fishery that have jurisdiction to fish in the OA and EMBA • SESSF Commonwealth Trawl Sector (CTS) - Otter-board - 0.50% overlap with the OA (Figure 3-15) • SESSF CTS and Scalefish Hook Sector (SHS) – 0.25% with the OA (Figure 3-16) • SESSF CTS - Gillnet Hook and Shark Hook - 0.42% overlap with the OA (Figure 3-17) • SESSF CTS - Shark Gillnet - 0.42% overlap with the OA (Figure 3-18) • SESSF CTS Danish-seine – 0.50% overlap with OA (Figure 3-19) • Southern Bluefin Tuna Fishery (SBTF)– 0.08% overlap with the OA (see Figure 3-20) • Southern Squid Jig Fishery (SSJF) - 0.23% overlap with the OA (see Figure 3-21). State fisheries – Victoria overlapped by the OA:

Value/sensitivity	Receptor	Description
		• Abalone Fishery – 5.59% overlap with the OA (see Figure 3-22) • Rock Lobster Fishery and Giant Crab Fishery – 5.55% overlap with the OA (Figure 3-23) • Pipi Fishery – 7.38% overlap with the OA (see Figure 3-24) • Wrasse Fishery – 3.91% overlap with the OA (see Figure 3-25) • Sea Urchin Fishery – 6.69% overlap with the OA (see Figure 3-26) • Scallop Fishery – 7.27% overlap with the OA (see Figure 3-27) • Octopus Fishery – 5.47% overlap with the OA (see Figure 3-28). State fisheries – Tasmania overlapped by the OA: • Lobster, Giant Crab, Scallop Fishery – 0.02% overlap with the OA (see Figure 3-29).
	Oil and gas	Other than the Esso permit areas in the Gippsland Basin there are 14 other permit areas held by other operators: • Cooper Energy (VIC/L32, VIC/RL13, VIC/RL14, VIC/RL15, VIC/RL16, VIC/P72, VIC/P75, VIC/P80) • SGH Energy (VIC/L29) • Carnarvon Hibiscus (VIC/RL17) • Emperor Energy/Shelf Oil Pty Ltd (VIC/P47) • Liberty Petroleum (VIC/P77, VIC/P78) • 3D Energi Limited (VIC/P74).
	Shipping (Figure 3-31)	The southeast coast of Australia has high shipping activity. This traffic includes international and coastal cargo trade, and passenger and ferry services.
	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 OA.
	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). In South Gippsland, the primary tourist location is Wilsons Promontory Marine National Park, which is Victoria's largest Marine Protected Area at 15,604ha. Situated at the southern tip of Wilsons Promontory, the park includes the Promontory itself and thirteen offshore islands. As one of Victorias largest and oldest National Parks, Wilsons Promontory is renowned for

Value/sensitivity	Receptor	Description
		its natural beauty and diverse ecosystems, making it a prominent destination for outdoor adventure and nature-based experiences. The South Coast region includes all the towns from Wollongong to the Victorian border.
	Renewable energy (Figure 3-30)	The OA is located within Australia's first offshore area declared available for renewable energy projects (OEI-01-2022 Part 1). The OA overlaps with the following licence areas: • Blue Mackerel North - FL-001 • Star of the South – FL-006 • Gippsland Dawn – FL-007 • Greater Eastern - FL-010 • Navigator North – FL-011 • Aurora Green – FL-012.
Cultural	Native Title determinations and claims	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, 2024). 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, 2024); (National Native Title Tribunal, 2023). There are no Native Title determinations or claims within the OA. Native Title determinations or claims intersected by the EMBA are described in Section A.1.5 of Appendix A.
	Sea Country	Gunaikurnai is the name of the indigenous group who have inhabited the Gippsland region for at least 18,000 years (Ramahyuck, 2023). The GLaWAC (GLAWAC, 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".* 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 OA 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

Value/sensitivity	Receptor	Description
		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). 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 IPAs 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 (DCCEEW, 2023). The Gunaikurnai Land and Waters Aboriginal Corporation (GLaWAC) has commenced steps to establish the Sea Country IPAs and is currently conducting Sea Country Assessments (GLaWAC, 2024), undertaking information gathering and is actively seeking engagement with Traditional Owners on how the IPAs should be managed (GLAWAC, 2023). The proposed Sea Country IPAs 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 OA).
Social environment	Recreational fishing, boating and leisure	Most recreational fishing typically occurs in nearshore coastal waters (shore or inshore vessels), and within bays and estuaries. Offshore fishing (>5km 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 There is moderate to high recreational use along most of the Victorian coast, mostly amongst the Nooramunga islands (near Corner Inlet), on the Gippsland Lakes, along Ninety Mile Beach, at Cape Conran Coastal Park and Croajingolong National Park and off the coast of Mallacoota, comprising both boat-based fishing and beach-based surf fishing. All these areas are outside the OA. Common recreational fish species (coastal area) include tiger flathead, bream, snapper, Australian salmon, and lobster and typically targets tiger flathead, bream, snapper, Australian salmon, and lobster.

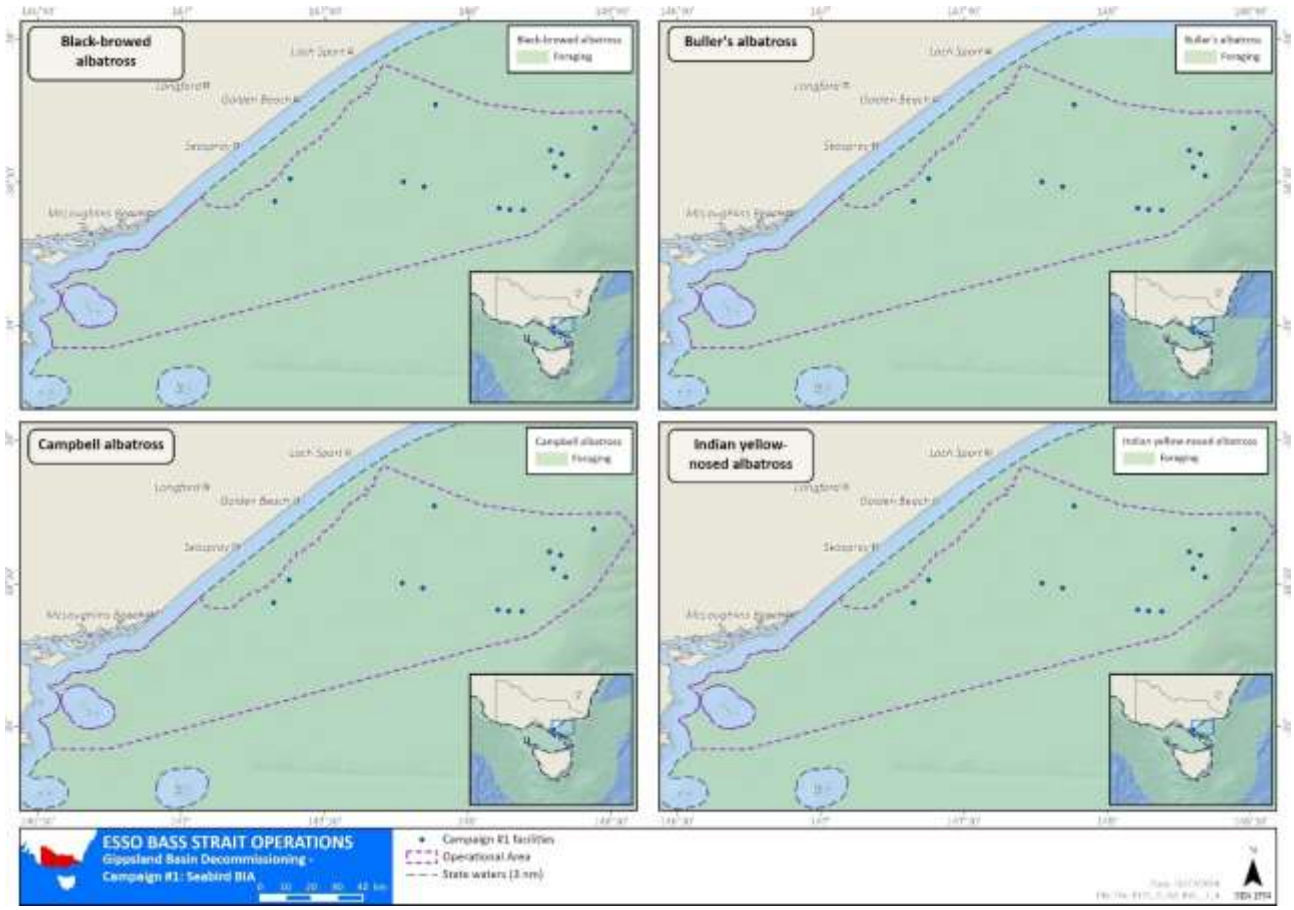


Figure 3-2 Foraging BIAs for the black-browed albatross, Buller's albatross, Campbell albatross and Indian yellow-nosed albatross overlapped with the OA

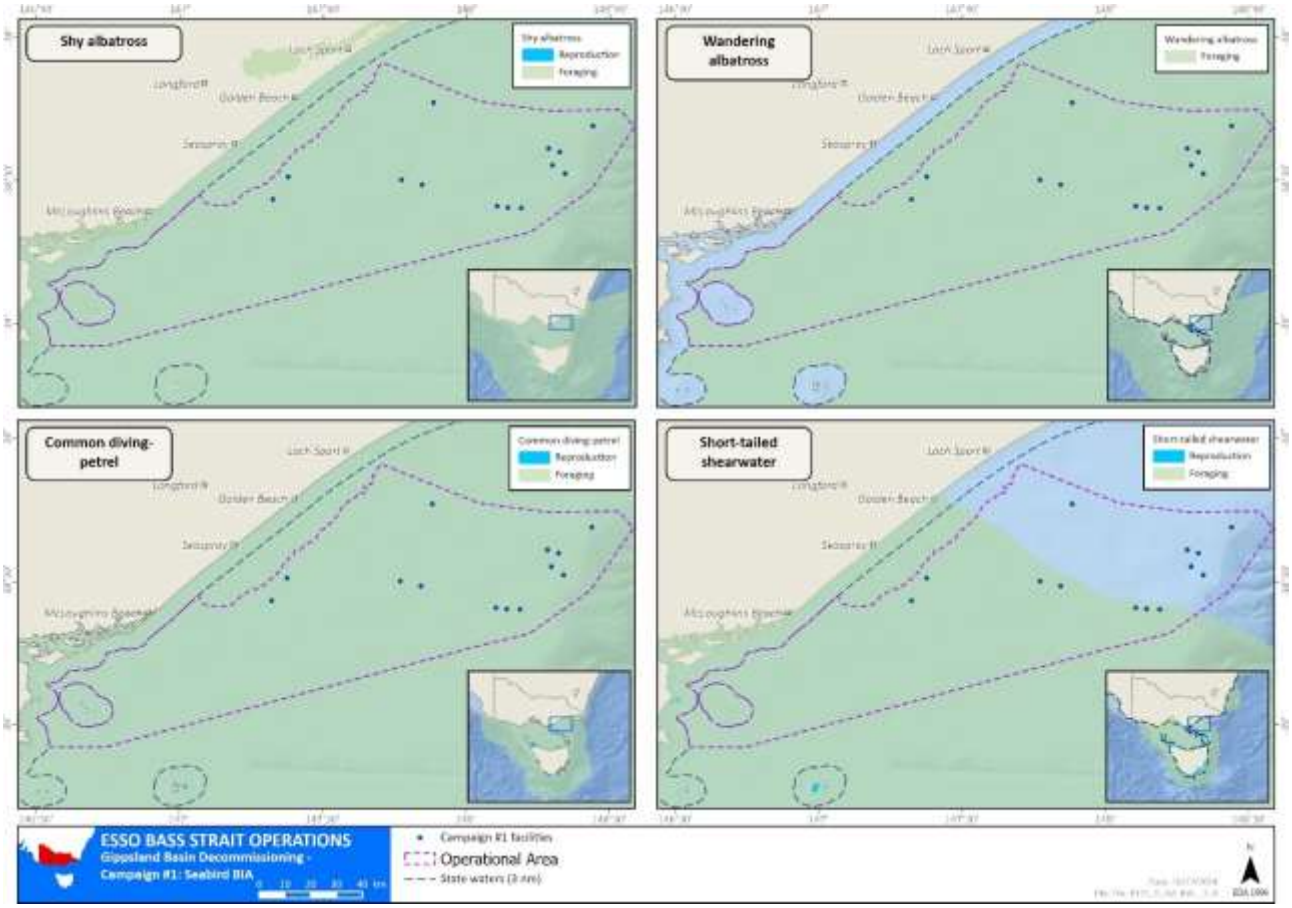


Figure 3-3 Foraging BIAs for the shy albatross, wandering albatross, common diving-petrel and short-tailed shearwater overlapped with the OA

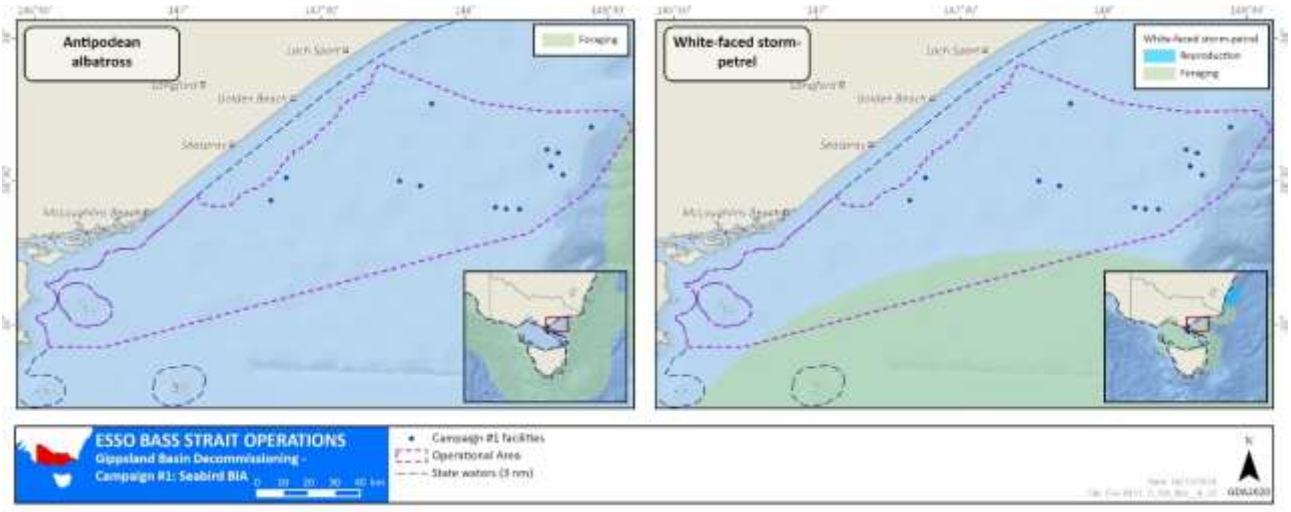


Figure 3-4 Foraging BIA for the antipodean albatross and foraging and reproduction BIA for the white-faced storm petrel

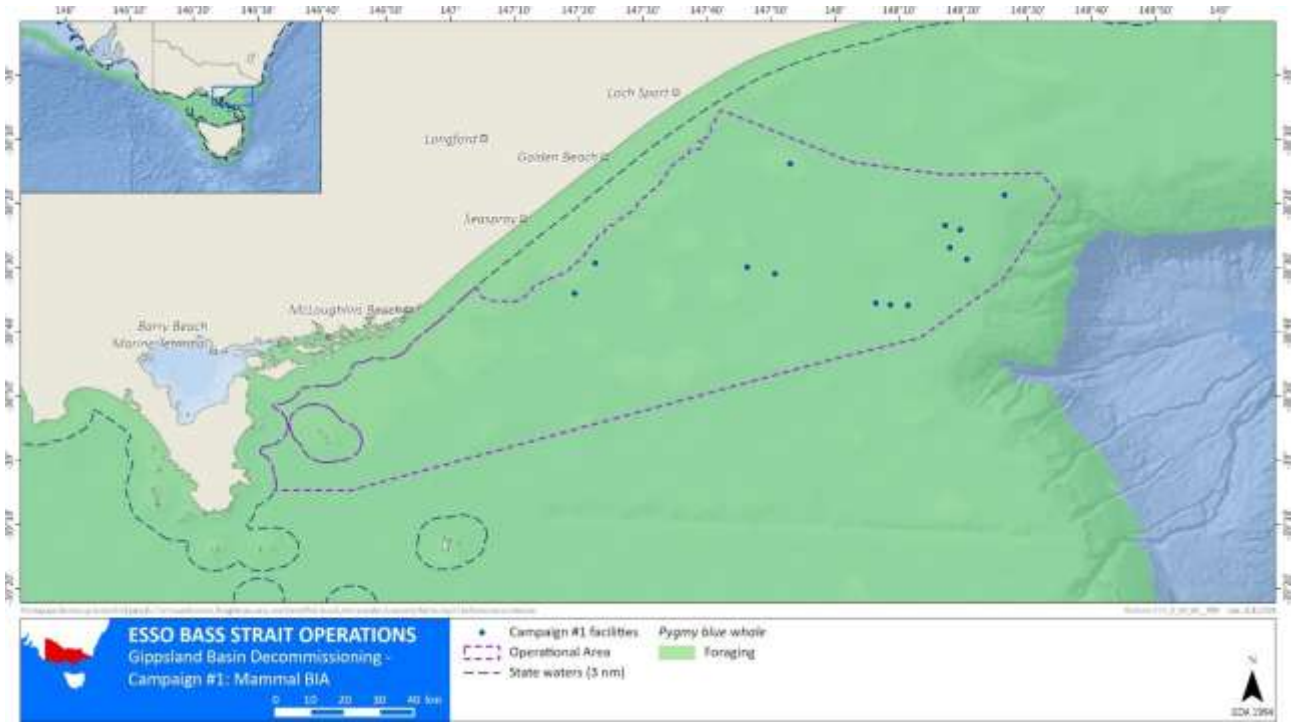


Figure 3-5 Foraging BIA for the PBW overlapped with the OA

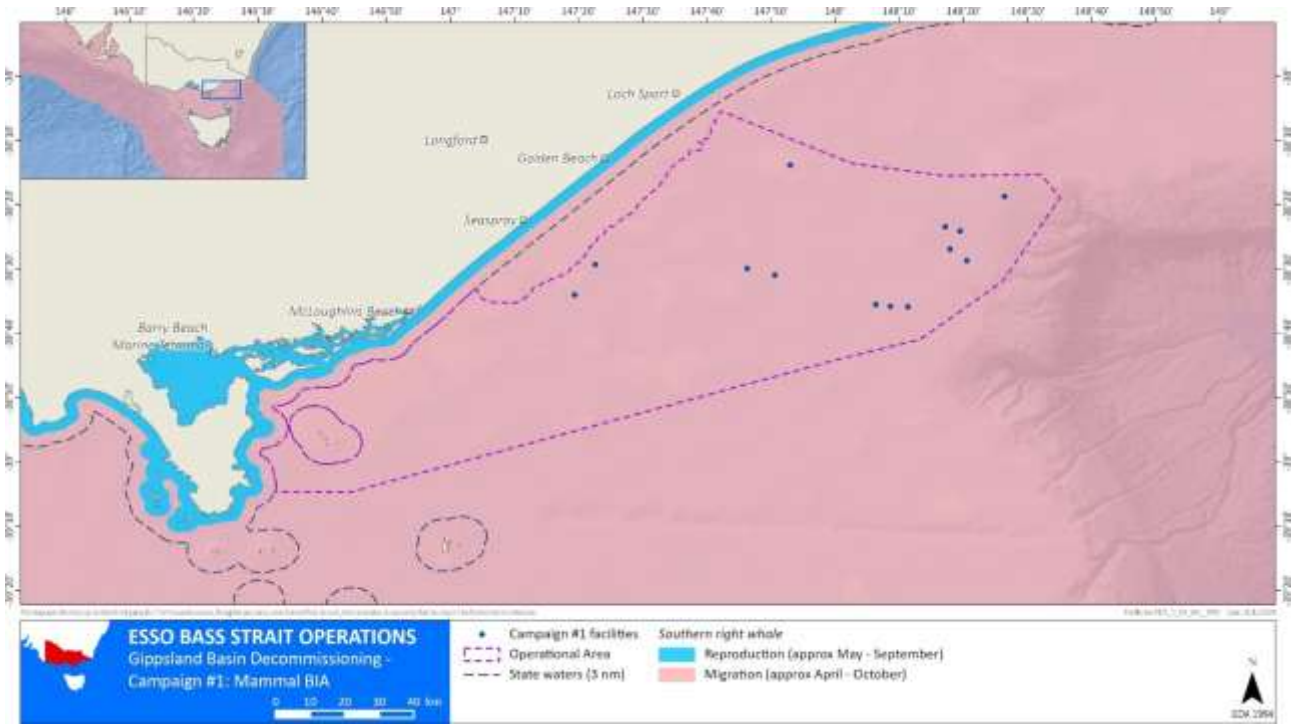


Figure 3-6 Migration BIA for the SRW overlapped with the OA

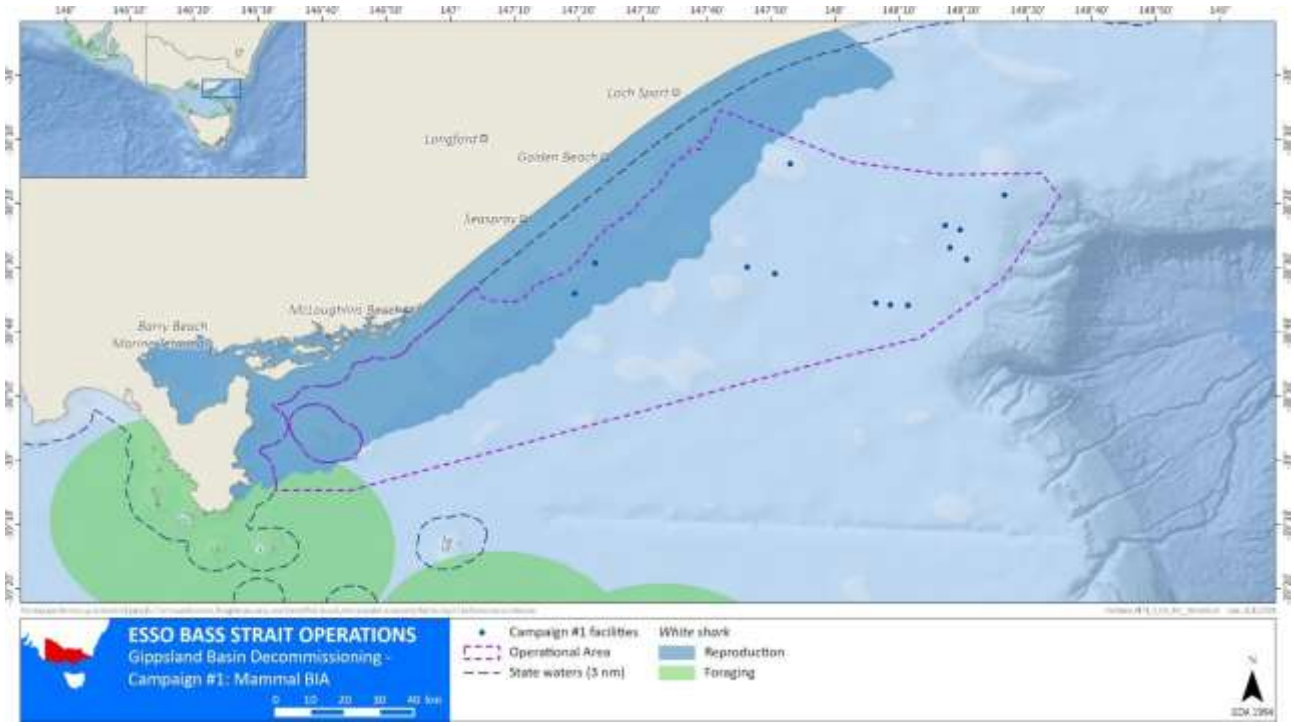


Figure 3-7 Reproduction and foraging BIAs for the white shark overlapped with the OA

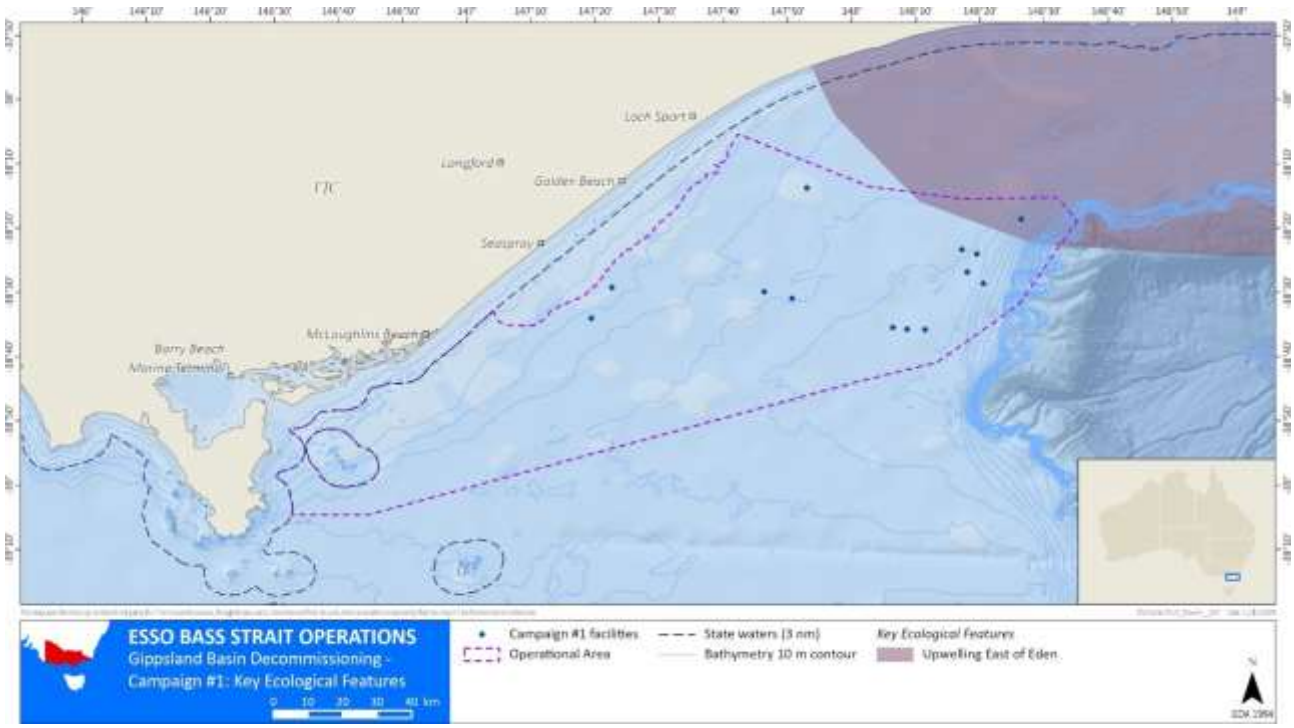


Figure 3-8 KEFs within the OA

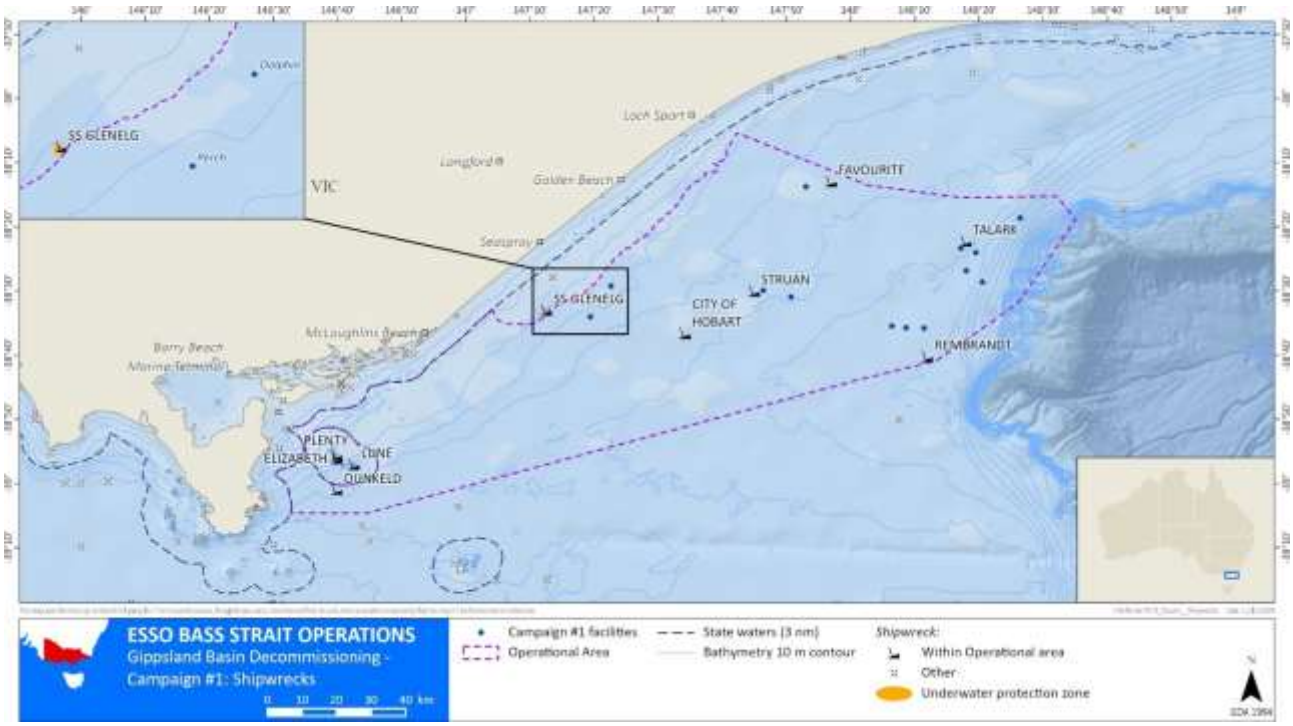


Figure 3-9 Shipwrecks within the OA

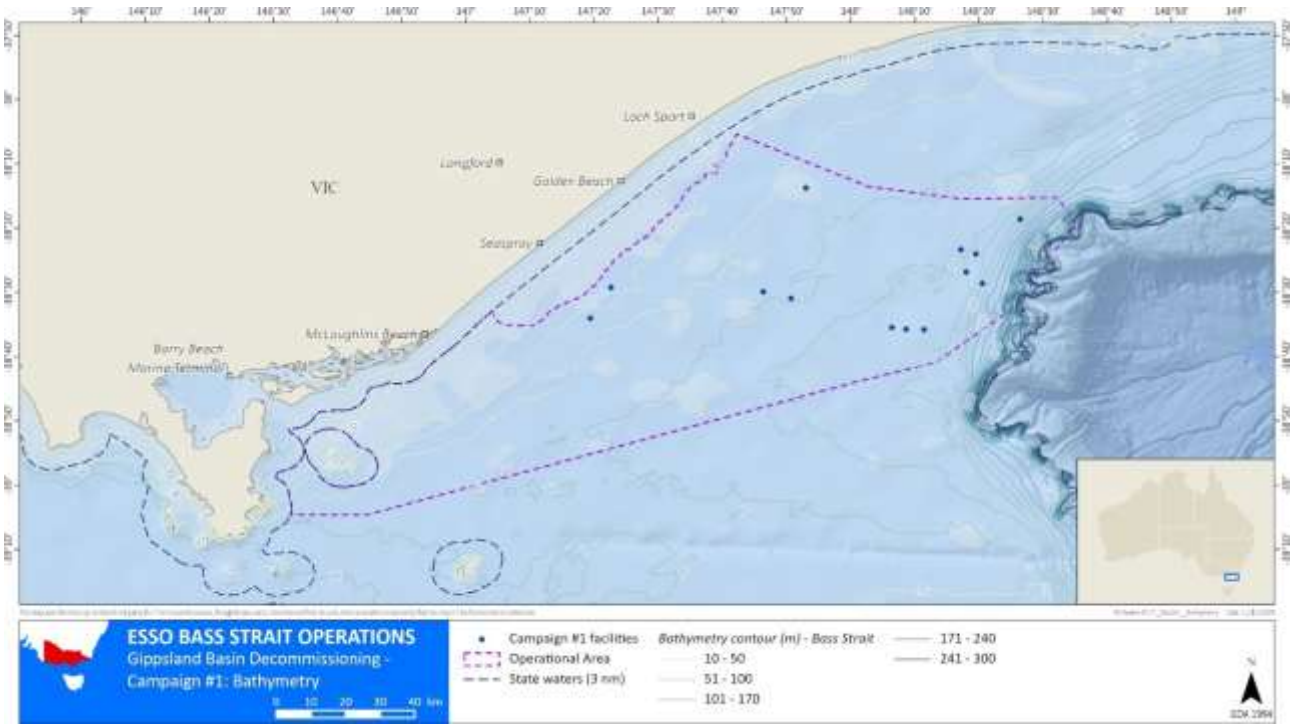


Figure 3-10 Bathymetry within the OA

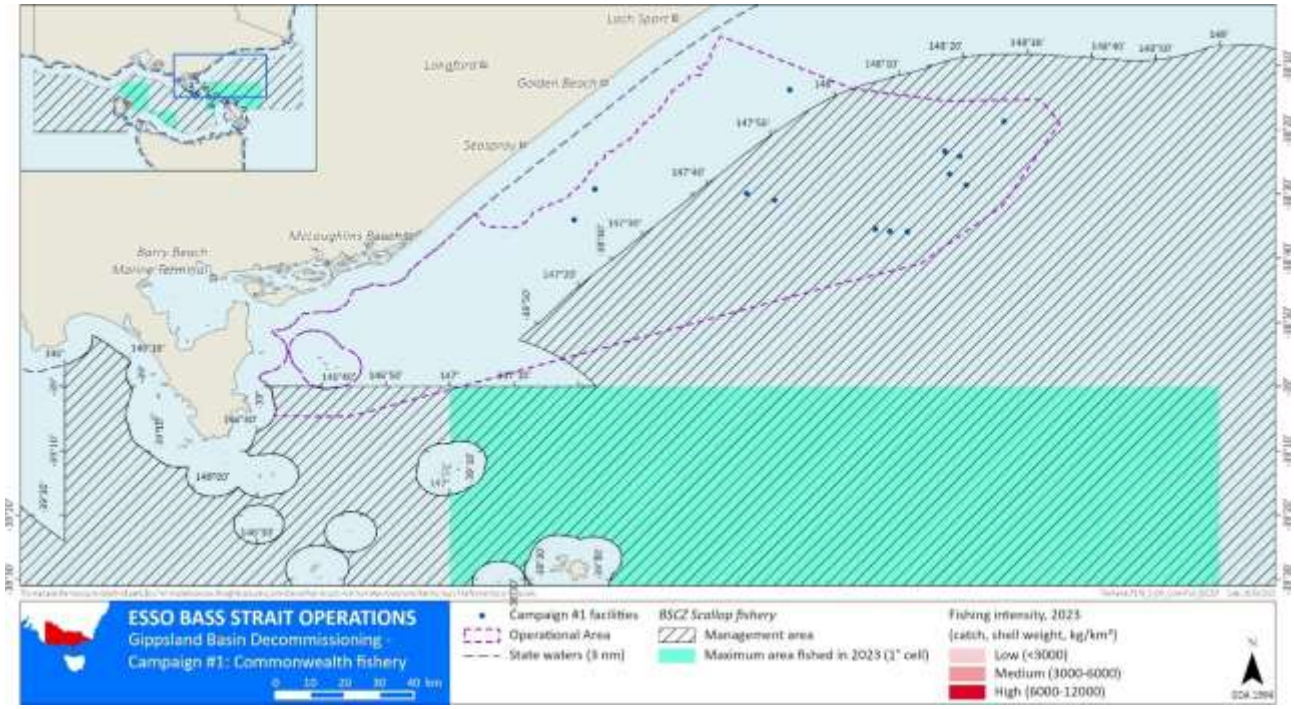


Figure 3-11 BSCZSF jurisdiction and 2023 fishing intensity overlapped by the OA

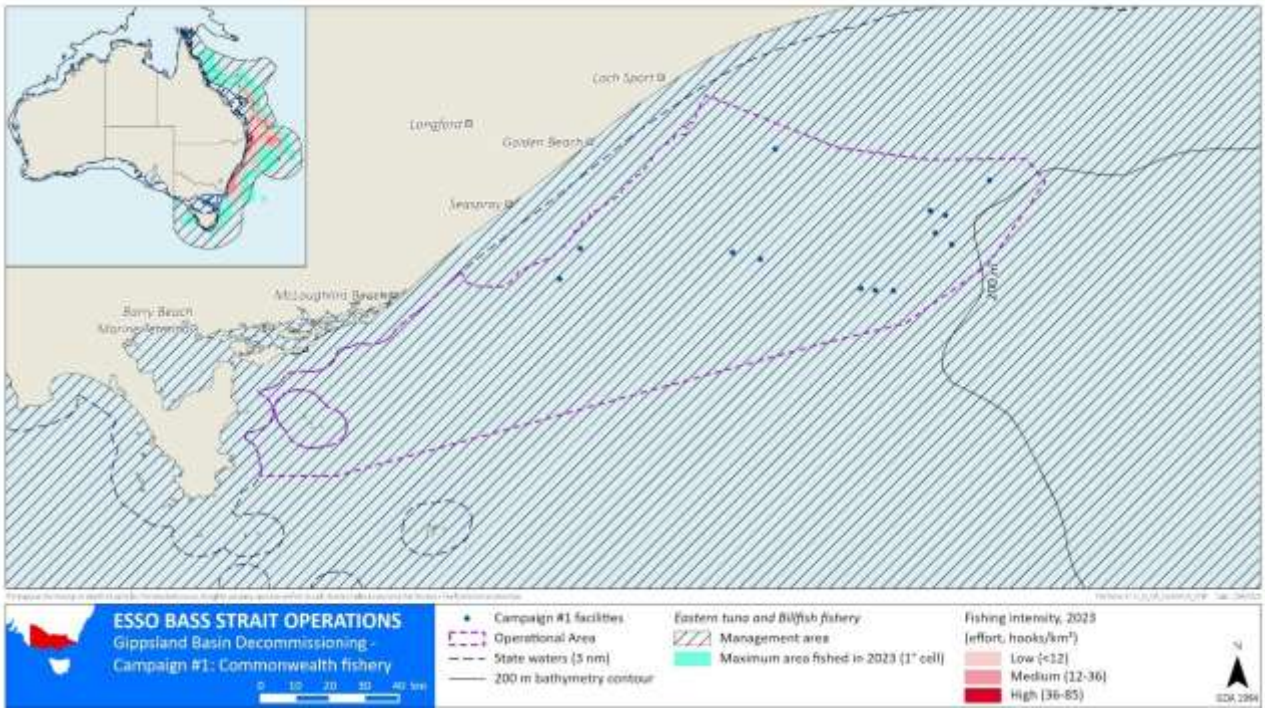


Figure 3-12 ETBF jurisdiction and 2023 fishing intensity overlapped by the OA

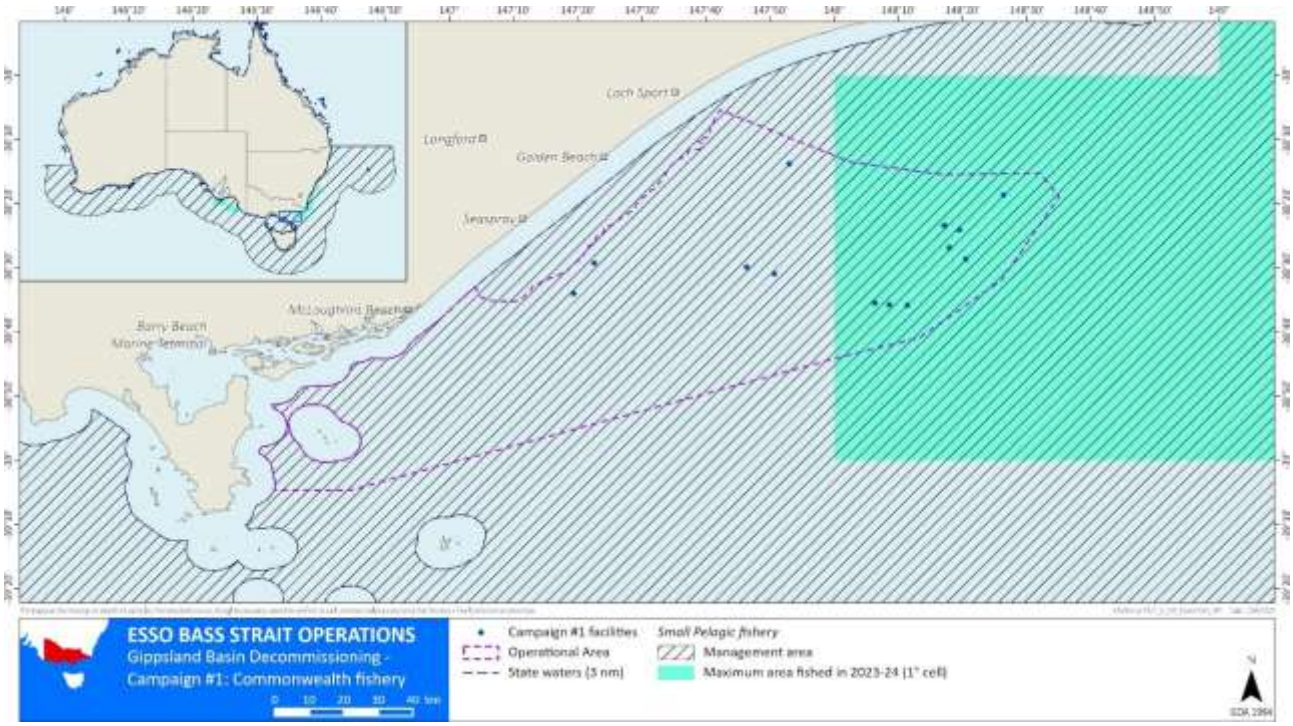


Figure 3-13 SPF jurisdiction and 2023 fishing intensity overlapped by the OA

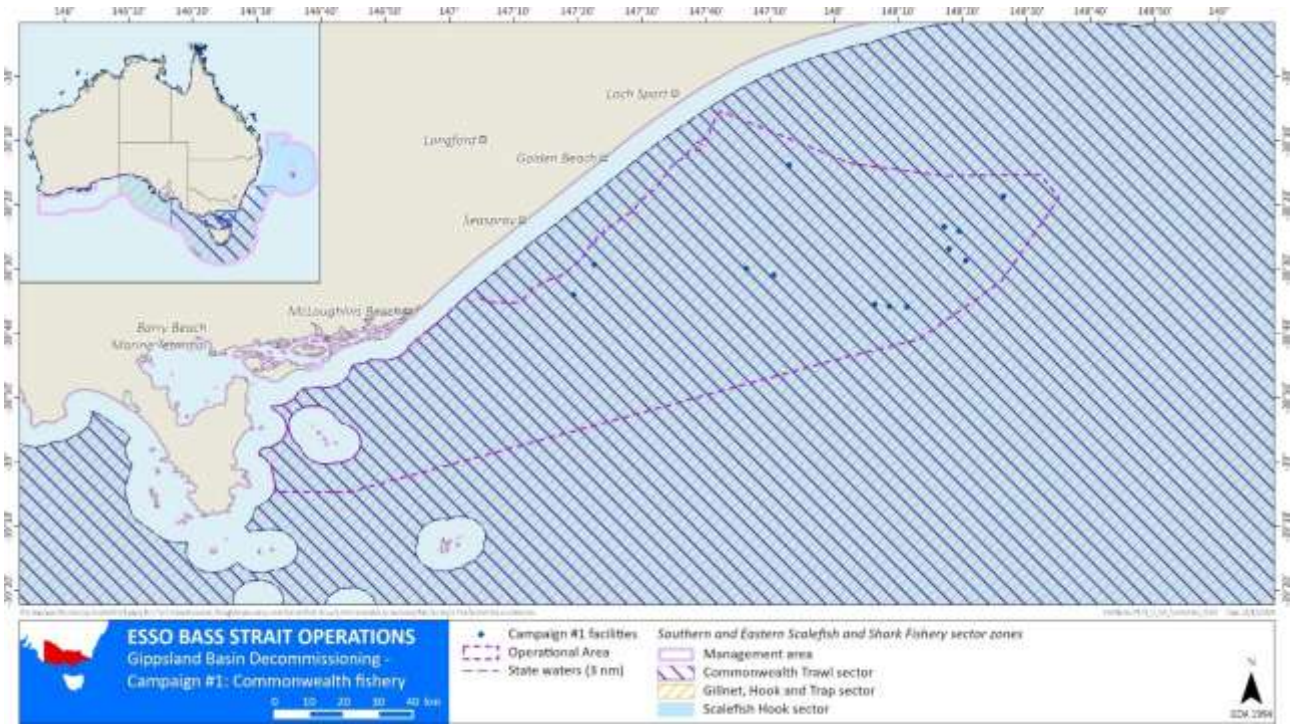


Figure 3-14 SESSF jurisdiction overlapped by the OA

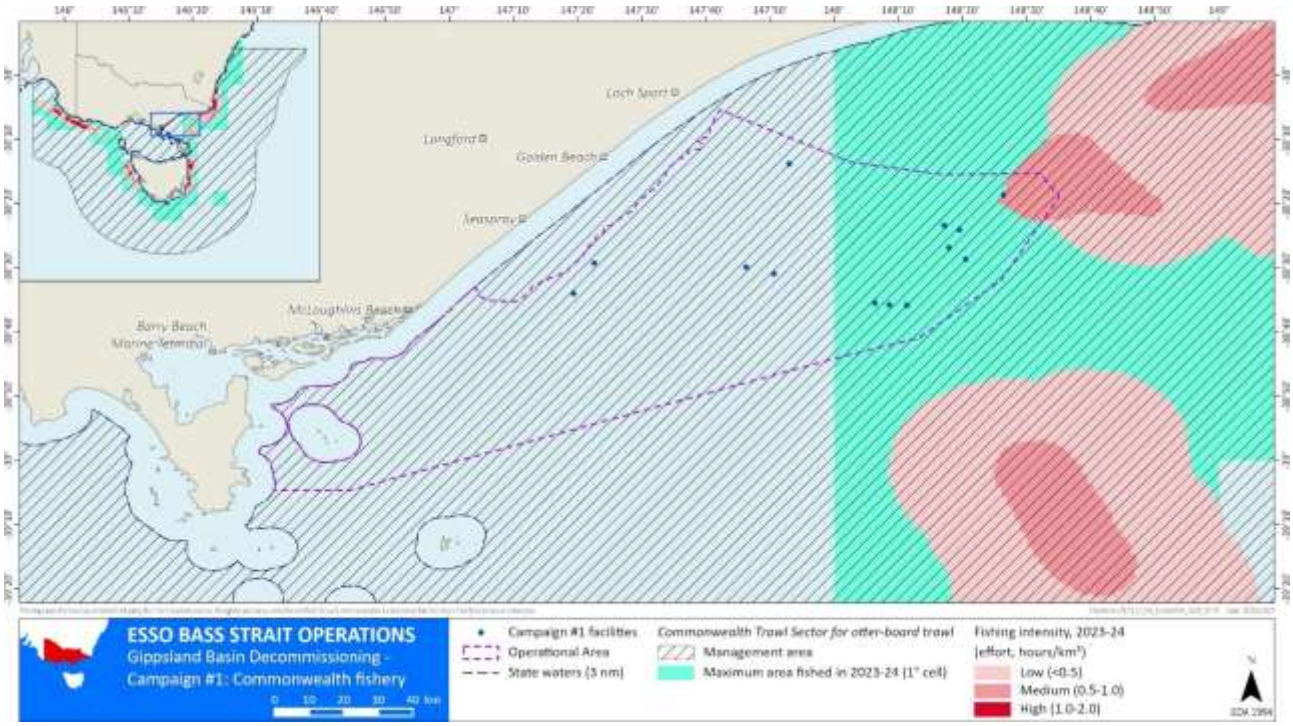


Figure 3-15 SESSF CTS otter-board jurisdiction and 2023 - 2024 fishing intensity overlapped by the OA

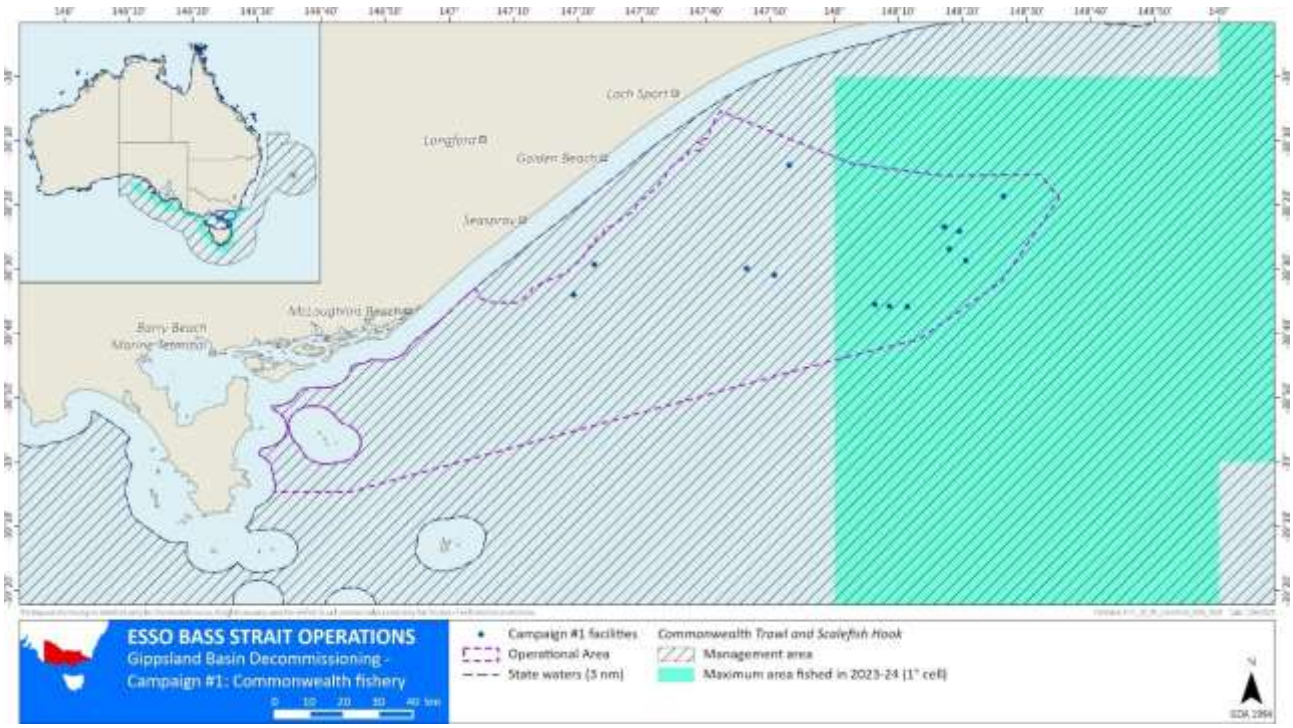


Figure 3-16 SESSF CTS and SHS jurisdiction and 2023 - 2024 maximum area fished overlapped by the OA

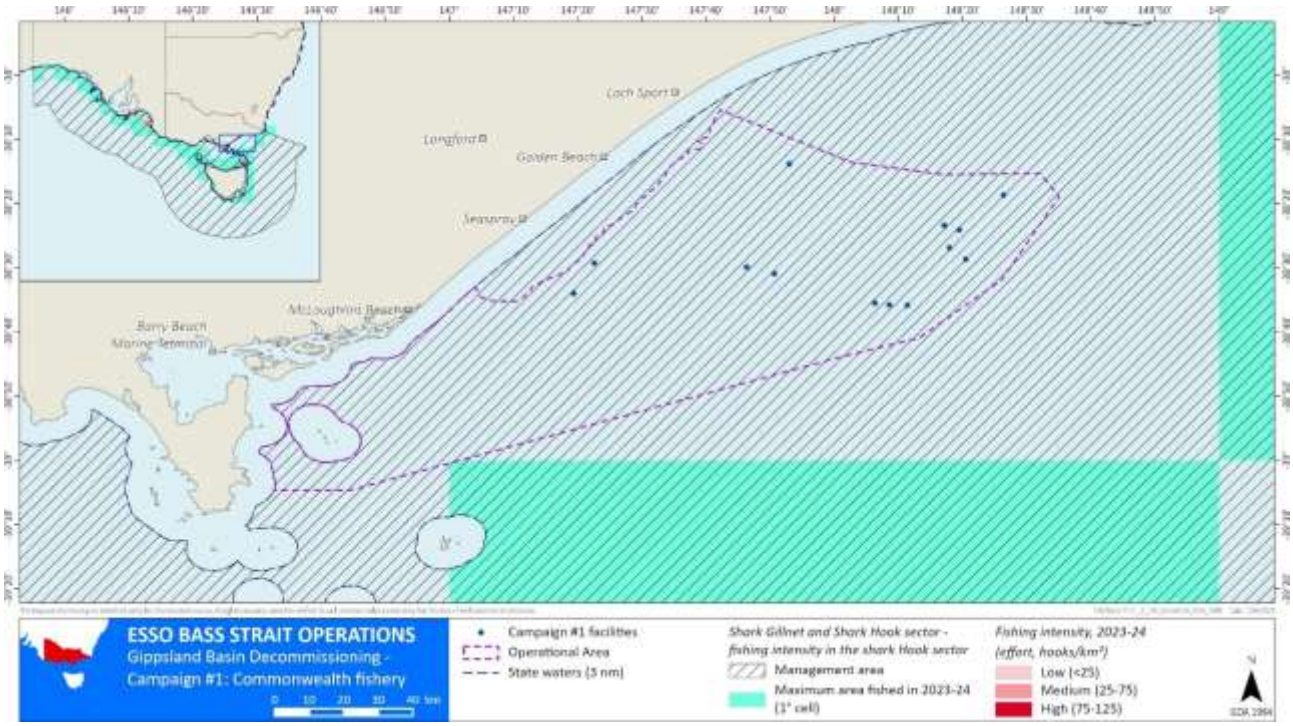


Figure 3-17 SESSF Commonwealth SGSHS – Shark Hook jurisdiction and 2023 – 2024 fishing intensity overlapped by the OA

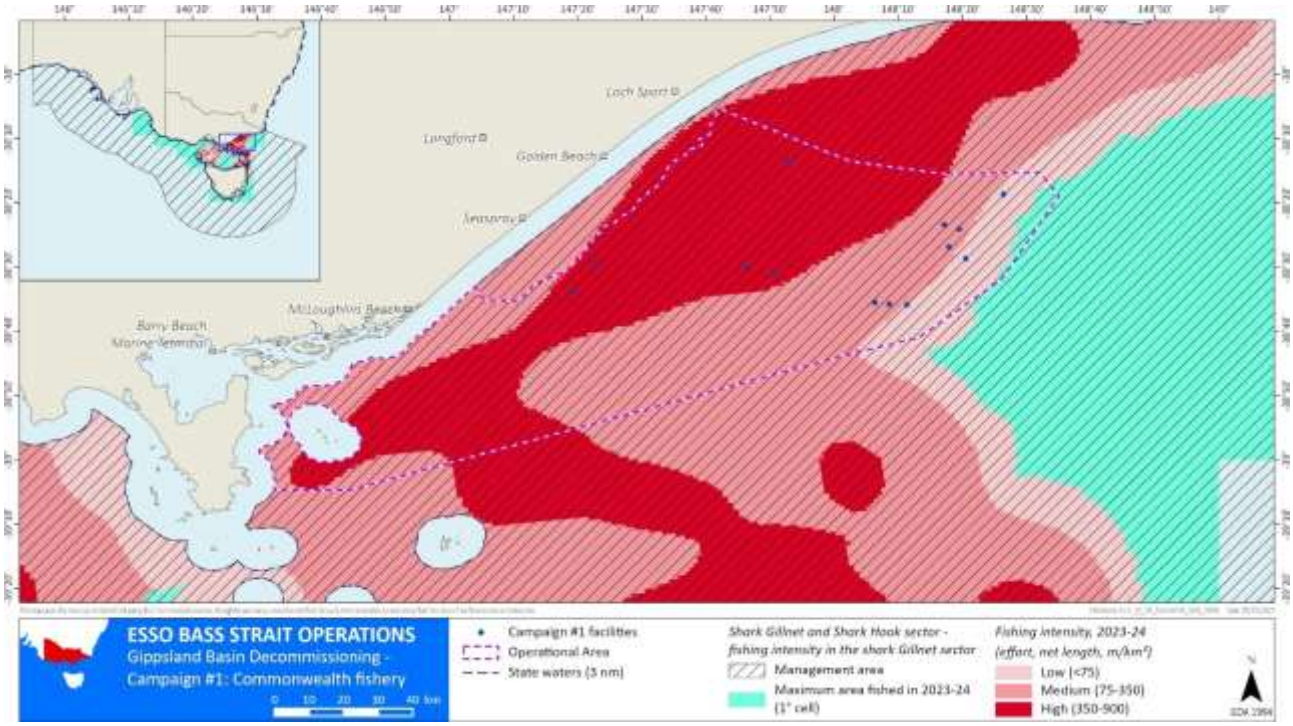


Figure 3-18 SESSF Commonwealth SGSHS - Shark Gillnet jurisdiction and 2023 - 2024 fishing intensity overlapped by the OA

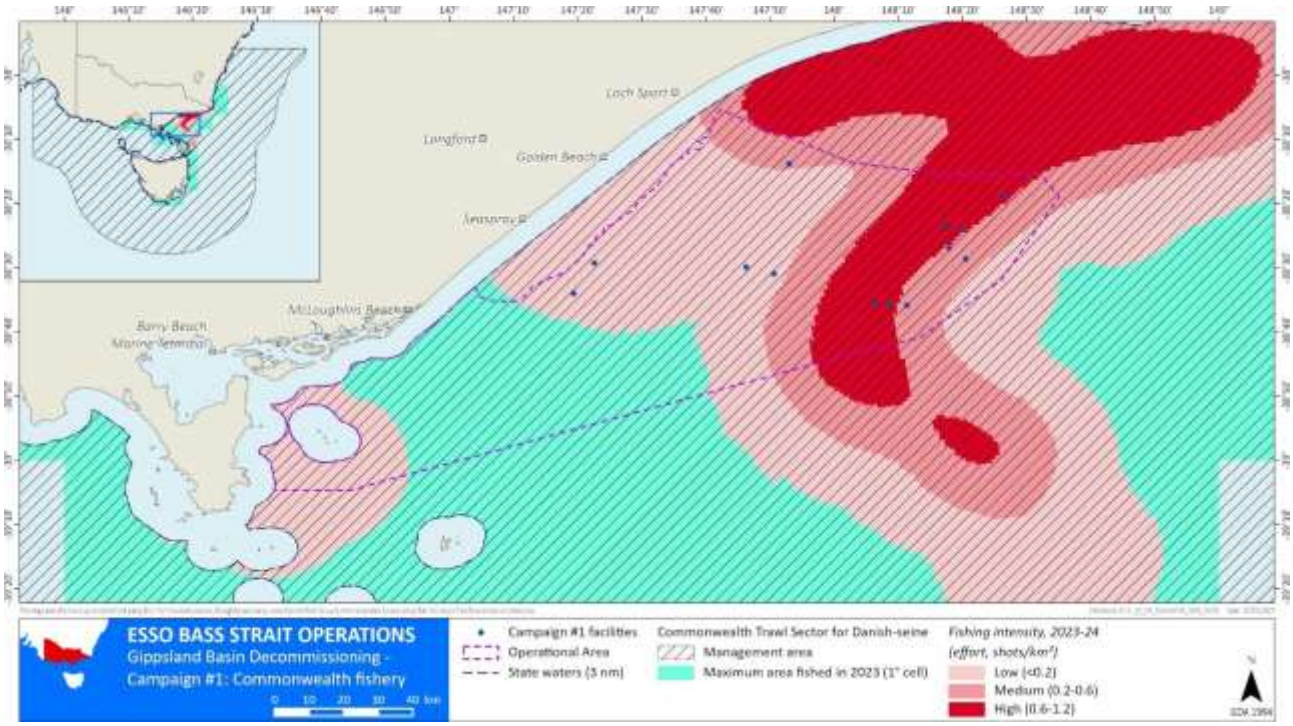


Figure 3-19 SESSF CTS for Danish-seine jurisdiction and 2023 - 2024 fishing intensity overlapped by the OA

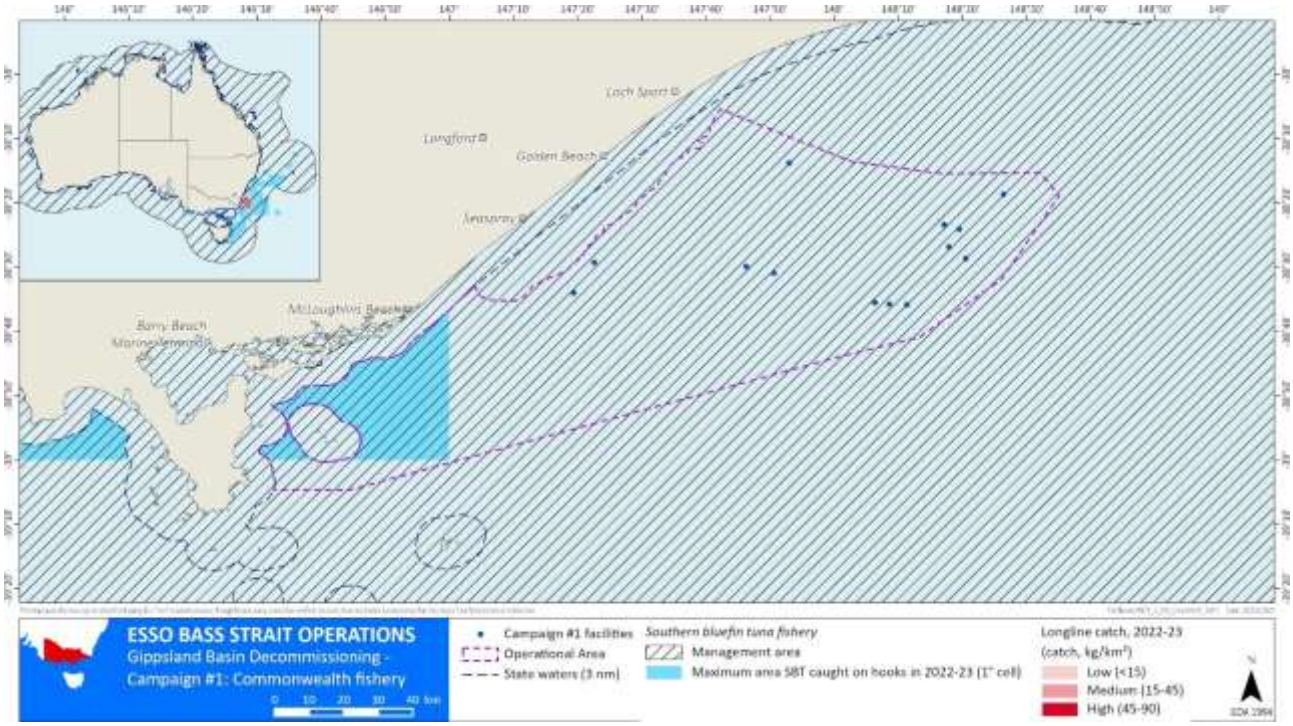


Figure 3-20 SBTF jurisdiction and 2022 -2023 fishing intensity overlapped by the OA

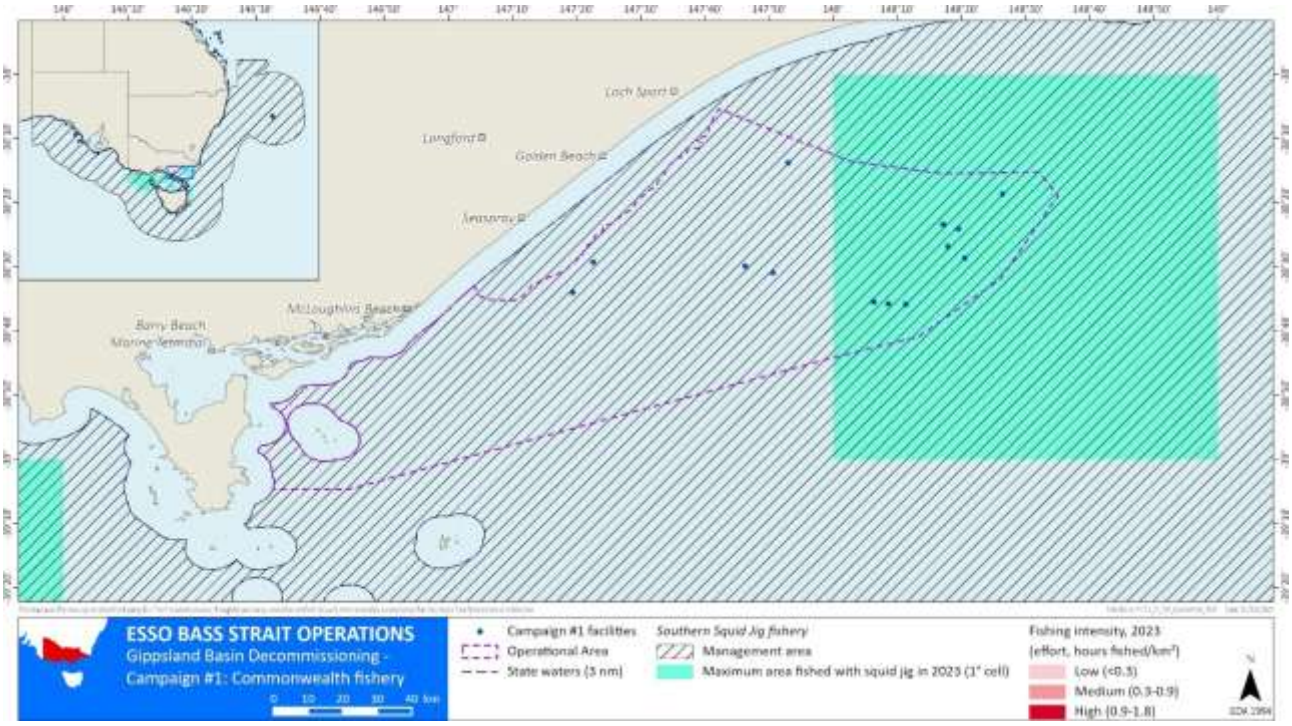


Figure 3-21 SSJF jurisdiction and 2023 fishing intensity overlapped by the OA

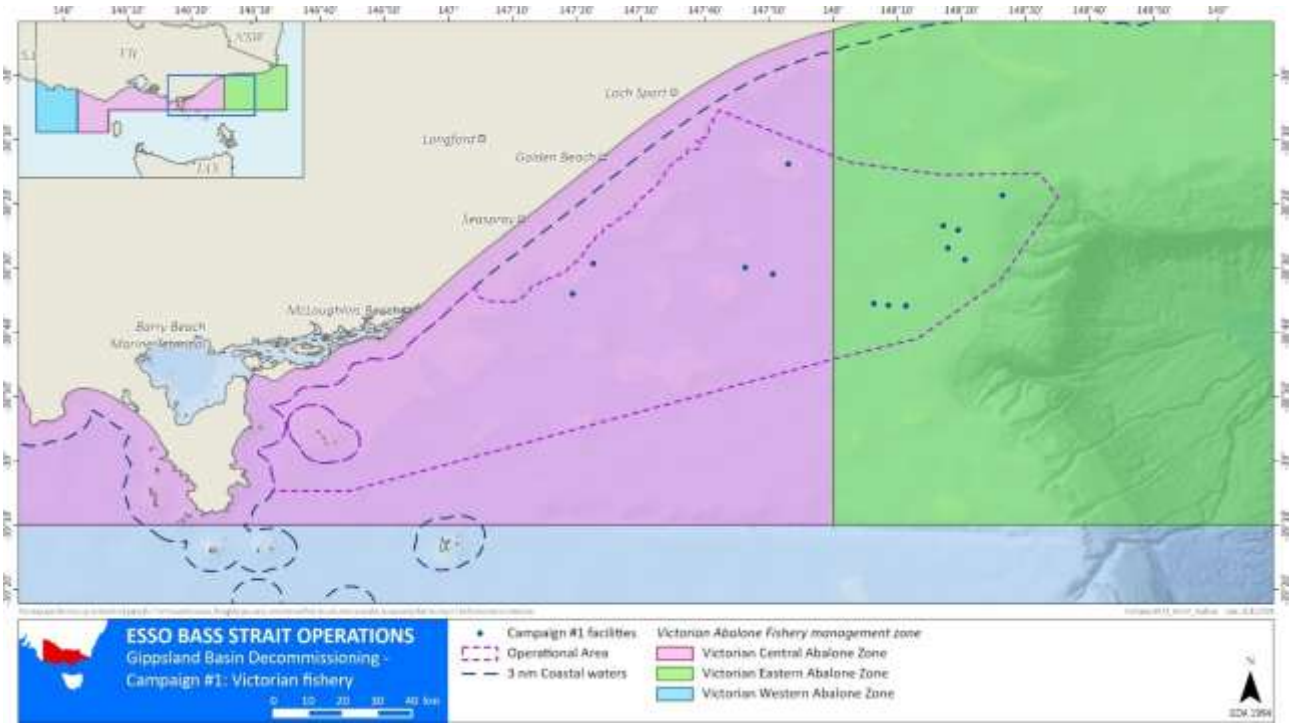


Figure 3-22 Victorian Abalone Fishery overlapped by the OA

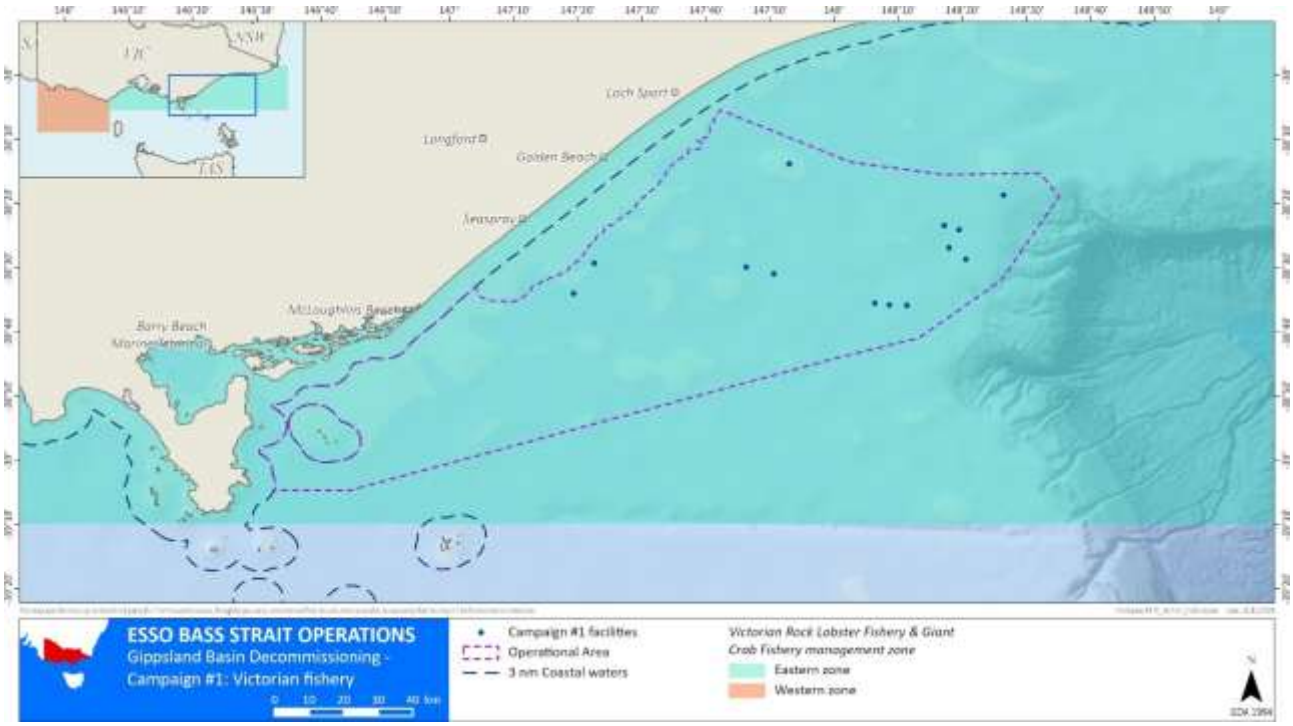


Figure 3-23 Victorian Rock Lobster and Giant Crab Fishery overlapped by the OA

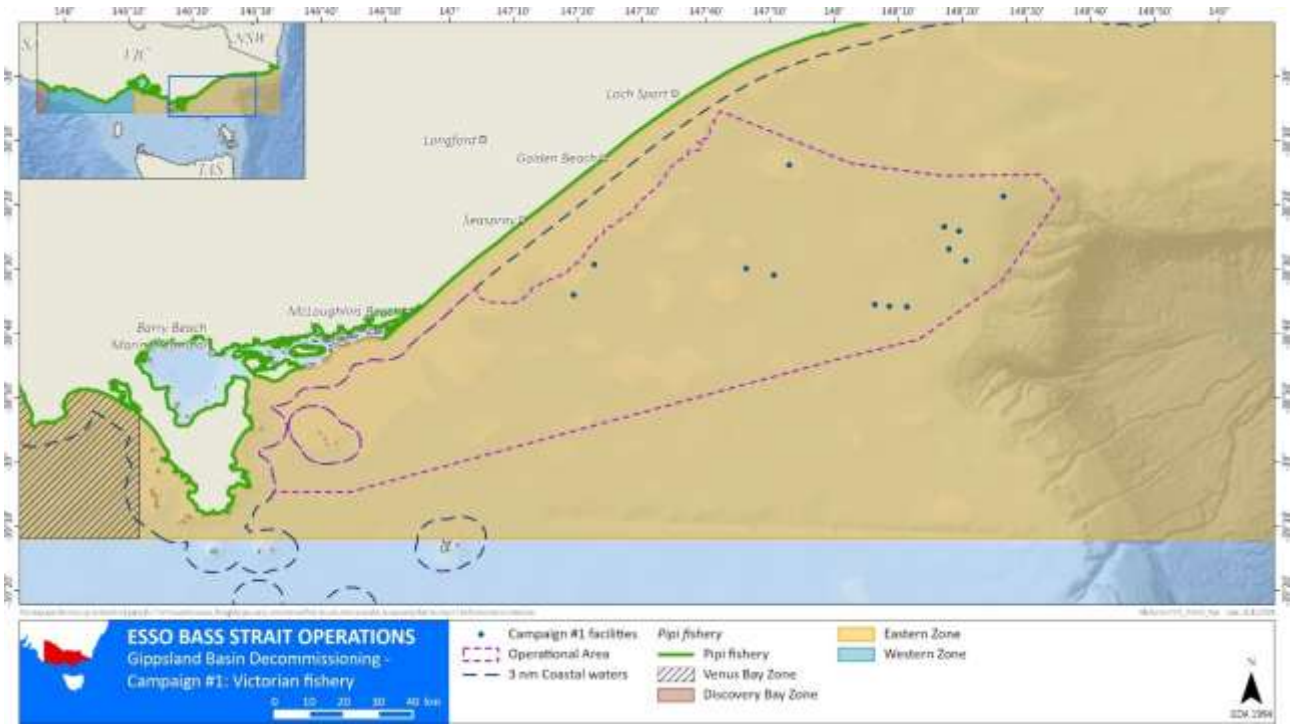


Figure 3-24 Victorian Pipi Fishery overlapped by the OA

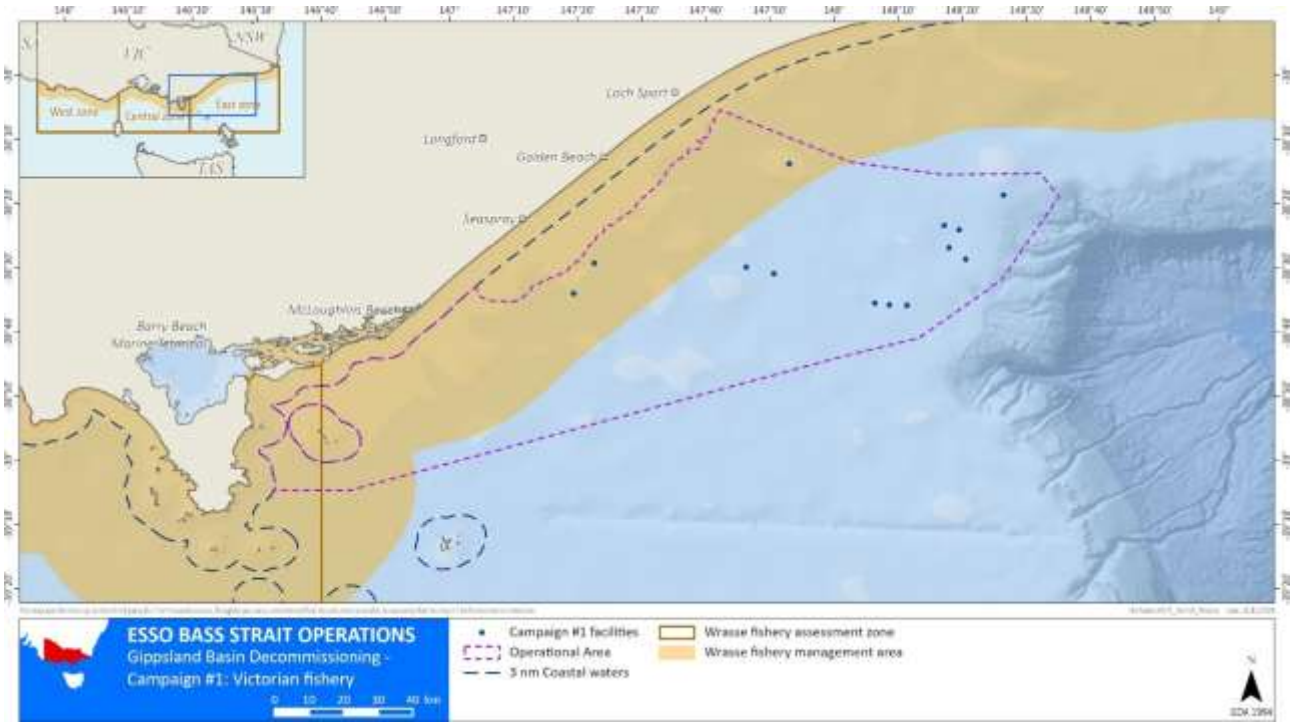


Figure 3-25 Victorian Wrasse Fishery overlapped by the OA

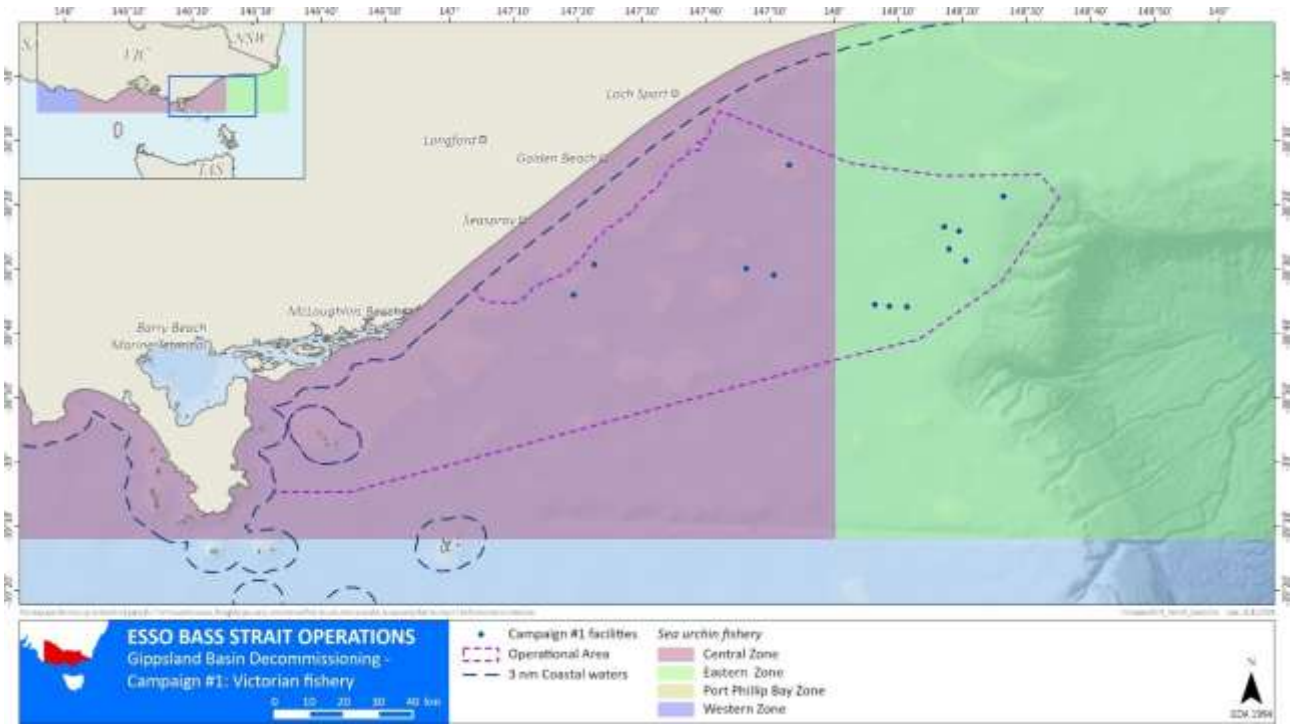


Figure 3-26 Victorian Sea Urchin Fishery overlapped by the OA

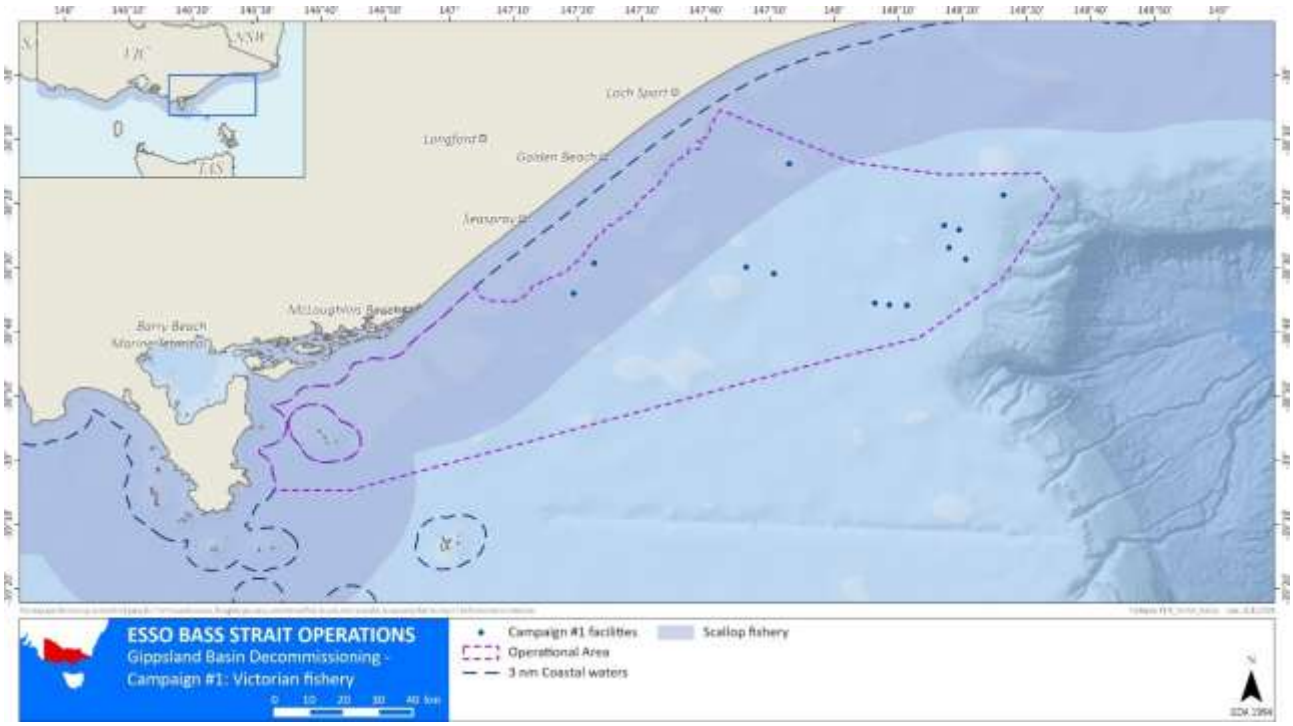


Figure 3-27 Victorian Scallop Fishery overlapped by the OA

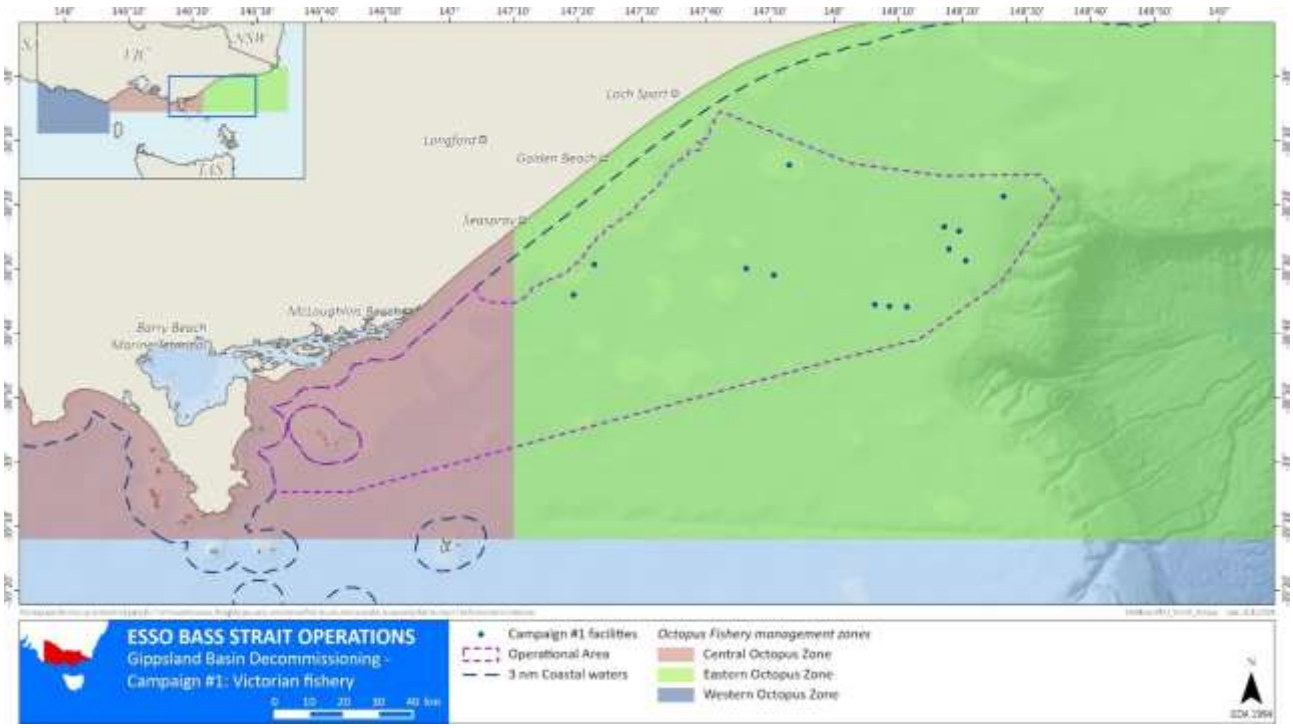


Figure 3-28 Victorian Octopus Fishery overlapped by the OA



Figure 3-29 Tasmanian Lobster, Giant Crab, Scallop Fishery overlapped by the OA

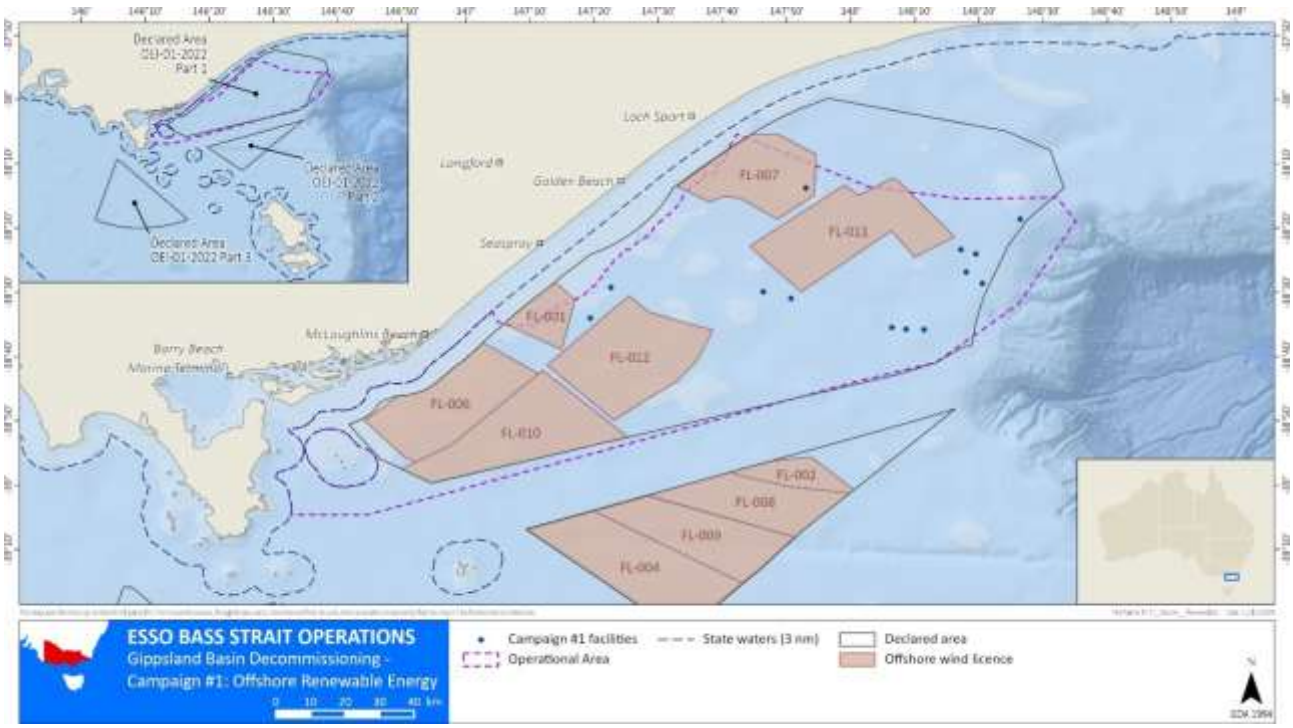


Figure 3-30 Offshore renewable energy declared area and licence areas overlapped by the OA

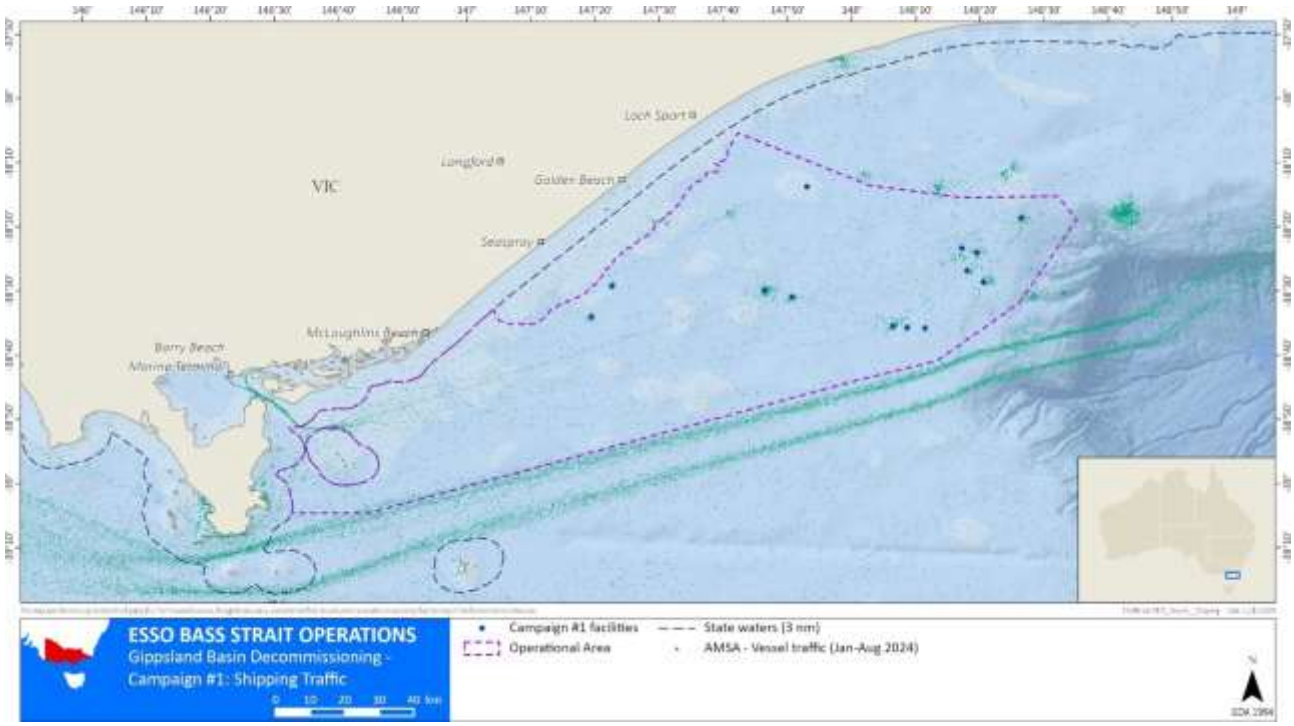


Figure 3-31 Shipping traffic within the OA

4 Relevant persons consultation

Esso has undertaken consultation in the course of preparing this EP in accordance with Regulation 25 of the 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 Environment Regulations.

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

This Section provides the outcomes of consultation conducted up to and including information received by January 2025. During the consultation process, which commenced in December 2023 feedback and requests for further information received have been summarised in Appendix E-2 and incorporated throughout this EP, where relevant.

Over the past 50 years of operations in Bass Strait, Esso has established relationships with relevant persons identified in the *Bass Strait Environment Plan* (AUGO-EV-EMM-012) 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 GHG 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 Section 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 Section 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 EP – 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 objects of Regulation 4 of the Environment Regulations.

Consultation-specific requirements are covered in several of the 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, 2024b), 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 Section 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, 2024a), *Environment Plan decision making* (NOPSEMA, 2024b) and *Environment plan content requirement* (NOPSEMA, 2024c).

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 Regulation 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 Regulation 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 Regulation 25(1)(e). Refer to Section 1.1.1.1.

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

4.1.1.5 Regulation 24

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

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

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 Section 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 and 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* (Cth), 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* (Cth) 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, 2024b), which was revised to incorporate the judgements.

4.1.2 ExxonMobil standards

In accordance with ExxonMobil Operations Integrity Management System (OIMS) System 10: Managing Community Risk, 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 functions, interests 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 provide clear and transparent reporting back to relevant persons in a reasonable timeframe.

Esso acknowledges the Traditional Custodians of Country, and the land and sea upon which our operations are located. We recognise the Traditional Custodians continuing connection to land, sea, culture and community, and pay our respects to Elders past and present. 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, 2024b), which states:

> *"...a connection of traditional owners with sea country may constitute an interest for the purposes of regulation 25(1)(d)".*

Esso continues to identify and attempt consultations with environmental 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 has been followed in preparing this EP.

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 Environment Regulations, including:

- the process for classification of relevant persons based on their functions, interests or activities
- preparation of appropriate consultation materials and forms of consultation for each relevant person identified
- the 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 Regulation 25(1)(d), activities are considered to be what other persons or organisations are already doing.

Term	Definition
ATBA	The boundary 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″ S and then runs southeasterly along the geodesic to the point of latitude 38°34′54.49″ S, longitude 147°44′04.61″ E and then 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 GHG 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.
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	The Environment Regulations defines this as: (a) ecosystems and their constituent parts, including people and communities; and (b) natural and physical resources; and (c) the qualities and characteristics of locations, places and areas; and (d) the heritage value of places; and includes (e) the social, economic and cultural features of the matters mentioned in paragraphs (a), (b), (c) and (d).
Functions	In relation to 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 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 GHG activities to which the EP relates.
OA	The area within which all activities described within this EP will occur. The OA encompasses Commonwealth waters both on title and off title.
Petroleum/GHG activity	A planned offshore petroleum or GHG activity for which an EP is required. This also includes activities undertaken in the event of an emergency condition such as oil spill response.

Term	Definition
Reasonable period	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. 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. 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).
Relevant person	Can be a person, organisation, department or agency that falls within one of the classifications defined by Regulation 25(1) of the 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	Accidental release e.g. loss of containment (LOC) of refined oils (collision) or LOC of reservoir hydrocarbons Covered by the Oil Pollution Emergency Plan (OPEP).

4.2.1.1 Petroleum activity (planned activity)

The 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 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, interest or activity that may be affected by – the planned activity.

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 detail in Section 2 of this EP.

4.2.1.2 Unplanned event/activity (emergency conditions)

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

Persons whose functions, interests or activities are within the 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 information 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: As described in Section 2.1
- Bass Strait ATBA: As described in Schedule 2 of the OPGGS Act
- EMBA: As described in Section 3.2.

4.2.2 Esso's approach to consultation

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

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

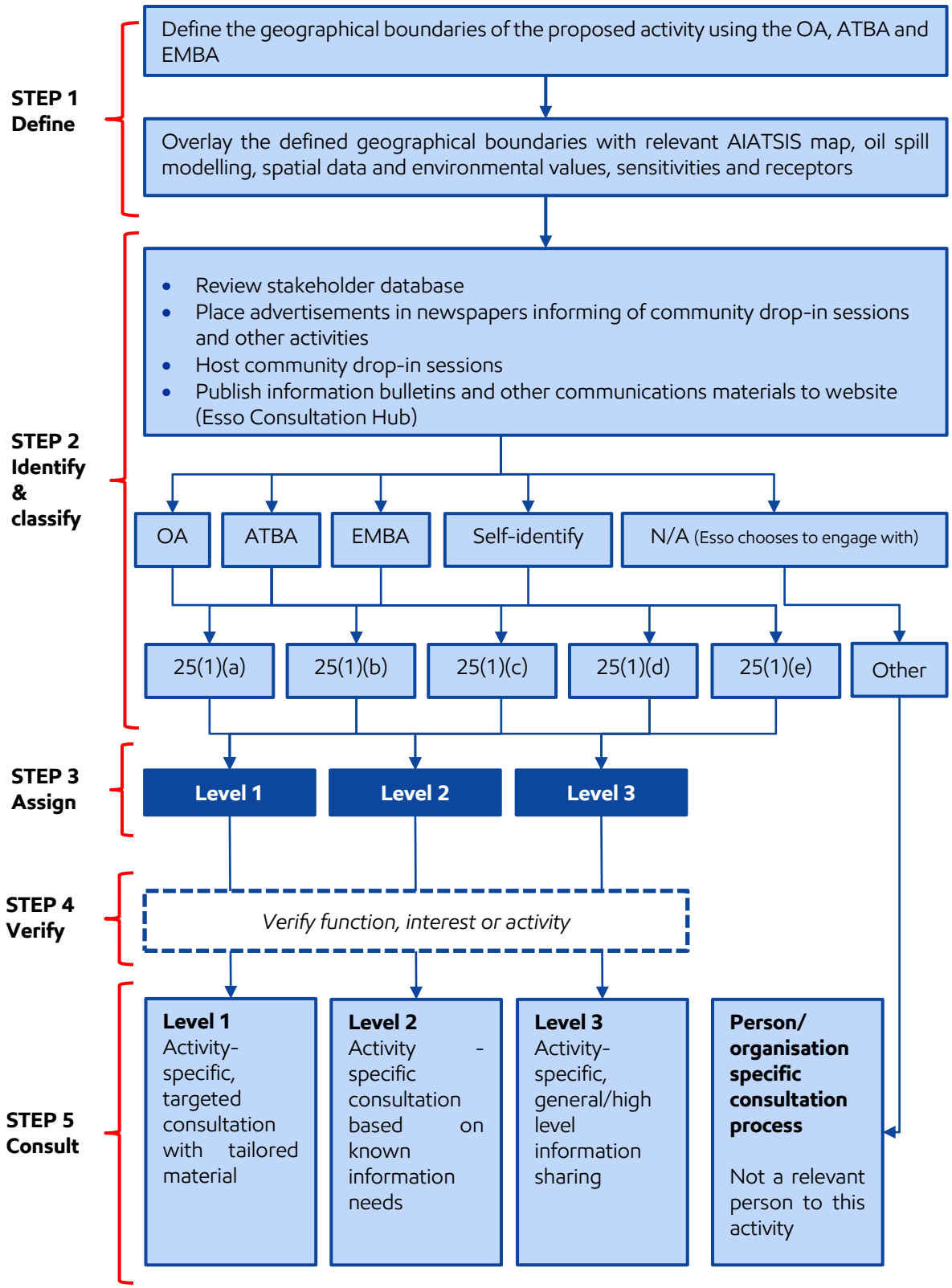


Figure 4-1 Esso's approach to consultation

4.2.3 Step 1 – Define

When preparing for consultation for each new petroleum activity, Esso first identifies the geographic boundaries of the EP. 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 TECs 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, 2024b).

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:

- Regulation 25(1)(a) – Each Commonwealth, State or Northern Territory agency or authority to which the activities to be carried out under the EP may be relevant. 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
- Regulation 25(1)(b) – The Department or the responsible State Minister, if the plan relates to activities in the offshore area or a State
- Regulation 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
- Regulation 25(1)(d) – A person or organisation whose functions, interests or activities may be affected by the activities to be carried out under the EP. 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
- Regulation 25(1)(e) - Any other person or organisation that the Esso considers relevant.
- Specific processes for the identification of relevant persons are outlined in the following Sections.

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

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

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

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

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

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

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

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

4.2.4.2.1 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.

4.2.4.2.2 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 information 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 (formerly APPEA), 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
- conducting a search of the National Electronic Approvals Tracking System to access publicly available information concerning offshore electricity infrastructure licences under the *Offshore Electricity Infrastructure Act 2021* (Cth).

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).

4.2.4.2.3 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, 2024b). 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).

4.2.4.2.4 SPECIFIC IDENTIFICATION PROCESSES FOR CERTAIN GROUPS

4.2.4.2.4.1 COMMONWEALTH AGENCIES WITH RESPONSIBILITIES IN THE MARINE AREA

When developing or revising an EP in accordance with the Environment Regulations, Esso must consult with relevant Australian Government agencies with responsibilities in the Commonwealth marine area. Esso has reviewed NOPSEMA's guidelines on *Consultation with Commonwealth agencies with responsibilities in the marine area* (NOPSEMA, 2024) and applied the guidance to the identification process for relevant persons within Australian Government agencies.

In accordance with the guidance, Esso recognises that while agencies may provide comments or advice on control measures that should be considered by titleholders to manage the potential impacts and risks of a petroleum activity. it is NOPSEMA's role to determine whether proposed control measures are appropriate to the nature and scale of the proposed petroleum activity.

4.2.4.2.4.2 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 Australian Institute of Aboriginal and Torres Strait Islander Studies map of indigenous Australia, overlaid with the geographical information of the OA, ATBA and EMBA, followed by an assessment of whether there will be any impacts from Esso's planned activities affecting the functions, interests or activities. Government resources such as State Government spatial data sets are also utilised to identify potentially relevant Aboriginal Land Councils, Registered Aboriginal Parties and Registered Aboriginal Community Organisations.

The Commonwealth Heritage List (DCCEEW, 2021) 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 IPAs 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 the Gunaikurnai Land and Waters Aboriginal Corporation (GLaWAC) and the Kurnai Clans as a Level 1 relevant person to allow opportunity to discuss Sea Country in the development of future EPs.

4.2.4.2.4.3 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.

4.2.4.2.4.4 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 (text message) 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 chartered vessel 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.

4.2.4.2.4.5 OFFSHORE WIND INDUSTRY

In December 2022, the Minister for Climate Change and Energy declared the offshore Gippsland area in Victoria (Commonwealth area only) as suitable for offshore electricity infrastructure. This declaration does not grant exclusive rights to use the area. As of July 2024, the Australian Government has granted 12 feasibility licences for offshore wind projects off Gippsland's coast in Victoria (DCCEEW, 2024).

Esso began consultation in July 2024 to establish if these offshore wind licence holders' feasibility stage functions, interests or activities have the potential to be affected by the activities outlined in this EP and may be relevant persons.



Figure 4-2 Victoria's offshore wind zone

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, 2024b). 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 information 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 Environment Plan* (AUGO-EV-EMM-012) 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 has 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 EMBA overlap with a known fishery
- the functions, interests and activities of the person(s) or organisation
- persons or organisations known to Esso and previously recorded in the stakeholder database
- relevant persons/organisation's known preferred methods of communication and any specific information needs

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

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

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

4.2.6 Step 4 – Verify

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

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

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

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

4.2.6.1 Verifying functions, interests and activities

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

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

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

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

In some cases, relevant persons have developed guidance detailing their own functions, interests or activities and how and when they wish to be consulted on activities (NOPSEMA, 2024b), 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, 2024b).

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, 2024b). 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. Esso may also determine this level of consultation appropriate if it is demonstrated that a stakeholder's functions, interests or activities are impacted by the proposed activity and are not within a geographical boundary.

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. This may require consultation over an extended period of time.

Consultation Level 2 is generally applied to relevant persons whose functions, interests or activities are located in the ATBA of the planned activity. Esso may also determine this level of consultation appropriate if it is demonstrated that a stakeholder's functions, interests or activities are impacted by the proposed activity and are not within a geographical boundary.

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.

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 information 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 EPs activity.

In the case that a response is received following the submission of this EP, the response will be considered for any implications to the proposed activity and clearly communicated to the relevant person.

4.2.10 Consultation reporting

Esso maintains a Gippsland-wide stakeholder 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, which commenced in December 2023 and concluded in January 2025, relevant persons provided feedback on various topics including both onshore and offshore activities. Feedback specific to the activities of this EP have been summarised in Appendix E-2 and incorporated throughout the EP, where relevant.

4.3.1 Step 1 - Define

For Campaign #1 activities, Esso has outlined the following specifications, which were the basis for determining the anticipated key functions, interests and activities of each relevant person's category and defining criteria to determine categorisation as a relevant person within the scope of this EP:

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

Activities included in the scope of this EP include:

- preparatory works at Campaign #1 facilities
- removal of the PCA and DPA monotowers to seabed
- removal of WTA and BMA topsides and jackets, as close as practicable to seabed to a maximum of 3m above seafloor with deep foundation piles to remain
- removal of topsides and upper jacket sections at MKA, WKF, FLA, CBA, KFA and KFB, to a depth of at least 55m below MSL
- the FTA facility has two options for removal:
    - FTA Option 1: Removal as close as practicable to seafloor to a maximum of 3m above seafloor, with deep foundation piles to remain
    - FTA Option 2: Removal to a depth of at least 55m below MSL

- removal of the BMB topsides and module support frame only. The BMB CGS will remain in place and navigational aids will be installed to the remaining CGS
- the option to remove HLA topsides, upper jacket section to a minimum of 55m below MSL and strut to the lower junction connection at the seabed template
    - the option to remove HLA is contingent on a number of operational and logistics conditions that will need to be met within the required Campaign #1 timeframes. If not able to be achieved in Campaign#1, decommissioning of HLA will be performed as part of a future campaign
- the option to remove CBA conductors or other facility conductors should this not be achieved prior to Campaign #1 during P&A
- the option to remove conductor stubs as necessary for FTA, BMA and WTA
- post removal as left survey.

Therefore, in determining who is a relevant person for consultation, Esso sought to identify and consult with persons whose functions, interests or activities could be affected by the activities described in Section 2 of this EP.

4.3.2 Step 2 - Identify and classify

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

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

To identify relevant persons in accordance with Regulation 25(1)(a) - (c), Esso used 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) - (c) 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: • activity description • scope • geographic location.
Actively seek out new relevant persons	
Regulation 25(1)(a) - (c)	Search for any Commonwealth or State departments, agencies or ministers related to any of the values and sensitivities listed in Section 3.3 and located in either the OA, ATBA or EMBA.

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

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

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

Method	Description
Relevant persons previously identified for other activities	
Review of Esso's existing relevant person database	Identify existing relevant persons based on Regulation 25(1)(d) and: • area of planned activities and geographic location of potentially affected areas from unplanned activities. • reasonably ascertainable functions, interests or activities

Method	Description
	• 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	Advertised community information sessions in Indigenous media e.g. Koori Mail. Maintained Esso Consultation Hub including information bulletin and Esso Consultation Questionnaire provided to all First Nations identified in the EMBA. Identified potentially relevant First Nations peoples are identified using the Australian Institute of Aboriginal and Torres Strait Islander Studies map of indigenous Australia, overlaid with the geographical information of the OA (and EMBA if applicable). Utilised Government resources such as State Government spatial data sets to identify potentially relevant Aboriginal Land Councils, Registered Aboriginal Parties and Registered Aboriginal Community Organisations. Continued engagement with GLaWAC.
Community sessions	Considered the attendees of community information sessions.
Recommendations	Considered 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 3.3. 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 *Koori Mail*.
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.
Offshore Wind Industry	Search of the National Electronic Approvals Tracking System to access publicly available information concerning offshore electricity infrastructure licences under the *Offshore Electricity Infrastructure Act 2021* (Cth).
Professional conferences	Attended/staffed booths at relevant industry conferences.
Self-identification	

Method	Description
Broad-based information sharing	Relevant persons self-identify in response to Esso's broad-based information sharing mechanisms, such as the Esso website, *Connection* 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 identify any other persons or organisations that Esso considers to be 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.

Esso has considered community members as relevant persons where the individual has:

- registered and attended Community Information Session on this activity, OR
- completed Esso Consultation Questionnaire and selected to be consulted of this activity, OR
- contacted Esso independently (email/phone) and nominated as relevant to this activity.

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. 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 Campaign #1 activities, include:

- the various locations of the OA's
- the OAs are within the 500m PSZ
- the well sites are located within existing Commonwealth fisheries that may be used by commercial fishers
- the 500m PSZ will be communicated to the commercial fishing organisations
- there may be recreational fishing in the area but unlikely to be significant given the closeness of the Traffic Separation Scheme
- the duration of the work, estimated to be up to 13 days per platform, timing at each location will differ depending on the work scope
- there is no known Sea Country mapping currently available
- relevant government departments are known
- the functions, interests and activities of the relevant person(s) or organisations identified and their known preferred methods of communication
- Esso's relationship with the relevant person or organisation e.g. when did Esso last engage with them? On what topic? What are their levels of interest? Is Esso currently consulting with them on other activities?
- the environmental values and sensitivities have been assessed in the impact and risk assessment as Risk Category 3 or 4 per Section 5 and 6 of this EP

- if the relevant person/organisation can provide input to the design of the or management of the planned activities have been identified.

A complete list of all identified relevant persons, their assigned consultation Level and the justification for the consultation Level, as per the process outlined in Section 4.2.5 is provided in Appendix E-1.

4.3.4 Step 4 - Verify

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

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

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

Table 4-4 Relevant person representatives

Relevant person	Representative for
SETFIA	Incorporated association representing commercial fishers in Commonwealth South East Trawl Sector; SHS; Shark Hook, Shark Gillnet Sectors; small pelagic fishery.
SIV	Representative peak body for the Victorian seafood industry, from professional fishers, through to wholesalers, processors, and retailers, predominately in State waters.
LEFL	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.
GLaWAC	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* (Vic).
Game Fishing Association of Victoria (GFAV)	Governing body for Game Fishing in Victoria affiliated with the Game Fishing Association of Australia and the International Game Fishing Association.

4.3.5 Step 5 – Consult

Esso has been engaging with Stakeholders to discuss decommissioning activities since 2020. For the activities specific to Campaign #1, consultations began in December 2023 using various methods and continued until January 2025.

4.3.5.1 Consultation timing

For the nature and scale of the activity described in this EP, Esso determined that 60 business 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 60 business days. Esso has met the requirement to provide a reasonable period for consultation.

4.3.5.2 Provision of sufficient materials

Esso developed three information bulletins as outlined in Table 4-5 and presented in Appendix F 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. The information bulletins were shared with stakeholders via email, face-to-face and were made available on the Esso Consultation Hub.

Table 4-5 Campaign #1 information bulletin issue dates

Information bulletin		Date	Details
Information Bulletin #1 (Appendix F-1)	Decommissioning Campaign #1 Project Update (March 2024)	28 March 2024	Campaign #1 update, activity timing, activity location.
Information Bulletin #2 (Appendix F-2)	Decommissioning Campaign #1 Environmental impacts and risks (June 2024)	1 July 2024	Potential impacts and risks, ORC.
Information Bulletin #3 (Appendix F-3)	Decommissioning Campaign #1 Impacts and risks update (September 2024)	30 September 2024	Key impacts and risks following completion of the impacts and risks workshop.
Information Bulletin #4 (Appendix F-4)	Decommissioning Campaign #1 ORC update (December 2024)	13 December 2024	Campaign #1 update, activity timing, activity location. Potential impacts and risks.

All information bulletins remain accessible via the Esso Consultation Hub.

In addition to the provision of information bulletins, Esso undertook the consultations shown in Table 4-6 with all relevant persons.

Table 4-6 Consultations undertaken with all relevant persons

Date	Summary of consultation
14 February 2024	Email to stakeholders advising of several offshore activities proposed by Esso including decommissioning.
28 March 2024	Email to stakeholders advising of several offshore activities proposed by Esso including decommissioning.
28 March 2024	Email to EMBA stakeholders advising of several offshore activities proposed by Esso including decommissioning.
10 April 2024	Email to stakeholders to provide Esso Australia: 2023 Annual Decommissioning Report.
25 April 2024	Email to stakeholders advising of several offshore activities proposed by Esso including decommissioning.
14 May 2024	Email to stakeholders advising of several offshore activities proposed by Esso including decommissioning.
14 May 2024	Email to EMBA stakeholders advising of several offshore activities proposed by Esso including decommissioning.
11 June 2024	Email to stakeholders advising of several offshore activities proposed by Esso including decommissioning.
12 June 2024	Email to stakeholders advising of several offshore activities proposed by Esso including decommissioning.

Date	Summary of consultation
11 June 24	Email to EMBA stakeholders sent advising of several offshore activities proposed by Esso including decommissioning.
12 June 2024	Email to EMBA stakeholders advising of several offshore activities proposed by Esso including decommissioning.
6 July 2024	Email to stakeholders advising of several offshore activities proposed by Esso including decommissioning.
6 July 2024	Email to EMBA stakeholders advising of several offshore activities proposed by Esso including decommissioning.
9 July 2024	Email to EMBA stakeholders advising of several offshore activities proposed by Esso including decommissioning.
11 July 2024	Email to stakeholders advising of several offshore activities proposed by Esso including decommissioning.
15 July 2024	Email to stakeholders advising of several offshore activities proposed by Esso including decommissioning.
15 July 2024	Email to stakeholders advising of several offshore activities proposed by Esso including decommissioning.
13 August 2024	Email to stakeholders advising of several offshore activities proposed by Esso including decommissioning.
16 August 2024	Email to stakeholders advising of several offshore activities proposed by Esso including decommissioning.

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

4.3.5.3 Community information sessions

Esso has been undertaking community information sessions in Sale and Lakes Entrance since 2017 and continues to hold these on a quarterly basis providing community updates on all Esso activities.

Given the location of the proposed ORC and community feedback, Esso provided additional information sessions to include the Corner Inlet area on a monthly basis between August and November 2024. Esso will continue to hold community information sessions in these areas on a quarterly basis during 2025. Attendance increased throughout 2024 with over 40 attendees at community information sessions held during September alone and increasing to 60 attendees during October community information sessions. A total of 20 people attended community information sessions held during November.

Community members attending sessions have advised that they are satisfied with the frequency of sessions being held at Sale and Lakes Entrance.

Over the course of the consultation period for this Campaign #1 activity, Esso provided a total of 19 community information sessions in the local area as summarised in Table 4-7.

Table 4-7 Consultation period community information sessions

Session	Date	Location	No. of attendees
1	29 February 2024	Lakes Entrance	5

Session	Date	Location	No. of attendees
2	29 May 2024	Sale	10
3	30 May 2024	Lakes Entrance	3
4	21 August 2024	Sale	2
5	22 August 2024	Lakes Entrance	3
6	27 August 2024	Welshpool	1
7	28 August 2024	Foster	9
8	29 August 2024	Golden Beach	3
9	25 September 2024	Welshpool	15
10	25 September 2024	Leongatha	5
11	26 September 2024	Foster	21
12	22 October 2024	Yarram	5
13	23 October 2024	Foster	45
14	24 October 2024	Leongatha	10
15	18 November 2024	Lakes Entrance	3
16	18 November 2024	Welshpool	4
17	19 November 2024	Foster	8
18	19 November 2024	Sale	4
19	20 November 2024	Leongatha	1

To ensure every effort was made to reach relevant persons, the community sessions were advertised in various news outlets, including local and national, as shown in Table 4-8. Esso also provided details of community sessions via ExxonMobil Instagram, ExxonMobil website and *Connection* Magazine.

Details of advertisements for each session are provided in Appendix G.

Table 4-8 Community information session advertisement news outlets

News outlet		East Gippsland			Central Gippsland		South Gippsland					State - Victoria	National	
		Bairnsdale Advertiser	Lakes Post	Snowy River Mail	Latrobe Valley Express	Gippsland Times and Maffra Spectator	South Gippsland Sentinel Times	South Gippsland Voices	Prom Coast News	Foster Community Online	The Bridge, Yarram	Herald Sun	Koori Mail	The Australian
Session 1	29/02/24	✓	✓	✓	N/A	✓	N/A	N/A	N/A	N/A	N/A	✓	✓	N/A
Session 2	29/05/2024	✓	✓	✓	✓	✓	✓	N/A	N/A	N/A	N/A	✓	✓	✓
Session 3	30/05/2024	✓	✓	✓	✓	✓	✓	N/A	N/A	N/A	N/A	✓	✓	✓
Session 4	21/08/2024	✓	✓	✓	✓	✓	✓	✓	N/A	N/A	N/A	✓	✓	✓
Session 5	22/08/2024	✓	✓	✓	✓	✓	✓	✓	N/A	N/A	N/A	✓	✓	✓
Session 6	27/08/2024	✓	✓	✓	✓	✓	✓	✓	N/A	N/A	N/A	✓	✓	✓
Session 7	28/08/2024	✓	✓	✓	✓	✓	✓	✓	N/A	N/A	N/A	✓	✓	✓
Session 8	29/08/2024	Local Golden Beach advertisement via mailing list												
Session 9	25/09/2024	N/A	N/A	N/A	✓	✓	✓	✓	✓	✓	✓	✓	N/A	✓

News outlet		East Gippsland			Central Gippsland		South Gippsland					State - Victoria	National	
		Bairnsdale Advertiser	Lakes Post	Snowy River Mail	Latrobe Valley Express	Gippsland Times and Maffra Spectator	South Gippsland Sentinel Times	South Gippsland Voices	Prom Coast News	Foster Community Online	The Bridge, Yarram	Herald Sun	Koori Mail	The Australian
Session 10	25/09/2024	N/A	N/A	N/A	✓	✓	✓	✓	✓	✓	✓	✓	N/A	✓
Session 11	26/09/2024	N/A	N/A	N/A	✓	✓	✓	✓	✓	✓	✓	✓	N/A	✓
Session 12	22/10/2024	N/A	N/A	N/A	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Session 13	23/10/2024	N/A	N/A	N/A	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Session 14	24/10/2024	N/A	N/A	N/A	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Session 15	18/11/2024	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Session 16	18/11/2024	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Session 17	19/11/2024	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Session 18	19/11/2024	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Session 19	20/11/2024	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Flyers for November 2024 community information sessions were displayed at the local venues as outlined in Table 4-9.

Table 4-9 Community information session flyers

Town	Location
Leongatha	• Laundromat • Information Centre • IGA Supermarket • Community House • Sports Power • Library • Mitre 10 • Nutrien Ag Solutions
Meeniyan	• Bowls Club • Bakery • Post Office • Service Station
Fish Creek	• Pharmacy/Post Office • Hardware Store
Foster	• Information Centre • Manna Gum Community House • Post Office • Laundromat • Hotel • Foodworks • Andos Café
Yarram	• Betta Electrical • Manners Department Store • Bargain Centre • BP Service Station
Woodside	• Service Station

In addition to the above activities, in March and April 2024, Esso staffed a booth and engaged with a wide variety of community members at the Sale Music Festival and Air Show in West Sale. Community members were provided with a Gippsland Basin Activities information bulletin including Campaign #1 EP information, which included links to the Esso Consultation Hub.

Qube, site operator of Barry Beach Marine Terminal, held the following community information sessions in Corner Inlet area to provide the local community with information relating to Barry Beach Marine Terminal activities:

- 6 May 2024 – Toora
- 6 May 2024 – Welshpool
- 7 May 2024 – Foster
- 30 May 2024 – Foster.

Members of Esso's Project Management Team and consultation team attended to provide information on Campaign #1 activities.

Esso also conducts regular meetings with organisations and/or agency representatives of Regulation 25(1)(a) - (c) relevant persons and with groups and/or group representatives identified under Regulation 25(1)(d). Details of these meetings are recorded in the relevant persons database and presented in the Consultation report (Summary) (refer to Appendix E-2).

4.3.5.4 Stakeholder forums

Esso held six decommissioning Campaign #1 stakeholder forums across Lakes Entrance, Sale, Port Welshpool, Aspendale and online between May and August 2024, as shown in Table 4-10. Invitations were sent to stakeholders allowing them to register for their preferred session (Appendix E-2). Over 80 people from across a range of different backgrounds took the opportunity to learn more about what was being considered to decommission the Esso platforms and to hear from each other about the potential risks and impacts of options being considered and how these could be managed.

Table 4-10 Stakeholder forum summary

Forum	Stakeholders	Date	Location	No. of attendees
1	Commercial fishing	27 May 2024	Lakes Entrance	15
2	All stakeholders	4 June 2024	Sale	12
3	All stakeholders	5 June 2024	Online	21
4	Commercial fishing	19 June 2024	Port Welshpool	1
5	Recreational fishing	17 July 2024	Aspendale	20
6	All stakeholders	8 August 2024	Port Welshpool	15

The stakeholder forums aimed to help relevant persons make an informed assessment of the possible consequences of decommissioning activities on their functions, interests and activities and to advise Esso of any potential impacts or risks that may affect them. These forums also enabled stakeholders to participate in the identification of Campaign #1 impacts and risks and consider mitigations that may be required to address these risks.

The stakeholder forums were facilitated by Esso Australia's Major Projects Decommissioning Project Manager and supported by Esso's Consultation Team and Environment and Regulatory Team.

All forums included a presentation that covered:

- an overview of Esso's operations
- the facility lifecycle
- Esso's approach to decommissioning
- details of vessels involved in Campaign #1
- information on transfer locations
- recycling and disposal plans
- an outline of impacts and risks associated with Campaign #1
- an overview of the regulatory process.

Opportunities were provided during the forums for questions to be raised and responded to by stakeholders.

Discussion topics on Campaign #1 raised by participants were:

- opportunities to increase transferable skills and job capacity in the area
- clarification of removal campaign activity details, such as load in operations at Barry Beach Marine Terminal and vessel exclusion zones
- feedback on potential impacts and risks of removal Campaign #1 activities
- disturbance to established ecosystems on jackets, residual debris presenting a snag risk, displacement of seals and seabirds
- feedback on potential controls associated with these impacts and risks – provision of navigational aids, regular notifications
- benefits of leaving infrastructure in situ - retaining established marine ecosystems and providing recreational fishing opportunities
- potential impacts (positive and negative) on tourism and local businesses
- opportunities to share research associated with infrastructure removal and/or leaving in situ

- Corner Inlet seagrass monitoring opportunities.

Information gathered at the stakeholder forums, where applicable, informed the environmental impacts and risks assessment undertaken as part of preparing this EP (Section 6 and Section 7).

A summary of the stakeholder forums from June to August was provided to stakeholders on 10 September 2024 (Appendix F-5) and Information Bulletin #3 (Appendix F-3), including the outcomes of the impacts and risks assessment, was provided to stakeholders on 30 September for feedback.

4.3.5.5 Consultation with Commonwealth agencies with responsibilities in the marine area

Esso engages with Commonwealth Government departments and agencies as required for project activities. Esso met with DCCEEW in July 2024 to provide an overview of Campaign #1 and the strategy for regulatory pathways. A second meeting was held in October 2024 to provide an update on the Campaign #1 strategy, followed by a meeting in November 2024. Esso undertakes ongoing quarterly meetings with NOPSEMA to provide updates on Campaign #1 progress.

Table 4-11 outlines the Commonwealth agencies with responsibilities in the marine area (NOPSEMA, 2024) relevant to Campaign #1 activity as outlined in this EP. Consultations undertaken with each agency is included in Appendix E-2.

Esso will continue to meet with relevant Commonwealth Government departments and agencies in an ongoing manner and/or as required. Esso considers it has discharged its obligations for consultation under Section 25(1) having provided a reasonable period, sufficient information and opportunity for relevant persons to provide feedback, objections and/or claims.

Table 4-11 Commonwealth agency relevance to Campaign #1 activity

Commonwealth agency		Relevant to this EP
DCCEEW	EPBC Act administration and the Australian Antarctic Division	Not relevant to this activity
	Underwater cultural heritage	Relevant to this activity
	Sea dumping	Not relevant to this activity
Director of National Parks		Relevant to this activity
Department of Agriculture, Fisheries and Forestry	Fisheries	Relevant to this activity
	Biosecurity (vessels, aircraft and personnel)	Relevant to this activity
	Biosecurity (marine pests)	Relevant to this activity
Australian Fisheries Management Authority		Relevant to this activity
AMSA		Relevant to this activity
Department of Defence (including the AHO)		Relevant to this activity
Department of Foreign Affairs and Trade		No relevant to this activity

4.3.5.6 Consultation with First Nations people

Esso engages with First Nations people and representative organisations respectfully and effectively in meeting statutory obligations. Esso considers guidance developed by Australian Government agencies, including but not limited to the DCCEEW guidance document *Interim Engaging with First Nations People and Communities on Assessments and Approvals under the Environment Protection and Biodiversity Conservation Act 1999.*

4.3.5.6.1 GUNAIKURNAI LAND AND WATERS ABORIGINAL CORPORATION

As a Prescribed Body Corporate under the federal Native Title (Prescribed Body Corporate) Regulations 1999 (Cth), the 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. GLaWAC is the Registered Aboriginal Party under the *Aboriginal Heritage Act 2006* (Vic) recognising them as the primary guardians, keepers and knowledge holders of Aboriginal cultural heritage of the lands on which Campaign #1 activities are located.

Esso commenced Campaign #1 specific consultation with GLaWAC in March 2022. Between March 2022 and February 2024 GLaWAC was provided with information via email and during an in-person meeting held in May 2023 at GLaWAC's office in Kalimna. Following this meeting, 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 decommissioning activities, including the ORC.

Monthly consultation meetings for Esso's proposed decommissioning activities commenced with GLaWAC in February 2024 and covered Campaign #1proposed scope. Post this meeting, an Esso Key Messages brochure was developed including ORC information and links to the Consultation Hub and provided by Esso in February 2024 as requested by GLaWAC for use during consultations with community members.

Esso followed up and sought feedback to the initial February meeting via Campaign #1 activity-specific consultation with GLaWAC in March, May, and June 2024, providing activity details (e.g. description, location, logistics, impacts and risks). In August 2024 GLaWAC attended an Esso site visit to the Longford Plant Valve Site 3 (Paradise Beach) pipeline easement, and pipeline shore crossing that included discussions on pipeline decommissioning, the South-East Australia Carbon Capture and Storage Project, as well as Campaign #1 and the proposed ORC activities at Barry Beach Marine Terminal.

Engagement with GLaWAC is an ongoing exercise via monthly consultation meetings, emails and phone calls, and includes discussions on Esso's offshore and onshore proposed activities. The content of monthly meetings is agreed between Esso and GLaWAC attendees, and includes sharing of information related to:

- decommissioning – offshore and onshore activities
- production activities (including P&A of wells, and wastewater treatment).

The monthly meetings, as well as emails and site visits provide continuous and targeted opportunities for GLaWAC to be consulted on Campaign #1 and other activities. The Campaign #1 EP submission date was communicated to GLaWAC in April 2024.

As per Esso's methodology for Level 1 consultation, GLaWAC has also received Campaign #1 EP information bulletins via email in March, June, September and a follow-up in November 2024. Additionally, GLaWAC has been invited to participate in-person and online for Campaign #1 forums held in June 2024, as well as being offered private forums for both GLaWAC and/or Gunaikurnai community members (which have not been accepted to date).

In relation to Traditional Custodian relevant persons, Esso has discharged its duty under Regulation 25 and considers that consultation under Regulation 25 is complete. Discharge and completion is on the basis that during the ongoing provision of detailed information, GLaWAC has advised that information provided in relation to the Campaign #1 activity since consultation commenced in March 2024 is satisfactory in answering queries. Furthermore, at the time of submission of this EP, GLaWAC has not raised any objection to the proposed Campaign #1 activity.

General engagements (beyond the Campaign #1 activity) with GLaWAC are ongoing and have included:

- 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 (Perth, 6-7 November 2023), which were also attended by GLaWAC representatives
- Esso requested information on Gunaikurnai Sea Country to further understand how offshore activities might impact on cultural heritage (November 2023). A meeting was conducted between Esso and GLaWAC (GLaWAC's Kalimna office) in December 2023 to further discuss GLaWAC's IPA application and to identify potential opportunities for Esso to share information that might support this application

- information sharing workshops were held in April (Esso's Sale office) and August 2024 (GLaWAC's Morwell office) to share Esso environmental and GIS information, including Campaign #1 underwater survey data, with GLAWAC to support the GLaWAC IPA application.

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

4.3.5.6.2 KURNAI CLANS

Under the *Native Title Act 1993* (Cth), the Federal Court determined the Gunai/Kurnai groups to be Native Title holders over much of Gippsland. The GLaWAC (on behalf of the Gunai group) signed an agreement with the State of Victoria in 2010 under the *Traditional Owner Settlement Act 2010* (Vic) to extinguish Native Title rights for land management including a number of State parks. GLaWAC is the Prescribed Body Corporate and the Registered Aboriginal Party that holds rights and interests which sometimes compromise the Native Title of the common law holders; the Kurnai group declined to sign the agreement to instead maintain their rights as the Native Title holders.

The Kurnai Clans Aboriginal Corporation actively promotes respect for Kurnai history, lore, laws and culture. The Kurnai Clans Aboriginal Corporation do not/are not represented by GLaWAC.

Elders from the Kurnai Clans Aboriginal Corporation attended the Community Information session in Leongatha on 24 October 2024. In November 2024 the Kurnai Clans Aboriginal Corporation contacted the Esso Consultation Team nominating to be consulted on Esso's Campaign #1 offshore and onshore activities.

Esso met with representatives from the Kurnai Clans Aboriginal Corporation on 12 December 2024 in Morwell to discuss the Campaign #1 scope. Kurnai Clans Aboriginal Corporation provided an overview of the corporation including members, goals and expectations for stakeholder consultation. Both parties agreed to meeting again in 2025 on an ad-hoc basis.

Esso will continue to meet with Kurnai Clans Aboriginal Corporation to consult on decommissioning activities.

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

4.3.5.7 Consultation with local councils

Esso maintains a strong relationship and frequent engagements with local councils in the Gippsland area, including Wellington Shire Council and South Gippsland Shire Council. During the consultation period for Campaign #1, Esso held meetings with South Gippsland Shire Council between February and August 2024 to discuss Barry Beach Marine Terminal and Campaign #1 activities.

Council members were also invited to Community Information sessions and Stakeholder Forums, with attendance from Wellington Shire, East Gippsland Shire, South Gippsland Shire and Mornington Peninsula Shire councils across various locations.

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

4.3.5.8 Consultation with commercial fishing

Esso started platform decommissioning activity-specific consultation with the commercial fishing industry in January 2022. Esso has continued more detailed consultation in 2024, providing activity overview (description, location, impacts and risks) and seeking feedback. Esso has continued to meet with SETFIA, LEFL and SIV via face-to-face and online meetings on a quarterly basis throughout the Campaign #1 consultation process, as well as targeted meetings to discuss issues, concerns or items as required. Esso also conducted Campaign #1 forums specific to commercial fishers, as detailed in Section 4.3.5.4.

There are 23 fisheries permitted to work around Esso Australia's field; 14 are State managed, and nine are Commonwealth managed. Of those 23 fisheries, only 15 have recorded recent (10 year) fishing efforts around the ATBA.

SETFIA represents more than 80% of the SESSF CTS, a Commonwealth managed fishery activity in the vicinity of the OAs. SIV represents Victorian State fisheries, with Inshore Trawl Fishery and Eastern Zone Octopus Fishery active in the vicinity of the OAs. LEFL (also a member of SETFIA) represents approximately eight boat owners that may fish in the vicinity of the OAs. Southern Shark Industry Alliance supports the Southern Shark Fishery, Southern Shark Industry Alliance shares the same key contact as the SETFIA Executive Officer.

Esso attempted to consult directly with individual commercial fishermen but was unable to obtain contact information due to confidentiality. Therefore, all consultation was conducted through the representative bodies, SETFIA, SIV and LEFL, unless Esso was contacted by commercial fishermen independently. Consultation records with the commercial fishing Industry are provided in Appendix E-2.

The commercial fishing industry has provided feedback on Campaign #1 activities, refer to Appendix E-2. Esso has considered this feedback within the development of this EP.

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

4.3.5.9 Consultation with recreational fishers

Esso has held ongoing meetings with GFAV, both face-to-face and online, including a presentation on Campaign #1 activities at the GFAV State Council Meeting on 17 July 2024 (details summarised in Appendix E-2).

Victorian Recreational Fishing Peak Body (VRfish) has been invited to meetings with GFAV and Esso directly contacted VRfish for a separate meeting. Esso continues to send VRfish updates on all activities.

Esso attends Gippsland Lakes Fishing Club meetings, as scheduled, to present to club members on Esso activities. Esso held a presentation on 6 March 2024 providing details on Campaign #1.

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

4.3.5.10 Consultation with unions

Esso held meetings with the Australian Manufacturing Workers Union, Australian Workers Union, Electrical Trades Union, Maritime Union of Australia and the Construction, Forestry and Maritime Employees Union throughout the consultation period. These meetings specifically focused on decommissioning plans and job opportunities, with the unions expressing interest in the broader decommissioning activities. This not only includes Campaign #1 but also the ORC and pipelines activity. Further meetings will be held and information shared with the unions as required.

Unions were also invited to stakeholder forums with attendance from Maritime Union of Australia, Victorian Trades Hall Council and the Australian Manufacturing Workers Union.

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

4.3.5.11 Consultation with environmentally focused non-government organisations

In the course of consultation, Esso has identified multiple eNGO's, including Friends of the Earth, The Wilderness Society and Birdlife Australia. Esso has communicated information regarding the Campaign #1 via email, phone, online and in-person meetings and during Drop-in and Community Information sessions and Stakeholder Forums. Esso will continue to share updates on Campaign #1 with eNGO's. Feedback from all eNGO's will be considered within the development of regulatory submissions.

Esso has engaged other eNGOs to provide information on Esso's offshore activities as outlined in Appendix E-2. Feedback from eNGOs has been considered and incorporated into the EP, where applicable. Updates on Esso's activities will continue to be shared with eNGO's.

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

4.3.5.12 Consultation with State Government departments/agencies

Esso engages with State Government departments and agencies as required for Campaign #1 activities. Relevant departments were invited to Campaign #1 stakeholder forums with attendance from: the Gippsland office of the Victorian Environment Protection Authority; the Gippsland office of the Department of Employment and Workplace Relations; the East Gippsland Catchment Management Authority; and Gippsland Water.

Esso also engages with departments relevant to emergency response (Quick Reference Guide) including the Victorian Environment Protection Authority and the Victorian Department of Transport and Planning. Esso has met with Parks Victoria specifically regarding Campaign #1 activities, with a presentation provided on 12 September 2024. Esso continues to meet with DEECA in an ongoing manner and/or as required.

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

4.3.5.13 Offshore wind industry

Feasibility licences for the offshore wind industry in Bass Strait were granted in second quarter 2024 and third quarter 2024. Esso began consultation with the new licence holders during second quarter 2024 to establish if the functions, interests or activities of these offshore wind developers have the potential to be affected by the Campaign #1 activities and may be relevant persons. Esso held meetings throughout 2024 with offshore wind developers within the Campaign #1 OA and ATBA. Esso continues to undertake meetings with offshore wind developers as required.

With regard to offshore wind industry relevant persons, Esso has discharged its duty under Regulation 25 and considers that in accordance with Regulation 25 consultation is complete. Discharge and completion of obligations is on the basis that wind industry participants were consulted on the Campaign #1 activity via email and meetings. During these consultations, offshore wind developers have asked to be kept informed of Esso's timing for decommissioning to allow for project planning. Esso will continue to share details of offshore activities including timing and locations with wind industry proponents. Consultation with all licence holders is summarised in Appendix E-2.

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

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 4-12.

Table 4-12 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: • Which of the following Esso activities would you like to be consulted on? • How would you prefer Esso communicates with you? • Please select any functions, interests or activities that may apply to you • Please select any group(s) you are represented by a member of, or participate in • Do you wish to be consulted through your representative? • How did you hear about our activities?
Connection magazine	Esso's monthly newsletter, which is distributed via email and accessible on the Company website. The magazine provides relevant persons with regular updates on Esso's activities.
Esso website	Esso's website is an online portal that gives broader groups of relevant persons up-to-date information on various facets of our business and provides an opportunity for relevant persons to make enquiries about our offshore activities and projects. The website is updated periodically to reflect new information and activity progress.

Mechanism	Description
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.

Feedback 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 is summarised in Appendix E-2 and incorporated throughout this EP, where relevant.

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 4-13 outlines the ongoing consultation plans for this EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Esso will apply its OIMS System 7: Managing Changes (see Section 8.12).

Table 4-13 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
Offshore wind industry	Meetings to provide updates on all activities and discuss planning.	Quarterly/as required
Unions	Meetings to provide updates on all activities.	Quarterly

Relevant person(s)	Planned ongoing consultation mechanism	Timing
Recreational fishing representatives	Meetings to provide updates on all activities.	As scheduled
Relevant persons identified as marine users and relevant government departments and agencies	Notifications of commencement of activities as appropriate.	Two weeks prior to activity commencing
	Notifications of vessel activities via text message or email where appropriate.	During activity
NOPSEMA	GD 817 – Decommissioning update.	Quarterly
	Regulatory notification of start of activity.	Ten days prior to activity commencing
	Regulatory notification of cessation of activity.	Within 10 days of activity completion
Newly identified relevant persons	Periodic review of relevant persons to ensure new relevant persons are identified and consulted. If a new relevant person is identified, consultation will commence by providing an information bulletin containing details of the activity, including information on the potential environmental impacts and risks associated with the activities.	Six monthly

4.6 Reporting

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

A summary report on all activity-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

Esso's decommissioning priority is to eliminate or reduce impacts and risks from the highest hazard aspects of non-producing assets, being well P&As (managed via a separate, accepted Well Operations Management Plan and not discussed further in this Campaign #1 EP) and removal of platform topsides, jackets and risers on non-operational platforms (this Campaign #1 EP). Both the well decommissioning and the platform decommissioning activities adopt the same environmental impact and risk assessment methodology.

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 or loss of materials 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 impacts and risk workshop held in Melbourne in July and August 2024 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 environmental impact and risk assessment workshop(s), an impacts and risk register is produced which details the outcomes from the assessments against each of the aspects against the environmental and socioeconomic dimensions outlined in Section 5.4.

5.2 Definitions

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

Table 5-1 Definitions

Term	Definition
Activity	An activity refers to a component or task within a project which results in one or more environmental aspects.
Aspect	An environmental aspect is an element or characteristic of an activity, product, or service that interacts or can interact with the environment. Environmental aspects can cause environmental impacts.
Impact (HB203:2012)	Any change to the environment or a component of the environment, whether adverse or beneficial, wholly, or partly resulting from an organisation's environmental aspects.
Risk (HB203:2012)	The effect of uncertainty on objectives. The level of risk can be expressed in terms of a combination of the consequences and the likelihoods of those consequences occurring.
Receptor	The term receptor refers to a feature of the natural and human surroundings that can potentially be impacted. This includes air, water, land, flora, and fauna including people.

Term	Definition
Consequence	The consequence of an impact is the outcome of the event on affected receptors. Consequence can be positive or negative.
Likelihood	The likelihood of an impact is the chance (probability) of the impact occurring.

5.3 Identification and characterisation of environmental aspects

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

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

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

Table 5-2 Activity and aspect matrix

Activity	Physical presence – Seabed displacement	Physical presence – Other Marine Users	Sound emissions	Emissions to air	Light emissions	Planned discharge – Bilge water and deck drainage	Planned discharge – Sewage and food waste	Planned discharge – Cooling water and reverse osmosis	Planned discharge – Grout	Planned discharge – Umbilical and pipeline fluids	Planned discharge – Jacket structure internal fluids	Planned discharge - Solids	Planned discharge – Marine growth	Physical interaction – Other marine users	Physical interaction – Marine fauna	Physical interaction – Translocation of native species	Physical interaction – Introduction of IMS	Accidental release – Dropped objects	Accidental release – Waste	Accidental release – Loss of containment: Hazardous/non-hazardous substances	Accidental Release – Loss of containment: Refined oils (collision)
Vessel operations	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes						Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Helicopter operations			Yes																		
Topside cutting and removal									Yes									Yes	Yes	Yes	
Jacket cutting and removal	Yes		Yes		Yes					Yes	Yes	Yes	Yes			Yes		Yes	Yes	Yes	
ROV operations	Yes		Yes														Yes			Yes	
Helicopter operations			Yes	Yes																	

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. Esso evaluates three effects dimensions (scale, duration, and intensity) (Table 5-3) and three environmental sensitivity dimensions (irreplaceability, vulnerability, and influence) (Table 5-4) (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 5-7). These determinations are made during the environmental impact and risk assessment workshop.

Table 5-3 Evaluation of environmental effect dimensions

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

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

Table 5-4 Evaluation of sensitivity dimensions

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

In addition to the environmental impact evaluation, Esso also evaluates the severity of impacts on socioeconomic receptors using the community impact severity interpretation outlines in Table 5-5 and Table 5-6.

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

This Environmental Impact Identification process is undertaken as part of the environmental impacts and risk assessment workshop.

Table 5-5 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.
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.

Effect dimension	Value	Description
	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 approximately 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 approximately 10 -100 households/businesses); moderate changes to social status, education, livelihood/income and/or community safety and security not significantly affecting lifestyle; moderate effects on availability/accessibility of local goods and services; moderate changes to natural and/or cultural resources not significantly affecting functionality (water supply, fisheries, foraging/hunting grounds, erosion protection, recreational, spiritual or cultural heritage sites, etc.); moderate changes to local customs, traditions and lifestyles not significantly affecting cultural identity.
	Significant (higher)	Notable changes to local demographics; high level of immigration; high number of resettlements (greater than 100 households/businesses); significant changes to social status, education, livelihood/income and/or community safety and security notably affecting lifestyle; notable effects on availability/accessibility of local goods and services; notable changes to natural and/or cultural resources significantly affecting functionality (water supply, fisheries, foraging/hunting grounds, erosion protection, recreational, spiritual or cultural heritage sites, etc.); notable changes to local customs, traditions and lifestyles significantly affecting cultural identity.

Table 5-6 Evaluation of community sensitivity dimensions

Sensitivity dimension	Value	Interpretation (applies to communities or members of the community at the same scale as effect)
Irreplaceability	Lower	Average livelihood or income exceeds basic needs; diverse sources of livelihood/income (diverse commercial enterprises/jobs and/or diverse effective forms of agriculture/subsistence); essential goods and services readily available.
	Moderate	Average livelihood or income meet but do not significantly exceed basic needs; moderately diverse sources of livelihood/income (moderate diversity of commercial enterprises/jobs and/or of effective forms of agriculture/subsistence); essential goods and services moderately available (quantity/accessibility moderately limited).
	Higher	Average livelihood or income barely meet or do not meet basic needs; Few or limited sources of livelihood/income (e.g. few if any commercial

Sensitivity dimension	Value	Interpretation (applies to communities or members of the community at the same scale as effect)
		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 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 Environmental Impact Identification, 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 Section 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 Section 6 and Section 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 Section 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) is defined in four Consequence Levels, I-IV as per the *Risk Matrix Application Guide* (ExxonMobil, 2024) by the scope of the disruption and the size of the population affected as shown in Table 5-7.

Table 5-7 Determination of environmental and public impact consequence

Consequence Level	Environmental impact	Public impact	Interpretative examples of environmental consequence dimension considerations
I	Potential widespread, long term, significant adverse effects	• Extended (less than three 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	• National media coverage. • Medium community disruption or evacuation (100–1000 people). • Closure of major transportation <24 hours.	Sensitivity of receptors are moderate or higher. Effects are medium to long term and/or have a moderate to higher intensity.
III	Potential short term, minor adverse effects	• Public complaints; small community impact (<100 people). • Closure of secondary transportation route <24 hours. • Tier 1 Process Safety Event.	• 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	• Public complaint. • Temporary closure of minor transportation route. • Minor inconvenience.	Sensitivity of receptors are lower. Effects are generally short term, localised and of low to moderate intensity.

5.5 Environmental risk assessment

5.5.1 Determination of consequence

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

5.5.2 Determination of likelihood

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

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

Table 5-8 Likelihood Categories

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

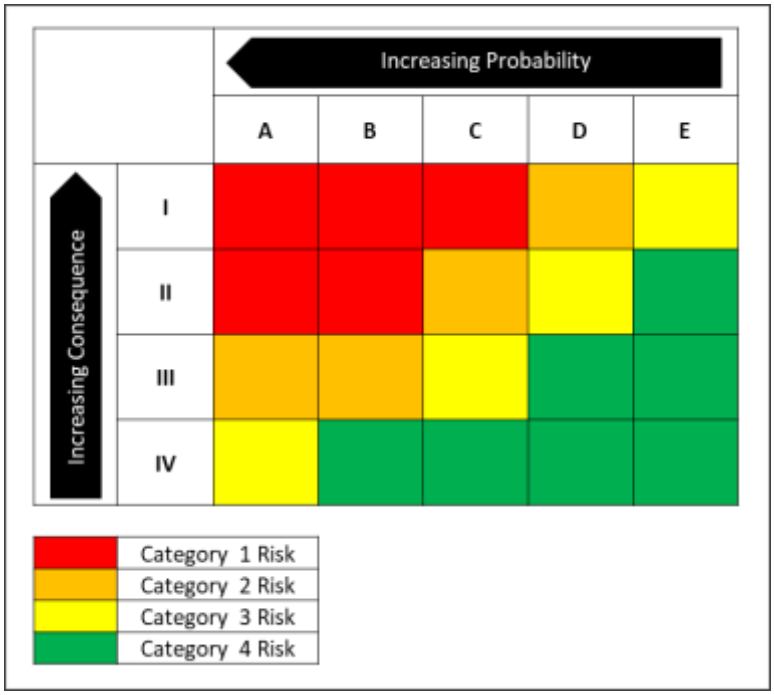


Figure 5-1 ExxonMobil risk matrix

5.6 Demonstration of As Low As Reasonably Practicable

Regulation 21(5)(c) of the Environment Regulations requires that the EP includes details of the control measures that will be used to reduce the impacts and risks of the activity to ALARP and an acceptable level. The ALARP aspect of this requirement is addressed in this Section: the acceptability aspect is addressed in Section 5.7.

Control measures are selected to reduce:

- for an impact - the consequence of a planned event occurring, and
- for a risk – the consequence and/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.

5.6.1 Principle of ALARP

In outlining its approach to assessing whether environmental impacts and risks of the activity will be reduced to ALARP, NOPSEMA's guideline *Environment Plan decision making* (NOPSEMA, 2024b) outlines that

"Reducing impacts and risks to ALARP is based on the concept of reasonable practicability; the weighing up of the magnitude of impact or risk reduction against the cost of that reduction. The 'cost' in this context means the sacrifice associated with implementing a control measure which includes an evaluation of the benefits versus the

impost such as money, time and/or effort required to implement a particular control measure. The 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."

5.6.2 Application of As Low As Reasonably Practicable principle in practice

Esso has adapted a framework for risk-related decision making referenced in NOPSEMA's guidance note *ALARP* (NOPSEMA, 2022) for use in an environmental context. This framework helps to determine the assessment technique or techniques required to demonstrate that impacts and risks have been reduced to ALARP (Figure 5-2).

The framework considers three factors that influence the decision context :

- the type of activity
- the risk and uncertainty of the activity
- stakeholder influence in the activity.

And three assessment techniques that can be used depending on the decision context:

- good practice
- engineering risk assessment
- precautionary approach.

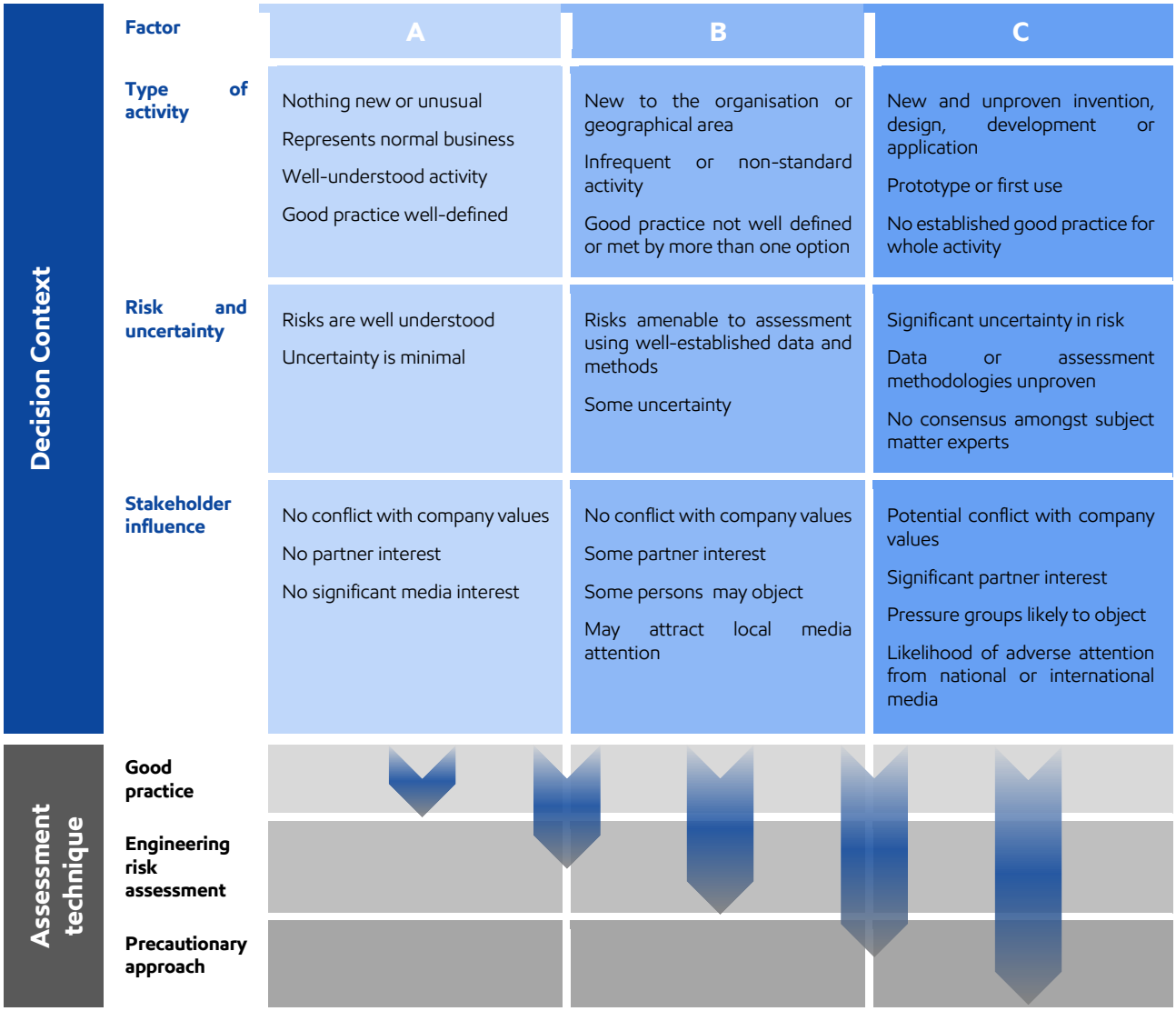


Figure 5-2 Risk related decision support framework, NOPSEMA ALARP Guidance Note August 2022

5.6.3 Decision Contexts

5.6.3.1 Decision Context A

Where the activity and associated potential impacts and/or risks are well understood, and there are no conflicts with company values nor stakeholder interest. The environmental consequence for planned activities (impacts) and unplanned events (risks) is Level III or IV. The risk of unplanned events is either Category 2, 3 or 4.

5.6.3.2 Decision Context B

Where the activity is infrequent or non-standard; potential impacts and risks are amenable to assessment but with some uncertainty; and some stakeholder interest. The environmental consequence for planned activities (impacts) and unplanned events (risks) is Level II. The risk of unplanned events is either Category 2, 3 or 4.

5.6.3.3 Decision Context C

Where the activity has higher potential impact or uncertain risks or expected significant adverse stakeholder reaction. The environmental consequence for planned activities (impacts) and unplanned events (risks) is Level I. The risk of unplanned events is either Category 2 or 3.

The Decision Context for each aspect has been identified in Sections 6 and 7.

5.6.4 Good practice

Esso notes NOPSEMA's key principle regarding "*good practice*" (NOPSEMA, 2022):

"The term 'good practice' in NOPSEMA guidance documentation therefore is taken to refer to any well-defined and established standard or codes of practice adopted by an industrial/occupational sector, including 'learnings' from incidents that may yet to be incorporated into standards. Good practice generally represents a preferred approach; however it is not the only approach that may be taken. While good practice informs, it neither constrains, nor substitutes for, the need for professional judgement. Good practice may change over time because of technical innovation, or because of increased knowledge and understanding."

For this EP, Esso's 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.

5.7 Demonstration of acceptable level

Regulation 21(5)(c) of the Environment Regulations requires that the EP includes details of the control measures that will be used to reduce the impacts and risks of the activity to ALARP and an acceptable level. The acceptability aspect of this requirement is addressed in this Section: the ALARP aspect is addressed in Section 5.6. The demonstration of acceptability is completed independently of the ALARP evaluation described above. However, as with the demonstration of ALARP, the demonstration of acceptability detailed below applies the decision-making principles described in Section 5.6.1, ensuring consistency with the precautionary principle when considering the acceptable levels of impact and risk caused by the activity

5.7.1 Demonstrating acceptability

In assessing the acceptability of an impact or risk, Esso has considered the factors that influence NOPSEMA's decision regarding whether an EP has demonstrated that the environmental impacts and risks will be of an acceptable level (NOPSEMA, 2024b) to arrive at the criteria shown in Table 5-9.

Table 5-9 Demonstration of acceptability

Factors influencing decision making (from *NOPSEMA N-04750- A524696 Environment Plan decision making guideline*)	**How addressed**
Acceptable levels are defined and based on reasonable internal and external context, legislative and industry standards. Acceptable levels of environmental impact and risk must be appropriate and relevant to the environment that may be affected by the project including activities that are part of the project.	Levels have been defined with reference to relevant corporate policies, legislative requirements and industry guidance (Section 1.5).
The predicted levels are compared to the acceptable levels to demonstrate that acceptable levels will be achievable.	Recorded in the assessment of each impact and risk.
The evaluation of an impact or risk is consistent with the principles of ESD set out in section 3A of the EPBC Act.	Recorded in the assessment of each impact and risk.
The activity will not result in unacceptable impacts to a migratory species or an area of important habitat for a migratory species.	Recorded in the assessment of each impact and risk
The impacts and risks of the activity are not inconsistent with • a recovery plan or threat abatement plan for a listed threatened species or ecological community	Listed threatened species that may be present within the OA are described in Appendix B and Appendix D applicable recovery plans or threat

Factors influencing decision making (from *NOPSEMA N-04750- A524696 Environment Plan decision making guideline*)	**How addressed**
• a management plan in operation for a Commonwealth reserve (e.g. an Australian Marine Park) or if there is no management plan in operation, the Australian International Union for Conservation of Nature (IUCN) Reserve Management Principles including a demonstration that an activity will not have unacceptable impacts on the values of an Australian marine park, to the extent these are relevant to the activity and the nature of its impacts and risks • a management plan for a Commonwealth Heritage Place.	abatement plans were considered based on the identified species. Consideration was given to the following conservation management plans and advice: • Conservation Management Plan for the Blue Whale 2015–2025 (Commonwealth of Australia, 2015) • Conservation Advice for humpback whales (TSSC, Approved Conservation Advice for Megaptera novaeangliae (Humpback whale), 2015b) • National Recovery Plan for the Southern Right Whale (*Eubalaena australis*) (DCCEEW, 2024) • Conservation Advice for sei whales (TSSC, 2015) • Conservation Advice for fin whales (TSSC, 2015) • Recovery Plan for Marine Turtles in Australia 2017-2027 (CoA, 2017) • Conservation Advice for leatherback turtles (TSSC, 2008). In regard to the National Recovery Plan for the Littoral Rainforest and Coastal Vine Thickets of Eastern Australia Ecological Community, Esso has assessed that the impacts and risks of the activity are not inconsistent with this Plan. In regard to Commonwealth reserves: • East Gippsland Marine Park • Beagle Marine Park • Flinders Marine Park • Jervis Marine Park • Freycinet Marine Park. Modelling of a spill of MGO has demonstrated that the activity is not inconsistent with the Australian IUCN Reserve Management Principles and will not have unacceptable impacts on these Marine Parks . See Appendix A Section A.1.1.7. Three Commonwealth Heritage sites identified are considered not relevant due to their lack of marine/coastal features. See Appendix A Section A.1.1.3.
The activity does not contravene: • a plan of management for a World Heritage place • a plan of management for a National Heritage place, or • a plan of management for a Ramsar wetland.	Because there are no World Heritage Properties nor National Heritage Places within or adjacent to the OA, the activity does not contravene a plan of management for either of these. Esso has reviewed the *Gippsland Lakes Ramsar Site Management Plan 2024* and has assessed

Factors influencing decision making (from *NOPSEMA N-04750- A524696 Environment Plan decision making guideline*)	**How addressed**
If a relevant plan of management is not in place, then all reasonable steps have been taken to ensure that the activity is not inconsistent with the: • Australian World Heritage Management principles • National Heritage management principles • Australia Ramsar management principles • Commonwealth Heritage management principles.	that the activity does not contravene the plan of management for the Gippsland Lakes Ramsar site. In regards to the Corner Inlet Ramsar site, Esso has reviewed the *West Gippsland Regional Catchment Strategy* and *Corner Inlet Marine National Park Management Plan 2005* and assesses that the activity is not inconsistent with the *Australian Ramsar management principles*.
Relevant policy documents, guidance, bioregional plans, wildlife conservation plans, management plans, gazettal instruments under the EPBC Act, conservation advices, marine bioregional plans and other information on the DCCEEW website including spatial data (e.g. National Conservation Values Atlas) have been reviewed and incorporated into this EP as appropriate.	Esso has reviewed the following EPBC Act and associated Policy Statements and incorporated them in this EP as appropriate. See Appendix A.
Areas of uncertainty in predictions of impact and risk are identified, acknowledged and addressed.	Decision Context process described in Section 5.6.
The method for comparing predicted impacts and risks to acceptable levels of impacts and risks is systematic, applied thoroughly, defensible and reproducible.	Impacts and risks methodology section of this EP.
Information provided during relevant person consultation is incorporated appropriately.	Recorded in the assessment of each impact and risk.

6 Environmental impact assessment

A discussion of the environmental impacts associated with planned activities 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. Potential environmental risks associated with unplanned events are covered in Section 7.

Alternative controls identified and considered to ensure impacts are ALARP and comply with the acceptability criteria are also covered. Environmental Performance Outcomes (EPOs), controls, Environmental Performance Standards (EPSs), and measurement criteria are provided for each aspect of the planned activities in Appendix H.

The following definitions are used in this EP, as defined in Regulation 5 of the 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.

A summary of the impacts and risk assessment is provided in Table 6-1. Inherent consequence level does not take any mitigating controls into consideration, the residual consequence level reflects the post control consequence.

Table 6-1 Summary impact assessment

Identifier	Hazard	Inherent Consequence Level	Residual Consequence Level
1	Physical interaction – Seabed displacement	IV	IV
2	Physical presence - Other marine users	IV	IV
3	Planned discharge - Sewage and food waste	IV	IV
4	Planned discharge – Cooling water and reverse osmosis	IV	IV
5	Planned discharge – Bilge water and deck drainage	IV	IV
6	Grout	IV	IV
7	Umbilical and pipeline fluids	IV	IV
8	Jacket structure internal fluids	IV	IV
9	Solids	IV	IV
10	Marine Growth	III	III
11	Sound emissions	III	III
12	Light emissions	II	III
13	Emissions to air	IV	IV

6.1 Physical presence – Seabed displacement

6.1.1 Sources of seabed displacement

The Campaign# 1 removal activities will result in localised seabed displacement associated with the following activities:

- clearing of seabed to allow cutting of pipelines and/or umbilicals that are connected to Campaign #1 facilities (DPA, PCA, WTA, BMA, FTA, FLA, WKF, KFA, KFB, CBA, MKA, and HLA)
- potential localised clearing of seabed to allow external pile cutting of SPJs at FTA, WTA and, BMA and potentially other platform locations if internal pile clearing and cutting techniques are considered unfeasible for any reason
- potential localised clearing of seabed and suction effect associated with the lifting of the DPA and PCA monotowers from the seafloor
- potential localised displacement of the seabed associated with any required temporary storage of material
- minor local displacement during installation and retrieval of a waverider buoy (refer to Section 2.14) if deployed
- vessels may be required to anchor in limited or unplanned circumstances (such as emergencies). No anchoring will occur within the PSZ or interfere with subsea infrastructure
- minor local displacement from ROV operations close to the seafloor (e.g. as part of as left survey)

Seabed displacement and impacts associated with planned discharges of solids that will be released to the environment as part of facility removal activities are described in Section 6.9.

6.1.2 Impacts of seabed displacement

Impacts of seabed disturbance on receptors are:

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

6.1.3 Impact assessment

6.1.3.1 Sediment displacement modelling

Hydrodynamic modelling was completed for key activity scenarios in order to assess potential sediment disturbance impacts. The study performed by Stantec Australia Pty Ltd (Stantec), estimated sediment displacement within Bass Strait using DELFT numerical modelling. The assessment included hydrodynamic modelling using DELFT3D-Flow which is a sophisticated tool used for simulating hydrodynamic conditions, including tidal patterns, in various coastal and ocean environments and DELFT-WAQ, the water quality and ecology module. The combined use of DELFT3D-Flow and DELFT-WAQ enables detailed assessments of sediment transport under various scenarios (Stantec Australia, 2024a).

Table 6-2 summarises the scenarios modelled and outcomes. Based on the scenarios assessed, the largest potential impact associated with a single activity was identified as the seabed disturbance associated with the cutting of all FTA piles externally. Results of modelling undertaken by Stantec indicate that for all scenarios (including the worst case in terms of radial dispersion and suspended sedimentation levels), the area of impact will be localised (i.e. generally within 50 – 100m of the facilities). Areas of influence may extend beyond this (up to 650m) but the concentrations of suspended sediments at these distances would be negligible in terms of impacts to marine biota and likely within levels of natural variability (Stantec Australia, 2024a).

Table 6-2 Sediment modelling outcomes

Scenario modelled	Facilities	Estimated volume displaced (m^3)	Modelling outcome
Seabed displacement generated during preparation of	WTA	950	The scenario assessed conservatively assumes sediment displacement would be needed for cutting of all piles at each facility. Of the three facilities, the largest sediment displacement modelled occurred at
	FTA	2380	

Scenario modelled	Facilities	Estimated volume displaced (m^3)	Modelling outcome
area required by ROV for external cutting of SPJ piles at or below seabed	BMA	1430	FTA which was 1.6 times larger than that at BMA and 2.5 times larger than that at WTA. Modelled FTA outcomes indicated a sand concentration of 100mg/L and above would only occur within 50m from the centre of the FTA facility. A concentration of 1mg/L is expected to extend up to 650m further to the east and 400m to the west. For fines, the maximum concentration of 5mg/L and above would only occur within about 10m from the centre of the facility. For deposition, it is expected that most of sediment particles would quickly settle near the centre of the platform. In this regard, modelling results show that the thickest sediment layer of 10cm and above is confined within 30m from central FTA (Stantec Australia, 2024a).
Seabed displacement and disturbance generated during preparation activities and lifting of two monotower	DPA and PCA	For each: Preparation = 17 Lifting = 83	For modelling it was assumed that water jetting would be used to prepare each monotower for lifting. Modelled outcomes indicated sand concentrations of 100mg/L would occur within 50m from the centre of the facility and 25m for fines during preparation activities. Both sand and fine particles are expected to be spread out in the southwest to the northeast directions. The accumulated sediment layer settled on the seabed near the facility is also very thin (only 1mm thick) because the total sediment displacement required for the preparation of area is small. The process of lifting the structures would lead to larger sediment disturbance. The concentration of sediment is anticipated to be highest in the immediate vicinity of the facility. Modelled results suggest that a sand concentration of 100mg/L will be confined to an area within 100m of the facility while fines are expected to have a more limited impact area of 20m For sediment deposition on the seabed, it is projected that most of the sediment will settle rapidly, particularly near the centre of the facility, potentially creating a sediment layer up to 1cm thick within a 20m radius (Stantec Australia, 2024a).
Seabed displacement generated during preparation of area required by ROV for external cutting of	DPA PCA, WTA, FLA, CBA,	Five each	Sediment displacement volumes vary across different facilities. For the purpose of modelling, HLA was modelled as a worst-case scenario as the external cutting of pipelines and risers will result in the largest volume of seabed displacement at this facility. Modelling of activities at HLA resulted in sand concentrations surpassing 100mg/L predominantly localised within a 50m radius surrounding the facility, indicating a significant deposition in this immediate area. Conversely, the area with elevated fines
	FTA	Three	
	BMA, KFB	47 each	

Scenario modelled	Facilities	Estimated volume displaced (m^3)	Modelling outcome
pipelines/risers at seabed	WKF, KFA	27 each	concentrations is considerably smaller, with the highest recorded concentration being approximately 10mg/L within a 20m radius (Stantec Australia, 2024a).
	MKA	10	
	HLA	57	

6.1.3.2 Change in habitat and smothering

The benthic habitat within the OA is largely characterised by a homogenous soft sediment and shelly seabed, infauna communities and sparse epibiotic communities. The exception is the South East Reef which is a patchy low profile formation situated in approximately 70m water depth located in the region of FTA, CBA and HLA (McLean et al, 2022a). Anthropogenic structures in the region support reef like communities where these structures sit above the seafloor. These structures are present in a very small portion of the overall OA area.

The seafloor in the OA will be subject to localised physical disturbance at each of the Campaign #1 facility locations associated with cutting and removal of structures. The area of the seabed to be disturbed is limited to the immediate vicinity of each facility. Heavier particles are expected to settle within short distances while finer particles will be temporarily suspended in the water column before settling onto the seafloor. The overall results of the modelling and ecological risk assessment performed by Stantec found impacts of the proposed decommissioning scenarios as 'low' to 'moderate'. It is noted that modelling by Stantec did not indicate the potential for overlap of any sediment plumes or sedimentation overlapping across platforms (Stantec Australia, 2024b).

The disturbance may result in the local mortality of flora and sessile fauna within the disturbance footprint and potentially the mortality of benthic infauna associated with the habitat.

Given that seabed sediments and infauna are widespread throughout the Gippsland Basin, there will be no anticipated impacts to sensitive seabed habitats. A small area of the South East Reef habitat closest to activities may experience localised changes to the availability of exposed hard strata.

Recovery and recolonisation following direct physical disturbance, elevated suspended sediments and deposition, is likely to be relatively fast (e.g. in a matter of weeks or months) for surrounding soft sediment habitats. Whether the composition of the recolonised assemblage is similar to that of the pre- decommissioning conditions will depend on if there have been any permanent changes to physical conditions (e.g. hydrology and currents, particle size distribution and sediment quality) that may favour different or more opportunistic species (Stantec Australia, 2024b).

6.1.3.3 Change in water quality

Turbidity may occur when seabed sediments are stirred up during the Campaign #1 facility removal activities, however this disturbance will settle quickly after the actions are completed. Given the limited and localised nature of the dispersion plume, any mobile species such as fish or marine megafauna would be able to avoid the affected area and find similar unaffected habitat elsewhere

The PBW has foraging habitat overlapping the OAs and the SRW migration BIA also overlaps the OAs. Research data detailing potential impacts from suspended solids to megafauna is scarce, however such megafauna is highly mobile, transitory, and able to avoid the plumes. The area of the turbidity plumes is regarded as a very small percentage of the foraging grounds of protected seabirds such as shearwaters, albatrosses, and petrels.

The environmental receptors with the potential for exposure and considered to be most sensitive to an increase in turbidity include pelagic fish species and plankton found in the area around the well locations.

Any turbidity created is likely to be within the limits of natural variability when considering the turbidity created by currents in the open-water environment of the OA. The turbidity will be short in duration and no long-term impacts are anticipated.

6.1.4 Controls

- **CMP1:** External pile cutting methods will only be used for pile cuts targeted below seabed if internal pile cutting not viable or uncertainty remains with regard to ability to remove internal blockages.

Refer to Appendix H for corresponding descriptions of EPOs, 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 Decision Context and justification

Decision Context A
Seabed disturbance from offshore activities is a common occurrence both nationally and internationally. The sediment displacement methods are well understood. Use of positive displacement methods in a controlled manner is an accepted industry practice. 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
Methodology approach	✓	**CMP1:** External pile cutting methods will only be used for pile cuts targeted below seabed if internal pile cutting not viable or uncertainty remains with regard to ability to remove internal blockages	Internal pile clearing and/or cutting will be attempted where deemed viable for cuts below or close to the seafloor so that sediment displacement is minimised.

Table 6-5 Engineering risk assessment

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
None identified	N/A	N/A	N/A

6.1.7 Demonstration of acceptability

Table 6-6 Demonstration of acceptability test

Factor	Demonstration criteria	Criteria met	Rationale
Principles of ESD	Biodiversity Principle:	✓	The potential impact associated with this aspect is limited to a localised short-term impact, which is not considered as having the potential to affect biological diversity and ecological integrity.

Factor	Demonstration criteria	Criteria met	Rationale
	No potential to affect biological diversity and ecological integrity.		
	Precautionary Principle 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 • Schedule 3 (occupational health and safety) of the OPGGS Act and Offshore Petroleum and Greenhouse Gas Storage (Safety) Regulations 2009 (Cth) (Safety Regulations) – Require the operator of each offshore facility to prepare a Safety Case for submission to NOPSEMA. Activities at a facility must be conducted in accordance with a Safety Case that has been accepted by NOPSEMA • Section 572 – Requirement to remove from the relevant title areas structures and all equipment and other property that is neither used nor to be used in connection with the operations.
Internal context	Consistent with Esso's Environment Policy.	✓	Proposed activities are consistent with Esso's Environment Policy, in particular, to *"comply with all applicable environmental laws and regulations and apply responsible standards where laws and regulations do not exist"*.
	Meets ExxonMobil Environmental Standards.	✓	Although there is no specific standard related to offshore (i.e. seabed) land use, the controls proposed meet the requirements of the Upstream Standard on Land Use specifically to *"avoid use of land within environmentally or socioeconomically sensitive areas"* and *"site selection process considers impacts on the ecological and social environment"*.
	Meets ExxonMobil OIMS Objectives.	✓	Proposed activities meet: • OIMS System 6: Regulatory Compliance and Sustainability Management objective to identify and assess environmental aspects; significant aspects are addressed and controlled consistent with policy and regulatory requirements

Factor	Demonstration criteria	Criteria met	Rationale
			• OIMS System 8: Selecting and Engaging with Third Party Providers objective to qualify, evaluate and select contractors based on their ability to perform work in a safe, secure and environmentally sound manner. Decommissioning contractor was 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 the amount of seabed disturbance covered in this EP.

6.2 Physical presence – Interaction with other marine users

6.2.1 Sources of interaction with other marine users

The movement of vessels within the OAs, and the physical presence of the HLV, CSVs, barges, HTVs, tugs and other support vessels has the potential to result in interactions with other marine users such as commercial and recreational fishing vessels and merchant shipping vessels. Given the overall size of the OA, close interactions between these vessels is considered unlikely to occur. The presence of Campaign #1 vessels in the OA is expected to have minor impacts to commercial fishing.

The physical presence of the lower jacket sections remaining in place on the seabed (at least 55m below MSL) and the BMB concrete base has been considered in assessing interactions with other marine users and is addressed in Section 7.1.

Note that this section deals with displacement or interference in a socioeconomic sense. Collision risk (and potential spill impacts) is addressed in Section 7.8.

During facility removal and transfers to barge/transport vessel, a 500m exclusion zone will be required around the HLV and any other transfer associated vessel. Marine users will be requested to avoid Campaign #1 vessel exclusion zones during activities to ensure the safety of both Campaign #1 vessels and third-party vessels. No exclusion zone will be in place while the HLV and CSVs are in transit between the facility locations and the transfer location.

A waverider buoy may be installed within the OA to provide real time field measurement of wave height and wave direction to support decommissioning activities. A typical waverider buoy arrangement includes a buoy which floats on the ocean surface and a tether from the buoy to a clump weight which would be sitting on the seabed. Marine users would be notified of the installation and location, and the buoy would be fitted with standard identifiers.

A clump weight on a taut wire may be deployed to provide localised confirmation of vessel depth. This weight would be deployed from the HLV within the OA and expected to sit on the seabed temporarily while measurements are completed.

Commercial fishing and other third-party vessels are currently excluded from the 500m PSZs around each facility. The PSZs have been in place since the installation of the facilities.

6.2.2 Impacts of interactions with other marine users

The impacts of interaction with other marine users are considered to be:

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

Disruption to commercial activities may include:

- diversion from navigation path (displacement of shipping)

- exclusion from fishing grounds as a result of the presence of vessels and subsequent loss of catch
- obstacles to trawling (presence of infrastructure).

Disruption to recreational activities may include:

- exclusion from recreational fishing areas as a result of the presence of vessels
- diversion from navigation path (displacement of recreational boating activities)

Disruption to other marine industry may include

- interruption to activities due to the presence of vessels.

6.2.3 Impact assessment

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

A shipping exclusion zone - the ATBA - exists around the operating oil and gas facilities in the Gippsland Basin, where unauthorised vessels larger than 200 gross tonnes are excluded from entry. The ATBA is defined in Schedule 2 of the OPGGS Act and shown in Figure-6-1 (Australian Border Force, 2022). Two Traffic Separation Schemes have been implemented to enhance safety of navigation around the ATBA by separating shipping into one-direction lanes for vessels heading north eastwards and those heading south-westwards. One separation area is located south of Wilsons Promontory, and the other south of KFB. The locations of the two Traffic Separation Schemes are depicted in Figure 6-2.

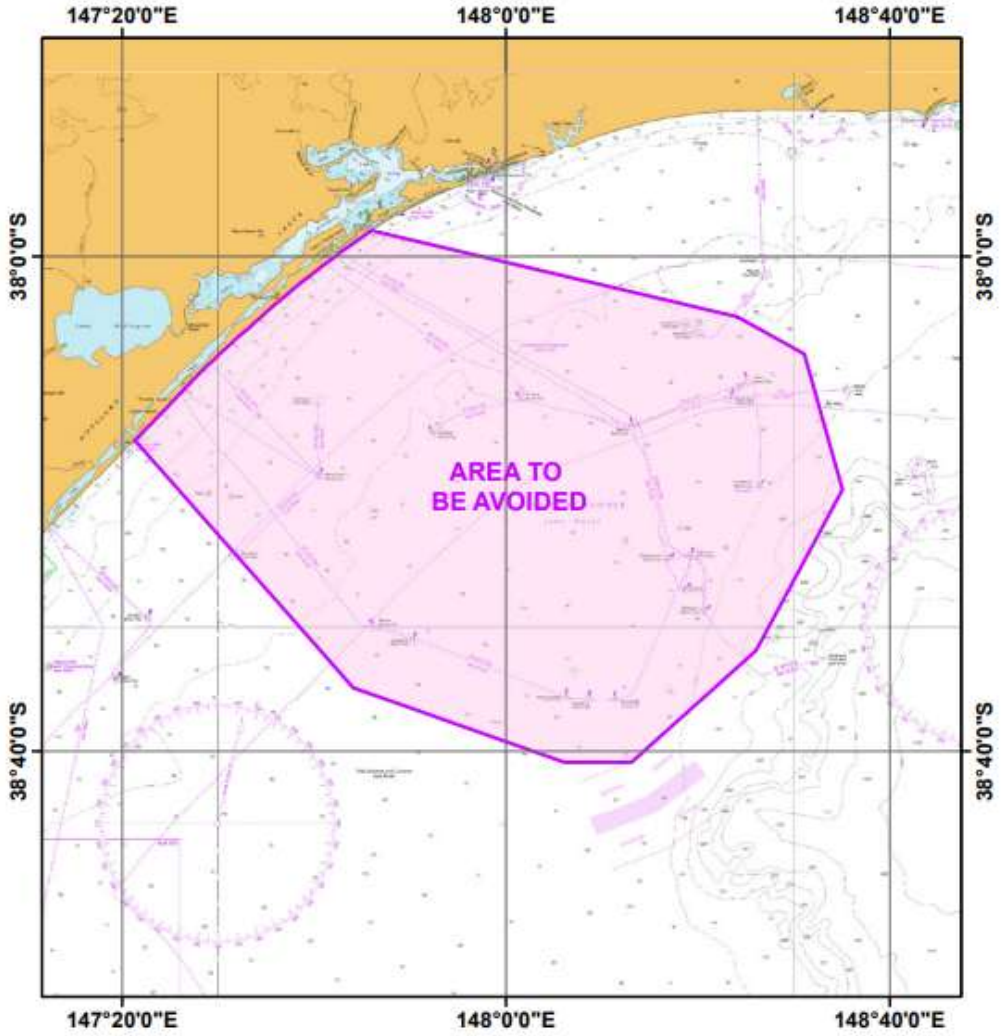


Figure-6-1 Shipping exclusion zone (ATBA) (AHO, 2024)

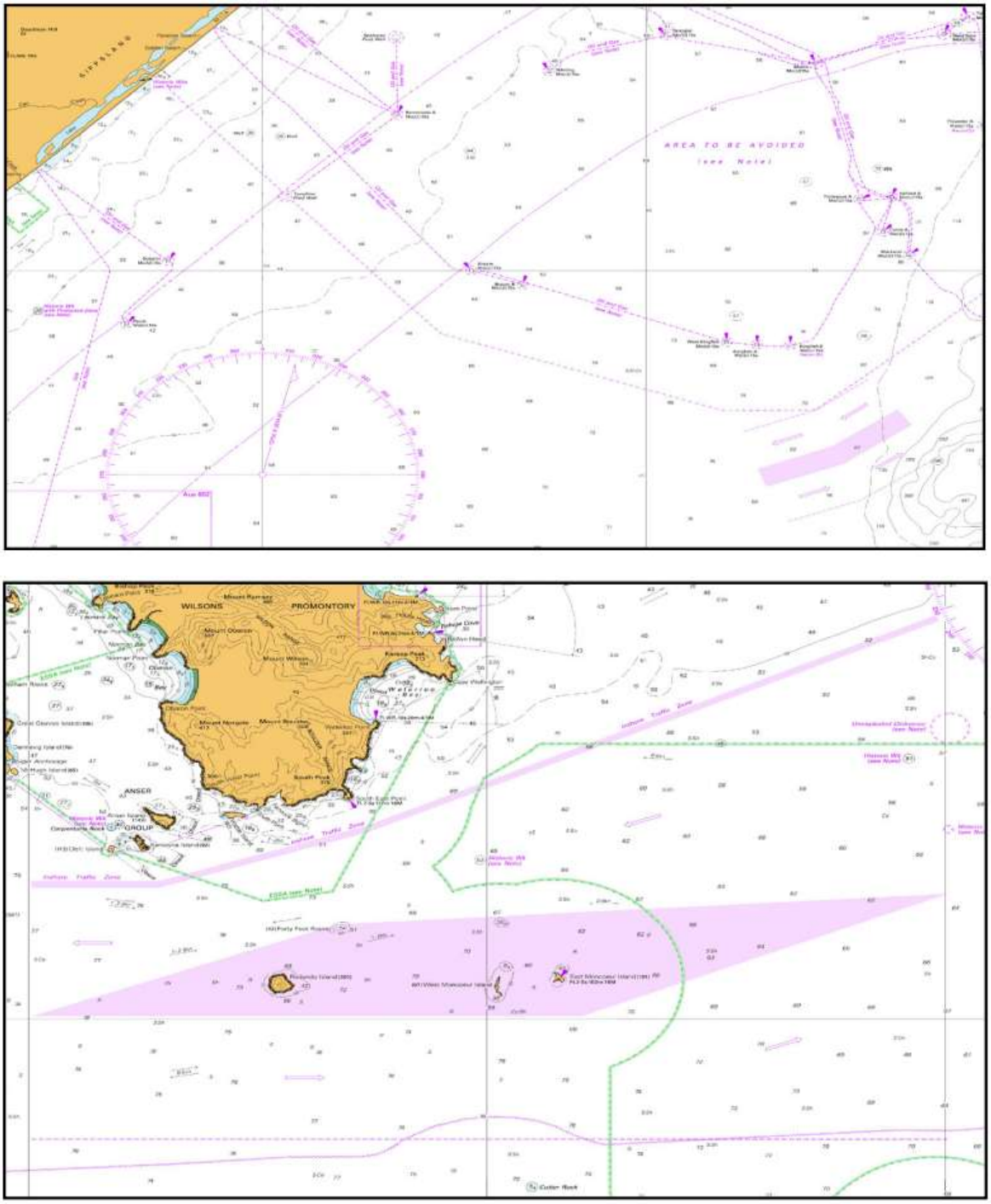
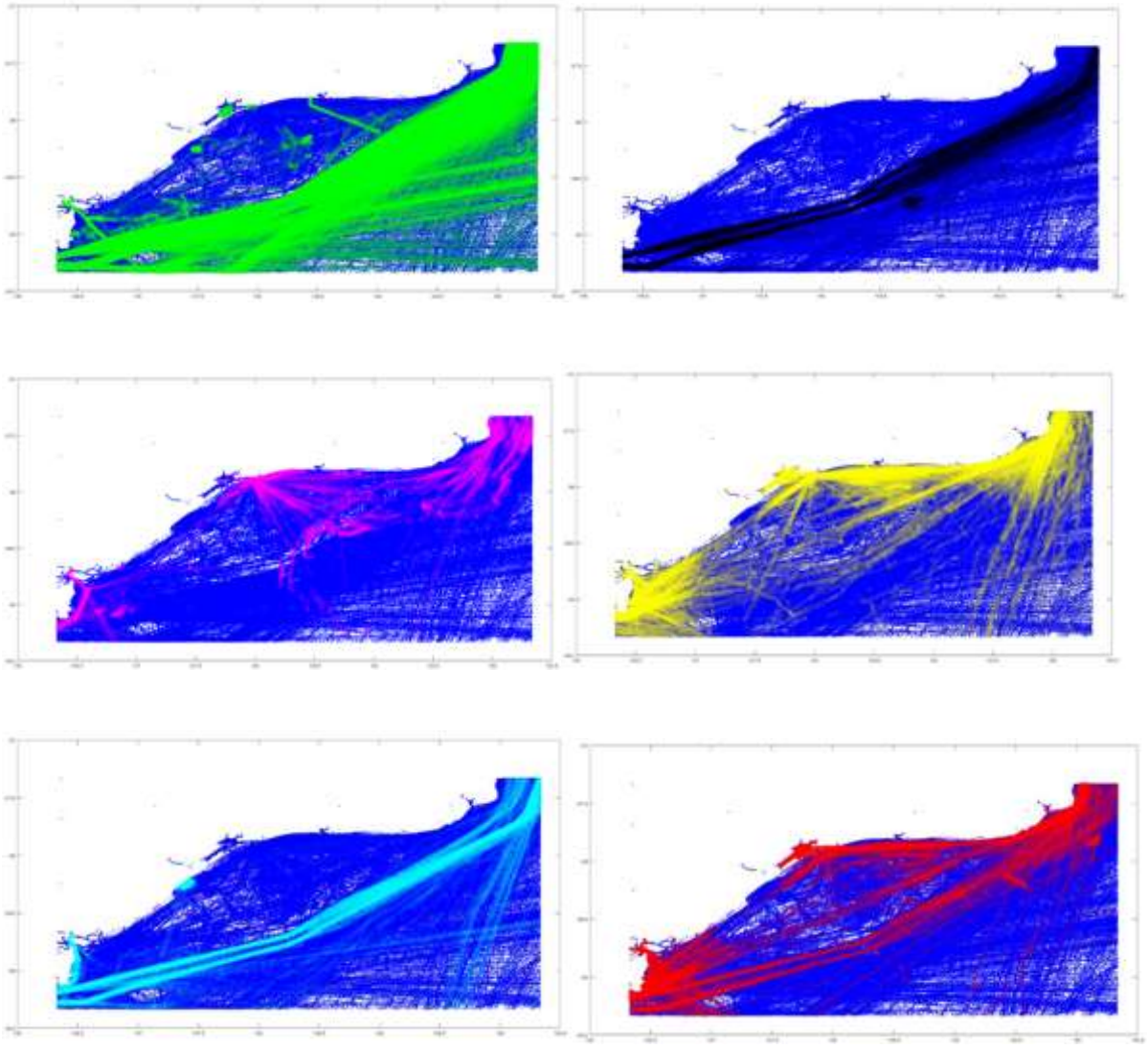


Figure 6-2 Traffic Separation Schemes (Bass Strait and south of Wilsons Promontory) (AHO, 2024)

It can be seen from Figure-6-1 that the PCA and DPA monotowers are not located within the ATBA and part of the transport route from the facilities to the transfer area will also occur outside the ATBA. However, given the proximity of these facilities and the transport route to the shore, and the presence of the two Traffic Separation Schemes to direct vessels around the ATBA, large commercial vessels are not expected to be transiting in the vicinity of PCA or DPA and within the transport route.

The proposed transfer area is located to the east of Wilsons Promontory. A Traffic Separation Scheme has been established to the south of Wilsons Promontory to separate the opposing flows of traffic and to keep vessels clear of the island groups in the area (AHO, 2024). Given the presence of this Traffic Separation Scheme and local geographic features, it is not expected that commercial shipping vessels will be transiting through or near the transfer area.

Further information on vessel movements in the area was obtained by a study undertaken in 2022 which assessed potential impacts to other users of the sea as a consequence of decommissioning (AMC Search, 2022). Vessel tracks transiting within Bass Strait by the type or category of vessel were produced as part of this study and are provided in Figure 6-3. From the diagrams it can be seen that tankers, passenger ships and cargo vessels all keep clear of the ATBA and use the two Traffic Separation Schemes that are in place.



First row left – Cargo ships

First row right – Tankers

Second row left – Fishing

Second row right – Sail/Pleasure craft

Third row left – Passenger

Third row right – Type 0 (default /unknown)

Figure 6-3 Ship tracks in Bass Strait by type for period 2015- 2019

Hence any disruption to commercial shipping as a result of the physical presence of the vessels undertaking removal, transport and transfer activities within the OA is unlikely to occur.

The lower sections of the jackets which will remain in place after Campaign #1 activities are expected to continue to be located within existing PSZs and the ATBA. The AMSA have noted during consultation that the Traffic Separation Scheme is likely to be maintained given other regional considerations for navigation safety. A risk assessment carried out by AMC Search in 2022 also concluded that *"removal at 55m will not affect the passage of merchant vessels of current design characteristics"* (AMC Search, 2022b). The minimum 55m vessel clearance was assessed as adequate for clearance even under extreme weather events and for the largest vessels. Hence there is no change to the current situation and impact to shipping activities is not expected to occur as a result of the presence of these structures on the seabed for a period of time until removal.

6.2.3.2 Change to the function, interests or activities of other users – Commercial fishing

A number of Commonwealth and State (Victoria) managed fishery areas overlap with the OA (refer to Table 3-2).

The physical presence of the removal activities will result in the exclusion of commercial fishing vessels from parts of the fisheries management area. Given commercial fishing vessels are already excluded from the 500m PSZ around the facilities to be removed, these exclusions are restricted to the transfer area while transfer activities are taking place and a slightly larger area (additional 500m) around each facility while the HLV is undertaking removal operations.

The presence of the HLV and the CSVs may also result in vessels needing to make minor deviations around these vessels while they are transiting through the area and transporting the removed infrastructure from the facility locations to the transfer area.

The areas of exclusion during the removal and transfer activities are minor relative to the size of the fishery areas available. Any impacts will be short-term in nature given the short duration of the activities, expected to be approximately four months. Hence it is anticipated that any disruption to fishing operations from displacement from fishing grounds as a result of the removal activities will be minor.

Esso have consulted with a broad range of stakeholders including fishing industry bodies representing both Commonwealth and State fisheries, individual fishing licence holders, recreational fishers and wind energy proponents (refer to Section 4). Fisheries (commercial and recreational) were interested in understanding the potential exclusions that would be in place during the removal activities and were provided information in this regard. It has been communicated that in addition to the existing PSZ, vessel specific exclusions will be required during lifting and transfer operations for the safety of all vessels and these requirements will be communicated in Notices to Mariners. No concerns were raised with this approach.

Commercial fishers raised whether compensation would be available to address any impacts to commercial fishers as a result of exclusion from any areas around the transfer locations during the activities. Esso is continuing to engage with commercial fishers on a regular basis and is considering the possibility of compensation for displacement around transfer areas.

Stakeholders were advised that at the completion of works, relevant authorities would be advised to allow navigation charts to be updated. A temporary navigation aid will be installed on the structures once topsides are removed if no vessel will remain in PSZ. Permanent navigation aids will be installed on the BMB CGS.

6.2.3.3 Change to the function, interests or activities of other users – Recreational activities

Recreational vessels are already excluded from the 500m PSZ around the facilities to be removed, and a slightly larger area (additional 500m) will be in place around each facility while the HLV is undertaking removal operations. Exclusions will also apply to the transfer area while transfer activities are taking place.

The presence of the HLV and the CSVs may also result in vessels needing to make minor deviations around these vessels while they are transiting through the area and transporting the removed infrastructure from the facility locations to the transfer area.

The areas of exclusion during the removal and transfer activities are minor relative to the size of the surrounding areas available. Any impacts will be short term in nature given the short duration of the activities, expected to be approximately four months. Hence it is anticipated that any disruption to recreational activities from displacement as a result of the removal activities will be minor.

As part of consultation, game fishers were interested in understanding the timing of any removal of the PSZs. It was noted that PSZs are authorised by NOPSEMA and the timing of any removal is not determined by Esso.

6.2.3.4 Change to the function, interests or activities of other users – Other marine industries

It is recognised that a number of existing and emerging marine industries have interests and operations within the OA. Decommissioning activities may result in other industries needing to make minor deviations in vessel operations or adjustments in activity planning based on their individual needs and activities.

The areas of exclusion during the removal and transfer activities are minor relative to the size of the surrounding areas available. Any impacts will be short-term in nature given the short duration of the activities, expected to be approximately four months. It is anticipated that any disruption to recreational activities from displacement as a result of the removal activities will be minor.

Esso have consulted with a range of existing and emerging marine industry stakeholders including but not limited to other oil and gas operators in the region, potential future wind energy operators with licence areas within the OA (refer to Section 4). Wind operators asked to be kept informed of decommissioning activities as part of general communications for information/interest.

6.2.4 Controls

- **CMP2:** Petroleum Safety Zone**.**
- **CM36:** Pre-start notifications**.**
- **CMP3:** Navigation aids.

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

6.2.5 Residual consequence assessment

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

- **Consequence Level IV.**

6.2.6 Demonstration of As Low As Reasonably Practicable

Table 6-7 Decision Context and justification

Decision Context A
The impacts associated with marine user interactions are well managed via legislative control measures. These controls are understood and well implemented by the industry. The use of International Maritime Organisation (IMO) approved Traffic Separation Schemes have proven to be effective in managing vessel interactions. The Bass Strait Traffic Separation Scheme is well established. 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. Concerns raised during relevant persons consultation have been considered/addressed and the socioeconomic consequence was identified as **Consequence Level IV** (the lowest level). Esso believes ALARP Decision Context A should apply.

Table 6-8 Good practice controls

Good practice	Adopted	Control	Rationale
PSZ	✓	**CMP2:** Petroleum Safety Zone	NOPSEMA is responsible for administration of PSZs as provided for in the OPGGS Act. PSZs are specified areas surrounding petroleum wells, structures or equipment which vessels or classes of vessel are prohibited from entering or being present in.
Pre-start notifications	✓	**CM36:** Pre-start notifications	Under the *Navigation Act 2012* (Cth), the Australian Hydrographic Office (AHO) is responsible for maintaining and disseminating hydrographic and other nautical information and nautical publications including: • Notices to Mariners • AUSCOAST warnings. Details of the PSZ will be published in Notices to Mariners, thus enabling other marine users to plan their activities, and minimising disruption to exclusion zones.

Good practice	Adopted	Control	Rationale
			Relevant details will be provided to the Joint Rescue Coordination Centre to enable AUSCOAST warnings to be disseminated. Commercial fisheries are notified of activities via the ongoing quarterly engagement forum. Distribution of SMS updates to the eastern fishing fleet advising of vessel movements or activities being performed outside the PSZ, etc. Messages may be sent as often as daily during an activity, if appropriate. Wind Energy proponents with licence areas within the OA are to be notified of activities via email on a quarterly basis during field activities.
Navigation aids	✓	**CMP3:** Navigation aids	Navigation aids will be installed on all Campaign #1 CGS/SPJs once topsides are removed if no vessel will remain in the PSZ. At the completion of Campaign #1, only the navigation aids installed on the BMB CGS will remain.

Table 6-9 Engineering risk assessment

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
None identified	N/A	N/A	N/A

6.2.7 Demonstration of acceptability

Table 6-10 Demonstration of acceptability test

Factor	Demonstration criteria	Criteria met	Rationale
Principles of ESD	Biodiversity Principle. No potential to affect biological diversity and ecological integrity.	✓	The potential impact is not considered as having the potential to affect biological diversity and ecological integrity.
	Precautionary Principle. 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 requirements	Legislative and other requirements have been identified and met.	✓	Legislation and other requirements considered as relevant include: OPGGS Act: • 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

Factor	Demonstration criteria	Criteria met	Rationale
			not interfere with navigation or fishing (among others) to a greater extent necessary than for the exercise of the rights conferred by titles granted • Section 619 prohibits unauthorised vessels from entering a PSZ. The exclusion of vessels within the PSZ is considered an acceptable impact for safety reasons, in particular to avoid interaction between the subsea facilities and other marine users, a PSZ is required for Esso to exercise the rights conferred by the production title. • *Navigation Act 2012* (Cth)– Chapter 6 (Safety of Navigation) Part 6 deals with safe navigation including provisions about reporting of movement of vessels. Marine Orders are made under the: • Navigation Act 2012 (Cth) • Protection of the Sea (Prevention of Pollution from Ships) Act 1983 (Cth) • Protection of the Sea (Harmful Anti-fouling Systems) Act 2006 (Cth) • Marine Orders 1 to 98 – Generally give effect to international obligations and standards and apply to regulated Australian vessels, foreign vessels, and some domestic commercial vessels • Marine Order 18 (Measures to enhance maritime safety) 2013 • Marine Order 27 (Safety of navigation and radio equipment) 2016 • Marine Order 30 (Prevention of collisions) 2016 • Rule 10 of COLREGs.
Internal context	Consistent with Esso's Environment Policy.	✓	Proposed activities are consistent with Esso's Environment Policy, in particular, to *"comply with all applicable environmental laws and regulations and apply responsible standards where laws and regulations do not exist".*
	Meets ExxonMobil Environmental Standards.	✓	The proposed controls meet the requirements of the *ExxonMobil Upstream Socioeconomic Management Standard* (ExxonMobil, 2021) specifically in relation to managing community relations.

Factor	Demonstration criteria	Criteria met	Rationale
	Meets ExxonMobil OIMS Objectives.	✓	Proposed activities meet: • OIMS System 6: Regulatory Compliance and Sustainability Management objective to identify and assess environmental aspects; significant aspects are addressed and controlled consistent with policy and regulatory requirements; and • OIMS System 10: Managing Community Risk objective to maintain public awareness and confidence in the Operations Integrity (OI) of operations and facilities.
External context	Relevant person concerns have been considered/addressed through the consultation process.	✓	Relevant persons concerns have been considered/addressed.

6.3 Planned discharge – Sewage and food waste

6.3.1 Sources of sewage and food waste discharges

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

The average volume of putrescible waste from each vessel depends on the number of POB and is estimated at 1 - 2kg/person/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 0.45m^3/person/day (NERA, 2017). Assuming between 150 - 250 people working on the *Pioneering Spirit* and 55 people on each CSV and up to 100 people across the other Campaign #1 vessels (tugs etc) this equates to an estimated range of 11 – 167m^3 of sewage and grey water discharged daily.

6.3.2 Impacts of sewage and food waste discharges

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

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

6.3.2.1 Change in water quality.

The PBW and several protected seabirds such as shearwaters, albatrosses and petrels have foraging habitat overlapping the OA.

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

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

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

6.3.2.2 Change in fauna behaviour

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

6.3.3 Controls

- **CM9:** Class certification.

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

6.3.4 Residual consequence assessment

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

- **Consequence Level IV**.

6.3.5 Demonstration of As Low As Reasonably Practicable

Table 6-11 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. The potential impacts are well regulated via various treaties and legislation, both nationally and internationally, which specify industry best practice control measures. These are well understood and implemented by the industry. Monitoring programs have been undertaken previously and a **Consequence Level IV** (the lowest level) identified. 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
MARPOL Annex IV Regulations for the Prevention of Pollution by Sewage from Ships. MARPOL Annex V Regulations for the Prevention of Pollution by Garbage from Ships.	✓	**CM9:** Class certification	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. 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. 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 three nm from shore, and untreated sewage no less than 12nm. 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 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
None identified	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

Factor	Demonstration criteria	Criteria met	Rationale
			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 requirements of MARPOL Annexes IV and V have been adopted. The following legislative and other requirements are considered relevant as they apply to the implementation of MARPOL in Australia: • Protection of the Sea (Prevention of Pollution from Ships) Act 1983 (Cth) • *Navigation Act 2012* (Cth) – Chapter 4 (Prevention of Pollution) • Marine Order 96 (Marine pollution prevention — sewage) 2018 • Marine Order 95 (Marine pollution prevention — garbage) 2018.
Internal context	Consistent with Esso's Environment Policy.	✓	Proposed activities are consistent with Esso's Environment Policy, in particular, to *"comply with all applicable environmental laws and regulations and apply responsible standards where laws and regulations do not exist"*.
	Meets ExxonMobil Environmental Standards.	✓	The proposed controls meet the requirements of the ExxonMobil's Upstream Water Management Standards specifically *"to comply with regulatory requirements and legally binding arrangements related to waste management"* and *"meet specified discharge criteria"* including MARPOL requirements.
	Meets ExxonMobil OIMS Objectives.	✓	Proposed activities meet: • OIMS System 6: Regulatory Compliance and Sustainability Management objective to identify and assess environmental aspects; significant aspects are addressed and controlled consistent with policy and regulatory requirements, and • OIMS System 8: Selecting and Engaging with Third Party Providers objective to qualify, evaluate and select contractors based on their ability to perform work in a safe, secure and environmentally sound manner.

Factor	Demonstration criteria	Criteria met	Rationale
External context	Concerns of relevant persons have been considered/addressed through the consultation process.	✓	No relevant person concerns have been raised concerning sewage and food waste discharges.

6.4 Planned discharge – Cooling waters and reverse osmosis system

6.4.1 Sources of cooling water and reverse osmosis discharges

The following activities have been identified as resulting in surface discharges:

- seawater cooling system
- reverse osmosis system.

These fluids are typical discharges associated with operational marine facilities – cooling water discharged to the sea from the vessel or facility and the reverse osmosis system discharges brine as the byproduct of the production of potable water.

A discharge of cooling water or potable water generation waste is continuous. Given the nature of these 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 very 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).

6.4.2 Impacts of cooling water and reverse osmosis discharges

Impacts of the planned discharge of brines and cooling waters are:

- change in water quality (increased salinity in the water column)
- change in the local water temperature and potential biofouling chemicals.

6.4.2.1 Change in water quality

6.4.2.1.1 INCREASED SALINITY

Reverse osmosis systems create brine which is discharged to the sea as part of the process.

Brine water will descend through the water from the discharge point where it will be rapidly mixed with receiving waters and dispersed by ocean currents. As such, any potential impacts are expected to be limited to the source of the discharge where concentrations are highest. This is confirmed by studies that indicate effects from increased salinity on planktonic communities in areas of high mixing and dispersion are generally limited to the point of discharge only (Abdul Azis, et al., 2003).

The receptors with the potential to be exposed to an increase in salinity include pelagic fish species and plankton found in surface waters within the OA. Changes in salinity can affect the ecophysiology of marine organisms. Most marine species are able to tolerate short-term fluctuations in salinity in the order of 20 to 30% (Walker & McComb, 1990). However, larval stages, which are crucial transition periods for marine species, are known to be more susceptible to impacts of increased salinity (Neuparth, Costa, & Costa, 2002). Mobile pelagic species may be subjected to slightly elevated salinity levels (approximately 10-15% higher than seawater) for a very short period which they are expected to be able to tolerate.

It is anticipated that ecological receptors that have the potential to be exposed are those that use the surface waters for transit or foraging such as whales, turtles, fish, and plankton. The PBW has a foraging habitat BIA overlapping the OA and the SRW migration BIA also overlaps the OA, but they would be required to be very close to the vessel which is considered unlikely. Vessel Masters will implement cetacean interaction management actions consistent with the *Australian National Guidelines for Whale and Dolphin Watching 2017* (Commonwealth of Australia, 2017a) and Part 8 Division 8.1 of the EPBC Regulations which, amongst other things, require that vessels not knowingly get closer than 100m to a whale.

6.4.2.1.2 INCREASED WATER TEMERATURE

The water discharged will be at a greater temperature to the surrounding seawater. Like the brine discharge the temperature will rapidly decrease due to the high mixing and dispersion until equilibrium with the ocean temperature is achieved.

It is anticipated that ecological receptors that have the potential to be exposed are those that use the surface waters for transit or foraging such as whales, turtles, fish and plankton. The PBW has a foraging habitat BIA overlapping the OA and the SRW migration BIA also overlaps the OA, but they would be required to be very close to the vessel which is considered unlikely.

6.4.2.1.3 INCREASED TOXCITY

Some heat exchange systems will have biofouling chemicals such as antifouling paints or have a system that doses with biofouling and anticorrosion chemicals. These will be in accordance with class requirements.

These are designed to provide protection for the system with the vessel and not to impact the environment.

6.4.3 Controls

- **CM3:** Chemical discharge assessment process**.**

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

6.4.4 Residual consequence assessment

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

- **Consequence Level IV**.

6.4.5 Demonstration of As Low As Reasonably Practicable

Table 6-15 Decision Context and justification

Decision Context A
The surface discharge of fluids from cooling and reverse osmosis systems is common both nationally and internationally. The release of brines and cooling waters are standard discharges associated with vessels and are not considered unusual in Commonwealth waters. The consequence of any impact associated with these discharges was assessed as **Consequence Level IV** (the lowest level). No objections or claims were raised by relevant persons about the planned operational discharges from vessels. Esso believes ALARP Decision Context A should apply.

Table 6-16 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 6-17 Engineering risk assessment

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
Electrochlorination	Requires less chemicals	Is feasible but requires retrofitting to MARPOL requirements which require specific controls regarding discharges from vessels.	Not adopted

6.4.6 Demonstration of acceptability

Table 6-18 Demonstration of acceptability test

Factor	Demonstration criteria	Criteria met	Rationale
Principles of ESD	No potential to affect biological diversity and ecological integrity	✓	The potential impact associated with this aspect is limited to a localised short-term impact, which is not considered as having the potential to affect biological diversity and ecological integrity.
	Activity does not have the potential to result in serious or irreversible environmental damage	✓	The activities were evaluated as having the potential to result in a **Consequence Level IV** thus are not considered as having the potential to result in serious or irreversible environmental damage.
Legislative and other requirements	Legislative and other requirements have been identified and met	✓	Chronic chemical pollution is a recognised threat to the species in the following conservation management plans and conservation advice; however, no conservation/management actions are specified: • *Conservation Management Plan for the Blue Whale 2015–2025* (Commonwealth of Australia, 2015) • *Conservation Advice for sei whales* (TSSC, 2015) • *Conservation Advice for fin whales* (TSSC, 2015).
Internal context	Consistent with Esso's Environment Policy	✓	Proposed activities are consistent with Esso's Environment Policy, in particular, to *"comply with all applicable environmental laws and regulations and apply responsible standards where laws and regulations do not exist".*
	Meets ExxonMobil Environmental Standards.	✓	The controls proposed meet the strategic objectives of the Exxon Mobil Upstream Environmental Standards.
	Meets ExxonMobil OIMS Objectives.	✓	Proposed activities meet: • OIMS System 6: Regulatory Compliance and Sustainability Management objective to identify and assess environmental aspects; significant aspects are addressed and controlled consistent with policy and regulatory requirements

Factor	Demonstration criteria	Criteria met	Rationale
			• OIMS System 7: Managing Changes objective to evaluate change against an established set of criteria and establish endorsement/approval levels • OIMS System 8: Selecting and Engaging with Third Party Providers 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 planned operational vessel discharges.

6.5 Planned discharge – Bilge water/deck drainage (vessel discharges)

6.5.1 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 licenced facility, or for discharge with an oil content of less than 15ppm.

Deck drainage comprising seawater from waves/spray, rainwater and deck wash water, may contain minor quantities of substances such as oil and grease which may be present on the deck.

6.5.2 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.

6.5.2.1 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).

6.5.3 Controls

- **CM9:** Class certification.

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 6-19 Decision Context and justification

Decision Context A
Discharge of treated bilge and deck drainage offshore (from vessels and other facilities) is a commonly practised activity. 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). No objections or claims were raised by relevant persons with regard to the discharge of treated bilge water and deck drainage. Esso believes ALARP Decision Context A should apply.

Table 6-20 Good practice controls

Good practice	Adopted	Control	Rationale
MARPOL Annex I Regulations for the Prevention of Pollution by Oil. MARPOL Annex V Regulations for the Prevention of Pollution by Garbage from Ships.	✓	**CM9:** Class certification	The vast majority of commercial ships are built to and surveyed for compliance with the standards laid down by classification societies. The role of vessel classification and classification societies has been recognised by the IMO across many critical areas including the SOLAS, the 1988 Protocol to the International Convention on Load Lines and MARPOL. 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. 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. 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.

Table 6-21 Engineering risk assessment

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
None identified	N/A	N/A	N/A

6.5.6 Demonstration of acceptability

Table 6-22 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 requirements of MARPOL Annexes I and V have been adopted. The following legislative and other requirements are considered relevant as they apply to the implementation of MARPOL in Australia: • Protection of the Sea (Prevention of Pollution from Ships) Act 1983 (Cth) • *Navigation Act 2012* (Cth)– Chapter 4 (Prevention of Pollution) • Marine Order 91 (Marine pollution prevention – oil) 2014 • Marine Order 95 (Marine pollution prevention – garbage) 2018.
Internal context	Consistent with Esso's Environment Policy.	✓	Proposed activities are consistent with Esso's Environment Policy, in particular, to *"comply with all applicable environmental laws and regulations and apply responsible standards where laws and regulations do not exist".*
	Meets ExxonMobil Environmental Standards.	✓	The proposed controls meet the requirements of the Upstream Water Management Standard specifically *"to meet regulatory requirements and legally binding agreements".*
	Meets ExxonMobil OIMS Objectives.	✓	Proposed activities meet: • OIMS System 6: Regulatory Compliance and Sustainability Management objective to identify

Factor	Demonstration criteria	Criteria met	Rationale
			and assess environmental aspects; significant aspects are addressed and controlled consistent with policy and regulatory requirements • OIMS System 7: Managing Changes objective to evaluate change against an established set of criteria and establish endorsement/approval levels • OIMS System 8: Selecting and Engaging with Third Party Providers 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.

6.6 Planned discharge – Grout

6.6.1 Sources of grout discharge

The safe lifting of the KFA and, KFB requires the installation of grouted lifting points as described in Section 2.7.1.2. The grouting operations will result in the planned discharges of small amounts of grout. The estimated volumes to be discharged to the environment is <1t of mixed grout per lifting point. There are a total of 12 lifting points to be installed in this manner. It is estimated that a maximum of 12t of grout could be discharged to sea across both facility locations.

This estimated amount accounts for any minor overfill of the lifting point assembly as well as necessary draining and flushing of installation equipment between locations to prevent curing and fouling. Cleaning and maintenance of the grouting equipment whilst at sea is critical to ensure no quality issues with subsequent installations.

The discharged slurry is expected to disperse rather than aggregate due to normal wave and current action and any impacts are assessed to be localised, minor in nature and short term in duration. No other safe or technically feasible options for capture and disposal of this material has been identified and therefore meets the ALARP criteria.

6.6.2 Minamata Convention on mercury

The Minamata Convention on mercury is an international treaty that seeks to protect human health and the environment from emissions and releases of mercury and mercury compounds caused by humans. Australia ratified the Convention on 7 December 2021. Countries that have ratified the Convention are bound to put controls in place to manage the discharges, emissions and disposal or 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 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.

Trace amounts of mercury can be present in some cement/grout products originating from the raw materials used in the manufacturing process. As part of the grout selection process, the contractor will ensure that the

concentration in grout to be used will be at or below a mercury concentration of <1mg/kg (1ppm) as outlined in the American Petroleum Institute (API) standards.

6.6.3 Impacts of grout discharges

Impacts of the planned discharge of grout on marine fauna considered are:

- change in water quality (increased turbidity of the water column and potential toxicity)
- change in habitat.

6.6.3.1 Change in water quality.

6.6.3.1.1 INCREASED TURBIDITY IN THE WATER COLUMN

Grout discharges will disperse under action of waves and currents and eventually settle out of the water column; the initial discharge will generate a downwards plume, increasing the initial localised turbidity of receiving waters.

Modelling of the release of 18m^3 of cement/grout wash water (De Campos, Paiva, Rodrigues, Ferreira, & Junior, 2017) indicate an ultimate average deposition of 0.05mg/m^2 of material on the seabed; with particulate matter deposited within the three-day simulation period. Given the low concentration of the deposition of the material, it is therefore expected that the in-water suspended solids (i.e. turbidity) created by the discharge is not likely to be high for an extended period of time, or over a wide area.

Modelling of larger cement/grout discharges was undertaken by BP (BP, 2013), which is useful as a conservative comparison of the potential impacts from this activity. This modelling was undertaken for significantly larger discharges at surface, i.e. 480bbl/hour (equivalent to approximately 76m^3/hour) and intermittent surface discharge of cement (following flushing of lines and equipment) in shallower water depths. The BP modelling results provide a high level of conservatism and as such is considered appropriate to apply for this program. The modelling indicates that two hours after the start of discharge, plume concentrations are between 5-50mg/L with the horizontal and vertical extents of the plume approximately 150m and 10m respectively (BP, 2013). Four hours after the start of the discharge, the modelling indicates that the plume will have completely dispersed to concentrations of less than 5mg/L (BP, 2013).

The PBW has foraging habitat overlapping the OAs and the SRW migration BIA also overlaps the OAs. Research data detailing potential impacts from suspended solids to megafauna is scarce, however such megafauna is highly mobile, transitory, and able to avoid the plumes. The area of the turbidity plumes is regarded as a very small percentage of the foraging grounds of protected seabirds such as shearwaters, albatrosses, and petrels.

The environmental receptors with the potential for exposure and considered to be most sensitive to an increase in turbidity include pelagic fish species and plankton found in the area around the well locations.

Suspended sediments greater than 500mg/L are likely to produce a measurable impact upon larvae of most fish species (Jenkins & McKinnon, 2006). It is also indicated that levels of 100mg/L may affect the larvae of several marine invertebrate species and that fish eggs and larvae are more vulnerable to suspended sediments than older life stages.

Neither modelling (De Campos, Paiva, Rodrigues, Ferreira, & Junior, 2017) (BP, 2013) suggests that suspended solids concentrations from a discharge of the cement/grout washing will be at or near levels required to cause an effect on fish or invertebrate larvae.

6.6.3.1.2 POTENTIAL TOXICITY

The potential for toxicity is associated with chemicals that are added to the dry grout mix; grout itself is classed as Poses Little or No Risk. Toxicity associated with the discharge of grout is limited to the surface discharge of grout slurry or equipment washings (not surface discharge of dry materials).

Any grout additives will be assessed and approved for discharge in accordance with Esso's *Environmental Chemical Discharge Assessment Process* (AUGO-EV-PCE-013). Table 6-23 provides examples of indicative additives that are used in industry. At the time of writing this EP, the engineering assessment is required to determine any additive use needs. The process uses the Offshore Chemical Notification Scheme (OCNS) ranking in conjunction with toxicity, biodegradation, and bioaccumulation data to determine potential impacts to the environment and acceptability of planned discharges. The process is described as part of the Implementation Strategy outlined in Section 8.

Table 6-23 Indicative grout additives

Function	OCNS ranking[1]	
	CHARM	Non-CHARM
Antifoaming agent	Silver	-
Antifoaming agent/foam breaker	Gold/substitution warning	-
Cement	-	E
Cement additive	-	E
Cement retarder	Gold	-
Cement set enhancer	Gold	-
Dispersant	Gold/substitution warning	-
Dye	Gold	-
Expanding agent additive	-	E
Fluid loss additive	Gold	-
Gas migration control	Gold/substitution warning	-
Liquid accelerator	-	E
Liquid trifunctional additive	Gold	-
Lost circulation material	-	E
Low temperature liquid dispersant	Gold/substitution warning	-
Multi-temperature cement retarder	Gold/substitution warning	-
Retarder	-	E
Spacer additive	Gold/substitution warning	-
Spacer viscosifier	Gold/substitution warning	-
Well stimulation chemical	Gold/substitution warning	-

[1] The OCNS uses the Harmonised Mandatory Control Scheme developed through the OSPAR Convention. This ranks chemical products according to Hazard Quotient, calculated using the Chemical Hazard and Risk Management (CHARM) model.

The environmental receptors with the potential to be exposed and most at risk from an increase in toxicity include pelagic fish species and plankton.

6.6.4 Controls

- **CM3:** Chemical discharge assessment process.
- **CMP5:** Grouting procedures.
- **CMP25:** Grout selection.

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

6.6.5 *Residual consequence assessment*

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

- **Consequence Level IV.**

6.6.6 *Demonstration of As Low As Reasonably Practicable*

Table 6-24 Decision Context and justification

Decision Context A
The impacts of inert discharges such as grout are well known. The practice of discharging grout to the marine environment is a well understood activity both nationally and internationally and good practice is well defined. Industry good practice control measures are considered sufficient to reduce the impacts and risks associated with this hazard to ALARP. The consequence of any impact associated with these discharges was assessed as **Consequence Level IV** (the lowest level). Esso believes ALARP Decision Context A should apply.

Table 6-25 Good practice controls

Good practice	Adopted	Control	Rationale
Discharge of least environmentally hazardous chemical	✓	**CM3:** Chemical discharge assessment process	This risk control practice requires that new chemicals (including additives) must be approved prior to use. This practice assesses chemicals that have the potential to be discharged to the environment to ensure the lowest toxicity, most biodegradable and least accumulative chemicals are selected which meet the technical requirements of the application.
		CMP25: Grout selection	Minamata Convention will be considered in grout selection. Grout will be selected to ensure a mercury concentration of <1mg/kg (1ppm) as outlined in the API standards.
No overboard discharge of unmixed bulk powders used in grouting	✓	**CMP5:** Grouting procedures	The grout jobs are conducted in accordance with the procedures and processes to ensure minimal stock is left over. It is a general industry standard that unmixed grout is not discharged offshore; this has also been applied to this program. There will be no planned discharge of unmixed grout. Unmixed grout will be returned to shore for reuse or appropriate disposal as needed.

Table 6-26 Engineering risk assessment

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
Dust recovery system	Collects dust from vent lines of bulk storage silos/tanks and reduces the amount of cement	If space is available and fitting the equipment is feasible (e.g. cyclones mounted on a secondary receiving	Not adopted

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
	emitted into the environment during pneumatic transport.	vessel), the cost of retrofitting this equipment, combined with the additional time required during transfer to unload the collected product and transfer it back to the primary storage vessel, and the potential for costly delays due to blockage of the vent lines is considered to outweigh the benefit gained.	
Discharge of mixed slurry to the sea	Minor discharge of excess slurry (overfill or from flushing/cleaning of equipment and piping).	Discharge to the marine environment will only occur when there are no other safe or technically feasible options and therefore when ALARP.	Adopted
Transfer of excess grout to other Esso operations	No planned discharge to the marine environment.	Given the small quantities and activity specific technical specifications of the grout to be used, transfer and use of excess mixed grout by other Esso operations is not considered practicable.	Not adopted

6.6.7 Demonstration of acceptability

Table 6-27 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.	✓	Minamata Convention considered part of grout selection.
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.	✓	There is no standard related to the discharge of grout, but the controls proposed meet the strategic objectives of the Upstream Environmental Standards.
	Meets ExxonMobil OIMS Objectives.	✓	Proposed activities meet: • OIMS System 6: Regulatory Compliance and Sustainability Management objective to identify and assess environmental aspects; significant aspects are addressed and controlled consistent with policy and regulatory requirements • OIMS System 8: Selecting and Engaging with Third Party Providers 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 offshore discharges.

6.7 Planned discharges – Umbilical and pipeline fluids

6.7.1 Sources of umbilical and pipeline fluids

Before decommissioning activities commence, pipelines connecting to the SPJs are cleaned and flushed until cleanliness is confirmed. Fluids generated in the cleaning process are received onshore at the Longford Plant and are managed through Longford's existing wastewater management practices. These cleaning activities are performed under the *Bass Strait Environment Plan* (AUGO-EV-EMM-012).

After cleaning of the pipelines and risers is completed, they are filled with seawater treated with inhibitor. Small concentrations of residues remain in the pipelines and risers.

Of the pipelines and risers to be cut as part of Campaign #1, pipeline HLA600 – MLA300 TEEKFB500 - HLA is estimated to contain the largest volume of seawater treated with inhibitor. It is estimated that approximately 0.6L of oil and 39.6L of inhibitor may potentially be released from this pipeline. The indicative total volume to be released from all the pipelines across all of the Campaign #1 activities combined is estimated to be approximately 4.7L of oil and 314L for inhibitor.

For umbilicals, release of fluids into the marine environment is only expected to occur at five facilities. These umbilicals will be cut at approximately 5m from the jackets and removed. Residual fluids will be released to the environment during the cutting and lifting operations, and may include hydraulic fluids, corrosion inhibitor and pour point depressant. Indicative volumes of fluids to be released from umbilicals are:

- MKA – Remaining umbilicals at MKA may be plugged or capped after being cut, minimising the potential release of residual fluids into the marine environment. Estimated volume of residual fluids that could be released from MKA umbilicals during lifting operations in the range of approximately 215L. The estimate accounts for densities of fluids that will remain in the umbilical, limited area of the cut end and likelihood that the fluids will remain within the umbilical. The options to flush the hydraulic fluid from the MKA

umbilical was reviewed and is not considered reasonably practicable due to technical complexities. The hydraulic fluid (Aqualink 325-F v2 f) was assessed using the comparable OCNS ranking in conjunction with toxicity, biodegradation, and bioaccumulation data and determines this material to be acceptable for use and discharge.
- There are substantial technical challenges to plugging umbilicals and the feasibility will not be able to be determined until the umbilical is cut. The hydraulic fluid in the umbilical is considered suitable for environmental discharge
- BMA - Estimated volume of residual fluids that could be released from BMA umbilicals during lifting operations is approximately 100L
- KFA, KFB, WKF - Estimated volume of fluids that could be released from each of these locations is approximately 40L.

6.7.2 Impacts of umbilical and pipeline fluids discharge

Impacts of discharged umbilical and pipeline fluids on receptors are:

- change in water quality
- injury/mortality of fauna.

6.7.3 Impact assessment

Discharge of fluids from each umbilical and pipeline structures will happen only once during the cutting and lifting of each structure. In addition, release from umbilicals is anticipated to occur only at selected facilities, as described in Section 6.7.1, with discharge of fluids limited to small volumes. Discharged fluids will be rapidly dispersed in the high energy marine environment. Severing the connection between the umbilical and the platforms is required to enable lifting operation of the facility and therefore the cutting operation cannot be eliminated.

For pipelines and given they will be cleaned and fluids generated during this process will be sent to the Longford Plant for management, only minor residual fluids that remain in the pipelines after the cleaning process will be released to the marine environment during removal of facilities as part of Campaign#1 activities.

Based on this assessment, potential impacts to water quality and to marine fauna are expected to be localised and be of a short-term nature, with inconsequential effects on sensitive receptors or at a population level.

6.7.4 Controls

- **CM3:** Chemical discharge assessment process.

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

6.7.5 Residual consequence assessment

Based on the assessment described above, the residual potential consequence has been determined as:

- **Consequence Level IV.**

6.7.6 Demonstration of As Low As Reasonably Practicable

Table 6-28 Decision Context and justification

Decision Context A
Discharge of residual fluids from umbilicals and pipelines is common during the execution of decommissioning activities. Industry best practice has been applied for management of planned discharge through the application of chemical assessment and selection processes for cleaning of pipelines, and completion of works such as plugging of lines to minimise expected residual volumes to be released. Given the small volumes and the absence of sensitive environmental features, the consequence of any potential impact associated to this planned discharge is assessed as Level IV (the lowest level). No objections or claims were raised by relevant persons with regard to the discharge of residual fluids from umbilicals and pipelines. Esso believes ALARP Decision Context A should apply.

Table 6-29 Good practice controls

Good practice	Adopted	Control	Rationale
Discharge of least environmentally hazardous chemical	✓	**CM3:** Chemical discharge assessment process	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 bio accumulative chemicals are selected which meet the technical requirements of the application.

Table 6-30 Engineering risk assessment

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
Capping and plugging all pipelines and umbilicals post cutting	Reduced release of chemicals to the environment	Pipelines are flushed to a cleanliness target prior to decommissioning. Umbilicals are flushed where possible. Plugging and capping umbilicals may not be technically feasible. Volumes of hydraulic fluid released are considered minor and the fluid present has been assessed to as suitable for environmental release	Not adopted

6.7.7 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.

Factor	Demonstration criteria	Criteria met	Rationale
Legislative and other requirements	Legislative and other requirements have been identified and met.	✓	No environmental legislation was deemed relevant to this particular impact. Chronic chemical pollution is a recognised threat to the species in the following conservation management plans and advice. These discharges are not chronic and will quickly dissipate. It is also noted that no conservation/management actions are specified in relation to chemical discharges. Outcome from assessment of potential impacts is not inconsistent with the conservation objectives of these plans. • *Conservation Management Plan for the Blue Whale* (Commonwealth of Australia, 2015). • National Recovery Plan for the Southern Right Whale (DCCEEW, 2024) • *Conservation Advice for sei whales* (TSSC, 2015). • *Conservation Advice for fin whales* (TSSC, 2015).
Internal context	Consistent with Esso's Environment Policy.	✓	Proposed activities are consistent with Esso's Environment Policy, in particular, to *"comply with all applicable environmental laws and regulations and apply responsible standards where laws and regulations do not exist".*
	Meets ExxonMobil Environmental Standards.	✓	Outcome from assessment of potential impacts is consistent with requirements of the Upstream Water Management.
	Meets ExxonMobil OIMS Objectives.	✓	Proposed activities meet: • OIMS System 6: Regulatory Compliance and Sustainability Management objective to identify and assess environmental aspects; significant aspects are addressed and controlled consistent with policy and regulatory requirements, and includes processes and procedures for managing environmental impacts, such as the: Environmental Chemical Discharge Assessment Process.
External context	Relevant person concerns have been considered/addressed	✓	No relevant person concerns have been raised concerning umbilical and pipeline residual fluids discharges.

Factor	Demonstration criteria	Criteria met	Rationale
	through the consultation process.		

6.8 Planned discharges –Jacket structure internal fluids

6.8.1 Sources of jacket structure fluids

Jacket structures described in this Section include ODSPs, CDSPs, JLSTs, and flooded jacket members.

The ODSPs are where all liquids from the atmospheric drains were collected in the platforms, and also where hydrocarbons were separated from the water by allowing water to flow out to sea via the subsea window, on average more than 30m below sea level. Removed hydrocarbons were then pumped either to the CDSP and from there to the skimmer vessel, or directly to the skimmer vessel. The CDSPs were used to collect all liquids from the closed drain system, and to separate the hydrocarbons from water by allowing the water to flow out to sea via the subsea window. Hydrocarbons were then pumped to the skimmer vessel by the CDSP pumps. The ODSPs and CDSPs will be cleaned during the preparation for decommissioning activities, as described in Section 2.11.1, to remove content of fluids remaining in these structures. However, it is expected that a small volume of residual fluids will remain inside these structures and then released into the environment during lifting operations. After cleaning of ODSPs and CDSPs, these structures will be left open to atmosphere and will free drain upon lifting.

The JLSTs were used to variously contain diesel, glycol, methanol or potable water. Similar to skimmer piles, JLSTs will be cleaned in preparation for decommissioning activities, and left open to atmosphere via a dedicated vent line. JLSTs have a sealed bottom which prevents drainage. Therefore, after cleaning is completed, holes will be drilled in the tanks to allow for free flow of residual fluids remaining inside the tanks during lifting operations.

As part of removals preparation activities, the status of structures post cleaning will be documented in a hazardous materials register for each facility. This register will be used to support identification of residual materials for Campaign #1 works planning and execution.

Flooded jacket members refer to sections of the jackets where there has been ingress of seawater. To ensure actual crane lifting weights and configurations reflect what has been planned for lifting operations, any seawater inside these jacket members must be allowed to drain out of the structure while it is lifted out of the water. To achieve this, drain and vent holes will be drilled in flooded members to eliminate the potential for any entrapped water to be removed with the jackets. This activity will be assessed on a case-by-case basis, to determine which jacket members are flooded and therefore require this approach.

6.8.2 Impacts of discharge of internal fluids from jacket structures

Potential impacts of discharged fluids from ODSPs, CDSPs, JLSTs and flooded jacket members on receptors are:

- change in water quality
- injury/mortality to fauna.

6.8.2.1 Change in water quality

For all ODSP systems and for Generation1 CDSPs (KFA and KFB), target cleanliness is an OIW content at or below 30ppm. For these systems and based on the maximum OIW set at these facilities, a combined total volume of fluids of less than 10L is expected to be released into the environment during lifting operations.

For the Generation 2 CDSPs (FTA, MKA, FLA, BMA, CBA, HLA, WKF) target cleanliness is an OIW content at or below 250ppm. The CDSPs in these facilities have complex internal structures which limit the technical feasibility of cleaning techniques. For these systems and based on the maximum OIW set at these facilities, a combined total volume of fluids of less than 350L is expected to be released into the environment during lifting operations. For all ODSP and CDSP systems, all reasonable endeavours will be made to achieve or better the cleanliness targets. Based on operational experience, it is anticipated that the cleanliness targets will be achievable however it is recognised that due to the internal configuration of the structures, the target may not be achieved in all cases.

The ODSP and CDSP have been in operation for many years. Both the ODSPs and CDSPs have subsea windows where separated process water can exit via displacement when liquids from the topside drains enter and where seawater can enter when hydrocarbons separated from the liquids are pumped out. Analysis of the residual water in the FTA skimmer pile reported level of nickel and zinc above the ANZECC trigger value for 99% level of

protection in marine water. During lifting of each skimmer pile, the residual water will be progressively released to sea through the water column. The volume of water to be released in such lifting is orders of magnitude less than the volumes of produced formation water that were assessed as acceptable during operation of these platforms (refer to BSEP). Iron was also reported in the analysis which is not unexpected: although there was some seawater exchange between the skimmer piles and the sea when they were operational, it is likely that water within the ODSPs and CDSPs will have become anoxic, resulting in the potential for rust deposits on the skimmer piles' internal surfaces. This may result in turbid, discoloured water being discharged during lifting which is expected to be temporary.

The JLSTs will also be cleaned by filling the tanks with seawater and subsequent skimming of diesel and draining of all liquids. Target cleanliness is the point of diminishing returns for OIW contents at or below 30ppm. Based on the maximum OIW set at these structures, an estimated volume of fluids that may be released from JLSTs during lifting operations is 10L per tank.

Methanol stored in a JLST at MKA will be removed by cleaning and flushing of the tank during preparation works prior to commencement of Campaign#1 activities. Resulting fluids from the cleaning of the JLST at MKA will be managed by either pumping it to the pipeline or into iso containers for transport to the Longford plant, or by temporary storage in iso containers and then transported to an onshore location. However, it is expected that residual volumes of the fluid that cannot be pumped will remain in the JLST and then released to the sea when the structure is lifted during Campaign#1 operations. From the cleaning process planned for the JLST and based on dilution rates to be used during that stage, it is estimated that the residual volume of methanol that may remain within the JLST and then be released to the sea is approximately 10L.

As a reference, the *Bass Strait Environment Plan* (AUGO-EV-EMM-012) presents an analysis and assessment of produced formation water discharge from production operations. A description provided in the referenced EP indicates that during platform operations, wells bring water to the surface alongside the oil and gas, then the produced formation water is separated and treated to remove hydrocarbons prior to discharge. Separation of formation water from reservoir fluids is not completely effective, and separated produced formation water often contains small amounts of naturally occurring substances (such as dispersed oil) and residual process chemicals. The BSEP established a mixing zone of produced formation water for each platform, and extent of this zone ranged between 140-230m. It is noted that release volume established for calculation of the mixing zones in the BSEP ranged between 1000-12,000kL/day. For the purpose of the assessment of potential impacts from release of residual fluids during decommissioning activities, it is noted that the estimated total volume to be released from ODSPs, CDSPs and JLSTs is several orders of magnitude less than the volumes described and assessed in the BSEP. In addition, release of residual fluids during decommissioning activities from ODSPs, CDSPs and JLSTs will be a one-off occurrence at each facility, and fluids will have OIW content that is below the target established for each structure (as previously described), ensuring that potential impact to receptors are reduced to ALARP. As a result, potential impacts to water quality from release of these small volumes of residual fluids are expected to be highly localised and short term, with inconsequential effects on sensitive receptors or at a population level, with a potential impact of **Consequence Level IV**.

For flooded jacket members, seawater that enters and become stagnant within these structures is not in contact with any fluids, substances or contaminants that may be of potential concern; however, it is likely for the seawater within the flooded members to have become anoxic, resulting in the potential for rust deposits on the members' internal surfaces. Upon lifting, there may be turbid, discoloured water discharged during lifting which is expected to be temporary. Assessed consequence level for this release is **Consequence Level IV**.

6.8.2.2 Injury/mortality to fauna

Due to the small volumes estimated to be potentially released, the low content of OIW in the fluids that may be discharged, the localised nature of the release and the negligible variation expected in water quality, potential impacts to marine fauna are considered to have inconsequential effects, with **Consequence Level IV**.

6.8.3 Controls

- **CMP26:** Cleaning of ODSPs, CDSPs and JLST.

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

6.8.4 Residual consequence assessment

Based on the assessment described above, the residual potential consequence has been determined as:

- **Consequence Level IV**.

6.8.5 *Demonstration of As Low As Reasonably Practicable*

Table 6-32 Decision Context and justification

Decision Context A
Discharge of residual fluids from ODSPs, CDSPs and JLSTs is common during the execution of decommissioning activities and is a well understood activity. Discharges are not managed by national regulations however industry best practice has been applied through the application of chemical assessment and selection processes during Esso operations in the Bass Strait. Industry best practice measures have been applied. Given the small volumes, limited extent of potential impacts and the absence of sensitive environmental features in the area where the planned release of residual fluids may occur, the consequence level of any potential impact associated to this planned discharge is assessed as Level IV (the lowest level). No objections or claims were raised by relevant persons with regard to the discharge of residual fluids from these structures. Esso believes ALARP Decision Context A should apply.

Table 6-33 Good practice controls

Good practice	Adopted	Control	Rationale
Minimise potential discharge of contaminated fluids present in ODSPs, CDSPs and JLSTs	✓	**CMP26:** Cleaning of ODSPs, CDSPs and JLST	Cleaning of ODSPs, CDSPs and JLSTs as part of preparation decommissioning activities will ensure potential volumes of fluids within these structures are minimised to as low as possible, and that contaminants present in those residual volumes of fluids are reduced to ALARP.

Table 6-34 Engineering risk assessment

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
None identified	N/A	N/A	N/A

6.8.6 *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.	✓	No environmental legislation was deemed relevant to this particular impact. Chronic chemical pollution is a

Factor	Demonstration criteria	Criteria met	Rationale
			recognised threat to the species in the following conservation management plans and advice. These discharges are not chronic and will quickly dissipate. It is also noted that no conservation/management actions are specified in relation to chemical discharges. Outcome from assessment of potential impacts is not inconsistent with the conservation objectives of these plans. • *Conservation Management Plan for the Blue Whale* (Commonwealth of Australia, 2015). • *National Recovery Plan for the Southern Right Whale* (DCCEEW, 2024). • *Conservation Advice for sei whales* (TSSC, 2015). • *Conservation Advice for fin whales* (TSSC, 2015).
Internal context	Consistent with Esso's Environment Policy.	✓	Proposed activities are consistent with Esso's Environment Policy, in particular, to *"comply with all applicable environmental laws and regulations and apply responsible standards where laws and regulations do not exist".*
	Meets ExxonMobil Environmental Standards.	✓	Outcome from assessment of potential impacts is consistent with requirements of the Upstream Water Management.
	Meets ExxonMobil OIMS Objectives.	✓	Proposed activities meet: • OIMS System 6: Regulatory Compliance and Sustainability Management objective to identify and assess environmental aspects; significant aspects are addressed and controlled consistent with policy and regulatory requirements.
External context	Concerns of relevant persons have been considered/addressed through the consultation process.	✓	No relevant person concerns have been raised concerning offshore discharges.

6.9 Planned discharges – Solids

6.9.1 Sources of solid discharges

Planned discharges of solids from subsea infrastructure during decommissioning activities include the following:

- Titanium iron oxide mineral sand and steel shot ballast - This aggregate-like material is present within some of the skirt piles of older facilities. Based on the planned cut heights, this material will only be encountered at KFA and KFB in Campaign #1. This material will be released during either cutting or lifting of structures. Where internal cutting of the jacket is feasible, the titanium iron oxide mineral sand and steel shot ballast material within may need to be removed to allow the abrasive water jetting cutting tool to fit inside the pile. The method to remove the steel shot and titanium iron oxide mineral sand mix is likely to be via the airlift tool or a suitable alternative. Use of airlift techniques to remove internal sediment/aggregate is common in industry. There is no viable means of capturing the materials removed from the piles using the airlift method. The steel shot and mineral sand will be discharged to sea. Where external cutting is required, steel shot and titanium iron oxide mineral sand mix will be released upon lifting of the jacket where this material extends above the cut height. Indicative volumes potentially to be released are shown in Table 2-26.
- Marine growth - Narrow bands of marine growth will be removed from where jacket cuts will be made to allow upper sections to be lifted. Specific scenarios where marine growth will be removed and released from the jackets as part of removal activities are:
    - where subsea cutting or drilling will be performed or where the jacket will be supported by the JLS
    - in areas around the cutting elevation of both jacket legs, pipe work and appurtenances to allow installation of cutting tool
    - at locations where subsea rigging may be attached
    - at the location of the jacket that will make contact with the support saddles on the JLS beams during the lift
    - in locations where detailed inspection is required or locations which require additional attention after the visual inspections
    - in other locations that may be determined as required based on other potential impacts and risks relating to dropped marine growth during transportation of structures

    A waverider buoy may also be installed within the OA to provide real time field measurement of wave height and wave direction to support decommissioning activities. At the completion of operations, some marine growth on the tether would be expected which would need to be cleaned off at the time of recovery

    The targeted removal of marine growth from jacket cutting/inspection locations will be conducted by an ROV utilising an ROV-held flexiclean tool or marine growth removal tool, or via high pressure water jetting. In addition, marine growth could also be released from inside the skirt piles that will require internal cleaning for removal purposes. An airlift tool will be used to displace marine growth both to the surrounding environment and deep within the piles as particulates settle. The estimate is approximately 50% of marine growth removed in this matter will disperse to sea and 50% will settle deep within the pile itself, being effectively captured.
- Minor steel fines and garnet sand associated with cutting of structures - During cutting operations swarf will also be released to sea. Garnet will be used for high pressure water jetting. Indicative volumes of swarf and garnet are indicated in Table 2-26.
- Natural accumulations of sand, grout and marine growth within piles that will be lost as part of either airlifting, or lifting of structures: marine growth, sand and grout may potentially be present within the skirt piles of the jackets. Internal cleaning may be required to allow for internal cutting of the piles. Where internal cutting is not possible, any materials present above the cut line of the pile is expected to be released into the marine environment during lifting operations. Presence of these materials will be assessed on a case-by-case basis. Volumes expected to be released from airlifting or lifting of jackets is determined to be negligible and therefore will not be assessed further.

6.9.2 Impacts of planned discharge of solids

Impacts of discharge of solids on receptors are:

- change in water quality
- change in habitat
- injury/mortality to fauna.

6.9.3 Impact assessment

6.9.3.1 Change in water quality

Titanium iron oxide and natural sands released during airlifting of the material or during lifting of the structures will disperse in the marine environment. Capture is not considered technically feasible. Coarse particles are expected to settle, while fine particles are expected to remain within the water column. Fines can lead to an increase in turbidity of the water. For decommissioning activities, it has been established that the maximum extent of the plume from the release source is at KFA, where it is expected that a concentration of 1mg/L could reach up to 100m from the release location. Maximum concentration assessed for titanium iron oxide is 100mg/L, which is limited to a 10m radius from the source. (Stantec Australia, 2024a). For turbidity, the ANZECC/ARMCANZ marine water quality objectives for protection of aquatic systems are established as 0.5 – 10ntu/1.5 – 30mg/L.

In addition, there is a risk of mobilising contaminants via release of particles in the water column during airlifting or lifting operations. Potential contaminants are those associated to aggregate-like materials, including fly-ash, bentonite and heavy metals.

The potential for effects of toxicity from the mobilisation of contaminants will depend on the particular toxicant, its concentration, level of dilution and sensitivity of the biological receptors. Metals can be essential for organisms as trace elements, however at higher concentrations they can become toxic (ANZG 2018). High exposure to heavy metals can cause physiological stress, reduced reproductive success, and in some cases, mortality in associated invertebrates and fishes (Ellis, et al., 2017).

The maximum distance at which the plume of released material could reach from the source location is 100m at KFA. As a result, it is possible to have concentrations of mobilised contaminants available in the water column within this radius.

During cutting activities, swarf and garnet will be released into the marine environment. Composition of swarf fines is subject to the composition of the structure from where it is originated, in this case, steel. Therefore, it is expected that swarf will be comprised of mostly iron and zinc and then traces of heavy metals such as copper and nickel. Swarf volumes to be released are dependent on the cross-section area and cutting length, which for decommissioning activities is expected to be minimal, with an estimated total volume of approximately 0.20m^3. The facility at which maximum potential volume of swarf could be generated is at HLA, with an approximate volume of 0.04m^3. Considering this maximum individual volume to be released from a facility, it is expected that potential affected area with concentrations up to 0.2mg/L is confined to within 15m from the point of fine contents release. Beyond this immediate vicinity, the concentration of fines are expected to diminish rapidly, with no significant change in water or sediment quality predicted at distances greater than 20m from the facility (Stantec Australia, 2024a).

Garnet to be used during cutting activities is a commonly used product by the industry for waterjet cutting worldwide. It consists mostly (>97%) of natural almandine (Fe_3AL_2 $[SiO_4]_3$), and then minor concentrations of ilmenite (<1%), quartz (<0.5%), zircon (<0.1%) and other (0.25%) components, with no presence of heavy metals or toxic compounds. Release of small volumes of garnet is expected to have inconsequential effects on water quality.

Based on this it is expected that potential impacts to water quality from the release of solids will be limited to the immediate vicinity of the facilities and of short duration. Therefore, a **Consequence Level IV** has been identified for this impact.

6.9.3.2 Change in habitat

Coarse particles released during airlifting, cutting or lifting operations will likely settle on the seafloor. Due to the small volume of material estimated to be released and then settled on the seafloor, it is considered that potential impacts to current habitat characteristics and features are negligible, with **Consequence Level IV**, and is therefore not assessed further in this EP.

6.9.3.3 Injury/mortality to fauna

The three potential pathways of exposure of fauna to injury or mortality from the release of material during airlifting, cutting and lifting operations are via smothering by material settling on the seafloor, exposure to reduced water quality, or by direct intervention of marine fauna attached to the narrow section of the jacket where marine growth will be removed to allow for cutting of the structure.

An organism's ability to survive burial and smothering due to sedimentation will vary largely depending on the particle grain size, rate of sedimentation, depth of burial and the organism's physiology and adaptation to smothering. This may vary among individual species of the same family. The predominant infauna and epifauna known to be associated with soft sediments around the facilities that are part of Campaign #1 activities include:

- 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, Campbell, & Hobday, 1990).

There is a paucity of information regarding the ability of these organisms to evade burial and smothering. When assessing potential effects of depth of settled material on organisms, (Stantec Australia, 2024b) reference studies such as (Roberts, Gregory, & Foster, 1998), where 15cm is suggested as the maximum depth of overburden through which benthic infauna can successfully migrate.

Based on the small volumes of material to be released, and the fraction of particles that would settle on the seafloor, it is unlikely that thickness of layer of settled material will be greater than 1cm in the immediate vicinity of the facilities. Based on the suggested ability of infauna to evade smothering when exposed to layers <1cm thick, it is unlikely smothering will pose a significant threat to these organisms. In addition, potential loss of infauna from smothering would be limited to the immediate vicinity of the facilities and has an overall inconsequential effect on diversity or ecosystem function.

Contaminants that may be mobilised within the water column pose a risk to marine fauna, however it is not expected that all the material will become bioavailable to organisms. The area of exposure is limited to the immediate vicinity of the facilities, and it is not expected to affect organisms at a population level.

The targeted removal of marine growth from the structure to allow for cutting activities can potentially lead to injury and mortality of organisms that are present within the specific section required to be cleaned. It is expected that highly mobile organisms that may be present will be more resilient to this impact than sessile organisms. Potential impact will be localised and is not expected to have an effect over species at a population level.

Given the localised nature of the potential impact, the limited presence of sensitive receptors in the immediate vicinity of the facilities, the likely fast recovery and recolonisation by organisms, and potential effects limited to individual organisms rather than species populations, consequence level from discharge of solids to the marine environment is assessed as **Consequence Level IV**.

6.9.4 Controls

- **CM3:** Chemical discharge assessment process.

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

6.9.5 Residual consequence assessment

Based on the assessment described above and with the control in place, the residual potential consequence has been determined as:

- **Consequence Level IV**.

6.9.6 Demonstration of As Low As Reasonably Practicable

Table 6-36 Decision Context and justification

Decision Context A
Industry best practice selection processes will be applied for solid materials to be used during decommissioning activities (i.e. garnet), including the application of chemical assessment and selection process. There is minimal uncertainty on the extent of impacts. Given the small volumes to be released and potential inconsequential effect, **Consequence Level IV** (the lowest level) has been assessed for this impact. No objections or claims were raised by relevant persons with regard to the discharge of solids.

Decision Context A
Esso believes ALARP Decision Context A should apply

Table 6-37 Good practice controls

Good practice	Adopted	Control	Rationale
Discharge of least environmentally hazardous chemical	✓	**CM3:** Chemical discharge assessment process	This risk control practice requires that new chemicals, including those to be used for cutting activities, must be approved prior to use. This practice assesses chemicals that have the potential to be discharged to the environment to ensure the lowest toxicity, most biodegradable and least accumulative chemicals are selected which meet the technical requirements of the application.

Table 6-38 Engineering risk assessment

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
Not identified	N/A	N/A	N/A

6.9.7 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 environmental damage.	✓	The activities were evaluated as having the potential to result in a **Consequence Level IV** thus are not considered as having the potential to result in serious or irreversible environmental damage.
Legislative and other requirements	Legislative and other requirements have been identified and met.	✓	No environmental legislation was deemed relevant to this particular impact. Chronic chemical pollution is a recognised threat to the species in the following conservation management plans and advice. These discharges are not chronic and will quickly dissipate. It is also noted that no conservation/management actions are specified in relation to chemical discharges. • *Conservation Management Plan for the Blue Whale* (Commonwealth of Australia, 2015).

Factor	Demonstration criteria	Criteria met	Rationale
			• *National Recovery Plan for the Southern Right Whale* (DCCEEW, 2024). • *Conservation Advice for sei whales* (TSSC, 2015). • *Conservation Advice for fin whales* (TSSC, 2015).
Internal context	Consistent with Esso's Environment Policy.	✓	Proposed activities are consistent with Esso's Environment Policy, in particular, to *"comply with all applicable environmental laws and regulations and apply responsible standards where laws and regulations do not exist".*
	Meets ExxonMobil Environmental Standards.	✓	There is no standard related to the discharge of solids resulting from marine growth removal, internal pile legs deposits, or swarf from SPJ cutting activities, but outcome from assessment of potential impacts is consistent with Esso's Corporate Environmental Expectations, in particular to *"operating our business in a responsible and sustainable manner, inclusive of working to minimise environmental impacts from our operations".*
	Meets ExxonMobil OIMS Objectives.	✓	Proposed activities meet: • OIMS System 6: Regulatory Compliance and Sustainability Management objective to identify and assess environmental aspects; significant aspects are addressed and controlled consistent with policy and regulatory requirements.
External context	Concerns of relevant persons have been considered/addressed through the consultation process.	✓	No relevant person concerns have been raised concerning offshore discharges.

6.10 Planned discharge – Marine growth during lifting, transfer and transit

6.10.1 Sources of marine growth

ROV surveys of the SPJs have shown all of the submerged structures to be extensively encrusted with marine growth. Table 6-40 includes conservative estimates of marine growth that may remain on structures at the time of lifting - based on planned cut depth and surface area.

Table 6-40 Marine Growth Estimates

Facility	HLA*	KFA*	KFB*	MKA	WKF	CBA	FLA	FTA	BMA	WTA	PCA	DPA
Estimated mass of marine growth (MT)	155	119	118	159	127	233	157	227	197	84	26	26

* including support strut

The marine growth is dominated by jewel anemones (*Corynactis australis*), which is a native species. The findings of decommissioning marine ecology surveys, that were assessed by the Australian Institute of Marine Science, suggested that generally >95% of the upper 55m section of the jackets were occupied by the jewel anemone and various forms of marine sponges with very little, if any, unoccupied space. The Australian Institute of Marine Science findings suggest that the high abundance of anemones have provided effective defensive of the structures against the establishment of IMS.

In further assessing for the potential presence of IMS across the Campaign #1 facilities, a review was completed that examined findings from the decommissioning marine ecology survey reports by the Australian Institute of Marine Science's review of 199 maintenance and inspection ROV recordings that captured structural surveys of jacket legs, conductor tubes, caissons, and overboard pipes and a review of high-resolution still images of fenders removed from FTA in January 2025. No IMS species were identified in any of the images/footage reviewed.

Potential IMS risks relating to biofouling of vessel hulls and discharge of ballast water are discussed further in Section 7.4. Potential translocation of mobile native species that have the potential to occur on the marine growth is discussed further in Section 7.3.

This EP considers direct and indirect impacts from activities conducted within Commonwealth waters (including off-title areas) across the OA as described in Section 3.1. Campaign #1 activities conducted outside of the OA will be subject to applicable approvals under Victorian and Commonwealth environment laws, and are not within the scope of this EP.

Esso intends to prepare and submit a staged referral under the *Environment Protection and Biodiversity Act 1999* (Cth) to DCCEEW. The second stage of the referrals will cover aspects associated with the transportation of decommissioned assets through State waters and offloading and set down at Barry Beach Marine Terminal.

6.10.2 Impacts of planned discharge of marine growth

Potential impacts of discharge of marine growth on receptors are:

- change in water quality
- change in habitat.

6.10.3 Impact assessment

6.10.3.1 Change in water quality

During lifting, any marine growth dislodged from the structures will fall to the seabed close to the structures' original location and will either survive in their new location or become food for other marine life in the area. During transit, and transfer, it is likely the marine growth now out of the water will progressively desiccate and some will fall off the structures. During transport, jackets are held on an incline with the jacket structures raked towards the vessel deck. During barge transport, jackets will be stood vertically while, monopods will be fastened horizontally on the deck. During these transport operations, marine growth will fall onto vessel and barge decks where it can be collected however it is recognised that some marine growth will not land on deck and will be lost to the environment. International industry practice is to dispose of dropped marine growth direct to the environment however for this EP, all marine growth that is captured on vessel or barge decks will be collected and stored for appropriate disposal onshore and will not be disposed of to sea. The change in water quality from marine growth being dislodged is assessed to be highly localised, temporary and negligible.

During lifting, it is expected that some mobile organisms (e.g. fish, crustaceans) will be dislodged and return to the sea close to the structure's original location. During transfer and transit, it is likely that any remaining mobile organisms on the structures out of that water will preferentially return to the sea or are likely to die on the structure. The mortality to overall levels of fauna arising from transfer and transit is assessed to be negligible.

6.10.3.2 Change in habitat

During lifting, it is expected that some mobile organisms (e.g. fish, crustaceans etc.) will be dislodged and return to the sea close to the structure's original location. The predominate species growing on the jackets is the jewel anemone. Jewel anemones are native encrusting species that are not known from any other offshore reef environments in this region, with reports of its occurrence typically associated with inshore rocky reefs and other artificial structures such as mussel farms (McLean et al, 2022a). This particular species has a broad distribution in south-eastern Australia including a recorded observation of this species at Wilsons Promontory (Australian Museum, 2020).

Operational observations suggests that desiccation and mortality of jewel anemone may reasonably occur within 48 hours of the jacket removal. A literature review identified a related species, *Tubastraea occidentalis*, whose morphology provides higher levels of protection than the jewel anemone requires at least four days exposure for 100% mortality (Mizrahi et al. 2023).

Transit times for jackets within the OA will vary between locations and sea state conditions experienced at the time however transits are expected to take three days on average between being lifted from the water and secured to a barge or transport vessel at the transfer location.

During transit and transfer, it is likely that marine growth out of the water will progressively fall off the structures due to vessel motion, drying out and decay. Marine growth waste that collects on vessel decks shall be collected where practical and safe to do so and loaded into appropriate bins and prepared for disposal onshore to an appropriate facility. Residue will be managed through deck washing / cleanliness practices.

It is possible that living marine growth could also be dislodged during transit. Given that the marine growth present on the jacket structures has a preference for hard substrate environments, it is unlikely that dislodged marine growth will colonise areas after it falls into the sea in areas where hard substrate is not present. The vast majority of the OA is characterised as sandy flats/bare substrate.

Areas of hard substrate within the OA are largely limited to other anthropogenic structures (where exposed) and the patchy outcrops associated with the South East Reef (adjacent to FTA, CBA and HLA). Key areas of near shore reefs were considered and purposefully avoided in the establishment of the extent of the OA. The location of key nearshore reefs was derived from the Statewide Marine Habitat Map 2023 mapping dataset developed by DEECA (DEECA, 2023) which provides information on broad habitat complexes and knowledge of the ecological diversity across Victoria's State waters.

It is noted that the stress of lifting of the structures out of the water may induce some species to spawn at that time.

The habitat impacts within the OA are assessed to be low.

6.10.4 Controls

- **CMP6:** Disposal of collected marine growth.
- **CMP28:** Avoidance of key near shore reefs.

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

6.10.5 Residual consequence assessment

Based on the assessment described above, the residual potential consequence has been determined as follows:

- removal of habitat as a result of removing structures - **Consequence Level III**
- marine growth falling to sea during lifting – **Consequence Level IV**
- marine growth falling to sea during transfer and transit – **Consequence Level III**.

6.10.6 Demonstration of As Low As Reasonably Practicable

Table 6-41 Decision Context and justification

Decision Context B
No IMS have been identified in any of the ROV footage reviews completed to date.

Decision Context B
There is some uncertainty on the extent of impacts. Given the combination of location and dryness of the marine growth likely to be dislodged, **Consequence Level III** has been assessed for this impact. Esso believes ALARP Decision Context B should apply.

Table 6-42 Good practice controls

Good practice	Adopted	Control	Rationale
Appropriate disposal of captured marine growth to shore to minimise impacts to the environment	✓	**CMP6:** Disposal of collected marine growth	Bulk marine growth waste that collects on vessel decks shall be collected where practical and safe to do so and loaded into appropriate bins and prepared for disposal onshore to an appropriate facility.
Avoidance of key areas of suitable near shore habitat for marine growth establishment	✓	**CMP28:** Avoidance of key near shore reefs	It is possible that living marine growth could also be dislodged during transit. Given that the marine growth present on the jacket structures has a preference for hard substrate environments, the boundary of the OA has been established to avoid the main nearshore reef areas. The vast majority of the OA is characterised as sandy flats/bare substrate limiting the viability of any living marine growth establishing materially in the broader OA.

Table 6-43 Engineering risk assessment

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
Bulk removal of marine growth at location of current platform	Removed marine growth remains at original location	Removal of all marine growth at the platform locations is not considered viable due to restricted access to structural members which are internally positioned within each jacket; difficulty working within the splash zone and other more complex safety considerations associated with extensive marine growth removal based on the nature and scale of the entire upper jacket sections.	Not adopted

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
Treatment of marine growth with biocides	Marine growth mortality to eliminate potential translocation of living specimens	Treatment can only be facilitated once jackets are lifted. The jacket size and lack of access make the application of biocide unfeasible. Application also has safety challenges due to the size of the jackets.	Not adopted
Suspension of jackets out of water at removal location for prolonged periods of time	Dried marine growth that falls off remains at original location	Safe lifting of a live load such as this will be completed under a strict weather window and requires jackets to remain suspended for the shortest achievable time. Remaining offshore with a load on slings is not an acceptable safe practice globally.	Not adopted

6.10.7 Demonstration of acceptability

Table 6-44 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 III** thus are not considered as having the potential to result in serious or irreversible environmental damage.
Legislative and other requirements	Legislative and other requirements have been identified and met.	✓	No environmental legislation or other requirements were deemed relevant to this particular impact.
Internal context	Consistent with Esso's Environment Policy.	✓	Proposed activities are consistent with Esso's Environment Policy, in particular, to *"comply with all applicable environmental laws and regulations and apply responsible standards where laws and regulations do not exist".*

Factor	Demonstration criteria	Criteria met	Rationale
	Meets ExxonMobil Environmental Standards.	✓	There is no standard related to the discharge of marine growth, but outcome from assessment of potential impacts is consistent with Esso's Corporate Environmental Expectations, in particular to *"operating our business in a responsible and sustainable manner, inclusive of working to minimise environmental impacts from our operations"*.
	Meets ExxonMobil OIMS Objectives.	✓	Proposed activities meet: • OIMS System 6: Regulatory Compliance and Sustainability Management objective to identify and assess environmental aspects; significant aspects are addressed and controlled consistent with policy and regulatory requirements.
External context	Concerns of relevant persons have been considered/addressed through the consultation process.	✓	No relevant person concerns have been raised concerning offshore discharges within the OA.

6.11 Sound emissions

6.11.1 Sources of sound emissions

Sound emissions during decommissioning activities are mostly associated with vessel operations. Table 6-45 summarises the sources of sound that will be generated from Campaign #1 activities.

Table 6-45 Summary of sound sources

Sound source	Type of sound	Duration of operations
Pioneering Spirit	Continuous: • propulsion, DP thrusters, onboard machinery.	Approximate duration of operations for this vessel is estimated in four months.
Support vessels – e.g. *Fortitude* or similar CSV	Continuous: • propulsion, DP thrusters, onboard machinery.	Approximate duration of operations for this vessel is estimated in <12 months.
Support vessels - Tugs	Continuous: • propulsion, DP thrusters, onboard machinery.	Approximate duration of operations for these vessels is estimated in four months.
Support vessels – others (i.e.: supply vessels	Continuous: • propulsion, DP thrusters, onboard machinery.	Operation of other support vessels will be on an intermittent basis and will be dependent on specific requirements from Campaign #1 vessels that are conducting removal operations.

Sound source	Type of sound	Duration of operations
ROV	Continuous: • small motor and propeller.	ROVs are expected to perform a variety of activities. Duration of operation is bound to the specific type of activity. Estimated duration ranges between one and eight hours.
Cutting tools	• Continuous operation of tools.	Subsea cutting of structures during decommissioning activities will be required to allow execution of operations such as lifting/removal of jacket legs, struts, pipeline risers, umbilicals and flexibles. Options to complete subsea cutting may include but are not limited to shear or DWCM tools. Cutting tools will be operated either via a ROV or via a deck mounted hydraulic power unit and control umbilical.
Helicopters	Continuous: • rotor operation.	Approximate number of helicopter round trips is estimated to be 114 for the duration of Campaign #1 activities.

Table 6-46 defines the acoustic terms used throughout this Section.

Table 6-46 Acoustic terminology used in this impact assessment

Term	Definition
Sound	A time-varying pressure disturbance generated by mechanical vibration waves travelling through a fluid medium such as air or water.
Decibel (dB)	Sound is measured on a logarithmic scale that expresses the ratio of two values of a physical quantity. It is used to measure the amplitude or 'loudness' of a sound. As the dB scale is a ratio, it is denoted relative to some reference level, which must be included with dB values if they are to be meaningful. The reference pressure level in underwater acoustics is 1µPa, whereas the reference pressure level used in air is 20µPa, which was selected to match human hearing sensitivity. As a result of these differences in reference standards, sound levels in air are not equal to underwater levels. There are four main metrics for underwater sound (ISO/DIS 18405.2:2017) – SEL, SPL, PK and PK-PK, all described in this Table.
Frequency	The rate of oscillation of a periodic function measured in cycles-per-unit-time. The reciprocal of the period. Unit: Hz. 1Hz is equal to 1 cycle per second.
Source level	A measure of sound pressure at a nominal distance of 1m from a theoretical point source that radiates the same total sound power as the actual source. Source level can be expressed as an SPL, SEL or PK. Unit: dB re 1µPa^{2}m^2 (pressure level) or dB re 1µPa^{2}m^{2}s (exposure level).
Non-impulse sound	Sound sources that produce sounds that can be broadband, narrowband or tonal, brief or prolonged, continuous or intermittent and typically do not have a high peak sound pressure with rapid rise time that impulsive sounds do. Examples of non-impulsive sound

Term	Definition
	sources include marine vessels, machinery operations/construction (e.g. drilling), certain active sonar (e.g. tactical), and vibratory pile drivers.
Sound exposure level (SEL)	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. Unit: dB re 1μPa^2·s.
Peak-to-peak sound pressure (PK-PK) Impulsive sounds	Sum of the peak compressional pressure (highest pressure variation) and the peak rare factional 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. Unit: dB re 1μPa.
Zero-to-peak sound pressure (PK)	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. Unit: dB re 1μPa.
Root-mean-square sound pressure level (SPL)	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). 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. Unit: dB re 1μPa.
Temporary Threshold Shift (TTS) in hearing	TTS is the temporary loss of hearing sensitivity caused by excessive noise exposure. Exposure to sufficiently intense sound may lead to an increased hearing threshold in any living animal capable of perceiving acoustic stimuli (Finneran J. , 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 6dB above the normal hearing threshold (Southall, et al., 2019). 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.
Permanent Threshold Shift (PTS) in hearing	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.
Auditory Injury (AUD INJ)	Damage to the inner ear that can result in destruction of tissue, such as the loss of cochlear neuron synapses or auditory neuropathy (NMFS, 2024). AUD INJ includes, but is not limited to PTS.
Behavioural response	The context of sound exposure plays a critical and complex role in behavioural responses in marine mammals (Gomez, 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

Term	Definition
	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) (Gomez, et al., 2016). The National Marine Fisheries Service (NMFS) currently uses a step function (all-or-none) threshold of 120dB re 1µPa SPL (unweighted) for non-impulsive sounds to assess and regulate noise-induced behavioural impacts on marine mammals (NOAA, 2024). The 120dB re 1µPa threshold is associated with continuous sources and was derived based on studies examining behavioural responses to drilling and dredging (NMFS, 2018), referring to Malme et al. (1983), (Malme, Miles, Clarke, Tyack, & Bird, 1984), and (Malme, Würsig, Bird, & Tyack, 1986), which were considered in (Southall, et al., 2007). (Malme, Würsig, Bird, & Tyack, 1986) and found that playback of drillship noise did not produce clear evidence of disturbance or avoidance for levels below 110dB re 1µPa (SPL), possible avoidance occurred for exposure levels approaching 119dB re 1µPa. Malme et al. (1984) determined that measurable reactions usually consisted of rather subtle short-term changes in speed and/or heading of the whale(s) under observation. It has been shown that both received level and proximity of the sound source is a contributing factor in eliciting behavioural reactions in humpback whales (Dunlop R. A., 2017), (Dunlop R. A., 2018). Whilst newer research by (Southall B. D., 2021) provides recommendations and discusses the nuances of assessing behavioural response, the authors of this research do not recommend new numerical thresholds for onset of behavioural responses for marine mammals.
Masking	Acoustic masking may occur when a noise impedes the ability of an animal to perceive a signal (Erbe, Reichmuth, Cunnigham, Lucke, & Fooling, 2015) (Wood, Southall, & Tollit, 2012). For this to occur the noise must be loud enough, have similar frequency content to the signal, and must happen at the same time (Wood, Southall, & Tollit, 2012). 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 R. , 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 (Gomez, et al., 2016).
Low-frequency cetaceans (LFCs)	The LFC group contains the mysticetes (baleen whales). Although there have been no direct measurements of hearing sensitivity in any mysticete, an audible frequency range of approximately 10 Hz to 30 kHz has been estimated from measured vocalization frequencies, observed reactions to playback of sounds, and anatomical analyses of the auditory system. A natural division may exist within the mysticete whales, with some species (e.g. blue, fin) having better LF sensitivity and others (e.g. humpback, minke) having better sensitivity to higher frequencies; however, at present there is insufficient knowledge to justify separating species into multiple groups. Therefore, a single species group is used for all mysticetes (NMFS, 2024).
High-frequency cetaceans (HFCs)	The HFC group contains most delphinid species (e.g. bottlenose dolphin, common dolphin, killer whale, pilot whale), monodonts (belugas, narwhals), beaked whales, and sperm whales (but not pygmy and dwarf sperm whales of the genus Kogia, which are treated as very high frequency species). Hearing sensitivity has been directly measured for several species within this group using psychophysical (behavioral) or auditory evoked potential (A measurements (NMFS, 2024).
Very high-frequency (VHF) cetaceans	The VHF cetacean group contains the porpoises, river dolphins, pygmy/dwarf sperm whales, *Cephalorhynchus* species, and some *Lagenorhynchus* species. Hearing sensitivity has been measured for several species within this group using behavioural or auditory

Term	Definition
	evoked potential measurements. VHF cetaceans generally possess a higher upper-frequency limit and better sensitivity at higher frequencies compared to the HF cetacean species (NMFS, 2024).

6.11.1.1 Campaign #1 vessels

The marine spread that will be part of Campaign# 1 is comprised of a variety of vessels, including but not limited to, the HLV *Pioneering Spirit*, two CSVs, supply vessels, HTVs or barges, and tugs. A description of the vessels is presented in Section 2.6.1 of this EP.

Underwater sound that radiates from vessels is produced mainly by propeller and thruster cavitation. Typical sound levels generated by vessels are broadband with most of the energy emitted below a few kilohertz. Sound from onboard machinery, particularly sound below 200Hz, dominates the sound spectrum before cavitation begins (Spence, et al., 2007). Typically, sound levels increase with increasing vessel size. Sound levels tend to be the highest when thrusters are used to position the vessel (DP) and when the vessel is transiting at high speeds.

When maintaining position, noise emitted from the vessel will vary based on the number of thrusters that need to be active during the operation and the amount of power or energy at which the thrusters that are active are required to operate for the vessel to maintain position. Factors influencing the amount of power required to hold position include wind speed and ocean currents. Thrusters are expected to operate at lower power levels to hold position under calm weather conditions. Vessels that will take part in the decommissioning activities will operate under the International Guidelines for The Safe Operation of Dynamically Positioned Offshore Supply Vessels (IMCA, 2022) which means that typically, 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).

6.11.1.2 Remotely Operated Vehicle

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

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

6.11.1.3 Remotely Operated Vehicle cutter tool

During decommissioning, subsea cutting will be required to allow for activities such as removal of jacket legs, struts, pipeline risers, umbilicals and flexibles. Options to complete subsea cutting include but are not limited to shear or DWCM tools. Cutting operations will be done by/with assistance of a ROV.

Underwater sound measurement data during an underwater diamond wire cutting of a 32’ conductor (10m above the seafloor in approximately 80m depth) found that the sound radiated was not easily discernible above the background noise at the closest recorder located 100m from the source and was primarily detectable at higher acoustic frequencies (above around 5kHz) (Pangerc, Robinson, Theobald, & Galley, 2016). Sporadic presence of seals at the platform locations have been documented, however no interaction of these species with ROVs or cutting tools have been recorded, indicating it is likely they move away from the underwater sound source. In another study, the United States Navy measured underwater sound levels when a diamond wire saw was cutting caissons for replacing piles. They reported an average SPL for a single diamond wire cutter at 136.1 to 141.4dB SPL at 10m (Fairweather Science LLC, 2019). This measurement was backpropagated using spherical spreading (20log10(R)) to estimate the broadband ESL for the cutter of 161.3dB re 1µPa^{2}m^{2}s (Muellenmeister, Connell, & Koessler, 2023).

Based on the results of these three studies, it is not expected that sound generated from ROV subsea cutting operations would add significantly to sound levels emanating from louder sources of sound such as decommissioning activity vessels.

6.11.1.4 Helicopters

Helicopters will be used to transport personnel to and from main Campaign #1 vessels, which is estimated to be approximately three flights per week. Helicopter operations produce strong underwater sounds for brief periods when the helicopter is directly overhead (Richardson, Greene, Malme, & Thomson, 1995). The received sound level underwater depends on the helicopter altitude and lateral distance from the receiver depth, and water depth.

Sound emitted from helicopter operations is typically below 500Hz and sound pressure is greatest at surface in the water directly below a helicopter, but this diminishes quickly with depth. Reports using the data for a Bell 214 helicopter (stated to be one of the noisiest types of helicopters) show it being audible in the air for four minutes before it passed over underwater hydrophones, and detectable underwater for 38 seconds at 3m depth and 11 seconds at 18m depth. The peak received sound levels diminishes with increasing helicopter altitude, but the duration of audibility often increases with increased altitude (Richardson, Greene, Malme, & Thomson, 1995). Noise from helicopter activities will be localised, short term and infrequent.

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

6.11.2 Impacts of underwater sound emissions

Esso commissioned JASCO Applied Sciences (Australia) Pty Ltd (JASCO) to undertake a modelling study of non-impulsive underwater sound emissions from vessel operations for Campaign#1 activities (Li, Connell, Warren, & Koessler, 2024) (Appendix J).

Underwater sound modelling predicts the distances from operations at which underwater sound levels reach noise effect thresholds and criteria. Due to the variety of species considered, there are several different thresholds for evaluating effects, including: mortality, injury, temporary reduction in hearing sensitivity, and behavioural disturbance.

6.11.2.1 Modelling scenarios

The noise modelling study completed by JASCO for Campaign#1 considered several sound sources associated with vessel operations, including simultaneous noise from multiple sources to inform cumulative impact assessment. The following sound-producing activities were considered:

- *Pioneering Spirit* as a HLV under DP and in transit
- *Fortitude* as a CSV under DP
- vessel noise from PSV
- vessel noise from tug/towed barge under DP
- cutting tool noise from a ROV performing underwater cutting of subsea infrastructure.

Table 6-47 presents the scenarios modelled for Campaign#1. These scenarios are based on representative expected vessel operations that will be conducted during the execution of Campaign #1, as described in Section 2 of this EP. Scenarios include simultaneous vessel operations that are expected to occur during Campaign #1 activities, which can be identified as the worst-case scenario for generation of underwater noise during decommissioning operations.

Table 6-47 Underwater noise – Modelling scenarios

Scenario	Description	Location
1	Operation of a CSV under DP holding position while conducting subsea cutting activities (via cutting tool operated from a ROV).	DPA
2	Operation of the HLV under DP holding position while conducting platform removal operations.	KFA

Scenario	Description	Location
3	Simultaneous operations of the HLV and a CSV under DP holding position, and subsea cutting activities via cutting tool operated from a ROV, during platform removal operations.	KFA
4	Simultaneous operations of the HLV, a CSV and a PSV under DP holding position during mode change operations for the *Pioneering Spirit*.	Representative Transfer Location (Transfer Location A)
5	Simultaneous operations of the HLV, a CSV and a PSV under DP holding position during mode change operations for the *Pioneering Spirit*.	Representative Transfer Location (Transfer Location B)
6	Simultaneous operations of the HLV under DP holding position and tugs assisting with barge manoeuvres, during operations to transfer removed platform sections that are on the HLV, onto the barges for final transport.	Optional Transfer Location A
7	Simultaneous operations of the HLV under DP holding position and tugs assisting with barge manoeuvres, during operations to transfer removed platform sections that are on the HLV, onto the barges for final transport.	Optional Transfer Location B
8	HLV transiting between platforms and transfer location.	Transit - KFA to Representative Transfer Location (B)
9	HLV transiting between platforms and transfer location.	Transit - KFA to Representative Transfer Location (B)

6.11.2.2 Criteria used for noise modelling

Vessel operation will be the main source of underwater noise during Campaign #1 activities. There are additional sources of noise such as operation of ROV and cutting tools for subsea cutting activities, and helicopter operations for crew change. However, these two additional sources are not expected to significantly contribute to underwater noise levels during vessel operations.

The following information was considered for noise modelling:

- Vessels – HLV:
  - *Pioneering Spirit* is the HLV that will conduct removal operations for Campaign #1
  - while in operation, it will hold position using thrusters under DP
  - there are no measurements of the underwater sound source level of the *Pioneering Spirit*. As a result, the source levels for this vessel under DP had been calculated using the source levels associated with the Allseas *Solitaire* vessel. The *Solitaire's* source level and spectrum was previously measured during the installation of the Nord Stream 2 pipeline project as part of a monitoring study presented in Tougaard and Griffiths (2020)
  - the *Solitaire* has installed thruster power of 55,500kW, and the median broadband source level from several measurements for the Solitaire was 188.0dB re 1μPa^{2}m^{2}s. On the other hand, *Pioneering Spirit* has installed thruster power of 72,600kW. To account for the difference in thruster power, the source levels of the *Solitaire* was scaled by the difference in installed thruster power with the *Pioneering Spirit*, resulting in an assessed potential source level of 189.2db re 1μPa^{2}m^{2}s for the HLV. This is standard practice for noise modelling exercises when surrogate vessels must be used to account for measured data and source levels
- Vessels – CSV:

- *Fortitude* vessel is representative of the CSV that will be used to support removal preparation works for Campaign#1
- while conducting operations at the facilities, the CSV it will hold position using thrusters under DP. The *Fortitude* has a total of 21,750kW installed thruster power capacity comprising two 2500kW bow thrusters, two 3350kW retractable azimuth thrusters, and three 3350kW main propulsion thrusters
- there are no measurements of the underwater sound source level of the *Fortitude*. As a result, the source levels for this vessel under DP had been calculated using the source levels associated with the *Skandi Feistein* vessel. The *Skandi Feistein* was used previously as a surrogate vessel for the *Fortitude* as described in Li, Connell, Warren, & Koessler, 2024 (Li, Connell, Warren, & Koessler, 2024). The authors in Li, Connell, Warren, & Koessler, 2024 estimated the source levels of the *Fortitude* by considering the engineering field data and source levels for *Skandi Feistein* as reported in (McPherson, et al., 2021). A regression analysis of source level versus actual thruster engine power under DP was conducted, resulting in a regression relationship between the two variables. Using this relationship and a total power usage of 45%, the broadband source level (BBSL) of the *Fortitude* while under DP was modelled as 185.3dB re 1µPa^{2}m^{2}s.

- Vessels – PSV (*Alegria*):
  - *Pioneering Spirit* and a CSV (*Fortitude or similar)* will be the main vessels conducting removal operations during Campaign#1. However, there will be sporadic operations from additional vessels to support decommissioning activities. The PSV *Alegria* was selected as a representative vessel for those additional support operations.
  - The *Alegria* has 8053kW of installed thruster power and dimensions 82.88m length, 19.3m beam and 6.31m draft. There are no measurements of the underwater sound source level of the *Alegria*. As a result, the same procedure described above for the *Fortitude* was completed for the PSV. A regression curve between source level versus actual thruster engine power was used to estimate the source level of the *Alegria* while on DP. Using regression correlation with a total power usage of 45%, the broadband source level (BBSL) of the *Alegria* while under DP was modelled as 181.0dB re 1µPa^{2}m^{2}s
- Vessels – Tugs:
  - where barges are used at the transfer location to receive removed structures by the *Pioneering Spirit* and the CSV (*Fortitude* or similar*)* vessels and transport them to an ORC, tugs are required to tow those barges
  - modelled Scenarios 6 and 7 (Appendix J) considered the tugs providing support operations, manoeuvring the barges as required for transfer of structures from the HLV onto the barges. The MMA *Mermaid Cove* has been identified as a representative tug for this operation. The MMA *Mermaid Cove* was purpose built to be an offtake support vessel with 4700kW of maximum installed thruster power and 70.3t bollard pull with an overall length, beam, and draft of 52.35m, 14.6m, and 4.9m
  - estimates of the source levels for the MMA *Mermaid Cove* were based on a surrogate vessel, the *Siem* anchor handling tug supply vessel, and its specifications were used to form a basis for vessel source level estimation for acoustic modelling purposes. The *Siem*, which is an anchor handling tug, was selected as a surrogate vessel as it presents an adequate representation of the power that would be required by a tug during pushing and/or manoeuvring operations. The monopole source levels (MSLs) and spectra for the surrogate vessel were measured by JASCO in McPherson, et al., 2021 and scaled to the MMA *Mermaid Cove* based on the ratio of maximum installed thruster power. The broadband (10Hz to 25kHz) source level of the MMA *Mermaid Cove* under DP was modelled as 187.2dB re 1µPa^{2}m^2 s.

6.11.2.3 Noise effect criteria

To assess the potential effects of a sound-producing activity, it is necessary to first establish exposure criteria (thresholds) for which sound levels may be expected to have an adverse effect on animals. Since 2007, several expert groups have developed SEL-based assessment approaches for evaluating AUD INJ, with key works including (Southall, et al., 2007) (Finneran & Jenkins, 2012) (Popper, et al., 2014) (Southall, et al., 2019) (NOAA, 2019). In addition, in October 2024 NOAA, through the NMFS released an update of the 2018 Technical Guidance

for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing (NMFS, 2024), which includes an Appendix with the updated Finneran Technical report (Finneran J. J., 2024).

Two sound level metrics, SPL and SEL, are commonly used to evaluate non-impulsive noise and its effects on marine life. Marine mammal thresholds include levels associated with behavioural response, PTS and TTS. The marine mammal functional hearing groups considered were low-, high- and VHF cetaceans and otariid seals. Thresholds for fish include recoverable injury and TTS, and the thresholds for sea turtles include PTS and TTS. Estimated underwater acoustic levels were presented as sound pressure levels (SPL, Lp), and accumulated sound exposure levels (over 24 hours) (SEL24hour, LE,24hour), as appropriate for non-impulsive (continuous) noise sources.

JASCO completed the underwater noise modelling for Campaign #1 using the literature that was current at the time of the modelling. As a result, the following thresholds and guidelines were chosen because they represented the best available science at that time:

- frequency-weighted accumulated sound exposure levels (SEL; LE,24hour) from Southall, et al., 2019 for the onset of PTS and TTS in marine mammals for non-impulsive sound sources
- marine mammal behavioural threshold based on the current interim US National Oceanic and Atmospheric Administration (NMFS, 2018) (2019) criterion for marine mammals of 120dB re 1µPa (SPL; Lp) for non-impulsive sound sources
- sound exposure guidelines for fish, fish eggs, and larvae (Popper, et al., 2014).

The updated guideline (NMFS, 2024) incorporates the term AUD INJ, which is inclusive of PTS. The guideline also focuses on updates to information relevant to TTS and AUD INJ in marine mammals, however there is no mention or reference to updates to the current marine mammal thresholds and auditory weighting functions for behavioural disturbance. As such, for this specific parameter, the NOAA (2018) guidelines are still current.

There is a minor change on the thresholds established for LFCs for both TTS and PTS, and the auditory weighting and exposure function was slightly increased for LFCs. For otariid seals, these criteria also present changes when compared to the version that was current at the time of modelling. Based on the minor extent at which the thresholds for LFCs were updated versus the thresholds used by JASCO for the Campaign #1 report, it is considered the outcomes from the JASCO modelling are still representative of the operational conditions and potential impact. It is also considered that controls that are presented in Section 6.11.3 adequately address potential effects on marine mammals for TTS and PTS (now AUD INJ). Furthermore, there are no BIAs present within the EMBA for otariid seals and therefore it is not expected that any potential difference in the extent or reach of underwater noise that could have an adverse effect on this species based on the updated data from the NMFS guidelines (NMFS, 2024) would result in impact to sensitive areas where important behaviours for otariid seals are established.

The updated guidelines (NMFS, 2024) also introduce thresholds for in-air noise exposure for AUD INJ and TTS for marine mammals. However, potential in-air exposure to noise produced during Campaign#1 activities is not considered to pose a risk to marine fauna. Sections 6.11.1 and 6.11.1.4 of this EP present a description and assessment of this specific potential source of noise.

Based on this analysis, Table 6-48 presents the criteria used for noise exposure for marine mammal by JASCO for Campaign#1 activities. Table 6-48 also presents added columns with information on the thresholds from the updated guideline (NMFS, 2024). Table 6-49 presents the criteria used for noise exposure for fish, and sea turtles (Popper, et al., 2014), while Table 6-50 shows the criteria for sea turtles (Finneran J. , et al., 2017).

Table 6-48 Criteria for effects of non-impulsive noise exposure for marine mammals: unweighted SPL and weighted SEL_{24h} thresholds

Hearing group	NOAA (2019)	Southall et al. (2019)		NMFS (2024)	
	Behaviour	PTS onset thresholds (received level)	TTS onset thresholds (received level)	AUD INJ onset thresholds	TTS onset thresholds
	SPL (Lp; dB re 1µPa)	Weighted SEL24h (LE,24hour; dB re 1µPa²s)	Weighted SEL24hour (LE,24hour; dB re 1µPa²s)	AUD INJ onset: SEL24hour (dB re 1µPa²s)	TTS onset: SEL24hour (dB re 1µPa²s)
LFCs	120	199	179	197	177
HFCs		198	178	201	181
VHFCs		173	153	181	161
Phocid seals		201	181	195	175
Otariid seals		219	199	199	179

Table 6-49 Criteria for vessel noise exposure for fish and sea turtles, adapted from Popper et al. (2014)

Type of animal	Mortality and potential mortal injury	Impairment			Behaviour
		Recoverable injury	TTS	Masking	
Fish - No swim bladder (particle motion detection)	(N) Low (I) Low (F) Low	(N) Low (I) Low (F) Low	(N) Moderate (I) Low (F) Low	(N) High (I) High (F) Moderate	(N) Moderate (I) Moderate (F) Low
Fish - Swim bladder not involved in hearing (particle motion detection)	(N) Low (I) Low (F) Low	(N) Low (I) Low (F) Low	(N) Moderate (I) Low (F) Low	(N) High (I) High (F) Moderate	(N) Moderate (I) Moderate (F) Low
Fish - Swim bladder involved in hearing (primarily pressure detection)	(N) Low (I) Low (F) Low	170 dB SPL for 48 h	158 dB SPL for 12 h	(N) High (I) High (F) High	(N) High (I) Moderate (F) Low
Sea turtles	(N) Low (I) Low (F) Low	(N) Low (I) Low (F) Low	(N) Moderate (I) Low (F) Low	(N) High (I) High (F) Moderate	(N) High (I) Moderate (F) Low
Fish eggs and fish larvae	(N) Low (I) Low (F) Low	(N) Low (I) Low (F) Low	(N) Low (I) Low (F) Low	(N) High (I) Moderate (F) Low	(N) Moderate (I) Moderate (F) Low

Sound pressure level dB re 1µPa.

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

Frequency-weighted accumulated sound exposure levels (SEL; LE,24hour) from (Finneran J. , et al., 2017) for the onset of PTS and TTS in sea turtles.

Table 6-50 Acoustic effects of continuous noise on sea turtles weighted SEL_{24hour} (Finneran J. , et al., 2017)

PTS onset thresholds (received level)	TTS onset thresholds (received level)
Weighted SEL_{24hour} ($L_{E,24hou}$; dB re 1µPa^2s)	Weighted SEL_{24hour} (L_E,2$4_{hour}$ dB re 1µPa^2s)
220	200

$L_{E,24h}$ denotes cumulative sound exposure over a 24 hour period and has a reference value of 1µPa^2s.

6.11.2.4 Modelling results

The results from the JASCO report (Li, Connell, Warren, & Koessler, 2024) assessed distances from vessel operations where underwater sound levels reached thresholds corresponding to various levels of potential impact to marine fauna. Due to the variety of species considered, several different thresholds were used for evaluating effects, including mortality, injury, temporary reduction in hearing sensitivity, and behavioural disturbance.

To evaluate the potential for accumulated sound exposure levels (SEL), the duration of the SEL accumulation was defined as integrated over a 24-hour period. The SEL24hour is a cumulative metric that reflects the dosimetric impact of noise levels within 24 hours based on the assumption that an animal is consistently exposed to such noise levels at a fixed position. The report indicates that underwater noise will vary based on the specific activity and the location where the activity takes place. Results provides an indication of potential effects from stand-alone vessel operations, as well as noise generated from simultaneous operations during Campaign#1. The inclusion of expected simultaneous vessel operations during decommissioning activities provide information of potential cumulative effects.

6.11.2.5 Noise modelling – Additional considerations

Noise modelling conducted for Campaign#1 was based on best available information at the time of modelling. Input data and methods are based on a conservative approach and consequently, results obtained from the modelling report are considered to be worst-case and not characteristic of real operational conditions. For underwater noise impact assessment, the following factors will be considered in addition to the noise modelling results for vessel operations during Campaign#1 operations:

- SEL24hour:
  - the duration of the SEL accumulation was defined as integrated over a 24-hour period. The SEL24hour is a cumulative metric that reflects the dosimetric impact of noise levels within 24 hours based on the assumption that an animal is consistently exposed to such noise levels at a fixed position. The corresponding SEL24hour radii represent an unlikely worst-case scenario. Under real conditions, it is not expected that marine mammals, fish or turtles will remain in a fixed position in proximity to the sound source location for a period of 24 hours. Therefore, a reported radius for SEL24hour criteria does not mean that marine fauna travelling within this radius of the source will be injured, but rather that an animal could be exposed to the sound level associated with impairment if it remained in a fixed position in proximity to the sound source location for a continuous period of 24 hours
  - duration of HLV vessel operations for Campaign#1 is approximately four months. However, during this period source of underwater sound emissions will be limited to the specific location at which the vessel is operating at. It is also noted that there is a significant portion of the planned decommissioning period where the HLV will be transiting between facilities, or between a facility and a transfer location. During transit, HLV is expected to produce significantly less underwater noise than when conducting lifting or transfer operations. As a result, it is expected that HLV DP operations for holding position for lifting of structures or during transfer operations will be limited to a short duration of time (less than 12 hours for each lifting operation, and less than 24 hours for each transfer operation) and will occur at one specific location within the OA at a time, until the Campaign#1 scope is completed. There is also the potential for generation of underwater noise during the HLV holding position for mode change operations. This specific activity will occur only once during the life of Campaign #1 activities and is expected to have a duration of approximately four days.

- Surrogate vessel:
  - the Allseas *Solitaire* was chosen as a suitable surrogate vessel to determine potential sound source levels for *Pioneering Spirit* while operating under DP, based on comparable installed thruster power capacity and size of that particular vessel (as described in Section 6.11.2.2)
  - measurement of underwater sound source levels for the *Solitaire* was completed while that vessel was conducting pipe-lay operations for the Nord-Stream 2 pipeline project (Tougaard, 2020). It is expected that power required by a vessel during pipe-lay operations (due to holding position while maintaining tension on active pipe being laid) is greater than that required by a vessel to hold position during heavy lift activities, as is the case of the HLV for Campaign #1 operations; however, it was not possible to include this consideration as input data for the noise modelling exercise completed for *Pioneering Spirit* operations. As a result, the method to scale the source levels from the *Solitaire* to account for the difference in thruster power with the *Pioneering Spirit*, although an industry standard practice and commonly used in several underwater noise modelling reports, has limitations on input data that prevents a more accurate representation of differences on specific vessel operations for underwater noise modelling. It is therefore considered that the outcome from the noise modelling report for Campaign#1 operations is worst-case and of a highly conservative nature.
- *Pioneering Spirit* power utilisation under real operational conditions – Historic data:
  - input data and methodology used by JASCO for the underwater noise modelling followed best industry practice and is based on available data at the time of the underwater noise modelling exercise. For *Pioneering Spirit*, total installed thruster capacity was used as the basis to identify potential sound source levels generated by the vessel while holding position for decommissioning operations
  - however, there is a limitation to this assumption, as the typical thruster power levels at which the *Pioneering Spirit* commonly operates could not be accounted for as a consideration in the modelling exercise. Data from the latest 20 removal/lift operations completed by *Pioneering Spirit*, which represents over 90 hours of critical DP operations within designated 500m zones, indicates that for 53% of the time, power utilisation required by the vessel to hold position was below 5% of its total installed thruster power. Data also shows that the maximum thruster power *Pioneering Spirit* had to use during those recent 20 lifts was between 50% and 55%, and this specific power usage accounted for only 1% of the total power utilisation of the vessel while on DP holding position (refer to Figure 6-4). Data shows that from the 90 hours of critical DP operations during the latest 20 lifts, the thrusters operated at a capacity below 20% for at least 90% of the time, which accounts for approximately 81 hours.

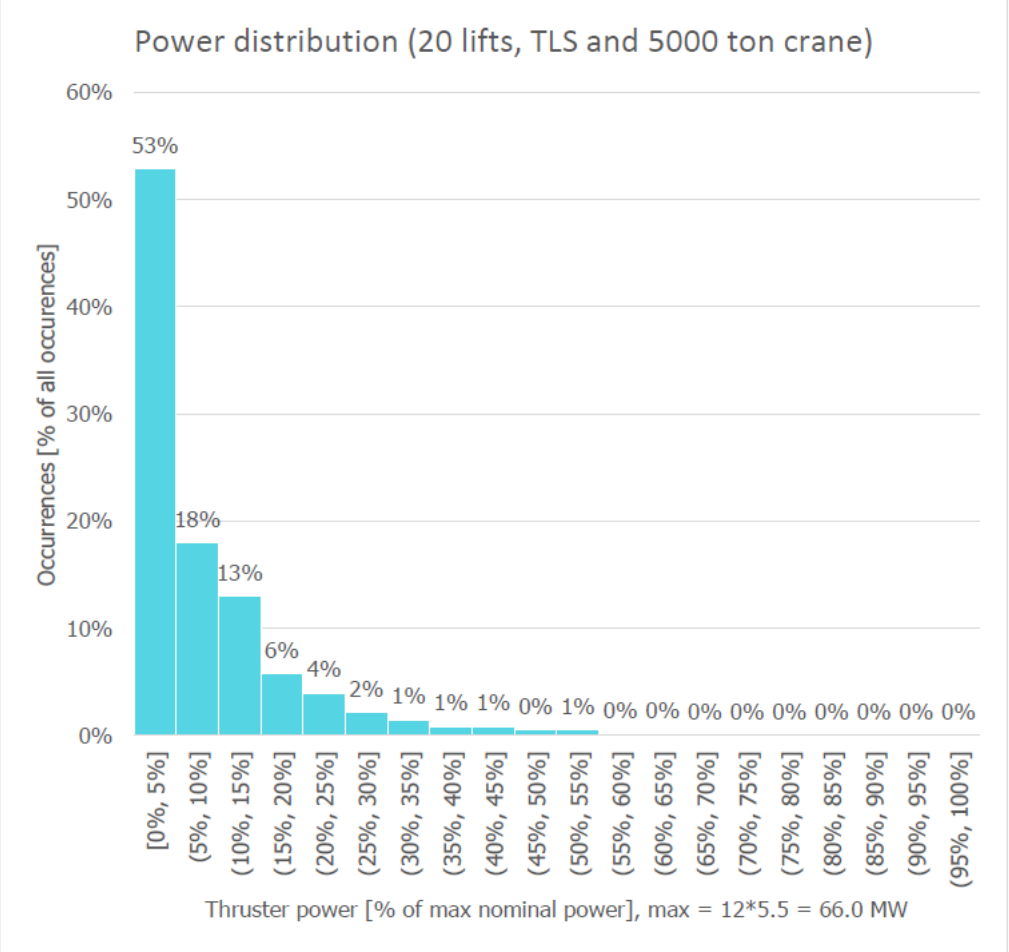


Figure 6-4 *Pioneering Spirit* thruster power utilisation from recent lifts (20)

- *Pioneering Spirit* power utilisation under real operational conditions – Assumed estimated operational conditions:
  - there are external environmental factors such as wind speed, wave height and currents that influence the power usage the vessel will require during decommissioning activities. Consequently, the exact thruster power utilisation the vessel will require when conducting removal operations cannot be determined in advance. However, as part of the planning process, the potential power the vessel may require to hold position was estimated based on historical weather data at the locations where decommissioning activities will take place. Table 6-51 presents the weather data obtained for a base case, which considered annual wave heights, annual current speed, and wind rose data from the HLA platform, and the estimated power utilisation required by the *Pioneering Spirit* for operations when base case weather conditions are present.

Table 6-51 Weather conditions and estimation of vessel thruster power utilisation – Base case and rough weather case

Thruster utilisation	Wind speed (kn)	Wave height (Hs - m)	Current speed (m/s)	Mean thruster power (%)
Base case	20	2.0	0.5	11-14
Rough weather case	25	2.5	1.0	34 - 43

  - vessel power utilisation estimated for a base case for Campaign#1 activities is consistent with the data presented in Figure 6-4, which shows that for the most recent 20 lift operations the *Pioneering*

Spirit has completed, 84% of the times, power utilisation was below 15% of the total installed thruster power capacity
    - as part of the planning of decommissioning activities at Gippsland Basin, and to ensure safety of operations during Campaign#1 activities, metocean conditions estimates will be confirmed at the time vessel operations are underway for the decommissioning activities.

- Vessel limitations – Equipment safety considerations:
    - in the absence of more detailed available data, total installed thruster power of the *Pioneering Spirit* was considered for the modelling exercise. However, the vessel will not operate the thrusters at full capacity, as this will risk the integrity of the thrusters. It is expected that *Pioneering Spirit* will operate its DP system based on the ASOG developed for this vessel. As a result, input data used for the model is highly conservative, and underwater noise levels from vessel operations under this conservative approach are expected to be greater to those expected under real operational conditions.

6.11.2.6 Impact to marine fauna

Due to the high mobility of many fish and most turtles and marine mammals, noise sources from vessel operations that are a continuous broadband are related mostly to behavioural disturbances rather than injury or mortality. For purposes of assessing potential impacts from underwater noise, the sound EMBA refers to the distance at which underwater sound emissions from vessel operations can trigger behavioural response from marine fauna.

6.11.2.6.1 PLANKTON

There is no data on mortality and potential mortality, injury, impairment and behaviour on plankton (Popper, et al., 2014). Therefore, the guidelines provided in (Popper, et al., 2014) are considered for this activity (Table 6-49). There are low risks to plankton for impairment, behaviour, mortality and potential mortal injury. Based on this evaluation, the impact consequence for plankton resulting from underwater noise generated by vessel operations has **Consequence Level IV** at an ecosystem and population level.

6.11.2.6.2 FISH

There is no direct evidence of mortality or potential mortality to fish from vessel sound emissions. The risks of mortality and potential mortality, and recoverable injury impacts to fish with no swim bladder (sharks) or where the swim bladder is not involved in hearing is low and that TTS may be a moderate risk at near distances (tens of metres) from the vessel (Popper, et al., 2014). White shark reproduction and foraging BIAs occur in the OA, as shown in Figure 3-7. However, sharks do not possess a swim bladder and are therefore not significantly affected by underwater sound. This is evidenced in the Recovery Plan for the White Shark (DSEWPC, 2013b), as underwater noise is not listed as a threat to this species.

Behavioural impacts to fish from the activity will be limited to behavioural responses within metres of the noise source. Fish (including sharks and rays) may be temporarily displaced from the immediate vicinity of the sound source.

The 48-hour threshold for recoverable injury for fish with a swim bladder involved in hearing (170dB re 1µPa (Popper, et al., 2014) (Table 6-49) was reached at a maximum distance of 20m from the sound source.

Because pelagic fish are unlikely to remain in a fixed position for long periods of time (i.e. they generally swim away from the sound source), it is not anticipated fish will be exposed for a period of 48 continuous hours to underwater noise at levels at which potential risks of mortality or injury could occur. Additionally, the sound emitted from vessel operations will be mostly of short duration (<24 hours). As a result, impact from continuous sound from DP are likely to be insignificant.

Based on this evaluation, the impact consequence for fish resulting from underwater noise generated by vessel operations is **Consequence Level IV**.

6.11.2.6.3 TURTLES

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

In 2006, the Working Group on the Effects of Sound on Fish and Turtles was formed to develop sound exposure criteria for fish and turtles. The Working Group developed guidelines with specific thresholds for different levels of

effects for several species' groups including turtles (Popper, et al., 2014) (Table 6-49). (Popper, et al., 2014) noted that there is no direct evidence of mortality or potential mortal injury to sea turtles from vessel sound emissions.

Using semi-quantitative analysis, (Popper, et al., 2014) suggests that there is a low risk to marine turtles from shipping and continuous sound except for TTS near (tens of metres) to the sound source, and masking at near, intermediate (hundreds of metres) and far (thousands of metres) distances and behaviour at near and intermediate distances from the sound source.

Results from the JASCO modelling study for Campaign #1 activity (Li, Connell, Warren, & Koessler, 2024) indicates the SEL24hour threshold for PTS in marine turtles would only extend to a maximum of 20m from the sound source (Scenarios 2, 3, 4 and 6). For TTS, study indicates underwater noise levels that exceed this threshold would only extend up to 380m from the sound source. It is not credible that marine turtles will remain within these distances from the sound source for more than 24 continuous hours. In addition, no BIAs were identified for marine turtles within the sound EMBA and the OA, which suggests potential impacts, if any, will be limited to individual turtles.

Based on this information, marine turtles may exhibit avoidance behaviour within the EMBA. Potential impacts will be of short duration and localised, with insignificant effect on a population level. As a result, the consequence level for turtles is assessed as **Consequence Level IV**.

6.11.2.6.4 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 whales, PBW and SRW) hear better at lower frequencies (Wartzok & Ketten, 1999) (Mooney, Yamato, & Branstetter, 2012), generally at infrasonic frequencies as low as 10 - 15Hz (Ketten, 2004). The optimal hearing frequency range for baleen whales is between ~20-1000Hz (McCauley, 1994).

Sound is very important to whales and dolphins for effective feeding, 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).

6.11.2.6.4.1 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.

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.

6.11.2.6.4.2 BEHAVIOURAL IMPACTS

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

- increased stress levels
- disruption to underwater acoustic cue
- masking
- behavioural changes
- displacement.

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) (Gomez, et al., 2016) (Southall, Nowaceck, 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) (Hotchkin & Parks, 2013) (Blackwell, et al., 2015). Masking can also occur (Erbe, Reichmuth, Cunningham, Lucke, & Dooling, 2015).

The EPBC Act PMST reports for the EMBA (Appendix D) found that four species of threatened cetaceans are likely to, or known to occur within the EMBA:

- Blue whale (PBW subspecies) (endangered)
- SRW (endangered)
- fin whale (vulnerable)
- sei whale (vulnerable).

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

A description on potential underwater sound impacts to marine mammals present within the OA is presented below.

6.11.2.6.4.3 SEALS

Both the Australian and New Zealand fur seals (otariid seals) may occur within the EMBA. Results from the PMST report for the EMBA of Campaign #1 (Appendix D) identified these two species are listed marine species under the EPBC Act, however, are not categorised as threatened or migratory species, and no BIAs for seals were identified in the area.

Australian fur seal breeding populations are known to have expanded from Kanowna Island (southwest of Wilsons Promontory) to Rag Island (Parks Victoria, 2017c), which is part of the group of islands that are located within the Seal Islands Wildlife Reserve. Rag Island is within the OA of Campaign #1. The conservation outcomes for the coastal asset (including islands) of the Wilsons Promontory Marine National Park, which is inclusive of Rag Island, does not identify underwater noise as a threat to achieve the conservation outcomes established for this asset.

Results from the underwater noise study completed by JASCO for Campaign #1 activities indicates that PTS thresholds for seals are not triggered by vessel operations. Results also indicate that underwater noise levels at which TTS thresholds could be triggered are limited to a maximum of 120m from the sound source. Considering the dimensions of the HLV, with a hull length of 382m and a breadth of 123.7m, the distance at which TTS impacts to seals could occur are mostly confined within the footprint of the vessel, resulting in a low likelihood of exposure.

Vessel operations during Campaign #1 activities will be of short duration and localised. Anecdotally, seals are observed to regularly haul-out on Esso's platform jackets in Bass Strait, even during supply operations, and they do not appear to be significantly perturbed or disturbed by noise emanating from platform and vessel operations. Intermittent vessel operations in Commonwealth waters including the area towards seal islands and the southeast of Wilsons Promontory are not inconsistent with the conservation outcomes from the Wilsons Promontory Conservation Action Plan (Parks Victoria, 2017c), as underwater noise is not an identified threat to this species. In addition, as established in this EP, there are no BIAs for Otariid seals within or in proximity of the EMBA, therefore it is anticipated Campaign #1 vessel activities will have inconsequential effects on areas of important behaviours for this species.

As a result, impacts to seals are predicted to be limited to temporary avoidance of the immediate area of the vessel. It is assessed as **Consequence Level IV**.

6.11.2.6.4.4 HIGH FREQUENCY CETACEANS

The PMST report for the EMBA identified several migratory species (Appendix D), several dolphin species, beaked and toothed whales, however, no BIAs or biologically important behaviours were identified within the EMBA and therefore they are not assessed further.

Impacts to high-frequency cetaceans are predicted to be temporary avoidance of the area nearby where removal activities will be conducted. It is assessed as **Consequence Level III**.

6.11.2.6.4.5 LOW FREQUENCY CETACEANS

The PMST report for the activity (Appendix D) identified blue whales (PBW sub-species) are likely to be present within the EMBA, and SRW are known to be present within the EMBA. These two species are listed as migratory, threatened species in the EPBC Act. In addition, the following BIAs have been identified to overlap with the noise EMBA:

- PBW: foraging BIA
- SRW: migration and reproduction BIAs.

The reproduction BIA for the SRW is also categorised as Habitat Critical to Survival (HCTS) of this species (DCCEEW, 2024). The area designated as reproduction BIA (and HCTS) for the SRW is located within coastal waters across south-southeast Australia. When compared against the OA for Campaign #1, this reproduction BIA does not overlap the OA. Table 6-52 presents the percentages at which BIAs for PBW and SRW overlaps with the EMBA and the OA of Campaign #1.

Table 6-52 Campaign #1 overlap with PBW and SRW BIAs

Species	BIA	Overlap with EMBA (%)	Overlap with OA (%)
PBW	Foraging	3.1	30.8
SRW	Migration	0.2	4.6
	Reproduction*	5.2	No overlap

* Also categorised as a HCTS area for SRWs.

Based on the underwater noise modelling results (Li, Connell, Warren, & Koessler, 2024), the maximum areas from the sound source where noise levels are above the PTS and TTS thresholds for LFCs are 0.45km^2 and 93.2km^2 respectively. These areas represent a very small portion of the total PBW known foraging BIA, estimated to be approximately 0.00025% for PTS and 0.05% for TTS. Similarly, when PTS and TTS areas identified in the JASCO report (Li, Connell, Warren, & Koessler, 2024) are compared against the migration BIA for SRW, the estimated percentage of the area that PTS and TTS areas represent against the total migration BIA for SRW is approximately 0.00002% for PTS and 0.004% for TTS. Given these small spatial overlays, if the activity has a temporal overlap with the presence and/or foraging of PBWs or migrating SRWs, it is unlikely to result in preventing cetaceans of using this BIA. In addition, it is not credible that a cetacean will remain in the same location exposed to the noise source for a continuous period of more than 24 hours, resulting in an unlikely and inconsequential impact. The same negligible impacts apply to other marine mammals that may be migrating through or foraging in the activity area at the time of the activity.

From a horizontal distance perspective, the furthest distance at which sound generated from vessel operations exceeds thresholds for LFCs where injury or disruption of behaviour could occur are 410m for PTS, 6.1km for TTS and 25km for behavioural response. As described in Section 6.11.2.5 of this EP, distances at which these thresholds may be triggered are based on a conservative, worst-case scenario, with conservative input data used as part of the underwater noise modelling exercise. As a result, it is expected vessel operations will generate lower noise levels than those described in the JASCO report.

A detailed assessment on potential impacts to PBW and SRW is shown below. Other LFCs is assessed as a **Consequence Level III**.

6.11.2.6.4.6 PYGMY BLUE WHALES

As PBW are listed as endangered under the EPBC Act and the sound EMBA overlaps with a foraging BIA established for this species, it is appropriate that the principles of ESD as described in Part 3A of the EPBC Act be applied.

The time and location of the appearance of the 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, Cetacean Observations. Blue Whale Compliance Aerial Surveys. Santos Ltd Seismic Survey Program Vic/P51 and P52. November – December 2002, 2003). The Bonney Upwelling generally starts in the eastern part of the Great Australian Bight in November or December and spreads eastwards to the Otway Basin around February as southward migration of the subtropical high-pressure cell creates upwelling favourable winds.

Sighting data indicates that blue whales are seasonally distributed (Gill P. , et al., 2011) (McCauley, R.D., Gavrilov, A.N., Jolliffe, C.D., Ward, R. and Gill, P.C., 2018). In addition, an acoustic noise logger in Bass Strait has picked up acoustic detections from PBW in May - June (Commonwealth of Australia, 2015). As a result, peak period of potential presence of PBW in the Bass Strait area is expected to occur towards the second quarter of the year (April -June), which suggest there is a low probability of overlap of Campaign#1 activities with peak presence of PBWs in the area. However, in the context of potential impacts from underwater noise emissions from vessel operations, a precautionary approach has been taken in assuming that blue whales may be present, albeit in relatively low numbers, in the Bass Strait at any time of year.

The CMPBW 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"*. 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 the CMPBW defines the Bass Strait, where vessel operations will take place, as a "*possible foraging area*" for PBWs. The 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 (DAWE & NOPSEMA, 2021) 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.

TTS effects on cetaceans are not considered credible due to the extended duration (24 hours) for which an individual would need to remain in proximity to the sound source. However, underwater sound impact is assessed as **Consequence Level III** for PBW as there is potential for their displacement while foraging. This is considered acceptable because:

- as there is limited data available on PBW 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 PBWs are present, they are unlikely to be present in large numbers
- if PBWs are present, they are assumed to be foraging only. This area is not identified as a reproduction location for PBWs
- the CMPBW states that:
    - shipping and industrial noise are classed as a 'minor' consequence (defined as: individuals are affected but no affect at a population level)
    - *"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 it would cause injury to foraging PBWs
- the OA is located at a distance of approximately 415km from the Bonney coast upwelling KEF, which is a known feeding aggregation area for PBWs (Gill, et al., 2011) (McCauley, 1998). Therefore, vessel operations for Campaign #1 will not have any impact to PBWs ability to forage in that particular key aggregation area
- PTS and TTS effects on PBWs from vessel operation during Campaign#1 activities are not considered credible due to the extended duration (24 hours) for which an individual would need to remain in proximity to the sound source. In the same manner, vessel operations at a single location will be short-term. As a result, a temporary and intermittent potential impact of short duration may occur at the specific location at which the vessel is operating, and mainly when holding position during lifting operations at each facility or during transfer operations
- there is a low likelihood that temporal overlap of vessel operations with the presence of foraging PBW will result in behavioural changes that affect foraging or migration of these species, The vastness of the ocean in which these behaviours take place and where foraging resources are available, and the small percentage the area covered by the sound EMBA represents against the total area established as the BIA for PBWs indicates there will not be impacts at a population level.

Adopting the controls defined in Section 6.11.3 of this EP aim to prevent or minimise impacts to PBW that may be foraging. Guidance on Key Terms within the Blue Whale Conservation Management Plan (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 6.11.3 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 CMPBW, specifically Action Area A.2 - *Assessing and addressing anthropogenic noise* (Commonwealth of Australia, 2015). A detailed assessment of the requirements is outlined in Table 6-53.

Table 6-53 Analysis of Campaign #1 activities against the CMPBW

Description	Justification
A1 - Maintain, implement, and improve efficacy of current legislative and management protection	
1. Continue or improve existing legislative management actions.	This EP will implement the following Commonwealth legislation and management arrangements (as outlined in the CMPBW: • 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 BIAs will be managed such that any blue whale continues to utilise the area without injury and is not displaced from a foraging area.	The OA and sound EMBA overlaps with the PBW foraging BIA. It is acknowledged that PBWs could be present in the area, although in small numbers, at any time for the year, however indicative peak PBW season (expected to occur towards April to June) is outside the period when HLV operations are expected to occur. Even though there is a very low probability of SRW being present in the area at the time when vessel operations take place, Esso will apply the precautionary approach, and the following controls will be implemented: The controls in place **CMP4:** Helicopter Pilot, **CM8:** Vessel Master, **CMP8:** Fauna observations, **CMP11:** Vessel operations - Adaptive management and **CMP15:** Dark zone between nocturnal nesting and roosting habitats and sources of artificial light. It is considered with these controls in place and the extension of the area that comprises the foraging BIA of the PBW, that the activities will not prevent any PBW from utilising the area or cause auditory impairment
5. Ensuring behavioural impacts are considered when developing and updating policy documents on the management of cetaceans and anthropogenic noise.	The OA overlaps a minor percentage of the PBW foraging BIA. The incorporation of the BIA into this EP demonstrates that Esso have considered the impacts of the Campaign #1 activities on PBW foraging. Esso has committed to control measures that will ensure that PBW have reduced impacts from removal operations (refer to Section 6.11.3).

6.11.2.6.4.7 SRW

The OA and the sound EMBA both overlap with the SRW migration BIA. In addition, results from the underwater noise model indicates that sound EMBA from one out of the nine scenarios modelled overlaps with the SRW reproduction BIA; there is also a second scenario where the behavioural response threshold extends near, but not within, the reproduction BIA, which is also defined as a HCTS for this species (DCCEEW, 2024). For these two scenarios, source of underwater sound from vessel operations are associated with transfer operations of removed structures from the HLV onto barges or a HTV in sheltered waters, and at some extent, to the operations related to HLV lifting system mode change. The requirement to conduct transfer operations and HLV mode change operations closer to the coastline, in a sheltered location, is to ensure operations are carried out in a safe manner. For this activity, metocean conditions are critical and can significantly influence the ability of the vessels to complete these operations. Sheltered waters, typically located closer to shore, provide more favourable weather conditions that allow for transfer operations to be conducted in a manner where potential risks to personnel, equipment, vessels and the environment are minimised. The nature of the transfer operation requires sheltered weather conditions (minimal sea states) to enable lifting of the jackets/topsides onto the transport vessel, the transfer of personnel onto the transport vessel to undertake weld down of these structures onto the transport vessel and vessels working in proximity to each other. It should be noted that execution of this work at open water locations, with unrestricted weather conditions, would significantly increase risks to personnel, equipment, vessels and the environment.

Mapping of BIAs available from the Australian Marine Spatial Information System (AMSIS) (Geoscience Australia, 2023) indicates the reproduction BIA for the eastern SRW population covers the coastal waters located between the northeast corner of New South Wales to the southeast coast of South Australia, and across the Tasmanian coastline. The SRW reproduction BIA is limited to coastal, State waters, extending up to approximately 2.5km from the coastline along the entire defined reproduction corridor. Breeding period from this source is suggested to occur approximately from May to September, and migration period is suggested to occur approximately from April to October. SRW BIAs and HCTS are also depicted in the *National Recovery Plan for the Southern Right Whale* (DCCEEW, 2024), with figures indicating the same reproduction and migration periods as the AMSIS tool, based on '*reliable information on species occurrence and biologically important behaviour, including direct observational data and satellite tracking information*'; however, the Recovery Plan also indicates that SRW in Australian waters predominantly occupy shallow waters to calve and nurse their young from May to October.

The *National Recovery Plan for the Southern Right Whale* (DCCEEW, 2024) indicates presence of SRWs in Australian waters may vary, however, the peak period of abundance is typically in late July and August. Females accompanied by a calf generally occupy the calving grounds for two to three months between June and September. This is consistent with additional description on abundance and population trends presented in the Recovery Plan, where it is stated that '*Based on breeding females sighted across the period 1996 to 2017 prior to the post-breeding southward migration (i.e. month of September), an estimate of population size for the eastern population resulted in 268 (146-650) whales…*' (DCCEEW, 2024).

SRWs demonstrate high fidelity to feeding and breeding areas. *The National Recovery Plan for the Southern Right Whale* suggests four historic use areas based on available information. SRWs are consistently observed in two of these four areas, namely in the southeast of South Australia and the southwest of Victoria. In the two other high historic use areas, located off the southeast coast of Tasmania and near Eden on the border between Victoria and New South Wales, they are less consistently observed. The recovery plan also indicates that there is no current published evidence for consistent re-occupation of areas by the eastern SRW population other than some bays in southwest Victoria, however there are increasingly regular records of short-term use by mother-calf pairs along the Victorian, Tasmanian, and southern New South Wales coastline from May to September. In these areas, small but growing numbers of calving and non-calving whales have been observed to regularly aggregate for short periods (days to weeks). These include coastal waters between Binalong Bay to South-East Cape in Tasmania, the Gippsland coast in Victoria and in numerous protected bays generally south of the New South Wales Central Coast, potentially extending north as far as Port Macquarie (DCCEEW, 2024).

According to the *National Recovery Plan for the Southern Right Whale*, the only established calving aggregation location for SRWs in the southeast area of Australia is Logan's Beach, located near Warrnambool, Victoria, and that there has been expansion and re-occupation into historic breeding areas as the population has increased in abundance, with whales now utilising areas such as Geographe Bay (Western Australia), Fowlers Bay (South Australia) and Encounter Bay (South Australia) (DCCEEW, 2024).

In addition to the fact that currently there are no established calving aggregation locations within the area where decommissioning activities will take place, it is also unlikely that calving whales would remain within the OA, as

the whales prefer to occupy depths of less than 10m within 1km from the coastline. Platforms that will be decommissioned during Campaign #1 activities are located more than 20km away from the SRW reproduction BIA at the closest point (at DPA), and up to approximately 78km distance (at KFB). As a result, it is not expected underwater sound from vessel operations at the platforms will have any effect on SRWs that may be present within the reproduction BIA. On the other hand, vessel operations to transfer removed structures from the HLV onto barges or a HTV, or the completion of the HLV mode change operation may be conducted at sheltered waters that are closer to shore, however still within Commonwealth water limits. Therefore, a temporary overlap of the sound EMBA with the SRW reproduction BIA or the area adjacent to this BIA may occur during these specific activities, dependent on the location of the transfer operations and HLV mode change operation as the behavioural zone for transfer operations is ~25km.

Results from the underwater noise modelling by JASCO indicates noise at which PTS thresholds for marine mammals are exceeded extends up to 410m from the source. Considering the dimensions of the HLV, with a hull length of 382m and a breadth of 123.7m, it is expected that underwater noise within PTS threshold levels will be limited to the immediate vicinity of the location of the vessel. The reproduction BIA of the SRW will not be affected by noise levels that could generate PTS to this species. Underwater sound within TTS and behavioural response thresholds may overlap or reach to a distance near the reproduction BIA of the SRW. TTS effects on SRW from vessel operations during Campaign #1 activities are not considered credible due to the extended duration (24 hours) for which an individual would need to remain in proximity to the sound source. In the same manner, underwater noise generated by thrusters to allow the HLV to maintain position during lifting operations, during transfer operations, or during the one-off HLV vessel mode change operation, will be intermittent and short-term at each location, with noise from the vessels reduced as soon as each individual operation is completed and vessel changes from an operational mode to a transit mode to travel from one location to the next.

In the same manner, HLV operations for Campaign#1 activities will be limited to the months between September and January; as a result, underwater noise from vessel operations during the core period for presence of SRWs, which typically occurs between July and August, will be avoided, significantly reducing the probability of temporary overlap of vessel operations with presence of calving SRWs within or in proximity the reproduction BIA.

The SRW is a highly mobile migratory species that travel thousands of kilometres between habitats used for essential life functions. Feeding has not been observed in coastal Australian waters, although other parts of the Australian Exclusive Economic Zone may be utilised for feeding (DCCEEW, 2024). For the eastern SRW population, there has been a 25% increase of foraging at higher latitudes (DCCEEW, 2024), which are closer to Antarctic waters. SRWs tagged at Auckland Islands off New Zealand demonstrated consistent westward migratory movements to offshore waters south of the Head of the Bight (South Australia) and Western Australia (DCCEEW, 2024).

There is the potential for migrating SRWs, including mother-calf pairs to be present within the OA at the time of the Campaign #1activity, particularly during September when it is suggested that the post-breeding southward migration may occur. As SRW are a highly mobile migratory species, a temporary overlap of sound EMBA from vessel operations with migrating whales is not expected to have as significant impact on the species. In addition, in light of the small percentage of area covered by the sound EMBA associated to vessel operations when compared to the total area covered by the BIAs in which migratory and reproduction behaviours take place, it is not likely whales will be restricted or deterred from accessing areas where these biologically important behaviours are known to occur (i.e. reproduction areas in shallow coastal waters). Moreover, and based on available information to date, the eastern population of SRWs prefer aggregation areas located towards southwest Victoria, such as Logan's beach, and other areas located within South Australia.

As a result, occasional overlap of vessel operations with presence of migrating whales may be possible, however is not considered to have a significant effect on this species.

The potential impacts from underwater sound emissions generated by vessel operations during Campaign #1 activities were also assessed against the applicable recovery actions in the *National Recovery Plan for the Southern Right Whale (Eubalaena australis)* (DCCEEW, 2024) (Table 6-54).

Table 6-54 Analysis of Campaign #1 activities against the *National Recovery Plan for Southern Right Whale (Eubalaena australis)*

Description	Justification
A1 - Maintain, implement, and improve efficacy of current legislative and management protection for SRW	
1. Maintain, implement, and improve efficacy of existing legislation and management arrangements (e.g. Managements Plans and Guidelines) as listed under Section 1.2 of the *National Recovery Plan for the Southern Right Whale* (DCCEEW, 2024).	This EP will implement the following Commonwealth legislation and management arrangements (as outlined in Section 1.2.1 of the *National Recovery Plan for the Southern Right Whale*) (DCCEEW, 2024): • 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 A5.4 below)
A5 - Assess, manage, and mitigate impacts from anthropogenic underwater noise	
2. Actions within and adjacent to SRW BIAs and HCTS should demonstrate that it does not prevent any SRW from utilising the area or cause auditory impairment.	The OA and sound EMBA overlaps with the SRW migration BIA. In addition, due to vessel operational safety considerations, the activities of transferring removed structures from the HLV onto barges or HTV need to be conducted in sheltered locations where metocean conditions are favourable. As a result, transfer operations will occur in Commonwealth waters, however in proximity to the coastal waters band established as a SRW reproduction BIA (also defined as a HCTS for this species). The potential for auditory impairment during decommissioning activities is when the vessels are utilising DP thrusters and a whale is located within the sound EMBA identified for PTS and TTS thresholds. However, as whales are highly mobile and are not expected to remain within the PTS or TTS areas of exposure for 24 continuous hours, it is not considered likely auditory impairment to SRW will occur. HLV vessel operations will be conducted from September to January, which is outside the peak period for presence of SRWs in Australian waters and its core breeding season. Similarly, decommissioning activities are located away from known or preferred aggregation areas of the SRW eastern population, which are identified mostly towards the southwest of Victoria and the southeast of South Australia. Sound EMBA may have a temporary overlap with migrating SRWs; however, considering the short duration of the event due to the high mobility of the SRW, and the small percentage of area the sound EMBA represents of the total migration BIA, it is not expected vessel operations will prevent SRWs from migratory movement within the BIA. The controls in place **CMP4:** Helicopter Pilot, **CM8:** Vessel Master, **CMP8:** Fauna observations, **CMP11:** Vessel operations - Adaptive management and **CMP15:** Dark zone between nocturnal nesting and roosting habitats and sources of artificial light will ensure that potential impacts to SRWs are managed adequately, allowing whales to continue using the area and preventing potential harm. In addition, even though there is a very low probability of SRW being present in the area at the time when vessel operations takes place, Esso will

Description	Justification
	apply the precautionary approach and apply the controls referenced in Section 6.10.3. Given that decommissioning activities will take place outside core presence period of SRWs, and with the controls proposed for vessel operations in this EP, it is considered the activities will not prevent any SRW from utilising the area or cause auditory impairment.
3. Actions within and adjacent to SRW BIAs and HCTS should demonstrate that the risk of behavioural disturbance is minimised.	The OA, and therefore, the sound EMBA from vessel operations overlaps with the SRW migration BIA. In addition, due to vessel operational safety considerations, the activities of transferring removed structures from the HLV onto barges or HTV, as well as the one-off HLV mode change operation need to be conducted in sheltered locations closer to shore where metocean conditions are favourable. As these operations will occur in Commonwealth waters, however in closer proximity to the coastal waters band established as a SRW reproduction BIA (also defined as a HCTS for this species), sound EMBA may overlap with or extend to the proximity of this BIA. HLV operations will be conducted from September to January, which is outside the peak period for presence of SRWs in Australian waters (July-August), however, the decommissioning activities overlaps with the last two months of the overall reproduction and migration season suggested for SRW. Decommissioning activities are located hundreds of kilometres away from known or preferred aggregation areas of the SRW eastern population, which are identified mostly towards the southwest of Victoria and the southeast of South Australia. As a result, no impact to these known aggregation and calving locations utilised by SRWs have been identified for decommissioning activities. Potential exposure of SRW to sound levels that may trigger a behavioural response is expected to be limited to whales that may be transiting or passing through the area when Campaign #1 activities are underway. Sound EMBA may have a temporary overlap with migrating SRWs; however, considering the likely short duration of this potential overlap due to the high mobility of the SRW, and the small percentage of area the sound EMBA represents of the total migration BIA, it is not expected vessel operations will prevent SRWs from migratory movement within the BIA. In addition, even though there is a very low probability of SRW being present in the area at the time when vessel operations take place, Esso will apply the precautionary approach. The controls in place **CMP4:** Helicopter Pilot, **CM8:** Vessel Master, **CMP8:** Fauna observations, **CMP11:** Vessel operations - Adaptive management and **CMP15:** Dark zone between nocturnal nesting and roosting habitats and sources of artificial light will ensure that potential impacts to SRWs are managed adequately, allowing whales to continue using the area and minimising potential exposure to harm. Given that decommissioning activities may overlap with the reproduction BIA, however, will take place outside peak presence period of SRWs and at a significant distance from known SRW aggregation areas, the risk of behavioural disturbance is low. Controls proposed will aid to further manage and reduce potential impacts and risks to SRWs that may have temporary, short duration overlap with the sound EMBA.

Description	Justification
4. Ensure environmental assessments associated with underwater noise generating activities include consideration of national policy (e.g. EPBC Act Policy Statement 2.1) and guidelines related to managing anthropogenic underwater noise and implement appropriate mitigation measures to reduce risks to SRW to the lowest possible level.	Although there are no seismic surveys in this operation, the control measures align with EPBC Act Policy Statement 2.1 by: A2: Trained crew: • signed induction records • verification of competency certificates. A3.1: Pre-start-up visual observations: • observations for SRWs prior to start of works (**CMP11:** Vessel operations - Adaptive management). A3.3 Start-up delay procedure: • delay works if SRW is seen prior to works commencing (**CMP11:** Vessel operations - Adaptive management) • continue to delay until SRW has left observation zone or last seen minimum 30 minutes within the observation zone (**CMP11:** Vessel operations - Adaptive management). A3.4: Operations procedure: • Marine Mammal Observers (MMOs) and watchkeepers are consistently on the lookout for SRW and other marine megafauna while operations are in progress (**CMP26:** Cleaning of ODSPs, CDSPs and JLST). A4: Compliance and sighting reports: • Esso's responsibility to notify DCCEEW within three days if there is a cetacean vessel strike. B4: Increased precaution zones and buffer zones: • JASCO report has provided modelled distances for cetaceans (including SRW) responses from behavioural, TTS and PTS (Appendix J). B.6: Adaptive management: Supply vessels: • If a SRW is observed during HLV operations, supply vessels will not be allowed to come near the HLV • if supply vessel is already near the HLV, and is unsafe to stop operations, reduce thrusters as low as possible and adjust heading if safe to do so.
5. Quantify risks of anthropogenic underwater noise to SRWs, including studies aimed to measure physiological effects, behavioural disturbance, and changes to acoustic communication (e.g. masking of vocalisations) to whales	Use of JASCO reports (Li, Connell, Warren, & Koessler, 2024) to provide modelling results, which assisted with deciding the control measures for this activity.
A6 - Manage, minimise, and mitigate the threat of vessel strike	
1. Assess risk of vessel strike to SRW in BIAs.	The Watchkeepers and MMOs will reduce the risk of vessel strike as they will be continuously observing for marine megafauna and other marine users. Section 7.2 details the assessment of physical

Description	Justification
	interaction with marine fauna. The risk ranking is Risk Category 4 (the lowest category) as the Vessel Master (**CM8:** Vessel Master): • will follow Part 8 Division 8.1 of the EPBC Regulations and the Australian National Guidelines for Whale and Dolphin Watching 2017 • ensure the vessel is not knowingly travelling faster than 6kn within 300m or 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 7.2.
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 MMO responsibility to report SRW vessel strike incidents to these authorities, additional to DCCEEW.

Based on this assessment and controls in place, the sound impacts is assessed as **Consequence Level III** for SRWs.

6.11.2.7 Cumulative impacts

Underwater noise modelling completed by JASCO for the Campaign#1 activities considered a range of different scenarios, most of them which included simultaneous operations of vessels and cutting activities from a ROV (Li, Connell, Warren, & Koessler, 2024). As a result, it is considered that potential cumulative effects from vessel operations associated to Campaign#1 activities have been addressed in Sections 6.11.2.1 to 6.11.2.6.

Offshore activities in the Bass Strait by other oil and gas operators includes the following:

- Basker Manta Gummy Closure Project Phase 2 (Cooper Energy Limited): Environment Plan for this activity was accepted by NOPSEMA on the 13 February 2024. Activities to be undertaken by Cooper Energy under this EP are:
  - campaign to remove flowlines, umbilicals and any remaining infrastructure above the mud line. This Campaign is expected to occur at any time between 2024 and 2026
  - decommissioning activities, which will be completed by the end of 2026
  - post-decommissioning activities such as monitoring, to be finalised by the end of 2027.
- Gippsland Offshore Operations (Cooper Energy (PBF) Pty Ltd): Environment Plan for this activity was accepted by NOPSEMA on the 21 October 2024. Activities to be undertaken by Cooper Energy under this EP include the IMR activities. Indicatively, vessel based IMR activities are expected to occur every one to two years, with an estimated duration of between two to four weeks, and up to approximately eight weeks in the unlikely event a major repair is required.

HLV operations for lifting of topsides and jackets will be conducted within the ATBA for Esso operations in the Bass Strait. Operations from other oil and gas operators in the area are limited, with potential sporadic, short-term IMR activities that would take place several kilometres away from nearest Esso Bass Strait facility. As a result, it is not expected Campaign#1 activities will overlap with vessel operations from other operators that could result in cumulative underwater noise impacts.

Currently planned offshore activities in the Bass Strait for Esso operations include the following:

- **Jack-Up Rig P&A EP** - The EP for this activity was accepted by NOPSEMA on 8 October 2024. The pre-start notification for activities under the scope of this EP was made in October 2024. The P&A program is estimated to have a duration of 12 months to 16 months and is expected to be completed by early 2026
- **Jack-Up Rig Kipper Stage 1B drilling EP** - The EP for this activity was accepted by NOPSEMA on 9 January 2025. Earliest expected start of activities under the scope of this EP is 2025. Duration of activities is estimated in approximately 90 days; however, duration is dependent on weather, scheduling and operations performance
- **Geophysical and Geotechnical (G&G) Investigations EP** - The EP for this activity was submitted to NOPSEMA for assessment on 20 May 2024. Currently there are no specific dates available on when G&G activities will take place, however it is stated that activities could happen at any time within the duration of the EP (five years from the date of approval by NOPSEMA). The EP describes that G&G survey campaigns are typically 20 to 60 days in duration, with a maximum duration of G&G campaigns to be no more than a combined total of 180 days per calendar year
- **Jack-up Turrum Phase 3 Drilling** - Esso is planning to undertake drilling operations at the Marlin B platform. This activity is subject to the development of an EP by Esso, and approval by NOPSEMA of this regulatory instrument. Initial expectation for commencement of the activity is towards third quarter 2025, dependent on regulatory approvals and then on other factors such as weather and operational constrains. It is expected that activities covered in the scope of the Turrum Phase 3 Drilling operations will have a duration of 300 days.

It is not expected that Jack-Up Rig operations from the projects described above will overlap with operations of the HLV during Campaign#1 activities. In addition, currently there is no indication on overlap with G&G activities, however this is dependent on factors such as weather, operational schedules and vessel and equipment availability. In any case, and due to the safety criticality of the HLV operations, no additional activities from vessels that are not associated with Campaign#1 activities are expected to be occurring in proximity of the location where the HLV is operating. As a result, it is not expected that Campaign#1 activities will overlap with vessel operations from other projects within the Bass Strait that could result in cumulative underwater noise impacts.

From a wind energy projects perspective, the Australian government has granted 12 feasibility licences for offshore wind projects off Gippsland's coast. From these 12 projects, six overlap at some extent with the OA for Campaign#1. Offshore wind farm projects are currently in early stages of planning, with processes for environmental and other approvals currently under way.

There is potential for cumulative underwater sound emissions generated from overlapping Campaign #1 activities and wind farm operations. Currently there is high uncertainty on exact timing when early offshore works (geophysical surveys) and construction activities of wind farms will take place. However, based on communications held between Esso and wind farm operators, the following information is provided. Note that the timing presented below is only indicative and is subject to change at any time by the wind farm operators, based on regulatory aspects or other projects' requirements. Esso maintains an open line of communication with wind farm operators to ensure the company is aware of updates from the offshore wind industry that may be relevant to Campaign#1 activities in a timely manner.

- Gippsland Dawn Project (Bluefloat) - Preliminary information available suggest geophysical survey may occur from third quarter 2025. Approximate duration is between one to three months.
- Navigator North Project (RES Group/Origin) - Preliminary information available suggest construction activities may begin in 2029.
- Blue Mackerel North Project (Parkwind and Beach) - Geophysical survey commenced November 2024 and is expected to take up to 40 days. Preliminary information available suggests geotechnical survey will commence during the first half of 2025, and construction of the Project, after approvals are granted, are estimated to commence in 2029.
- Aurora Green Project (Iberdrola Australia) - Preliminary information available suggest geophysical and geotechnical surveys may occur between late 2024 and early 2025. No information is available on the estimated timing for construction operations.
- Great Eastern Offshore Wind Farm Project (Corio Generation) - Preliminary information available suggests offshore site investigations may occur between first quarter 2025 and first quarter 2027. No information is available on the estimated timing for construction operations.
- Star of the South (Southerly Ten) - Preliminary information available indicates the operator is currently preparing environmental assessments to seek required approvals. There is no information available on the estimated timing for construction operations.

Based on this information, it is not expected that Campaign#1 activities will overlap with vessel operations from wind farm operators that could result in underwater noise cumulative impacts.

This EP considers direct and indirect impacts from activities conducted within Commonwealth waters (including off-title areas) across the OA as described in Section 3.1. Campaign #1 activities conducted outside of the OA will be subject to applicable approvals under Victorian and Commonwealth environment laws, and are not within the scope of this EP.

Esso intends to prepare and submit a staged referral under the *Environment Protection and Biodiversity Act 1999* (Cth) to DCCEEW. The second stage of the referrals will cover aspects associated with the transportation of decommissioned assets through State Waters and offloading and set down at the Barry Beach Marine Terminal.

6.11.3 Controls

- **CM8:** Vessel Master.
- **CMP4:** Helicopter Pilot.
- **CMP26:** Cleaning of ODSPs, CDSPs and JLST.
- **CMP9:** Marine Mammal Observers
- **CMP10:** Pre-activity aerial survey**.**
- **CMP11:** Vessel operations - Adaptive management.

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

6.11.4 Residual consequence assessment

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

- **Consequence Level III.**

6.11.5 Demonstration of As Low As Reasonably Practicable

Table 6-55 Decision Context and justification

Decision Context B
Decommissioning activities using HLVs is a common and well understood practice, however there is the potential for uncertainty in relation to the level of impact. Activities are well practised, and there are no conflicts with Company values. Esso believes ALARP Decision Context B should apply.

Table 6-56 Good practice controls

Good practice	Adopted	Control	Rationale
Part 8 Division 8.1 of the EPBC Regulations. *Australian National Guidelines for Whale and Dolphin Watching 2017* (Commonwealth of Australia, 2017a)	✓	**CM8:** Vessel Master **CMP4:** Helicopter Pilot	The Vessel Master and Helicopter Pilot have 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. 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

Good practice	Adopted	Control	Rationale
			and helicopter rotor blades that cause sound emissions. 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.

Table 6-57 Engineering risk assessment

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
Do not undertake the activity	Eliminates underwater sound generation	This is not a feasible option. General Direction 817 indicates Esso must complete all preparatory decommissioning activities and commence the topside dismantling campaign as soon as reasonably practicable, and no later than 30 September 2027, associated with facilities listed in Schedule 3 of the Direction.	Not adopted
Decommissioning of facilities via single lift method	Reduces vessel operations and movements required and the overall duration of decommissioning activities when compared against other removal methods such as 'reverse installation'	Implementing the single lift method over other decommissioning techniques such as 'reverse engineering (reverse installation)' allows to reduce decommissioning timeframes, and also to reduce total number of HLV operations required to complete the facilities removal scope. Reducing required vessel operations results in reduction of the total time during which underwater noise is generated as a result of decommissioning activities, and therefore, reduced probability of exposure to underwater noise by marine fauna. The likelihood of potential cumulative impacts of underwater noise is also minimised if time required for completion of decommissioning operations is reduced.	Adopted

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
		Reducing required vessel operations to complete decommissioning activities also results in reduction of the time window in which HLV operates, minimising the potential of vessel activities to overlap with months of the year where important behaviour of marine fauna is expected to occur. The use of specialised vessels is required to undertake removal of facilities via single lift approach. There are limited vessels available that have the specifications required to safely complete decommissioning operations via single lift. The large size of the *Pioneering Spirit* HLV is advantageous for holding position in challenging Bass Strait metocean conditions, reducing overall expected program duration. The benefit of implementing the single lift method for decommissioning (via the use of the *Pioneering Spirit* HLV) outweighs the potential environmental impact.	
Trained vessel bridge crew, watchkeepers support continuous fauna observations	Allows for fauna observations and adaptive management to be undertaken as per: **CMP8:** Fauna observations and: **CMP11:** Vessel operations - Adaptive management	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 EPBC Regulations, which is implemented via the *Australian National Guidelines for Whale and Dolphin Watching 2017* (Commonwealth of Australia, 2017a). • Trained bridge crew undertake continuous observations. • Watchkeepers trained in marine fauna recognition and vessel management practices. • Vessel operator is required to maintain compliance with the	Adopted

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
		EPBC Act and other relevant conservation management plans. As such, vessel crews complete Marine Fauna Observer training to ensure that obligations with respect to marine mammals are observed while they are in charge of the vessel. • Esso verifies the crew Marine Fauna Observer training as part of pre-hire and routine EP compliance inspections. • Vessels have multiple pairs of binoculars available to Watchkeepers. • Marine megafauna identification charts are posted onboard. HLV and CSVs bridge crew are also provided an EP-specific environment awareness induction which further reinforces these requirements in whale observation, species identification, reporting requirements and adaptive management plan requirements (see: **CMP11:** Vessel operations - Adaptive management). The Campaign #1 induction includes: • providing photos/pictures of the different megafauna expected in the area at the time of the decommissioning activities, including in the form of posters for display on the vessels • instructions on the pre-start, requirements (as listed in: **CMP11:** Vessel operations - Adaptive management) • 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	

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
		• instructions on data to be recorded for marine megafauna sightings, including time of observation, type and number of species observed and estimated location coordinated • vessels crew are able to provide observation whilst the vessel is entering the OA and while undertaking decommissioning activities.	
HLV operations outside of indicative peak PBW season (expected to occur towards April to June).	Prevents generation of underwater sound from HLV operations during indicative peak season of PBW.	HLV operations for Campaign #1 activities have been planned to take place from September to January only. It is acknowledged that PBWs could be present in the area, although in small numbers, at any time for the year. The impact (in the event of whales being present) will be managed through controls in place.	Adopted
HLV will operate outside of indicative peak period of abundance of SRW in Australian waters (July and August) and largely outside the reproduction season of SRW (May to October).	Prevents generation of underwater sound from decommissioning activities by the HLV during indicative peak abundance months and breeding season of SRW.	General Direction 817 indicates Esso must complete all preparatory decommissioning activities and commence the topside dismantling campaign as soon as reasonably practicable, and no later than 30 September 2027, associated with facilities listed in Schedule 3 of the Direction. Planning and execution of decommissioning activities are conditioned by several factors, including but not limited to: • completion of facility preparation activities are required prior the arrival of the HLV, that are necessary to enable platform lifting operations • availability of vessel capable of performing decommissioning via single lift method • metocean conditions.	Partially adopted

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
		HLV operations for decommissioning activities have been planned to take place from September to January. In the event of the presence of whales in the observation zone during the activity, the proposed control measures will reduce potential impacts.	
Implement a buffer zone between the SRW reproduction BIA and adjacent area, and transfer operations and the HLV mode change operation.	Reduces potential exposure of SRW to underwater noise.	The OA defined for Campaign #1 is located in its entirety within Commonwealth waters. The OA does not overlap with the SRW reproduction BIA, however the reproduction BIA is present along the Gippsland coastline, near the northern boundary of the OA. HLV operations for Campaign #1 activities, including transfer operations and HLV mode change operation, have been planned to take place between September to January, which is outside peak presence period of SRWs in Australian waters, but this period still overlaps with the last two months of the reproduction season. Transfer operations of removed structures from the HLV onto barges or a HTV, and the HLV mode change operation are safety critical activities that are highly dependent on metocean conditions. These activities require a sheltered location, closer to the coastline, to ensure operations are carried out in a safe manner. Sheltered waters provide more favourable weather conditions, significantly influencing in a positive manner the ability of the vessels to complete these operations with reduced potential risks to personnel, equipment, vessels and the environment. As a result, limiting these operations to areas further away from sheltered water environments would result	Not adopted

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
		in either a significant increase in safety risk and significant increase in potential activity duration while waiting for appropriate operational conditions to conduct transfers. The OA is located hundreds of kilometres from known regular aggregation locations (i.e. Logan's Beach in Warnambool) and from areas where reoccupation or expansion of SRW breeding areas has occurred such as Geographe Bay, Fowlers Bay and Encounter Bay. This control is considered to provide a limited environmental benefit, however, significantly increasing the safety risk to vessel crew, equipment and other users of the sea, as well as the overall duration of vessel operations during decommissioning activities. The cost associated with mitigating the increased safety risk resulting from the implementation of this measure is disproportionate to the potential benefit achieved.	
Shut down DP thrusters on vessels if PBWs and SRWs are sighted near the vessel.	Reduces the potential for PTS, TTS and behavioural impacts.	Operation of the DP system is required to ensure vessels keep station when conducting decommissioning activities, mostly during removal operations such as lifting of platforms and transfer of structures from HLV onto barges or HTVs. Operation of the DP system by vessels during Campaign #1 activities is a safety critical element, and preventing its use would result in an unacceptable risk to decommissioning personnel, vessels and platforms. This may also lead to a potential unplanned release of oil if an incident occurs.	Not adopted

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
		This control measure is not technically feasible and would lead to disproportionate and unacceptable safety risks, and an increased risk of impact from unplanned releases into the marine environment.	
Limit DP power to maximum 75%.	Reduces the potential for PTS, TTS and behavioural impacts.	Operation of the DP system is required to ensure vessels keep station when conducting decommissioning activities, mostly during removal operations such as lifting of platforms and transfer of structures from HLV onto barges or HTVs. Operation of the DP system by vessels during Campaign #1 activities is a safety critical element. The power at which thrusters need to operate to hold position will vary based on specific vessel operation to be conducted and weather conditions present at the time of operations. When metocean conditions are calm, vessels are expected to require less thruster power to hold position. 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. Limitations: Vessels must be able to hold station to safely undertake decommissioning activities. Activities will be suspended in the event that thruster power levels need to exceed safety levels identified in the Thruster and Generator Operating Strategy and/or the Activity Specific Operating Guideline (ASOG). Weather forecasts will aid in anticipating estimated thruster power likely to be required, and	Adopted – Subject to safety considerations

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
		its influence on conducting removal activities.	
Use of competent MMOs on the HLV.	Monitoring and detection. Supports fauna observations and adaptive management to be undertaken as per: **CMP8:** Fauna observations and **CMP11:** Vessel operations - Adaptive management.	MMO onboard the HLV means that a trained expert is dedicated to search and identify whales and implementation of whale management procedures if needed. Continuous coverage by MMO is planned during daylight hours. The MMOs will 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. MMOs with recognised training and experience in whale observation, distance estimation and reporting in accordance with Part A.2 and B.1 of the EPBC Act Policy Statement 2.11) (DEWHA, 2008) will be onboard the HLV for the duration of the activity. Having MMOs on the HLV, which is the main source of underwater noise during Campaign#1 activities, provides further support to the efforts of visual survey and identification of whales, and triggering of adaptive management measures The environmental benefits of having MMOs onboard the HLV outweighs the costs of implementing this control measure and is considered best practice. Limitations: Sourcing trained and experienced MMOs to be available at the time of the activity can be logistically difficult, as the market for such skilled people is tight. Where feasible, at least one MMO will be on shift on the HLV during daylight hours to implement the EPBC Act Policy Statement 2.1	Adopted

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
		(DEWHA, 2008), with an additional MMO available to take over the previous shift or assist the MMO on shift as required. Observations can be hampered by glare, rough seas, mist/fog and low light. Observations will be suspended during night hours and when conditions make observations impracticable.	
Use of MMOs on CSVs and other support vessels.	Monitoring and detection. Supports fauna observations and adaptive management to be undertaken as per: **CMP8:** Fauna observations and **CMP11:** Vessel operations - Adaptive management.	Having MMOs in the CSVs and other support vessels when these vessels are in proximity to the HLV will not result in a significantly better outcome for detection and identification of whales. In addition, CSVs and other supply vessels will have trained crew as MMOs onboard, with responsibilities on whale detection and identification, including when vessels are operating as stand-alone vessels away from the HLV, which allows for monitoring of whales during operations by these vessels. Training aims to build capabilities to provide an adequate resource to detect and identify whales and trigger adaptive management measures. The costs associated with the addition of MMOs on the CSVs and other support vessels is grossly disproportionate to the potential environmental benefits.	Not adopted
Undertake pre-activity and activity vessel-based observations for turtles (particularly leatherback turtles).	Monitoring and detection. Awareness of presence of marine turtles in proximity to vessel operations.	There are no turtle nesting beaches in Bass Strait. The Recovery Plan for Marine Turtles in Australia (CoA, 2017) details noise interference as a threat, however the absence of turtle BIAs in Bass Strait, non-existence of nesting locations, and known low abundance of turtles in this area, indicates that vessel operations in the Bass Strait associated to Campaign #1	Not adopted

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
		activities are not inconsistent with the objectives established in the plan, specifically with Actions A.5 (Assess, manage, and mitigate impacts from anthropogenic noise). Vessel-based surveys do not guarantee that turtles will be sighted. Observations can be hampered by glare, rough seas, mist/fog. Based on this evidence, pre-activity and activity surveys for turtles would not result in a significant additional environmental benefit.	
Undertake pre-activity and activity vessel-based observations for white shark.	Monitoring and detection. Awareness of presence of white sharks in proximity to vessel operations.	White sharks do not have a swim bladder, therefore underwater sound is unlikely to impact this species. The Recovery Plan for the White Shark (*Carcharodon carcharias*) (DSEWPAC, 2013) does not list underwater sound as a threat. As a result, vessel operations in the Bass Strait associated to Campaign #1 activities are not inconsistent with the objectives established in the Plan. Vessel-based surveys do not guarantee that white sharks will be sighted. Observations can be hampered by glare, rough seas, mist/fog. Based on this evidence, pre-activity and activity surveys for white sharks would not result in a significant additional environmental benefit.	Not adopted
Undertake pre-activity vessel-based observations for PBW and SRW while on-route to the location where removal operations will take place, before	Monitoring and detection. Increases the confidence that there are no PBW or SRW in the area where removal activities will occur.	• Bridge crew and trained personnel: No additional costs. Bridge crew and personnel from Campaign #1 vessels 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	Adopted

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
the start of vessel safety-critical operations*. **For Campaign#1 activities, vessel safety critical operations are defined as those activities that require the vessel to adhere to and maintain strict operational settings and configurations to ensure removal operations are completed in a safe manner. These activities are those directly associated with removal operations such as vessel connecting to the platform, lifting operations, transiting between facilities when the vessel is transporting removed structures, and transfer operations.*		the EPBC Regulations, which is implemented via the Australian National Guidelines for Whale and Dolphin Watching 2017 (Commonwealth of Australia, 2017a) • MMOs (for HLV): The MMOs will 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. Vessel-based surveys do not guarantee that whales will be sighted, and the field of vision from the vessel (which depends on height of observation) only covers a small portion of the behaviour zone at any point in time. Observations can be hampered by glare, rough seas, mist/fog.	
Undertake pre-activity aerial survey to cover the sound behavioural zone around the fixed platform location where removal activities will occur prior to the HLV entering the PSZ in preparation for vessel safety-critical operations*. **For Campaign#1 activities, vessel safety critical operations are defined as those activities that require the vessel to adhere to and maintain strict operational settings and configurations to ensure removal operations are completed in a safe*	Monitoring and detection. Increases the confidence of presence or absence of PBW or SRW within the sound behavioural zone from where removal activities will occur.	Aerial surveys are a non-invasive detection method that provides coverage of a large area of the sea efficiently and rapidly, increasing the distance range that MMOs can monitor. Aerial surveys may be performed by fixed wing aircraft, helicopters, drones etc. and can cover more of the sound behavioural zone from location/PSZ where removal activities will take place may be restricted by flight direction limitations, weather conditions (glare, wind, fog/mist etc), nighttime operations, safety or operability. The increased detection range allows for coverage of more of the behavioural zone/sound EMBA in a relative short period of time. If a PBW or SRW are sighted within the sound behavioural zone around a fixed platform	Adopted – Subject to safety, light and weather considerations

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
manner. These activities are those directly associated to removal operations such as the vessel connecting to the platform, lifting operations, transiting between facilities when the vessel is transporting removed structures, and transfer operations.		prior to the HLV entering the PSZ of that location in preparation for vessel safety-critical operations, removal activities will not commence until 30 minutes after the last PBW or SRW sighting in the area. Limitations: Aerial surveys introduce safety risks and are subject to weather condition limitations. Benefit of implementing aerial survey to detect whales during the pre-activity survey outweighs the cost.	
Do not allow supply vessels next to the HLV if a PBW or SRW has been recently observed.	Reduces the potential for PTS, TTS and behavioural impacts.	If PBWs or SRWs have been sighted from the HLV within the past 30 minutes prior to a supply vessel approaching the HLV for re-supply operations, supply vessel will not be allowed to come alongside. Authorisation to supply vessel to resume approach to HLV will only be granted when no PBW or SRW sightings have been made for a period of 30 minutes, or before this time if there is visual confirmation that PBWs or SRWs have exited the observation zone (sound EMBA). The environmental benefits of restricting supply vessel operations outweighs the costs of implementing this control measure.	Adopted
Move supply vessels away from the HLV during unloading/loading when the vessel is using DP if a PBW or SRW has been recently observed.	Reduces the potential for PTS, TTS and behavioural impacts.	If there is a sighting of PBWs or SRWs when loading/unloading activities from supply vessels to the HLV are under way, and it is possible to stop the supply operations safely and quickly, they will be ceased and the supply vessel will move away from the HLV, in the opposite direction of where the whale was sighted, and cease using DP until the PBW or SRW moves out of the observation zone radius or when	Adopted - Subject to safety considerations

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
		30 minutes have lapsed since the last sighting. Each event will be assessed on a case-by-case basis. It may not be practicable or safe for the operation to cease and the vessel to move away. It may take some time to cease the activity of loading/unloading in a safe manner, by which time it is likely that an individual whale would have passed. If feasible, supply vessels in this scenario will reduce thrusters and adjust heading if safe to do so (see **CMP11:** Vessel operations - Adaptive management) and this will help minimise noise and disturbance.	
Use of Passive Acoustic Monitoring (PAM).	Monitoring and detection. Increases the confidence that presence of PBW or SRW in the area nearby where removal activities are taking place is noted	As a cetacean detection method, PAM has been used to detect whales that vocalise at high frequencies/intensities such as HFCs and VHFCs (e.g. sperm whales) and, in conjunction with visual monitoring, can enhance cetacean detection effectiveness. PAM has the advantage of potentially detecting cetaceans during night hours and during periods of poor visibility when they cannot be visually detected. Although PAM can be a valuable tool in identifying the presence of cetaceans, the following factors limit its effectiveness: • most suitable for HFCs and VHFCs, which are known to emit regular distinctive clicks and high frequency calls during long dives. HFCs and VHFCs are generally of lower concern in the Gippsland Basin region compared to LFCs. It is difficult for PAM to pick up vocalisations of LFCs such as blue whales and SRW • PAM detections may not reliably determine whale	Not adopted

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
		behaviour as accurate as visual observations. • rely on individual vocalisations within the detection range • PAM is not a typical control for vessel operations. Underwater noise from vessels at close range may interfere with the PAM system. Background signals and underwater sounds such as vessel noise presents an added challenge to effectively distinguish marine mammal noise • some PAM arrangements such as systems mounted on buoys are affected by weather and can present a navigations risk for other users of the sea • to increase reliability of the PAM system, accurate background data from the environment in which it will operate and detailed characterisation of vocalisation from target species is required • detection of a target species by a PAM system requires validation by a trained operator, or a visual confirmation by a Marine Fauna Observer or MMO. Implementation of PAM systems do not result in a discernible reduction in risk. Currently there is limited confidence in operational reliability for this application. LFCs surface to breathe more regularly than deeper water HFCs and VHFCs, which result in an increased likelihood of LFCs to be detected by MMOs and Marine Fauna Observers during vessel-based surveys and MMOs during aerial-based surveys, resulting in a reduction of the overall added benefit from implementation of PAM surveys. The cost of implementing PAM is grossly	

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
		disproportionate to the environmental benefit.	
Deploy bubble curtains around the HLV.	Reduces the potential for PTS, TTS and behavioural impacts.	Bubble curtains are most useful for projects that are fixed in position and involve piling or detonation of explosives; it is not a typical control for mobile vessel operations. The bubble curtain (perforated hose) is deployed to the seabed and encompasses the noise source in an aim to obscure noise transmission, resulting in a reduction of received sound levels to receptors outside of the bubble curtain. Circa 15dB noise attenuation has been reported for impulsive noise from piling; efficacy is dependent on various factors. The deployment of bubble curtains for this activity is limited by the following factors: • there is high uncertainty on its applicability for managing noise from HLV operations for Campaign #1 activities • size of HLV: the bubble curtain is required to cover the area around the vessel and fixed facility or adjacent vessel. This would require a significant length for the curtain • the highly mobile nature of the Campaign #1 activities, where the HLV will be moving between platforms and the OA for transfer activities. This results in significant logistic limitations for the implementation of this control • bubble curtains are drastically impacted by currents. Current speeds and directional shifts with wind and tide would result in bubble curtains being distorted and a reduced effectiveness of noise attenuation	Not adopted

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
		• typically bubble curtains are placed on the seafloor. This may generate resuspension of sediments • additional support vessels would be required to deploy and retrieve the bubble curtain(s). This results in additional sources of underwater noise, artificial light and emissions to air. It would also result in additional potential impacts from interactions with other users of the sea and increase the risk of occurrence of unplanned events with negative environmental consequences. Due to depth, large compressors are likely required to deliver air through the bubble curtain to the outlets from where the bubbles will be released into the water column. This control measure is not technically feasible for HLV decommissioning activities.	
Dedicated spotter vessel.	Monitoring and detection. Increases the confidence that there are no PBW or SRW in the area where removal activities will occur.	Deploying a dedicated spotter vessel may extend the range at which fauna observations can be made. Using a dedicated spotter vessel introduces additional environmental impacts such as an additional underwater noise source, additional air emissions and additional risk of unplanned interactions with marine fauna and other users of the sea (e.g. fishery operations, recreational/tourism activities). The nature of the dedicated spotter vessel substantially influences the ability for fauna observations, as the range at which detections can be made is directly influenced by the height of the observer (i.e. the greater the height of the observer, the greater the detection range).	Not adopted

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
		Local charter vessels (e.g. fishing boats <20m length) produce relatively low underwater noise levels, however the fauna observer can only be stationed 3 - 4m above the sea. This is substantially less than the approximate 10m elevation platform available from which a fauna observer can complete visual surveys onboard a typical CSV. Using a larger vessel as a dedicated spotter vessel with an available platform that provides a good range of visibility to fauna observers could introduce additional underwater noise. The use of small fishing or charter vessels as dedicated spotter vessels also increase safety risks associated to metocean conditions for navigation. Given this EP proposes a pre-activity aerial survey (**CMP10:** Pre-activity aerial survey) to cover a broad extent of the area at which potential underwater noise from vessel operations could result in a behavioural response from cetaceans, and additional fauna observations are to be conducted from decommissioning activity vessels, using a dedicated spotter vessel provides no additional benefit - cost is grossly disproportionate to the potential benefit.	

6.11.6 Demonstration of acceptability

Table 6-58 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, temporary and intermittent impact, which is not considered as having the potential to affect biological diversity and ecological integrity

Factor	Demonstration criteria	Criteria met	Rationale
	Activity does not have the potential to result in serious or irreversible environmental damage.	✓	The 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.	✓	Requirements of Part 8 Division 8.1 of the EPBC Regulations, although more relevant to tourism activities (e.g. whale watching), have been adopted. Noise interference is a recognised threat to the species in the following conservation or recovery management plans and advice. The proposed controls are consistent with conservation/management actions in: • CMPBW • *Conservation Advice for Humpback Whales* (TSSC, Approved Conservation Advice for Megaptera novaeangliae (Humpback whale), 2015b) • *National Recovery Plan for Southern Right Whale* (DCCEEW, 2024) • *Conservation Advice for Sei Whales* (TSSC, 2015) • *Conservation Advice for Fin Whales* (TSSC, 2015) • Recovery Plan for Marine Turtles in Australia, 2017-2027 (CoA, 2017) • Recovery Plan for the White Shark (Carcharodon carcharias) (DSEWPAC, 2013) • Conservation Acton Plan for Parks and Reserves Managed by Parks Victoria – Wilsons Promontory (Parks Victoria, 2017).
Internal context	Consistent with Esso's Environment Policy.	✓	Proposed activities are consistent with Esso's Environment Policy, in particular, to "*comply with all applicable environmental laws and regulations and apply responsible standards where laws and regulations do not exist*"
	Meets ExxonMobil Environmental Standards.	✓	Impact assessment process and controls proposed meet the strategic objectives of the business and the Environmental policy.
	Meets ExxonMobil OIMS Objectives.	✓	Proposed activities meet: • OIMS System 6: Regulatory Compliance and Sustainability Management objective to identify

Factor	Demonstration criteria	Criteria met	Rationale
			and assess environmental aspects; significant aspects are addressed and controlled consistent with policy and regulatory requirements • OIMS System 8: Selecting and Engaging with Third Party Providers objective to qualify, evaluate and select contractors based on their ability to perform work in a safe, secure and environmentally sound manner.
External context	Relevant person concerns have been considered/addressed through the consultation process.	✓	Relevant persons concerns have been considered.

6.12 Light emissions

6.12.1 Sources of light emissions

Light emissions from Campaign #1 activities in the Gippsland basin will be limited to those associated with vessel operations. Platforms to be decommissioned will be non-operational and therefore there will be no sources of light from topsides such as flares, cranes, accommodation and other installations. Light from platforms will be restricted to a standard light for navigational aid. Subsea activities performed by ROVs are also a source of light emissions.

Light sources from vessels operating during Campaign #1 activities include:

- navigational and safety lights
- operational lights required during removal of facilities and transfer operations
- emergency lighting.

Light emissions from ROVs while conducting subsea operations are considered to be localised and limited to the immediate area where ROV is operating, confined to only metres from the source. As light emitted underwater is rapidly absorbed within the water column surrounding the light source, potential light emissions from ROV operations are considered negligible and therefore are not assessed further.

6.12.2 Impacts of light emissions

Impacts of light emissions on receptors are:

- change in fauna behaviour
- injury/mortality of fauna
- change in visual amenity.

6.12.3 Impact assessment

Artificial light has the potential to affect wildlife that use visual cues for orientation, navigation or other purposes. Artificial light at night can disrupt critical behaviours such as foraging, reproduction and dispersal of fauna and can cause disruption and displacement of specific species from important habitat (Commowealth of Australia, 2023). Where this occurs in threatened and listed species that are impacted by multiple sources, artificial light can add to the complexity to recovery of these species. Important habitat includes areas of importance designated through recovery plans and conservation advice, BIAs, and internationally and nationally important habitat (with relevant ecological values for light sensitive fauna). Marine fauna with the greatest sensitivity to light are marine turtles, seabirds and shorebirds, and fish.

It is also noted that not all species respond in the same manner to artificial light. Most animals are sensitive to ultraviolet (UV)/violet/blue light, while some birds are sensitive to longer wavelength yellow/orange light

(DCCEEW, 2023). As a result, potential impacts from light emissions are dependent on specific species exposed to the light source, wavelength and intensity of the light source, distance up to which artificial light extends to, season/time of the year when artificial light is emitted, and physiological sensitivity and resilience of species exposed to artificial light. This includes development stage of the animal; for instance, it is suggested that fledglings are more vulnerable to disorientation induced by artificial lights than adult birds (Atchoi, et al., 2024) (Burt, et al., 2024).

The impact assessment has considered the recommendations from the National Light Pollution Guidelines for Wildlife (NLPGW) (DCCEEW, 2023), in conjunction with a light spill modelling for vessel operations (ERM, 2024). The aim of the guidelines is that artificial light is managed so wildlife is not disrupted within or displaced from important habitat, and that wildlife is able to undertake critical behaviours such as foraging, reproduction and dispersal. As a result, a 20km buffer at four representative locations, including two locations to represent areas where transfer operations may take place, was considered to identify sensitive receptors that could be potentially impacted by light from vessel operations during Campaign #1.

After initial identification of sensitive receptors within the 20km buffer at each representative location, results from light spill modelling for vessel operations were used to further refine the area that could be exposed to impacts from light emissions during Campaign #1 activities. Maximum reach for light emissions during vessel operations at levels that could potentially have an effect on seabirds and shorebirds was estimated at within 7.2km from the source (ERM, 2024).

Sensitive fauna include the following.

6.12.3.1 Plankton and fish

Plankton species, including both phytoplankton and zooplankton, are a key component in oceanic food chains. Phytoplankton are autotrophic planktonic organisms living within the photic zone 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). 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. 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. As with phytoplankton, zooplankton biomass appears to be higher in the shallow waters of the shelf (ERM, 2024).

Bony fish are a diverse group of fish that have skeletons primarily composed of bone tissue, as opposed to cartilage; most living species of fish are bony fish. The vast majority of fish are members of *Osteichthyes*, which is an extremely diverse and abundant group consisting of 45 orders, and over 435 families and 28,000 species. It is estimated that there are over 500 species of fish found in the Gippsland Basin, including a number of species of importance to commercial and recreational fisheries (LCC, 1993). Fish species listed under the EPBC Act that may occur in the OA are blue warehou, southern bluefin tuna, orange roughy, eastern gemfish, and eastern dwarf galaxias, all of which are considered conservation dependent except eastern dwarf galaxias which is endangered.

The OA overlaps with a reproduction BIA and a forging BIA for the white shark. However, the Recovery Plan for the White Shark does not identify light emissions as a threat for this species (DSEWPC, 2013b).

6.12.3.2 Marine reptiles – Turtles

The Recovery Plan for Marine Turtles in Australia, lists light pollution as a key threat to turtles, however this relates specifically to turtle hatchlings and nesting sites (CoA, 2017). There is no evidence to suggest that adult or juvenile turtles are impacted by artificial light when they are offshore (Marangoni, et al., 2022).

There is some conflicting evidence to suggest turtles may be attracted to vessels offshore where fish aggregate. (Wang, Boles, Higgins, & Lohmann, 2007) found that juvenile loggerheads were attracted to lightsticks associated with longline fisheries in a laboratory setting. Contradicting evidence found that using LEDs or chemical lightsticks in commercial bottom gill net fishery was found to reduce green turtle by catch (Scott, et al., 2010). There is also evidence that hatchlings orientate to artificial lighting even after reaching the ocean (Cruz, 2018), however no marine turtle nesting is known to occur in the region.

6.12.3.3 Birds

Birds in the marine environment may include both seabirds and shorebirds:

- seabirds refers to those species of bird whose normal habitat and food sources are derived from the ocean (both coastal and pelagic); seabirds include such species as pelicans, gannets, cormorants, albatrosses and petrels
- 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.

The Wildlife Conservation Plan for Seabirds (Commonwealth of Australia, 2020) and the Conservation Plan for Migratory Shorebirds (Commonwealth of Australia, 2015a) identifies artificial light as a disturbance threat to these species. Seventy-eight listed threatened or migratory seabird and shorebird species were identified as potentially occurring within 20km of the two representative platform locations (DPA and KFA) and the two representative locations for transfer operations.

6.12.3.3.1 ALBATROSSES

There are sixteen species of albatrosses identified within the 20km buffers, and all except five (Buller's albatross, grey-headed albatross, Indian yellow-nosed albatross, northern Buller's albatross, and sooty albatross) have been identified as using the area for foraging, feeding or related behaviours. Albatross species in Australia forage in higher latitude, maritime waters from Western Australia to Queensland, predominantly southwards of the parallel of 25°S. Many of these species distribute widely across the world's oceans in the higher latitudes of the Southern Hemisphere (CoA, 2022).

Albatrosses are wide-ranging, opportunistic predator with 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 (CoA, 2022). Six BIAs for foraging have been identified for the following albatross species: black-browed, Buller's, Campbell, Indian yellow-nosed, shy, and wandering. There is only one species, the shy albatross, that is known to breed within the waters off mainland Australia, and this occurs outside of the area assessed for light emissions.

6.12.3.3.2 PETRELS

Within the 20km buffers, there are three species of petrels that may occur (blue petrel, Gould's petrel, and southern giant petrel), one species of petrel where foraging is likely to occur (northern giant petrel), and one species of petrel that is likely to occur (white-bellied storm petrel). Similar to albatrosses, the petrels in Australia forage in higher latitude, maritime waters from Western Australia to Queensland, predominantly southwards of the parallel of 25°S. Many of these species distribute widely across the world's oceans in the higher latitudes of the Southern Hemisphere. Petrels are wide-ranging, opportunistic predators with 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 (CoA, 2022).

Two BIAs where foraging is known to occur have been identified for the white-faced storm petrel and common diving petrel. Both the common diving petrel and the white-faced storm petrel are listed as marine species under the EPBC Act, and have large populations within Australia, accounting for 5% and 25% respectively of the global population (CoA, 2015a). Very little is known of the common diving petrel range when not breeding, but they are thought to be fairly sedentary, remaining in coastal waters adjacent to colonies. Its breeding season is variable according to locality, forming colonies with up to 1500 individuals in burrows on steep slopes and also on flat ground of oceanic islands. Common diving-petrel occurs on 53 offshore islands in Tasmania with an estimated 127,000 – 184,000 pairs. No populations estimates are available for Victoria, and the Australian trend is unknown (CoA, 2020). However, the South-east marine region profile - '*A description of the ecosystems, conservation values and uses of the South-east Marine region'* report indicates that the common diving petrel breeds on islands off southeast Australia and Tasmania; there are 30 sites with significant breeding colonies (defined as more than 1000 breeding pairs) known in Tasmania, and 12 sites in Victoria (including Seal Island, Wilsons Promontory and Lady Julia Percy Island) (CoA, 2015a). There are 15 sites with significant breeding colonies in Tasmania, and three sites with Victoria, for the white-faced storm petrel (CoA, 2015a), however these sites don't overlap with the indicative area assessed based on NLPGW advice.

6.12.3.3.3 SHEARWATERS

Shearwaters represent the most abundant seabird in Australia. Within the 20km buffers, there is one species of shearwater that may occur (sooty shearwater), one species of shearwater that is likely to forage (flesh-footed shearwater), and one species of shearwater that is known to breed and forage (short-tailed shearwater). A foraging BIA and a breeding BIA have been identified for the short-tailed shearwater.

Shearwaters are typically pelagic species, except during breeding seasons where they are found on remote islands or coastal headlands. Breeding season in southeastern Australia for shearwaters is typically over summer; late-August/early-September to May (DCCEEW, 2024f) (DCCEEW, 2024g) (DCCEEW, 2024h) (DCCEEW, 2024i). Shearwater nests are usually in burrows or rock crevices.

Shearwaters are known to forage for a variety of pelagic prey, including krill, cephalopods, fish and crustaceans. Food is usually taken by pursuit-plunging, surface plunging or surface-seizing; however other methods (e.g. hydroplaning, deep plunging) may be used.

6.12.3.3.4 TERNS

Within the 20km buffers, there is one species of tern that may occur (little tern), one species of tern that is known to occur (Australian fairy tern), and one species of tern that is known to breed (greater crested tern). No BIAs for terns have been identified within the area assessed.

Many of the tern species 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 for fish, squid, jellyfish, and sometimes crustaceans.

6.12.3.3.5 PLOVERS

Within the 20km buffer, there is one species of plover that may occur (eastern hooded plover), one species of plover that is likely to occur (greater sand plover), and four species of plover that are known to occur. Six species are wetland migratory species some of which are known to roost in the area (double-banded plover, grey plover, lesser sand plover, and Pacific golden plover). No BIAs for plovers have been identified within the area.

Many plovers feed by running along wet sand, mud or beaches and shorelines, snapping up small, aquatic, molluscs and insects for food. The nest is in a slight hollow in the ground where two to five (usually four) spotted eggs are laid and both parents incubate and care for the young. Some of the species here including the vulnerable greater sand plover and the endangered lesser sand plover are strongly migratory birds breeding in the Northern Hemisphere and wintering in sandy beaches of Asia and Australasia. Whilst wintering in Australia, they occur in coastal areas of all states, though the greatest numbers occur in northern Australia.

There are three non-migratory species of plovers in the area, one of which is listed as vulnerable (the eastern form of the hooded plover (*Thinornis cucullatus cucullatus*)). It is a small bird that nests on the back of usually wide beaches above the high-water mark. Its main threat is human disturbance from off-leash domestic dogs (DCCEEW, 2024h).

6.12.3.3.6 SANDPIPERS

Within the 20km buffers, there are two species of sandpipers that are known to occur (common sandpiper and curlew sandpiper), one species of sandpipers that may occur (pectoral sandpiper), and three species of sandpipers that are known to roost in the area (sarp-tailed sandpiper, terek sandpiper, and wood sandpiper). No BIAs for sandpipers have been identified within the area.

Sandpiper are all migratory birds breeding in the Northern Hemisphere Arctic and sub-Arctic regions and travel in large flocks when migrating. The critically endangered curlew sandpiper's (*Calidris ferruginea*) sighted population in Australia has significantly declined. In Australia the main threat for all sandpipers is from disturbance from humans and their domestic animals.

Also, in the *Scolopacidae* family are all of the other listed wetland migratory species found in the area (other than the osprey) including the snipes, knots, ruffs, godwits, sanderlings, shanks, turnstones, curlews, and whimbrel. These have similar breeding habits as the sandpipers. Their feeding habitat is generally coastal with large intertidal mudflats or sandflats and they roost on sandy beaches, sandbars, and spits.

There is one critically endangered species, the eastern curlew. The eastern curlew is Australia's largest shorebird and a long-haul flyer. The eastern curlew takes an annual migratory flight to Russia and northeastern China to breed, arriving back home to Australia in August to feed on crabs and molluscs in intertidal mudflats. Recorded numbers are in decline in Australia and, like the sandpipers, this is largely attributed to the decline in wetlands in Asia. In Australia threats include human disturbance as well as habitat loss and degradation, changes to the water regime and invasive plants (CoA, 2023).

6.12.3.3.7 LITTLE PENGUIN

The little penguin Australian population is large but not thought to exceed one million birds (CoA, 2015a). Bass Strait has the largest proportion (approximately 60%) of the known breeding colonies in Australia. Individuals exhibit strong site fidelity, returning to the same breeding colony each year to breed (Gillanders et al, 2013). Little penguins nested almost exclusively in rock crevices and burrows near the ocean (Weerheim, Klomp, Brunstig, & Komdeur, 2003). The diet of a little penguin includes small school fish, squid and krill. Little penguins are also an important component of the Australian and New Zealand fur seals' diet (PoSA, 2011).

Breeding is known to occur within the 20km buffers of representative locations for transfer operations. A study was conducted between 2008 and 2011 on 13 of the 15 islands adjacent to Wilsons Promontory in northern-central Bass Strait, southeastern Australia, during November – early February (Schumann, Dann, & Arnould, 2013). This study reported that little penguins were known to occur on all 13 islands (Anser, Citadel, Cliffy, Dannevig, Great Glennie, Kanowna, Mchugh, Norman, Notch, Rabbit, Rabbit Rock, Rag, and Seal Islands).

6.12.3.3.8 FAIRY PRION

The vulnerable fairy prion (southern) is likely to occur within the 20km buffers, however no BIAs for fairy prions have been identified in the area. Breeding is known to occur at Kanowna Island off the coast of Victora with 1000 – 4000 breeding pairs of fairy prions, representing 1 - 4% of the Bass Strait population (Fromant, Eizenberg, Poupart, Bustamante, & Arnould, 2022). This island is outside the 20km buffer area indicated by the NLPGW for assessment of light emissions. During the non-breeding season, it frequents sub-tropical waters, and it feeds by plucking food off the ocean surface.

A study of year-round at-sea movements of fairy prions from southeastern Australia (Fromant, Eizenberg, Poupart, Bustamante, & Arnould, 2022) found during the breeding season, individuals foraged primarily along the continental shelf-edge 200 – 300km from the colony but also used pelagic waters (500 – 900km from the colony) and continental shelf areas (within Bass Strait). A colony of several hundred fairy prion burrows have been recorded at Seal Island (Harris & Deerson, 1980).

6.12.3.3.9 FORK-TAILED SWIFT

Within Victoria, the fork-tailed swift is widespread but sparsely scattered in all regions (Higgins P. , 1999). The fork-tailed swift is an aerial eater, flying anywhere from 1 - 300m above the ground to forage. Feeding flight is characterised by circular flight patterns throughout areas of high prey concentration. The fork-tailed swift does not breed in Australia.

6.12.3.3.10 MIGRATORY WATERBIRDS

Migratory birds are species where a substantial proportion of the global or a regional population makes regular cyclical movements beyond the breeding range, with predictable timing and destinations. Many species of migratory waterbirds occur within the 20km buffers including sandpipers, plovers, and the southern fairy prion.

6.12.3.3.11 OTHER THREATENED SPECIES

The vulnerable blue-winged parrot breed in Tasmania, coastal southeastern South Australia and southern Victoria. They form monogamous pairs and make their nests in a tree hollow or stump, preferably one with a vertical opening. The eggs are laid on a bed of decayed wood. Their clutch size is four to six eggs. Breeding season is from October to February (Birdlife Australia, 2025a). There is a definite passage of blue-winged parrots to and from Tasmania after breeding each year, leaving in March to April and returning in August to October. Some birds, however, over-winter in Tasmania or on the Bass Strait islands.

The swift parrot and orange-bellied parrot are both critically endangered, they both breed in Tasmania, and migrate to the mainland for the non-breeding season. The swift parrot's habitat is mainly forest and it's threatened mainly by native predators and loss of forest habitat (Birdlife Australia, 2025c). The orange bellied parrot is ground feeding and inhabits salt marshes, coastal dunes, pastures, shrub lands, estuaries, islands, beaches and moorlands generally within 10km of the coast. As with many of the migratory species, it is threatened by the loss of wetland habitat, in this case through changes to land use practices such as drainage of wetlands for grazing, alteration and destruction of saltmarsh for industrial and urban development, vegetation clearance for agricultural purposes (Birdlife Australia, 2025d).

6.12.3.3.12 POTENTIAL EFFECTS FROM ARTIFICIAL LIGHT - NESTING AND ROOSTING

Artificial lighting may increase risk of predation to shorebirds, potentially resulting in selection of nocturnal roost sites with lower levels of light (Rogers, Piersma, & Hassell, 2006). Some shorebirds are more responsive to

predators under artificial lighting, resulting in additional energy demand and disrupting foraging (Jolkkonen, Gaston, & Troscianko, 2023). This indicates that artificial illumination of nocturnal roost sites may reduce occupation of these roost sites and consequently influence the abundance of shorebirds in nearby foraging areas.

Procellariiformes (albatrosses, petrels, prions and shearwaters) which breed in cavities and attend breeding colonies at night (Warham, 1990) are at greater risk of negative impacts from artificial light. Due to most procellariiformes having acute vision and olfaction this generates sensitivity to sensory information which can result in them being uniquely vulnerable to sensory threats, including artificial light (Friesen, Beggs, & Gaskett, 2017) (Heswall, et al., 2022).

Visiting frequency of breeding seabirds attending colonies at night is influenced by moon cycles and is likely driven by light levels (Riou & Hamer, 2008) (Rodríguez, Chiaradia, Wasiak, Renwick, & Dann, 2016). Many species of pelagic seabirds attend their colony only at night, in complete darkness, avoiding approaching their nest sites under moonlight as a predator avoidance strategy, however this may also relate to a lower foraging efficiency during moonlit nights. Such effects have been shown to influence chick provisioning where nests situated closer to higher artificial light and sound gained less weight in an overnight weight gain study (Cianchetti-Benedetti, Becciu, Massa, & Dell'Omo, 2018). Austad, et al., 2023 found coastal vessel presence significantly impacted shearwater colony attendance and proposed that disruption of natural attendance patterns could have short and long-term effects on breeding success, physiological condition, and colony viability.

For shearwater and petrel species, fledgling emergence is highly synchronised and occurs under the cover of darkness shortly after sunset which are thought to be predator avoidance strategies (Collins, et al., 2023). Moon phase is not considered a predictor of the timing of peak fledging (Raine, Driskill, Rothe, & Travers, 2022), and significant illumination of seabird burrow sites could act to suppress fledging activity (DCCEEW, 2023).

Fledglings embarking on their first flight are vulnerable to artificial light due to naivety, immature eye development and the potential association between light and food from being fed through the burrow entrance (Montevecchi, 2006) (Mitkus, Nevitt, Danielsen, & Kelber, 2016) (Rodríguez, et al., 2017). Numerous studies have documented fallout events resulting from fledglings' attraction to nearby light sources (Deppe, et al.) (Raine, Borg, Raine, Bairner, & Cardona, 2007) (Rodríguez, et al., 2015a) (Rodríguez, Rodríguez, & Negro, 2015b) (Le Corre, Ollivier, Ribes, & Jouventin, 2002) (Reed, Sincock, & Hailman, 1985), and even light sources up to 15km away (Rodríguez, et al., 2014). However, the mechanisms for mass fledgling fall-out events are still not fully understood in part because data is often collected opportunistically through rescue programs (Brown, Wilhelm, Mastromonaco, & Burness, 2023). In a two-year study of Leach's storm petrels adjacent to a seafood processing plant, 94.9% of strandings due to artificial light were fledglings during the peak stranding period and fledglings also composed the majority during mass stranding events (Burt, et al., 2024).

A higher proportion of fledglings make it safely to sea during full moon nights than during moonless nights, representing a decrease in the severity of light pollution impacts around full moon (Rodríguez, et al., 2023). Miles, Money, Luxmoore, & Furness, 2010 suggests this effect is possibly because of the relative glare and attraction of artificial lights diminishing on nights when ambient light from the moon was particularly bright and long-lasting. Atmospheric conditions that challenge fledglings' ability to navigate and produce scattering effects on light (e.g. fog, smoke and cloud) are also thought to be a confounding factor in fall-out events (Gjerdrum C. , Ronconi, Turner, & Hamer, 2021).

Light-induced grounding can result in injury or mortality due to impact with the ground or man-made structures, and exposure to threats including predation or inanition as some fledglings are unable to take off without human intervention (Marangoni, et al., 2022).

6.12.3.3.13 POTENTIAL EFFECTS FROM ARTIFICIAL LIGHT – NOCTURNAL FORAGING

Whilst many shorebirds are considered diurnal, it is the tidal cycle's influence on food availability that drive activity patterns rather than the day/night cycle (Burger, Howe, Hahn, & Chase, 1977). Artificial lighting has been shown to influence the nocturnal foraging behaviour in shorebirds, often resulting in improved foraging success by increasing the availability of more successful visual foraging (Santos, et al., 2010) (Dwyer, Bearhop, Campbell, & Bryant, 2013) (Pugh & Pawson, 2016).

Similarly, most seabird species are visual predators and forage most actively during the day. However, a number of species, including many albatrosses and petrels, forage at night either preferentiality or uniformly (Shealer, 2002) (Phalan , et al., 2007). Nocturnal feeders tend to feed offshore and are associated with prey that surfaces at night (Brooke, De, & Prince, 1991). Light intensity plays an important role in determining visual nocturnal foraging behaviour, where increased foraging activity has been demonstrated under moonlit conditions in many species

(Phalan , et al., 2007) (Regular , Hedd, & Montevecchi, 2011) (Yamamoto, Yoda, Watanabe, & Trathan, 2008) and artificial light (Krüger, Paiva, Petry, & Ramos, 2016). Despite this observed effect, a study on Bulwer's petrel found no evidence of dietary shifts across lunar phases highlighting some nocturnal predators may be resilient to changes in the vertical distributions of prey (Waap, et al., 2017).

Many studies have documented the attraction of seabirds to offshore vessels (Gjerdrum C. , Ronconi, Turner, & Hamer, 2021) (Merkel & Johansen, 2011) (Ryan, Ryan, & Glass, 2021) (Coleman, Hollyman, Black, & Collins, 2022), though few have established the life stage of grounded birds to determine whether foraging seabirds are a key receptor. Foraging seabirds in the vicinity of vessels may be attracted to artificial lighting which may also cause disorientation, thereby increasing the likelihood of seabird injury or mortality through collision with the vessel, or mortality from starvation due to disrupted foraging at sea (Wiese, et al., 2001). Disorientation may also result in entrapment, stranding or grounding, and interference with navigation (DCCEEW, 2023). Fairy prions exhibit strong phototaxis, particularly towards lights on vessels (Middlemiss, Cieraad, Mander, Fischer, & Goad, 2024).

In addition, bird attraction to and disorientation by artificial light increases when visibility is poor due to rain or fog (Russell, 2005) (Montevecchi, 2006), and when lunar illumination is low (Rodríguez & Rodríguez, 2009) (Miles, Money, Luxmoore, & Furness, 2010).

Atchoi, et al., 2024 have demonstrated that light induced effects on shearwaters are comparatively reduced in adults with visual and navigational experience in comparison to fledglings. Therefore, foraging adults may be less subject to disorientation (Burt, et al., 2024).

Nonetheless, groundings appear to be correlated with light intensity and the distance from breeding colonies irrespective of age (Heswell et al., 2022).

6.12.3.3.14 POTENTIAL EFFECTS FROM ARTIFICIAL LIGHT – MIGRATION

Decommissioning activities sit within the East Asian–Australasian Flyway which stretches from the Russian Far East and Alaska, southwards through East Asia and Southeast Asia, to Australia and New Zealand and encompasses 22 countries (CoA, 2017a). During migration, waterbirds rely on a system of highly productive wetlands to rest and feed, building up sufficient energy to fuel the next phase of their journey. The species present are all migratory birds breeding in the Northern Hemisphere (e.g. Siberia/Alaska) and migrating south during their winter.

Two Ramsar wetlands are located in the proximity of the OA: Corner Inlet and Gippsland Lakes, considered of international and national importance respectively (Weller, et al., 2020). These sites are wintering destinations for trans-equatorial migratory birds (with stopovers through Asia and northern Australia) and a number of species originating from New Zealand (Williams, Gummer, Powlesland, Robertson, & Taylor, 2006).

Results from the identification of sensitive bird species within the 20km buffer from representative locations where vessel operations may take place included the presence of 30 migratory wetland species, 21 migratory marine and four migratory terrestrial species likely to be present in the area. Internationally significant populations of the bar-tailed godwit, red-necked stint, red knot, sharp-tailed sandpiper, double-banded plover and eastern curler, and nationally important populations of the curlew sandpiper, grey plover, black-tailed godwit, sanderling, common greenshank, whimbrel and ruddy turnstone are found at the Corner Inlet site, with the Nooramunga Coastal Park supporting the most significant populations (Weller, et al., 2020).

Light pollution is a particular issue for migratory shorebirds as they undertake their migratory flights at night (Geering, Agnew, & Harding, 2007). It has been found that artificial light can affect the behaviour of birds in flight, inducing unnecessary ascent and descent, long periods of circling, and other types of unusual manoeuvring that would be more energetically expensive than typical straight-path migratory flights (Van Doren, et al., 2017) (Cabrera-Cruz, Smolinsky, & Buler, 2018). Similarly, high levels of marine lighting can attract and disorient seabird species resulting in behavioural changes such as circling light sources leading to exhaustion or disrupted foraging (Longcore & Rich, 2004) (Gaston, Duffy, Gaston, Bennie, & Davies, 2014) (Rich & Longcore, 2006).

Further skyglow is now considered highly influential and a consistently positive predictor of bird migration stop-over densities (Horton, et al., 2023) and artificial lighting may override the internal magnetic compass of migratory shorebirds or nocturnal seabirds (Gauthreraux Jr & Belser, 2006). Broad-scale attraction by some seabird and shorebird species to artificial light while airborne can prevent them from selecting appropriate habitat, choosing instead areas that are well lit, but less suitable for survival, in preference to less light affected habitat.

6.12.3.4 Pinnipeds

The listed Australian fur seal and New Zealand fur seal have the potential to occur in the area, with the Australian fur seal likely to occur amongst the waters surrounding the Seal Islands. A breeding colony of Australian fur seals is located on Rag Island located approximately 5.5km from one of the locations used as representative for transfer operations during decommissioning activities, and haul out sites consist of rocky islands, boulder and pebble beaches and rocky ledges. Australian fur seals are considered listed marine species with populations in recovery (Kirkwood, et al., 2010) and have the widest range of the pinnipeds. Breeding occurs typically between October and December with the main breeding sites occurring at Kanowna Island, the Skerries and Gabo Island.

Seals are also known to use the sea decks of offshore infrastructure as haul-out sites for resting, although they are not expected to be present during decommissioning activities due to the high levels of disturbance. Seals may also forage in the offshore waters, although there are no BIAs overlapping with the OA or the EMBA for Campaign #1.

6.12.3.5 Marine mammals

There is a lack of data studying the effects of artificial light on the circadian rhythms of cetaceans and other marine megafauna (Stanton & Cowart, 2024). However, there is no literature to suggest that light is considered a cue for important behaviours such as feeding, migration or breeding. Some transiting cetaceans may opportunistically forage on small aggregations of fish and plankton around Campaign #1 vessels at night, however this is expected to be short-term and highly localised with no adverse effects.

6.12.3.6 Terrestrial mammals

Following the recommendation from the NLPGW, initial identification of sensitive species considered a 20km buffer from locations assessed as representative of areas within the OA where Campaign #1 activities will be conducted. However, and based on the distance identified by the light modelling at which potential impacts to fauna could occur from light emitted from vessel operations during Campaign #1, sensitive species assessed in this EP are those within 7.2km from the light source. As a result, the area in which impacts from light emissions could occur is within the overall EMBA defined for the decommissioning activities, as described in Section 3 and Appendix A of this EP.

6.12.4 Change in fauna behaviour, and injury/mortality of fauna

6.12.4.1 Plankton and fish

Plankton, fish, squid, distributions are influenced by oceanographic conditions, often involving diurnal movements within the water column driven by light (Omand, Steinberg, & Stamieszkin, 2021). The movement of organisms into the photic zone increases their availability as prey to higher order predators such as seabirds and pinnipeds. Many nocturnal predators have diets, eye structures and hunting strategies that are specialised in foraging on prey that is only available at night (Brooke, De, & Prince, 1991).

Light spill over water from vessels and platforms is known to result in aggregations of photopositive species, often comprising fish of commercial interest. Numerous light trap studies have documented the photopositive effects of artificial light in marine fish and invertebrates (Marchesan, Spoto, Verginella, & Ferrero, 2005) (Stickney, 1969) (Utne-Pal, Breen, Løkkeborg, & Humborstad, 2018) (Krafft & Krag, 2021). Lindquist, Shaw, & Hernandez, 2005 concluded from a study of larval fish populations around an oil and gas platform in the Gulf of Mexico that an enhanced abundance of clupeids (herring and sardines) and engraulids (anchovies), both of which are highly photopositive, was caused by the platforms' light fields. The concentration of organisms attracted to light results in an increase in food source for predatory species and marine predators are known to aggregate at the edges of artificial light halos (Marangoni, et al., 2022). Further, the moonlight intensity is known to affect the foraging efficiency of many procellariiformes who increase their foraging activity under full moon conditions (Rubolini, et al., 2015) (Yamamoto, Yoda, Watanabe, & Trathan, 2008), although no studies of skyglow have reproduced this behaviour.

Artificial light can also influence the diurnal migration of photonegative species, including most zooplankton (Forward, 1988). In contrast to behaviour shown from photopositive species, normal working lights on marine research vessels have been shown to cause zooplankton and their vertebrate predators to descend away from the surface; these effects occurred at depths of up to 200m, and up to 200m horizontally from the light source (Berge, et al., 2020). A number of fish species have also been shown to avoid light (Marcheson et al, 2005; Utne-Pal et al; 2018). Another study (Shell, 2010) indicates that plankton and fish may be directly or indirectly attracted to lights. Experiments using light traps have found that some fish and zooplankton are attracted to light sources, with traps

drawing catches from up to 90m. This suggests that light could lead to aggregation at the surface of plankton and fish, and to potential increased predation.

Campaign #1 vessels require lights for safe navigation and to illuminate work areas within the vessels during nighttime operations, which may result in temporary nighttime attraction of marine fauna, including prey and higher order predators.

The scale of attraction to Campaign #1 vessel light sources is expected to be highly localised and not detectable at population scales for plankton, fish (including sharks), and squid. Further, the HLV activity duration is limited to approximately four months in which vessels will be moving from one facility to another, and between the facilities and the transfer locations, with operations at transfer locations limited to approximately 21 intermittent, non-consecutive nights. As a result, it is not expected that light will be emitted at the same location for more than one consecutive night during activities to remove facilities, and during transfer operations. There can be the potential for a one-time occurrence of light emitted at the same location for up to four consecutive nights, associated with the activity of HLV mode change operation. This specific activity will be required only once during the life of decommissioning activities.

Given the highly localised and short-term exposure of plankton and fish to light at each location, and the expected negligible changes in distribution and abundance of these organisms, the consequence level is assessed as **Consequence Level IV**.

6.12.4.2 Marine reptiles – Turtles

Light pollution can be an issue along, or adjacent to, turtle nesting beaches where emerging hatchlings orient to, and head towards, the low light of the horizon unless distracted by other lights which disorient and affect their passage from the beach to the sea (CoA, 2017).

Three listed/threatened species of marine turtle may occur within the OA, 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 (CoA, 2017) lists light pollution as a key threat, however this relates specifically to turtle hatchlings and nesting sites, which don't occur within the OA. In addition, mating, inter-nesting, foraging and migration behaviours are not guided by light cues, and therefore it is unlikely that turtles would be displaced or experience behavioural changes due to artificial light emissions from decommissioning activity vessels.

Therefore, it is anticipated that light emissions from vessel operations during Campaign #1 activities will not affect marine turtles. Impact is assessed as **Consequence Level IV**.

6.12.4.3 Birds

Identification of sensitive receptors was based on the recommendation from the NLPGW which indicates a distance of 20km from the light source. Then, for decommissioning activities, the assessment of potential impacts considered the results of light modelling for vessel operations during Campaign #1.

There is a lack of studies establishing the relationship between seabird behaviour and light intensity (Longcore, 2023), and therefore no thresholds for predicting impacts have been established. Artificial light intensity that equates to a quarter moon or greater has been used as a conservative proxy to identify where impacts to seabirds and shorebirds behaviour have the potential to occur. Table 6-59 presents the criteria for artificial light impact assessment for birds, whilst Table 6-60 presents results obtained for each of the representative scenarios modelled for decommissioning activities in the Gippsland Basin.

Table 6-59 Seabird and shorebird full moon equivalent impact potential criteria

Field of view radiance (full moon equivalent ranges)	Description	Impact potential
10 - 100	Light or light glow visible. Represents a very bright light, equivalence of to up to 100 times the radiance of one moon.	Impacts are possible.

Field of view radiance (full moon equivalent ranges)	Description	Impact potential
1 - 10	Light or light glow visible. Represents a bright light, equivalence of to up to 10 times the radiance of one moon.	Impacts are possible.
1	Light or light glow visible but will vary depending on ambient moon phase at the time of exposure, which will influence the visibility of the artificial light sources. Artificial lights will be more visible under a first quarter moon than under a full moon.	Artificial light has the potential to result in impacts, based on studies which have observed behavioural changes in seabirds at full moon (Yamamoto, Yoda, Watanabe, & Trathan, 2008) (Riou & Hamer, 2008).
0.01 - 0.1	Light or light glow visible. Equivalent to the light output from the first quarter moon to new moon.	Artificial light is visible above ambient conditions at new moon, but impacts are not likely.
<0.01	Light or light glow is considered ambient.	Impacts are not expected.

Table 6-60 Field of view and full moon equivalent distances

Field of view radiance (full moon equivalent ranges)	Scenario 1: CSV at DPA (range in km)	Scenario 2: HLV at DPA (range in km)	Scenario 3: CSV and HLV at KFA (range in km)	Scenario 4: HLV, CSV and PSV at representative transfer locations (range in km)
100 - 10	<0.10	<0.67	<0.70	<0.71
10 - 1	0.10 – 0.72	0.67 – 2.3	0.70 – 2.5	0.71 - 2.6
1 - 0.1	0.72 – 3.2	2.3 – 6.4	2.5 – 6.8	2.6 – 7.2
0.1 - 0.01	3.2 - 9.1	6.4 – 15.6	6.8 – 16.4	7.2 – 17.1
<0.01	>9.1	>15.6	>16.4	>17.1

Results from the light emissions modelling indicates the furthest distance at which light from vessel activities associated with Campaign #1 could potentially have an effect on seabirds and shorebirds (field of view – full moon equivalent range of 0.01 - 0.1 or greater) is 7.21km from the source (ERM, 2024).

6.12.4.3.1 NESTING AND ROOSTING

Campaign #1 activities will be conducted in the offshore marine environment, within Commonwealth waters. The activities that will occur closest to the shoreline, at a minimum distance of 5.5km (3nm) will be those associated with operations to transfer removed structures from the HLV onto barges of a HTV, and the HLV mode change operation. Removal of facilities within the scope of this EP will occur furthest away from the shoreline, with DPA being the closest platform to shore at an approximate distance of 21km.

Results indicate transfer operations to be conducted during decommissioning activities may overlap with the breeding BIA for the short-tailed shearwater, specifically islands located to the east of Wilsons Promontory (Rabbit Rock and Rabbit Island). However, overlap will be subject to location where transfer operations and mode change

of the HLV take place. There is no recovery plan or conservation advice for the short-tailed shearwater, however artificial light is listed as a threat in the *Wildlife Conservation Plan for Seabirds* (Commonwealth of Australia, 2020).

Other areas where possible intersections with seabird and shorebird nesting and roosting habitat may occur include:

- Seal Islands Group (Seal Islands Wildlife Reserve)
- the sand barrier islands and tidal channels of Nooramunga Marine and Coastal Park.

Wilsons Promontory Islands are considered an Important Bird Area by Birdlife International due to the presence of breeding short-tailed shearwater and pacific gulls. Schumann et al (2013) records the presence of burrowing short-tailed shearwater, common-diving petrel, fairy prion and little penguin across the majority of the islands, however there is otherwise a paucity of publicly available contemporary bird count data.

The sandy beaches and foredunes of Wilsons Promontory support high nesting densities of the threatened hooded plover (Birdlife, 2023a) but are generally considered to support less significant populations of seabird and shorebirds.

The Nooramunga islands form part of the Corner Inlet Ramsar site and supports an estimated 29,000 waders (migratory and non-migratory), including significant populations of pied oyster catcher, sooty oystercatcher, pacific gull, fairy tern, grey plover, bar-tailed godwit, red knot, red-necked stint, great knot and eastern curlew (Hale, 2017). Migratory shorebirds typically overwinter in the area during the austral summer and adults migrate back to their breeding grounds in the Northern Hemisphere, therefore migratory shorebirds are expected to be present at foraging and roosting sites for the duration of Campaign #1 following their arrival in August/September. The site also supports breeding populations of pied oystercatchers, hooded plover, Caspian tern, fairy-tern, crested-tern and short-tailed shearwaters.

The results of light modelling for various decommissioning activity vessel scenarios indicated that artificial light intensity is highest immediately surrounding the vessels and dissipates with distance at a rate proportionate to the number and size of vessels present, which broadly correlates to the number of luminaires present.

For HLV operations at DPA light intensity is expected to dissipate to 0.01 – 0.1 FME at 6.4km, which is equivalent to the light output from the first quarter moon to new moon. For KFA, where there may be presence of both the HLV and CSV (Scenario 3) at the same time, light intensity dissipated to 0.01 – 0.1 FME beyond 6.8km from the light sources. Therefore, artificial light impacts to nesting and roosting behaviours along the coastline are not expected from vessel operations at the platforms.

For vessel operations during transfer activities or HLV mode change operation, it is possible that light spill extends to seabird and shorebird nesting habitat. Specifically, for the HLV mode change operation a worst case is considered for impact assessment, which results from the simultaneous operations of the HLV, a CSV and a PSV. This vessel operation combination resulted in radiance equivalent to a first quarter moon to a full moon (0.01 – 1 FME) within a range of 2.6 - 7.2km from the light source. The FME ranges also represent a conservative estimate considering that the HLV mode change operation will occur only once during Campaign#1 activities, and considering the CSV and the PSV will not be present in the area at the same location with the HLV during transfer activities.

Given the location of transfer operations are subject to change, seabirds nesting and roosting locations may or may not overlap with artificial light emitted from the vessels at levels that may have a minor, localised effect on these species. For shorebirds, impacts to nesting and roosting significant habitats are not expected, as light spill form vessel operations will not reach intertidal roosting and nesting habitats, preventing behavioural disruption. In addition, some degree of shielding from the vessel light sources can be expected due to topographical variation and vegetation, which is not accounted for in the light model. The Seal Islands rise steeply from the ocean to a maximum of approximately 50m above sea level, therefore seabird nesting and roosting sites furthest from the light source may experience some additional shielding from direct light. As a result, if transfer operations or the HLV mode change operation are conducted towards the western end of the OA where artificial light could have an effect on nesting and roosting behaviours at Seal Islands, potential impacts are mitigated by:

- the temporary and intermittent nature of the transfer activity: approximately 21 intermittent transfer operations to load removed structures from the HLV onto barges or a HTV, which would account for an estimated 21 non-consecutive nights over four months
- the temporary nature of the HLV mode change operation: this will be a one-off activity during Campaign#1, with an estimated duration of four consecutive nights
- the moderating influence of the moon on ambient brightness for at least half of every month

- the variable topography of the islands will further aid in reducing visibility of vessel lighting, as will the predicted low intensity of sky glow due to the low levels of regional lighting.

The consequence level of the potential impact to nesting and roosting behaviours is therefore assessed as **Consequence Level IV.**

From a perspective of potential impacts on fledglings, it is possible that seabird fledglings leaving the burrow on their inaugural flight may transit within the maximum distance reached by artificial light emitted from Campaign #1 vessels (7.2km during HLV mode change) and become attracted to and disoriented by vessel lighting. However, the timing of the activity (September -January) precludes the short-tailed shearwater exodus (April - May). Common diving petrels tend to nest earlier than most species and may fledge between November and December, and fairy prions may also fledge during January (Eizenberg, Fromant, Lec'hvien, & Arnould, 2021). The potential for fledgling groundings will be dependent of the atmospheric conditions with foggy or cloudy conditions further disorienting birds, whilst full moon conditions tend to reduce grounding events. Noting that the decommissioning activity is constrained by suitable weather conditions, there may be some protection from severe grounding events relating at least to high winds and sea state.

Impacts to fledgling seabirds, particularly cavity nesting procellariiformes on nearby islands, are considered possible given the proximity to significant nesting locations and the modelled light intensity of the vessel spread at the representative transfer locations. The vessels will be present for short periods at a time (one night) during each transfer, before moving further offshore to platform locations. Therefore, the vessels will only be present at the transfer location occasionally and intermittently during Campaign #1, across approximately 21 nights during the nominal four-month activity. From a HLV mode change operation perspective, potential exposure of fledglings to this specific operation will be limited to a total of only approximately four nights during the planned four months planned for HLV decommissioning activities.

To further minimise the potential exposure of fledglings to artificial light from vessel operations, a number of measures, implemented individually or as a combination of measures that includes vessel location, timing of operations and lighting arrangements, may be implemented to reduce the likelihood of exposure from fledglings to artificial light.

The area potentially affected is limited to a localised area over a temporary and intermittent period of time. Implementation of controls will further reduce the potential for nesting and roosting habitat and fledglings to be exposed to artificial lights. There is the potential for impacts at individuals scale, however it is not expected that impact will have an effect at population or ecosystemic levels. As a result, the consequence level for fledglings is assessed as **Consequence Level III.**

6.12.4.3.2 NOCTURNAL FORAGING

The OA overlaps foraging BIAs for the black-browed albatross, Buller's albatross, Indian yellow-nosed albatross, Campbell albatross, shy albatross, wandering albatross, common diving petrel, white-faced storm petrel and the short-tailed shearwater. Indian yellow-nosed albatross and the Campbell albatross are foraging in the OA only during the winter months and are therefore unlikely to be present during the decommissioning activities. The recognised foraging BIAs for albatross species generally covers large areas. For example, the entire southeast marine region is recognised as a foraging BIA for the Indian yellow-nosed (*Thalassarche carteri*), Campbell (*Thalassarche impavida*) and the black-browed albatross species, resulting in minor percentages of area overlap between identified BIAs and the OA.

Foraging seabirds are likely to be present in the Campaign #1 activity area at night, particularly given the presence of breeding colonies for some species nearby the western end of the OA where transfer operations and the HVL mode change operation may take place. The skyglow created by the Campaign #1 vessels may also increase foraging behaviour and efficiency in some seabirds, based on the observed effects of moonlight. It is considered that foraging adults are subject to similar impacts to fledglings albeit at significantly reduced rates due to advanced visual development and navigational experience.

For the artificial light worst-case scenario modelled for vessel operations (HLV mode change operation) results indicated that artificial light radiance of a quarter moon to new moon is reached between 2.6 - 7.2km from the source. These light radiance levels overlap a high-density seabird foraging area adjacent to breeding seabird colonies located to the west of the OA, where transfer operations may take place, and thus may attract birds foraging within the area or transiting to foraging grounds further offshore. The presence of the vessel spread during HLV removal operations is planned to be approximately four months, with transfer operations limited to approximately 21 intermittent, non-consecutive nights, whilst HLV mode change operation will be a one-off

activity with a duration of approximately four nights. Overall, Campaign #1 vessels will be constantly moving between different locations within the OA during decommissioning activities, which reduces the potential impact to be concentrated at a specific location, particularly sensitive areas located closer to the western end of the OA.

Therefore, the effect of artificial light on foraging seabirds is considered to have a possible impact on seabirds. However, impact will be localised and will be mostly limited to intermittent transfer operations and the HLV mode change operation when these activities are conducted closer to sensitive areas such as Seal Island, the eastern coastline of Wilsons Promontory, and the outer sand barriers and islands at Nooramunga Marine and Coastal Park, which represents a small percentage of the total available foraging area. As a result, the consequence level is assessed as **Consequence Level III.**

6.12.4.3.3 MIGRATION

Migratory birds typically begin to arrive in Australia from late August onwards to December and are therefore expected to be undertaking their final migratory movements throughout the duration of Campaign #1. The OA is located near important migratory bird habitat where large numbers of migratory birds are expected to occur.

Based on light modelling results, area that may be affected by artificial light emitted during vessel operations represents a very small area within the East Asian–Australasian Flyway available to migratory birds. The presence of the vessel spread during HLV removal operations is planned to be approximately four months, with transfer operations and HLV mode change operation limited to approximately 28 intermittent, non-consecutive nights. Vessels will be constantly moving between different locations within the OA during decommissioning activities, which reduces the potential impact from vessel operations at a single specific location, particularly sensitive areas located closer to the western end of the OA.

Any attraction of migratory birds toward Campaign #1 vessel artificial light emissions is unlikely to cause significant deviations to normal migratory paths and minimal costs to individual energy budgets given the close proximity to suitable over-wintering destinations. The consequence level is therefore assessed as **Consequence Level III.**

6.12.4.4 Pinnipeds

Seals may opportunistically forage on small aggregations of fish around Campaign #1 vessels at night (SETFIA, 2007), where other predators such as white sharks may also aggregate. Artificially lit water may increase both the opportunity for predation by seals from an increased predator/prey interaction but also increase the visibility of seals in the water aiding shark predation success (Morse, et al., 2019) (Fallows, Fallows, & Hammerschlag, 2016). However, this potential impact is expected to be limited to individuals during the short duration of the activity. It is not expected that light emissions will occur at the same location for more than one consecutive night during platform lifting and removal operations, and during transfer operations. However, there is potential for the HLV mode change operation to last up to four nights; this specific operation will occur only once during the life of the decommissioning activities, at a sheltered waters location within the OA.

Potential impacts to seals from light emissions will be highly localised, short-term and with no consequence on a population level. Therefore, impact is assessed as **Consequence Level IV.**

6.12.4.5 Marine mammals

There is no literature that suggest that light is considered a cue for important behaviours such as feeding, migration or breeding. (Simmonds, Dolman, & Weilgart, 2003) indicates that cetaceans predominantly utilise acoustic senses to monitor their environment rather than visual sources. In addition, the Conservation Plan for PBW and the Recovery Plan for SRW don't identify light emissions as a threat to these species.

Some transiting cetaceans may opportunistically forage on small aggregations of fish and plankton around Campaign #1 vessels at night.

Potential impacts to marine mammals from light emissions will be highly localised, short-term and with no consequence on a population level or ecosystemic functions. Therefore, impact is assessed as **Consequence Level IV.**

6.12.5 Change in visual amenity

Artificial light from vessel operations creates a skyglow that leads to a reduced visibility of the natural night sky. The level of skyglow is dependent mostly on the intensity and number of the artificial light sources, with additional factors such as position of the lights, effect of shading on lighting where present and type of light also influencing light emissions.

The effect of the skyglow from a visual amenity perspective is more relevant in areas where night skies are a source of tourism and astronomical observations. Currently there are six officially recognised Dark Sky sites in Australia (Dark Sky International, n.d.), none of which are located in Victoria.

Wilsons Promontory is a popular tourist destination in Victoria. Its location away from populated urban centres results in a reduced exposure of the night sky to the skyglow effect produced by artificial lights. There are tourism initiatives within the park that benefit from natural night sky to attract visitors.

Based on light modelling results for decommissioning activities, it is not expected that impact to visual amenity will occur from vessel operations that takes place at the platforms or during transit between locations. In contrast, transfer operations and the HLV mode change operation may take place towards the western end of the OA (within Commonwealth waters) in proximity to the southeastern portion of Wilsons Promontory. In this scenario, it is possible that skyglow could be perceived from a limited area of the Wilsons Promontory Park.

Light emissions during decommissioning activities will be temporary, and the mobile nature of vessel operations results in a disperse potential impact. Particularly for activities associated with transfer operations, it is estimated that artificial light may be emitted for approximately 21 non-consecutive nights. For the HLV mode change operation, this will be a one-off activity with an estimated duration of maximum four nights. HLV decommissioning activities will occur between September and January, when daylight is longer, further reducing the potential impact on visual amenity from skyglow. In addition, the single lift decommissioning method to be implemented for Campaign #1 will reduce the vessel time required to complete removal of facilities, including a reduction on the number of nights that artificial light would be produced when compared to other approaches for decommissioning such as the reverse installation.

As a result, it is expected that these operations will have very limited, short-term duration, with inconsequential effect on visual amenity. Natural values of the dark sky are expected to return to its original condition immediately after emission of artificial light from vessels ceases. As a result, consequence level is assessed as **Consequence Level IV.**

Table 6-61 Assessment of light management options for seabirds from the National Light Pollution Guidelines for Wildlife (Commowealth of Australia, 2023) (Commowealth of Australia, 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 OA doesn't overlap with rookeries. However, during transfer operations and HLV mode change operation, artificial light from vessel operations could reach coastal areas where these habitats may be present. During transfer operations and HLV mode change operation, a measure or a combination of measures can be implemented to minimise the risk of artificial light reaching coastal areas where foraging or roosting may occur. Measures are identified in Section 6.12.6 of this EP and in Appendix H (adopted control measures and associated EPS).
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 Section 6.12.6 of this EP and in Appendix H).
Use curfews to manage lighting.	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 Section 6.12.6 of this EP and in Appendix H).
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 Section 6.12.6 of this EP and in 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 Section 6.12.6 of this EP and in Appendix H).
Use motion sensors to turn lights on only when needed.	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 Section 6.12.6 of this EP and in Appendix H).

Management Option	Achievable?	Justification
Prevent indoor lighting reaching outdoor environment.	Yes	Vessels will have blinds/curtains installed in cabins (see Section 6.12.6 of this EP and in 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 Section 6.12.6 of this EP and in Appendix H).
Night fishing should only occur with minimum deck lighting.	N/A	Not applicable to this activity.
Avoid shining light directly onto fishing gear in the water.	N/A	Not applicable to this activity.
Ensure lighting enables recording of any incidental catch, including by electronic monitoring systems.	N/A	Not applicable to this activity.
Avoid shining light directly onto longlines and/or illuminating baits in the water.	N/A	Not applicable to this activity.
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.	Yes	A Seabird Management Plan will be developed and implemented for Campaign #1 activities (see Section 6.12.6 of this EP and in Appendix H).
Use luminaires with spectral content appropriate for the species present.	No	The Campaign #1 vessel(s) are 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.

Management Option	Achievable?	Justification
Avoid high-intensity light of any colour.	No	The Campaign #1 vessel(s) are 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.
Shield gas flares and locate them inland and away from seabird rookeries.	N/A	Not applicable to this activity.
Minimise flaring on offshore oil and gas production facilities.	N/A	Not applicable to this activity.
In facilities requiring intermittent nighttime inspections, turn on lights only while operators are moving around the facility.	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 Section 6.12.6 of this EP and in Appendix H).
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 Section 6.12.6 of this EP and Appendix H).
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.	Yes	A Seabird Management Plan will be developed and implemented for Campaign#1 activities (see Section 6.12.6 of this EP and in Appendix H). This plan will include actions to be implemented in the event of birds landing on the vessel.

Table 6-62 Assessment of light management options for shorebirds from the National Light Pollution Guidelines for Wildlife (Commowealth of Australia, 2023)

Management Option	Achievable?	Justification
Implement actions when birds are likely to be present, including for peak migratory periods.	Yes	Achievable management actions are identified in this Table and in Appendix H (adopted control measures and associated EPS).
No light source should be directly visible from foraging or nocturnal roost habitats, or from migratory pathways.	Partially	Migratory paths for shorebirds, as established in the East Asian-Australasian Flyway, covers extensive areas which includes the full extension of the Bass Strait. As result, it is not possible to eliminate visible light generated by vessel operations from the overall area identified as potential for use by shorebirds as migratory paths, as it may occur at any location within the OA. From the perspective of foraging or nocturnal roost habitats, the OA doesn't overlap with these areas. However, during transfer operations and HLV mode change operation, artificial light from vessel operations could reach coastal areas where these habitats may be present. During transfer operations and HLV mode change operation, a measure or a combination of measures can be implemented to minimise the risk of artificial light reaching coastal areas where foraging or roosting may occur (see Section 6.12.6 of this EP and in Appendix H).
Do not install fixed light sources in nocturnal foraging or roost areas.	N/A	Not applicable to this activity.
Prevent mobile light sources shining into nocturnal foraging and roost habitat.	Yes	Achievable management actions from vessel operations perspective are identified in this Table (see Section 6.12.6 of this EP and in Appendix H).
Maintain a natural barrier between nocturnal foraging and roost areas and sources of artificial light.	No	This action is practical for onshore installations/fixed facilities inland. From a vessel operations perspective, it is not feasible due to the mobile nature of the light source, the extension of the OA where transfer operations and HLV mode change operation may take place, and the additional potential impacts from modification or alteration of coastal areas to implement this control.
Maintain a dark zone between nocturnal foraging and roost habitats and sources of artificial light.	Yes	The OA doesn't overlap with rookeries or with shorebird coastal foraging habitats. However, during transfer operations and HLV mode change operation, artificial light from vessel operations could reach coastal areas where these habitats may be present.

Management Option	Achievable?	Justification
		During transfer operations and HLV mode change operation, a measure or a combination of measures can be implemented to minimise the risk of artificial light reaching coastal areas where foraging or roosting may occur (see Section 6.12.6 of this EP and in Appendix H).
Use curfews to manage lighting near nocturnal foraging and roosting areas in coastal habitats.	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 Section 6.12.6 of this EP and in 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 Section 6.12.6 of this EP and in Appendix H).
Use motion sensors to turn lights on only when needed.	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 Section 6.12.6 of this EP and in Appendix H).
Manage artificial light on jetties, wharves, marinas.	N/A	Not applicable to this activity.
Reduce deck lighting to the minimum required for human safety on vessels moored near nocturnal foraging and roost areas, and those operating offshore.	Yes	Lighting will be reduced to that required for safe operations and by maritime legislative requirements (see Section 6.12.6 of this EP and in Appendix H).
Minimise nighttime flaring on offshore oil and gas production facilities.	N/A	Not applicable to this activity.
Use luminaires with spectral content appropriate for the species present.	No	The Campaign #1 vessel(s) are 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.
Avoid high-intensity light of any colour.	No	The Campaign #1 vessel(s) are 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.

Management Option	Achievable?	Justification
Prevent indoor lighting reaching migratory shorebird habitat.	Yes	Vessels will have blinds/curtains installed in cabins (see Section 6.12.6 of this EP and in Appendix H).
In facilities requiring intermittent night inspections, turn on lights only while operators are moving around the facility.	N/A	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 Section 6.12.6 of this EP and in Appendix H).
Industrial site/plant operators use personal 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 Section 6.12.6 of this EP and Appendix H).
Supplement facility perimeter security lighting with computer-monitored infrared detection systems.	N/A	Not applicable to this activity.

6.12.6 Controls

- **CMP12:** Lighting will be limited to that required for safe navigation and work requirements.
- **CMP13:** Blinds or curtains installed in accommodation windows.
- **CMP14:** Light shielding and orienting.
- **CMP15:** Dark zone between nocturnal nesting and roosting habitats and sources of artificial light.
- **CMP16:** Training.
- **CMP17:** Seabird Management Plan.
- **CMP18:** Vessel crew transfer to/from the vessels only during daylight hours.

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

6.12.7 Residual consequence assessment

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

- **Consequence Level III.**

6.12.8 Demonstration of As Low As Reasonably Practicable

Table 6-63 Decision Context and justification

Decision Context B
Use of artificial lights is a standard practice for safe work operations and navigation for vessels. However, there is the potential for uncertainty in relation to the level of impact from light spill. Activities are well practised, and there are no conflicts with Company values. Esso believes ALARP Decision Context B should apply.

Table 6-64 Good practice controls

Good practice	Adopted	Control	Rationale
National Light Pollution Guidelines for Wildlife (Commowealth of Australia, 2023)	✓	**CMP12:** Lighting will be limited to that required for safe navigation and work requirements	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* (Commowealth of Australia, 2023). Specifically: • implement actions when birds are likely to be present in the area • reduce unnecessary lighting outdoor, deck lighting on all vessels in known seabird foraging areas at sea and shorebird foraging and roosting areas • prevent indoor lighting reaching outdoor environment • shielding and orienting the light source to reduce light spill • implementing a Seabird Management Plan to prevent seabird landings on the ship, manage birds appropriately and report the interaction • record bird strikes. Note: Reporting will be undertaken as per Section 8.11.

Table 6-65 Engineering risk assessment

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
Do not undertake the activity	Eliminates artificial light emitted from vessels	This is not a feasible option. General Direction 817 indicates Esso must complete all preparatory decommissioning activities and commence the topside dismantling campaign as soon as reasonably practicable, and no later than 30 September 2027, associated with facilities listed in Schedule 3 of the Direction.	Not adopted
Do not undertake the activity during nighttime	Eliminates artificial light emitted from vessels	This is not a feasible option. Decommissioning of platforms, including operations to transfer removed structures from the HLV onto barges or a HTV, is a complex, safety-critical activity that may have a duration of several hours at each location. As such, operations may extend to nighttime hours. Artificial light is required to complete activities in a safe manner, thus cannot be eliminated.	Not adopted
Do not undertake vessel crew change activities during nighttime	Eliminates the need for artificial light from vessels and helicopters that would otherwise be required for the safe operation of personnel transfers to/from Campaign #1 vessels	**CMP18:** Vessel crew transfer to/from the vessels only during daylight hours**,** will be required during decommissioning operations. This activity can be planned in advance to take place within specific time periods of the day. Conducting crew change during daylight hours is preferred as it reduces the risk that are associated to nighttime operations. Daylight vessel crew change operations will be implemented. Crew transfer between vessels and fixed facilities will occur as required to complete the work.	Adopted – Subject to emergency event considerations
Implement a dark zone between nocturnal foraging and roost habitats and sources of artificial lights	Reduce the probability of impact to foraging and roosting birds from artificial lights	Nesting and roosting habitats associated with presence of fledglings are found at inland and island locations. Similarly, habitats associated with foraging areas for shorebirds include coastal habitats such as wetlands, rocky inlets, sandy beaches and estuaries, and inland	Adopted – Subject to safety considerations

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
		habitats. These habitats are outside the OA. Under specific vessel operations settings during transfer operations and HLV mode change operation, artificial light could partially overlap with areas within these habitats. Vessels require the use of artificial lights for safe work operations and navigation. This ensures safety of crew, the vessel and other users of the sea. As a result, eliminating the use of artificial lights at night by the vessels is not feasible. Transfer operations of removed structures from the HLV onto barges or a HTV, and the HLV mode change operation are critical-safety activities that are highly dependent on metocean conditions. These activities require a sheltered location, closer to the coastline, to ensure operations are carried out in a safe manner. Sheltered waters provide more favourable weather conditions, significantly influencing in a positive manner the ability of the vessels to complete these operations while reducing potential risks to personnel, equipment and vessels. Operations within sheltered waters also reduce the potential risk of occurrence of unplanned events that could result in environmental impacts. Based on the distances assessed at which artificial lights from the HLV operations could have an impact on fledglings present in nesting and roosting habitats or in potential foraging coastal habitats for shorebirds, a number of measures, implemented individually or as a combination of measures including vessel location, timing of operations and lighting arrangements, can be implemented to reduce the likelihood of exposure from fledglings and from foraging shorebirds to artificial light from the vessel (refer to **CMP15:** Dark zone between nocturnal nesting and roosting habitats and sources of artificial light).	

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
Limit external lighting to that required for safe works operations and navigation	Reduces artificial light emitted from vessels	During transit at night, vessels are required to use artificial lights for safe navigation. During vessel operations at night for decommissioning, work areas such as the deck need to be lit to allow safe operations by the vessel crew. **CMP12:** Lighting will be limited to that required for safe navigation and work requirements: Light can be limited to the areas of the vessel where works are taking place. Consideration must be given to specific lighting requirements for work areas within the vessel and for safe navigation that must be observed to ensure safety of crew, the vessel and other users of the sea.	Adopted – Subject to safety considerations
For transfer activities and during the HLV mode change operation, limit presence of Campaign #1 support vessels in proximity to the HLV to only those required to complete these operations in a safe manner	Reduces artificial light emitted from presence of vessels in the area	**CMP12:** Lighting will be limited to that required for safe navigation and work requirements: Total artificial light emitted by Campaign #1 vessels can increase when vessels are located in proximity to each other. Transfer activities and HLV mode change operations require the presence of various support vessels nearby the HLV to complete these operations. During transfer activities and HLV mode change operations, limiting vessels present in the area to those strictly necessary for the safe execution of these activities will result in reduction of artificial light emitted.	Adopted – Subject to operational and safety requirements
Manage light spill from internal light sources	Reduces light spill from internal vessel lights to the outdoor environment	**CMP13:** Blinds or curtains installed in accommodation windows Internal lights from accommodation cabins can reach the outdoor environment, adding to the overall light spill during vessel operations. Installation of blinds and/or curtains in the accommodation windows is required to allow management of this light source. Benefit of installing blinds and/or curtains in the vessels outweighs the cost.	Adopted

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
Shielding and orienting of vessel light, where practicable	Reduces artificial light spill from vessels to the environment	**CMP14:** Light shielding and orienting: Shielding of lights reduces the brightness and intensity of the light emitted to the environment. Preventing lights to emit light towards the horizon where possible, and instead, directing and concentrating them towards the specific work areas required to be lit, will reduce the potential skyglow effect produced by vessel lights. There are specific lighting requirements for work areas within the vessel and for safe navigation that must be observed to ensure safety of crew, the vessel and other users of the sea. Shielding and orientation of lights must consider and prioritise safe operation conditions.	Adopted – Subject to safety considerations
Training	Allows for efficient use of artificial light within the vessel, reducing unnecessary light spill into the environment Allows for implementation of the Seabird Management Plan	**CMP16:** Training provides vessel crew with the knowledge and competency to implement an efficient use of artificial light. It also allows for effective implementation of the Seabird Management Plan. Environmental training is a standard process within vessel operations. Additional resources are required to address specific topics such as artificial light and management/controls for operations within the Gippsland Basin, including sensitive receptors such as areas and marine fauna located nearby Wilsons Promontory and islands. However, additional cost associated to artificial light training is not significant. Benefit of training on artificial light management and the Seabird Management Plan outweighs the cost.	Adopted
Seabird Management Plan	Allows for prevention, mitigation and management of potential impact to birds, following an adaptative management approach	**CMP17:** Seabird Management Plan: Development and implementation of a Seabird Management Plan requires additional resources; however, they are considered to be low cost. A Seabird Management Plan provides a tool that clearly outlines the actions to be implemented during vessel operations, positively acknowledging and addressing presence of birds within the OA.	Adopted

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
		Benefit of development and implementation of a Seabird Management Plan outweighs the cost.	
Do not take safe harbour at sheltered waters in rough weather events that pose a risk to the safety of the vessel	Prevents artificial light at sheltered waters from vessels taking refuge from rough weather	Typically, during transit of the vessel and for decommissioning activities, vessel relies on the DP system to maintain course/position. Metocean conditions influence the level at which the DP system is required to be used. During calm weather, it is expected the vessel will require less power to maintain course/position. On the contrary, during rough weather conditions, it is expected the power required by the vessel to maintain course/position will be higher. There are limits at which the vessel's DP system can operate. When vessel is in open water, it is likely to be more exposed to potential risks from rough weather conditions. Vessel Master must ensure the safety of the vessel and the crew on board. Seeking refuge in more sheltered waters during rough weather conditions is a safety critical element, and prohibiting this measure would result in an unacceptable risk to vessel crew. This may also lead to a potential unplanned release of oil if an incident occurs. This control measure is not feasible and would lead to disproportionate and unacceptable safety risks, and an increased risk of impact from unplanned releases into the marine environment.	Not adopted

6.12.9 Demonstration of acceptability

Table 6-66 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 an intermittent, temporal impact in a small, localised area, which is not considered as having the potential to affect biological diversity and ecological integrity.

Factor	Demonstration criteria	Criteria met	Rationale
	Activity does not have the potential to result in serious or irreversible environmental damage.	✓	The activities were evaluated as having the potential to result in a **Consequence Level III.** They 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.	✓	Management actions for seabirds and migratory shorebirds contained in the *National Light Pollution Guidelines for Wildlife* (Commowealth of Australia, 2023) have been adopted where relevant. Light pollution is a recognised threat to a number of species of marine fauna. The proposed decommissioning activity is consistent with conservation and management actions contained in the following plans: • Recovery Plan for Marine Turtles in Australia (CoA, 2017) • National Light Pollution Guidelines for Wildlife (DCCEEW, 2023) • National Recovery Plan for Albatrosses and Petrels (CoA, 2022). • Wildlife Conservation Plan for Migratory Shorebirds (CoA, 2015). • *Wildlife Conservation Plan for Seabirds* (Commonwealth of Australia, 2020) • Conservation Acton Plan for Parks and Reserves Managed by Parks Victoria – Wilsons Promontory (Parks Victoria, 2017c)
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

Factor	Demonstration criteria	Criteria met	Rationale
			and regulations and apply responsible standards where laws and regulations do not exist".
	Meets ExxonMobil Environmental Standards.	✓	There is no standard related to light emissions, but the activities proposed meet the strategic objectives of the Upstream Environmental Standards.
	Meets ExxonMobil OIMS Objectives.	✓	Proposed activities meet: • OIMS System 6: Regulatory Compliance and Sustainability Management objective to identify and assess environmental aspects; significant aspects are addressed and controlled consistent with policy and regulatory requirements • OIMS System 8: Selecting and Engaging with Third Party Providers objective to qualify, evaluate and select contractors based on their ability to perform work in a safe, secure and environmentally sound manner.
External context	Relevant person concerns have been considered/addressed through the consultation process.	✓	Relevant person concerns have been considered.

6.13 Emissions to air

6.13.1 Sources of emissions to air

The use of fuel used by Campaign #1 vessels to power engines, generators and mobile and fixed plant, as well as the use of helicopters to transfer personnel to and from Campaign #1 vessels during decommissioning operations will result in gaseous emissions of GHG pollutants such as carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O), and non-GHG emissions such as sulphur oxides (SO_x) and nitrous oxides (NO_x).

In this Section, GHG emissions are described and assessed considering the *Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard* (World Resources Institute and World Business Council for Sustainable Development, 2004), the National Greenhouse Energy Reporting (Measurement) Determination 2008 (Cth), and the Australian National Greenhouse Accounts Factor (CoA, 2023). In addition, GHG emissions have been separated into direct emissions and indirect emissions, aligned with the definitions of the *GHG Protocol Scope 2 Guidance: An amendment to the GHG Protocol Corporate Standard* (World Resources Institute, 2015) and National Greenhouse and Energy Reporting Scheme (Clean Energy Regulator, 2025). GHG emissions are measured in tonnes of CO_2-equivalent (tCO_2-e), which accounts for the global warming potential of all the non-CO_2 GHGs.

For the purposes of this activity, the following applies:

- Direct emissions – Emissions associated with the offshore activity within the OA, specifically emissions associated to the operation of vessels (i.e. combustion of MGO from the vessel engines, generators and fixed and mobile deck equipment during the activity). Since the vessels for decommissioning activities are operated by Allseas (vessel contractor), these emissions will be reported by Allseas rather than Esso.
- Indirect emissions – Emissions associated with additional support operations within OA such as combustion of aviation fuel used by the helicopters to transfer personnel between shore and Campaign #1 vessels where required. Additional emissions that have been classified as indirect emissions are those from vessel operations that, although not directly related to the lifting and removal of facilities in Commonwealth waters to be conducted by HLV and CSVs, will be required to support the satisfactory completion of Campaign #1. These indirect emissions cover indirect emissions from vessel operations, specifically tugs/barges or the HTV, that are dedicated to transporting removed structures from the transfer location(s) to the Barry Beach Marine Terminal.

The transit of tugs/barges or the HTV within State waters to transport decommissioned infrastructure from the OA to Barry Beach Marine Terminal is not covered under the scope of this EP. However, for the assessment of indirect impacts associated with air emissions these are described in this Section for information.

Approximate fuel combustion from vessels during Campaign #1 activities is shown in Table 6-67.

Table 6-67 Sources of GHG and other air emissions from the activity

Activity	Emission Type	Estimated fuel use rate	Estimated duration of source of emissions	Estimated total volume of fuel to be used
Vessel operations at platforms	Direct	116.10t/d	*Pioneering Spirit*: 75 days Primary CSV (*Fortitude* or similar): 227 days Additional support CSV: 62 days	10,444.70t
Vessels in transit between locations within the OA	Direct	313.90t/d	*Pioneering Spirit:* 16 days Primary CSV (*Fortitude* or similar): 50 days Additional support CSV: 80 days	4166.27t
Helicopter	Indirect	0.308km/L	114 round trips - 560km per round trip	192,467.53L
As-left survey	Direct	12.90t/d	2 days	25.80t
Indirect transport of structures to Barry Beach Marine Terminal	Indirect	8.60t/d	6 tugs, 20 trips	51.28t

6.13.2 Impacts of atmospheric emissions

Impacts of air emissions from Campaign #1 activities are:

- change in air quality
- contribution to the global GHG effect.

6.13.3 Impact assessment

6.13.3.1 Change in air quality

Vessel operations during Campaign#1 will emit combustion gases to the atmosphere that could result in a change of air quality. Emissions and volumes generated will be influenced by factors such as type of fuel used during the operations, efficiency and maintenance of systems/equipment that emits combustion gases, length of the activity and the number of vessels involved in the operations. Fuel to be used by the main vessels is MGO. For lifting operations and transit to/from transfer locations, the *Pioneering Spirit* and the primary CSV will be operating mostly as stand-alone vessels; however, based on operational conditions, these two vessels may operate simultaneously during lifting works at KFA and KFB. In addition, it is expected the *Pioneering Spirit* will be working nearby other vessels during lifting system mode change activities and during transfer of loads from the *Pioneering Spirit* onto barges or heavy transport vehicles.

Fuel usage from the *Pioneering Spirit* while holding position is expected to be one third of the usage required when the vessel is transiting from one location to the next. As a result, it is expected that air emissions while the vessel is at a fixed location will be significantly lower than those when vessel is moving between locations. This results in a reduced exposure to air pollutants at a single location, reducing the potential for impacts to air quality in the immediate vicinity of platforms or transfer locations.

Given the nature of the activities to be undertaken during Campaign #1 activities, operations of helicopters to transport personnel to/from vessels, and the operation of vessels between transfer location(s) and Barry Beach Marine Terminal are limited to the following:

- 114 helicopter round trips are estimated for the duration of decommissioning activities. These trips will be intermittent and only as required
- total number of vessel movements required to transport removed infrastructure from the OA to the Barry Beach Marine Terminal is estimated to be approximately 20 trips (based on the option of using tugs and barges to complete this operation). These movements are expected to take place within a period of five months (September to January).

From a human health impact perspective, emissions to air are temporary and will not occur in the vicinity of established communities. The closest facility to shore that forms part of decommissioning activities is DPA, located 21km from shore. No impacts to human health are expected from air emissions during vessel operations for Campaign #1.

Potential receptors above the sea surface that may be exposed to reduced air quality include seabirds and marine fauna that surface for air (e.g. cetaceans). Locations where emissions to air will occur are likely to overlap with foraging BIA for the PBW and birds such as albatrosses, the short-tailed shearwater and the common diving petrel, as well as within the migration and reproduction BIAs for the SRW.

Due to the mobile nature of the emission sources and the planned timeframe in which decommissioning activities will be completed, potential air emissions are anticipated to be temporary, of a dispersive nature, and will quickly dissipate. The potential for any exposure to reduced air quality is not expected to affect the health of marine fauna. Indirect air emissions from removal activities, such as those generated from the operation of helicopters for vessel crew transfer during Campaign #1 activities, or the operation of vessels associated with the transport of removed facilities from the transfer location(s) to Barry Beach Marine Terminal will be intermittent, of short duration and will not be concentrated at a single location, thus reducing the concentration of emissions that are emitted within a specific area. As a result, air emissions are assessed as having inconsequential effects on air quality.

From a cumulative effects perspective, platforms at which vessels will be operating for removal activities will be de-staffed and non-operational. As a result, there will be no air emission sources at or nearby platforms other than those associated with vessel operations for decommissioning activities. Simultaneous vessel operations during decommissioning activities are limited and may only occur when conducting lifting operations for isolated removal activities at KFA and KFB, as well as during transfer operations and during *Pioneering Spirit* lifting system mode change operations. In addition, there is a 500m PSZ radius established for vessel operations during decommissioning activities. It is unlikely that vessels that are not related to Campaign #1 will be in close vicinity to areas where Campaign #1 vessels will be operating. As such, no cumulative impacts to air quality are expected from decommissioning activities.

Based on this analysis, potential impacts to air quality will be short-term, temporary and with inconsequential effect. Therefore, impact is assessed as **Consequence Level IV**.

6.13.3.2 Contribution to the global GHG effect

GHG emissions from Campaign #1 activities have been estimated using the Australian National Greenhouse Accounts Factor (CoA, 2023). Estimated emissions (Aecom 2024) are presented in Table 6-68.

Table 6-68 Predicted GHG emissions from the activity

Source	Emission Type	Estimated volume to be used	Estimated duration of source of emissions	Estimated total emissions (tCO_2-e)
Vessel operations at platforms	Direct	116.10t/d	*Pioneering Spirit*: 75 days Primary CSV (e.g. *Fortitude*): 227 days Additional support CSV: 62 days	45,165
Vessels in transit between locations within the OA	Direct	313.90t/d	*Pioneering Spirit:* 16 days Primary CSV (e.g. *Fortitude*): 50 days Additional support CSV: 80 days	18,016
Helicopter	Indirect	0.308km/l	114 round trips - approximately 520-560km per round trip	622
As-left survey	Direct	12.90t/d	2 days	112
Transfer of structures into Barry Beach Marine Terminal	Indirect	8.60t/d	6 tugs, 20 trips each	221.7

In total, it is estimated that 63,293t CO_2-e of direct GHG emissions will be generated from decommissioning activities, which represents approximately 4% of ExxonMobil's Australian total direct emissions for the 2022-2023 financial year.

DEECA (DEECA, 2022) informs that net GHG emissions for the State were 84.7Mt CO_2-e. In this context, the estimated GHG emissions to be generated by decommissioning activities would contribute the equivalent of 0.07% of Victoria's 2022 emissions.

Indirect emission sources from decommissioning activities are estimated to be 843.7t CO_2-e and include helicopter operations for movement of personnel to and from vessels, and the transport of removed facilities from the OA to Barry Beach Marine Terminal.

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. In addition, these emissions will be temporary and limited to the duration of decommissioning activities. These emissions will cease when vessel operations associated with Campaign #1 are completed.

The general vessel operation activity for decommissioning activities is similar to vessel operations for other industrial or commercial activities contributing to the accumulation of GHG in the atmosphere. Furthermore, indirect emissions represent a minor fraction of the overall emissions from the decommissioning activities and are assessed as not presenting a significant potential for impact to air quality in the area. Therefore, a **Consequence Level IV** has been assessed for impacts from air emissions during development of Campaign #1 operations.

6.13.4 Controls

- **CM9:** Class certification.
- **CM18:** Preventative Maintenance System.

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

6.13.5 Residual consequence assessment

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

- **Consequence Level IV.**

6.13.6 Demonstration of As Low As Reasonably Practicable

Table 6-69 Decision Context and justification

Decision Context A
Emissions to air from fuel combustion generated by Campaign #1 vessels during decommissioning activities 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 is 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 6-70 Good practice controls

Good practice	Adopted	Control	Rationale
MARPOL Annex VI Regulations for the Prevention of Air Pollution from Ships	✓	**CM9:** Class certification	The vast majority of commercial ships are built to and surveyed for compliance with the standards laid down by classification societies. The role of vessel classification and classification societies has been recognised by the IMO across many critical areas including the SOLAS, the 1988 Protocol to the International Convention on Load Lines and MARPOL. 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. MARPOL Annex VI entered into force in 2005, and it aims to limit the harmful effects of air pollution and GHG emissions from international shipping on human health and the environment. Specifically, this Annex requires vessels (as appropriate to class) hold an International Air Pollution Prevention certificate for each diesel engine of >130kW; vessel engine NO_x emission levels comply with Regulation

Good practice	Adopted	Control	Rationale
			13; sulphur content of any fuel oil used on board is <0.5%; and ongoing maintenance of engines, generators and deck equipment to ensure efficient operation. It sets limits to SO_x and NO_x emissions from ship exhausts and prohibits deliberate emissions of ozone depleting substances; designated emission controls areas set more stringent standards for SO_x, NO_x and particulate matter. An additional chapter adopted in 2011 covers mandatory technical and operational energy efficiency measures aimed at reducing GHG emissions from ships (IMO).
Maintenance of plant and equipment	✓	**CM18:** Preventative Maintenance System	Development and implementation of a Preventative Maintenance System (PMS) ensures condition of plant and equipment within the vessel is adequate and that equipment operates efficiently, reducing emissions of air pollutants from combustion processes.

Table 6-71 Engineering risk assessment

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
None identified	N/A	N/A	N/A

6.13.7 Demonstration of acceptability

Table 6-72 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 requirements of MARPOL Annex VI have been adopted. The following legislative and other requirements are considered relevant as they apply to the implementation of MARPOL in Australia: • Protection of the Sea (Prevention of Pollution from Ships) Act 1983 (Cth) • *Navigation Act 2012* (Cth) – Chapter 4 (Prevention of Pollution)

Factor	Demonstration criteria	Criteria met	Rationale
			• Marine Order 97 (Marine pollution prevention – air pollution) 2022.
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.	✓	Impact assessment process and controls proposed meet the strategic objectives of the business and the Environmental policy.
	Meets ExxonMobil OIMS Objectives.	✓	Proposed activities meet: • OIMS System 6: Regulatory Compliance and Sustainability Management objective to identify and assess environmental aspects; significant aspects are addressed and controlled consistent with policy and regulatory requirements • OIMS System 8: Selecting and Engaging with Third Party Providers objective to qualify, evaluate and select contractors based on their ability to perform work in a safe, secure and environmentally sound manner.
External context	Relevant person concerns have been considered/addressed through the consultation process.	✓	No relevant person concerns have been raised concerning emissions to air.

7 Environmental risk assessment

This Section describes the outcome of the environmental risk assessment of unplanned events associated with activities described in this EP. Environmental impacts associated with planned activities are covered in Section 6.

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 Section.

A summary of the risk assessment is included in Table 7-1. Inherent consequence level does not take any mitigating controls into consideration, the residual consequence level reflects the post control consequence.

Table 7-1 Summary risk assessment

Identifier	Hazard	Inherent Consequence Level	Residual Consequence Level	Residual Likelihood Category	Risk Category
1	Physical interaction - Other users of the sea	III	IV	D	4
2	Physical interaction – Marine fauna	III	IV	D	4
3	Physical interaction – Translocation of native species	III	III	C	3
4	Physical interaction – Introduction of IMS	III	III	D	4
5	Accidental release – Dropped objects	IV	IV	D	4
6	Accidental release – Waste	III	IV	D	4
7	Accidental release – LOC hazardous or non-hazardous substances	III	IV	D	4
8	Accidental release – LOC of refined oils (marine gas oil)	I	I	E	3

7.1 Physical interaction – Other users of the sea

7.1.1 Causes of physical interaction with other users of the sea

It is recognised that material will remain in place on the seafloor in all locations within PSZs post completion of Campaign #1. Materials remaining will vary from location to location. Examples of materials that may remain include remains of pipelines, umbilicals and other ancillaries, the CGS at BMB, some remaining lower jacket sections and other items listed within the subsea materials register. These remaining materials will be addressed as part of future decommissioning submissions (refer to Section 1.2.1).

Post Campaign #1, the BMB CGS will remain above sea level and will be fitted with aids to navigation and signage, consistent with maritime requirements, to minimise safety hazards associated with this structure.

A waverider buoy may be temporarily installed within the OA during the execution timeframe to provide real time field measurements of wave height and wave direction to support Campaign #1 activities. A typical waverider buoy arrangement includes a buoy which floats on the ocean surface and a tether from the buoy to a clump weight

which would be sitting on the seafloor. There is minor risk to other users if the buoy is separated from its tether or if a vessel collides with the buoy.

7.1.2 *Risks of interaction with other users of the sea*

The impacts of interaction with other marine users are considered to be:

- remaining presence of obstacles (presence of infrastructure) within the PSZ.

7.1.3 Risk assessment

7.1.3.1 Change in ecosystem dynamics

The PSZs will remain in place until such time that NOPSEMA remove those exclusions and as such, users of the sea will continue to be excluded from operating within the PSZs per existing practice.

Esso have consulted with fishing industry bodies representing both Commonwealth and State fisheries, as well as individual fishing licence holders, with wind energy licence holders and recreational fishers (refer to Section 4). Stakeholders were interested in understanding if any navigation aids were to be installed post completion of Campaign #1.

It was noted that only BMB would have navigation aids installed post topside removal due to the concrete structure remaining above sea level. In all other cases, the depth of materials is considered sufficient for safe navigation. It is recognised that remaining infrastructure does represent a trawling hazard however there are existing trawling hazards, such as pipelines, that are not visually identified. The locations of the former jackets will remain marked on navigation charts as a hazard and users will need to take appropriate measures to safely navigate around remaining items. Esso noted there is an existing fishing tribunal to address damage to fishing gear and the existing tribunal will continue to operate while Esso continues with ongoing operations and decommissioning removal activities in the region.

Relevant authorities will be informed to ensure navigation charts can be updated to reflect changed conditions.

Risks associated with interaction with a waverider buoy are considered negligible.

7.1.4 Residual risk ranking

Table 7-2 Residual risk ranking outcome

Consequence Level	Likelihood Category	Risk Category
IV	D	4

7.1.5 Controls

- **CMP2:** Petroleum Safety Zone**.**
- **CMP3:** Navigation aids.
- **CMP19:** Navigation charts

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 A
Esso has been operating in this part of Bass Strait for 60 years, with other marine users well aware of Esso's facilities and the presence of seafloor obstructions. The impacts associated with marine user interactions are well managed via existing legislative control measures (PSZs). These controls are understood and well implemented by the industry. No unresolved concerns were raised during relevant persons consultation and the socioeconomic consequence was identified as **Consequence Level IV** (the lowest level). Esso believes ALARP Decision Context A should apply.

Table 7-4 Good practice controls

Good practice	Adopted	Control	Rationale
PSZ	✓	**CMP2:** Petroleum Safety Zone	NOPSEMA is responsible for administration of PSZs as provided for in the OPGGS Act. PSZs are specified areas surrounding petroleum wells, structures or equipment which vessels or classes of vessel are prohibited from entering or being present in.
Navigation aids	✓	**CMP3:** Navigation aids	Permanent navigation aids will be installed on BMB concrete structure post topside removal to provide ongoing visual identification of that structure.
Navigation charts	✓	**CMP19:** Navigation charts	AHO will be provided post completion records to allow navigation charts to be updated to reflect changed conditions.

Table 7-5 Engineering risk assessment

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
Installation of permanent navigation aids at all former jacket locations	Visual identifiers	This control is considered unfeasible given depths of clear water column and sea state conditions. Visual aids such as buoys would likely frequently detach and become a hazard to fishing and marine life.	Not adopted

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	✓	Although the habitat with the potential to be impacted is characterised by soft sediment communities, because of the

Factor	Demonstration criteria	Criteria met	Rationale
	or irreversible environmental damage.		potential for irreversible impacts, this aspect is considered as having the potential to (although very unlikely) result in serious or irreversible environmental damage. 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. It is not considered that there is significant scientific uncertainty associated with this aspect. Therefore, the precautionary principle has not been applied.
Legislative and other requirements	Legislative and other requirements have been identified and met.	✓	Legislation and other requirements considered as relevant include: OPGGS Act: • Section 280 requires that a person carrying on activities in an offshore area under the permit, lease, licence, authority or consent must carry on those activities in a manner that does not interfere with navigation or fishing (among others) to a greater extent necessary than for the exercise of the rights conferred by titles granted • Section 619 prohibits unauthorised vessels from entering a PSZ. The exclusion of vessels within the PSZ is considered an acceptable impact for safety reasons, in particular to avoid interaction between the subsea facilities and other marine users, a PSZ is required for Esso to exercise the rights conferred by the production title.
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*

Factor	Demonstration criteria	Criteria met	Rationale
			apply responsible standards where laws and regulations do not exist".
	Meets ExxonMobil OIMS Objectives.	✓	Proposed activities meet: • OIMS System 6: Regulatory Compliance and Sustainability Management objective to identify and assess environmental aspects; significant aspects are addressed and controlled consistent with policy and regulatory requirements • OIMS System 10: Managing Community Risk objective to maintain public awareness and confidence in the OI of operations and facilities.
External context	Concerns of relevant persons have been considered/addressed through the consultation process.	✓	Stakeholders were advised that existing PSZ and fishing tribunal processes will remain in place. Relevant persons concerns have been considered/addressed.

7.2 Physical interaction – Marine fauna

7.2.1 Causes of physical interaction with marine fauna

The movement of vessels has the potential to result in collision with marine fauna and is the primary risk assessed in this EP.

A waverider buoy may be installed within the OA. A typical waverider buoy arrangement includes a buoy which floats on the ocean surface and a tether from the buoy to a clump weight which would be sitting on the seafloor.

7.2.2 Risks of physical interaction with marine fauna

Interaction with marine fauna has the potential to result in:

- injury/mortality to marine fauna.

7.2.3 Risk assessment

7.2.3.1 Injury/mortality to fauna

Several marine turtle species including species listed as either threatened and/or migratory under the EPBC Act may occur within the OA, 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 OA. The PBW has a foraging habitat BIA overlapping the OA and the SRW migration BIA also overlaps the OA.

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 10kn may cause fatal or severe injuries to cetaceans, with the most severe injuries caused by vessels travelling faster than 14kn (Laist, Knowlton, Mead, Collet, & Podesta, 2001).

Of the Campaign #1 activities described in this EP, transit between facility locations and transfer location when a load is present on the *Pioneering Spirit*, is considered a safety critical activity. Speed will be determined by the vessel master based on consideration of several factors including but not limited to megafauna safety, sea state, forecast conditions and load carrying safety requirements. Vessel speed during this transit may reach speeds of up to 10kn when assessed by the vessel master as appropriate.

The Australian and New Zealand fur seals are highly agile species that haul themselves onto rocks and oil and gas platform structures. As such, it is likely that they will avoid any collision with moving support vessels.

Vessel strike data from (1997 - 2015) for marine species in Australian waters was reviewed and identified the following (Peel, Smith, & Childerhouse, 2016):

- off the Victorian coast there are fewer than 10 records of vessel strikes with whales (historic and modern records)
- whales including the humpback whale (*Megaptera novaeangliae*), PBW, Antarctic blue whale (*Balaenoptera musculaus interndedia*), 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 macroephalus*), 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 OA
- dolphins including the Australian humpback (*Sousa sahulensis*), common bottlenose (*Tursiops truncates* 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 OA
- there were no vessel interaction reports during the period for either the Australian or New Zealand fur seal. There have been incidents of seals being injured by boat propellers however all indications are rather than 'boat strike' these can be attributed to be the seal interacting/playing with a boat, with experts indicating the incidence of boat strike for seals is very low.

If a fauna strike occurred and resulted in death, it is not expected that it would have a detrimental effect on the overall population. Consequently, the potential consequence from fauna strike is considered to be **Consequence Level III** as this type of event may result in a localised, short-term impact to species of recognised conservation value but is not expected to affect the population or local ecosystem function. The likelihood of such interactions causing severe injury or death of an individual is considered **Likelihood Category D** (very unlikely) during these activities.

Risks associated with interaction with a waverider buoy are considered negligible.

During consultation, stakeholders asked how interactions with marine mammals would be managed. Esso noted that vessels would comply with Division 8.1 of the EPBC Regulations requirements.

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

- **CM8:** Vessel Master.

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
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 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 IV.** 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 7-9 Good practice controls

Good practice	Adopted	Control	Rationale
Part 8 Division 8.1 of the EPBC Regulations. *Australian National Guidelines for Whale and Dolphin Watching 2017* (Commonwealth of Australia, 2017a).	✓	**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. 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. 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.

Table 7-10 Engineering risk assessment

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
Grates on vessel tunnel 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.	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. Adding grates to thrusters significantly impacts efficiency of vessels leading to increased fuel usage and air emissions, particularly for small vessels. Further,	Not adopted

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
		grates lead to increased potential for marine growth (which further reduces efficiency of thrusters). Retrofitting of grates to vessels requires dry docking at significant schedule and cost implications, also impacting operability and efficiency of vessels.	

7.2.7 Demonstration of acceptability

Table 7-11 Demonstration of acceptability test

Factor	Demonstration criteria	Criteria met	Rationale
Risk assessment process for unplanned events	The risk ranking is lower than Risk Category 1.	✓	The risk ranking is Risk Category 4 (the lowest category) and therefore considered acceptable.
Principles of ESD	No potential to affect biological diversity and ecological integrity.	✓	The 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. 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: • CMPBW • *Conservation Advice for Humpback Whales* (TSSC, Approved Conservation Advice for Megaptera novaeangliae (Humpback whale), 2015b) • National Recovery Plan for the Southern Right Whale (Eubalaena australis) (DCCEEW, 2024) • *Conservation Advice for Sei Whales* (TSSC, 2015) • *Conservation Advice for Fin Whales* (TSSC, 2015) • Recovery Plan for Marine Turtles in Australia (CoA, 2017) • *Conservation Advice for Leatherback Turtles* (TSSC, 2008).

Factor	Demonstration criteria	Criteria met	Rationale
			• National Strategy for Reducing Vessel Strike on Cetaceans and other Marine Megafauna (Commonwealth of Australia).
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 OIMS Objectives	✓	Proposed activities meet: • OIMS System 6: Regulatory Compliance and Sustainability Management objective to identify and assess environmental aspects; significant aspects are addressed and controlled consistent with policy and regulatory requirements. • OIMS System 8: Selecting and Engaging with Third Party Providers 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 concerns have been raised in relation to impacts to marine fauna.

7.3 Physical interaction – Translocation of native species

7.3.1 Causes of physical interaction with native species

A native species of note observed in low numbers of the long-spined sea urchin (*Centrostephanus rodgersii*) have occasionally been observed in ROV survey footage of SPJs. The long-spined sea urchin is considered a range expanding native species of New South Wales that is known to exist in the Bass Strait region and down the eastern coast of Tasmania. The long-spined sea urchin was first observed as far south as Tasmania in the late 1970's (Ling & Keane, 2018) and is considered invasive due to its ability to overgraze kelp beds, forming and maintaining stable barrens.

This EP considers direct and indirect impacts from activities conducted within Commonwealth waters (including off-title areas) across the OA as described in Section 3.1. Campaign #1 activities conducted outside of the OA will be subject to applicable approvals under Victorian and Commonwealth environment laws, and are not within the scope of this EP.

Esso intends to prepare and submit a staged referral under the *Environment Protection and Biodiversity Act 1999* (Cth) to DCCEEW. The second stage of the referrals will cover aspects associated with the transportation of decommissioned assets through State waters and offloading and set down at the Barry Beach Marine Terminal.

7.3.2 Risks of translocation of native species

During lifting, any marine growth dislodged from the structures will fall to the seabed close to the structures' original location and will either survive in their new location or become food for other marine life in the area. During transit, and transfer, it is likely the marine growth now out of the water will progressively desiccate and some will fall off the structures. During transport, jackets are held on an incline with the jacket structures raked towards the vessel deck. Marine growth waste (including any long-spined sea urchins) that collects on vessel decks shall be

collected where practical and safe to do so and loaded into appropriate bins and prepared for disposal onshore to an appropriate facility. Residue will be managed through deck washing / cleanliness practices.

Some marine growth will not land on deck and will be lost to the environment. The translocation of native species due to decommissioning activities (that would not have occurred through existing range expansion processes) has the potential to result in effects to seabed habitat and marine ecosystems due to changes in ecosystem dynamics.

7.3.3 Risk assessment

7.3.3.1 Change in ecosystem dynamics

Successful translocation of a native species requires the following steps:

- presence of the species on a structure being removed
- survival of that species during lifting, transit and transfer of the removed structure
- colonisation (e.g. dislodgement or reproduction) of that species in the recipient region, followed by successful establishment of a viable new local population.

Urchins are a mobile species, and it is expected that any individuals that might be present at the time of lifting will likely be dislodged at the lifting location due to the movement forces associated with the lifting activity.

A literature review did not identify mortality data for *C.rodgersii* however *Tripneustes gratilla* and *Heliocidaris erythrogramma* were noted to have a 0-20% mortality following 24 hours at 12°C but 100% mortality at 27°C. (Bennett, Mos, & Dworjanyn, 2024).

In the unlikely event that *C.rodgersii* was translocated, and even more unlikely, if it did colonise an area, it is expected that any colony would remain fragmented and isolated because of the unfavourable larger soft benthic habitat across the OA. Therefore, in the context of the broader range-expanding nature of this species, there is the potential for a localised, long-term, minor impact to habitat resulting in a **Consequence Level III.**

Campaign #1 will occur during summer and will likely experience warm temperatures. In addition, given the paucity of natural hard-substrate habitat in the offshore area between the Esso platforms and the transfer area, it is considered unlikely that *C.rodgersii* would be able to survive and become established along this route.

The vast majority of the OA is characterised as sandy flats/ bare substrate and is not considered suitable habitat for *C.rodgersii*. Areas of hard substrate within the OA are largely limited to other anthropogenic structures (where exposed) and the patchy outcrops associated with the South East reef (adjacent to FTA, CBA and HLA). These areas have likely been exposed to the potential establishment of *C.rodgersii* in the past as this species has been recorded in the broader region for several decades. Key areas of near shore reefs were considered and purposefully avoided in the establishment of the extent of the OA.

It is considered Unlikely (C) that activities within the OA would result in the translocation of a viable presence of long-spined sea urchin and any subsequent impact to receptor.

7.3.4 Residual ranking

Table 7-12 Residual risk ranking outcome

Consequence Level	Likelihood Category	Risk Category
III	C	3

7.3.5 Controls

- **CMP28:** Avoidance of key near shore reefs.
- **CMP6:** Disposal of collected marine growth.

7.3.6 Demonstration of As Low As Reasonably Practicable

Table 7-13 Decision Context and justification

Decision Context B
The causes resulting in a translocation of native species via attachment to removed structures are well understood. Given the potential for localised, long-term, minor impact on the benthic habitat, there is the potential for **Consequence Level III** impacts. No issues, objections or claims were raised by relevant persons with regard to the risk of translocation of native species. Based on the **Consequence Level III** rating, Esso believes ALARP Decision Context B should apply.

Table 7-14 Good practice controls

Good practice	Adopted	Control	Rationale
Avoidance of key areas of suitable near shore habitat for marine growth establishment.	✓	**CMP28:** Avoidance of key near shore reefs	It is possible that living native species could be dislodged during transit. Given that the marine growth present on the jacket structures has a preference for hard substrate environments, the boundary of the OA has been established to avoid the main nearshore reef areas. The vast majority of the OA is characterised as sandy flats/bare substrate limiting the viability of translocated species to establish materially in the broader OA.
Appropriate disposal of captured marine growth to shore to minimise impacts to the environment	✓	**CMP6:** Disposal of collected marine growth	Bulk marine growth waste that collects on vessel decks shall be collected where practical and safe to do so and loaded into appropriate bins and prepared for disposal onshore to an appropriate facility.

Table 7-15 Engineering risk assessment

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
Removal of marine growth at location of current platform	Removed marine growth remains at original location.	Substantial marine growth cannot feasibly be removed because of restricted access to structural members internally positioned within each jacket; inability to work effectively in splash zone and more complex safety considerations based on the nature and scale of removal.	Not adopted

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
Treatment of marine growth with biocides	Marine growth mortality to eliminate potential translocation of living specimens.	Treatment can only be facilitated once jackets are lifted. The jacket size and lack of access make application of biocide unfeasible. Application also has safety challenges due to the size of the jackets.	Not adopted
Suspension of jackets out of water at removal location for prolonged periods of time	Dried marine growth that falls off remains at original location.	Safe lifting of a live load such as this will be completed under a strict weather window and requires jackets to remain suspended for the shortest achievable time. Remaining offshore with a load on slings is not an acceptable safe practice globally.	Not adopted

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 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 habitat with the potential to be impacted is characterised by soft sediment and shell/rubble seabed. Localised long-term (but minor) impacts are possible. Range-expanding native species already exist in the region. There is little uncertainty associated with this aspect as the activities are well understood and the cause pathways are well known. It is not considered that there is significant scientific uncertainty associated with this aspect.
Legislative and other requirements	Legislative and other requirements have been identified and met.	✓	There are no prescriptive legislative requirements concerning the translocation of range-expanding native species.
Internal context	Consistent with Esso's Environment Policy.	✓	Proposed activities are consistent with Esso's Environment Policy, in particular,

Factor	Demonstration criteria	Criteria met	Rationale
			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: • OIMS System 6: Regulatory Compliance and Sustainability Management objective to identify and assess environmental aspects; significant aspects are addressed and controlled consistent with policy and regulatory requirements.

7.4 Physical interaction – Introduction of Invasive Marine Species

7.4.1 Causes of physical interaction with Invasive Marine Species

An IMS is a species occurring as a result of human activities, beyond its 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.

It is noted that no IMS species have been identified on the SPJ structure themselves. Review of ROV footage from marine ecology surveys, maintenance and facility integrity inspections have not identified any IMS species present on the structures (Refer Section 6.10).

The following activities have the potential to result in the introduction of IMS in the activity area:

- translocation of foreign species through biofouling of vessel hulls and niches
- translocation of foreign species through biofouling of immersible retrievable equipment (e.g. ROVs)
- discharge of ballast water from support vessels containing foreign species.

7.4.2 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.

7.4.3 Risk assessment

7.4.3.1 Change in ecosystem dynamics

Successful IMS invasion requires the following 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 marine '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).

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.

The IMS are likely to have little or no natural competition or predators, thus potentially outcompeting native species for food or space, preying on native species, or changing the nature of the environment.

Marine pest species can also deplete fishing grounds and aquaculture stock, with between 10% and 40% of Australia's fishing industry being potentially vulnerable to marine pest incursion. For example, the introduction of the northern Pacific seastar (*Asterias amurensis*) in Victorian and Tasmanian waters was linked to a decline in scallop fisheries (Dommisse & 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 seafloor 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 OA.

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 (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.**

7.4.3.1.1 BRINGING THE VESSELS TO BASS STRAIT

Several vessels will need to relocate to Bass Strait to facilitate the execution of Campaign #1. These vessels may come from elsewhere within Australian waters or be relocated from overseas such as in the case of the *Pioneering Spirit*.

Any vessels relocating to Australian territory will need to fulfill relevant biosecurity clearance requirements which are to be reported through the Maritime Arrivals Reporting System.

7.4.3.1.2 SUPPORT VESSEL OPERATIONS

Support vessels may pose a risk of introducing IMS through ballast water and hull biofouling. Compliance with regulatory requirements for the management of ballast water and ensuring all vessels are assessed as posing a low biofouling risk through the screening via the Esso *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 the Esso *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.

It is considered Very Unlikely (D) that this activity would result in the introduction of an IMS and any subsequent impact to receptor.

7.4.4 Residual risk ranking

Table 7-17 Residual risk ranking outcome

Consequence Level	Likelihood Category	Risk Category
III	D	4

7.4.5 Controls

- **CM23**: Ballast Water Management Plan
- **CM24**: Ballast Water Management Certificate.
- **CMP20:** Ballast water record system.
- **CM25**: Biosecurity clearance when entering Australian territory.
- **CM8**: Vessel Master.
- **CM26**: Invasive Marine Species Risk Assessment Procedure
- **CMP21:** Immersible retrievable equipment cleaning**CM21:** Remotely Operated Vehicle pre-post dive checks.

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

7.4.6 Demonstration of As Low As Reasonably Practicable

Table 7-18 Decision Context and justification

Decision Context B
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. Given the potential for an irreversible (although localised) effect on the benthic habitat, there is the potential for **Consequence Level III** impacts. 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 7-19 Good practice controls

Good practice	Adopted	Control	Rationale
Ballast Water Management (BWM) Convention and Guidelines (IMO)	✓	**CM24**: Ballast Water Management Certificate	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 a 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

Good practice	Adopted	Control	Rationale
		CMP20: Ballast water record system	environment from ballast water discharge, by minimising the uptake and subsequent discharge of sediments and organisms. The BWM Convention requires all vessels designed to carry ballast water to implement a BWM Plan and to carry out BWM procedures in accordance with approved methods. Specifically, these are: • use of a type approved BWM system • ballast water exchange should be conducted in at least 200nm from nearest land and in waters 200m deep. For voyages that cannot practically meet these requirements ballast water exchange • must occur at least 12nm from the nearest land and in water at least 50m deep use of low-risk ballast water • retention of high-risk ballast water on board • discharge to an approved ballast water reception facility. 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. All vessels that carry ballast water must maintain a ballast water record system. Exceptions to the BWM Convention will only be performed where allowable under relevant provisions or permissioning.
Maritime arrivals reporting system	✓	**CM25:** Biosecurity clearance when entering Australian territory	The Vessel Master has responsibility for ensuring a pre-arrival report is submitted in the Maritime Arrivals Reporting System and clearance to enter Australian territory is obtained from the Department of Agriculture and Water Resources (DAWR). Offshore installations operating outside of Australian territory are not under the jurisdiction of the *Biosecurity Act 2015* (Cth). 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'. 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, unless exempt under the Biosecurity

Good practice	Adopted	Control	Rationale
			(Exposed conveyance – exceptions from biosecurity control) Determination 2016.
Australian Ballast Water Management Requirements, Version 8 (DAWR, 2020)	✓	**CM8**: Vessel Master	The Vessel Master has responsibility for ensuring these Requirements are followed. The Requirements describe the obligations on vessel operators with regard to the management of ballast water and sediments when operating in Australian seas. 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. Exceptions to these practices will only be performed where allowable under relevant provisions or permissioning.
Australian biofouling management requirements (Version 1.) (DAWE, 2022)	✓	**CM26**: Invasive Marine Species Risk Assessment Procedure	Biofouling risk in accordance with Australian biofouling management requirements (Version 1.) (DAWE, 2022) is assessed and documented through the Esso *IMS Risk Assessment Procedure* (AUGO-EV-PCE-014). Consistent with the 'best practice' approach set out in the IMO Guidelines for the Management of Ships Biofouling (IMO, 2023) the risk assessment considers many parameters of the vessels including (where relevant): • transport method • 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 operations (OA), timings and durations. 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. 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

Good practice	Adopted	Control	Rationale
			whether additional controls can be implemented to reduce the vessel risk status to low risk. Examples of potential control/mitigation measures to reduce risk that may be proposed are consistent with the Australian National Biofouling Guidelines for the Petroleum Production and Exploration Industry (DAWE, 2022) and the IMO Guidelines. The control measures proposed must meet the standard of performance described in the *IMS Risk Assessment Procedure* (AUGO-EV-PCE-014). 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).
Cleaning of immersible equipment such as ROVs or wire cutters	✓	**CMP21:** Immersible retrievable equipment cleaning	Management of submersible equipment will be in accordance with the *Australian National Biofouling Guidelines for the Petroleum Production and Exploration Industry* (DAWE, 2022).

Table 7-20 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
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. The *Pioneering Spirit* is too large to dry dock.	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	Not possible given the engineering needs. Existing vessels do not have the carrying capacity.	Not adopted

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
	low (see above), there is limited environmental benefit associated with implementing this measure.		

7.4.7 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.	✓	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. 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. It is not considered that there is significant scientific uncertainty associated with this aspect. Therefore, the precautionary principle has not been applied.
Legislative and other requirements	Legislative and other requirements have been identified and met.	✓	The requirements of the BWM Convention have been adopted. The following legislative and other requirements are considered relevant as they apply to the implementation of the BWM Convention in Australia: • Biosecurity Act 2015 (Cth) • Protection of the Sea (Harmful Anti-fouling Systems) Act 2006 (Cth)

Factor	Demonstration criteria	Criteria met	Rationale
			• Marine Order 98 (Marine pollution – anti-fouling systems) 2013. Australian BWM requirements (DAWR, 2020) will be adhered to and measures for managing ballast water discharges in this document are incorporated in the controls. Biofouling risk is assessed, and mitigated, in accordance with the National Biofouling Guidelines for the Petroleum Production and Exploration Industry (DAWE, 2022).
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: • OIMS System 6: Regulatory Compliance and Sustainability Management objective to identify and assess environmental aspects; significant aspects are addressed and controlled consistent with policy and regulatory requirements • OIMS System 8: Selecting and Engaging with Third Party Providers 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 the risk of introduction of IMS.

7.5 Accidental release – Dropped objects

7.5.1 Causes of dropped objects

Dropped objects may be released by accidently dropping any objects not permanently fixed to the vessels (such as small tools ls and cargo loads such as bulk containers), or during ROV operations, due to human error, equipment failure or adverse weather. Structural objects (such as a conductor stub) may also drop from the structures being removed during lifting.

7.5.2 Risks of dropped objects

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

- change in habitat
- change in water quality.

7.5.3 Risk assessment

7.5.3.1 Change in habitat

In the event of an accidental dropped object from either the vessels, during ROV operations, or lifting operations, effects will be limited to localised physical disturbance to benthic communities arising from equipment sinking to and dragging across the seabed. Any environmental impact caused by damage to small areas of seabed and associated communities would be mitigated by ubiquitous distribution of similar habitat in the region.

Severity of impact to benthic communities is affected by density of biota, sensitivity of biota to disturbance and recovery potential of benthic communities. Physical disturbance to the seabed from a dropped load would be limited to the footprint of the object and temporary in nature if the item was retrieved and longer term if irretrievable. Both are likely to pose minor environmental risk as the seabed within the OA is largely sandy sediment with benthic assemblages (predominantly polychaetes (worms), crustaceans and molluscs) and not particularly susceptible to physical disturbance.

Any lost materials such as, batteries and so forth, would settle on the seafloor if dropped overboard. Over time, this may result in the leaching of chemicals to the seabed resulting in a small area of substrate becoming toxic and unsuitable for colonisation by benthic fauna. Given the low release volumes, it is expected that only very small areas of benthic habitat would be affected.

For larger objects, some sediment disturbance and short term, localised turbidity and associated benthic smothering is anticipated.

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.**

Stakeholders asked what will be done to address the risk of structurally derived dropped objects. Esso noted that all facilities undergo preparation works to remove or secure loose items to minimise potential losses and the single lift approach minimises the cutting and potential to inadvertently create loose or unstable items. No objections or further questions were asked.

7.5.3.2 Change in water quality

Impacts from a chemical release during crane transfer of bulk containers – with the maximum volume based upon the loss of an intermediate bulk container typically containing 1m^3 of chemicals – would be minimal, due to the small potential volumes released, and the fact that spilled chemicals will rapidly evaporate, disperse, and weather. In the open ocean environment, the spilled liquids would be rapidly dispersed and diluted to concentrations at which they are non-toxic resulting in a **Consequence Level IV**.

The key risk if a cargo load or subsea equipment is dropped during lifting is to the benthic habitat, however, given the controls in place it is considered **Likelihood Category D** (very unlikely) that such a dropped object would result in the impacts described above.

7.5.4 Residual risk ranking

Table 7-22 Residual risk ranking outcome

Consequence Level	Likelihood Category	Risk Category
IV	D	4

7.5.5 Controls

- **CMP22:** Crane handling and transfer procedures.
- **CM18:** Preventative Maintenance System (Vessel).
- **CM19:** Cargo Securing Manual

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

7.5.6 Demonstration of As Low As Reasonably Practicable

Table 7-23 Decision Context and justification

Decision Context A
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. Facility preparation work scopes include the assessment and removal and securing of loose items to the extent practicable. There is little uncertainty associated with the potential environmental impacts which have been evaluated as **Consequence Level IV** (the lowest level). Stakeholders asked what will be done to address the risk of structurally derived dropped objects. Esso noted that all facilities undergo preparation works to remove or secure loose items to minimise potential losses and the single lift approach minimises the cutting and potential to inadvertently create loose or unstable items. Esso believes ALARP Decision Context A should apply.

Table 7-24 Good practice controls

Good practice	Adopted	Control	Rationale
API Recommended Practice 2D	✓	**CMP22:** Crane handling and transfer procedures	The API Recommended Practice 2D are industry-developed requirements which provide guidance in the development of operating and maintenance procedures for use in the safe operation of cranes on fixed or floating offshore platforms. Relevant vessels certify that the deck cranes and accessory gear are compliant with API Recommended Practice 2D.
Maintenance of lifting gear	✓	**CM18:** Preventative Maintenance System (Vessel)	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 Dangerous Goods (SOLAS, 1974)	✓	**CM19:** Cargo Securing Manual	The SOLAS sets minimum safety standards in the construction, equipment, and operation of merchant ships. In accordance with Regulations VI/5 and VII/5 of the SOLAS, cargo units and cargo transport units will be loaded, stowed, and secured throughout the voyage in accordance with the approved Cargo Securing Manual (as appropriate to vessel class).

Table 7-25 Engineering risk assessment

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
Dead weight support	The installation of dead weight supports will be used to ensure structures on facilities are kept in place during lifting and transit. Dead weight supports may include the use of pins, pipe hooks, shackles, chains, clamps to provide vertical or lateral support.	Industry standard engineering approach to support lift safety and dropped objects prevention.	Adopted

7.5.7 Demonstration of acceptability

Table 7-26 Demonstration of acceptability test

Factor	Demonstration criteria	Criteria met	Rationale
Risk assessment process for unplanned events	The risk ranking is lower than Risk Category 1.	✓	The risk ranking is Risk Category 4 (the lowest category) and therefore considered acceptable.
Principles of ESD	No potential to affect biological diversity and ecological integrity.	✓	The potential impact associated with this aspect is limited to a localised short-term impact, which is not considered as having the potential to affect biological diversity and ecological integrity.
	Activity does not have the potential to result in serious or irreversible environmental damage.	✓	The activities were evaluated as having the potential to result in a **Consequence Level IV** thus are not considered as having the potential to result in serious or irreversible environmental damage.
Legislative and other requirements	Legislative and other requirements have been identified and met.	✓	The proposed activities outlined in this EP 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 • Schedule 3 (occupational health and safety) of the OPGGS Act and 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

Factor	Demonstration criteria	Criteria met	Rationale
			conducted in accordance with a Safety Case that has been accepted by NOPSEMA. The requirements of SOLAS Chapters VI and VII, in relation to a Cargo Securing Manual, have also been adopted.
Internal context	Consistent with Esso's Environment Policy.	✓	Proposed activities are consistent with Esso's Environment Policy, in particular, to *"comply with all applicable environmental laws and regulations and apply responsible standards where laws and regulations do not exist".*
	Meets ExxonMobil OIMS Objectives.	✓	Proposed activities meet: • OIMS System 6: Regulatory Compliance and Sustainability Management objective to identify and assess environmental aspects; significant aspects are addressed and controlled consistent with policy and regulatory requirements • OIMS System 8: Selecting and Engaging with Third Party Providers objectives to clearly define and communicate OI requirements to contractors and to qualify, evaluate and select contractors based on their ability to perform work in a safe, secure and environmentally sound manner.
External context	Concerns of relevant persons have been considered/addressed through the consultation process.	✓	No relevant person concerns have been raised concerning the risk of dropped objects.

7.6 Accidental release – Waste

Waste sources considered include:

- decommissioned topsides, inclusive of any equipment or materials that are present within the topside
- decommissioned jacket legs
- vessel operations (e.g. used personal protective equipment and other consumables).

The decommissioning derived topsides and jackets will transit through the OA prior to being transferred to a barge or transport vessel. Transfer is to a shallower draft vessel necessary to allow final transport out of the OA to an ORC at Barry Beach Marine Terminal for the processing of decommissioning derived waste materials. Activities outside the extent of the OA are not specifically addressed in the EP as these fall under the jurisdiction of other Authorities.

Estimated waste materials from facility topsides and jackets are presented in Table 7-27 and Table 7-28 respectively. The estimates presented were derived using a range of sources, including (i) weight control reports, (ii) review of existing documentation, (iii) bench marking of similar aged facilities, (iv) facility site inspections and (v) targeted intrusive sampling. The material inventories have been developed to a level of accuracy sufficient for works planning purposes. Most of the materials in both the topsides and jackets is steel and current estimates anticipate that the majority (>95%) of the total mass of materials processed will be able to be recycled. Remaining

materials that cannot be recycled will be disposed of at appropriately licenced facilities in accordance with applicable regulations.

A small portion of the total materials are considered hazardous waste (classified as 'priority waste' under Victorian waste classification). This hazardous material is mostly asbestos. Very small quantities of other hazardous materials, such as post cleaning residues of hydrocarbons and naturally occurring radioactive materials (NORM) may be present within topsides processing equipment.

Electrical waste, including batteries, is classed a priority waste in Victoria and requires appropriate segregation and disposal. Electrical waste is shown separately in Table 7-27.

Equipment and items that may contain hazardous material or residues will be assessed and sealed where appropriate to ensure safety for transport as part of facility preparation activities performed under the *Bass Strait Environment Plan* (AUGO-EV-EMM-012) prior to the commencement of decommissioning removal activities.

As part of removals preparation activities, the status of structures prior to decommissioning be documented in a hazardous materials register for each facility. This register will be used to support identification of residual materials for Campaign #1 works planning and execution.

This EP considers direct and indirect impacts from activities conducted within Commonwealth waters (including off-title areas) across the OA as described in Section 3.1. Campaign #1 activities conducted outside of the OA will be subject to applicable approvals under Victorian and Commonwealth environment laws, and are not within the scope of this EP.

Esso intends to prepare and submit a staged referral under the *Environment Protection and Biodiversity Act 1999* (Cth) to DCCEEW. The third stage of the referrals will cover aspects associated with the processing and disposal of wastes once offloaded on shore.

The Barry Beach Marine Terminal has an existing site operating licence that allows the receival of priority wastes as part of Esso's ongoing operations. Any licence amendments will be referred to the Victorian Environment Protection Authority.

Table 7-27 Estimated topside waste materials

Facility topsides	Estimated Weight in Metric Tonnes										
	Steel (all types)	Aluminium, Brass and copper	Grout/concrete	Insulation materials (Non asbestos)	Plastics	Wood	Non-hazardous construction materials	Electrical equipment	Reusable equipment	Hazardous waste	Total
HLA	3160	50	12	17	1	2	59	50	120	17	3488
KFA	1880	30	8	12	1	2	41	35	84	14	2107
KFB	2440	30	9	13	1	2	44	37	90	18	2684
MKA	3170	50	12	17	1	2	59	50	119	98	3578
WKF	3030	40	11	16	1	2	55	46	112	17	3330
CBA	2620	40	10	14	1	2	48	41	98	43	2917
FLA	3450	50	13	18	1	3	64	54	130	98	3881
FTA	2660	40	1	10	1	2	49	42	100	99	3004

Facility topsides	Estimated Weight in Metric Tonnes										
	Steel (all types)	Aluminium, Brass and copper	Grout/concrete	Insulation materials (Non asbestos)	Plastics	Wood	Non-hazardous construction materials	Electrical equipment	Reusable equipment	Hazardous waste	Total
BMA	3860	50	14	20	2	3	70	59	143	18	4239
BMB	720	10	3	4	1	1	13	11	27	16	806
WTA	1180	20	4	6	1	1	21	18	44	0	1295
PCA	170	0	11	1	1	1	3	3	0	0	190
DPA	170	0	11	1	1	1	3	3	0	0	190
Totals	**28,510**	**410**	**119**	**149**	**14**	**24**	**529**	**449**	**1067**	**438**	**31,709**

Table 7-28 Estimated jacket waste materials

Facility	Estimated weights in metric tonnes											
	Steel (all types)	Copper	Grout/concrete	Insulation materials (non asbestos)	Plastics/nylon/rubber	Wood	Electrical equipment	General waste	Marine growth	Cemented iron ore	Anodes	Total
HLA*	2160	1	1	30	0	20	3	2	155	0	26	2398
KFA*	1590	1	0	30	2	18	2	2	119	0	32	1796
KFB*	1620	0	0	30	3	18	2	2	118	0	32	1825
MKA	2260	1	1	10	2	20	3	3	159	0	45	2504
WKF	2650	1	1	10	2	17	3	2	127	0	53	2866
CBA	2490	1	1	10	2	17	3	2	233	0	56	2815
FLA	2970	2	1	10	2	20	4	3	157	0	59	3228
FTA	4420	1	1	502	2	17	3	2	227	0	97	5272
BMA	4320	1	1	366	3	13	3	2	197	0	79	4985
WTA	1570	0	1	105	0	1	1	1	84	0	26	1789

Facility	Estimated weights in metric tonnes											
	Steel (all types)	Copper	Grout/concrete	Insulation materials (non asbestos)	Plastics/nylon/rubber	Wood	Electrical equipment	General waste	Marine growth	Cemented iron ore	Anodes	Total
PCA	690	1	1	10	0	1	1	1	26	1419	13	2163
DPA	680	1	1	10	0	1	1	1	26	1419	10	2,50
Totals	**27,420**	**11**	**10**	**1123**	**18**	**163**	**29**	**23**	**1626**	**2838**	**528**	**33,789**

* including structural struts

7.6.1 Causes of accidental release of waste

The handling and storage of materials and waste on board Campaign #1 vessels has the potential for accidental over-boarding of materials and waste.

The single lift approach to decommissioning maintains maximum structural integrity of the topsides and jackets during lifting and transport. Measures taken to prepare the structures for decommissioning (cleaning and removal/securing of loose items) reduces the potential for items to be lost. Accidental release of waste materials to sea from the decommissioned structures themselves is considered unlikely. Impacts associated with any potential dropped objects are addressed separately in Section 7.5.

Wastes associated with vessel operations include small item such as consumable personal protective equipment and packaging. These small items are more likely to be accidently released if not properly secured. All Campaign #1 vessels will use separate clearly identified cans, drums, boxes, bags, or other containers for storage of any small quantities of vessel operations derived wastes to be off loaded for onshore disposal.

Vessel waste management procedures will be in place to address 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 example vessel wastes will be transported to shore, but have the potential to be accidentally dropped or released overboard:

- paper and cardboard
- wooden pallets
- metal, aluminium, cans
- glass
- plastics.

The following example hazardous materials may be generated using consumable products and will be transported to shore, but may be accidentally dropped or released overboard:

- hydrocarbons, hydraulic oils and lubricants
- hydrocarbon-contaminated materials (e.g. oily rags, oil filters)

- batteries
- contaminated personal protective equipment.

7.6.2 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.

7.6.2.1 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). Marine debris has been identified as a threat to several marine mammals (e.g. whales, dolphins, seals), marine reptiles, seabirds and fish in relevant conservation advice and recovery plans.

Recognition of the problem of plastic and microplastic debris in the marine environment is a key aspect of the National Plastics Plan (DAWE, 2021). The National Plastics Plan also supports action to address marine plastic debris, including the implementation of the Threat Abatement Plan for the Impacts of Marine Debris on the Vertebrate Wildlife of Australia's Coasts and Oceans (DoEE, 2018). The Threat Abatement Plan for the Impacts of Marine Debris on the Vertebrate Wildlife of Australia's Coasts and Oceans (DoEE, 2018) identifies EPBC Act listed species for which there are scientifically documented adverse impacts resulting from marine debris.

The threatened or migratory fauna species identified by the Threat Abatement Plan for the Impacts of Marine Debris on the Vertebrate Wildlife of Australia's Coasts and Oceans as impacted by marine debris and have known BIAs that overlap the OA include whales (PBW and SRW) and albatross (antipodean, Buller's, Indian yellow-nosed and wandering). The CMPBW (CoA, 2015a), *National Recovery Plan for the Southern Right Whale* (DCCEEW, 2024) and *Wildlife Conservation Plan for Seabirds* (Commonwealth of Australia, 2020) identified marine debris as a threat to the relevant species. The number of any of these species likely to be exposed to accidental releases of waste is very low.

Threats to marine organisms were considered primarily mechanical, including entanglement and ingestion of small plastic pieces. However, more recent research has demonstrated microplastic ingestion across a range of marine species (Cole M, 2011), suggesting the potential for more complex and poorly understood impacts on marine ecosystems (DoEE, 2018).

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).

7.6.2.2 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).

Stakeholders were interested in understanding what measures will be taken to ensure waste is appropriately handled and disposed of. Esso noted vessel operators will implement waste procedures and will comply with Australian was regulations and standards. No objections or further questions were asked.

7.6.3 Residual risk ranking

Table 7-29 Residual risk ranking outcome

Consequence Level	Likelihood Category	Risk Category
IV	D	4

7.6.4 Controls

- **CM9:** Class certification.
- **CMP23:** Waste Management Plan

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

7.6.5 Demonstration of As Low As Reasonably Practicable

Table 7-30 Decision Context and justification

Decision Context A
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. 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). No objections were raised by relevant persons during the consultation for the campaign with regard to risk of accidental release of waste. Esso believes ALARP Decision Context A should apply.

Table 7-31 Good practice controls

Good practice	Adopted	Control	Rationale
MARPOL Annex V Prevention of Pollution from Garbage from Ships.	✓	**CM9:** Class certification	The vast majority of commercial ships are built to and surveyed for compliance with the standards set 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. 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. MARPOL Annex V Regulations for the Prevention of Pollution by Garbage from Ships specifically requires vessels (as appropriate to class) to have a Garbage

Good practice	Adopted	Control	Rationale
			Management Plan and garbage record book in place and implemented.
Management practices	✓	**CMP23:** Waste Management Plan	Vessels will have a Waste Management Plan which identifies the procedures for collecting, storing and disposing of waste.

Table 7-32 Engineering risk assessment

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

7.6.6 Demonstration of acceptability

Table 7-33 Demonstration of acceptability test

Factor	Demonstration criteria	Criteria met	Rationale
Risk assessment process for unplanned events	The risk ranking is lower than Risk Category 1.	✓	The risk ranking is Risk Category 4 (the lowest category) and therefore considered acceptable.
Principles of ESD	No potential to affect biological diversity and ecological integrity.	✓	The potential impact associated with this aspect is limited to a localised short-term impact, which is not considered as having the potential to affect biological diversity and ecological integrity.
	Activity does not have the potential to result in serious or irreversible environmental damage.	✓	The activities were evaluated as having the potential to result in a **Consequence Level IV** thus are not considered as having the potential to result in serious or irreversible environmental damage.
Legislative and other requirements	Legislative and other requirements have been identified and met.	✓	The proposed activities outlined in this EP align with the requirements of the OPGGS Act: • 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. The requirements of SOLAS Chapters VI and VII, in relation to a Cargo Securing Manual, have also been adopted. Marine debris (including entanglement) is a recognised threat to the species in the following conservation management plans and

Factor	Demonstration criteria	Criteria met	Rationale
			advice. The proposed controls are consistent with conservation/management actions in: • CMPBW • National Recovery Plan for the Southern Right Whale (Eubalaena australis) (DCCEEW, 2024) • Recovery Plan for Marine Turtles in Australia (CoA, 2017) • *Conservation Advice for Leatherback Turtles* (TSSC, 2008) • Conservation Advice for Rhincodon typus (whale shark) (TSSC, 2015a) • *National Plastics Plan* (DAWE, 2021) • Threat Abatement Plan for impacts of marine debris on vertebrate wildlife of Australia's coasts and oceans (CoA, 2018) • *Wildlife Conservation Plan for Seabirds* (CoA, 2020). General vessel derived releases are covered under: Protection of the Sea (Prevention of Pollution from Ships) Act 1983 (Cth).
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 OIMS Objectives.	✓	Proposed activities meet: • OIMS System 6: Regulatory Compliance and Sustainability Management objective to identify and assess environmental aspects; significant aspects are addressed and controlled consistent with policy and regulatory requirements • OIMS System 8: Selecting and Engaging with Third Party Providers 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.

7.7 Accidental release – Loss of containment hazardous or non-hazardous substances

7.7.1 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, chemicals and grouting spread from spills or LOC from Campaign #1 vessels (including ROVs) or from the platforms during removal, transport and transfer from the *Pioneering Spirit* HLV or CSV onto barges or a HTV.

Most of the hazardous substances present on Campaign #1 vessels are used for the adequate operation of plant and equipment required to complete final preparation of topsides before lifting operations, as well as operation of plant and equipment onboard Campaign #1 vessels. These substances are standard across the shipping industry and includes gear oil, engine oil and hydraulic oil, and may also include thermal oil. Quantities of these products that are carried by vessels are generally low and vary from vessel to vessel. Similarly, residual quantities remaining in equipment on the platform topsides are expected to be small.

In addition, decommissioning activity vessels will be carrying MGO that will be used to power propellers, thrusters and other equipment during decommissioning activities. This type of oil represents the largest volumes of any hazardous substances within the vessels. Risks associated to MGO from accidental release due to rupture of a fuel tank are described and assessed in Section 7.8 of this EP.

For removal operations platforms will be non-operational and, following the flushing of topside systems, the presence of hazardous and non-hazardous substances in the topsides will be minimal. Temporary diesel generators will be installed at the platforms for final topside removal preparations by Allseas. As a result, diesel has been identified as a source for potential accidental release.

Causes of accidental releases of hazardous and non-hazardous substances during decommissioning activities may include:

- inadequate storage or handling of hazardous or non-hazardous substances
- failure or mechanical breakdown of equipment that use, store or transfer hazardous or non-hazardous materials
- failure to align valves correctly during transfer of hazardous or non-hazardous substances to tanks, or during transfer from vessels to platforms, such as grouting)
- overfilling of chemicals or fuel bulk storage tanks.

Accidental release of hydraulic fluids can occur from both hydraulic line failure and failure or breakdown of equipment onboard vessels and ROVs. These events are associated with small volume spill events.

An accidental release of fuel into the sea may occur during bunkering operations due to failure of equipment or from a human error. Bunkering of vessels at sea during the Campaign #1 activities will be limited and it is expected that bunkering of the *Pioneering Spirit* at sea will be required only once during decommissioning activities. Smaller vessels such as tugs will be bunkering at a port facility.

In addition, accidental release of diesel may occur from equipment located on the topsides that is required to complete final preparations for removal before lifting operations including that associated to temporary generators installed in the topsides. Release may be due to human error or leaks from equipment or storage containers.

During installation of lifting points to prepare the platforms for removal, an arrangement is required for lifting of KFA and KFB topsides that involves the installation of prefabricated grouted lifting points at designated locations around nominated deck legs within these two platforms. The grouted lifting points consist of two half shells clamped together to become a single lifting point. Section 2.7 describes this activity in more detail. Accidental release of grout may potentially occur due to failure of equipment or from human error during the grout transfer operations from the vessel to the platform.

The environmental risks associated with a loss of marine fuel from a vessel collision are assessed in Section 7.8.

7.7.2 Risks of loss of containment of hazardous or non-hazardous substances

A minor LOC has the potential to result in:

- change in water quality

- change in habitat
- injury/mortality to fauna
- change to the function, interest or activities of other users.

7.7.3 Risk assessment

Small spills of chemicals or stored fuel that could occur from failure of storage tanks/containers or from accidental release during handling of substances in the vessels are expected to be contained within the vessel and will not flow overboard into the sea. Vessels have Shipboard Oil Pollution Emergency Plans (SOPEPs) in place to manage this type of spill events.

The volume of hydraulic fluids potentially released into the sea from an accidental spill is estimated to be small. For instance, a ROV underwater hydraulic line failure is estimated to result in a maximum spill volume of 20L.

Potential spills from vessel to vessel pumping activities of substances associated to bunkering may be accidentally released into the sea. For bunkering operations, it is suggested that the maximum credible spill volume from a refuelling incident with continuous supervision is approximately the transfer rate over 15 minutes (AMSA, 2015). Assuming failure of dry-break couplings and based on the largest typical transfer rate in the order of 300m^3/hour, this equates to an instantaneous spill of approximately 75m^3.

Potential spills from vessel to platform pumping activities of substances associated to transfer of grout may be accidentally released into the sea. Estimated volume of grout slurry per lifting point is approximately 2m^3. In an unplanned release scenario, it is expected that grout slurry released from a single lifting point installation operation would be <1t.

The volume of diesel that will be present at the topsides for operation of temporary generators is estimated to be a maximum of 2.5m^3 at any one time, which is inclusive of an allowance of spare diesel drums available for refuelling of the generator. Standard preventative and containment measures will be in place to manage the risk from accidental diesel spills at the topsides and prevent potential release to the sea. To this end, equipment will be in good working conditions and temporary diesel generators and fuel storage area will either have a dedicated drip tray or appropriate bunding to contain and manage any accidental spill. It has been estimated that the potential volume of hazardous or non-hazardous materials that could accidentally be released into the ocean is small. 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).

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 into the sea resulting in significant impacts to water quality, marine fauna and to the function and interests of other users of the sea is considered **Likelihood Category D** (very unlikely).

7.7.4 Residual risk ranking

Table 7-34 Residual risk ranking outcome

Consequence Level	Likelihood Category	Risk Category
IV	D	4

7.7.5 Controls

- **CM9:** Class certification.
- **CM14:** Procedures for bulk transfer of fluids from support vessels.
- **CM18:** Preventative Maintenance System.
- **CM20:** Shipboard Marine Pollution Emergency Plan.
- **CM21:** Remotely Operated Vehicle pre-post dive checks.
- **CM22:** Remotely Operated Vehicle International Marine Contractors Association audit.
- **CMP27:** Bunding.
- **CMP5:** Grouting procedures.
- **CMP24:** Vessel contractor Environment Management Plan.

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

7.7.6 Demonstration of As Low As Reasonably Practicable

Table 7-35 Decision Context and justification

Decision Context A
The transfer, storage and handling of fuels and chemicals offshore are commonly practised activities. Similarly, grouting operations for installation of lifting points is a well-established operation that the vessel contractor is familiar with, including implementation of this method in previous decommissioning projects that Allseas has completed. There is a good understanding of potential spill sources, and the control measures required to manage these. There is little uncertainty associated with the potential environmental impacts which have been evaluated as **Consequence Level IV** (the lowest level). 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. Esso believes ALARP Decision Context A should apply.

Table 7-36 Good practice controls

Good practice	Adopted	Control	Rationale
Vessel class certification	✓	**CM9:** Class certification	Vessel complaint with MARPOL Annex 1, as appropriate to class.
Job Safety Analysis and Permit to Work	✓	**CM14:** Procedures for bulk transfer of fluids from support vessels	Job Safety Analysis and Permit to Work controls reflect industry good practice adopted to ensure the safety of personnel on board all vessels servicing and supporting offshore facilities, and to reduce the risks associated with such operations.
Design and certification of hoses	✓	**CMP24:** Vessel contractor Environment Management Plan	Hose certification reflects industry good practice adopted to ensure the safety of personnel on board all vessels servicing and supporting offshore facilities, and to reduce the risks associated with such operations.
Maintenance of equipment	✓	**CM18:** Preventative Maintenance System **CMP5:** Grouting procedures	It is industry good practice that a PMS is in place to ensure that equipment is in good working condition, including hoses inspection and replacement when degraded.
ROV condition check	✓	**CM21:** Remotely Operated Vehicle pre-post dive checks **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	✓	**CMP27:** Bunding	It is industry good practice that storage of oils and chemicals is adequately contained.

Good practice	Adopted	Control	Rationale
to prevent spills overboard		**CM9:** Class certification	Vessel complaint with MARPO Annex 1, as appropriate to class.
Shipboard Marine Pollution Emergency Plan (SMPEP)	✓	**CM20:** Shipboard Marine Pollution Emergency Plan	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. 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. MARPOL Annex I Regulations for the Prevention of Pollution by Oil specifically require that a SMPEP (or equivalent, according to class) is in place. MARPOL Annex I Regulations for the Prevention of Pollution by Oil specifically require that a SMPEP (or equivalent, according to class) is in place. To prepare for a spill event, the SMPEP details: • 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. In the event of a spill, the SMPEP details: • reporting requirements and a list of authorities to be contacted • activities to be undertaken to control the release • procedures for coordinating with local authorities.
EMP – Vessel contractor	✓	**CMP44:** Vessel contractor environment management plan	Vessel contractor will develop and implement an EMP that aligns and complies with the requirements contained in this EP. The Vessels EMP includes a requirement to comply with relevant regulations, including Marine Orders 91 and 93.

Good practice	Adopted	Control	Rationale
Procedures for grouting operations procedure	✓	**CMP5:** Grouting procedures	Vessel contractor will develop and implement a grouting procedure for grouting operations. The procedure will include (but is not limited to), the following considerations to minimise the risk of accidental release: • grouting operations to be conducted by trained personnel only • consideration on pre-start checks of equipment and lines, and maintenance/certifications of equipment where required • there will be no planned discharge of unmixed grout. Unmixed grout will be returned to shore for reuse or appropriate disposal as needed.

Table 7-37 Engineering risk assessment

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

7.7.7 Demonstration of acceptability

Table 7-38 Demonstration of acceptability test

Factor	Demonstration criteria	Criteria met	Rationale
Risk assessment process for unplanned events	The risk ranking is lower than Risk Category 1.	✓	The risk ranking is Risk Category 4 (the lowest category) and therefore considered acceptable.
Principles of ESD	No potential to affect biological diversity and ecological integrity.	✓	The potential impact associated with this aspect is limited to a localised short-term impact, which is not considered as having the potential to affect biological diversity and ecological integrity.
	Activity does not have the potential to result in serious or irreversible environmental damage.	✓	The activities were evaluated as having the potential to result in a **Consequence Level IV** thus are not considered as having the potential to result in serious or irreversible environmental damage.
Legislative and other requirements	Legislative and other requirements have been identified and met.	✓	The requirements of MARPOL Annex I have been adopted. The following legislative and other requirements are considered relevant as they apply to the implementation of MARPOL in Australia: • Protection of the Sea (Prevention of Pollution from Ships) Act 1983 (Cth) • *Navigation Act 2012* (Cth) – Chapter 4 (Prevention of Pollution)

Factor	Demonstration criteria	Criteria met	Rationale
			• Marine Order 91 (Marine pollution prevention – oil) 2014 • Marine Order 93 (Marine pollution prevention – noxious liquid substances) 2016.
Internal context	Consistent with Esso's Environment Policy.	✓	Proposed activities are consistent with Esso's Environment Policy, in particular, to *"comply with all applicable environmental laws and regulations and apply responsible standards where laws and regulations do not exist"*
	Meets ExxonMobil Environmental Standards.	✓	The controls proposed meet the strategic objectives of the Upstream Environmental Standards.
	Meets ExxonMobil OIMS Objectives.	✓	Proposed activities meet: • OIMS System 6: Regulatory Compliance and Sustainability Management objective to identify and assess environmental aspects; significant aspects are addressed and controlled consistent with policy and regulatory requirements • OIMS System 8: Selecting and Engaging with Third Party Providers objectives to clearly define and communicate OI requirements to contractors and to qualify, evaluate and select contractors based on their ability to perform work in a safe, secure and environmentally sound manner.
External context	Concerns of relevant persons have been considered/addressed through the consultation process.	✓	No relevant person concerns have been raised concerning the accidental release of hazardous substances.

7.8 Accidental release – Loss of containment refined oils (marine gas oil)

7.8.1 Causes of loss of containment of refined oils

The HLV and other vessels such as CSVs will use MGO (Group II – light persistent oil) to power its engines during decommissioning activities. As a result, there will be significant volumes of this type of fuel stored within each vessel. Scenarios identified in which a worst-case release of MGO from an unplanned event may occur are:

- LOC resulting from a collision between HLV and platforms during preparation to or while conducting lifting operations at the facilities locations, that results in tank rupture and MGO loss
- LOC resulting from a collision between the HLV with third-party commercial (merchant) vessels nearby the platforms or commercial shipping lines with presence of large third-party vessels such as cargo ships, tankers and large passenger ships, which in a collision event, may damage the HLV to an extent where

the outer layer of ballast water tanks are breached and the internal fuel tanks of the vessel are breached, resulting in potential tank rupture and MGO loss
- LOC from rupture of tank of a support vessel during transfer operations due to collision with other vessels.

For the purpose of identification of worst-case oil spill scenarios for Campaign #1 activities, mitigation factors such as the following were not considered:

- procedures in place by the vessel contractor for operations
- existing shipping exclusion zone (also known as the ATBA) currently in place around operating oil and gas facilities in the Gippsland Basin for vessels larger than 200 gross tonnes
- Traffic Separation Schemes implemented in the area which regulates vessel traffic flow to enhance safety of navigation around the ATBA by separating shipping into one-direction lanes for vessels heading north-eastwards and those heading south-westwards
- the 500m exclusion zone that will be required around Campaign #1 vessels during decommissioning activities
- the speed at which vessels will transit, which may prevent collision between ships or significantly reduce the force of the impact minimising the likelihood of tank breaches
- Notices to Mariners that will be issued prior to HLV operations in the Gippsland Basin.

As a result, the potential release of MGO for the worst-case scenarios identified is considered an extremely unlikely event that provides a significantly conservative approach to assess potential impacts from an unplanned oil spill event.

Unplanned oil spill from a vessel drift or powered grounding scenario is considered not credible given the lack of emergent features within the OA, the water depth at which project vessels will operate, and the type of DP system installed in the HLV (DP Class 3). The design basis of a DP3 Class system is to allow vessel to stay on location in the worst failure mode defined by IMO, which includes fire or flooding of an engine room, a switchgear room, or any other active or passive component of the system causing similar serious effect (Janson, 1998). DP3 Class system is the most comprehensive DP system offering the highest level of protection, safety and reliability, and it is aimed to prevent loss of position from any single failure, including a completely burnt fire division or flooded watertight compartment as described above.

Transfer operations will be conducted in areas that are located away from shipping lines frequently used by large vessels such as cargo, tankers, container or cruise ships. Instead, predominant vessel traffic in the area where transfer operations are likely to take place is limited to smaller craft such as fishing boats and ships engaged in recreational activities, which transit at lower speeds and have more manoeuvrability. The HLV has a configuration that follows the principle of a double-hulled vessel, protecting the fuel storage tanks in internal storage tanks located at least one layer in from the exterior of the vessel that is exposed to external contact with other vessels. In the extremely unlikely collision event scenario, these smaller craft are not considered to have the impact energy that would penetrate the HLV outer hull and reach the internal tanks. As a result, a potential oil spill from the HLV due to a vessel collision during transfer operations is not credible. For this operation, a potential release from a smaller vessel, such as a support vessel is considered credible, however highly unlikely, as described earlier in this Section.

Campaign #1 vessels that will conduct the operations for decommissioning of facilities will rely entirely on Group II fuel (i.e. MGO), however, there may be minimal residual volumes of HFO present in the vessels. The residual volume of HFO is the result of remaining content of this type of fuel that was used by the vessels during previous projects or for long distance transit purposes. Before commencing Campaign #1 activities, the vessel operator will ensure HFO contained in the vessel is minimised, and MGO will be the fuel type to be used for decommissioning operations. It is possible that residues of HFO sitting at the bottom of the tanks may not be fully removed by the vessel fuel transfer systems utilised for this purpose. As a result, it is expected that minimal residual volumes of this fuel will be present in the vessels. The estimated maximum residual volume to be present in a single tank for the *Pioneering Spirit* is up to approximately 80m^3. Any fuel tanks containing residual volumes of HFO in the HLV are located behind a double hull, and ballast water tanks, which act as additional barriers of protection. Given the combination of residual volume of fuel in these tanks, the level of barriers to the external environment and the extremely unlikelihood of a collision event with enough energy to breach these tanks, the scenario of HFO spill from a collision event is assessed as not credible.

7.8.2 Spill modelling

To understand the potential consequences of a worst-case unplanned release of oil associated with vessel operations during Campaign#1 activities as described in Section 7.8.1, the following was considered for the purpose of impacts and risk assessment:

- there is existing oil spill modelling commissioned by Esso to RPS that presents quantitative oil spill modelling to assess spill scenarios associated with the release of 280m^3 of MDO from a support vessel at five representative locations within the Gippsland Basin (RPS, 2024b) (refer to Appendix I). For the purposes of the Campaign#1 activities, results from this report are considered representative to inform potential impacts from the worst-case scenario described in Section 7.8.1 as "*Loss of containment from rupture of tank of a support vessel nearby transfer locations due to collision with other vessels*"
- for worst-case scenario associated to the HLV, Esso commissioned RPS to undertake additional spill modelling of potential MGO loss from the occurrence of the worst-case scenario (RPS, 2024a) (refer to Appendix I), described in Section 7.8.1 as "*Loss of containment resulting from a collision between HLV and platforms during preparation to or while conducting lifting operations at the facilities locations, that results in tank rupture and MGO loss*' and *'Loss of containment resulting from a collision between HLV with third-party commercial (merchant) vessels nearby the platforms or commercial shipping lines with presence of large third-party vessels… resulting in potential tank rupture and MGO loss*". Further information is presented in Sections 7.8.2.1 to 7.8.2.3 of this EP. Both reports (RPS, 2024a) (RPS, 2024b) (refer Appendix I) use the same methodology approach, including:
    - current and wind dataset was generated whereby current included the combined influence of three-dimensional large scale ocean currents and tidal currents
    - a three-dimensional oil spill model (SIMAP) was used to simulate the drift, spread, weathering and fate of the spilled oil
    - each scenario modelling was conducted using a stochastic approach involving 100 randomly selected spill single trajectory simulations
    - where applicable, deterministic runs were also assessed and presented
    - a description of floating, shoreline and in-water thresholds including:
        - floating (sea surface) oil exposure thresholds
        - shoreline accumulation (contact) thresholds
        - in-water exposure thresholds.
    - MGO and MDO are both classified as Group II – Light persistent oils. While MGO consist exclusively of distillates, MDO consists of a blend of mostly distillates with a very low proportion of HFO. These fuels have similar density, API gravity, dynamic viscosity, pour point and boiling point characteristics. These similarities result in an expected similar behaviour and weathering effects of the oil if an accidental spill event where to occur. For the modelling exercises described in the items above, RPS used representative specifications for these types of fuels.

Based on the outcomes of the modelling reports, it is determined that the potential extent of a worst-case spill from the LOC from a support vessel is within, and therefore covered by, the extent of the spill resulting from a worst-case release scenario from the HLV. Therefore, results from the RPS report (RPS, 2024a) (refer to Appendix I) are used as the basis to inform and assess potential impacts and risks from an unplanned release of LOC from a vessel, and to establish required controls.

7.8.2.1 Modelling methodology

Esso commissioned RPS to undertake stochastic and deterministic modelling of potential LOC of MGO from the HLV at representative locations within the Gippsland Basin (RPS, 2024a) (refer to Appendix I). These locations were selected to be representative of the potential impacts from the unlikely event of a MGO release from the HLV as described in Section 7.8.1. The spill modelling input and parameters are summarised in Table 7-39.

The worst-case spill scenario modelled was completed with the intent of providing an understanding of a conservative outer envelope of the potential area of exposure to a spill. The modelling didn't consider any applicable controls, such as legislative requirements and/or guidelines in place to prevent vessel collisions, or standard vessel operational procedures to prevent and manage scenarios where oil is released, increasing the conservative nature of the modelling completed to represent a highly unlikely oil spill event during decommissioning activities.

Table 7-39 HLV MGO spill modelling inputs for Campaign #1

Parameter	Details				
Number of spill simulations	100				
Period of the year (season)	Annual analysis				
Hydrocarbon type	MGO Group II				
Total spill volume	1165m^3				
Volume basis	Based on the design of the Allseas *Pioneering Spirit*, it is noted that there are no fuel tanks located directly next to the outer hull. All the fuel tanks in the *Pioneering Spirit* are located behind ballast water tanks. This configuration prevents the direct exposure of fuel tanks to impacts from collision events, and it follows the same principle as a double-hulled vessel configuration. Based on the protection provided to the fuel tanks by the design of the vessel, and following AMSA's guideline for indicative maximum credible spill volumes from collision for vessels that are protected by a double-hull, (AMSA, 2015), the volume used for the spill modelling (MGO) and the risk assessment is 1165m^3. The loss of fuel from a ruptured tank is influenced by the location of the rupture and the hydrostatic pressure, which would limit the release into the ocean; also, pumping of fuel from the affected tank into other tanks in the vessel that have not been compromised could also restrict the amount of fuel lost.				
Release locations	DPA 38° 29' 14" S, 147° 22' 39" E	WTA 38° 14' 24" S, 147° 52' 25" E	FTA 38° 24' 26" S, 148° 16' 41" E	KFA 38° 35' 47" S, 148° 08' 41" E	FLA 38° 18' 40" S, 148° 26' 22" E
Location basis	The locations chosen for modelling were selected to provide representative information and coverage for a potential vessel spill scenario within the OA during decommissioning activities.				
Release duration	12 hours				
Modelled duration	30 days				
MGO characteristics:					
Density	829.1kg/m^3@25°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)

Parameter	Details			
	6.0%	34.6%	54.4%	5.0%

7.8.2.2 Modelling outputs – Weathering and fate

MGO contains approximately 95% of volatile and semi-volatile hydrocarbons (or non-persistent to light-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 MGO 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 7-1 to Figure 7-5 shows the predicted oil fate and weathering corresponding to a single spill trajectory at each of the modelled locations, representing the largest swept area of floating oil above 10g/m^2. Results indicates that for the oil exposed to the surface, evaporation is the main weathering process taking place immediately after the release occurs. Between the first and second day after the release, the entrainment process presents a sharp and rapid increase followed then by a steadier decrease over the remaining 28 eight days of the model.

At the conclusion of the spill simulation period (30 days), between 44% (at KFA and FLA) and 52% (at DPA) of the spilled oil was lost to the atmosphere through evaporation, between 30% (at DPA) and 40% (at FTA and FLA) of the MGO was predicted to have decayed, whilst between 14% and 16% was predicted to remain entrained within the water column.

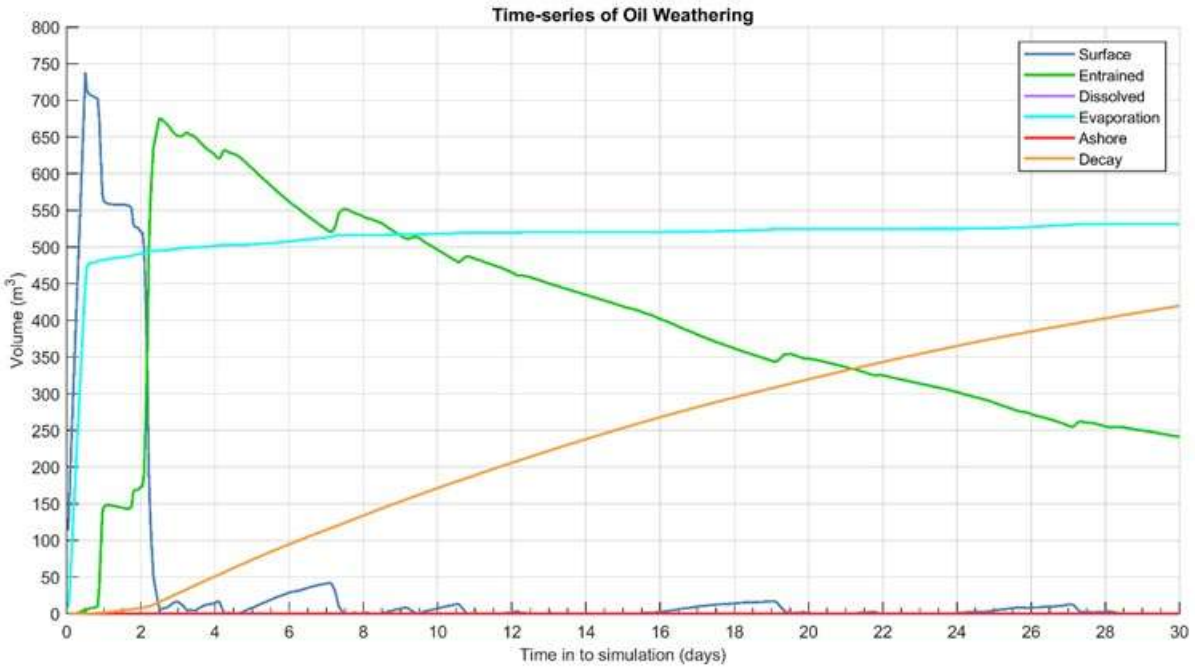


Figure 7-1 Predicted weathering and fates graph as volume for the selected MGO single spill at DPA: largest swept area of floating oil

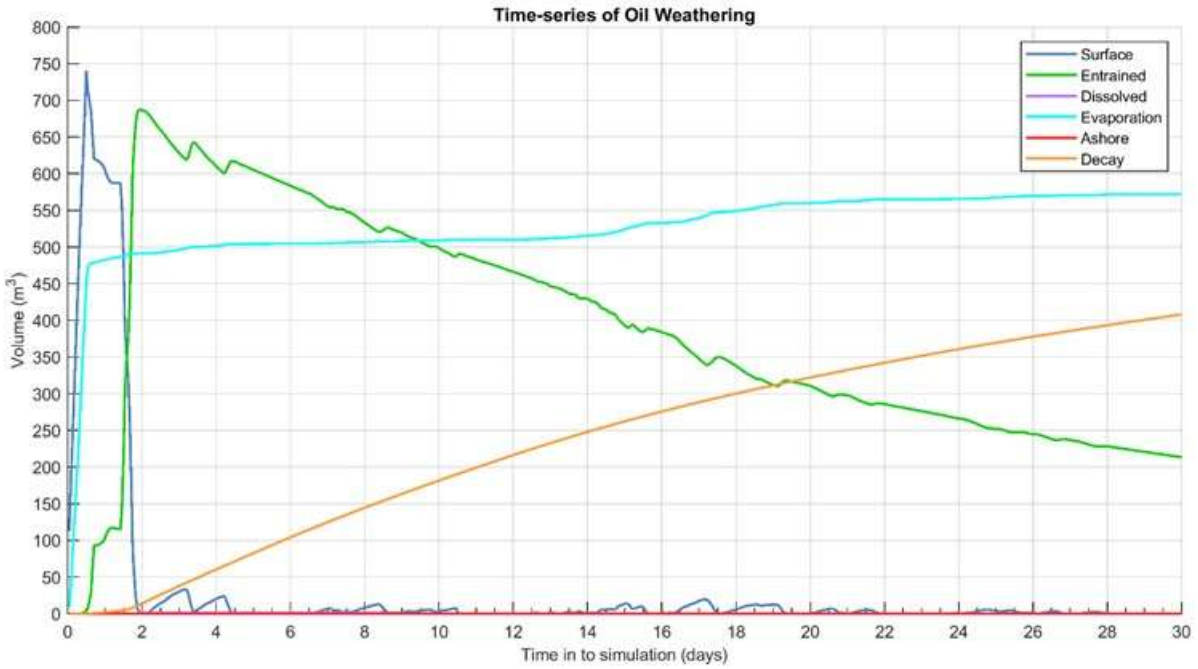


Figure 7-2 Predicted weathering and fates graph as volume for the selected MGO single spill at WTA: largest swept area of floating oil

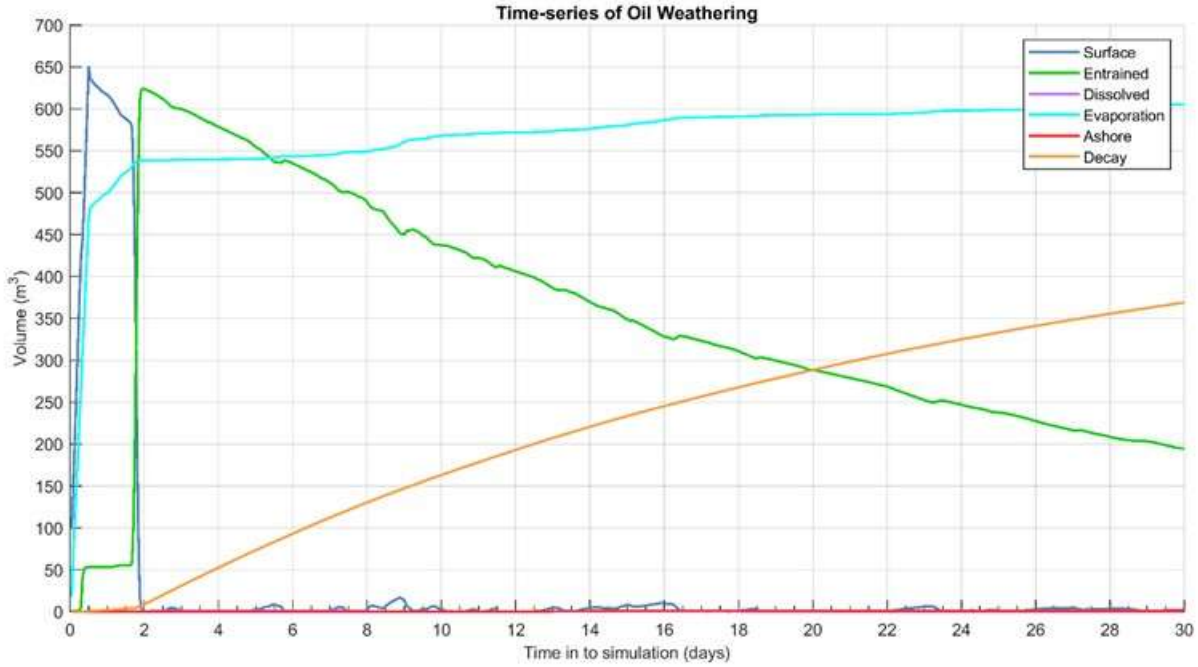


Figure 7-3 Predicted weathering and fates graph as volume for the selected MGO single spill at FTA: largest swept area of floating oil

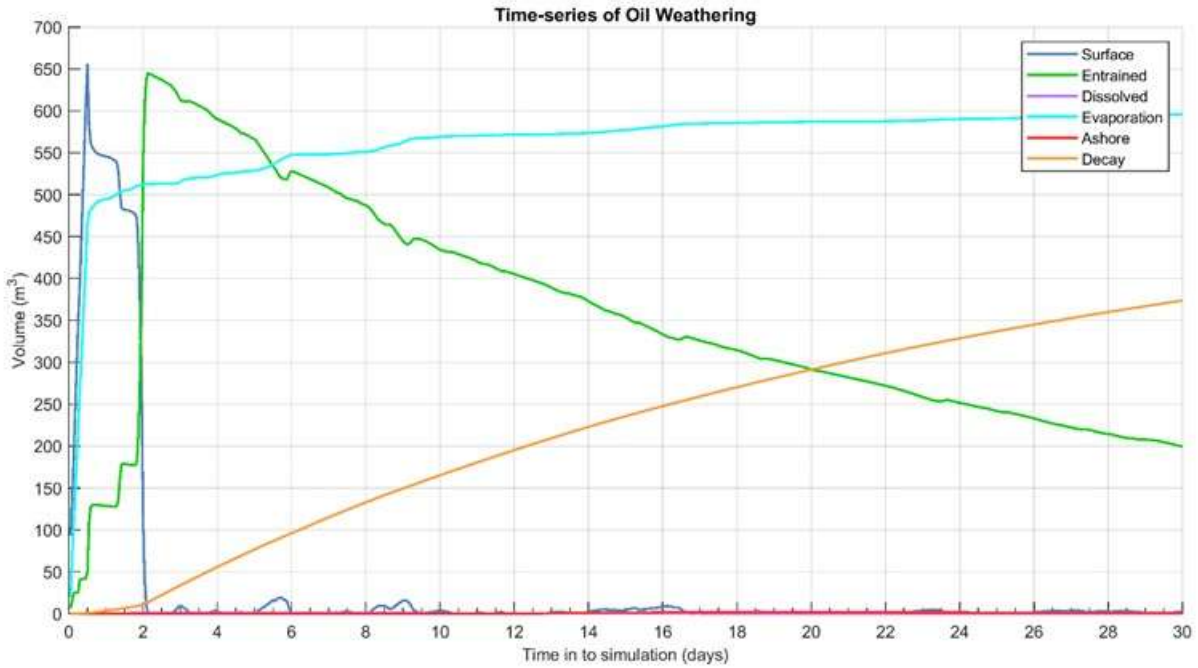


Figure 7-4 Predicted weathering and fates graph as volume for the selected MGO single spill at KFA: largest swept area of floating oil

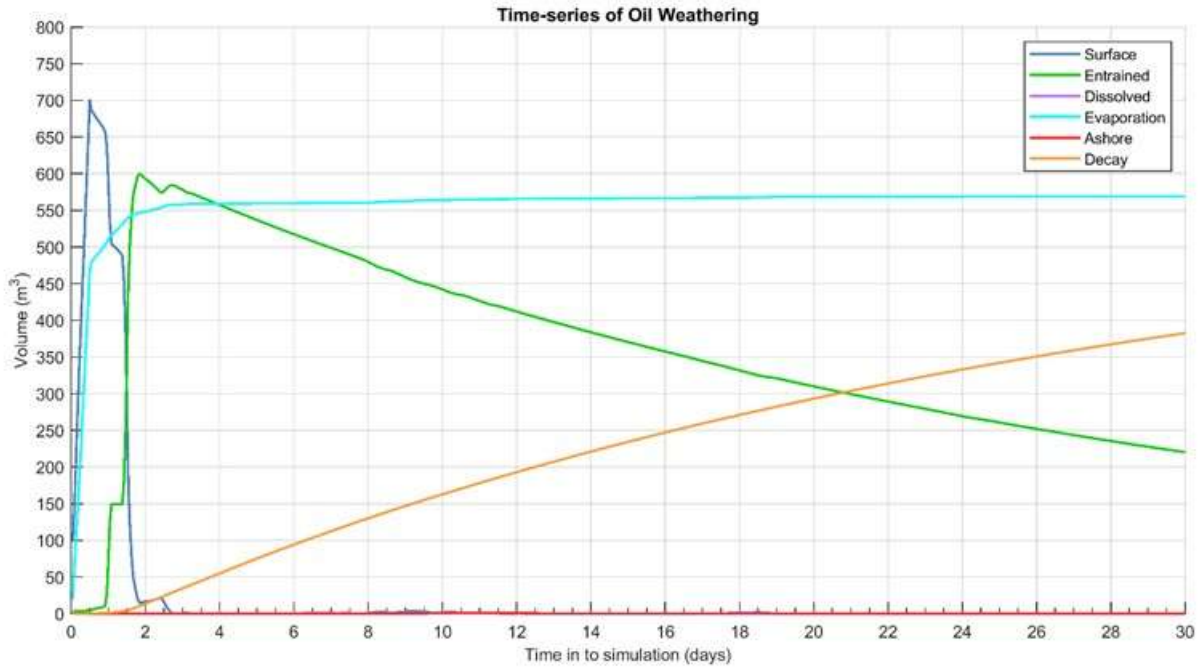


Figure 7-5 Predicted weathering and fates graph as volume for the selected MGO single spill at FLA: largest swept area of floating oil

7.8.2.3 Modelling outputs – Stochastic

Oil spill modelling predicts the total area that could be exposed to hydrocarbon, including trace concentrations of oil in the water column, because of any spill. This is known as the spill 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, therefore 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 from Table 7-40 to Table 7-44 based on results for the worst-case release from HLV at the five locations modelled for a MGO spill.

Table 7-40 Vessel collision DPA - MGO modelling output summary

Model parameter	Exposure value	Stochastic modelling (based on 100 annualised spill trajectories)
Sea surface exposure	Moderate ($10g/m^2$)	Maximum distance from release location is approximately 31.4km in a northeast direction. The zone of moderate exposure overlaps several albatrosses foraging BIAs, the common diving petrel and the short-tailed shearwater foraging BIAs, the PBW foraging BIA, SRW migration BIA and the white shark breeding BIA. The spill does not extend into State waters or contact any marine parks at this threshold, and it doesn't overlap with KEFs.
	High ($50g/m^2$)	Maximum distance from release location is approximately 20.2km in a southwest direction. There is an 87% probability that the zone of high exposure will overlap with several albatrosses and the common diving petrel foraging BIAs, PBW foraging BIA, SRW migration BIA and the white shark breeding BIA.
Shoreline exposure	Moderate ($100g/m^2$)	The maximum length of the shoreline accumulation at moderate threshold is 13km. The highest predicted probabilities of moderate shoreline exposure were at East Gippsland (33%) and Point Hicks (32%), with the minimum predicted time before shoreline accumulation at these locations as 3.88 days.
In-water (dissolved) exposure	Moderate (50ppb instantaneous)	Analysis of potential for in-water exposure in the water column between 0m-10m depth from the surface. The greatest probability of dissolved hydrocarbon exposure (11%) at the moderate threshold was predicted to overlap with several albatrosses foraging BIAs, the common diving petrel and the short-tailed shearwater foraging BIAs, the PBW foraging BIA, SRW migration BIA and the white shark breeding BIA. There is a 1% probability of water column exposure in the Upwelling East of Eden KEF and 1% probability of overlap with State waters (Victoria). There is no probability of exposure indicated for marine national parks. The probability of water column exposure in State waters (Victoria) is 1%, and there was no probability of exposure indicated for marine national parks.

Table 7-41 Vessel collision WTA - MGO modelling output summary

Model parameter	Exposure value	Stochastic modelling (based on 100 annualised spill trajectories)
Sea surface exposure	Moderate ($10g/m^2$)	Maximum distance from release location is approximately 31.5km in a northeast direction. The zone of moderate exposure overlaps several albatrosses foraging BIAs, the common diving petrel and the short-tailed

Model parameter	Exposure value	Stochastic modelling (based on 100 annualised spill trajectories)
		shearwater foraging BIAs, the PBW foraging BIA, SRW migration BIA and the white shark breeding BIA. There is a 2% probability of floating oil within the moderate threshold to reach the Upwelling East of Eden KEF, and the spill do not extend into State waters or marine parks at this threshold.
	High (50g/m^2)	Maximum distance from release location is approximately 19.1km in a northeast direction. There is a 75% probability that the zone of high exposure will overlap with several albatrosses and the common diving petrel foraging BIAs, the PBW foraging BIA, SRW migration BIA and the white shark breeding BIA.
Shoreline exposure	Moderate (100g/m^2)	The maximum length of the shoreline accumulation at moderate threshold is 11km. The highest predicted probabilities of moderate shoreline exposure were at East Gippsland (20%) and Point Hicks (15%), with the minimum predicted time before shoreline accumulation at these locations as 3.96 days and 4.54 days respectively.
In-water (dissolved) exposure	Moderate (50ppb instantaneous)	Analysis of potential for in-water exposure in the water column between 0 - 10m depth from the surface. The greatest probability of dissolved hydrocarbon exposure (15%) at the moderate threshold was predicted to overlap with several albatrosses and the common diving petrel foraging BIAs, the PBW foraging BIA, SRW migration BIA and the white shark known distribution area. There is a 2% probability of water column exposure in the Upwelling East of Eden KEF and 1% probability of overlap with State waters (Victoria). There is no probability of exposure indicated for marine national parks.

Table 7-42 Vessel collision FTA - MGO modelling output summary

Model parameter	Exposure value	Stochastic modelling (based on 100 annualised spill trajectories)
Sea surface exposure	Moderate (10g/m^2)	Maximum distance from release location is approximately 46km in a southwest direction. The zone of moderate exposure overlaps several albatrosses foraging BIAs, the common diving petrel and the short-tailed shearwater foraging BIAs, the PBW foraging BIA, SRW migration BIA and the white shark breeding BIA. There is a 1% probability of floating oil within the moderate threshold to reach the Upwelling East of Eden KEF, and the spill do not extend into State waters or marine parks at this threshold.
	High (50g/m^2)	Maximum distance from release location is approximately 19.1km in a northeast direction. There is a 69% probability that the zone of high exposure will overlap with several albatrosses and the common diving petrel foraging BIAs, the PBW foraging BIA, SRW migration BIA and the white shark known distribution area.

Model parameter	Exposure value	Stochastic modelling (based on 100 annualised spill trajectories)
Shoreline exposure	Moderate (100g/m^2)	The maximum length of the shoreline accumulation at moderate threshold is 2km. The highest predicted probabilities of moderate shoreline exposure were at Bega Valley (3%) and Montague Island (1%), with the minimum predicted time before shoreline accumulation at these locations as 9.42 days and 11.42 days respectively.
In-water (dissolved) exposure	Moderate (50ppb instantaneous)	Analysis of potential for in-water exposure in the water column between 0 - 10m depth from the surface. The greatest probability of dissolved hydrocarbon exposure (23%) at the moderate threshold was predicted to overlap with several albatrosses and the common diving petrel foraging BIAs, the PBW foraging BIA, SRW migration BIA and the white shark known distribution area. There is a 2% probability of water column exposure in the Upwelling East of Eden KEF, and there is no probability of exposure indicated for State waters or marine national parks.

Table 7-43 Vessel collision KFA - MGO modelling output summary

Model parameter	Exposure value	Stochastic modelling (based on 100 annualised spill trajectories)
Sea surface exposure	Moderate (10g/m^2)	Maximum distance from release location is approximately 48.9km in a southwest direction. The zone of moderate exposure overlaps several albatrosses foraging BIAs, the common diving petrel and the short-tailed shearwater foraging BIAs, the PBW foraging BIA, SRW migration BIA and the white shark known distribution area. Modelling results indicate no overlapping of floating oil at the moderate threshold with KEFs, marine national parks or State waters.
	High (50g/m^2)	Maximum distance from release location is approximately 16.6km in a southwest direction. There is a 78% probability that the zone of high exposure will overlap with several albatrosses foraging BIAs, the common diving petrel and the short-tailed shearwater foraging BIAs, the PBW foraging BIA, SRW migration BIA and the white shark known distribution area.
Shoreline exposure	Moderate (100g/m^2)	The maximum length of the shoreline accumulation at moderate threshold is 5km. There is a probability of moderate shoreline exposure at Montague Island (2%), with the minimum predicted time before shoreline accumulation at this location as 6.42 days.
In-water (dissolved) exposure	Moderate (50ppb instantaneous)	Analysis of potential for in-water exposure in the water column between 0 - 10m depth from the surface. The greatest probability of dissolved hydrocarbon exposure (17%) at the moderate threshold was predicted to overlap with several albatrosses foraging BIAs, the common diving petrel and short-tailed shearwater foraging BIAs, the PBW foraging BIA, SRW migration BIA and the white shark known distribution area.

Model parameter	Exposure value	Stochastic modelling (based on 100 annualised spill trajectories)
		There is a 1% probability of water column exposure in the Upwelling East of Eden KEF, and there is no probability of exposure indicated for State waters or marine national parks.

Table 7-44 Vessel collision FLA - MGO modelling output summary

Model parameter	Exposure value	Stochastic modelling (based on 100 annualised spill trajectories)
Sea surface exposure	Moderate ($10g/m^2$)	Maximum distance from release location is approximately 39.2km in a south-southwest direction. The zone of moderate exposure overlaps several albatrosses foraging BIAs, the common diving petrel and the short-tailed shearwater foraging BIAs, the PBW foraging BIA, SRW migration BIA and the white shark known distribution area. In addition, the Upwelling East of Eden KEF also overlaps with floating oil at the moderate threshold. On the other hand, modelling results indicate no overlapping of floating oil at the moderate threshold with marine national parks or State waters.
	High ($50g/m^2$)	Maximum distance from release location is approximately 18.5km in a south-southwest direction. There is a 67% probability that the zone of high exposure will overlap with several albatrosses and the common diving petrel foraging BIAs, the PBW foraging BIA, SRW migration BIA, the white shark known distribution area, and the Upwelling East of Eden KEF.
Shoreline exposure	Moderate ($100g/m^2$)	The maximum length of the shoreline accumulation at moderate threshold is 9km. There is a probability of moderate shoreline exposure at Bega Valley (3%), with the minimum predicted time before shoreline accumulation at this location as 10.32 days.
In-water (dissolved) exposure	Moderate (50ppb instantaneous)	Analysis of potential for in-water exposure in the water column between 0 - 10m depth from the surface. The greatest probability of dissolved hydrocarbon exposure (24%) at the moderate threshold was predicted to overlap with several albatrosses and the common diving petrel foraging BIAs, the PBW foraging BIA, SRW migration BIA and the white shark known distribution area. In the same way, there is a 24% probability of water column exposure in the Upwelling East of Eden KEF. Modelling results indicate there is no probability of exposure for State waters or marine national parks at the moderate threshold.

Other features from the five locations modelled that are outside of the mapped (moderately exposed) area that are within the EMBA are outlined in Table 7-45 to Table 7-49.

Table 7-45 DPA vessel collision MGO modelling output of other features outside the mapped area

Model parameter	Exposure value	Stochastic modelling (based on 100 annualised spill trajectories)
Surface exposure	Low ($1g/m^2$)	Zone of low exposure extends approximately 200km from release location in a predominately east-northeast direction. The zone of low exposure overlaps several albatrosses foraging BIAs, the common diving petrel and the short-tailed shearwater foraging BIAs, the PBW foraging BIA, SRW migration BIA and the white shark breeding BIA. In addition, there is an 8% probability of overlap with the Upwelling East of Eden KEF, a 2% and 1% probability of overlap with the Ninety Miles Beach and the Point Hicks Marine National Parks respectively, and a 6% probability of overlap with State waters (Victoria). Due to the fate and weathering process predicted for MGO, sea surface exposure (maximum residence) is estimated to be 2.46 days after the release.
Shoreline exposure	Low ($10g/m^2$)	The maximum length of the shoreline accumulation is 99km. The highest probability for shoreline exposure is at East Gippsland (58%) followed by Point Hicks (51%), with the minimum predicted time before shoreline accumulation at these locations as 3.17 days.
In-water (dissolved) exposure	Low (10ppb instantaneous)	Analysis of potential for in-water exposure in the water column between 0 - 10m depth from the surface. The greatest probability of dissolved hydrocarbon exposure (47%) at the low threshold was predicted to overlap with several albatrosses and the common diving petrel foraging BIAs, the PBW foraging BIA, SRW migration BIA and the white shark breeding BIA. Similarly, there is probability of water column exposure in the Upwelling East of Eden KEF (7%), the Point Hicks and Cape Howe Marine National Parks (2% and 1% respectively) and with State waters (4% for Victoria and 1% for New South Wales).
In-water (entrained) exposure	Low (10ppb instantaneous)	In-water entrained hydrocarbon at the low threshold extends along the southeastern Australian coast, from the coastal area near Cape Paterson, Victoria to the southeast of Ulladulla, New South Wales. Exposure to entrained hydrocarbons at the low threshold overlaps with several albatrosses foraging BIAs, the common diving petrel and the short-tailed shearwater foraging BIAs, the PBW foraging BIA, SRW migration and breeding BIAs and the white shark breeding BIA. Probability of entrained hydrocarbons contact with nearshore waters areas ranges from 1% at Pyramid Island and Eurobodalla to 49% at East Gippsland. Entrained hydrocarbons contact probability with the shorelines of various terrestrial national parks and reserves ranges from approximately 1% at Eurobodalla, Answer Island, Kanowna Island and Skull rock, to 53% at East Gippsland. Entrained hydrocarbon at the low threshold could also potentially overlap with other receptors, including the following: • Beagle and the East Gippsland Australian Marine Parks, with likelihoods of 13% and 4% respectively • Kent Group National Park, with a likelihood of 2% • Cape Howe, Ninety Mile Beach, Points Hick and Wilsons Promontory Marine National Parks, with likelihoods of 28%, 8%, 56% and 3% respectively

Model parameter	Exposure value	Stochastic modelling (based on 100 annualised spill trajectories)
		• Upwelling East of Eden (72%), Shelf rocky Reefs (7%), Canyons of the Eastern Continental Slope (2%) and Big Horseshoe Canyon (1%) • State waters in Victoria (57%), New South Wales (25%) and Tasmania (12%).

Table 7-46 WTA vessel collision MGO modelling output of other features outside the mapped area

Model parameter	Exposure value	Stochastic modelling (based on 100 annualised spill trajectories)
Surface exposure	Low (1g/m^2)	Zone of low exposure extends approximately 240km from release location in a predominately east-northeast direction. The zone of low exposure overlaps several albatrosses, petrels and shearwaters foraging BIAs, the PBW foraging BIA, SRW migration BIA and the white shark breeding BIA. In addition, there is a 36% probability of overlap with the Upwelling East of Eden KEF, a 1% probability of overlap with the Point Hicks Marine National Park, and a 1% probability of overlap with State waters (Victoria). Due to the fate and weathering process predicted for MGO, sea surface exposure (maximum residence) is estimated to be less than one day after the release.
Shoreline exposure	Low (10g/m^2)	The maximum length of the shoreline accumulation is 54km. The highest probability for shoreline exposure is at East Gippsland (41%) followed by Point Hicks (30%), with the minimum predicted time before shoreline accumulation at these locations as 3.21days and 3.41 days respectively.
In-water (dissolved) exposure	Low (10ppb instantaneous)	Analysis of potential for in-water exposure in the water column between 0 - 10m depth from the surface. The greatest probability of dissolved hydrocarbon exposure (55%) at the low threshold was predicted to overlap with several albatrosses and the common diving petrel foraging BIAs, the PBW foraging BIA, SRW migration BIA and the white shark known distribution area. Similarly, there is probability of water column exposure in the Upwelling East of Eden KEF (17%), the Point Hicks and Cape Howe Marine National Parks (4% and 2% respectively) and with State waters (5% for Victoria and 2% for New South Wales).
In-water (entrained) exposure	Low (10ppb instantaneous)	In-water entrained hydrocarbon at the low threshold extends along the southeastern Australian coast, from the coastal area near Wilsons Promontory in Victoria and the Kent Group islands, to the southeast of Ulladulla, New South Wales. Exposure to entrained hydrocarbons at the low threshold overlaps with several albatrosses and the common diving petrel foraging BIAs, the PBW foraging BIA, SRW migration BIA and the white shark known distribution area. Entrained hydrocarbons contact probability with nearshore waters areas ranges from 1% at Pyramid Island and Eurobodalla to 49% at East Gippsland. Entrained hydrocarbon at the low threshold could also potentially overlap with other receptors, including the following: • Beagle and the East Gippsland Australian Marine Parks, with likelihoods of 12% and 7% respectively • Kent Group national park (4%)

Model parameter	Exposure value	Stochastic modelling (based on 100 annualised spill trajectories)
		• Cape Howe and Point Hicks, with likelihoods of 38% and 61% respectively • Upwelling East of Eden (78%), Shelf rocky Reefs (7%), Big Horseshoe Canyon (4%) and Canyons of the Eastern Continental Slope (4%). • State waters in Victoria (64%), New South Wales (33%) and Tasmania (12%).

Table 7-47 FTA vessel collision MGO modelling output of other features outside the mapped area

Model parameter	Exposure value	Stochastic modelling (based on 100 annualised spill trajectories)
Surface exposure	Low (1g/m^2)	Zone of low exposure extends approximately 108km from release location in a predominately east-northeast direction. The zone of low exposure overlaps several albatrosses, petrels and the shearwater foraging BIAs, the PBW foraging BIA, SRW migration BIA and the white shark known distribution area. In addition, there is a 21% probability of overlap with the Upwelling East of Eden KEF. The spill does not extend into State waters or marine parks at this threshold. Due to the fate and weathering process predicted for MGO, sea surface exposure (maximum residence) is estimated to be less than one day after the release.
Shoreline exposure	Low (10g/m^2)	The maximum length of the shoreline accumulation is 31km. The highest probability for shoreline exposure is at Bega Valley (13%) followed by Montague Island (8%), with the minimum predicted time before shoreline accumulation at these locations as 6.58 days and 5.33 days respectively.
In-water (dissolved) exposure	Low (10ppb instantaneous)	Analysis of potential for in-water exposure in the water column between 0 - 10m depth from the surface. The greatest probability of dissolved hydrocarbon exposure (52%) at the low threshold was predicted to overlap with several albatrosses and the common diving petrel foraging BIAs, the PBW foraging BIA, SRW migration BIA and the white shark known distribution area. Similarly, there is probability of water column exposure in the Upwelling East of Eden KEF (19%), the Cape Howe Marine National Park (1%) and with State waters in Victoria and New South Wales (2% each).
In-water (entrained) exposure	Low (10ppb instantaneous)	In-water entrained hydrocarbon at the low threshold extends along the southeastern Australian coast, from the coastal area near the Kent Group islands and Flinders Island in Tasmania, to the south of Ulladulla, New South Wales. There is a 98% probability of exposure with several albatrosses and the Common Diving petrel foraging BIAs, the PBW foraging BIA, SRW migration BIA and the white shark known distribution area. The entrained hydrocarbons contact probability with nearshore water areas ranges from 2% at Craggy Island to 10% at Bega Valley. Entrained hydrocarbon at the low threshold could also potentially overlap with other receptors, including the following: • Beagle (5%), East Gippsland (5%) and Flinders (2%) Australian Marine Parks • Kent Group National Park (5%) • Cape Howe and Point Hicks, with likelihoods of 16% and 11% respectively

Model parameter	Exposure value	Stochastic modelling (based on 100 annualised spill trajectories)
		• Upwelling East of Eden (71%), Big Horseshoe Canyon (12%), Shelf rocky Reefs (3%) and Canyons of the Eastern Continental Slope (2%). • State waters in Victoria (18%), New South Wales (13%) and Tasmania (5%).

Table 7-48 KFA vessel collision MGO modelling output of other features outside the mapped area

Model parameter	Exposure value	Stochastic modelling (based on 100 annualised spill trajectories)
Surface exposure	Low (1g/m^2)	Zone of low exposure extends approximately 71km from release location in a predominately northeast direction. The zone of low exposure overlaps several albatrosses, petrels and the short-tailed shearwater foraging BIAs, the PBW foraging BIA, SRW migration BIA and the white shark known distribution area. In addition, there is a 4% probability of overlap with the Upwelling East of Eden KEF. The spill does not extend into State waters or marine parks at this threshold. Due to the fate and weathering process predicted for MGO, sea surface exposure (maximum residence) is estimated to be approximately 1.33 days after the release.
Shoreline exposure	Low (10g/m^2)	The maximum length of the shoreline accumulation is 45km. The highest probability for shoreline exposure is at Montague Island (7%) followed by Bega Valley (5%), with the minimum predicted time before shoreline accumulation at these locations as 6.04 days and 14.71 days respectively.
In-water (dissolved) exposure	Low (10ppb instantaneous)	Analysis of potential for in-water exposure in the water column between 0 - 10m depth from the surface. The greatest probability of dissolved hydrocarbon exposure (72%) at the low threshold was predicted to overlap with several albatrosses, common diving petrel and the short-tailed shearwater foraging BIAs, the PBW foraging BIA, SRW migration BIA and the white shark known distribution area. Similarly, there is probability of water column exposure in the Upwelling East of Eden KEF (8%), the Kent Group National Parks (1%) and with State waters (1% for Victoria, New South Wales and Tasmania).
In-water (entrained) exposure	Low (10ppb instantaneous)	In-water entrained hydrocarbon at the low threshold extends along the southeastern Australian coast, from the coastal area near Wilsons Promontory in Victoria and Flinders Island (Tasmania), to the north of Tuross Heads, New South Wales. Exposure to entrained hydrocarbons at the low threshold overlaps with several albatrosses, the common diving petrel and the short-tailed shearwater foraging BIAs, the PBW foraging BIA, SRW migration BIA and the white shark known distribution area. The entrained hydrocarbons contact probability with nearshore water areas ranges from 1% at Pyramid Island to 6% at Bega Valley, Craggy Island and Montague Island. Entrained hydrocarbon at the low threshold could also potentially overlap other receptors, including the following: • Beagle, East Gippsland and Flinders Australian Marine Parks, with likelihoods of 13%, 5% and 2% respectively

Model parameter	Exposure value	Stochastic modelling (based on 100 annualised spill trajectories)
		• Kent Group National Park (11%) • Cape Howe and Point Hicks, with likelihoods of 11% and 5% respectively • Upwelling East of Eden (49%), Big Horseshoe Canyon (11%) and Shelf Rocky Reefs (5%) • State waters in Victoria (11%), New South Wales (12%) and Tasmania (11%).

Table 7-49 FLA vessel collision MGO modelling output of other features outside the mapped area

Model parameter	Exposure value	Stochastic modelling (based on 100 annualised spill trajectories)
Surface exposure	Low ($1g/m^2$)	Zone of low exposure extends approximately 180km from release location in a predominately east-northeast direction. The zone of low exposure overlaps several albatrosses, petrels and the short-tailed shearwater foraging BIAs, the PBW foraging BIA, SRW migration BIA and the white shark known distribution area. In addition, there is a 100% probability of overlap with the Upwelling East of Eden KEF. The spill does not extend into State waters or marine parks at this threshold. Due to the fate and weathering process predicted for MGO, sea surface exposure (maximum residence) is estimated to be approximately 1.13 days after the release.
Shoreline exposure	Low ($10g/m^2$)	The maximum length of the shoreline accumulation is 41km. The highest probability for shoreline exposure is at Bega Valley (8%) followed by East Gippsland (7%), with the minimum predicted time before shoreline accumulation at these locations as 5.63 days and 7.92 days respectively.
In-water (dissolved) exposure	Low (10ppb instantaneous)	Analysis of potential for in-water exposure in the water column between 0 - 10m depth from the surface. The greatest probability of dissolved hydrocarbon exposure (68%) at the low threshold was predicted to overlap with several albatrosses and the common diving petrel foraging BIAs, the PBW foraging BIA, SRW migration BIA and the white shark known distribution area. Similarly, there is probability of water column exposure in the Upwelling East of Eden KEF (68%), the East Gippsland Marine Park (1%) and with State waters (1% for Victoria and New South Wales).
In-water (entrained) exposure	Low (10ppb instantaneous)	In-water entrained hydrocarbon at the low threshold extends along the southeastern Australian coast, from the coastal area near Kent Group islands and Flinders Island (Tasmania), to the north of Tuross Heads, New South Wales. There is a 96% probability of exposure with several albatrosses and the common diving petrel foraging BIAs, the PBW foraging BIA, SRW migration BIA and the white shark known distribution area. The entrained hydrocarbons contact probability with nearshore waters areas ranges from 1% at Pyramids Island and Inner Sister and Outer Sister islands to 11% at Bega Valley. Entrained hydrocarbon at the low threshold could also potentially overlap other receptors, including the following: • Flinders, Beagle, East Gippsland and Freycinet Australian Marine Parks, with likelihoods of 8%, 6%, 5% and 2% respectively • Kent Group National Park (4%)

Model parameter	Exposure value	Stochastic modelling (based on 100 annualised spill trajectories)
		• Cape Howe and Point Hicks, with likelihoods of 17% and 11% respectively • Upwelling East of Eden (96%), Big Horseshoe Canyon (18%), Shelf Rocky Reefs (4%), Canyons of the Eastern Continental Slope (3%) and the Seamounts South and East of Tasmania (1%) • State waters in Victoria (18%), New South Wales (14%) and Tasmania (6%).

7.8.3 Risks of loss of containment of refined oils

An accidental release of MGO has the potential to result in the following impacts:

- injury/mortality to fauna
- change in habitat
- change in water quality
- change to the function, interest or activities of other users.

Table 7-50 outlines the impact assessment for MGO spill.

Table 7-50 Impact Assessment

Receptor	Impact of MGO exposure	Exposure risk assessment
Benthic Habitats: Bare substrate, seagrass, subtidal rocky reef, macroalgae, corals	**Bare substrate:** While this receptor represents the 'bare sand' areas offshore, it does provide habitat for benthic invertebrates (both infauna and macroinvertebrates). Unconsolidated mixed and particulate sediments are likely to be dominated by burrowing fauna (e.g. annelid worms, molluscs, echinoderms, crustaceans, cnidarians). Many of the organisms that live in these habitats are habitat modifiers (e.g. through burrows or shell production), stabilising and/or oxygenating the sediments around them, and providing additional ecological niches for colonisation by other fauna – increasing local biodiversity. Deep water benthic invertebrates are usually protected from oiling by the buoyant nature of hydrocarbons, although the depth of oil penetration is dependent on turbulence in the water column. Hydrocarbons can also reach the benthos through the settlement of oiled particles such as faeces, dead plankton or inorganic sand particles (Jewett, Dean, Smith, & Blanchard, 1999). **Seagrass** The predominant benthic habitat in the Gippsland Basin is bare substrate. However, there are known areas of seagrass within Victorian waters, including Corner Inlet and Lakes Entrance. Seagrasses generally grow in sediments in intertidal and shallow subtidal waters where there is sufficient light and are common in sheltered coastal areas such as bays, lees of islands and fringing coastal reefs. As such, they may be exposed to both surface and subsurface hydrocarbons. Submerged vegetation in nearshore areas can be exposed to oil by direct contact (i.e. smothering) and by uptake by rhizomes through contaminated sediments. Exposure also can take place via uptake of hydrocarbons through plant membranes. In addition, seeds may be affected by contact with oil contained within sediments (NRDA, 2012).	**Bare substrate:** Based on the nature of the potential worst-case spill event (vessel collision), release of spilled oil would occur at or close to the water surface and dissolved hydrocarbon is expected to be present mostly within the upper water column section between 0 - 10m from the water surface. There is no expected direct exposure of the substrate to hydrocarbons where a spill event occurs towards deeper waters. **Seagrass** There is no predicted exposure above the moderate dissolved hydrocarbons and moderate surface (floating) oil thresholds at known seagrass areas such as Corner Inlet and Lakes Entrance. **Macroalgae** Suitable hard substrate for macroalgal beds occur in areas such as Gabo Island and within the Bemm River Estuary. In addition, the Giant Kelp Ecological Community is currently limited to Tasmanian coastal waters. There is no predicted exposure above the moderate surface (floating) oil, moderate dissolved hydrocarbons, or high entrained hydrocarbons thresholds at these locations, resulting in no impact to this receptor. **Corals** Corals are not a common habitat type in the Gippsland Basin, however solitary soft corals may occur where suitable hard substrate, such as rocky reef or man-made structures, is present. Benthic species which come into direct contact with hydrocarbons in the immediate vicinity of the release location may be affected, however their habitat is widespread throughout Bass Strait and population level impacts are not anticipated. Recent studies have shown that infaunal taxa are similar across the Bass Strait but the

Receptor	Impact of MGO exposure	Exposure risk assessment
	When seagrass leaves are exposed to petroleum oil, sub-lethal quantities of the soluble fraction can be incorporated into the tissue, causing a reduction in tolerance to other stress factors (Zieman, Macko, & Mills, 1984). The toxic components of petroleum oils are thought to be the polycyclic aromatic hydrocarbons (PAH), which are lipophilic and therefore able to pass through lipid membranes and tend to accumulate in the thylakoid membranes of chloroplasts (Ren, Huang, McConkey, Dixon, & Greenberg, 1994). As such, the susceptibility of seagrasses to hydrocarbon spills will depend largely on distribution. Deeper communities will be protected from oiling under all but the most extreme weather conditions. Shallow seagrasses are more likely to be affected by dispersed oil droplets or, in the case of emergent seagrasses, direct oiling. Theoretically, intertidal seagrass communities would be the most susceptible because the leaves and rhizomes may both be affected. **Subtidal rocky reefs** Nearshore and offshore subtidal reef habitats are dominated by seaweeds, mobile invertebrates and fish. Potential impacts to sensitive receptors related to these reefs discussed in the appropriate sections. It was observed that the release of large quantities of fuel oil during the grounding of the Iron Baron did not substantially affect populations of subtidal reef associated organisms (Edgar & Barrett, 1995). **Macroalgae** Macroalgae are generally limited to growing on intertidal and subtidal rocky substrata in shallow waters to 10m depth. As such, they may be exposed to subsurface and entrained and dissolved hydrocarbons, however are susceptible to surface hydrocarbon exposure more so in intertidal habitats as opposed to subtidal habitats. Reported toxic responses to oils have included a variety of physiological changes to enzyme systems, photosynthesis, respiration, and nucleic acid synthesis (Lewis & Pryor, 2013). Despite the well-established pool of literature on macroalgae exposure to petroleum oils, very few investigations	contribution of each to the assemblage varies Where hard substrate or points of attachment (facilities) are present, colonisation by epifauna occurs mostly in the form of sessile, invertebrate, filter feeders. The effects are expected to be localised and temporary. Invertebrates of value have been identified to include squid, crustaceans (rock lobster, crabs) and molluscs (scallops, abalone). Filter-feeding, sessile benthic invertebrates such as sponges, bryozoans, scallops, abalone and hydroids may be exposed to sub-lethal impacts, however population level impacts are considered unlikely. The consequence on benthic habitats is assessed as **Consequence Level III** (Potential Short Term, Minor Effects).

Receptor	Impact of MGO exposure	Exposure risk assessment
	have reported effects on species that are common in Australian waters (Lewis & Pryor, 2013). Smothering, fouling and asphyxiation are some of the physical effects that have been documented from oil contamination in marine plants (Blumer, 1971) (Cintron, Lugo, Marinez, Cintron, & Encarnacion, 1981). In macroalgae, oil can act as a physical barrier for the diffusion of CO_2 across cell walls (O'Brien & Dixon, 1976). The effect of hydrocarbons however is largely dependent on the degree of direct exposure and how much of the hydrocarbon adheres to algae, which will vary depending on the oils physical state and relative 'stickiness'. The morphological features of macroalgae, such as the presence of a mucilage layer or the presence of fine 'hairs' will influence the amount of hydrocarbon that will adhere to the algae. A review of field studies conducted after spill events (Connell, Miller, & Farrington, 1981) indicated a high degree of variability in the level of impact, but in all instances, the algae appeared to be able to recover rapidly from even very heavy oiling. The rapid recovery of algae was attributed to the fact that for most algae, new growth is produced from near the base of the plant while the distal parts (which would be exposed to the oil contamination) are continually lost. Other studies have indicated that oiled kelp beds had a 90% recovery within three to four years of impact, however full recovery to pre-spill diversity may not occur for long periods after the spill (French-McCay D. , 2004). Intertidal macroalgal beds are more prone to oil spills than subtidal beds because although the mucous coating prevents oil adherence, oil that is trapped in the upper canopy can increase the persistence of the oil, which impacts upon site-attached species. Additionally, when oil sticks to dry fronds on the shore, they can become overweight and break as a result of wave action (IPIECA, 1995). The toxicity of hydrocarbons to macroalgae varies for the different macroalgal life stages, with water-soluble hydrocarbons more toxic to macroalgae (O'Brien & Dixon, 1976). Toxic effect concentrations for hydrocarbons and algae have varied greatly among species and studies, ranging 2 - 10,000,000ppb (Lewis & Pryor, 2013). The sensitivity of	

Receptor	Impact of MGO exposure	Exposure risk assessment
	gametes, larva and zygote stages however have all proven more responsive to petroleum oil exposure than adult growth stages (Lewis & Pryor, 2013). Macrophytes, including macroalgae, require light to photosynthesise. So, in addition to the potential impacts from direct smothering or exposure to entrained and dissolved hydrocarbons, the presence of entrained hydrocarbon within the water column can affect light qualities and the ability of macrophytes to photosynthesise. Exposure to in-water hydrocarbons poses the greatest threat to sensitive macroalgal assemblages, specifically the Giant Kelp Forests TEC, that grow on rocky reefs from the seafloor ≥8m below sea level. This TEC is located within Tasmanian coastal waters. Substrate on which this TEC may occur is also found in Victoria along the west coast of Wilsons Promontory and from Sydenham Inlet to Gabo Island (DSEWPC, 2012a). **Corals** Corals are generally located in shallow and intertidal regions, where there is the potential for exposure to surface and in-water hydrocarbons. Experimental studies and field observations indicate all coral species are sensitive to the effects of oil, although there are considerable differences in the degree of tolerance between species. Differences in sensitivities may be due to the ease with which oil adheres to the coral structures, the degree of mucous production and self-cleaning, or simply different physiological tolerances. Direct contact of coral by hydrocarbons may impair respiration by symbiotic zooxanthellae due to smothering (IPIECA, 1992). Coral gametes or larvae in the surface layer where they are exposed to the slick may also be fouled (Epstein, Bak, & Rinkevich, 2000). Physical oiling of coral tissue can cause a decline in metabolic rate and may cause varying degrees of tissue decomposition and death (Negri & Heyward, 2000). Oil may also cling to certain types of sediment causing oil to sink to the seafloor, covering corals in oiled sediment. Where corals come into direct contact with surface exposures (i.e., intertidal/shallow areas), they are more susceptible due to physical	

Receptor	Impact of MGO exposure	Exposure risk assessment
	presence, than toxicity associated with dissolved oil components within the water column which, in some cases, may be more toxic than the floating surface slicks (Volkman, Miller, Revill, & Connell, 1994). A range of impacts is reported to result from toxicity including partial mortality of colonies, reduced growth rates, bleaching and reduced photosynthesis. Laboratory and field studies have demonstrated that branching corals appear to have a higher susceptibility to hydrocarbon exposure than massive corals or corals with large polyps. Chronic effects of oil exposure have been consistently noted in corals and, ultimately, can kill the entire colony. Chronic impacts include histological, biochemical, behavioural, reproductive and developmental effects. Field studies of chronically polluted areas and manipulative studies in which corals are artificially exposed to oil show that some coral species tolerate oil better than other species (NOAA, 2010). Reproductive stages of corals have been found to be more sensitive to oil toxicity. Fertilisation of coral species has been observed to be completely blocked in Acropora tenuis at HFO concentrations of 150ppb (Harrison, 1999), with significant reductions in fertilisation of *A.millepora* and *A. valida* at concentrations between 580 and 5800ppb, in addition to developmental abnormalities and reduced survival of coral larvae at similar concentrations. Lower concentrations of less than 100ppb crude oil were observed to inhibit larval metamorphosis in A. millepora (Negri & Heyward, 2000). Studies undertaken after the *Montara* incident included diver surveys to assess the status of Ashmore, Cartier and Seringapatam coral reefs. These found that other than a region-wide coral bleaching event caused by thermal stress (i.e. caused by sea water exceeding 32°C), the condition of the reefs was consistent with previous surveys, suggesting that any effects of hydrocarbons reaching these reefs was minor, transitory or sub-lethal and not detectable (Heyward, Moore, Radford, & Colquhoun, 2010). This is despite AMSA observations of surface slicks or sheen nears these shallow reefs during the spill (Heyward, Moore, Radford, & Colquhoun, 2010). Surveys in 2011 indicated that the corals exhibiting bleaching in 2010 had largely survived and recovered (Heyward, et al., 2012), indicating that	

Receptor	Impact of MGO exposure	Exposure risk assessment
	potential exposure to hydrocarbons while in an already stressed state did not have any impact on the healthy recovery of the coral.	
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 floating hydrocarbons, but plankton also has the potential to be directly affected by in-water hydrocarbons as a result of toxicity effects. Phytoplankton are typically not sensitive to the impacts of oil, though they do accumulate it rapidly (Hook, Batley, Holloway, Irving, & Ross, 2016) due to their small size and high surface area to volume ratio. Oil can affect the rate of photosynthesis and inhibit growth in phytoplankton, depending on the concentration range. For example, photosynthesis is stimulated by low concentrations of oil in the water column (10 – 30ppb) but becomes progressively inhibited above 50ppb. Conversely, photosynthesis can be stimulated below 100ppb for exposure to weathered oil (González, 2009). In addition, the potential for effects to photosynthesis (i.e. temporary suppression of primary production) from shading caused by continuous surface slicks may have implications for consumers of phytoplankton (Hook, Batley, Holloway, Irving, & Ross, 2016), though a prolonged surface coverage over an extensive area would be required. During the DWH oil spill it was observed that plankton and other surface material were found to be sinking at rates of more than 10 times the normal level. It was hypothesised that the weathered spilled oil catalysed clumping of organic particles (Schrope, 2013). It is currently unclear as to whether this effect was caused by the chemical characteristics of the weathered oil, or a bacterial effect. Zooplankton (microscopic animals such as rotifers, copepods and krill that feed on phytoplankton) are vulnerable to hydrocarbons (Hook, Batley, Holloway, Irving, & Ross, 2016). Water column organisms that come into	Plankton are likely to be exposed to floating (surface) oil above the moderate exposure threshold within a zone up to an approximately maximum distance of 49km in length from the spill location (at KFA) extending parallel to the Gippsland coastline. Maximum probability of exposure to levels above the moderate threshold for dissolved hydrocarbons is 35% within the Twofold Shelf Bioregion. There is also a low probability of exposure to moderate levels of dissolved hydrocarbons at the Upwelling East of Eden, where significant episodic phytoplankton blooms occur. This intermittent bloom events forms the basis to support a productive food chain, from zooplankton up to large marine fauna such as whales. Plankton are at their highest concentrations below surface waters (e.g. 60m water depth for phytoplankton during the day) and undertake a vertical migration which would likely reduce their potential for (and duration of) exposure to dissolved hydrocarbons in the surface layer of the water column. There is a low probability of an oil spill during Campaign #1 activities to significantly impact plankton. As a conservative approach, and recognising potential, however unlikely, effects on the food web, consequence on plankton is therefore predicted to be **Consequence Level III.**

Receptor	Impact of MGO exposure	Exposure risk assessment
	contact with oil risk exposure through ingestion, inhalation and dermal contact (NRDA, 2012), which can cause immediate mortality or declines in egg production and hatching rates along with a decline in swimming speeds (Hook, Batley, Holloway, Irving, & Ross, 2016). Plankton are generally abundant in the upper layers of the water column and is the basis of the marine food web, so an oil spill in any one location is unlikely to have long-lasting impacts on plankton populations at a regional level. Reproduction by survivors or dispersion from unaffected areas (via sea surface currents) is likely to rapidly replenish losses (Abbriano, et al., 2011). Plankton have life cycles based on rapid reproduction with levels of high productivity. It is also in the nature of plankton to be dispersive. Oil spill field observations show minimal or transient effects on plankton (Abbriano, et al., 2011). Once background water quality is re-established, plankton takes weeks to months to recover (ITOPF, 2011). Plankton found in open waters of the exposure zone is expected to be widely represented within waters of the wider Bass Strait region and generally across all waters in the southeastern offshore region, which aids in the re-establishment of communities.	
Fish, sharks and rays	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 PAH are generally regarded as the most toxic to fish. <u>Surface oil</u> 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	The potential MGO release locations are located both in open ocean waters and in waters closer to shore. The zone of moderate surface oil, moderate dissolved hydrocarbons and high entrained hydrocarbons is predicted to extend within these areas. Shallow inshore fish species including various syngnathids (seahorses, pipefish, pipehorses and seadragons) are less likely to be able to move away from surface or in-water oil and therefore may be exposed to elevated levels or for longer periods. However, their habitats are typically widespread, and any impacts are expected to be localised, and at individual organism levels rather than population levels. Although pelagic fish species may be exposed to moderate levels of dissolved oil, their mobile and transitory characteristics reduce the risk of prolonged exposure. Large-scale population level effects following a LOC on fish species, abundances or assemblage

Receptor	Impact of MGO exposure	Exposure risk assessment
	open waters (Volkman, et al., 2004). As a result, wide-ranging pelagic fish of the open ocean generally are not highly susceptible to impacts from surface hydrocarbons. Adult fish kills reported after oil spills occur mainly to shallow water, near-shore benthic species (Volkman, et al., 2004). Following the Deep-Water Horizon (DWH) incident, it was suggested that whale sharks may be vulnerable to oiling of gills if exposed to the oil. The tendency of whale sharks to feed close to surface waters will increase the likelihood of exposure to surface slicks and elevated hydrocarbon concentrations beneath slicks. In-water oil 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. 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.	composition would be unlikely due to the wide geographical distribution of many fish in Bass Strait and the potential for rapid re-colonisation. Deep water demersal fish are not expected to be impacted given the presence of in-water hydrocarbons in upper layers of the water column only. There is potential for exposure to moderate thresholds of dissolved hydrocarbons at the white shark foraging and reproduction BIAs and the SRW migration and reproduction BIAs, while the high exposure to entrained hydrocarbons will contact these same BIAs for white sharks, but also the grey nurse shark foraging and migration BIAs. Pelagic species of shark are at greatest risk of being exposed to oil following a LOC given their wide foraging areas and risks of consuming contaminated prey. Juvenile white sharks appear to aggregate in Corner Inlet and Ninety Mile Beach, and philopatric characteristics means they may return to the place of birth to breed even if habitats are contaminated. This species is widely distributed and thus unlikely to suffer ecologically important declines in abundance. The consequences to fish and sharks are assessed as **Consequence Level II,** taking into consideration the potential impacts to threatened species such as the white shark and the larval or juvenile stages of the Australian grayling.

Receptor	Impact of MGO exposure	Exposure risk assessment
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 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. 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). Surface oil 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. Experiments on physiological and clinical pathological effects of hydrocarbons on loggerhead turtles (approximately 15 - 18 months old) showed that the turtles' major physiological systems were adversely affected by both chronic and acute exposures (96 hour exposure to a 0.05cm 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). 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%	While marine turtles are known to occur in the area potentially exposed to MGO at moderate concentrations for surface and dissolved hydrocarbons, and high concentrations for entrained hydrocarbons, they do not reside or aggregate in significant numbers within the Gippsland Basin, and there are no recognised BIAs in the region. There is also probability of shoreline exposure at locations across the Gippsland coastline from a MGO release event. However, there are no turtle nesting beaches along the Gippsland coastline, therefore impacts to turtles from shoreline oiling is considered inconsequential. 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, rather than having an effect at a population level. The consequence on marine reptiles is considered to be **Consequence Level III.**

Receptor	Impact of MGO exposure	Exposure risk assessment
	of the live turtles found were oiled (NOAA, 2013). Of the captured animals, 88% of the live turtles were later released, suggesting that oiling does not inevitably lead to mortality. Shoreline oil 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, noting 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. 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).	
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, Holloway, Irving, & Ross, 2016). Species that raft together in large flocks on the sea surface are particularly at risk (ITOPF, 2011).	A number of 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, albatrosses and shearwaters throughout the EMBA. However, there are no breeding BIAs within the area potentially affected by MGO spill at levels within moderate threshold for surface and

Receptor	Impact of MGO exposure	Exposure risk assessment
	Surface oil Birds foraging at sea have the potential to directly interact with oil on the sea surface at a 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. For seabirds, direct contact with hydrocarbons can foul feathers, which may subsequently result in hypothermia due to a reduction in the ability of the bird to thermo-regulate and impair waterproofing. A bird suffering from cold, exhaustion and a loss of buoyancy may also dehydrate, drown or starve (DSEWPAC, 2011). Increased heat loss as a result of a loss of water-proofing results in an increased metabolism of food reserves in the body, which is not countered by a corresponding increase in food intake, may lead to emaciation (DSEWPAC, 2011). The greatest vulnerability in this case occurs when birds are feeding or resting at the sea surface (Peakall, Wells, & Mackay, 1987). In a review of 45 actual marine spills, there was no correlation between the numbers of bird deaths and the volume of the spill (Burger A. E., 1993). 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). Shoreline oil 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	dissolved hydrocarbons, and high thresholds for entrained hydrocarbons. Seabirds rafting, resting, diving or feeding at sea have the potential to come into contact with surface oil, ranging from moderate to high exposure. As such, acute or chronic toxicity impacts (death or long-term poor health) to seabirds are possible. Most species tend to forage on their own, though large feeding flocks will gather at rich or passing food sources. The maximum distance surface (floating) oil is predicted to reach at concentrations that may have biological impacts to birds is approximately 49km. Shorebirds are not likely to be significantly affected by in-water concentrations of hydrocarbons due to their limited exposure time in the water column. Because there is a mostly low probability for the zone of in-water moderate exposure (dissolved hydrocarbons) and high exposure (entrained hydrocarbons) to extend into nearshore waters, foraging shorebirds may be indirectly impacted by the loss of invertebrate prey. Foraging BIAs for several species of albatrosses, the common diving petrel, the white-faced storm petrel and the short-tailed shearwater overlap with shorelines along the Gippsland coast where oil is predicted to accumulate at concentrations within the moderate threshold. Shorebirds foraging in intertidal areas or along the high tide mark and splash zone, or nesting in coastal areas particularly close to the high-water mark are most at risk of exposure effect. The maximum length of shoreline predicted to be exposed to moderate thresholds of hydrocarbons is approximately 13km. The populations of both seabird and shorebird species have a wide geographic range, meaning that impacts to individuals at one location will not necessarily extend to populations at other un-impacted locations.

Receptor	Impact of MGO exposure	Exposure risk assessment
	tissues, including skin and eyes, as well as internal tissue irritation in their lungs and stomachs. 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/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. 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. The threshold thickness of oil that could impart a lethal dose to an individual wildlife species is 10µm (approximately 10g/m^2) (Engelhardt, Petroleum effects on marine mammals, 1983) (Clark, 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).	Given the extensive ocean foraging habitat available to species such as albatrosses and petrels, the relatively small, affected area, and the temporary nature of MGO at levels that can result in harmful exposures to birds on the sea surface makes it unlikely that a spill will limit their ability to forage for unaffected prey. When first released, MGO 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 be exposed to more significant potential 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. The Little penguin is not considered at risk globally, but some colonies are at risk on a regional scale (Cannell, et al., 2016) and declines in the status of this species have been reported from Tasmania (Stevenson & Woehler, 2007). The little penguin foraging BIA located around the Gabo Island area has a maximum probability of 2% of exposure to shoreline accumulation within the moderate threshold. No impact is expected to other little penguin foraging BIAs located within the Bass Strait from an unlikely MGO release event. Consequently, the potential consequence of risks to seabirds and shorebirds from a LOC are considered to be **Consequence Level II**, taking into consideration the particular vulnerability of shorebirds such as the hooded plover, which nest along the beaches and dunes of the Gippsland coast.
Marine mammals (pinnipeds)	Pinnipeds are directly at risk from impacts associated with the exposure to surface, shoreline and in-water hydrocarbons. Sea surface oil 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	Both the New Zealand fur seal (*Arctocephalus forsteri*) and the Australian fur seal (*Arctocephalus pusillus doriferus*) are listed marine species with habitat and breeding sites known to occur in areas potentially exposed to in-water and shoreline oil above harmful exposure thresholds. These areas are not identified as

Receptor	Impact of MGO exposure	Exposure risk assessment
	to surface every few minutes to breathe and regularly haul out on to beaches. Pinnipeds are also sensitive as they will stay near established colonies and haul-out areas, meaning they are less likely to practise avoidance behaviours. Seals, sea lions and fur seals have been observed swimming in oil slicks during a number of documented spills (Geraci & St. Aubin, 1988). 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). 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. <u>In-water oil</u> Ingested hydrocarbons can irritate or destroy epithelial cells that line the stomach and intestine, thereby affecting motility, digestion and absorption. 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	critical habitat and there are no identified BIAs for fur seals in the region. Both the Australian and New Zealand fur seals are at risk to surface oil while at sea and shoreline accumulated oil at haul out sites or rookeries. The direct effect to pups from exposure to shoreline oil at ≥100 g/m^2 could result in mortality, while indirect effects could be negative behavioural changes associated with the smell of shoreline oil or contamination of prey. The Australian fur seal is vulnerable to a population decline following a LOC because breeding locations are restricted to the islands of Bass Strait. It is predicted that Rag Island, a breeding location to which recently Australian fur seal expanded to, may be exposed to accumulated shoreline oil, and in-water oil at concentrations that are likely to be harmful. These species are particularly vulnerable to oil because oil is believed to adhere more readily to their coats. Such oiling can have significant effects to their function if foraging in areas with fresh oil. In addition, fur seals are known to aggregate around offshore oil and gas facilities where, in the event of a release, exposure to fresh oil would occur. The consequence of a LOC on pinnipeds is assessed as **Consequence Level II.**

Receptor	Impact of MGO exposure	Exposure risk assessment
	volumes, hydrocarbons may not be completely metabolized, which may result in death (Volkman, Miller, Revill, & Connell, 1994). Shoreline oil Breeding colonies (used to birth and nurse until pups are weaned) are particularly sensitive to hydrocarbon spills (Higgins & Gass, 1993). ITOPF (2011) report that 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. It is reported that most pinnipeds scratch themselves vigorously with their flippers and do not lick or groom themselves, so are less likely to ingest oil from skin surfaces (Geraci & St. Aubin, 1988). However, mothers trying to clean an oiled pup may ingest oil. The Long Term Environmental Impact and Recovery report for the Iron Barren oil spill concluded that "*The number of pups born at Tenth Island in 1995 was reduced when compared to previous years. There was a strong relationship between the productivity of the seal colonies and the proximity of the islands to the oil spill wherein the islands close to the spill showed reduced pup production and those islands more distant to the oil spill did not*" (Tasmanian SMPC, 1999). 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). Australian sea lions are endemic to Australia, found only in South Australia and Western Australia (CoA, 2013). Australian sea-lions have 'naturally poor recovery abilities' due to unusual reproductive biology and life history (CoA, 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	

Receptor	Impact of MGO exposure	Exposure risk assessment
Marine mammals (cetaceans)	Whales and dolphins can be exposed to the chemicals in oil through: • internal exposure by consuming oil or contaminated prey • inhaling liquid oil droplets and/or 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). <u>Surface oil</u> Unlike with pinnipeds, oil would not be expected to adhere well to the surface of cetacean skin due to the lack of hairs and the frequent sloughing of skin cells (Engelhardt, 1983) (Helm, et al., 2015). In addition, oil should not readily penetrate cetacean skin due to tight intercellular bridges and thick epidermis (O'Hara & O'Shea, 2001). However, photographs of dolphins with oil on their bodies after the DWH oil spill showed that oil can adhere to and persist on cetacean skin, and contrary to suggestions from previous studies, direct contact with oil and resultant exposure to toxic compounds is of concern (Aichinger Dias, et al., 2017). Cetaceans can be exposed to oil through direct contact with the eyes, mouth (ingestion), and airways (inhalation), potentially leading to inflammation and lung congestion (Geraci & St. Aubin, 1988). Helm et al. (2015) suggested that inhalation of toxic compounds associated with fresh oil was of greater concern than absorption through the skin and ingestion. The inhalation of oil droplets, vapours and fumes is a distinct possibility if whales or dolphins surface in slicks to breathe. Exposure to hydrocarbons in this way could damage mucous membranes, damage airways or even cause death. Cetaceans may incidentally draw seawater and floating oil, into their lungs by breathing in splashed droplets or liquid that has collected near the blowhole just prior to inhalation. Aspiration of liquid oil can cause physical injuries to the respiratory tract by irritating tissues/membranes and can also lead to absorption of toxicants into the blood, as in inhalation exposure (Takeshita, et al., 2017). French-McCay (2016) proposed exposure to oil	Several threatened, migratory and/or listed cetacean species may traverse the spill plume. Foraging BIA for the PBW and the migration BIA for the SRW are likely to be exposed to surface and in-water concentrations above the moderate exposure threshold for floating oil and dissolved hydrocarbons, and high threshold for entrained hydrocarbons. In addition, there is a probability of exposure of the SRW reproduction BIA to high thresholds of entrained hydrocarbons The foraging BIA for the Humpback whale and breeding BIA for the Indo-Pacific bottlenose dolphin (which extends northwards into New South Wales from the Victorian border) have a low probability to overlap the zone of moderate dissolved hydrocarbon (maximum 5%) and the zone of high entrained hydrocarbon (maximum 7%). It is plausible that individual whales could encounter surface oil above the moderate to high exposure threshold in the immediate vicinity of the release location, but the release would need to coincide with pod migration or foraging for a greater number of individuals to be present in the plume. Sightings of blue whales in the Gippsland Basin are reasonably rare (Bannister et al., 1996). It is difficult to predict with certainty if a spill would lead to levels of mortality or reproductive depression that would manifest in terms of a population-level response. The highly mobile and transitory nature of cetacean species in Bass Strait means that exposure to moderate to high levels of surface oil (in the vicinity of the release location) or moderate levels of in-water hydrocarbon is not anticipated to result in long term population viability effects. In addition, a release of MGO is expected to be of a short to medium duration. Nevertheless, taking into account that the populations of some whale species remain small relative to pre-whaling days and are thought to have a multi-decadal recovery time, mortality of even a small number of adults and or calves as result of oiling could inhibit or retard species recovery. Also, considering the sensitivity of species potentially

Receptor	Impact of MGO exposure	Exposure risk assessment
	concentrations of 10g/m^2 could result in mortality to marine mammals (French-McCay D. , 2016). Evidence suggests that many cetacean species are unlikely to detect and avoid spilled oil (Matkin et al. 2008). There are numerous examples where cetaceans have appeared to incidentally come into contact with oil and/or not demonstrated any obvious avoidance behaviour. Following the Exxon *Valdez* oil spill, Matkin et al. (2008) reported killer whales in slicks of oil as early as 24 hours after the spill, and evidence presented by Aichinger Dias et al. (2017) showed that following the DWH oil spill cetaceans in the GoM came into direct contact with both oil and sheen by swimming through them. Although in the GoM it was observed that cetaceans were able to detect the thick and dark-coloured patches of oil, detection of the lighter substances may have been more difficult. In-water oil The physical impacts from ingested hydrocarbon with subsequent lethal or sub-lethal impacts are applicable to both dissolved and entrained oil. However, the susceptibility of cetaceans varies with feeding habits. Baleen whales (such as blue, SRW and humpback whales) 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 (e.g. >96 hours) that would lead to chronic effects. Note also, many marine mammals appear to have the necessary liver enzymes to metabolise hydrocarbons and excrete them as polar derivatives (Ball & Truskewycz, 2013). Ingestion of oil may however result in acute nausea and vomiting and aspiration of oily vomitus into the lungs. Research conducted in the GoM linked aspiration pneumonia, lung abscesses, and pulmonary infections in dolphins to exposure to DWH oil (Venn-Watson et al., 2015a cited in Takeshita et al., 2017).	exposed, which include a number of marine mammals that are listed as threatened, the consequence of an MGO spill on marine mammals is assessed as **Consequence Level II.**

Receptor	Impact of MGO exposure	Exposure risk assessment
	Some whales, particularly those with coastal migration and reproduction, display strong site fidelity to specific resting, breeding and feeding habitats, as well as to their migratory paths and this may override any tendency for cetaceans to avoid the noxious presence of hydrocarbons. The SRW exhibits varying degrees of site fidelity, with the majority of females and calves returning to the same birthing location, while some also travel long distances between breeding grounds within a season (DCCEEW, 2024). If spilled oil reaches these biologically important habitats, the pollution may disrupt natural behaviours, displace animals, reduce foraging or reproductive success rates and increase mortality. It was concluded that the range of adverse health effects and increased mortality/reproductive failure observed in cetacean populations throughout the GoM since the DWH oil spill are consistent with the range of exposure scenarios (Takeshita, et al., 2017). If sufficiently high numbers of animals are impacted, the greater population may experience reduced recovery and survival rates. The restitution time for cetaceans affected at a population level is assumed to be long term, i.e. 40 years, based on consensus on recovery times for marine mammals following the DWH incident (Bock, et al., 2018).	
Coastal environment– Sandy shoreline, inter-tidal flats, rocky shoreline, mangroves and saltmarsh	**Sandy shorelines and inter-tidal flats** 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). Depth of penetration in sandy sediment is influenced by:	There are different types of shorelines found along the Gippsland and southern New South Wales coast and offshore islands, however this coastline is dominated by wide sandy beaches with intermittent rocky shores, and salt marshes and isolated mangroves within tidal estuaries, coastal lakes and bays. Modelling indicates that locations closer to shore will result in higher shoreline length exposure, with a maximum length of shoreline exposed to oil at the moderate and high thresholds of 13km and 3km respectively. The shoreline loadings may result in acute toxicity, and mortality of many invertebrate communities, especially for light oil such as MGO which will easily penetrate into sandy sediments. However, tidal action is expected to lead to rapid weathering of any hydrocarbons in the intertidal area and in rocky shorelines, and the populations of

Receptor	Impact of MGO exposure	Exposure risk assessment
	• 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. A 100g/m^2 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 100g/m^2 oil concentration would be enough to coat an animal and likely impact its survival and reproductive capacity (French-McCay D. , 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. Following the *Sea Empress* spill (in west Wales, 1996) many amphipods (sandhoppers), cockles and razor shells were killed. There were mass strandings on many beaches of both intertidal species (such as cockles) and shallow sub-tidal species. Similar mass strandings occurred after the Amoco *Cadiz* spill (in Brittany, France, 1978) (IPIECA, 1999). Following the *Sea Empress* spill, populations of mud snails recovered within a few months, but some amphipod populations had not returned to normal after one year. Opportunists such as some species of worm may actually show a dramatic short-term increase following an oil spill (IPIECA, 1999). In March 2014, small volumes of crude oil from an unidentified source (confirmed to not be offshore oil and gas production facilities) washed up along a 7km section of	these communities would be likely to rapidly recover. Impacts on intertidal communities are typically short term unless acute exposure to fresh product causes high mortality. Mangroves are highly productive habitats, serve as nursery habitat, and support a great diversity of plants and animals. Saltmarshes are important benthic primary producers and provide habitat for other species, thus the loss of salt marshes could have long-lasting indirect effects on other organisms (EPA, 2016). In Victoria, mangroves are known to occur within sheltered bays or inlets such as Lakes Entrance and Corner Inlet. Similarly, saltmarshes are also known to occur near Corner Inlet, Lakes Entrance and towards the west coast of Wilsons Promontory. Based on the modelling results, these areas have a low probability of exposure to moderate concentrations of oil for shoreline accumulation and in-water hydrocarbons. The effect of a LOC on individual shorelines will depend on the type of shoreline, aspect and whether they are high or low energy shores. Shoreline recovery studies link restitution times to oil type, climate and shoreline type, and results range depending on the receptors monitored and level of clean up. As a result, the consequence of MGO accumulating on coastal environments is assessed as **Consequence Level II.**

Receptor	Impact of MGO exposure	Exposure risk assessment
	sandy beach on the Victorian Gippsland coast as small (a few millimetres thick) granular balls (Gippsland Times, 2014). AMSA (2014) reported that no impacts were observed over the course of two months following the incident. As a result of the DWH spill, oil washed up on sandy beaches of the Alabama coastline. The natural movement of sand and water through the beach system continually transformed and re-distributed oil within the beach system, and 18 months after the event, mobile remnant oil remained in various states of weathering buried at different depths in the beaches (Hayworth, Clement, & Valentine, 2011). There is also evidence that submerged oil mats exist just offshore of the Alabama beaches (ranging in thickness from a few millimetres to several centimetres), which has resulted in the regular washing up of tar balls onto sandy beaches. These submerged oil mats may serve as long-term sources of remnant oil to the beach ecosystem (Hayworth, Clement, & Valentine, 2011). Long-term changes to the beach ecosystem as a result of stranded oil are unknown. Other results from beach sampling undertaken at Dauphin Island, Alabama, in May (pre-impact) and September 2011 (post-impact) found a large shift in the diversity and abundance of microbial species (e.g. nematodes, annelids, arthropods, polychaetes, protists, fungi, algae and bacteria). Post-spill, sampling indicated that species composition was almost exclusively dominated by a few species of fungi. DNA analyses revealed that the before and after communities at the same sites weren't closely related to each other (Bik, Halanych, Sharma, & Thomas, 2012). Similar studies found that oil deposited on the beaches caused a shift in the community structure toward a hydrocarbonoclastic consortium (petroleum hydrocarbon degrading microorganisms) (Lamendella, et al., 2014). **Rocky shorelines** Rocky shores encompass a wide variety of habitats. Exposure to the sun and wave energy are key factors in determining the types of plants and animals that inhabit the rocky shores. The persistence of oil is largely governed by the same forces (IOGP, 2016). Rock surfaces exposed to strong wave action are typically dominated by barnacles and limpets that are firmly attached	

Receptor	Impact of MGO exposure	Exposure risk assessment
	and if oil strands on those surfaces it may result in mortality of the affected animals but is unlikely to persist. Sheltered rocky shores in estuaries or inlets are typically dominated by macroalgae (seaweed) with various invertebrates living on or under the algae. Oil deposited in these habitats may not be washed off so quickly and recovery from impacts may take longer. **Mangroves and salt marshes** Mangroves grow in intertidal mud and sand, with specially adapted aerial roots (pneumatophores) that provide for gas exchange during low tide (CoA, 2016). The effects of surface hydrocarbons on mangroves include damage by smothering of lenticels (mangrove breathing pores) on pneumatophores or aerial prop roots, or the lower trunk; or by the loss of leaves (defoliation) due to chemical burning. It is also known that mangroves take up hydrocarbons from contact with leaves, roots or sediments, and it is suspected that this uptake causes defoliation through leaf damage and tree death (Wardrop, Butler, & Johnson, 1987). In-water entrained and dissolved hydrocarbons may affect mangrove communities directly through root uptake of toxic contaminants or indirectly due to effects on benthic infauna leading to reduced rates of bioturbation and subsequent oxygen stress on the plants root systems. Observed thresholds for effects are likely to vary depending on the health of the system, the hydrocarbon spilled and the environmental conditions; however, observations (Lin & Mendelssohn, 1996) demonstrated that more than 1kg/m^2 of oil during the growing season would be required to affect salt marsh or mangrove plants significantly. Subtropical and temperate coastal salt marsh (otherwise referred to as coastal salt marsh) is listed as a TEC. This TEC is usually associated with sandy/muddy shores of estuaries and embayments along low wave energy coastlines. The physical environment for the TEC is coastal areas under regular or intermittent tidal influence, with salt marsh being the key vegetation type – that being salt-tolerant grasses, herbs, sedges, rushes and shrubs generally less than 50cm high (DSEWPC, 2013a). Salt marshes occur in sheltered conditions, commonly in the strandline zone, and the vegetation offers a large surface area for oil absorption and trapping. Additionally,	

Receptor	Impact of MGO exposure	Exposure risk assessment
	many salt marsh grasses, which can be dominant over large areas, have corrugated leaf surfaces which increase their holding capacity. Evidence from case histories and experiments shows that the damage resulting from oiling is very variable – as are recovery times. Lighter, more penetrating oils are more likely to cause acute toxic damage than heavy or weathered oils. In areas of light to moderate oiling where oil is mainly on perennial vegetation with little penetration of sediment, the shoots of the plants may be killed, but recovery can take place from the underground systems. Good recovery commonly occurs within one to two years. Where thick deposits of viscous oil or mousse accumulate on the marsh surface, vegetation is likely to be killed by smothering and recovery delayed because persistent deposits inhibit recolonisation.	
Wetlands	Most wetlands of international importance i.e. Ramsar wetlands have a reduced risk of receiving oil following a LOC event at a release location outside these areas because they have no, or very narrow and/or seasonal, connections to the sea. If surface oil was to enter a Ramsar site, the level of effect would be dependent on the type of receptors exposed to oil and the proportion of the site exposed to oil as well as the nature of the oil (fresh versus weathered). Sensitive receptors found in Ramsar sites connected to the sea could include mangroves, salt marshes, fish, shorebirds and seabirds. The consequences of oil exposure to these specific receptors have been described individually in the Sections above.	Floating oil and in-water (dissolved) hydrocarbons at or above the moderate threshold are not predicted to reach the Gippsland Lakes or the Corner Inlet Ramsar sites. There is a potential of exposure to low thresholds (10ppb) of in-water (entrained) hydrocarbons in the Corner Inlet Ramsar wetland. Considering the higher sensitivity of the receptor (Ramsar site), the consequence is assessed as **Consequence Level II.**
National parks and reserves	Potential impacts to sensitive receptors related to the shorelines of the terrestrial parks, such as coastal habitats and birds, and the waters of the marine parks, such as benthic habitats, fish, cetaceans and pinnipeds, are discussed in the appropriate sections above. Impacts on tourism and recreation from degraded aesthetic values and water quality or restricted access to the coast and recreational locales within the parks due to clean up efforts are discussed below	There is the potential for exposure above the high threshold for in-water (entrained) hydrocarbons at Point Hicks and Cape Howe. Probability of exposure remains low, with a maximum 11% and 7% respectively. Taking into consideration the potential impacts to the receptors within the terrestrial and marine parks and reserves, the overall consequence is assessed as **Consequence Level II.**

Receptor	Impact of MGO exposure	Exposure risk assessment
AMPs	AMPs vary in their conservation objectives and specific values, but all are designed to conserve fauna, habitats and water quality over the long term. AMPs support populations of threatened seabird, marine mammal and fish species. A temporary deterioration of water quality could have negative effects on organisms, such as plankton, seabirds, marine mammals and fisheries resources which in turn affect the values of those parks. These impacts are discussed individually within other Sections of this table.	There is a 1% probability of exposure of the Beagle AMP to a high threshold of in-water (entrained) hydrocarbons. Taking into consideration the potential impacts to the receptors within the AMP and the sensitivity of the area, the overall consequence is assessed as **Consequence Level II.**
KEFs	KEFs are underwater features and hence are not at direct risk from floating surface oil or shoreline accumulated oil. Deepwater geological features, such as the Big Horseshoe Canyon and canyons on the Eastern Continental Slope will not be impacted directly by oil. However, biological values associated with KEFs such as the Upwelling East of Eden and shelf rocky reefs may be at risk from oil. Potential impacts to sensitive receptors related to the KEF Upwelling East of Eden such as plankton and cetaceans are discussed in the appropriate sections above.	Based on modelling results, exposure to concentrations at or above the moderate floating oil and the in-water (dissolved) thresholds intersects only the KEF Upwelling East of Eden. While a spill would not affect the upwelling itself, if the spill occurs at the time of an upwelling event, it may result in plankton, krill and other fauna being exposed to in-water phase hydrocarbons. Large marine mammals feeding at this time may suffer from reduced availability of prey however these impacts are expected to be localised and temporary. The consequence is assessed as **Consequence Level III.**
Cultural – Indigenous and historic wrecks	Visible sheen or oil stranded on the shoreline has the potential to reduce the visual or cultural (including activities such as camping, rituals and ceremonies) amenity of cultural heritage sites or indigenous protected areas. Impacts from oil exposure are unlikely for submerged shipwrecks.	Depending on the location of the release, there is a probability that MGO release will result in accumulation at shoreline or exposure to floating oil within the low-level thresholds in the vicinity of the Gunaikurnai Native Title Determination Area. However, the effect from oil spill is expected to be of a short to medium duration. The consequence is considered **Consequence Level III.**
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 impacts to commercial fishing from a public perception perspective, however, may be more significant and longer term than the spill itself.	Several commercial fisheries may operate within the area potentially exposed to an MGO plume and a temporary fisheries closure may be put in place. 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.

Receptor	Impact of MGO exposure	Exposure risk assessment
	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 oil contaminants in fish and crustacean and mollusc tissues could pose a significant potential adverse risk to human health, 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. Impacts to fish stocks have the potential for reduction in profits for commercial fisheries. Detectable tainting of fish flesh occurs 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). 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, red emperor, saddletail snapper and yellow spotted rockcod being the key species fished (PTTEP, 2013). As a precautionary measure, the Western Australia Department of Fisheries advised the commercial fishing fleet to avoid fishing in oil-affected waters. Testing of fish caught in areas of visible oil slick (November 2009) found that there were no detectable petroleum hydrocarbons in fish muscle samples, suggesting fish were safe for human consumption. In the short-term, fish had metabolized petroleum hydrocarbons. Limited ill effects were detected in a small number of individual fish only (PTTEP, 2013). No consistent effects of exposure on fish health could be detected within two weeks following the end of the well release. Follow up sampling in areas affected by the spill during 2010 and 2011 (PTTEP, 2013) found negligible ongoing environmental impacts from the spill. Since testing began in the month after the DWH blowout in the GoM (2010), levels of oil contamination residue in seafood consistently tested 100 to 1000 times lower than safety thresholds established by the USA FDA, and every sample tested was found to be far below the USA FDA's safety threshold for dispersant compounds (BP, 2015). The USA FDA testing of	In addition, oil may foul the hulls of fishing vessels and associated equipment, such as gill nets, resulting in additional costs from cleaning and maintenance, or replacement of affected tools and equipment. The 2023 fishery status reports (Butler, 2024.) present information on maximum area fished and fishing intensity from Commonwealth fisheries. Based on the data provided in this report, the fisheries most active during 2022 in the area potentially exposed to hydrocarbons from an MGO spill, and therefore potentially most at risk of socioeconomic impact from reduced market confidence, are the SESSF, especially the CTS (for both the otter-board trawl and the Danish-seine). The Victorian Scallop Fishery extends 20nm 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. However, there is limited data publicly available on the location and extent of this fishery and other fisheries that operate within Victorian waters. A temporary fisheries closure and the flow on losses from the lack of income derived from these fisheries based on reduced market confidence, together with the potential for extended media coverage (potentially greater than three months) has the possibility of exceeding medium community disruption (>100 – 1000 people) such as reduced employment (in fisheries service industries and the seafood supply chain). The flow on losses from the lack of income derived from these fisheries are likely to have short-term socio-economic consequences in local communities or the region, such as reduced employment in fisheries service industries which may include, but are not limited to tackle and bait supplies, fuel, marine mechanical services and accommodation among others. The

Receptor	Impact of MGO exposure	Exposure risk assessment
	oysters found oil contamination residues to be 10 - 100 times below safety thresholds (BP, 2015). Sampling data shows that post-spill fish populations in the GoM since 2011 were generally consistent with pre-spill ranges and for many shellfish species, commercial landings in the GoM in 2011 were comparable to pre-spill levels. In 2012, shrimp (prawn) and blue crab landings were within 2.0% of 2007 - 2009 landings. Recreational fishing harvests in 2011, 2012 and 2013 exceeded landings from 2007 - 2009 (BP, 2015).	potential economic impacts to commercial fisheries from a LOC are considered to be **Consequence Level I.**
Recreation and tourism	Refer to sections on fish, cetaceans, birds, benthic and coastal habitats, wetlands, national parks and reserves, and AMPs described above.	Tourism and recreation are linked to the presence of marine fauna (e.g. whales), particular habitats and locations for swimming, leisure (such as sandy beaches) or recreational fishing. Depending on the location of the MGO release, the modelling predicts a high probability (maximum of 83%) of floating oil at concentrations within the low threshold (1g/m^2). Short to medium-term impacts to nature-based tourism and other human uses of beaches (and nearshore waters) may occur as a result of temporary beach closures including wider impacts due to perceptions of a polluted environment that is not desirable to visit. With respect to human health, post-*Macondo* oil spill (April 2010) studies in December found of 17,000 water samples, none exceeded US Environmental Protection Agency benchmarks for protection of human health (OSAT, 2011) and a year later residual oil in nearshore and sandy shoreline areas was highly weathered and concentrations of constituents of concern were below levels of concern for human health (OSAT, 2011). Alaska's tourism economy took approximately two years to recover from the Exxon Valdez (BOEM, 2017). The Eastern Research Group (2014) reported that while the DWH spill had had a significant impact on several areas of tourism in the short term and had wide-ranging impacts across the GoM, the tourism economy has rebounded to pre-spill levels within four years.

Receptor	Impact of MGO exposure	Exposure risk assessment
		The extent of potential impacts to tourism and recreation depends on when and where the spill occurs, and the total volume of oil released during the event. Considering the range of activities and locations, and the modelled impacts of the spill, the potential for reduced amenity of areas used by coastal tourists and recreational visitors, temporary health implications and possible closures, the consequence is considered as **Consequence Level I.**

7.8.4 Residual risk ranking

The impact assessment described in Section 7.8.3 present different consequence level results that are specific to the type of receptor assessed. To determine the residual risk ranking, the highest consequence level assessed (assigned to wetlands, AMPs, commercial fisheries and the recreation and tourism receptors) will be considered for the risk ranking definition, as presented in Table 7-51.

Table 7-51 Residual risk ranking outcome

Consequence Level	Likelihood Category	Risk Category
I	E	3

7.8.5 Controls

- **CM9:** Class certification**.**
- **CM12:** Oil Pollution Emergency Plan**.**
- **CM20:** Shipboard Marine Pollution Emergency Plan**.**
- **CM27:** Vessel approach procedure**.**
- **CM28:** Activity specific operating guidelines/Critical Activity Mode Procedures**.**
- **CM29:** Vessel dynamic positioning system**.**
- **CM34:** NOPSEMA accepted Safety Case**.**
- **CM35:** Operational and Scientific Monitoring Plan**.**
- **CM51:** Utilisation of idle fishing vessels**.**
- **CM52:** Communication with fisheries.

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

7.8.6 Demonstration of As Low As Reasonably Practicable

Table 7-52 Decision Context and justification

Decision Context C
Vessel operations for decommissioning of offshore facilities and infrastructure is common and well-established practice worldwide. These activities are well regulated with associated control measures, well understood, and are implemented across the offshore industry. Although there is the potential for impacts of **Consequence Level I** from a LOC of MGO from a vessel, spill source volumes are restricted in size and limited to the volume of fuel that is inside the affected/ruptured fuel tank, the environmental impact of MGO is well understood, a credible spill volume has been modelled and a very conservative threshold has been selected to define the EMBA. As a result, there is limited uncertainty associated with this event. 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. However, a precautionary approach is required due to the potential consequence level of a spill event. Esso believes ALARP Decision Context B should apply.

Table 7-53 Good practice controls

Good practice	Adopted	Control	Rationale
Class certificate – oil pollution	✓	**CM9:** Class certification	Under MARPOL – Annex I requirements, any ship of 400 gross tonnage or above is required to hold an International Oil Pollution Prevention Certificate
OPEP	✓	**CM12:** Oil Pollution Emergency Plan	Under the Environment Regulations, NOPSEMA require that the petroleum activity have an accepted OPEP in place before commencing the

Good practice	Adopted	Control	Rationale
			activity. In the event of a vessel collision the OPEP will be implemented.
SOPEP	✓	**CM20:** Shipboard Marine Pollution Emergency Plan	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. 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. MARPOL Annex I Regulations for the Prevention of Pollution by Oil specifically require that a SMPEP (or equivalent, according to class) is in place. To prepare for a spill event, the SMPEP details: • 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 test. In the event of a spill, the SMPEP details: • reporting requirements and a list of authorities to be contacted • activities to be undertaken to control the release • procedures for coordinating with local authorities.
Support/supply vessel approach protocols	✓	**CM27:** Vessel approach procedure	Procedures will be clearly defined to manage the very low approach speeds for approaching the platforms to be removed by the HLV on DP.
Structured operational limits criteria for DP operations	✓	**CM28:** Activity specific operating guidelines/Critical Activity Mode Procedures	The application of ASOG/Critical Activity Mode risk management tools is industry best practice for DP operations. Critical Activity Mode describes how to configure the vessels DP system and ASOG sets out the operational, environmental and equipment performance limits considered necessary for safe DP operations while carrying out a specific activity.

Good practice	Adopted	Control	Rationale
DP class (2 and 3) for CSVs and HLV only.	✓	**CM29:** Vessel dynamic positioning system	For CSVs and the HLV only: • DP Class 2/3 (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 • CSVs operating during Campaign #1 may be DP2 or DP3. The HLV is a DP3 class vessel, further reducing the possibility of system failure due to a single fault.
Implementation of a safety management system that controls risks arising from major incidents and achieves safe operation of the facility* **For Campaign #1 purposes, facility refers to the HLV (Pioneering Spirit)*	✓	**CM34:** NOPSEMA accepted Safety Case	NOPSEMA requires that the facility (namely the *Pioneering Spirit* HLV) has an accepted Safety Case in place before commencing the activity. A Safety Case for the *Pioneering Spirit* will be sent to NOPSEMA for assessment. HLV operations will only be allowed if the Safety Case has been accepted by the regulator. The key elements of the Safety Case that function to reduce the likelihood of LOC include: • training • qualifications • maintenance (of HLV equipment) • Management of Change (MOC) • emergency response • performance monitoring.
OSMP	✓	**CM35:** Operational and Scientific Monitoring Plan	Esso's OSMP details the arrangements and capability in place for: • operational monitoring of a hydrocarbon spill to inform response activities • scientific monitoring of environmental impacts of the spill and response activities. Operational monitoring will allow adequate information to be provided to aid decision making to ensure response activities are timely, safe, and appropriate. Scientific monitoring will identify if potentially longer-term remediation activities are required.

Table 7-54 Engineering risk assessment

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
Do not undertake the activity.	Eliminates spill potential	This is not a feasible option. Esso is required to decommission	Not adopted.

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
Vessel fuel tanks layout for the *Pioneering Spirit*	The *Pioneering Spirit* HLV is the largest vessel to be used as part of Campaign #1. The location of fuel tanks within the *Pioneering Spirit* HLV influence the likelihood of tank rupture in a collision event. When tanks are located toward the inner section of the vessel, protected by a double hull or outer ballast water tanks, the likelihood of fuel tank rupture is reduced significantly.	An oil spill event from a rupture of a fuel tank from a vessel collision is a highly unlikely event. Several factors influence the potential release of oil from an unlikely vessel collision event, including location of fuel tanks within the vessel. The *Pioneering Spirit* HLV meets the criteria of having an internal fuel tank layout, protected by outer tanks such as ballast water tanks and following a double-hull type of configuration that further reduces the probability of a fuel tank to be impacted/ruptured in the highly unlikely event of a vessel collision. Implementing the use of the *Pioneering Spirit* provides further protection against a potential oil spill resulting from an external impact (i.e. collision with another vessel).	Adopted
Do not undertake the activity.	Eliminates spill potential	This is not a feasible option.	Not adopted.

7.8.7 Demonstration of acceptability

Table 7-55 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 3 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 moderate short-term impact. It 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.	✓	Unplanned release of oil into the water is a very highly unlikely event, however with potential for significant consequences on the environment.

Factor	Demonstration criteria	Criteria met	Rationale
			Esso has adopted industry best practice for assessing the risk and has management measures in place to reduce the risk to ALARP. This includes: • A conservative oil spill modelling was conducted to inform potential risk, sensitive receptors and response capabilities and measures • Oil spill modelling was based on a worst-case scenario that is representative of specific vessel operations for Campaign#1 • Esso considered and applied requirements and advice from legislation, publications and industry guidelines on risk assessment, prevention and mitigation measures, and preparedness and response in the very highly unlikely event of an oil spill during Campaign#1 • Esso will implement measures and controls to manage the potential risk of an unplanned oil release, including best industry standards and practices, and engineering and design • Vessels conducting activities for Campaign#1 will comply with regulatory requirements, including those that are specific to oil pollution and emergency preparedness. Esso considers that adherence to these principles is consistent with the principles of ESD
Legislative and other requirements	Legislative and other requirements have been identified and met.	✓	The proposed activities align with the requirements of the: • *Navigation Act 2012* (Cth) – Chapter 6 (Safety of Navigation) Part 6 deals with safe navigation including provisions about reporting of movement of vessels. The requirements of MARPOL Annex I has been adopted. The following legislative and other requirements are considered relevant as they apply to the implementation of MARPOL in Australia: • Protection of the Sea (Prevention of Pollution from Ships) Act 1983 (Cth) • *Navigation Act 2012* (Cth) – Chapter 4 (Prevention of Pollution)

Factor	Demonstration criteria	Criteria met	Rationale
			• Marine Order 91 (Marine pollution prevention – oil) 2014. The proposed activities align with the requirements of the OPGGS Act: • Schedule 3 (occupational health and safety) of the OPGGS Act and Safety Regulations require the operator of each offshore facility to prepare a Safety Case for submission to NOPSEMA. Activities at a facility must be conducted in accordance with a Safety Case that has been accepted by NOPSEMA.
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 MGO but the activities proposed meet the strategic objectives of the Upstream Environmental Standards.
	Meets ExxonMobil OIMS Objectives.	✓	Proposed activities meet: • OIMS System 6: Regulatory Compliance and Sustainability Management objective to identify and assess environmental aspects; significant aspects are addressed and controlled consistent with policy and regulatory requirements • OIMS System 8: Selecting and Engaging with Third Party Providers objectives to clearly define and communicate OI requirements to contractors and to qualify, evaluate and select contractors based on their ability to perform work in a safe, secure and environmentally sound manner • OIMS System 10: Managing Community Risk objective to anticipate community concerns and develop response plans, as appropriate • OIMS System 10: Emergency Preparedness and Response objectives to document, resource and communicate emergency response plans, and conduct training, exercises

Factor	Demonstration criteria	Criteria met	Rationale
			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 Regulations 22(1) of the Environment Regulations 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 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. ExxonMobil uses the term OI to address all aspects of its business impacting personnel and process safety, security, health and environmental performance.

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.

OIMS is applied by both Upstream and Global Projects to ensure that Corporate expectations are met. The Global Projects OIMS Systems, are described in Table 8-1. System 1: Leading, Managing and Driving Performance is the driver to ensure effectiveness of all 17 Systems. Each Global Projects 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 OIMS framework

Table 8-1 Description of Global Projects OIMS Systems

Corporate OIMS Element	Global Projects OI System	
	Title	Linked Corporate OIMS Expectations
1 Leading, Managing and Driving Performance	Leading, Managing and Driving Performance	1.1-1.12, 2.2
2 Identifying, Assessing, Mitigating and Accepting Risk	Identifying, Assessing, Mitigating and Accepting Risk	1.4, 1.5, 2.1-2.3, 3.2, 4.2
3 Designing, Constructing and Preparing for Start Up	Quality Assurance and Pre-Startup Review	3.5, 3.6
	Project Management and Execution	3.1, 3.2
	Design and Construction Practices and Standards	3.3, 3.4, 3.7
4 Providing Information Needed for Construction, Operation and Maintenance	Information Needed for Construction, Operation, and Maintenance	4.1, 4.3
5 Selecting, Training, Engaging and Enabling People	Selecting, Training, Engaging and Enabling People	1.7, 5.1-5.4

Corporate OIMS Element	Global Projects OI System	
	Title	Linked Corporate OIMS Expectations
	SSHE Behaviours and Human Performance	1.9, 5.5, 5.6
6 Operating and Maintaining Assets	Management of Work and Equipment	6.1-6.3, 6.5
	Regulatory Compliance and Sustainability Management	4.5, 6.7, 10.2
	Critical Safeguard Management	1.5, 1.6, 4.2, 6.6
7 Managing Changes	Managing Changes	7.1
8 Selecting and Engaging with Third Party Providers	Selecting and Engaging with Third Party Providers	1.8, 8.1-8.3
9 Learning from Operating Experience and Incidents	Learning from Project Activities and Incidents	1.10, 9.1-9.7
10 Preparing for Emergencies and Managing Potential Risk to the Community	Emergency Preparedness and Response	10.1
	Managing Community Risk	10.2, 2.1
11 Assessing and Driving Effectiveness	Assessing and Driving Effectiveness	1.11, 11.1-11.2

* Global Projects supports multiple Corporate OIMS Expectations.

Esso has determined the following OIMS Systems are required for the implementation of this EP:

- OIMS System 1: Leading, Managing and Driving Performance
- OIMS System 2: Identifying, Assessing, Mitigating and Accepting Risk
- OIMS System 3: Quality Assurance
- OIMS System 3: Project Management and Execution
- OIMS System 3: Design and Construction Practices and Standards
- OIMS System 4: Information Needed for Construction, Operation and Maintenance
- OIMS System 5: Selecting, Training, Engaging and Enabling People
- OIMS System 5: SSHE Behaviours and Human Performance
- OIMS System 6: Management of Work and Equipment
- OIMS System 6: Regulatory Compliance and Sustainability Management
- OIMS System 6: Critical Safeguard Management
- OIMS System 7: Managing Changes
- OIMS System 8: Selecting and Engaging Third Party Providers
- OIMS System 9: Learning from Project Activities and Incidents
- OIMS System 10: Emergency Preparedness and Response
- OIMS System 10: Managing Community Risk
- OIMS System 11: Assessing and Driving Effectiveness

8.2 OIMS System 1: Leading, Managing and Driving Performance

In accordance with OIMS System 1: Leading, Managing and Driving Performance, Esso has defined the roles and responsibilities relevant to this EP.

8.2.1 Roles and responsibilities

As required by Regulation 22(3) of the Environment Regulations, this Section sets out the roles and responsibilities of personnel in relation to the implementation, management and review of this EP.

An indicative organisational chart is provided in Figure 8-2, while Table 8-2 describes the responsibilities of key personnel involved in the activity.

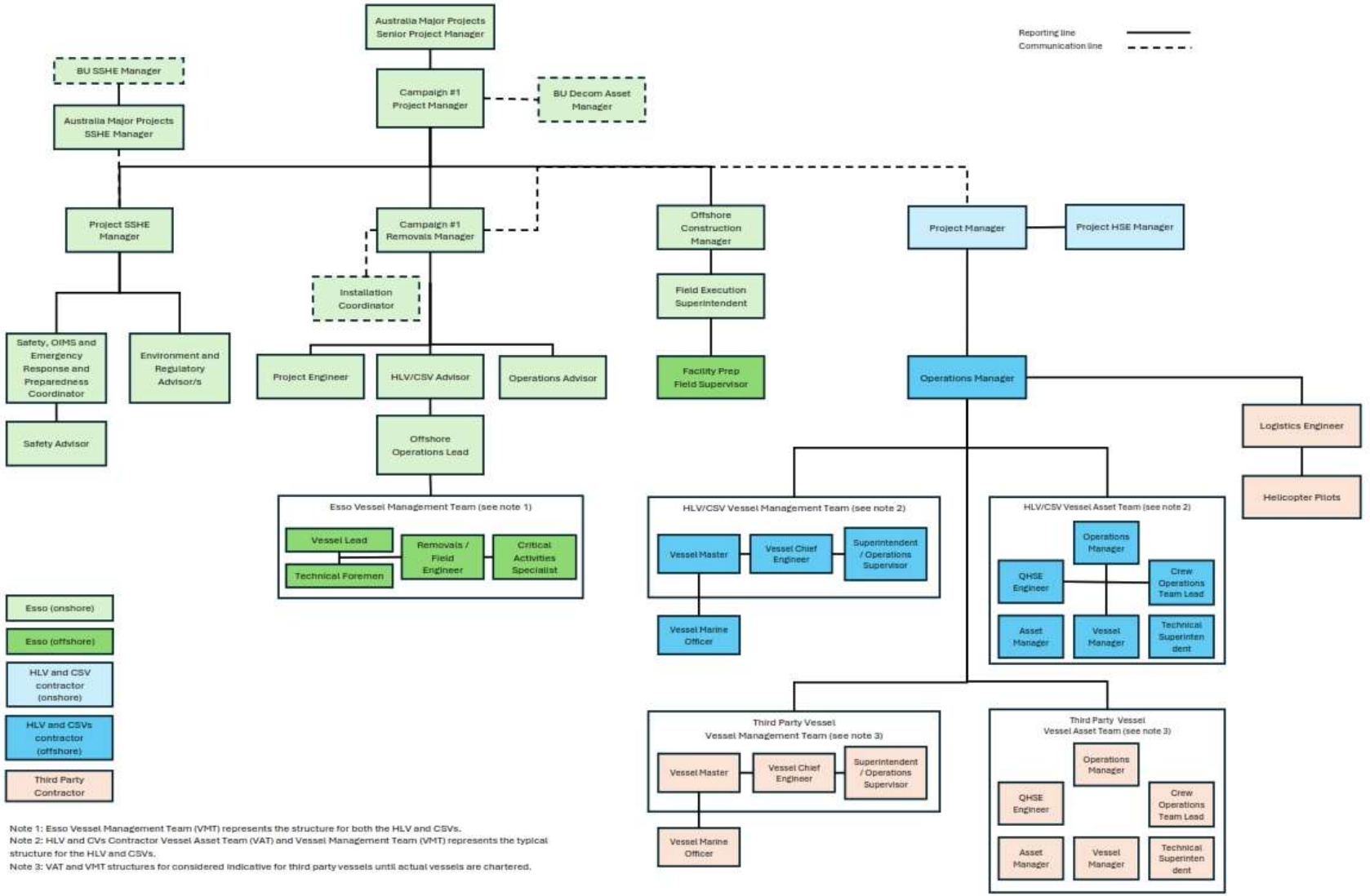


Figure 8-2 Activity-specific organisation chart for this EP

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

Role	Responsibilities
Campaign #1 Removals Manager (Esso)	• Oversees day-to-day operations to ensure compliance with relevant environmental legislative requirements, commitments, conditions and procedures as provided in this EP. • Primary point of contact between Vessel Management Team (VMT) (based both onshore and offshore) and Engineering, Procurement and Removals Contractor. • Ensures campaign-related induction is delivered. • Ensures training matrix is fully implemented. • Ensures procedures are in place and used effectively for the safe and efficient work management during execution. • Ensures prompt follow-up action is initiated and completed after inspections/audits, incidents, and emergency drills. • Member of the Esso Emergency Response Team. • Engaged in contract life cycle management. • Approves environmental MOCs and provides support to the Environmental and Regulatory Advisor in the process. May also assist in identifying environmental MOCs, including chemical assessments.
Offshore Operations Lead (Esso)	• Provides guidance to Esso VMT to ensure procedural (including environmental) compliance during decommissioning activities. • Advises the Project Management Team (PMT) and VMT in incident response and case management. • Acts as primary interface with Engineering, Procurement and Removals Contractor with regard to vessel activities. • Monitors contractor performance (including environmental). • Identifies where environmental MOC process may be triggered and provides support to Environmental and Regulatory Advisor as required. • Participates in daily communication between the Vessel Lead and PMT regarding environmental compliance. • Member of Esso Emergency Response Team.
Vessel Lead (Esso)	• Member of the Esso VMT. • Primary interface with contractor VMT. • Manage Esso on-vessel personnel, which may include technical foremen, inspectors and Marine Warranty Surveyors. • Oversees all work activities and work programs ensuring work is undertaken in accordance with procedures, work instructions and in compliance with all legislative requirements and EP commitments. • Ensures vessel personnel understand their obligations with respect to the management of environmental risk. • Responsible for on-vessel environmental performance and ensuring contractor environmental management systems are followed. • Responsible for on-vessel incident response case management. • Ensure approved removal procedures are followed or MOC process is implemented as required. • Implement field surveillance plans. • Steward implementation of SSHE and emergency response plans. • Oversee Campaign #1/SSHE personnel on vessel. • Validate and endorse daily and other reports. • Monitor contractor performance and ensure environmental specifications are met and approved procedures are followed. • Responsible for Esso reportable incident notifications.

Role	Responsibilities
Removals/Field Engineer (Esso)	• Member of the VMT. • Provide technical support as needed to the Esso VMT as required. • Promote environmental awareness and environmental performance. • Monitor work for alignment with the approved removal procedures. • Assist with environmental MOC process. • Steward Marine Warranty Surveyor activities. • Monitor offshore execution progress against the offshore integrated schedule. • Facilitate lessons learned, coordination of reporting, and supports field surveillance.
Critical Activities Specialist (Esso)	• Provides support to Removal/Field Engineers. • Provide technical support as needed to VMT.
Technical Foreman (Esso)	• Member of the VMT. • Oversees offshore operations on 24-hour basis (via 12-hour shifts), communicating activities to the Vessel Lead. • Ensure environmental management systems are followed. • Implement field surveillance plans. • Steward implementation of SSHE and emergency response plans. • Assist in the preparation of daily activity reports. • Monitor vessel condition/readiness. • Serve as day-to-day interface with contractor with a focus on safety and environmental aspects. • Provide safety and environmental monitoring/leadership/coaching as well as participate in safety meetings. • Participate, coach and assist contractor personnel in effective pre-task planning measures in JSA's, and toolbox meetings. • Provide oversight of contractor's materials management/verification systems. • Monitor and ensure compliance with environmental specifications, procedures, and plans. • Monitor environmental compliance as required. • Assist in collection of all documentation offshore relating to the environmental aspects of Campaign #1 (i.e. equipment and personnel certifications, contractor daily reports, minutes of meetings, inspections and audits, accident/incident reports, near miss reports, survey reports, environmental MOC reports, and corrective action reports, as required). • Capture lessons learned during removal activities.
Project SSHE Manager	• Ensures all regulatory reporting requirements are met and reports to regulatory authorities as appropriate, including the reporting of environmental incidents. • Ensures Campaign #1 related induction is delivered. • Approves environmental MOCs. • Coordinates EP compliance audits. • Supports communication with regulators and government agencies.
Environmental and Regulatory Advisor (Esso)	• Undertakes duties as delegated by Project SSHE Manager. • Interfaces between Project SSHE Manager and Safety Advisor. • Prepares environmental/regulatory content for inductions and ensures that attendance records are maintained.

Role	Responsibilities
	• Completes/coordinates EP compliance audits, as delegated by Project SSHE Manager. • Supports incident investigations as required. • Completes monthly incident reporting to NOPSEMA. • Completes annual and/or end of activity environmental performance reporting (as delegated by Project SSHE Manager). • Completes environmental MOCs as applicable to this EP. • Completes chemical discharge assessment.
Helicopter Pilots (Contractor)	• Implements cetacean interaction management actions consistent with Part 8 Division 8.1 of the EPBC Regulations.
Project Manager (Contractor)	• Overall responsibility to ensure that the requirements of the EP are communicated and understood with all parties involved in the preparation and execution of the onshore and offshore works. • Ensure subcontractors are compliant with the Campaign #1 environmental requirements.
Vessel Master (Contractor)	• Member of the contractor VMT. • Overall responsibility for vessel environmental performance. • Monitor the implementation of the environmental management controls during removal activities as part of daily inspection rounds. • Ensure environmental controls for the vessel are adequately resourced. • Ensure environmental equipment and resources are readily available. • Ensure crew are competent and drilled in emergency response processes for the vessel.
Vessel Chief Engineer (Contractor)	• Member of the contractor VMT. • Ensure an immediate and adequate response to any overboard spill (as per SOPEP requirements). • Ensure safe transfer of fuel, oil and sludge in bulk. • Ensure all equipment is maintained and operational as per planned maintenance requirements to avoid accidental discharges to water or air.
Project HSE Manager (Contractor)	• Identify Campaign #1 specific environmental requirements based on local regulations, environmental permits and publicly available information sources. • Provide Campaign #1 specific environmental instructions to the vessels, discipline engineers, yards and subcontracted sites as applicable. • Perform environmental inspections as applicable.
Superintendent/Operations Supervisor (Contractor)	• Communicate HSE related issues (generic and project specific) in pre-shift and toolbox meetings to the relevant crew. • Identify the need for additional onboard work risk assessments, Permit to Work and further risk reducing measures. • Monitor the implementation of the environmental management controls during the decommissioning activities as part of daily inspection rounds. • Communicate the HSE expectations, including project specific expectations. • Report on HSE performance, including environmental monitoring. • Report anomalies to the Vessel Master and investigate incidents for adequate corrective and preventive actions.

Role	Responsibilities
Vessel Marine Officers (Contractor)	• Ensures compliance with all applicable navigational safety standards and regulations. • Conducts emergency drills. • Supervises vessel crew to ensure they are fit for duty and undertaking work only within their area of qualification and training. • Monitors, reports and takes appropriate action to remedy any vessel or equipment defects that may impact on safety and environmental performance of the vessel. • Maintains logs of emissions and discharges in accordance with MARPOL regulations. • Ensures that all crew are appropriately qualified, trained and equipped for their roles on the vessel. • Ensures the vessel activities are in compliance with the requirements of this EP. • Reports to the Vessel Master. • Reports all incidents and near-misses to the Esso VMT

8.3 OIMS System 2: Identifying, Assessing, Mitigating and Accepting Risk

Implementation of OIMS System 2: Identifying, Assessing, Mitigating and Accepting Risk is achieved in relation to this EP through the processes outlined in Sections 5, 6 and 7. These Sections detail the identification, evaluation and management of safeguards to ensure risks are reduced to ALARP. Compliance with EPOs and EPSs, controls and measurement criteria are provided in Appendix H.

In instances where full control of a worksite is authorised to the contractor for the decommissioning activities described in this EP, OIMS System 8: Selecting and Engaging with Third Party Providers oversight applies (refer Section 8.14).

8.4 OIMS System 3: Quality Assurance and Pre-Start Up Review

Implementation of OIMS System 3: Quality Assurance and Pre-Start Up Review, where relevant, ensures that the controls and safeguards outlined in Section 6, 7 and Appendix H of this EP are verified to meet environmental objectives during execution.

In instances where full control of a worksite is authorised to the contractor for the decommissioning activities described in this EP, OIMS System 8: Selecting and Engaging with Third Party Providers oversight applies (refer Section 8.14).

8.5 OIMS System 3: Project Management and Execution

Implementation of the OIMS System 3: Project Management and Execution ensures that risks associated with decommissioning activities are effectively managed through structured processes and controls. Within ExxonMobil, the ExxonMobil Capital Project Management System (EMCAPS) is the corporate system that provides guidance and ensures best practices are applied, on a scalable basis, when developing and executing capital projects. Although largely based on EMCAPS, a bespoke Decommissioning Project Management System (DPMS) framework for Campaign #1 has been developed. The DPMS provides a structured process for development, reviews and decision making to achieve stated project objectives.

In instances where full control of a worksite is authorised to the contractor for the decommissioning activities described in this EP, OIMS System 8: Selecting and Engaging with Third Party Providers oversight applies (refer Section 8.14).

8.6 OIMS System 3: Design and Construction Practices and Standards

OIMS System 3: Design and Construction Practices and Standards ensures that the design and construction of new or modified facilities comply with approved standards. For the decommissioning activities included in this EP,

the relevant Centre of Expertise Decommissioning Specifications, which integrate applicable international Standards, along with recognised industry best practices, will be applied.

OIMS System 3: Design and Construction Practices and Standards also ensures that any new design practices or standards are thoroughly reviewed and evaluated for project applicability. Deviations from established industry decommissioning standards or practices will be reviewed by Esso prior to implementation and will undergo a MOC where considered appropriate.

In instances where full control of a worksite is authorised to the contractor for the decommissioning activities described in this EP, OIMS System 8: Selecting and Engaging with Third Party Providers oversight applies (refer Section 8.14).

8.7 OIMS System 4: Information Needed for Construction, Operation, and Maintenance

In accordance with OIMS System 4: Information Needed for Construction, Operation, and Maintenance, 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.

For decommissioning activities, the Digital Decommissioning Management Tool serves as the primary tool to manage, track and transfer relevant documentation and drawings. The Digital Decommissioning Management Tool ensures that integrity critical information is organised and appropriately transferred between Esso and contractors.

Processes are also established to ensure that records pertinent to this EP are defined and appropriately maintained.

In instances where full control of a worksite is authorised to the contractor for the decommissioning activities described in this EP, OIMS System 8: Selecting and Engaging with Third Party Providers oversight applies (refer Section 8.14).

8.8 OIMS System 5: Selecting, Engaging and Enabling People

In accordance with OIMS System 5: Selecting, Engaging and Enabling People, Esso has processes in place to ensure that personnel and contractors are selected, trained and competent to meet the requirements of specific positions and roles. These processes align with the Regulation 22(4) of the Environment Regulations requirement that the implementation strategy details 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.

8.8.1 Operations Integrity key positions

Key positions that could have a significant impact on OI must meet job specific requirements and maintain competency in their roles consistent with the Environment Policy and OIMS System 5: Selecting, Engaging and Enabling People. Personnel in these roles are subject to verification of training and experience relevant to their responsibilities.

The extent of initial, ongoing, and refresher training is determined by OI related training requirements and any identified competency or experience gaps, as documented in a training plan.

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. Training programs specific to this EP are detailed in Section 8.8.2.

Job-specific OI requirements are defined and communicated to third parties during the contracting process. Third-party service providers are required to maintain training files for their personnel. The processes for third-party training and competency are evaluated as part of the contractor selection and management process, refer to OIMS System 8: Selecting and Engaging with Third Party Providers in Section 8.14.

8.8.2 Personnel training

In accordance with OIMS System 5: Selecting, Engaging and Enabling People, Esso has identified required training programs, specific to this EP, that will be implemented for Esso personnel, contractors and third parties.

8.8.2.1 Environmental induction

All personnel involved in activities related to this EP will undergo environmental awareness training as part of their induction, prior to the activities commencing. The level of induction provided will be appropriate to each individuals role and may include environmental familiarisation, where applicable.

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 EPBC Regulations
- 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 Removals Manager and Project SSHE Manager are responsible for ensuring personnel complete the required 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 and Regulatory Advisor or member of the Project SSHE team.

8.8.2.2 Marine Mammal Observers

Where MMOs are required for the activity they will be trained and experienced in whale identification and behaviour, distance estimation, and be capable of making accurate identifications and observations of whales in Australian waters per *EPBC Act Policy Statement 2.1* (Department of the Environment, Water, Heritage and the Arts, 2008). This standard is applied in the absence of there being any definitive qualifications stipulated in Australia for MMOs.

Bridge crew and watchkeepers will also receive whale observation and species identification training to provide additional observation support to MMOs.

8.8.2.2.1 OIL SPILL RESPONSE

In accordance with 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. Roles and responsibilities will be defined in an emergency response bridging document prior to the commencement of this activity.

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 100/200 training	ExxonMobil (Esso) WebCAT CBT	ICS 100/200 training consists of computer-based training which addresses fundamental principles of the ICS including key roles and functions.
ICS 300 training	Various accredited organisations	ICS 300 training is instructor led training that expands upon the information covered in the ICS 100/200 course.

Training/course	Delivered by	Training description
Australian Marine Oil Spill Centre (AMOSC) Core Group training	AMOSC	Training and competence must be completed and maintained in accordance with the AMOSC Core Group agreement. IMO 1/2/3 must be revalidated every three years and Aerial Observer must revalidated every two years. Core Group Members must also participate in a Core Group Workshop every two years
IMO I – Oil Spill Response Operations	Registered Training Organisation AMOSC	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)	Registered Training Organisation AMOSC	Designed for personnel who require the knowledge and skills to support the management and coordination of oil spill response activities.
IMO III – Command and Control (or equivalent)	Registered Training Organisation AMOSC	Required for personnel identified to fulfil a Tier 2/3 Incident Commander role.
Aerial observers course	Registered Training Organisation AMOSC	The course includes theory and practical activities including: • 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 Incident Management Team in a clear and coherent manner.
Emergency Support Group (ESG) training (COURSE 509100)	ExxonMobil (Esso) WebCAT CBT	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 a computer-based training which combines theory and a number of simulation exercises. Course objectives are to: • 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

Training/course	Delivered by	Training description
		• enhance ExxonMobil's commitment to a consistent approach to emergency response.
Incident management training (PMAOMIR322)	Registered Training Organisation ERGT Australia	Course objectives are to: • collect and analyse data during an incident • record and report information during an incident • review incident response information and recommend process improvements.
Incident management training (PMAOMIR418)	Registered Training Organisation ERGT Australia	Course objectives are to: • assess the situation and determine priorities • manage incident control centre • liaise with internal management and support structures • ensure communications systems are effective • conclude and review incident activities.

8.8.2.3 Oil spill response roles

Esso Incident Management Team members are selected based on skills and experience. Nominations are reviewed by the OIMS System 10: Emergency Preparedness and Response System Lead (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: Selecting, Training, Engaging and Enabling People mitigation approval process applies.

The selection of the Environmental Unit Lead is based on relevant experience as an Environmental and Regulatory 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 or operations activities. In addition, the minimum requirement includes a relevant tertiary degree in engineering, environmental science, environmental management or similar.

Esso also allocates members to an ESG, which provide strategic support in the event of an oil spill or other emergency event and contributes personnel to ExxonMobil's Regional Response Team (RRT). The ExxonMobil RRT includes personnel with experience and/or training in oiled wildlife response. These personnel are able to provide above-field support to an oiled wildlife response through development of response plans and coordination of specialist resources.

Selected ExxonMobil personnel have been identified as members of the AMOSC Core Group and may be called upon to respond under the AMOSC Plan and National Plan arrangements.

8.8.2.4 Role-specific competencies and training

Mandatory competencies and training provided to specific personnel required to undertake a role in oil spill response are outlined in Table 8-4.

Table 8-4 Mandatory competencies and training for oil spill response roles

Section	Role	Mandatory competencies and training
Command	Incident Commander	• Incident Management training (PMAOMIR418). • IMO III – Command and Control training (for Level II/III incidents). • Participate in regular drills and exercises.
	Safety Officer	• Incident Management training (PMAOMIR322).

Section	Role	Mandatory competencies and training
		• 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	• Incident Management training (PMAOMIR322). • Participate in regular drills and exercises.
Planning	Planning Section Chief	• Incident Management training (PMAOMIR322). • 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*	• IMO II – Oil Spill Management. • Incident Management training (PMAOMIR322). • Familiarity with the *Bass Strait Operational and Scientific Monitoring Program* (AUGO-EV-EPL-001) (OSMP) – Refer to Attachment 2. • Participate in regular drills and exercises.
Operations	Operations Section Chief	• Incident Management training (PMAOMIR 322). • IMO II – Oil Spill Management. • Experience in fulfilling Operations Section Chief role. • Participate in regular drills and exercises.
	Maritime Unit	• ICS 100/200. • Experience in marine operations. • Participate in regular drills and exercises.
	Aviation Unit	• ICS 100/200. • Participate in regular drills and exercises.
	Aerial Observer	• Oil Spill Response Fundamentals training. • Aerial Marine Fauna Observer training course.
Logistics	Section Chief	• Incident Management training (PMAOMIR322). • IMO II – Oil Spill Management, or IMO III – Command and Control. • Experience in fulfilling Logistics Section Chief role. • Participate in regular drills and exercises.
Finance and Administration	Finance and Administration Section Chief	• ICS 100/200. • Participate in regular drills and exercises.
RRT	All RRT members and select Esso Incident Management Team members	• Oil spill response training program (ExxonMobil University of Spill Management. • ICS 100/200. • Participate in RRT exercises/workshops. • Role-specific training, as required.
ESG	All ESG members	• ESG CBT training.

Section	Role	Mandatory competencies and training
		• ESG induction conducted by Esso Emergency Preparedness and Response Advisors. • Participate in regular drills and exercises.
AMOSC Core Group	Management	• IMO I – Oil Spill Response Operations training. • IMO II Oil Spill Management or IMOIII Oil Spill Response Command and Control. • AMOSC Core Group Workshop.
	Operations	• IMO I – Oil Spill Response Operations. • AMOSC Core Group Workshop.
	Aerial Observer	• Aerial Marine Fauna Observer training course.

* When the Esso Incident Management Team is activated, the Environmental Unit Lead becomes responsible for managing implementation of the Bass Strait OSMP Modules, as directed by the Planning Section Chief.

Note: When PMAOMIR322 is completed, completion for ICS 100/200 is assigned. When PMAOMIR418 is completed, completion for PMAOMIR322is assigned. When IMOIII is completed, Completion for IMOII is assigned.

8.9 OIMS System 5: SSHE Behaviours and Human Performance

In accordance with OIMS System 5: SSHE Behaviours and Human Performance, Esso applies human performance principles to ensure personnel perform their work safely and effectively. This includes the development and practise of behaviour-based processes that include:

- observing, recognising, reporting, and mitigating hazards and at-risk conditions
- intervening to address at-risk behaviours with co-workers
- recording and analysing results to reduce future events and eliminate at-risk behaviours.

These principles are reinforced through inductions and training managed by Esso and the Engineering, Procurement and Removals contractor.

8.10 OIMS System 6: Management of Work and Equipment

Management of work and equipment 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: Management of Work Equipment.

This System ensures 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 Esso and contractor processes:

- work permits are executed to protect personnel, equipment, and the environment from 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.

In instances where full control of a worksite is authorised to the contractor for the decommissioning activities described in this EP, OIMS System 8: Selecting and Engaging with Third Party Providers oversight applies (refer Section 8.14).

8.11 OIMS System 6: Regulatory Compliance and Sustainability Management

8.11.1 Regulatory Compliance

OIMS System 6: Regulatory Compliance and Sustainability Management 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 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 Esso Environmental and Regulatory 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 Esso Environmental and Regulatory Advisor, and incorporated into risk assessments, control measures, EPOs and EPSs and implementation strategy in the EP where required.

Changes identified by the Esso Environmental and Regulatory Advisor are reviewed and assessed in accordance with the process outlined in OIMS System 7: Managing Changes.

8.11.2 Environmental management

In accordance with Regulation 22(5) of the Environment Regulations 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: Regulatory Compliance and Sustainability Management, with the exception of recording (see OIMS System 4: Information Needed for Construction, Operation, and Maintenance) and management of non-conformance (see OIMS System 9: Learning from Project Activities and Incidents).

OIMS System 6: Regulatory Compliance and Sustainability Management addresses corporate requirements for environmental and regulatory management, including socioeconomic and community health aspects. This includes the fundamental requirement to develop 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: Regulatory Compliance and Sustainability Management requirement for an EMP for the activities outlined in this EP.

In addition, OIMS System 6: Regulatory Compliance and Sustainability Management includes processes and procedures for managing environmental impacts, such as the: *Environmental Chemical Discharge Assessment Process* (AUGO-EV-PCE-013) and *IMS Risk Assessment Procedure* (AUGO-EV-PCE-014); as discussed in the following sections.

8.11.2.1 Chemical discharge assessment process

Esso assesses all chemicals that are likely to be discharged in the OA, during the activities described in this EP. The chemical discharge assessment process is triggered by the MOC process. The introduction of a new chemical to Esso's facilities or within the OA, 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 (OSPAR Convention)
- Centre for Environment, Fisheries and Aquaculture Science (CEFAS).

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 Chemical Hazard and Risk Management (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 little or no risk to the environment are given the OCNS 'E' grouping. Data used for the assessment includes toxicity, biodegradation and bioaccumulation.

Chemicals that are hazardous to the marine environment are subject to substitution warnings under the Harmonised Mandatory Control Scheme. The UK follows and applies the OSPAR harmonised pre-screening scheme and complies with the recommendation of Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), to replace chemical substances identified as candidates for substitution. These substances are flagged with a substitution warning on the product template and CEFAS encourages operators to select products without a substitution warning.

Only chemicals ranked under the OCNS rating system as 'gold' or 'silver' (CHARM) and 'E' or 'D' (non-CHARM) with no substitution warning will be approved for discharge without further assessment.

Where no OCNS ranking is available for a chemical but ecotoxicity data is available, an equivalence check can be completed to establish if it would have a substitution warning. The equivalence check will be completed in accordance with the assessment process outlined by CEFAS for the OCNS scheme. A chemical will be considered to be 'equivalent' if it is assessed to ***not*** have a substitution warning according to the criteria defined by OCNS (https://www.cefas.co.uk/cefas-data-hub/offshore-chemical-notification-scheme/substitution-warning/).

If a chemical is not on the OCNS list, has a substitution warning (or equivalent) or has limited ecotoxicity data available, then further assessment is required to determine if the chemical is suitable for discharge to the marine environment. This assessment can include:

- details of the technical requirement for this product and review of any possible alternative chemicals
- assessment of impacts to the receiving environment from discharge in the relevant scenario
- consideration of additional restrictions or controls to the approval e.g. timeframes for use, periodic reassessment
- seeking guidance from toxicity experts
- whole effluent toxicity testing the chemical in the discharge to determine if the environmental impact is beyond the mixing zone, and/or
- completing chemical dispersion modelling in the local environment.

8.11.2.2 Invasive Marine Species risk assessment process

The Esso *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 regardless of origin, all vessels that will enter the 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.

Following an investigation by NOPSEMA into reporting of a suspected IMS in Esso's Bass Strait offshore operations, it is noted that future IMS investigations will include the collecting of specimens of suspected IMS. Under the *Bass Strait Environment Plan* (AUGO-EV-EMM-012) Esso has a commitment to immediately report any suspected IMS introductions to DAFF and DEECA.

8.11.3 Audit, inspection and assessments

8.11.3.1 Inspections - Campaign activities

A due-diligence pre-activity inspection of the HLV (*Pioneering Spirit*) and CSV (*Fortitude* or similar) will be carried out after contract award and prior to the work commencing to ensure all controls listed in the EP to achieve the EPSs and EPOs are ready to be implemented prior to the activities commencing and to verify that procedures and equipment for managing routine discharges and emissions are in place for the activities described in this EP, to enable compliance with the EP.

A vessel inspection checklist will be completed at commencement of the activity and quarterly thereafter by the Offshore Operations Lead, or delegate, in conjunction with the Vessel Master, and issued to the Esso Environmental and Regulatory Advisor for review.

Throughout the campaign monthly EP compliance checks of EPSs and EPOs will be conducted and issued to the Esso Environmental and Regulatory Advisor for review and as the basis for the monthly recordable incident report (OIMS System 9: Learning from Project Activities and Incidents).

8.11.3.2 Inspections - Vessel activities

In addition to the third-party services OIMS evaluation under System 8: Selecting and Engaging with Third Party providers, 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.

8.11.3.3 Audits - Environment Plan compliance

Esso will undertake an annual compliance audit of the commitments contained in this EP and assess the effectiveness of the implementation strategy. Any non-compliance with this EP will be subject to investigation and follow-up action as detailed in Section 8.15.1.

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 environmental inspections and audits will be summarised in the Campaign #1 specific EP environmental performance report(s) submitted to NOPSEMA annually.

8.11.4 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-conformances and opportunities for improvement are identified
- environmental monitoring and reporting requirements are met.

8.11.4.1 Daily vessel calls

Daily vessel calls are undertaken to keep all personnel involved up to date with the activities that are planned for the day and allows for input from the management team to assist with work planning.

8.11.4.2 Toolbox meetings

Toolbox meetings are conducted at the beginning of each shift to plan for any events that are occurring during the shift. This allows for relevant permits and risk assessments to be undertaken and to make sure that personnel completing the tasks understand all the associated safety and environmental risks and required controls.

Environmental issues will also be addressed in regular HSE meetings. Vessel crew will participate in these meetings with the Esso Vessel Lead or delegate and Vessel Master in discussing HSE matters that have arisen during that day or week's operations, and upcoming issues to consider. Outcomes will be documented in HSE meeting minutes.

8.11.4.3 Completion of activity

The Campaign #1 decommissioning team conducts regular reviews of key performance indicators such as incident reports (including spills), regulatory compliance and types/volumes of waste disposed.

The HSE team on board the vessel meets periodically to review and assess environmental issues and initiatives. Personnel from the vessels, Esso and other contractors attend where possible.

At the completion of activities described in this EP, a lessons learned review and assessment will be conducted to determine:

- the effectiveness of control measures
- improvements in procedures or processes for future activities.

8.11.5 Monitoring of emissions and discharges

In accordance with Regulation 22(6) of the Environment Regulations, 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 Vessel Master is responsible for collecting all the data on emissions and discharges for energy, fuel and waste for the duration of Campaign #1, and reporting to the Esso Project Team including the Removals Manager and Environmental and Regulatory 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 6: Regulatory Compliance and Sustainability Management.

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

Aspect	Monitoring	Frequency	Reporting
Planned grout discharge	Location Volume	Per event	End of activity environmental performance report
Other planned discharges (e.g. waste food, bilge water)	Type of discharge Location Volume	Daily	End of activity environmental performance report
Planned atmospheric emissions	Type and volume of fuel consumption (per vessel and helicopter used during execution of Campaign#1 activities)	Daily	End of activity environmental performance report
Planned waste from removal of facilities	Type of waste Tonnes (for SPJs)	Per event	End of activity environmental performance report
Unplanned spill to sea	Chemical/oil type and volume	By incident event	Incident report End of activity environmental performance report
Unplanned 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

8.11.6 Reporting

Regulation 51 of the Environment Regulations requires the reporting of environmental performance of this EP.

Regulation 22(7) of the Environment Regulations 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, Regulation 54 of the Environment Regulations 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 EP reporting requirements

Requirement	Timing	Contact
Submit an end of activity EP environmental	The end of activity EP environmental performance report will be submitted to	NOPSEMA –

Requirement	Timing	Contact
performance report to NOPSEMA	NOPSEMA within three months of the completion of the Decommissioning – Campaign#1 activities.	submissions@nopsema.gov.au
Notify NOPSEMA of the commencement date	At least 10 days prior to activity.	
Notify NOPSEMA of the completion date	Within 10 days of activity completion.	
Notification of EP completion	Within 10 days of activity finalisation and obligation completion.	

8.12 OIMS System 6: Critical Safeguard Management

OIMS System 6: Critical Safeguard Management ensures that environmental safeguards are in place, maintained and verified to prevent or mitigate risks associated with the activity.

Risks associated with this EP are identified are then managed through structured processes outlined in Sections 5 6 and 7. These Sections detail the identification, evaluation and management of safeguards to ensure risks are reduced to ALARP. Compliance with EPOs and EPSs, including specific controls and measurement criteria is outlined in Appendix H to ensure EPOs are met.

Managers and supervisors oversee the ongoing effectiveness of safeguards, using leading and lagging indicators to track performance and ensure continued integrity.

8.13 OIMS System 7: Managing Changes

At the time of writing this EP, detailed engineering is being performed and specific methods of removal, final cut depths and details around how the structures will be removed is yet to be finalised and is subject to change. Ensuring adequate flexibility during detailed planning and execution is a critical element required for safe and environmentally efficient execution of major projects.

Esso has developed MOC tools and procedures to meet the requirements outlined in OIMS System 7: Managing Changes. 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, 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 System 7: Managing Changes 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 by the Esso Environmental and Regulatory Advisor and approved by the Campaign #1 Removals Manager and/or Project SSHE Manager.

The Esso Environmental and Regulatory Advisor reviews the MOC in accordance with Regulation 39 of the Environment Regulations. A revision of the EP will be required under 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 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 and amend new regulations which is described in OIMS System 6: Regulatory Compliance and Sustainability Management.

8.14 OIMS System 8: Selecting and Engaging with Third Party Providers

OIMS System 8: Selecting and Engaging with Third Party Services Providers 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, crane services, provision of lifting equipment and aviation services) and suppliers of critical equipment.

8.14.1 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, contractor training and competency 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: Selecting and Engaging with Third Party Providers 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, subsea activities and vessels.

The contractor's SSHE execution plan is required to address areas including:

- 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.

8.14.2 Vessel Environmental Management System

The *Pioneering Spirit* and *Fortitude* or similar vessel, operated by Allseas, will be utilised to execute the activities described in this EP. Vessel operations will be conducted in accordance with Allseas Integrated Management System and the specific requirements of this EP. The system integrates internationally recognised standards

including ISO 14001, ISO 45001 and the International Safety Management Code, ensuring compliance with ExxonMobil's environmental policies and regulatory obligations.

Regulatory compliance for Allseas vessels aligns with the legal obligations administered by the IMO. The IMO regulation establishes controls and protocols to ensure personnel safety, protection of the marine environment from vessel pollution, and fair treatment of all seafarers. Compliance with IMO requirements is enforced through flag state registration, certification and inspection processes, ensuring that vessels meet international safety and environment standards.

Bridging plans will be used to document the interface between Esso and contractor systems and processes. Any third-party vessels subcontracted by Allseas will adhere to either the Allseas Integrated Management System or an equivalent Environmental Management System.

8.14.3 Contractor performance monitoring

Esso develops performance monitoring plans for third parties prior to a contractor mobilising to a work site location.

The Campaign #1 Removals Manager is engaged in the contract life cycle management and the Project SSHE Team assists in the assessment and monitoring of contractor performance, as required. Providers of OIMS-critical services such as aviation, vessels and decommissioning activities, 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.

8.15 OIMS System 9: Learning from Project Activities and Incidents

OIMS System 9: Learning from Project Activities and Incidents 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 conformance
- environmental
- equipment reliability (with SSHE consequences).

System 9: Learning from Project Activities and Incidents requires that:

- the incident is reported in accordance with incident management processes
- 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 instances where full control of a worksite is authorised to the contractor for the decommissioning activities described in this EP, contractor incident management systems will be in place. Bridging documents will be developed to define and document the interface between Esso and contractor incident management systems and processes.

All incidents, assessment findings, lessons learned, and follow up actions will be captured, tracked, and analysed and shared to support continuous improvement and effective information management.

8.15.1 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 System 9: Learning from Project Activities and Incidents.

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
- enables the analysis and trending of incident data to ensure appropriate focus on emerging issues.

Incidents are managed in accordance with the Incident Management Manual (IMM) for Global Projects 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 Esso SSHE Team 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 the IMM. 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.

In instances where full control of a worksite is authorised to the contractor for the decommissioning activities described in this EP, the contractor will conduct investigations in accordance with their incident management system. Bridging documents will be developed to define and document the interface between Esso and contractor incident management systems and processes, ensuring compliance with incident notification, investigation, and reporting requirements.

8.15.2 Incident notification and reporting

The 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.

The 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		
A 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.	As soon as possible but before the 15th day of the following	NOPSEMA – submissions@nopsema.gov.au Copy Joint Venture partner: Woodside Energy (Bass Strait) Pty Ltd – bass.strait@woodside.com.au

Requirement	Timing	Contact
As a minimum, the written monthly recordable incident report must include a description of: • 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. Monthly reports will utilise the Recordable Environmental Incident Monthly Report form (NOPSEMA, 2024). If there are no recordable incidents a nil report will be submitted.	calendar month.	
Reportable incidents		
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: • unplanned release of hydrocarbon liquid or chemicals exceeding 80L 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. The notification must contain: • all material facts and circumstances concerning the reportable incident that the	Verbally as soon as possible to NOPSEMA but within 2 hours of the 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. Written notification as soon as practicable to NOPSEMA	NOPSEMA – 1300 674 472, submissions@nopsema.gov.au DEECA – Earth Resources Regulation – errchiefinspector@deeca.vic.gov.au Compliance Duty Officer - 0419 597 010 (24-hour) Department of Transport and Planning – marine.pollution@transport.vic.gov.au State Duty Officer – 0409 858 715 National Offshore Petroleum Titles Administrator – reporting@nopta.gov.au Joint Venture partner: Woodside energy (Bass Strait) Pty Ltd – bass.strait@woodside.com

Requirement	Timing	Contact
titleholder knows or is able, by reasonable search or enquiry, to find out • any action taken to avoid or mitigate the adverse environmental impact of the reportable incident • the corrective action that has been taken or is proposed to be taken to stop, control or remedy the reportable incident.	(copy to National Offshore Petroleum Titles Authority and DEECA. Written report as soon as practicable to NOPSEMA but within three days including specifying if a further written report will be provided (then copy to National Offshore Petroleum Titles Authority and DEECA within 7 days). If a formal investigation is triggered, a further written report within 30 days.	
Other reporting requirements		
Mandatory MARPOL report about a pollution incident involving: • 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: • name of ship(s) involved	Vessel Master to notify AMSA verbally without delay. If AMSA asks for a written MARPOL report this must be provided within 24 hours after AMSA asks for the report.	AMSA +61 02 6230 6811 or 1800 641 792 rccaus@amsa.gov.au

Requirement	Timing	Contact
• time, type and location of incident • quantity and type of harmful substance • assistance and salvage measures • any other relevant information.		
Suspected or known IMS introduction	Immediately	Report a pest – https://www.marinepests.gov.au/ DEECA – 136 186 Esso Environmental and Regulatory Advisor to notify Joint Venture partner Woodside Energy (Bass Strait) Pty Ltd – bass.strait@woodside.com
Oiled wildlife	Immediately	DEECA State Agency Commander – 1300 134 444 (24hrs) Esso Environmental and Regulatory Advisor to notify JV partner Woodside Energy (Bass Strait) Pty Ltd – bass.strait@woodside.com
Wildlife emergency	Immediately	DEECA Whale and Dolphin Emergency Hotline – 1300 136 017 Seals, Penguins or Marine Turtles 136 186 (Mon-Fri 8am to 6pm) Marine Response Unit – 1300 245 678 Esso Environmental and Regulatory Advisor to notify Joint Venture partner Woodside Energy (Bass Strait Pty Ltd – bass.strait@woodside.com
Notification of activities affecting listed species or ecological communities in or on a Commonwealth area (specifically unintentional injury or death of a cetacean or listed threatened/migratory/marine species caused by, or suspected to have been caused by petroleum activity)	Within seven days	DCCEEW- Environmental Compliance Hotline: 1800 110 395 environment.compliance@dcceew.gov.au Copy to Joint Venture partner Woodside Energy (Bass Strait Pty Ltd – bass.strait@woodside.com
Cetacean vessel strike	Within three days	DCCEEW- Hotline: 1800 920 528 EPBC.Permits@dcceew.gov.au Esso Environmental and Regulatory Advisor to notify Joint Venture partner Woodside Energy (Bass Strait Pty Ltd – bass.strait@woodside.com
Cultural Heritage Management Protocols	Immediately	DCCEEW Indigenous Cultural Heritage Emergency Hotline: 1800 571 242

Requirement	Timing	Contact
		atsihpa@dcceew.gov.au Relevant Traditional Owner groups Esso Environmental and Regulatory Advisor to notify Joint Venture partner Woodside Energy (Bass Strait Pty Ltd – bass.strait@woodside.com

8.16 OIMS System 10: 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 System 10: Emergency Preparedness and Response.

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.

The following considerations are made for the purposes of emergency response:

- for decommissioning activities described in this EP, Allseas is the Operator of the facility[4] and has legislative responsibilities for all vessel operations, including response to emergencies
- Esso is the operator for the Gippsland Basin Joint Venture (Esso and Woodside Energy (Bass Strait) Pty Ltd)
- for emergency purposes, both Esso and Allseas will have responsibilities for emergency response. Responsibilities are described in an emergency response bridging document, which will be developed and implemented together with Allseas prior to commencement of decommissioning activities.

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.

As mentioned, a Campaign#1 specific bridging 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 decommissioning activities 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 Operator and Esso will interact in the event of an emergency. A Campaign #1 specific Contacts Directory listing all contact numbers will also be developed.

8.16.1 Oil Pollution Emergency Plan

In accordance with Regulation 22(8) and 22(12) of the Environment Regulations, the implementation strategy must include an OPEP and arrangements for testing the response arrangements within this EP.

Esso has an OPEP (see Appendix A of Attachment 2) in place for all its offshore assets and operations in Bass Strait that outlines how Level 1, 2 and 3 spills will be managed. In addition, Quick Reference Information specific to the activities of this EP, is included as Appendix D of the OPEP in Attachment 2. The Quick Reference Information

[4] For the purposes of Campaign#1, the facility is understood to be vessel(s) conducting the decommissioning activities within the scope of this EP.

summarises hydrocarbon properties, worst case deterministic modelling, receptors at risk, relevant shoreline Tactical Response Plans, and recommended spill response strategies.

In addition, to fulfill its responsibilities to respond to emergencies, Allseas has a SOPEP in place that provides the basis, resources and strategy required to immediately respond to a spill emergency.

As described above, both Esso and Allseas have an OPEP in place for management of oil spill events during Campaign#1 activities. The Esso-Allseas emergency preparedness and response bridging document will provide detail on the response process, including responsibilities, resources and response strategies to be implemented depending on the size and nature of the spill.

8.16.2 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.

MGO 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 MGO 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 MGO. Based on results from modelling at various representative locations, the highest probability of shoreline contact at the moderate threshold from an MGO spill within the OA is predicted to be 98% (refer OPEP).

8.16.3 Testing of oil spill response arrangements

In accordance with Regulation 22(14) of the Environment Regulations and requirements of OIMS System 10: Emergency Preparedness and Response, the response arrangements within the OPEP and provisions described in the Esso-Allseas emergency response bridging document 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, where applicable
- in accordance with the:
    - Campaign#1 EP-specific schedule defined in the Esso - Allseas emergency response bridging document. Schedule described in Volume 4 of the *Bass Strait Environment Plan* (AUGO-EV-EMM-012) [Volume 4 Table 9-1] will be the basis for the development of the Decommissioning – Campaign#1 EP-specific schedule
    - 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: Emergency Preparedness and Response.

Where changes are required to the OPEP, resulting from testing/exercise outcomes, altered contractual arrangements, corrective actions, routine information updates (e.g. contact detail change), or other items; the OIMS System 10: Emergency Preparedness and Response Administrator is responsible for ensuring changes are assessed against the revision criteria of Regulation 39 of the Environment Regulations and where necessary, this EP and/or the OPEP is submitted to NOPSEMA as a formal revision, in accordance with the MOC process (OIMS System 7: Managing Changes). For changes which do not trigger a formal revision, internal revisions to the OPEP will also be in accordance with the MOC process with any change justified.

8.17 OIMS System 10: Managing Community Risk

OIMS System 10: Managing Community and Risk, ensures that community related risks are identified, assessed, and managed through proactive engagement with relevant persons, including local communities, Indigenous groups and regulatory authorities. Community engagement and hazard awareness are key components of this process, ensuring that stakeholders are informed of potential community exposures, emergency preparedness measures and recommended response actions.

Section 4 of this EP outlines the applicable consultation and engagement standards and legislative requirements, including Esso's definition of relevant persons, describes Esso's consultation methodology and how this methodology has been applied to the scope of this EP.

It is noted that third-party operated sites, such as the Barry Beach Marine Terminal are stewarded under the operator's own systems and OIMS system do not apply.

8.18 OIMS System 11: Assessing and Driving Effectiveness

Formal assessment is regularly undertaken on the performance of the OIMS Systems 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 11: Leading, Managing and Driving Performance.

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Appendix A: Description of the Environment in the EMBA

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A.1 Description of the environment

In accordance with the Environment Regulations – Part 4, Division 2 'Contents of environment plan', Section 21(2), the EMBA by the activity is described in this Section, together with its values and sensitivities. The description of the EMBA is within Section 3.2 of the EP. The EMBA is shown in Figure A-1.

The following explanation has been inserted on all the figures displaying the EMBA throughout this Appendix:

"The environment that may be affected (EMBA) illustrated in this map represents the combined modelling results of 100 individual hydrocarbon spill simulations from a loss of containment from a vessel at representative locations where key decommissioning activities will take place. The theoretical spill at each location simulates the release of 1165m^3 over 12 hours, with a simulation length of 30 days, and a release of 280m^3 over 6 hours, with a simulation length of 30 days, using annualised metocean conditions. Each spill simulation is subject to different wind and ocean currents at different times of the year. The 100 individual spill simulations for each scenario are then combined to identify the largest envelope in which a single spill is predicted to occur. 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."

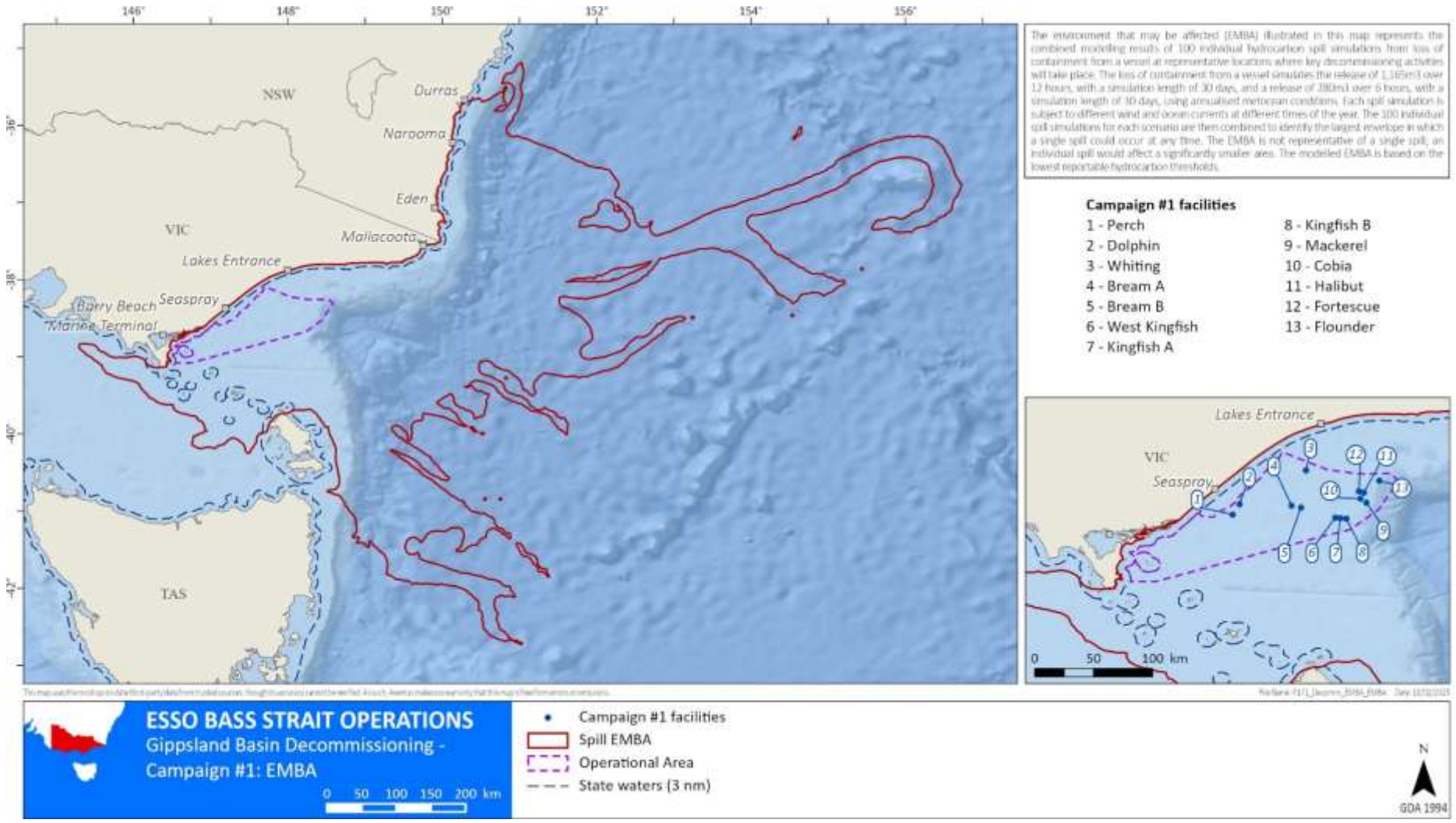

Figure A-1 Campaign #1 Execution EMBA

A.1.1 Conservation values and sensitivities

The conservation values and sensitivities found within EMBA are described within this Section.

A.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.

A.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.

A.1.1.3 Commonwealth heritage

Commonwealth heritage places are defined in Table 3-2 of the EP. The Commonwealth heritage places identified within the PMST reports (Appendix D) are either outside the extent of the EMBA or are a terrestrial feature and hence have not been described.

A.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 A-2.

A.1.1.4.1 Gippsland Lakes

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

The Gippsland Lakes Ramsar site, located in Victoria is a series of large, shallow, coastal lagoons approximately 70km in length and 10km wide, separated from the sea by sand dunes. The surface area of the lakes is approximately 364km^2 and the three main water bodies are Lake Wellington, Lake Victoria, and Lake King.

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, with limited residential and tourism purposes.

The bird diversity of the Ramsar wetland is high with 86 species of waterbirds being recorded including the nationally endangered Australasian bittern and nationally vulnerably Australian fairy tern and hooded plover.

The site meets six of the Ramsar criteria: 1, 2, 4, 5, 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 embayments.

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, a vulnerable fish species (the Australian grayling) as well as one nationally threatened wetland-associated flora species, the swamp everlasting.

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: chestnut teal, fairy tern and little tern.

Gippsland Lakes is a recognised important recreational fishery and supports one of the largest fisheries of black bream in Victoria. In addition, the Gippsland Lakes supports over 230 species of fish including an abundance and diversity of native fish.

A.1.1.4.2 Corner Inlet

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

Corner Inlet is a 67,168ha wetland enclosed to the west and north by the South Gippsland coastline, in the southeast by a series of barrier islands and sandy spits lying end to end and separated by narrow entrances, and to the south by the hills of Wilsons Promontory. Corner Inlet includes the chain of barrier islands, multiple beach ridges, lagoons and swamps, tidal creeks, tidal deltas, and tidal washovers. The 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.

The site meets six of the Ramsar criteria: 1, 2, 4, 5, 6 and 8.

The inlet contains the most extensive intertidal mudflats in Victoria.

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 SRW, 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.

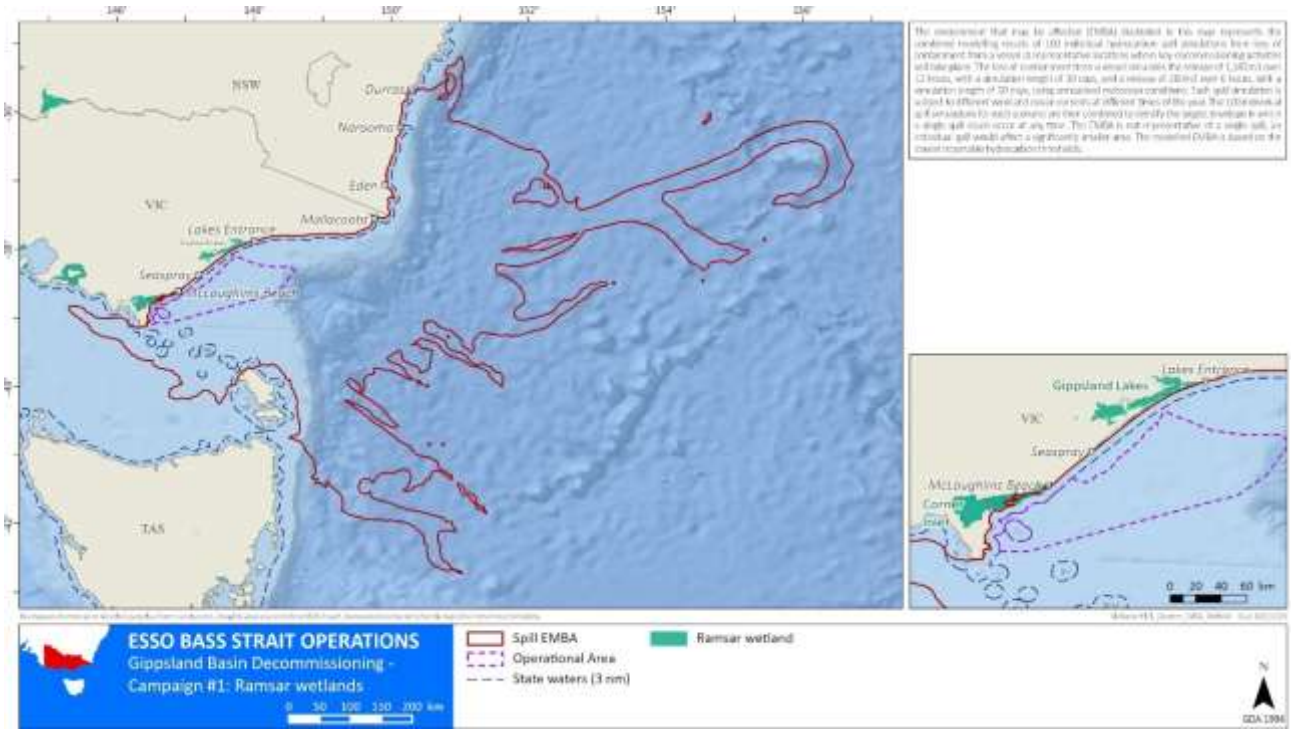

Figure A-2 Ramsar wetlands within the EMBA

A.1.1.5 Nationally Important Wetlands

NIWs are defined in Table 3-2 of the EP. Table A-1 describes the NIWs identified within or adjacent to the EMBA and shown in Figure A-3.

Table A-1 NIWs within the EMBA

Wetland	Description
Victoria	
Benedore River	The Benedore River is located in East Gippsland in the Croajingolong National Park, with a catchment elevation that ranges from 210m (ASL) at the headwaters to sea level at the river mouth. It flows naturally without artificial barriers through diverse geological zones - from sedimentary beach deposits, to non-marine sands, gravels, ironstone, and brown coal, and finally to sedimentary sandstone and mudstone - supporting EPBC Act listed threatened fauna and being highly valued for recreational and scientific research purposes (DCCEEW, 2019).
Corner Inlet	Corner Inlet is located between Wilsons Promontory, Foster, and Woodside, covering an area of 51,500ha on the South East Coastal Plain at low elevations (0 – 10m ASL). It features the most southerly tidal mudflat system on mainland Australia, with a diverse geological setting comprising Quaternary marine, coastal, aeolian, lacustrine, and paludal sediments. The inlet is internationally (listed as a Ramsar site) and nationally significant for its geomorphology and high productivity, supporting unique flora and providing critical feeding grounds for a wide array of waterfowl and migratory wader species. It is also valued for recreation and scientific research (DCCEEW, 2019).
Ewing's Marsh (Morass)	Ewing's Marsh is a coastal wetland that formed in a long, narrow basin of Quaternary alluvium between an active 50km coastal barrier. It provides vital habitat for a diverse range of fauna, particularly water birds, and is valued for recreational use. (DCCEEW, 2019).

Wetland	Description
Lake Bunga	Lake Bunga is a narrow freshwater lagoon in East Gippsland that forms part of the Gippsland Lakes Ramsar site. Fed by Bunga Creek and rarely open to the sea, the lake is valued for its geological, geomorphological, botanical and ornithological features (DCCEEW, 2019).
Lake King Wetlands	Lake King Wetlands consist of two large coastal lagoons with associated channels, saltmarshes, and brackish to fresh marshes in East Gippsland. The Lake King Wetlands are valued for their ecological, recreational, scientific, cultural, and landscape features, exemplifying a large coastal lagoon system. Within the wetlands, the internationally significant Mitchell River silt jetties and the state-recognized Tambo River Delta demonstrate remarkable geological and geomorphological processes, and Mullacky Swamp is noted for its special botanical significance (DCCEEW, 2019).
Mallacoota Inlet Wetlands	Mallacoota Inlet Wetlands comprise Mallacoota Inlet, Lake Barracoota and Howe Flat in East Gippsland. The wetlands are supplied with fresh water from Genoa River, Wallagaraugh River, Little River, Dowell River and several smaller streams, although sea water may enter via the shallow inlet entrance via tidal movement. The Mallacoota Inlet Wetlands provide a variety of wetland habitats ranging from estuarine to freshwater, deep inlet waters to sedgelands. It is also valued for recreational purposes (DCCEEW, 2019).
Sydenham Inlet Wetlands	Sydenham Inlet Wetlands, together with Tamboon Inlet, developed in an embayment between Pearl Point and Tamboon South headlands in East Gippsland. The Sydenham Inlet Wetlands include a variety of wetland types affected by fresh to saline water and provide a large area of estuarine habitat and support a high diversity of flora and fauna, including nesting and roosting sites. It is also valued for recreational purposes (DCCEEW, 2019).
Tamboon Inlet Wetlands	Tamboon Inlet Wetlands, together with Sydenham Inlet Wetlands, developed in an embayment between Pearl Point and Tamboon South headlands in East Gippsland. The Tamboon Inlet Wetlands have a variety of wetland types affected by fresh to saline water which support a diversity of flora and fauna and provides a large area of estuarine habitat. It is also valued for recreational purposes (DCCEEW, 2019).
Thurra River Wetland	The Thurra River Wetland is located in East Gippsland with elevation ranging from 0–560m ASL. The river supports EPBC Act listed threatened fauna and flora species. It is also valued for recreational purposes (DCCEEW, 2019).
New South Wales	
Clyde River Estuary	The Clyde River Estuary is located on the south coastal plain from the tidal waters and intertidal wetlands of the Clyde River and Cullendulla Creek estuary upstream to Cyne Mallows in East Gippsland. Due to relatively large areas of mangrove, saltmarsh and seagrasses, it is a representative example of an estuarine wetland on the south coast. The estuary supports migratory birds and provides a nursery habitat for commercial fish species. It is also valued for cultural practices such as permanent camps and sustenance practices (DCCEEW, 2019).
Moruya River Estuary Saltmarshes	Moruya River Estuary Saltmarshes is located in the South East Corner biogeographic region with elevation ranging from 0 – 2m ASL. The salt marsh is part of a mature estuarine system that contains a number of extensive, modified salt and brackish marshes (DCCEEW, 2019).

Wetland	Description
Nadgee Lake and tributary wetlands	Nadgee Lake and tributary wetlands are located in the South East Corner biogeographic region. It is a relatively large intermittently closed and open coastal lake, although it is predominately closed to the ocean. The lake is supplied by large swamps and ephemeral creeks flowing from the Nadgee Range to the west. It is also valued for cultural practices and scientific research (DCCEEW, 2019).
Nargal Lake	Nargal Lake is one of the few dune-swale freshwater lakes in the bioregion. Lake waters are derived from a relatively small freshwater catchment. The swamp oak forest and sedgelands surround the lake, providing shelter, refuge and breeding sites for numerous bird species. It has cultural values and is identified as a site of significance to Aboriginal people (DCCEEW, 2019).
Nelson Lagoon	Nelson Lagoon is an intermittently closed and open barrier lagoon with several small, indented bays and a delta at the mouth of Nelson Creek. This lagoon features saltmarsh areas and an elevation of 0m ASL. It is also valued for recreational purposes (DCCEEW, 2019).
Tuross River Estuary	Tuross River Estuary is a complex delta estuary with many low islands and islets (>20), draining a major South East Corner bioregion river system and entering the sea adjoining a relatively long beach barrier. The estuary is valued for recreational (e.g. boating) and commercial (e.g. oyster farming and productive grazing) purposes. Cultural values include known middens and sites of Aboriginal sacred significance (DCCEEW, 2019).

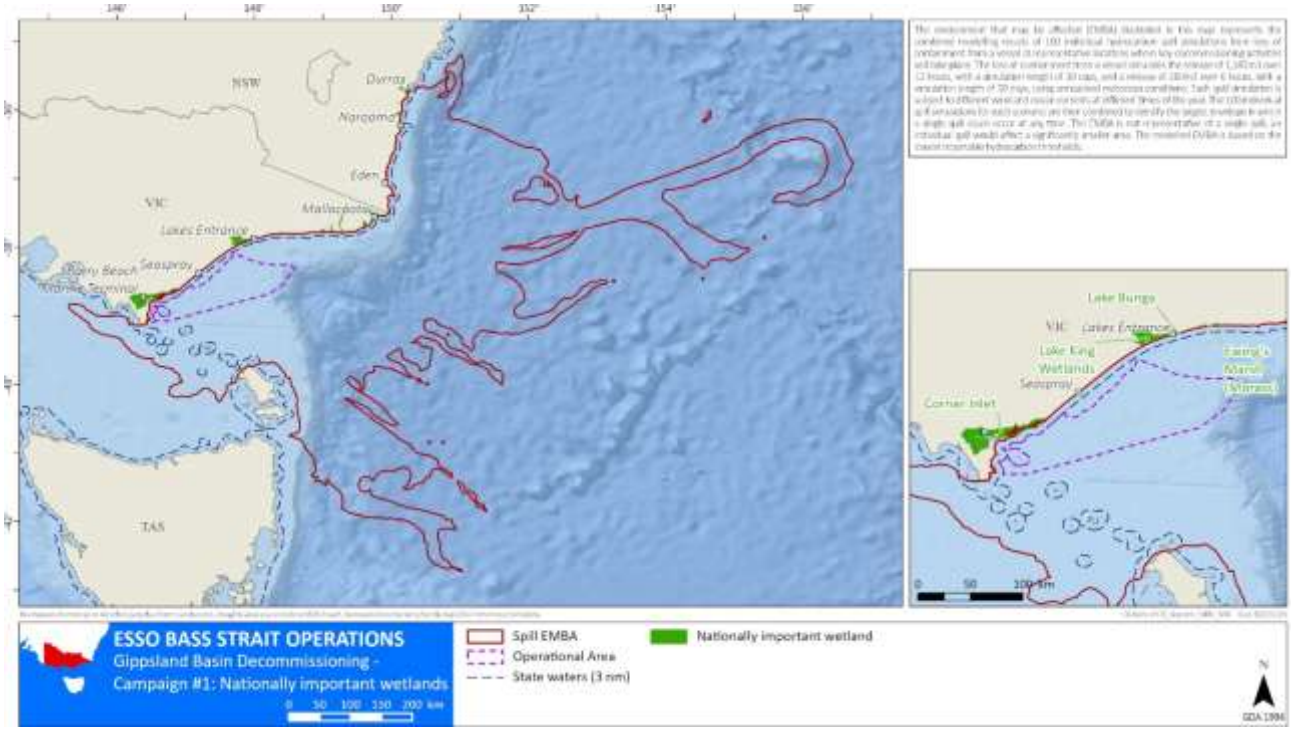

Figure A-3 NIWs within the EMBA

A.1.1.6 Threatened Ecological Communities

TECs are defined in Table 3-2 of the EP. TECs within the EMBA are described below and shown in Figure A-4. Only TECs that are marine/coastal in nature have been described, a full list of TECs detected by the PMST report (refer to Appendix D of the EP).

A.1.1.6.1 Littoral Rainforest and Coastal Vine Thicket

This TEC is listed as critically endangered under the EPBC Act. This ecological community is a complex of rainforest and coastal vine thickets influenced by its proximity to the sea. It 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 2km 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 the New South Wales southern coastline intersect with the EMBA.

A.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 the Victorian coastline which intersects with the EMBA.

A.1.1.6.3 Giant Kelp Marine Forests of South East Australia

This TEC is listed as endangered under the EPBC Act. This ecological community was once common in the coastal waters of southeast Australia, including around Tasmania, across Bass Strait up to Victoria, eastern South Australia and southern New South Wales. However, after significant declines in recent decades, remnant fragments of Giant Kelp Marine Forest are now only found in Tasmania, where patches of giant kelp declined from 400ha in the late 1990s to less than 10ha by 2015 (DCCEEW, 2024).

Giant kelp (*Macrocystis pyrifera*) plants are the foundation species of this TEC. Giant kelp is a large, brown algae that grows on rocky reefs from the seafloor 8m below sea level and deeper. Its fronds grow vertically toward the water surface, in cold temperate waters off southeast Australia. Their presence on a rocky reef adds vertical structure to the marine environment that creates significant habitat for marine fauna (DSEWPC, 2012a). The kelp species itself is not protected; to be considered a Giant Kelp Marine Forest, the plants must form a closed or semi-closed canopy at or below the water's surface and grow at depths generally greater than 8m on a rocky substrate. Other components of this TEC include a large range of marine algae, reef associated fish and numerous invertebrates that shelter, feed, and reproduce within giant kelp marine forests (DSEWPC, 2012a).

This community occurs sporadically along the Victorian and Tasmanian coastlines, intersecting with the EMBA.

A.1.1.6.4 Coastal Swamp Oak 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 New South Wales 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 *(Casuarina glauca)* 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).

This community intersects with the EMBA along the New South Wales coastline.

A.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 South Australia 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. This community intersects with the EMBA along the coastline near Wilsons Promontory.

A.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 New South Wales (DAWE, 2021) where it intersects the EMBA. This TEC is present in low-lying coastal alluvial areas with minimal relief at elevations below 20m ASL but may occur occasionally up to 220m 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.

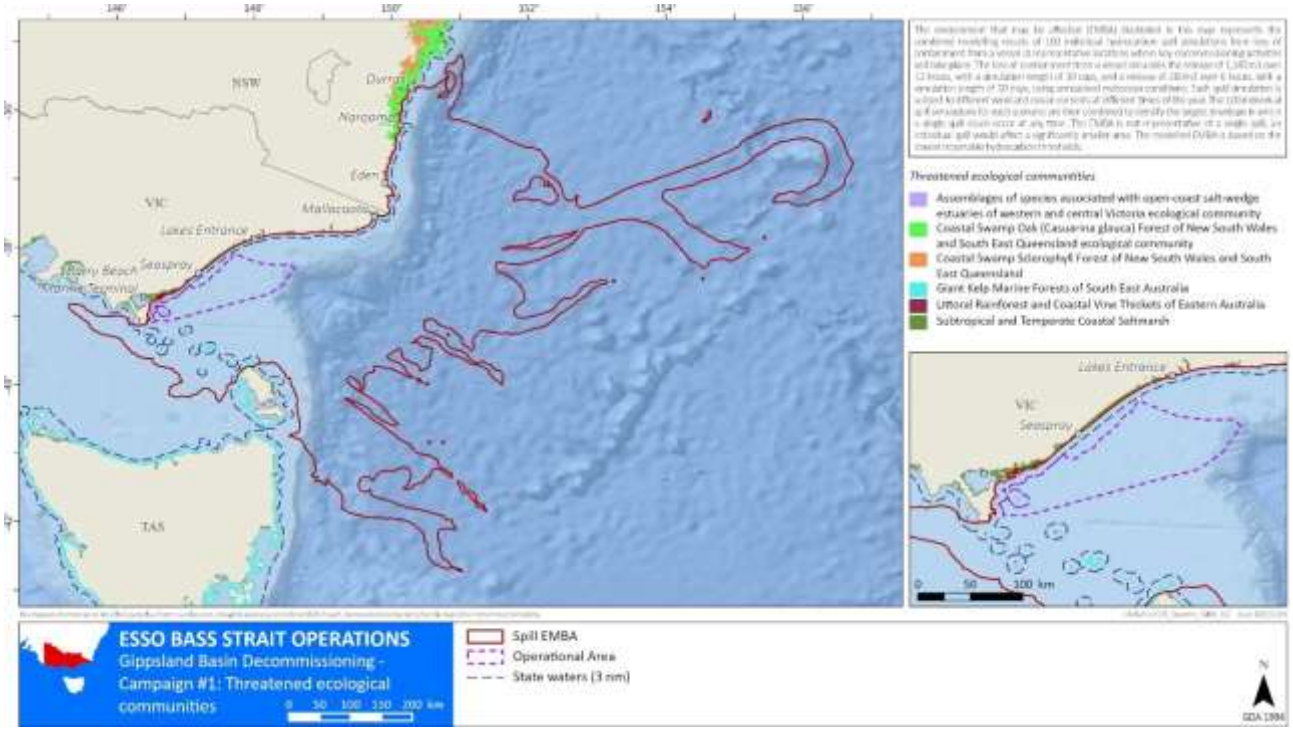

Figure A-4 TECs intersected by the EMBA

A.1.1.7 Australian Marine Parks

AMPs are defined in Table 3-2 of the EP. AMPs within the EMBA are described below and shown in Figure A-5. The AMPs in the South-east Network, established between 1999 and 2007, were managed under the *South–east Marine Parks Network Management Plan 2013–2023* which expired in 2023. As a result, the Director of National

Parks prepared the *South-east Marine Parks Network Management Plan 2025* that sets out management of this network from 2025 to 2035. This management plan has been approved by the Minister for the Environment and Water and came into effect from the 13 February 2025.

The 2025 version of the management plan for this network presents a description of the conservation values, which include natural, cultural, and socio-economic values. From the natural values perspective, the 2025 version of the management plan reinforces the importance of values referenced in the now superseded 2013-2023 plan, including the presence of KEFs, BIAs ecosystems and habitat or species that are particularly important due to their uniqueness, functional importance, vulnerability, biological productivity, diversity or ability to provide social and economic benefit. From a cultural and socio-economic perspective, the 2025 version of the management plan incorporates additional important values such as *Ancient land bridge*, describing that areas now under the sea in the South-east Network were once part of the landscape used by First Nations people, and *Songlines and stories*, acknowledging that First Nations people continue to honour ancient saltwater songlines, migrations, stories and ancestral connections (DNP, 2025).

A.1.1.7.1 East Gippsland Marine Park

The East Gippsland Marine Park is located off the northeast corner of Victoria and is 4137km^2. The full area of the marine park is designated as a Multiple Use Zone (IUCN VI) (DNP, 2025).

The marine park contains representative samples of an extensive network of canyons, the continental slope, and escarpments at water depths ranging from 604m to 5276m (DNP, 2025). The main seabed features include a dome-shaped plateau on the mid slope, two large box canyons and several large, tilted blocks.

The East Gippsland Marine Park is south-east of the New South Wales – Victorian border at Cape Howe. The park contains deepwater ecosystems extending from the upper slope to the abyssal plain. The main seabed features include a dome-shaped plateau on the mid slope, two large box canyons and several large, tilted blocks. The western section of the park intersects with the offshore edge of the Upwelling East of Eden, which is defined as a KEF, as it is an area of high productivity. The East Australian Current brings warm subtropical water from the north and forms large eddies around Cape Howe which interact with the varied seafloor terrain, causing upwelling of cooler waters. The mixing of cool and warm water creates phytoplankton blooms that support an abundance of zooplankton, fish, marine mammals and seabirds (DNP, 2025). Major conservation values identified within the *South–east Marine Parks Network Management Plan 2025* include (DNP, 2025):

- foraging BIAs including albatross species (including shy, black browed, Campbell, Indian yellow–nosed and wandering and Buller's), wedge-tailed shearwaters, white faced storm petrels and PBWs
- the lower slope (water depths ranging from 2500m to 3850m) supports diverse invertebrate fauna, including large red spiny king crab, squat lobsters, finned octopus, sea cucumbers, sea stars, sea spiders, shrimp, crinoids and sea whips, polychaetes and bivalves
- habitats, species and ecological communities associated with the Southeast Transition provincial bioregion
- the Upwelling East of Eden KEF
- social and economic benefits include commercial fishing.

A.1.1.7.2 Beagle Marine Park

Beagle Marine Park, in Bass Strait off Wilson's Promontory, surrounds Tasmania's Kent Group Marine Park and the Hogan and Curtis Island groups with a total area of 2,928km^2. The park represents an area of shallow continental shelf ecosystems in depths of about 46 - 77m and is designated as a Multiple Use Zone (IUCN VI) and a National Park Zone (IUCN II) (DNP, 2025), with areas of 2448km^2 and 479km^2 respectively (DNP, 2025).

Major conservation values identified within the *South–east Marine Parks Network Management Plan 2025* include (DNP, 2025):

- the seabed covers part of an ancient land bridge between Tasmania and Victoria and was used by First Nations people before it was submerged at the end of the last glacial period about 10,000 years ago. First Nations communities hold knowledge, oral traditions, stories and songlines that connect to the times of the land bridge that have been passed down through the generations, giving unique insights into the flooding of this Country
- between the Kent Group and Hogan Island Group are mesophotic (middle-light) reefs that rise 2m to 5m above the seabed and are considered relict coastal dunes that formed on the ancient land bridge. These mesophotic reefs, a rare ecosystem within Bass Strait, support a sessile invertebrate assemblage comprised of bryozoans, hydroids and a high diversity of temperate sponges. Abundant and diverse fish

communities are associated with these mesophotic reefs and are dominated by butterfly perch, barber perch, jackass morwong, common gurnard perch, Melbourne silverbelly, Degen's leatherjacket, and rosy wrasse. Aggregations of hundreds of predominantly female Port Jackson sharks have been observed in 2018 and 2024, indicating that these reef features are important for the species during winter foraging migrations to Bass Strait.

- the shallower eastern section of the park is dominated by linear ridges less than 1m in height that extend several kilometres. These low-profile ridges are sometimes covered by shell hash and gravel that support a diverse sessile filter feeding invertebrate community dominated by bryozoans and sponges. The deeper, southwestern part of the park is sediment-dominated and contains extensive mobile dune fields less than 1m high with patches of doughboy scallops
- foraging BIAs for many seabirds, including albatross species (including the endangered shy albatross; the vulnerable black browed, Campbell, Indian yellow-nosed and wandering albatrosses; and Buller's albatross), white faced storm petrel, common diving petrel, short-tailed shearwater and little penguin. There are also BIAs for white sharks, SRWs and PBWs.
- humpback whales and short-tailed shearwaters are culturally significant species
- the KEFs represented include the Shelf Rocky Reefs and hard substrate[5], including the mesophotic reefs between the Kent Group and Hogan Island Group
- habitats, species and ecological communities associated with the Southeast Shelf Transition provincial bioregion and the Twofold Shelf and Flinders mesoscale bioregions
- The social and economic benefits include commercial fishing and shipping.

A.1.1.7.3 Flinders Marine Park

Flinders Marine Park is off the northeast tip of Tasmania near Flinders Island. The park extends from the mid-continental shelf eastwards to the outer limit of Australia's Exclusive Economic Zone and protects a range of ecosystems, including mesophotic (middle-light) reefs; rariphotic (rare light) reefs; shelf sediments; upper-, mid-, and lower-slope reefs and sediments; canyons; and seamounts. It covers a depth range from about 34m on the shallow continental shelf to abyssal depths of 5041m near the edge of Australia's exclusive economic zone. The marine park protects a range of ecosystems, including mesophotic reefs, rariphotic reefs, shelf sediments, upper–, mid–, and lower–slope reefs and sediments, canyons and seamounts. The park has a total area of 27,046 km^2 and is recognised as a Marine National Park Zone (IUCN II), a Multiple Use Zone (IUCN VI), and a Habitat Protection Zone (IUCN IV), each one covering areas of 15,024km^2, 1129 km^2 and 10,892 km^2 respectively. (DNP, 2025).

Major conservation values identified within the *South–east Marine Parks Network Management Plan 2025* include (DNP, 2025):

- the seabed covers part of an ancient land bridge between Tasmania and Victoria and was used by First Nations people before it was submerged at the end of the last glacial period about 10,000 years ago
- ecosystems, habitats and communities associated with the Tasmania Province, the Tasmanian Shelf Province, the Southeast Transition, the Southeast Shelf Transition
- diverse mesophotic reefs supporting a diverse benthic community of sponges, cnidarians, hydroids, gorgonian fans and soft corals
- the shelf break (water depths of ~120m) is largely sediment draped with few reef features, although midway along the shelf break are two canyon incisions with exposed reef, including cliffs up to 60m high. Fish communities associated with these features are dominated by reef ocean perch, jackass morwong and striped trumpeter
- the upper slope reefs and canyons support an abundance of rare black corals and octocorals and several species of conservation-dependent deepwater sharks, including the Harrisson's dogfish and southern dogfish
- foraging BIAs for many seabirds, including albatrosses (including the endangered shy albatross; the vulnerable antipodean, black browed, Campbell, Indian yellow-nosed and wandering albatrosses; and

[5] Currently not defined within the Australian Marine Spatial Information System or identified within the PMST reports (refer to Appendix of the EP).

Buller's albatross), white faced storm petrel, common diving petrel and short-tailed shearwater. There are also BIAs for white sharks, SRWs and PBWs
- habitats, species and ecological communities associated with provincial bioregions - Southeast Transition, Southeast Shelf Transition and Tasmanian Shelf Province, and the Flinders and Freycinet mesoscale bioregions
- the KEF[5] represented include the Shelf Rocky Reefs and hard substrate, includes rariphotic reefs in the northwest of the marine park and east Tasmania subtropical convergence zone
- social and economic benefits include commercial fishing
- the proposed Tayaritja Milaythina Muka IPA overlaps the western part of Flinders Marine Park. This is the first proposed Sea Country IPA in the South-east Network, extending from northeast Lutruwita/Tasmania over the submerged ancient land bridge and surrounds Tayaritja/Bass Strait Islands. The Tayaritja Milaythina Muka IPA proposes to protect culturally and ecologically important habitats and species.

A.1.1.7.4 Jervis Marine Park

Jervis Marine Park is located about 20 km offshore, adjacent to the NSW Jervis Bay Marine Park and the Commonwealth Booderee National Park, comprising an area of 2,473 km2 and covering a depth range from 120 - 5,000 m approximately. The park has Habitat Protection (UCN IV) and Special Purpose (Trawl) zones (UCN VI) (DNP, 2018).

Seafloor features represented in the reserve include abyssal-plain/deep ocean floor, canyons, shelf and slope. The reserve includes two KEFs, it is one of three shelf incising canyons occurring within the region (unique seafloor 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
- KEFs, Canyons on the Eastern Continental Slope and Shelf Rocky Reefs
- contains one known historic shipwreck *HMAS Tattoo* (wrecked in 1939)
- Sea Country is valued for Indigenous cultural identity, health and wellbeing
- social and economic values include tourism, commercial fishing and recreation.

A.1.1.7.5 Freycinet Marine Park

The Freycinet Marine Park is located east of Tasmania, 6km to 12km offshore from the Freycinet Peninsula. It covers 57,941km^2, with depths from 40–5230m (DNP, 2025). The marine park protects a range of ecosystems, including mesophotic reefs; rariphotic reefs; shelf sediments; upper–, mid–, and lower–slope reefs and sediments; and seamounts. It has National Park (IUCN II), Recreational Use (IUCN IV), Multiple Use (IUCN VI), and Habitat Protection (IUCN IV) zones, each one with areas covering 56,825 km^2, 323km^2, 725 km^2 and 68km^2 respectively (DNP, 2025) (DNP, 2025).

Major conservation values identified within the South–east Marine Parks Network Management Plan 2025 include (DNP, 2025):

- Joe's Reef is an isolated granite reef that rises ~20m above the surrounding seabed near the western boundary of the marine park. This structurally complex reef occurs in depths of 59m to 83m, so the top of the reef extends into the mesophotic rocky reef ecosystem. It is covered in a diverse invertebrate fauna of sponges, gorgonian fans, mushroom corals and rare but distinctive tree-forming black corals up to 3m tall. Associated fish assemblages are dominated by reef–associated species such as jackass morwong, ocean perch, butterfly perch, splendid perch, rosy wrasse and striped trumpeter
- in the northwest corner of the marine park there are lower profile, fragmented and isolated patch reefs in depths of ~80m. Associated fish assemblages are dominated by jackass morwong, barred grubfish, ocean perch and common gurnard perch. There are steep mudstone ledge/cliffs without significant reef complexity and the associated fish assemblages include relatively high abundances of jackass morwong, ocean perch and striped trumpeter. Sawtail catshark have also been observed at these shelf break reefs. Between 70 - 80m and 120 - 200m the habitat is primarily soft sediment with associated fish assemblages dominated by flathead and barred grubfish. Toothy flathead is the most common flathead species and is widely distributed across the shelf. Tiger flathead is found across the shelf to the shelf breaks but predominantly in the Multiple Use Zone and in lower numbers. Sand flathead is found in shallower shelf sites in the Multiple Use Zone

- much of the shelf between 80m and 120m has low profile dune-like ridge features and are likely consolidated relic glacial coastal dune features drowned by sea level rise following the last glacial period. These systems are intermediate between reef and soft sediment and are typically covered in a fine layer of sand or silt with emergent small sponges and bryozoan/hydroid turf matrix. Fish assemblages include jackass morwong, common gurnard perch, spikey dogfish, gummy shark and draughtboard shark
- foraging BIAs for seabirds, including albatrosses (including shy, antipodean, black browed, Campbell, Indian yellow–nosed, wandering and Buller's), white faced storm petrel, common diving petrel, soft plumaged petrel, and short-tailed shearwater. There are also BIAs for white sharks, PBWs and SRWs
- habitats, species, and ecological communities associated with provincial bioregions - Tasmania Province, Tasmanian Shelf Province, and Southeast Transition - and the Freycinet mesoscale bioregion
- the KEFs represented include:
    - Shelf Rocky Reefs and hard substrate, includes rariphotic reefs in the north-west of the marine park[5]
    - seamounts, east and south of Tasmania
    - east Tasmania subtropical convergence zone[5].
- social and economic benefits include commercial and recreational fishing, and scuba diving.

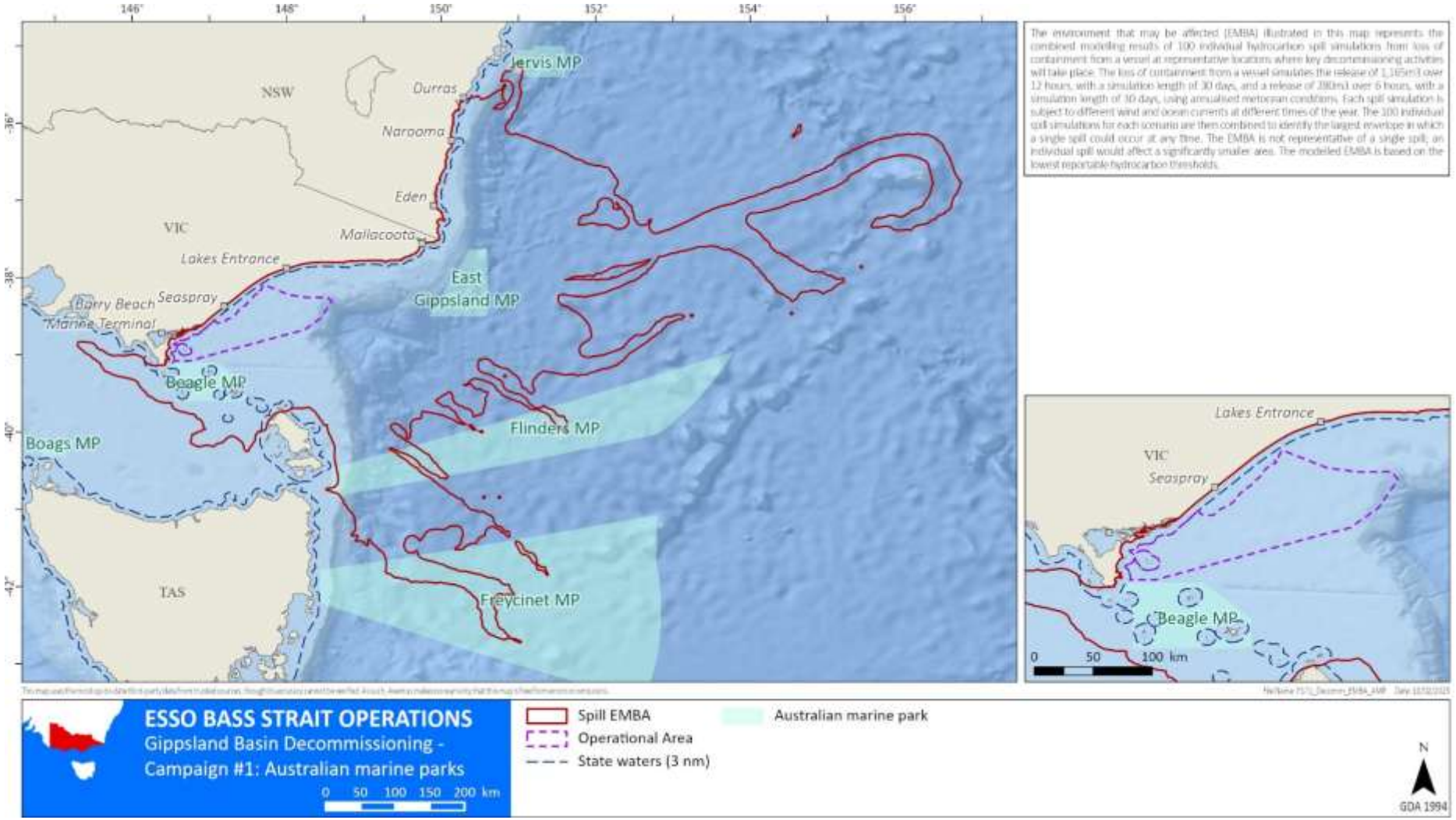

Figure A-5 AMPs intersected by the EMBA

A.1.1.8 Key Ecological Features

KEFs are defined in Table 3-2 of the EP. KEFs within the EMBA are described below and shown in Figure A-6.

A.1.1.8.1 Upwelling East of Eden (South–east Marine Region)

The Upwelling East of Eden is present along the eastern Victorian and southern New South Wales coasts and is defined as a KEF as it is an area of high productivity and aggregations of marine life (DCCEEW, 2023e).

The East Australian Current brings warm subtropical water from the north and forms large eddies around Cape Howe which interact with the varied seafloor terrain, causing upwelling of cooler waters. The mixing of cool and warm water creates phytoplankton blooms that support an abundance of zooplankton, fish, marine mammals and seabirds (DNP, 2025). As a result, the upwelling supports regionally high primary productivity that supports fisheries and biodiversity, including top order predators, marine mammals, and seabirds.

This area is one of two feeding areas for blue whales (*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 (DNP, 2025).

A.1.1.8.2 Big Horseshoe Canyon (South–east Marine Region)

Big Horseshoe Canyon is defined as a KEF 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 (DNP, 2025).

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 (DNP, 2025).

The Big Horseshoe Canyon is the largest southeastern canyon sampled for benthic biodiversity (Williams A, 2009). It has a total area of 319km^2 in 1500m depth that supports a rich, abundant, filter-feeding benthic megafauna, including large sponges in dense beds of large individuals at 120m and at 300–400m, dense stands of the stalked crinoid (*Metacrinus cyaneus)* in 200-300m, and many species of octocoral (especially gold corals) at depths >700m (Kloser RJ, 2001). It is the only known temperate location of the stalked crinoid.

A.1.1.8.3 Shelf Rocky Reefs (Temperate East Marine Region)

The Shelf Rocky Reefs habitat has been identified as a KEF as it is considered a unique seafloor feature which is associated with ecological properties of regional significance (DCCEEW, 2023e).

Shelf Rocky Reefs 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 45m (CoA, 2012). Below wave-influenced areas, massive and branched growth forms of sponges are more prevalent, and sponge species richness and density generally increase 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 45m from those of soft sediments (DCCEEW, 2023e).

A.1.1.8.4 Canyons on the Eastern Continental Slope (Temperate East Marine Region)

The Canyons on the Eastern Continental Slope are defined as a KEF as they are a unique seafloor feature with enhanced ecological functioning and integrity, and biodiversity, which apply to both its benthic and pelagic habitats (CoA, 2012).

The Canyons on the Eastern Continental Slope lie off the coast of New South Wales. Canyon systems have a marked influence on the diversity and abundance of species through their combined effects of topography, geology, and localised currents, all of which 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 – 700m) (CoA, 2012). 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 (DCCEEW, 2023e).

A.1.1.8.5 Seamounts South and East of Tasmania (South–east Marine Region)

The Seamounts South and East of Tasmania are defined as a KEF as they are an area of high productivity and aggregations of marine life (DNP, 2025).

These seamounts are a chain or cluster of seamounts rising from the abyssal plain, continental rise or plateau situated 200km or more from shore (east of Flinders Island to southeast of southern Tasmania). Seamounts with hard substrate summits and slopes provide attachment points for sessile invertebrates, while the soft sediments can be habitat for species that burrow into the sediments (DNP, 2025).

These seamounts create localised upwellings of nutrient rich waters from the seafloor. The hard substrate supports sessile invertebrates (DCCEEW, 2023e).

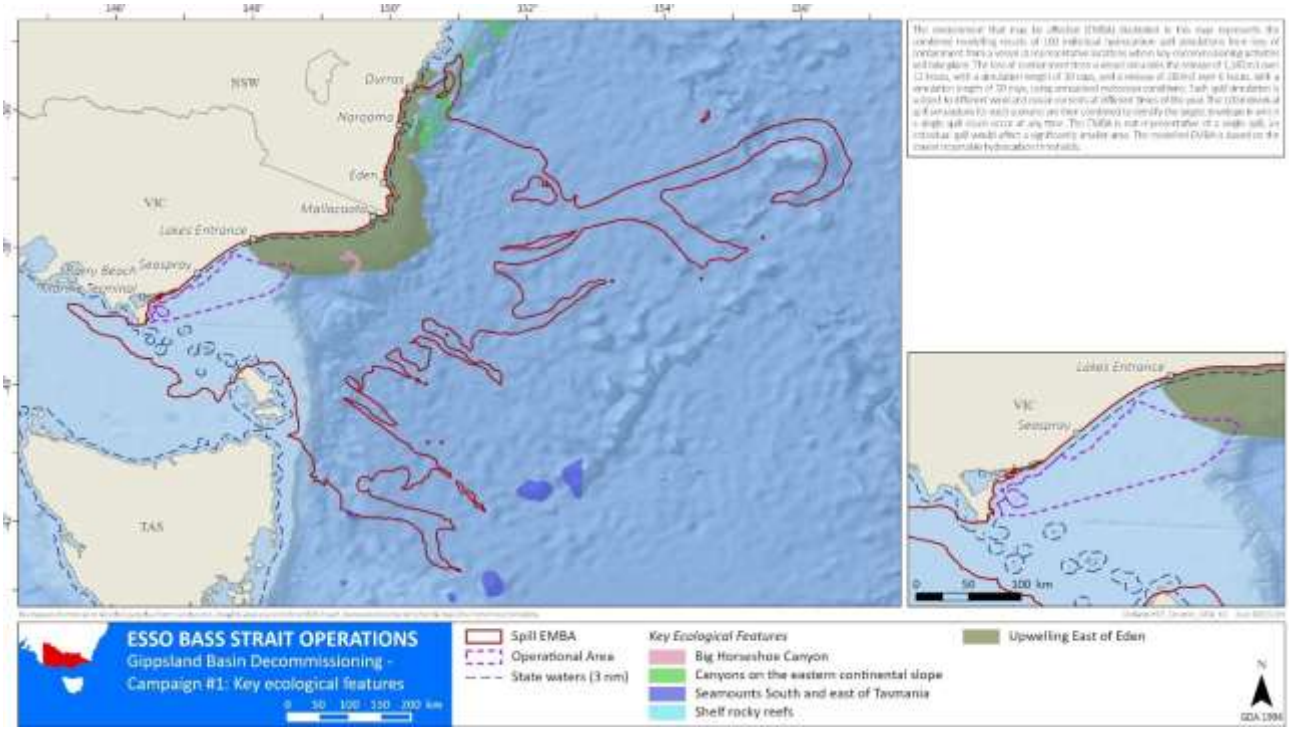

Figure A-6 KEFs intersected by the EMBA

A.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 of the EP). The marine/aquatic and coastal protected areas in relation to each state are mapped in Figure A-7, Figure A-8 and Figure A-9.

A.1.1.9.1 Marine/aquatic protected areas

Table A-2 lists and describes the marine/aquatic protected areas within the EMBA.

Table A-2 Marine/aquatic protected areas that are within the EMBA

Name	Description
Victoria (see Figure A-7)	
Beware Reef Marine Sanctuary	The Beware Reef Marine Sanctuary is a State marine protected area, IUCN Category II, located approximately 5km southeast of Cape Conran, comprising of a granite outcrop covering an area of 220ha and extending approximately 500m from the edge of the exposed reef. It rises from a depth of approximately 30m and is exposed at low tide, providing a resting area for Australian fur seals (Victorian National Parks Association, 2016). The reef is covered by outcrops of bull kelp (*Durvillaea sp.*) and supports a range of marine life, including seahorses and leafy sea dragons (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.
Cape Howe Marine National Park	The Cape Howe Marine National Park is situated in the far east of Victoria alongside the border with New South Wales. The habitats found in the park include kelp forests, granite and sandstone reefs, sandy beaches and soft sediments. 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).
Ninety Mile Beach Marine National Park	Ninety Mile Beach Marine National Park is located 30km south of Sale and adjacent to Gippsland Lakes Coastal Park, the Ninety Mile Beach Marine National Park covers 5km of coastline. 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).
Nooramunga Marine and Coastal Park	Nooramunga Marine and Coastal Park covers an area of 30,170ha 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 (*Sarcocornia quinqueflora*) and shrubby glasswort (*Tecticornia arbuscula*). Seagrass meadows also occur throughout the park. Seaward of the mangroves are extensive areas of intertidal mud and sand flats. 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.
Point Hicks Marine National Park	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. The national park is approximately 4000ha in area, with fauna including intertidal and shallow subtidal invertebrates, diverse sessile invertebrates living on subtidal reefs,

Name	Description
	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.
Wilsons Promontory Marine National Park, Marine Park and Marine Reserve	Wilsons Promontory Marine National Park is Victoria's largest Marine Protected Area at 15,604ha, is located around the southern tip of Wilsons Promontory, is classified as category II (IUCN), and the Parks Victoria level of protection is established as *Marine A* level. Wilsons Promontory Marine Park is located along the western and eastern coastlines of Wilsons Promontory. The southern end of the western section limits with the marine national park, whilst the southern end of the eastern section limits with an area of the marine reserve. The marine park also covers the Shellback Island, Norman Island ,and Rabbit Island (Parks Victoria, 2006). Extension of the park is 5566ha and it is classified as category IV (IUCN), and the Parks Victoria level of protection is established as *Marine B* level (ParksVic, 2017). Wilsons Promontory Marine Reserve is divided into two separate areas: one area to the west of Wilsons Promontory, covering the Glennie Group of islands; the second area covers a small section of the eastern coastline of Wilsons Promontory, between Refuge Cove to the north and Cape Wellington to the south (Parks Victoria, 2006). Extension of the reserve is 627ha and is classified as category IV (IUCN), and the Parks Victoria level of protection is established as *Marine D* level (ParksVic, 2017). The Wilsons Promontory Marine Park and Wilsons Promontory Marine Reserve complement the Wilsons Promontory Marine National Park system and protect other important values within this area. These three systems fall under the same planning area, covering a total of 22,075ha, and are governed under the Wilsons Promontory Marine National Park – Wilsons Promontory Marine Park Management Plan, 2006 implemented by Parks Victoria 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 (Parks Victoria, 2017). 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. 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 (Parks Victoria, 2017). Natural values of significance of the Wilsons Promontory Marine Protected Areas include but are not limited to: • abundant and diverse marine flora and fauna, including hundreds of fish species and invertebrates such as sponges, ascidians, sea whips and bryozoans • 126 species of marine flora and fauna at, or presumed to be at, their eastern or western distributional limits

Name	Description
	• important breeding populations of several seabird species, Australian fur seals and New Zealand fur seals, including one of the largest Australian fur seal breeding populations in the State • important habitat for several threatened shorebird species, including species listed under international migratory bird agreements • part of a nationally significant area for the recovery of great white shark populations. Four marine conservation assets have been identified in the Wilsons Promontory Park Landscape, including the Coastal (including islands) asset. This asset, and all marine habitats, are in very good condition (ParksVic, 2017). The Conservation Action Plan (ParksVic, 2017) establishes that Australian and New Zealand fur seals are of particular importance, as they breed on some islands within the park, they play a pivotal role as marine apex predators and, along with seabirds, are an important vector for the transfer of marine nutrients to the terrestrial ecosystems of the islands and are of importance for ecotourism operators. As such, fur seal breeding populations (Australian and New Zealand fur seals) have been identified as one of the three nested assets within the more general Coastal asset. Kanowna Island hosts one of the four largest breeding population of fur seals in Victoria, and the current extent of the breeding population is expanding and now also occurring at Rag Island (ParksVic, 2017)., which is part of the group of islands that are located within the Seal Islands Wildlife Reserve. Conservation outcome for the Coastal (including islands) asset of the Wilsons Promontory Marine National Park includes, that over the 15 years to 2031, suitable conditions for fur seals haul-out and breeding are maintained (ParksVic, 2017).
Tasmania (see Figure A-8)	
Kent Group National Park	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 29,000ha of marine habitat including deep and shallow reefs as well as extensive sponge beds (TPWS, 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 32.62ha unpopulated granite island with a peak elevation of 125m above sea level. Recorded breeding seabird and wader species include little penguin, short-tailed shearwater, fairy prior, common diving petrel, Pacific gull and sooty oystercatcher (Brothers, 2001).
New South Wales (see Figure A-9)	
Batemans Marine Park	The Batemans Marine Park was established in 2006 and covers approximately 85,000ha, 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 3nm offshore. Including all estuaries, creeks, rivers and lakes (except Nargal Lake) to the limit of tidal influence. 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

Name	Description
	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. 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).

A.1.1.9.2 Coastal protected areas

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

- Victoria (see Figure A-7):
  - 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 100km and together with the adjoining Nadgee Nature Reserve in New South Wales 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 NIW. 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 340km^2 and have a shoreline of 320km. 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 20km 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
  - Seal Island Wildlife Reserve is part of the parks and reserves within the Wilsons Promontory Park Landscape that is managed by Parks Victoria. The extension of the Reserve is 36ha and it is classified as Category IV (IUCN), and the Parks Victoria level of protection is established as *D* level (ParksVic, 2017). General description of the natural values and conservation assets, which include information on fur seals, is presented in Table A-2 in the Wilsons Promontory Marine National Park section.
- Snowy River
- Southern Wilsons Promontory Remote and Natural Area
- Vereker Creek Reference Area
- Wilsons Promontory Wilderness Zone
- Wilsons Promontory National Park
- Wilsons Promontory Islands Remote and Natural Area

- Tasmania (see Figure A-8):
  - 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 150ha 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 4.77ha. 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, 2000).
  - Hogan Group Conservation Area
    - Hogan Island, the largest island in the Hogan Group, is a 232ha 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
  - Mount Tanner Nature Recreation Area
  - North East Islet Nature Reserve

- North East River Game Reserve
- 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 A-9):
    - Ben Boyd National Park
    - Biamanga National Park
    - Bournda National Park
        - Bournda has been a special place for the Dhurga and Yuin people for thousands of years and its name means 'place of tea tree and kangaroos'. The estuarine wetlands provide roosting and feeding areas for a large variety of waders and waterfowl including threatened species such as little tern, hooded plover and pied oystercatcher (NPWS, 2023a).
    - Broulee Island Nature Reserve
        - Broulee Island Nature Reserve is located on the South Coast of New South Wales and covers the entire 43ha 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).
    - 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).
    - 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
  - Murramurang National Park spans 44km of coastline on the New South Wales 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

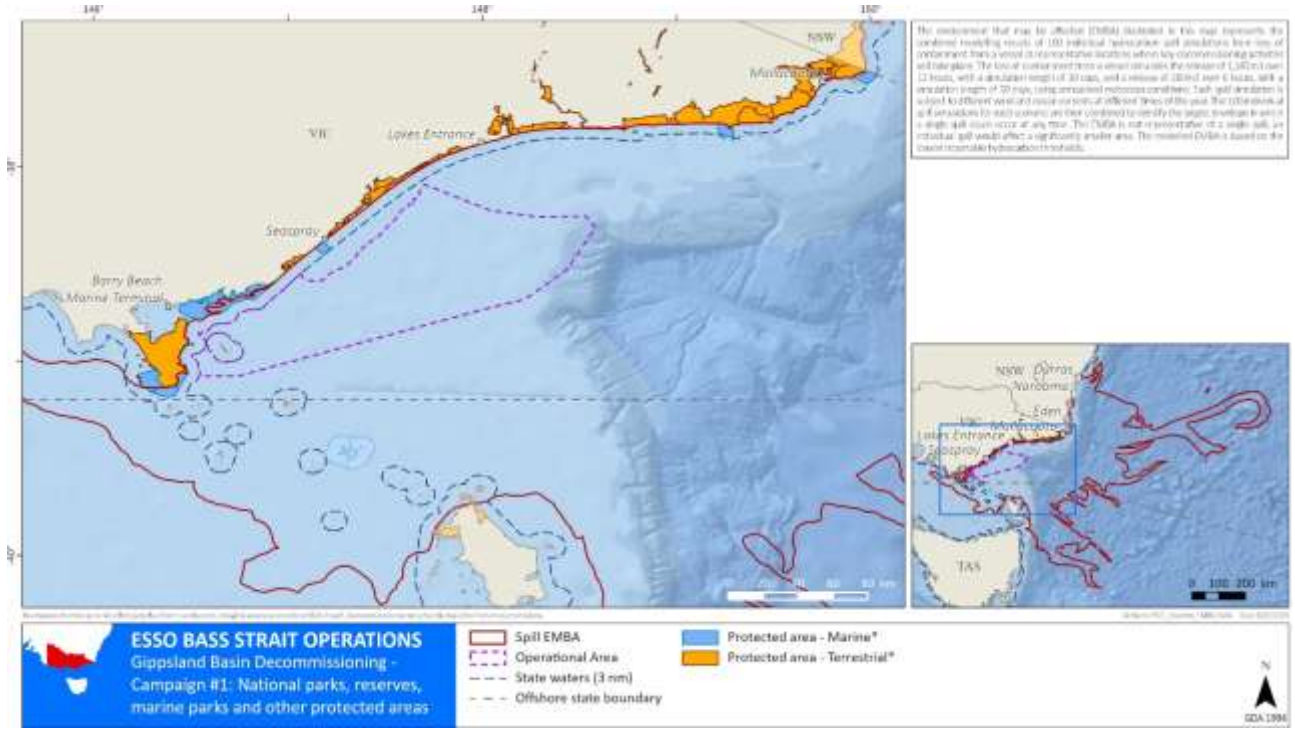

Figure A-7 Victorian protected areas intersected by the EMBA

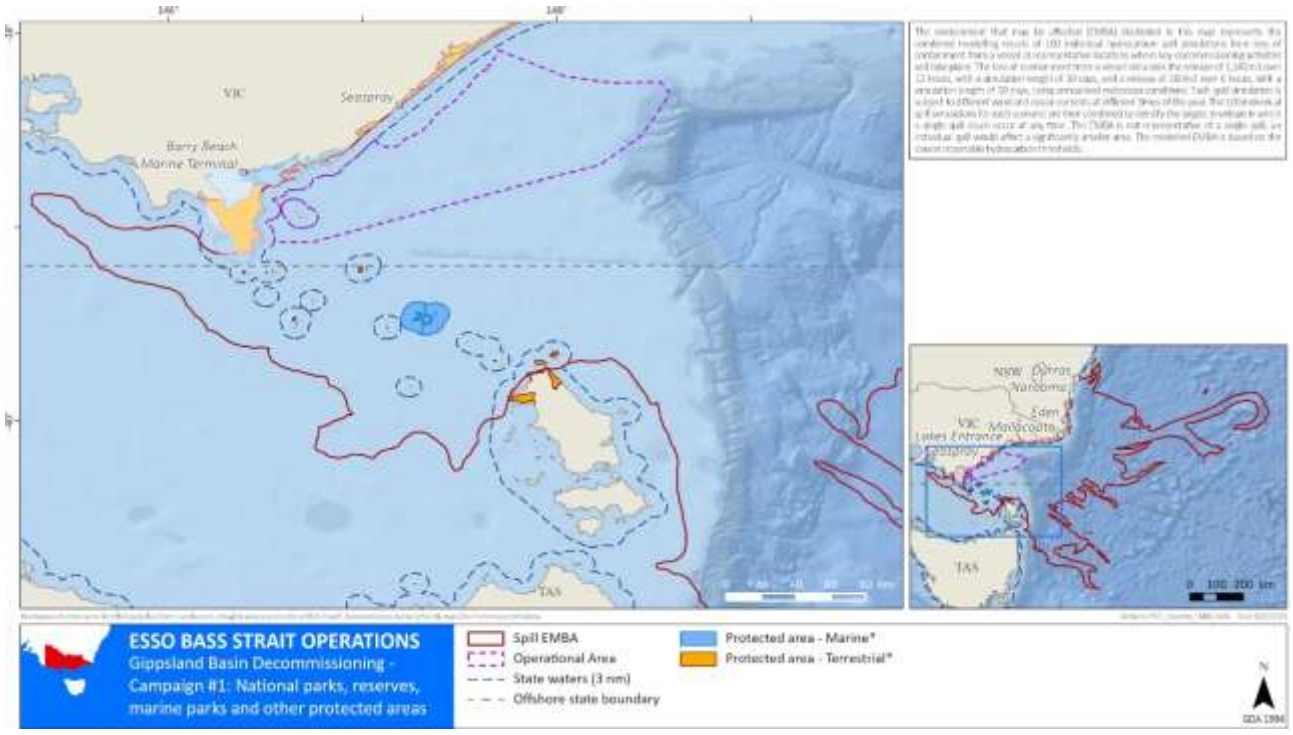

Figure A-8 Tasmanian protected areas intersected by the EMBA

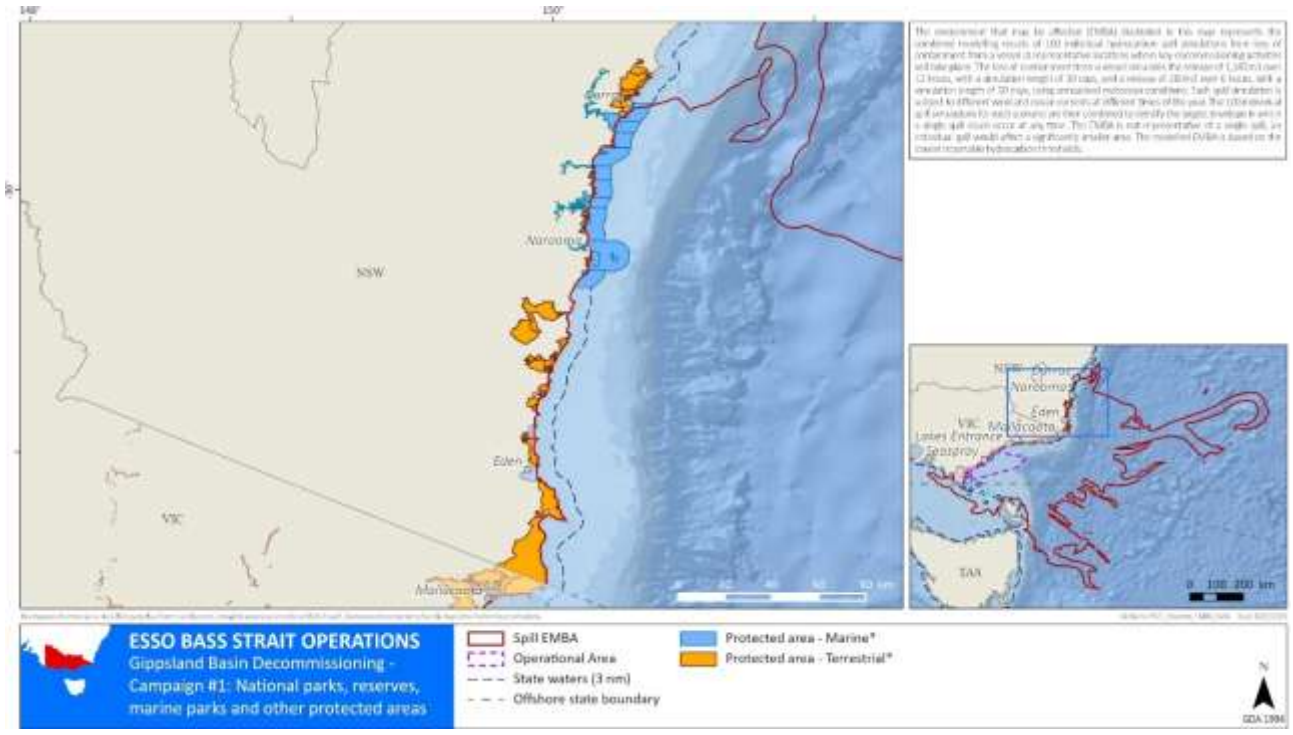

Figure A-9 New South Wales protected areas intersected by the EMBA

A.1.2 Regional context

The regional context of the EMBA is described in this Section.

A.1.2.1 Commonwealth marine regions

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 km^2, 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 and the temperate east region, which are described below:

A.1.2.1.1 South-east Marine Region

The South-east Marine Region includes the Commonwealth waters of Bass Strait and those surrounding Macquarie Island in the Southern Ocean. The region spans approximately 1.6 million km^2, from the warm temperate waters in the north of the region, through the cool temperate waters around Tasmania, to the subantarctic Southern Ocean waters around Macquarie Island. The key conservation values of the South-east Marine Region are (CoA, 2015):

- features eight KEFs with high biodiversity and productivity, including the east Tasmania subtropical convergence zone, Bass Cascade, Upwelling East of Eden, Seamounts south and east of Tasmania and Bonney Upwelling
- breeding and resting areas for SRW
- migration areas for blue, fin, sei, humpback whales and SRW
- foraging areas for Australian sea-lion, white shark, Harrisson's dogfish, killer and sei whales, Australasian gannet, fairy prion, black-faced cormorant, little penguin, crested tern, and several species of seal, penguin, albatross, petrel, shearwater and gulls
- wrecks of *MV City of Rayville*, *SS Cambridge* and ketch *Eliza Davies*
- 10 provincial bioregions and 17 seafloor types are represented in the network.

In 2013, the Director of National Parks issued the first management plan for the south-east network of marine reserves, which expired in 2023. As a result, the Director of National Parks prepared the South-east Marine Parks Network Management Plan 2025 that sets out management of this network from 2025 to 2035. This management plan has been approved by the Minister for the Environment and Water and came into effect from the 13 February 2025.

The 2025 version of the management plan for this network presents a description of the conservation values, which include natural, cultural, and socio-economic values. From the natural values perspective, the 2025 version of the management plan reinforces the importance of values referenced in the now superseded 2013-2023 plan, including the presence of KEFs, BIAs ecosystems and habitat or species that are particularly important due to their uniqueness, functional importance, vulnerability, biological productivity, diversity or ability to provide social and economic benefit. From a cultural values perspective, the plan now in force incorporates additional important values such as:

- *ancient land bridge*, describing that areas now under the sea in the south-east network were once part of the landscape used by First Nations people
- *culturally significant species,* acknowledging that cultural obligation to care for mutton birds, seals and whales and other marine animal resources as well as the interconnectivity between coastal and offshore marine environments
- *songlines and stories*, acknowledging that First Nations people continue to honour ancient saltwater songlines, migrations, stories and ancestral connections (DNP, 2025).

Underwater cultural heritage (UCH), acknowledging that shipwrecks, sunken aircrafts and other kinds of underwater artefacts can be protected for their cultural heritage significance under the *Underwater Cultural Heritage Act 2018* (Cth) (UCH Act).

A.1.2.1.2 Temperate East Marine Region

The Temperate East Marine Region spans an area of approximately 1.4 million km^2 from the southern boundary of the Great Barrier Reef in Queensland to Bermagui in Southern New South Wales. 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 New South Wales 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.

9.1.1 Provincial bioregions

Based on the Integrated Marine and Coastal Regionalisation of Australia Version 4.0 (DCCEEW, 2023a), the EMBA is situated within the following provincial bioregions (see Figure A-10):

- Bass Strait Shelf Province
- Central Eastern Province
- Southeast Shelf Transition
- Southeast Transition
- Tasmania Province
- Tasmanian Shelf Province.

A.1.2.2 Mesoscale bioregions

Based on the Integrated Marine and Coastal Regionalisation of Australia Version 4.0 (DCCEEW, 2023b), the EMBA is situated within the following mesoscale bioregions (Figure A-11):

- Batemans Shelf
- Central Bass Strait
- Central Victoria
- Flinders
- Freycinet
- Twofold Shelf.

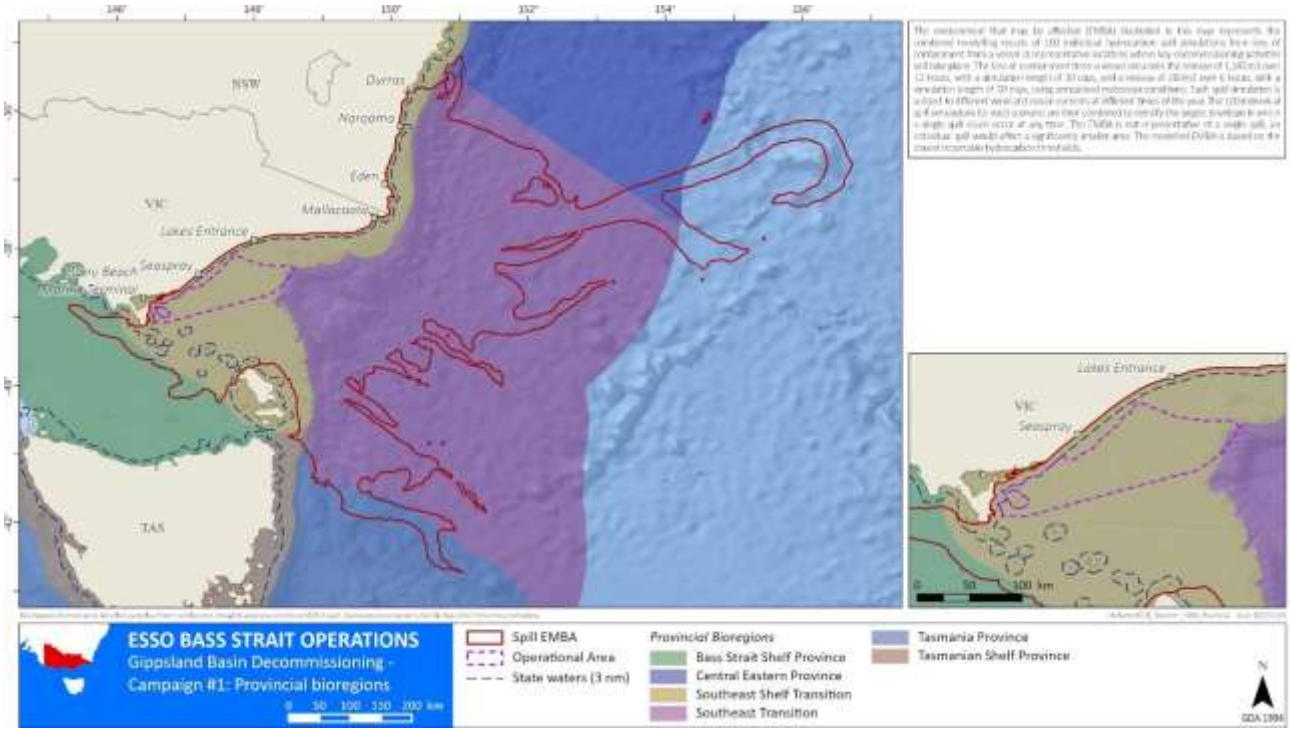

Figure A-10 Provincial bioregions within the EMBA

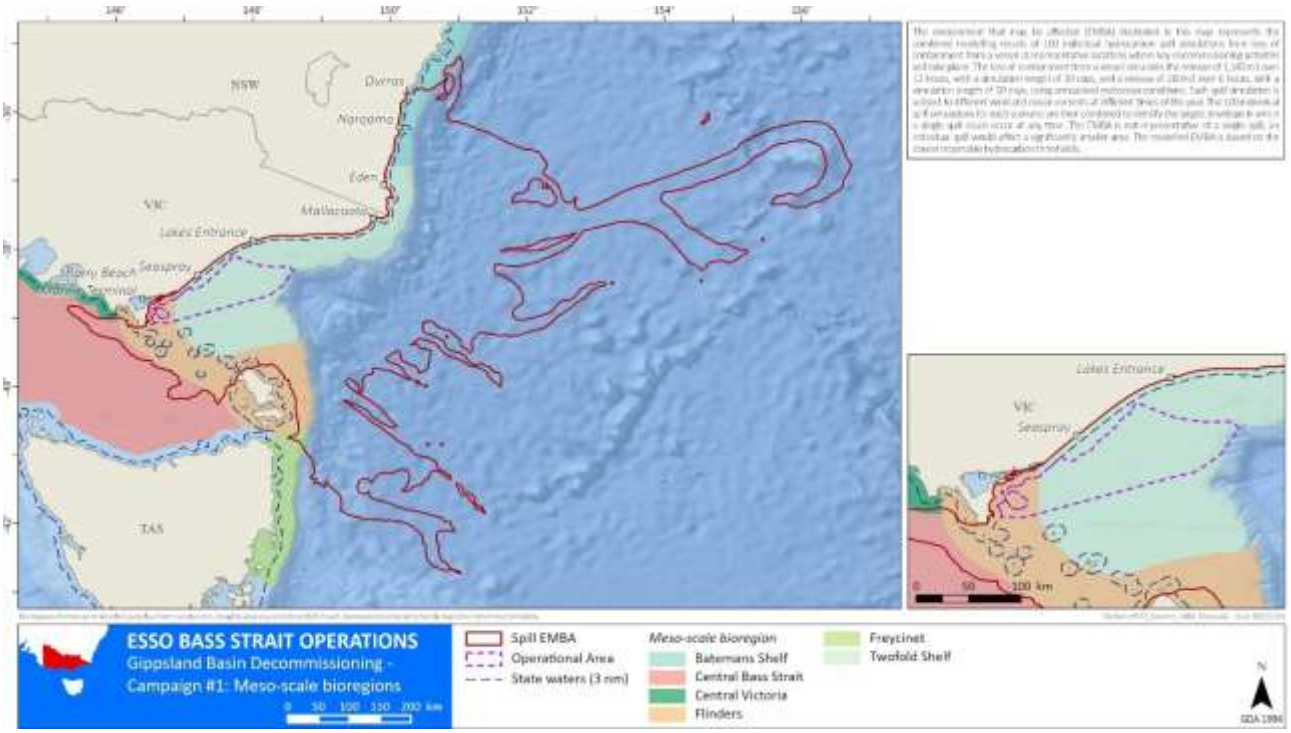

Figure A-11 Mesoscale bioregions within the EMBA

A.1.3 Physical environment

A.1.3.1 Climate and meteorology

Average mean monthly maximum temperatures from 1991 to 2020 in coastal Victoria – East Sale (closest weather station to where decommissioning – Campaign #1 activities will take place) range from 14.2°C in July to 26.1°C in January. In contrast, average mean minimum monthly temperatures for this same period range between 3.6°C in July to 13.6°C in January (BOM, 2024). Offshore (on Hogan-Island in central Bass Strait), milder conditions occur with an average maximum temperatures between 13°C to 21.8°C during July and January respectively, and an average minimum temperature range of 8.8°C in August to 15.3°C in February (BOM, 2024).

Mean average monthly rainfall along the Gippsland coast (East Sale) ranges from 33.4mm in May (lowest 3.2mm in January 2009) to 62.2mm in November (highest 204.6mm in September 1993). Offshore (on Hogan Island in central Bass Strait) monthly rainfall ranges from 35.4mm in February (lowest 3.6mm for this same month in 2022) to 72.4mm in August (highest 164.8mm for this same month in 2013) (BOM, 2024).

Mean wind speeds recorded at East Sale weather station in the period from 1991 to 2010 are in the range of 11.1 to 16.3km/hour during the morning and 17.1 - 24.2km/hour in the afternoon, with maximum gusts reaching an average of 152km/h in December (BOM, 2024). 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 southeasterly 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, 2024).

There are three main and one minor types of storms which can generate severe wave conditions in the study area of Bass Strait (Esso, 1989) (Cardno, 2017):

- Southeast 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 southeast winds (speeds in excess of 80kn have been measured off the New South Wales coastline) and high rainfall. Southeast storms resulting from east-coast lows occur relatively infrequently (on average one to two 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.

- Southwest 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 southwest 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 southeast through to south southwest winds in Bass Strait. During storm development however, the wind can have a significant southeast or southwest component, depending on the origin of the low. Southerly storms occur at about the same frequency as southeast storms. Southerly storms are considered to have a greater potential than the southwest 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.

A.1.3.2 Oceanography

A.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 that flows southward adjacent to the east coast of New South Wales, Victoria and Tasmania, carrying warm equatorial waters (Refer Figure A-12 and Figure A-13). The East Australian Current is up to 500m deep and 100km wide and is strongest in summer when it can flow at up to 5kn. In winter it flows at 2 – 3kn as the oceanographic and climatic drivers in the Coral Sea diminish. The East Australian Current tends to form ocean eddies that rotate around warm, central cores that can be up to 200km across and may persist for months. Eddies form more frequently off the south coast of New South Wales 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 – 300km in diameter. Seasonal and transient upwellings are important ecological features of the Region. The East Australian Current 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, Arnott, Longmore, & Marchant, 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). ry

Esso undertook a comprehensive current measurement program in the Blackback study area using seven current meters moored 3m 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 - 0.3m/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 500m. Currents during these cascade flows were stronger than background tidal currents and were the strongest currents recorded lower down the continental slope.

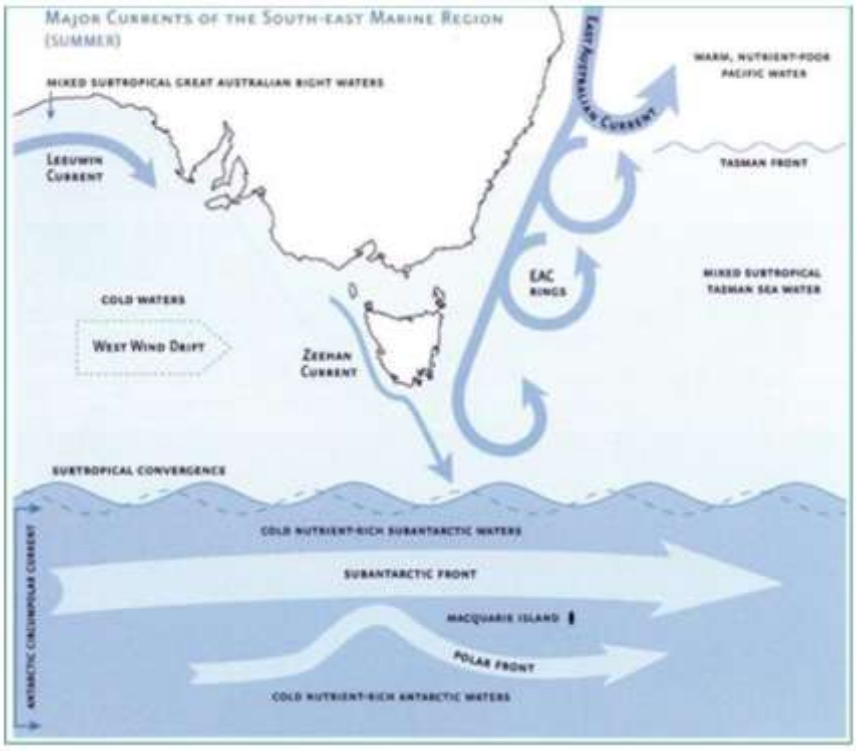

Figure A-12 Major ocean currents in southeastern Australian waters summer

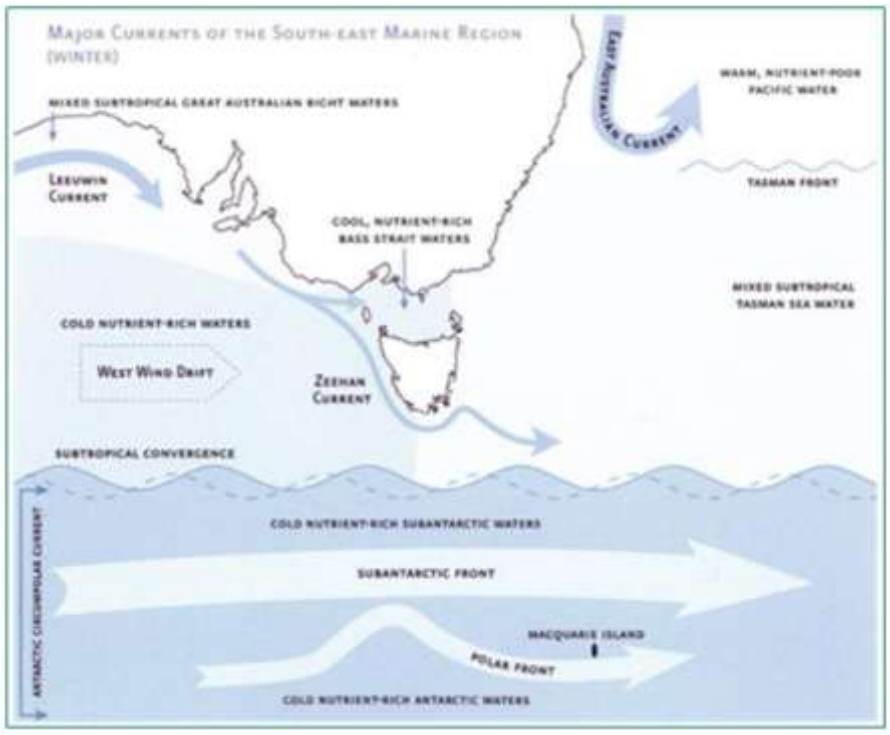

Figure A-13 Major ocean currents in southeastern Australian waters winter

A.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). The monthly sea temperature and salinity profiles of the water column within the area of study were obtained from the World Ocean Atlas 2018 database produced by the National Oceanographic Data Centre (National Oceanic and Atmospheric Administration) and its co-located World Data Center for Oceanography (see (Levitus, et al., 2013)).

Table A-3 shows the monthly average sea surface temperatures and salinity representative for offshore locations in deep waters (e.g. WTA, FTA, KFA and FLA), as well as that representative for offshore locations in more shallow waters (e.g. DPA). Monthly average sea surface temperatures were shown to range from 13°C (September) and 20.9°C (March) at deep waters, and from 12.4°C (September) and 19.9°C (February) in shallower waters. Salinity remained consistent throughout the year for both deep and shallower waters, ranging from 35.4 to 35.6psu (RPS, 2024).

Table A-3 Average monthly sea surface temperature and salinity nearby DPA, WTA, FTA, KFA and FLA locations within the 0-5m water depth

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
WTA, FTA, KFA and FLA (deep waters)												
Temperature (°C)	19.2	20.8	20.9	18.8	16.7	15.2	14.2	13.6	13.0	13.8	16.0	16.8
Salinity (psu)	35.5	35.5	35.5	35.5	35.5	35.5	35.5	35.4	35.4	35.4	35.4	35.4
DPA (shallower waters)												
Temperature (°C)	19.6	19.9	19.7	18.3	16	14.6	13.2	12.5	12.4	13.4	15.6	17.2
Salinity (psu)	35.5	35.5	35.5	35.5	35.6	35.6	35.5	35.4	35.4	35.4	35.4	35.4

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 93m to a minimum of 7°C at 480m. 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.

A.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 - 4m or more. In severe cases, southwest storms can result in significant wave heights of greater than 6m (Jones 1980).

Extreme design wave conditions are associated with east coast low pressure systems. These can result in very strong east to southeast winds in eastern Bass Strait. The *1989 Metocean Design Criteria Report* (Esso, 1989) gives a design significant wave height of 9.0m and a corresponding maximum wave height of 17.5m.

Wave data from the KFB weather station were analysed for the ten-year period from 1990- 2000 (O'Grady & McInnes, 2010). Average significant wave heights at KFB were 1.97m, approximately 40% lower than those to the west of Bass Strait (Cape de Couedic and Cape Sorell) and approximately 10% higher than on the east coast at Eden. The highest significant wave height recorded was 4.79m. Wave periods at KFB are also lower by just over 30% compared to those to the west of Bass Strait and are about 10% lower than those at Eden. These differences are a result of the fetch-limited conditions that exist in Bass Strait where a portion of the long period waves from the Southern Ocean are blocked by Tasmania. Table A-4 shows the monthly mean, significant wave height and 99th percentile values recorded at KFB for the period of 1990-2000 (O'Grady & McInnes, 2010). The analysis of the data showed that for waves at KFB, the highest wave events occur most frequently with westerly wind events and were usually associated with storm surge events (occurring 58% of the time) in northeastern Bass Strait. However, high wave events can also occur during easterly wind events when a weak or a negative surge from the southeast is present (occurring 31% of the time) (O'Grady & McInnes, 2010).

Table A-4 KFB wave data

Month	Mean wave height (m)	Wave height standard deviation	Wave height 99th percentile (m)	Peak wave period (sec)	Peak wave period standard deviation	Peak wave period 99th percentile (sec)	Number of observations
Jan	1.64	0.67	3.58	7.83	1.75	13.27	4832
Feb	1.69	0.75	4.09	8.14	2.11	14.17	4063
Mar	1.62	0.77	4.24	8.32	2.18	13.74	4615
Apr	1.66	0.84	4.13	8.43	2.12	13.61	4295
May	1.45	0.73	3.92	8.69	2.50	15.06	4842
Jun	1.71	0.87	4.21	8.80	2.48	14.53	5129
Jul	1.74	0.83	4.30	9.00	2.51	15.05	5509

Month	Mean wave height (m)	Wave height standard deviation	Wave height 99th percentile (m)	Peak wave period (sec)	Peak wave period standard deviation	Peak wave period 99th percentile (sec)	Number of observations
Aug	1.70	0.83	4.12	8.66	2.57	15.34	5120
Sep	1.80	0.93	4.48	8.60	2.21	13.97	5157
Oct	1.59	0.79	4.00	8.37	2.21	14.74	4955
Nov	1.78	0.92	4.79	7.76	1.83	12.71	4346
Dec	1.66	0.79	3.91	7.96	1.92	13.12	5395
Mean	1.67	0.81	4.15	8.38	2.20	14.11	4855

A.1.3.2.4 Bathymetry

The seabed bathymetry across the region is highly variable. A significant portion of the EMBA lies within water past the shelf in depths range from 300m to 5000m (see Figure A-14). The bathymetry contours along the coast where the EMBA lies range from 10m to 300m deep (refer to Figure A-14).

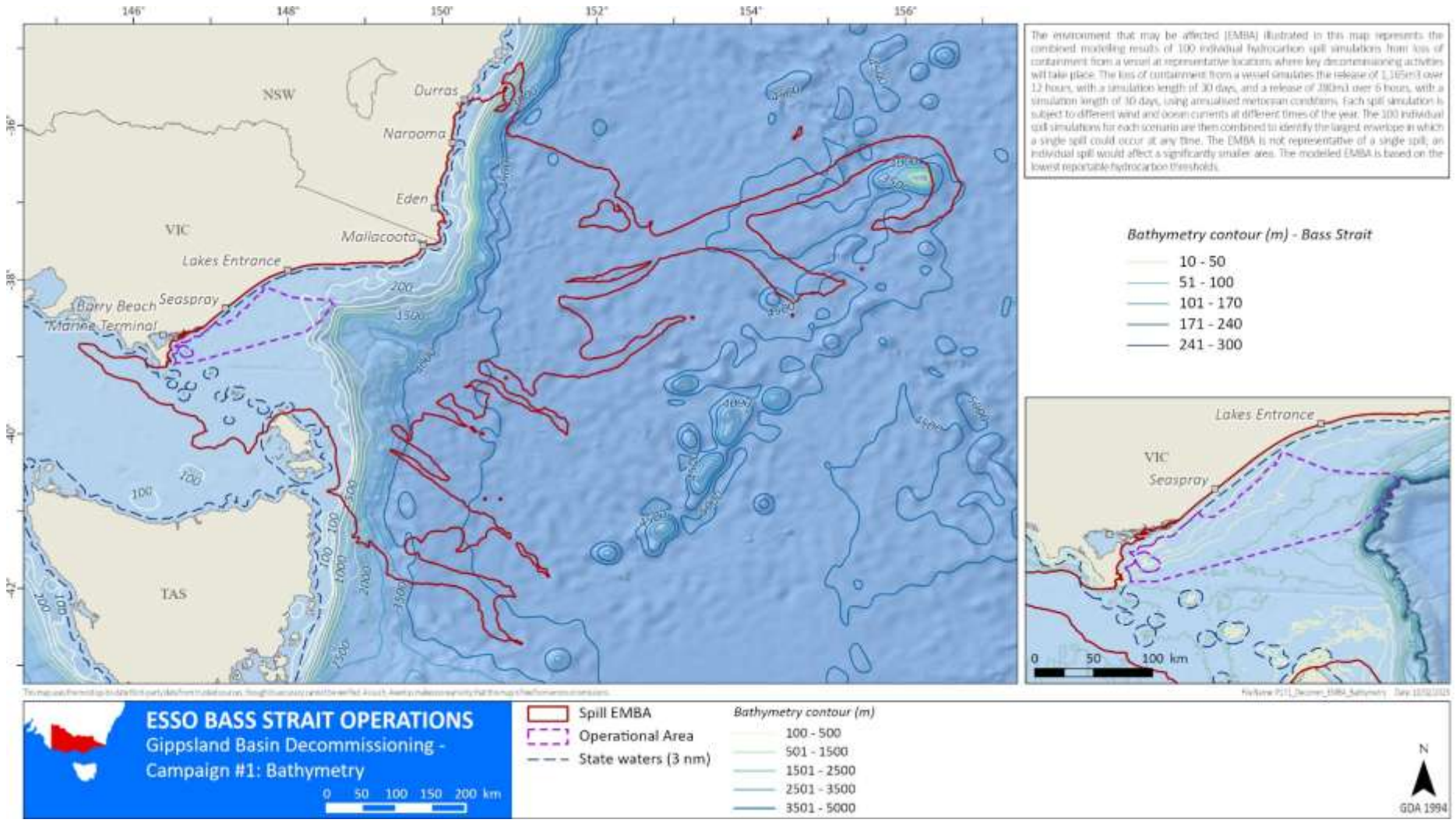

Figure A-14 Bathymetry within the EMBA

A.1.4 Biological environment

9.1.2 Benthic habitat

A.1.4.1.1 Bare substrate

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). In the Gippsland Basin, seabed material is predominantly calcium carbonate comprised of calcarenite marls and marine shales (Esso, 2009). A study of the seascape of the southeastern 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 & Williams, 2001).

Maxon Consulting Inc, 2024 presents an assessment of information available from environmental surveys completed in the Gippsland Basin in 2021, 2022 and 2023, which included monitoring of locations adjacent to selected Esso offshore platforms and near-field and far-field reference locations. Report indicates sediment categories are dominated by coarse-grained sands, however, increased mud and gravel size fractions co-occur at approximately 40 - 80m depth. The mid-depth shelf area is bordered by sandy sediments in the near-shore shallows (10 - 40m) and at depths greater to 80m towards the shelf break (Maxon Consulting Inc, 2024). The report also notes that results are remarkably consistent between monitoring completed by Esso versus AusSeabed samples collected a few kilometres apart, suggesting stable seabed conditions over several decades. Figure A-15 presents the sediment categories identified for the Gippsland Basin (Maxon Consulting Inc, 2024).

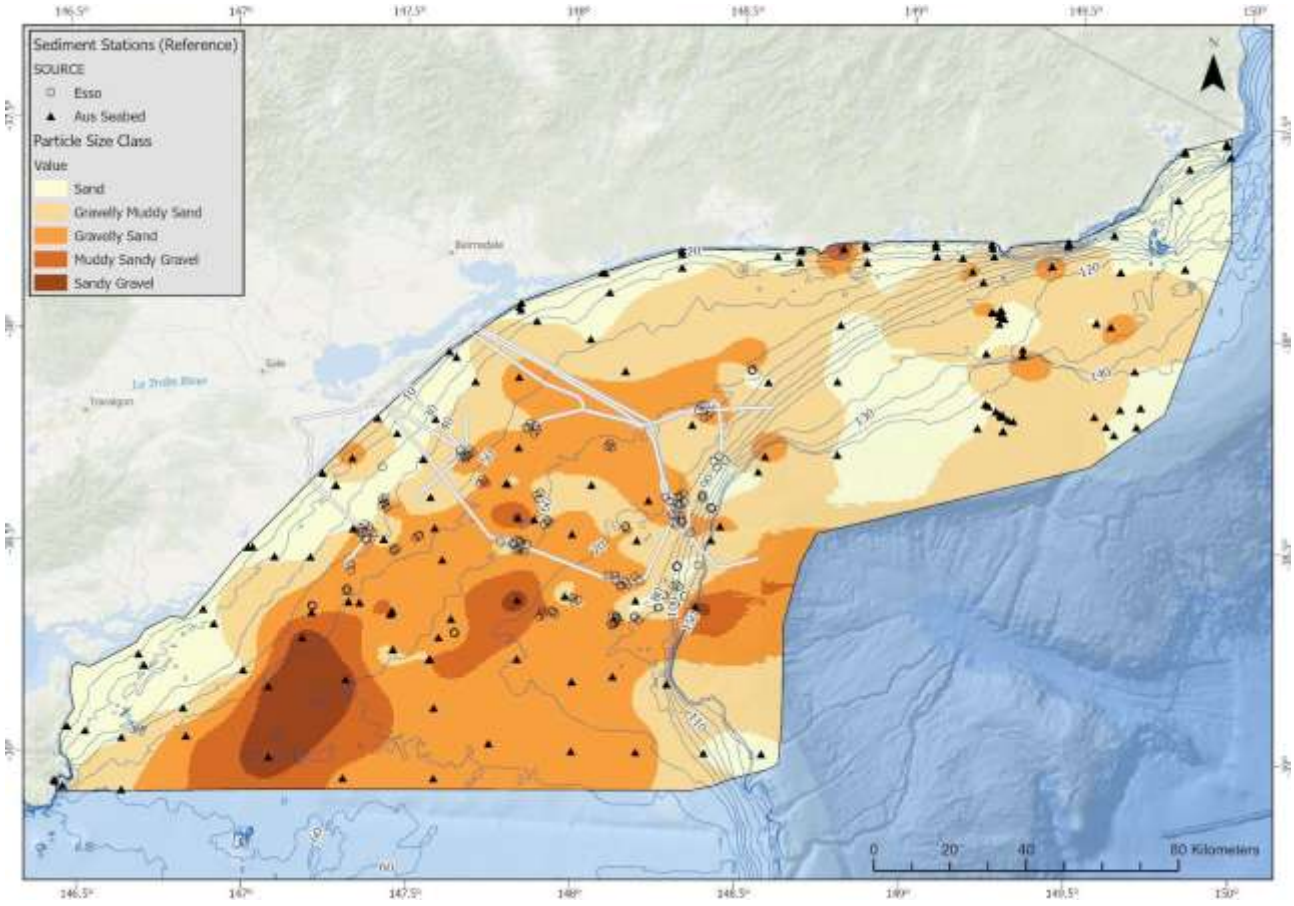

Figure A-15 Gippsland Basin surface sediment particle size descriptions based on Folk (1980). Data sourced from Aus Seabed MARS and Esso far-field reference stations

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 G. C., 1990).

Many of these species are burrowing organisms that cause moderate bioturbation (Edgar G. , 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 10m^2 (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) (Bax & Williams, 2001).

Maxon Consulting Inc, 2024 report indicates that within the Gippsland Basin, biological communities generally are categorised into the inner shelf, outer shelf, and shelf break zones (Bax & Williams, 2001) (Passlow, O'Hara, Daniell, Beaman, & Twyford, 2006). This zonation is significantly influenced by sediment type, with the hard substrates of the inner shelf, supporting a higher diversity and abundance of epifaunal organisms (Lavering, 1994). From the inner shelf zone (circa. 10 – 50m depth) of east Gippsland, (Coleman, Gason, & Poore, 1997) identified polychaete worms, bivalve molluscs, and peracarid crustaceans as the dominant invertebrate macrofaunal groups. These taxa collectively accounted for 99% of all individuals and 98% of all species in their study. An ROV seabed survey conducted following drilling at the Snapper OA 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.

Passlow, O'Hara, Daniell, Beaman, & Twyford (2006) documented high diversity across various invertebrate groups on the Bass Strait shelf, including polychaetes, pycnogonids (sea spiders), brachiopods, decapods (e.g. crabs, crayfish, shrimps, prawns), isopods, echinoderms (e.g. sea stars, sea urchins), and gastropods (e.g. snails). Shallow basins within the shelf tend to support higher macrofaunal densities and species richness. These environments benefit from the accumulation of detrital food and less demanding physical conditions, which are likely to contribute to the enhanced biodiversity observed in these zones (Maxon Consulting Inc, 2024). Refer to Figure A-16 for information on macrofauna abundance and proportions of key phyla based on results from survey at the platform locations sampled.

Figure A-17 presents sampling locations for the monitoring program completed in 2021, 2022 and 2023, including those associated to platform locations and reference locations in the vicinity and further away from the platforms.

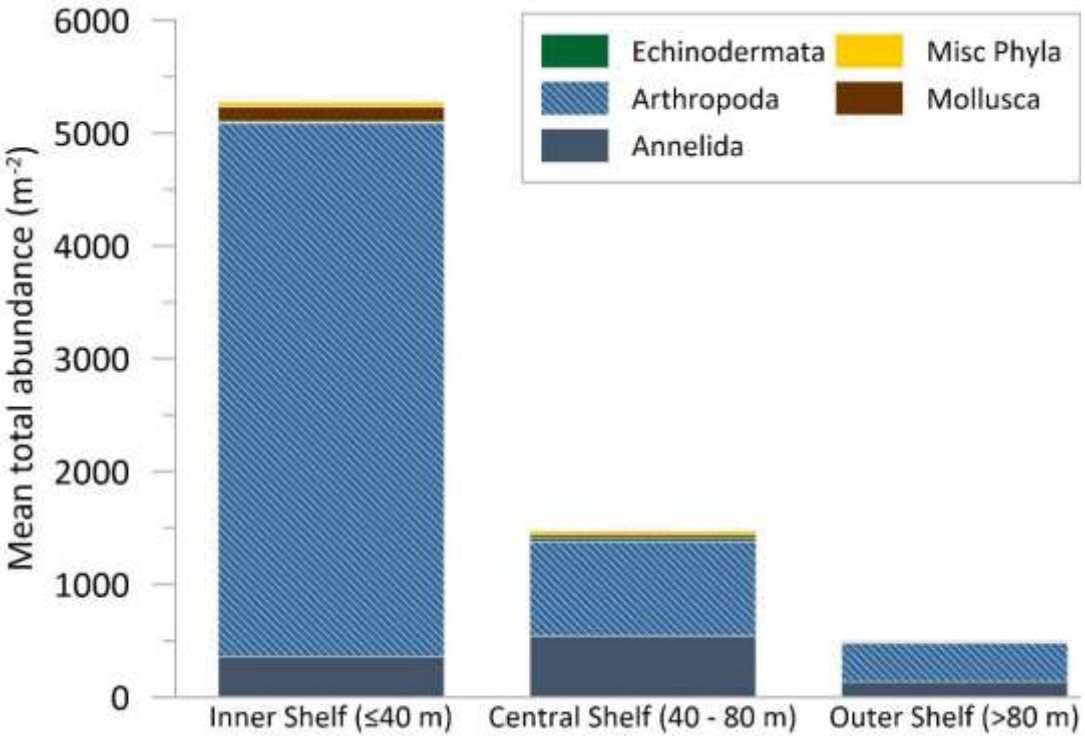

Figure A-16 Mean total macrofauna abundance

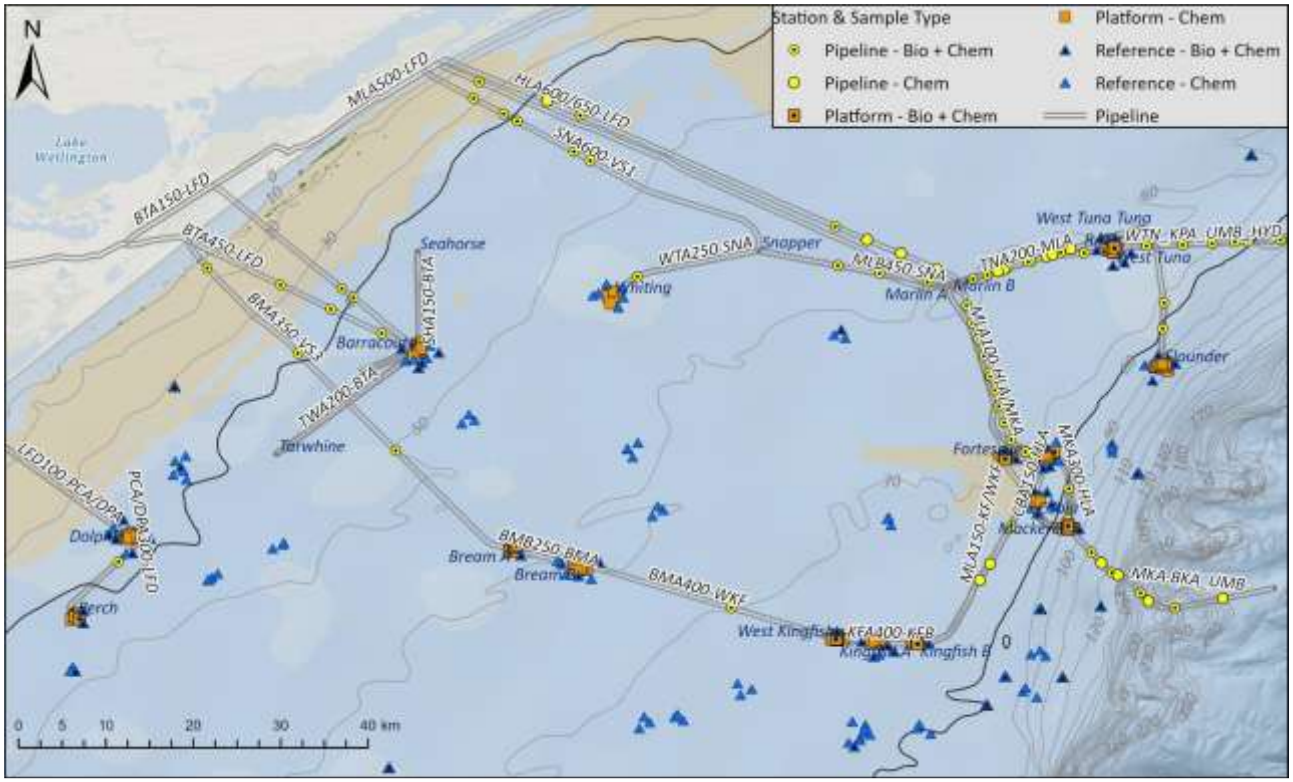

Figure A-17 Sediment survey locations

Analysis of results from surveys completed in 2021, 2022 and 2023 suggest that on a family level, the sampled macrofauna community was relatively rich, with many taxa, an evenly distributed fauna, and intermediate levels of dominance. This richness may, in part have resulted from the sampling of a number of areas with significant gravel/shell content mixed in with the sand, and some stations with considerably more fine sediment than others. This provides variety in the physical milieu that the organisms are exposed to, resulting in the presence of a large number of taxa that occurred at only a few of the 335 sampled stations, noting that no taxon occurred at all stations (Maxon Consulting Inc, 2024).

The low proportion of mud-class sediments within the mix of bottom particles amplifies differences in community composition between areas where they are present and where they are absent, while also influencing the trophic structure of the associated fauna. Gravel patches promote the presence of deposit-feeding interstitial organisms, such as *Syllidae*, by trapping nutrients from overlying waters. In the predominantly sandy areas where water movement patterns ensure a steady or frequent supply of suspended nutrient particles, large groups of suspension feeders, such as the tube-building amphipod *Corophiidae*, gather to exploit these resources (Maxon Consulting Inc, 2024).

Furthermore, Maxon's report (2024) indicates this heterogeneity, despite the appearance of a uniform habitat, can be highly pronounced, with stark contrasts between the predominantly sandy bottom and the intermittent gravelly-muddy patches. These microhabitat variations create distinct ecological niches that significantly influence benthic community dynamics. Richness of macrofauna is the result of such subtle physical disparity, and that diversity is very evident in this sampling. The number of family level taxa reported here exceeds those reported for similar nearby habitat (Coleman, Parry, & Hutson, 2007) (Gray, et al., 1997). Many of the taxa are uncommon, occurring only a few times in the stations sampled. That does not mean that they are rare, but that their populations are strongly adapted to specific microhabitats and their larvae only settle when conditions are right. While total abundance was highest in shallow depths of the inner shelf, heterogeneous sediments of the broad central shelf support communities that are more diverse and evenly distributed among taxa.

A.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 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 P. W., 2013) (McClatchie, 2006). Seagrass habitats occur worldwide, from arctic to tropical climates.

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 P. W., 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 New South Wales 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 South Australia and Western Australia (Kirkham, 1997).

A.1.4.1.3 Subtidal rocky reefs

This habitat occurs either as extensions of intertidal rocky shores or as isolated offshore reefs and is 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 southeastern Australian shelf (Bax & Williams, 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 vary 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 & Williams, 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 (<2m), 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 (<20cm) 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 CBA platform versus other facilities (based 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, occur as elongate, low relief slabs which crop out from soft sediments along the Gippsland coastline. While it has not been 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 features localized, higher relief (>10 m) outcrops formed of distinctive irregular, hexagonally jointed, coarsely crystalline granite, or hard reefs. Granite reef areas include Point Hicks and New Zealand Star Banks. Figure A-18 shows the high level substrata distribution in southeast Australia (Bax & Williams, 2001).

Rocky reef habitats can support rich, diverse communities of attached epifauna (e.g. stalked crinoids, 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 diverse 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 temperate and subtropical currents overlap 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).

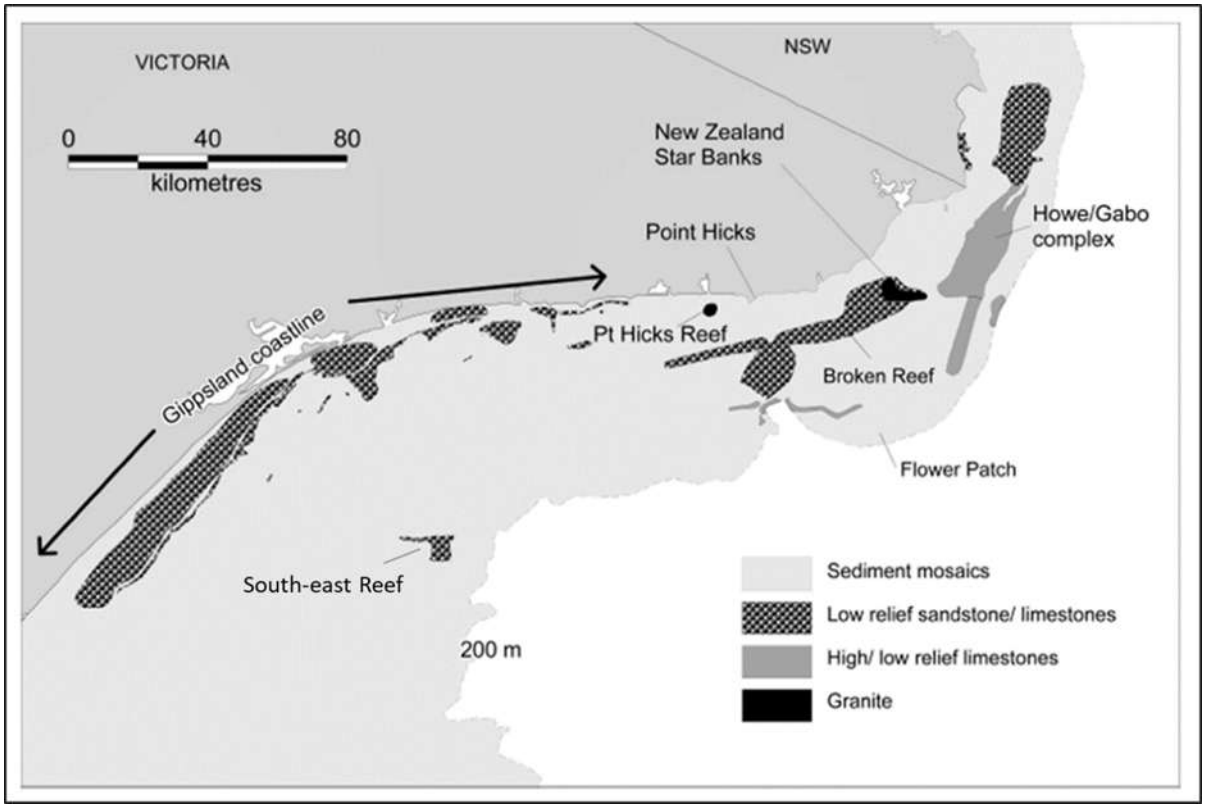

Figure A-18 Substrata on the southeastern Australian continental shelf (Bax & Williams, 2001)

A.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 subtidal 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 TECs. Refer to Section A.1.1.6.3 for information on giant kelp marine forests.

Known areas containing macroalgae within the EMBA include around Gabo Island and within the Bemm River estuary (Lucieer V, 2017).

A.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 (<50m) waters, while soft corals are found at most depths, including in deeper waters throughout the continental shelf, slope and off-slope 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 J. W., 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 off-slope regions, to well below the limit of light penetration.

A.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 G. P., 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 G. P., 1982) and absence of stable habitat collection led to faunal impoverishment compared to adjacent slope environments (Vetter, 1998).

Submarine canyons that intersect the EMBA are described in Section A.1.1.8, including the Big Horse Canyon and the Canyons on the Eastern Continental Slope (Geoscience Australia, 2024).

A.1.4.2 Coastal environment

A range of shoreline types are represented along the coastal areas within the EMBA, including sandy shorelines, rocky shorelines, cliffs, intertidal flats, and saltmarsh (Griffin C, 2012).

The coastline, from Wilsons Promontory in the west to Cape Howe in the east near the New South Wales border, consists mainly of steep sandy beaches and rocky outcrops.

The New South Wales coast consists of primarily rocky outcrops with sections of sandy beaches and rocky cliffs. The offshore islands in Bass Strait are characterised by steep cliffs and rocky shores. These shoreline types are also dominant along the north and east coast of Tasmania.

A.1.4.2.1 Sandy shorelines

This shoreline type has been defined as beaches dominated by sand-sized (0.063 - 2mm) particles, and also includes mixed sandy beaches (i.e. sediments may include mud or gravel, but sand is the dominant particle size).

Sandy beaches are dynamic environments, naturally fluctuating in response to external forcing factors (e.g. waves, currents etc.). Sandy beaches can support a variety of infauna and provide nesting and/or foraging habitat to shorebirds, 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 within the EMBA such as Ninety Mile Beach (East Gippsland, Victoria) and Squeaky Beach (Wilsons Promontory, Victoria).

A.1.4.2.2 Rocky shorelines

Sheltered rocky shores are characterised 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 5m 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 New South Wales 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 in Victoria).

A.1.4.2.3 Sea cliffs

The intertidal zone is steep (>30° slope) and narrow with very little width. Sediment accumulations are uncommon because waves remove debris that has slumped from the eroding cliffs. There is strong vertical zonation of intertidal biological communities. Species density and diversity vary greatly, but barnacles, snails, mussels, polychaetes, and macroalgae can be abundant (NOAA, 2010).

This environment occurs behind Betka Beach and Secret Beach through to Little Rame Head, Sandpatch Point, Wingan Point, The Skerries, Rame Head, Petrel Point, Point Hicks, Clinton Rocks, Tamboon Inlet, Pearl Point, Cape Conran (Needle Rocks, Irvine Rocks, Quincy Rocks Salmon Rocks), and at Ricardo Point (all of which are within the EMBA in Victoria). This is a common shoreline type for the Furneaux Island group in Bass Strait (within the EMBA in Tasmania).

A.1.4.2.4 Inter-tidal flats

This shoreline type has been defined as areas with predominantly mud-sized (<0.063mm) 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.

A.1.4.2.5 Mangroves

Along the Gippsland coast, mangroves can be found in Corner Inlet, Nooramunga Marine and Coastal Park and Cunninghame 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 kilometres. The substrate can be sand, mud, leaf litter, or peat, often as a veneer over bedrock. Mangroves are highly productive, serve as nursery habitat, and support a great diversity and abundance of animal and plant species (NOAA, 2010).

A.1.4.2.6 Saltmarsh

Saltmarshes are terrestrial halophytic (salt-adapted) ecosystems that mostly occur in the upper-intertidal zone and are widespread along the coast of Victoria and New South Wales. 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).

Saltmarshes can be found behind Mallacoota Entrance to Lake Barracouta, Wingan Inlet, inside Cann River Estuary, Tamboon Inlet, Sydenham Inlet (Bemm River Estuary and Mud Lake), Dock Inlet, inside Snowy River Estuary, Lake Tyers Estuary, and inside Lakes Entrance - Gippsland Lakes Ramsar Site (within the EMBA in Victoria). In southern New South Wales between Towradgi Creek about 40km north of the Victorian border there are approximately 12km^2 of saltmarsh spread over 62 estuaries (Daly, 2013), including areas of Tomaga River and Moruya River, Tuross Lake, Wapengo Lake, Bega River, and Wonboyn River (Creese R.G, 2009) (within the EMBA).

9.1.3 Plankton

Plankton species, including phytoplankton and zooplankton, are key components 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 (20-200µm), nanoplankton (2 - 20µm) and picoplankton (0.2 - 2µm). 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 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 A-19).

Phytoplankton biomass ranges across Bass Strait (integrated over 0 - 100m depth) from about 1.6µg chlorophyll a/L from shallow to 0.1µg/L in deeper waters (Gibbs, Arnott, Longmore, & Marchant, 1991). Phytoplankton biomass rapidly drops off with water depth, to about 0.1µg/L below 100m, 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 (16.1mg/m^3 dry weight off Mallacoota and 15.5mg/m^3 off Seaspray), dropping to between 1.2 - 2.1mg/m^3 further offshore (integrated over the top 50m of the water column), near the deepest regions of the eastern Great Australian Bight (Gibbs, Arnott, Longmore, & Marchant, 1991) A. As with phytoplankton, zooplankton biomass appears to be higher in the shallow waters of the shelf. Copepods dominate the species encountered (Chaloupka, 1982).

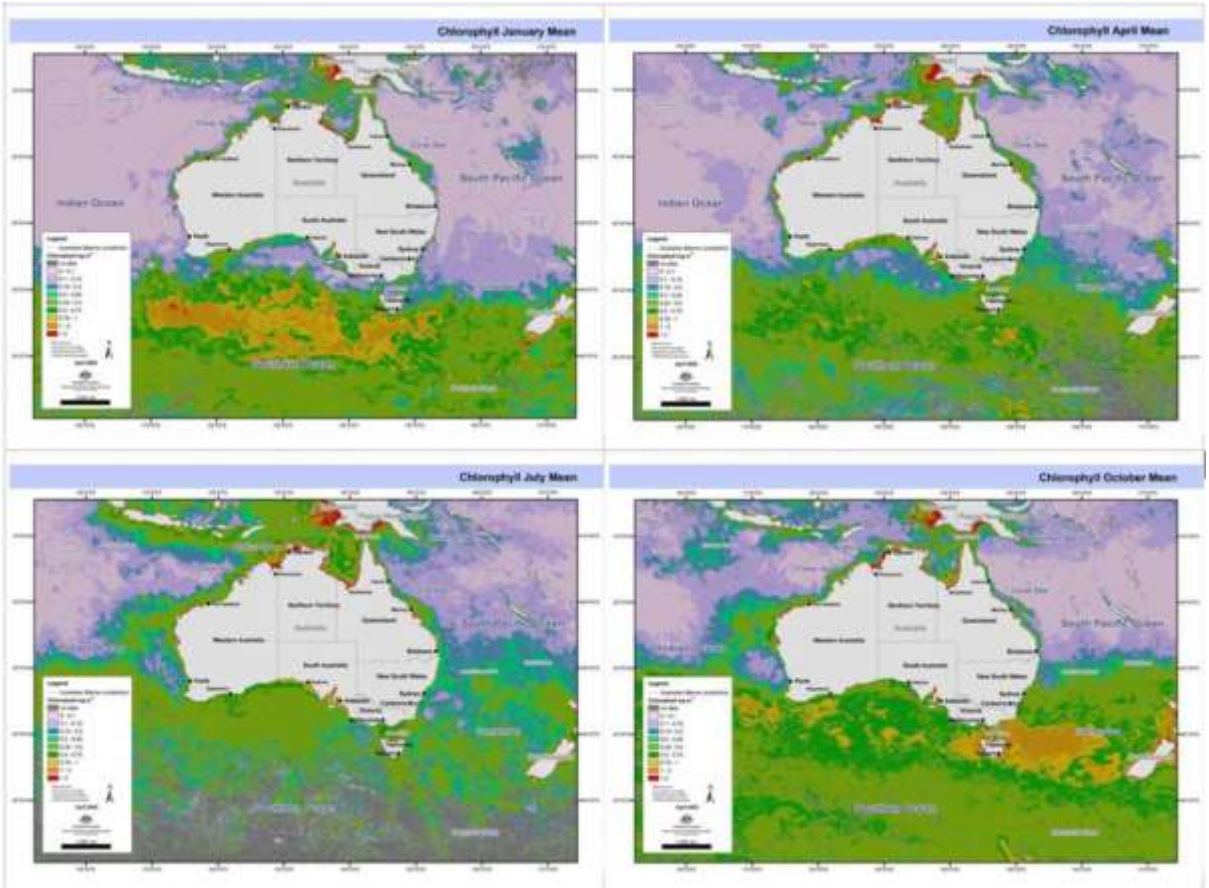

Figure A-19 Seasonal phytoplankton growth from MODIS ocean colour composites (McClatchie, 2006)

A.1.4.3 Fish, sharks and rays

Fish species detected by the PMST within the EMBA are listed in Table B-1 and Table B-2 in Appendix B of the EP (see also Appendix D of the EP for the full PMST report for the EMBA). Only fish, sharks and ray species that are listed threatened species under the EPBC Act are discussed further. Appendix D lists the relevant threats to shark species that may occur within the EMBA, as identified by management plans, conservation advice and recovery plans. No relevant threats were identified for rays or fish.

It is estimated that there are over 500 species of fish found in the waters of Bass Strait, including a number of species of importance to commercial and recreational fisheries (LCC, 1993). Fish species commercially fished within the EMBA are listed in Sections A.1.6.2, A.1.6.3, A.1.6.4, and A.1.6.5.

There are 48 fish species, including seven species of shark, listed as threatened under the EPBC Act with potential to occur within the EMBA (see Table B-2 in Appendix B). 34 of the 48 fish species identified in the EPBC Act PMST (~71%) are Syngnathids, which includes seahorses, seadragon, pipehorse and pipefish. *Sygnathidae* are mostly benthic on coastal reefs, amongst marine algae, seagrass beds, or on sandy and rubble substrates and in caves and crevices. A few species are found offshore amongst floating *Sargassum* algae (Bray, 2021) they can be found in waters less than 50m deep and are sometimes recorded in deeper offshore waters. It is likely that *Syngnathidae* species will occur in coastal reefs, marine algae, seagrass beds, sandy and rubble substrates and caves and crevices sites throughout the EMBA.

A.1.4.3.1 Black rockcod

The black rockcod (*Epinephelus daemelii*) is listed as vulnerable under the EPBC Act. The black rockcod is a large cod species distributed in warm temperate to temperate marine waters of southeastern Australia, from southern Queensland to Mallacoota in Victoria, and rarely south of this point (DSEWPC, 2012b).

The species inhabits caves, gutters, and crevices generally to depths of 50m, with juveniles found inshore. Individuals are highly territorial and have small home ranges (DSEWPC, 2012b). The black rockcod is a protogynous hermaphrodite, meaning it changes sex from female to male during its life cycle. The species has declined in number due to angling and spearfishing (DSEWPC, 2012b). Given their known distribution, the black rockcod may occur in suitable habitat north of Mallacoota (Victoria) and is likely to occur toward the north end of the EMBA in New South Wales. The Elizabeth and Middleton Reefs Marine National Nature Reserve (outside the EMBA) supports an abundant population of black rockcod (DSEWPC, 2012b).

A.1.4.3.2 Eastern dwarf galaxias

The eastern dwarf galaxias (*Galaxiella pusilla*) is listed as endangered under the EPBC Act. The species conservation status was upgraded from vulnerable to endangered in November 2023 due to its restricted geographic distribution, continuing habitat decline and population fragmentation (DCCEEW, 2023h).

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 (Saddlier, 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 (Victoria) is open to the ocean at the time of the spill.

A.1.4.3.3 White's seahorse

The White's seahorse (*Hippocampus whitei*) is listed as endangered under the EPBC Act and is endemic to New South Wales and Queensland in eastern Australia (TSSC, 2020). It is also included as one of nine priority fish species in the Threatened Species Action Plan 2022-2032 (DCCEEW, 2022).

White's seahorse is a small (maximum length approximately 16cm), 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 five to six years (TSSC, 2020).

White's seahorse are known to occur in water depths between 1 - 15m and are known to occur in estuaries from Saint Georges Basin, New South Wales (towards the north end of the EMBA) to Hervey Bay, Queensland (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 70m (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 in proximity to Saint Georges Basin.

A.1.4.3.4 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 180-1800m 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 kilometres 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 is likely to occur in deep waters of the EMBA.

A.1.4.3.5 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 19cm in length. The species typically inhabits the coastal streams of New South Wales, 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.

A.1.4.3.6 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 100–700m (down to 1254m) 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 is likely to be present with the eastern sections of the EMBA.

A.1.4.3.7 Blue warehou

The blue warehou (*Seriolella brama*) is listed as conservation dependent under the EPBC Act. The blue warehou is a bentho-pelagic species found in southern Australia where it inhabits continental shelf and slope waters. Adults can be found at depths from 50 - 300m. 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 2022 (AFMA, 2014). Blue warehou is likely to occur in the EMBA.

A.1.4.3.8 Non-parasitic lamprey

As of March 2023, the non-parasitic lamprey (*Mordacia praecox*) also known as precocious lamprey, is listed as endangered under the EPBC Act (DCCEEW, 2023g). The species is listed in the PMST report as to be within the EMBA. However, unlike most parasitic lamprey species, the non-parasitic lamprey is entirely a freshwater species, completing its life cycle in rivers and never migrating to brackish or marine systems. Consequently, it is restricted to individual river basins. Within each river system, specimens of the non-parasitic lamprey have only been reported relatively close to the coast (<50km) (DCCEEW, 2023g). The species has been reported in far southern New South Wales from Wallagaraugh River on the New South Wales and Victoria border, and also at northern New South Wales and southeastern and central Queensland.

A.1.4.3.9 Grey nurse shark (east coast population)

The grey nurse shark (*Carcharius taurus*) (eastern population) is listed as critically endangered under the EPBC Act due to commercial fishing, spearfishing, and protective beach meshing (TSSC, 2001). The grey nurse shark is also included as one of nine priority fish species in the Threatened Species Action Plan 2022-2032 (DCCEEW, 2022).

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 New South Wales, occasionally as far south as the New South Wales/Victoria border (DoE, 2014b), which coincides with the BIA for their migration and foraging (December to April) which is intercepted by the EMBA and shown in Figure A-20.

Preferred habitat for grey nurse sharks is inshore rocky reefs or islands, generally aggregating near the seabed in water depths of 10 - 40m in deep sandy or gravel filled gutters, or in rocky caves border (DoE, 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 (December to April) within the coastal waters towards the south of New South Wales (Figure A-20). Given the current distribution of the grey nurse shark and the known foraging and migration areas, the species is known to occur within the EMBA.

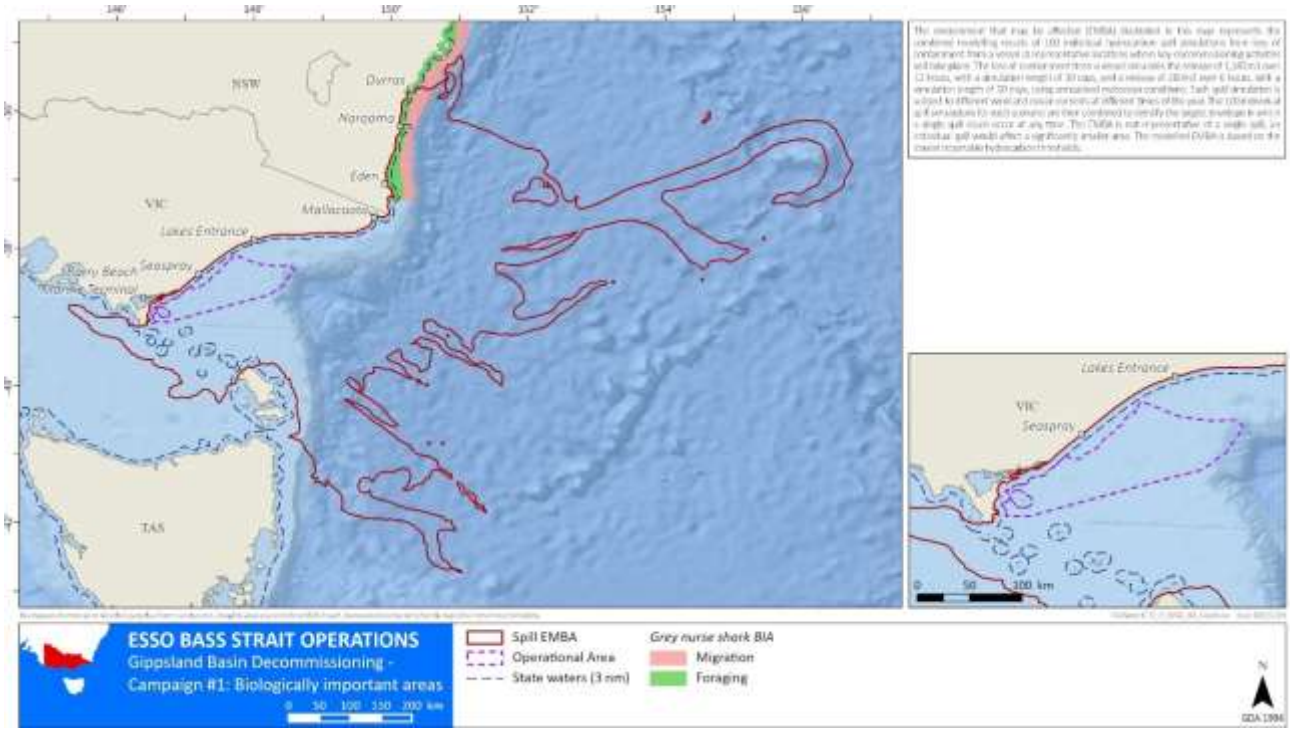

Figure A-20 Grey nurse shark BIAs intersected by the EMBA

A.1.4.3.10 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 A-21) (DSE, 2003). The Recovery Plan for the White Shark (2013) indicates juvenile white sharks appear to congregate in certain key areas including the Corner Inlet-Ninety Mile Beach area. (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. A breeding BIA covering the area from Wilsons Promontory to Lakes Entrance is intercepted by the EMBA. Likewise, a foraging BIA located in the Bass Strait between Wilsons Promontory and the Kent Island Group, as well as an area nearby Mallacoota, are within the EMBA (Figure A-21).

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 foraging areas, great white sharks are known to occur within the EMBA.

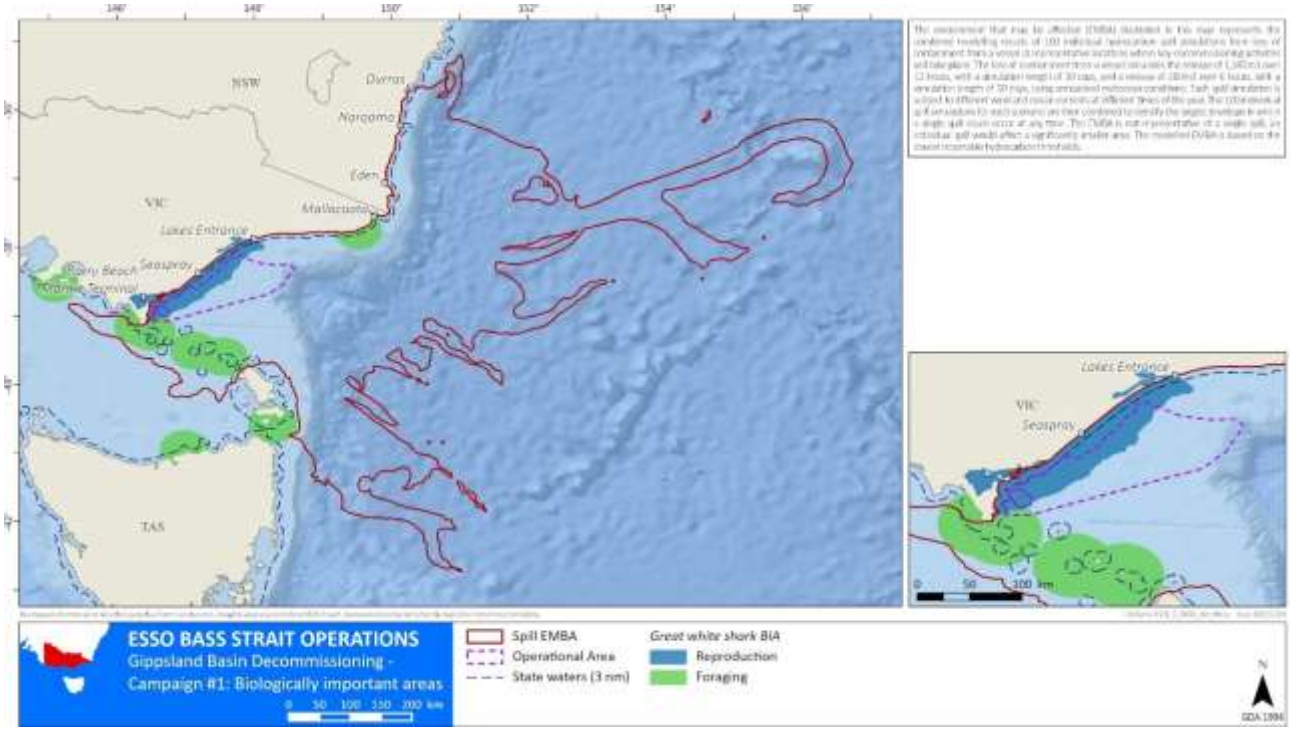

Figure A-21 Great white shark BIAs intersected by the EMBA

A.1.4.3.11 Harrisson's dogfish

Harrisson's dogfish (*Centrophorus harrissoni*) is listed as conservation dependent under the EPBC Act. In Australian waters, Harrisson's dogfish distribution extends off the Clarence River, New South Wales, to South East Cape, Tasmania, and from Fraser Seamount, Queensland to Taupo Seamount, New South Wales (DCCEEW, 2023e), preferring depths of 200–1050m.

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) Harrisson's dogfish populations are estimated to have declined by more than 90% in parts of their range off southern New South Wales 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.

A.1.4.3.12 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 (New South Wales) to Bunbury (Western Australia), including Tasmania, in depths of 200 - 700m, but usually in depths below 400m (DCCEEW, 2023e).

Little gulper sharks undertake day-night migrations across their depth range from relatively deep daytime residence depths (1000m) to shallower nighttime feeding depths (to 200m). This species feeds mainly on fish, crustaceans and squid. It migrates up gullies on the continental slope to feed at night on mesopelagic fish that have migrated from deeper waters. The main threat to the little gulper shark in Australian waters is population reduction caused by past fishing pressure in both State and Commonwealth-managed commercial fisheries operating on the upper-slope (TSSC, 2013). Species in genus *Centrophorus* are vulnerable to over-exploitation due to the fact that they are long-lived, late to mature and have small litters (DCCEEW, 2023e). This species habitat preferences indicates that it is likely to occur in the EMBA.

A.1.4.3.13 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 New South Wales, Victoria and South Australia. Because this species is not known to migrate through Bass Strait, and the lack of known distribution in Victoria, Tasmania, and New South Wales, it is highly unlikely to occur within the EMBA.

A.1.4.3.14 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 New South Wales (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 the area near Jervis Bay in New South Wales.

A.1.4.3.15 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 800m 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.

A.1.4.4 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.

Table B-4 in Appendix B of the EP lists the cetacean species within the EMBA. Table A-5 lists the relevant threats to cetacean species that may occur within the EMBA, as identified by management plans, conservation advice and recovery plans. Cetacean species that are listed as threatened or migratory under the EPBC Act or have known BIAs within the EMBA 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 250m. The extent of occurrence is large in all cases, estimated to be greater than 20,000km^2. All are tropical to subtropical species (occasionally temperate) with distribution varying depending on water temperature and flow of warm currents.

A.1.4.4.1 Southern right whale

Two populations of SRW (*Eubalaena australis*) occur in Australia, the western and the eastern SRWs. While the geographical boundary between these two populations is unclear, for management purposes the western population includes Western Australia and South Australia waters west of Ceduna (South Australia), whereas the eastern population, comprises coastal waters of east of Ceduna (South Australia), Victoria, Tasmania, New South Wales and Queensland (DCCEEW, 2024).

SRW predominantly occupy shallow, coastal areas where they calve and nurse their young on the Australian coast. The peak period of abundance is typically in late July and August, although there is within season variability that differs between females with calves and unaccompanied whales. Females accompanied by a calf generally occupy the calving ground for two to three months between June and September, whereas unaccompanied whales (males and females without a calf) are more variable in their occupancy of coastal areas throughout the reproductive season (DCCEEW, 2024). Mapping of BIAs available via the Australian Marine Spatial Information System – Advanced platform (Geoscience Australia, 2024) identifies two BIA that are overlapped by the EMBA (Figure A-22); reproduction (May to September) and migration (April to October). Similarly, the *National Recovery Plan for Southern Right Whales* includes mapping that indicates reproduction season for SRW ranging approximately from May to September, however this plan also make reference to the reproduction season extending from May to October (DCCEEW, 2024).

Known calving and aggregation grounds in the southeast region are Warrnambool, Port Fairy, Port Campbell and Portland in Victoria, and Encounter Bay, South Australia (DSEWPC, 2012d). Calving itself usually occurs in very shallow (<10m 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, et al., 2015).

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). Both BIAs are overlapped by the EMBA (Figure A-22). In addition, under Part 13, Section 270 of the EPBC Act, a Recovery Plan must identify the habitats that are critical to the survival of the species or community concerned (DCCEEW, 2024). As such, the *National Recovery Plan for Southern Right Whale* has established that HCTS for SRW are all the reproductive BIAs across the species range, based on the following (DCCEEW, 2024):

- they meet the species essential life cycle requirements for reproduction (e.g. mating, calving, and nursing) and reproduction is known to occur at that location
- there is a level of occupancy by individual breeding females at these locations of multiple days in any given year, and across multiple years, for long-term maintenance of the species
- they are critical for recovery of the SRW in terms of expanding habitat occupancy and contributing to the maintenance of genetic diversity as site fidelity may lead to small-scale genetic differences.

The *National Recovery Plan for the Southern Right Whale* indicates that *critical habitat*, as defined under Section 207A of the EPBC Act, is different from HCTS and only applies to Commonwealth land and sea, and there is no such habitat identified or included in the Register of Critical Habitat. The Plan also confirms that there are no important cetacean habitat areas identified in the Australian Whale Sanctuary for SRW as defined under Section 228A of the EPBC Act (DCCEEW, 2024).

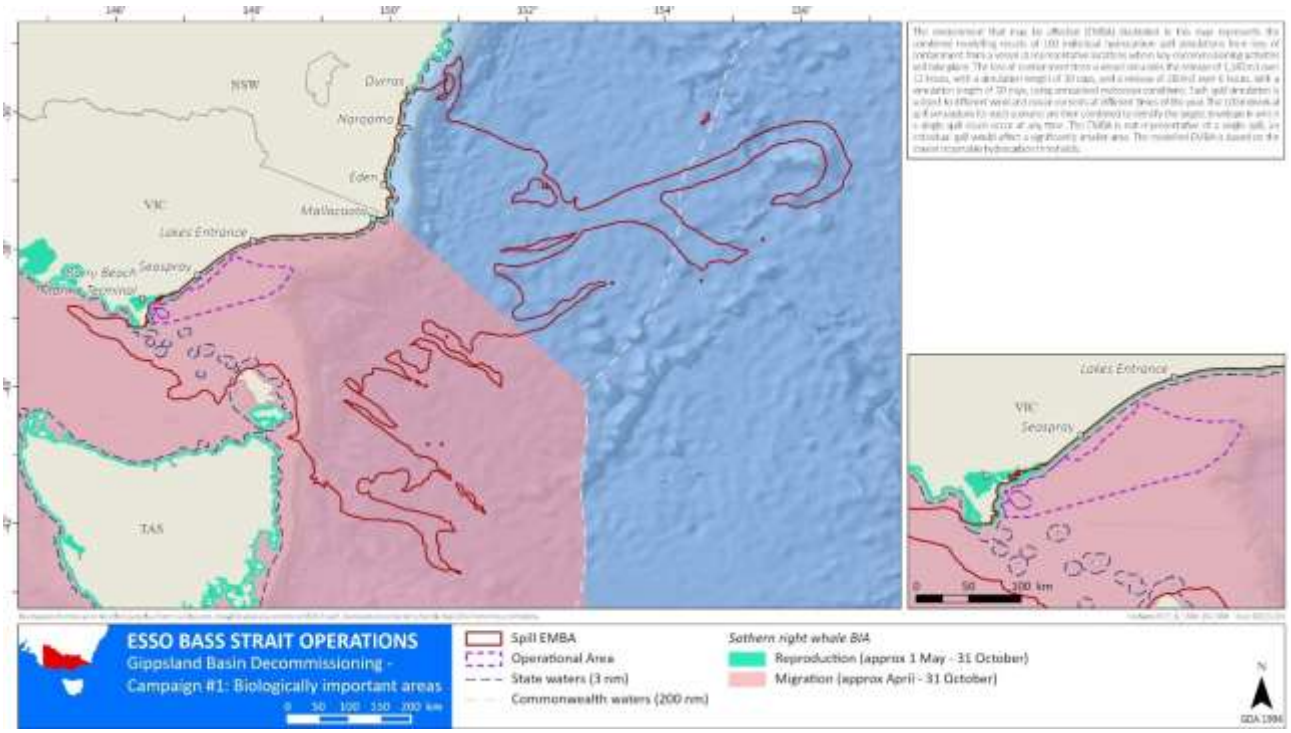

Figure A-22 SRW BIAs intersected by the EMBA

A.1.4.4.2 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 PBW (*B. m. brevicauda*) (Rice 1998, in (Department of the Environment, 2023).

The PBW has five population groups, two of which are found in the Southern Hemisphere. Figure A-23 summarises the known and predicted ranges of the species and populations around Australia and New Zealand and their likely presence in Esso's areas of operation in eastern Bass Strait.

A.1.4.4.2.1 DISTRIBUTION

Long term passive acoustic recorders set by McCauley et al. (2018) found Antarctic blue whale calls along the entire southern Australian coast, while calls from the New Zealand PBW population occur predominantly eastward of Bass Strait and calls from the Indo-Australian PBW population were heard west of Bass Strait. The Indo-Australian PBW population wasn't recorded on the east Australian coast or east of Bass Strait and the New Zealand PBW population was always heard in the Bass Strait recordings, and only ever heard as far west as Portland in Victoria. The Antarctic blue whale was recorded at all sites south of 19°S (McCauley, R.D., Gavrilov, A.N., Jolliffe, C.D., Ward, R. and Gill, P.C., 2018).

Balcazar et al. (2015) suggests that the Australian continent acts as a geographic boundary, separating Indo-Australian and New Zealand PBW acoustic populations at the junction of the Indian and Pacific Ocean basins (Balcazar, 2015). The distribution of PBW in the Australian region is illustrated in Figure A-24. There are few contemporary records of blue whales in the Gippsland region. However, recent scientific literature suggests that PBW populations are capable of travelling great distances far beyond their expected range (Barlow, 2023). This concept that blue whales can extend beyond their current range is corroborated by Branch et al (2023), who modelled the predicted detection range for the Antarctic blue whale and PBW populations. Findings from Branch et al (2023) and Barlow et al (2023) are discussed further within the population sub-headings in this Section.

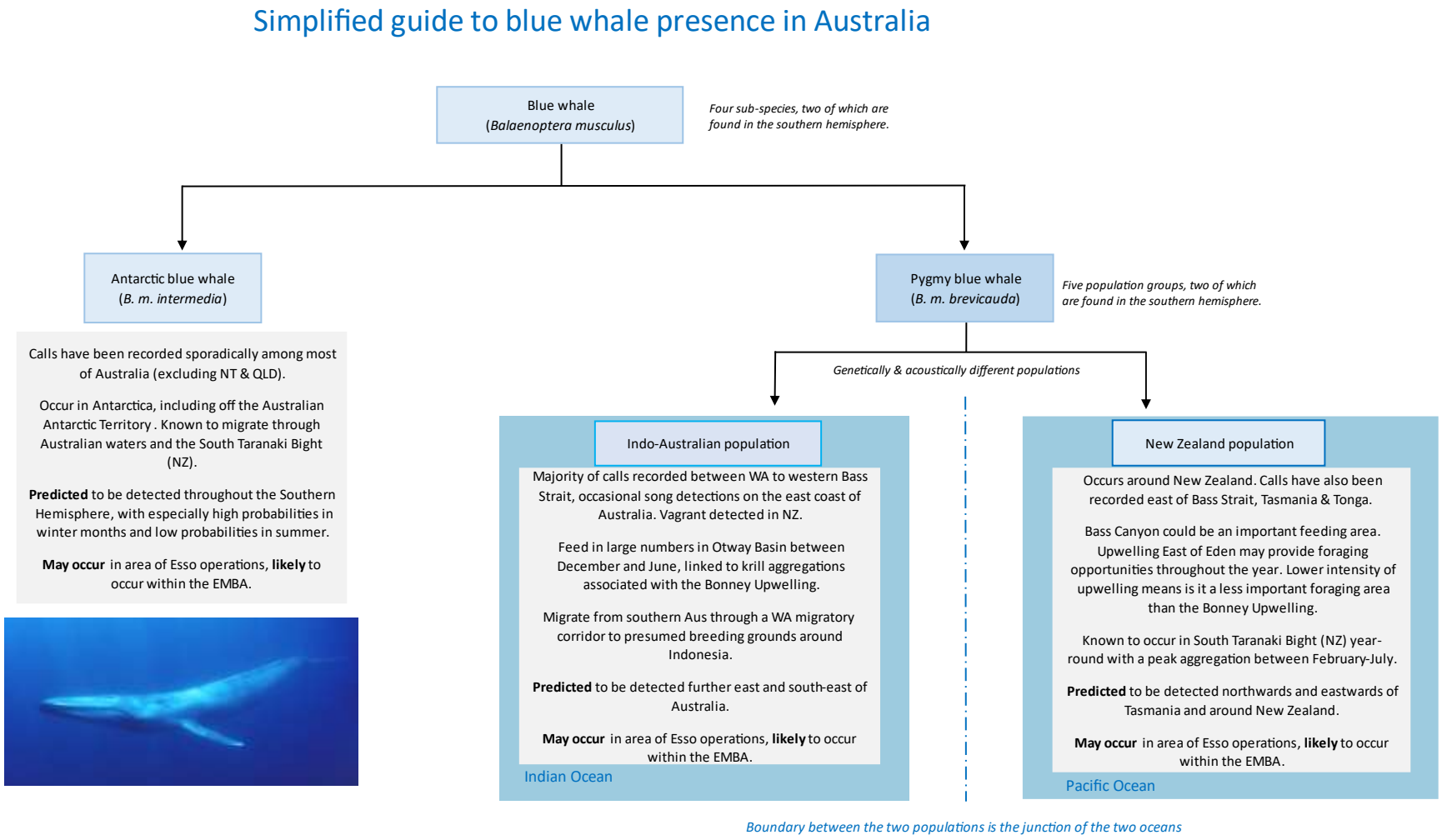

Figure A-23 Simplified guide to blue whale presence in Australia

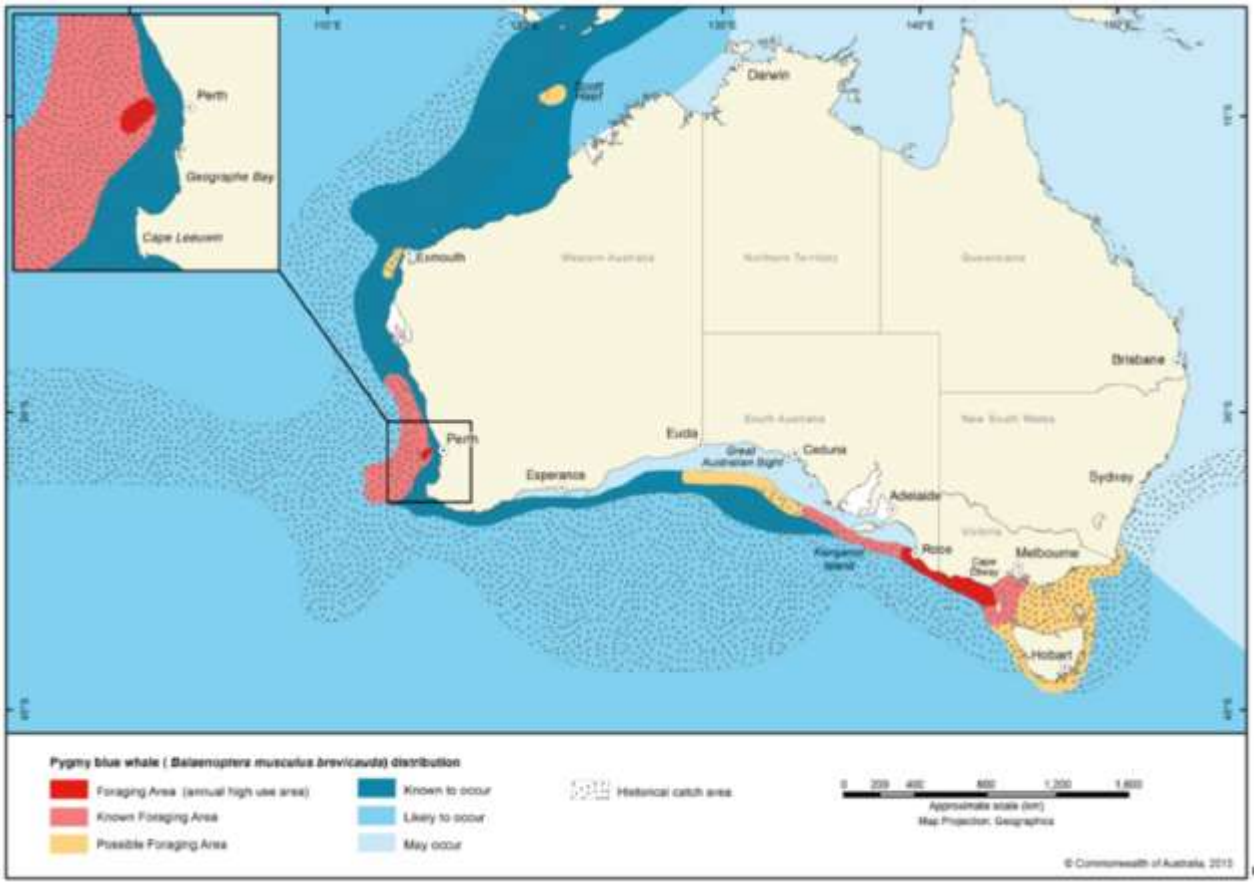

Figure A-24 Distribution and foraging areas for the PBW (DoE, 2015b)

A.1.4.4.2.2 DIET

Blue whales have the highest known prey requirements, consuming up to two tonnes of krill per day (DoE, 2015b). Krill is the key to understanding the ecology and behaviour of blue whales. Krill is sensitive to temperature and migrates vertically and horizontally to maintain optimal positioning with respect to nutrients, often being found along thermal fronts and thermoclines. Krill abundance in a given season may be linked to oceanographic conditions of the previous year. The krill species, *Nyctiphanes australis*, frequently swarm at or near the surface, making it easily available to foraging blue whales. It can also be found at depth, where blue whales must dive to search and consume it. Foraging is energetically expensive for blue whales, which must regularly find sufficient food to balance their enormous energy requirements (Gill., 2020). There are two important seasonal feeding aggregations areas known in Australia where large numbers of PBW have been recorded: the Bonney Upwelling KEF and adjacent waters off South Australia and Victoria (located approximately 230km west of the EMBA); and the Perth Canyon KEF and adjacent waters off Western Australia (located over 2800km west of the EMBA). Prominent surface upwelling commonly occurs west of Portland where the shelf is narrow (the Bonney Upwelling); whereas on the broader shelf between Portland and King Island, upwelling is usually subsurface, with cooler upwelled water beneath a warmer surface layer (Gill., 2020).

A.1.4.4.2.3 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 (DNP, 2025).

Results of continuous acoustic recordings that took place from January 2016 to February 2018 in the South Taranaki Bight in New Zealand (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.

A.1.4.4.2.4 INDO-AUSTRALIAN PYGMY BLUE WHALE

The distribution and migration patterns of Indo-Australian PBW are relatively well understood in areas further west of the EMBA. Satellite tagging of Indo-Australian PBW by Double et al. (2014) and Möller, et al. (2020) has revealed that the Indo-Australian population migrates from southern Australian foraging grounds through a Western Australian migratory corridor to (presumed) breeding grounds in waters around Indonesia. In July 2024, revised BIA spatial data became publicly available via the Australian Marine Spatial Information System website. Based on the revised BIA data, the EMBA overlaps with 32.57% of the foraging BIA for PBW (Figure A-25).

The time and location of the appearance of Indo-Australian PBW generally coincides with the upwelling of cold water in summer and autumn along the Bonney Upwelling and the associated aggregations of krill that they feed on (Gill, P. and M. Morrice, 2003). The Bonney Upwelling generally starts in the eastern part of the Great Australian Bight in November or December and spreads eastwards to the Otway Basin around February as southward migration of the subtropical high-pressure cell creates upwelling favourable winds. Sighting data indicates that blue whales are seasonally distributed (Gill P. , et al., 2011) (McCauley, R.D., Gavrilov, A.N., Jolliffe, C.D., Ward, R. and Gill, P.C., 2018).

Barlow (2023) detected the Indo-Australian PBW song during a 10-day period in January 2017, implying a rare vagrant occurrence. The modelling predicts that the distribution of the Australian PBW is further westward of Western Australia, further south along the Great Australian Bight and Indian Ocean, south-eastward towards the Bass Strait and Tasmania and even as far as New Zealand (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.

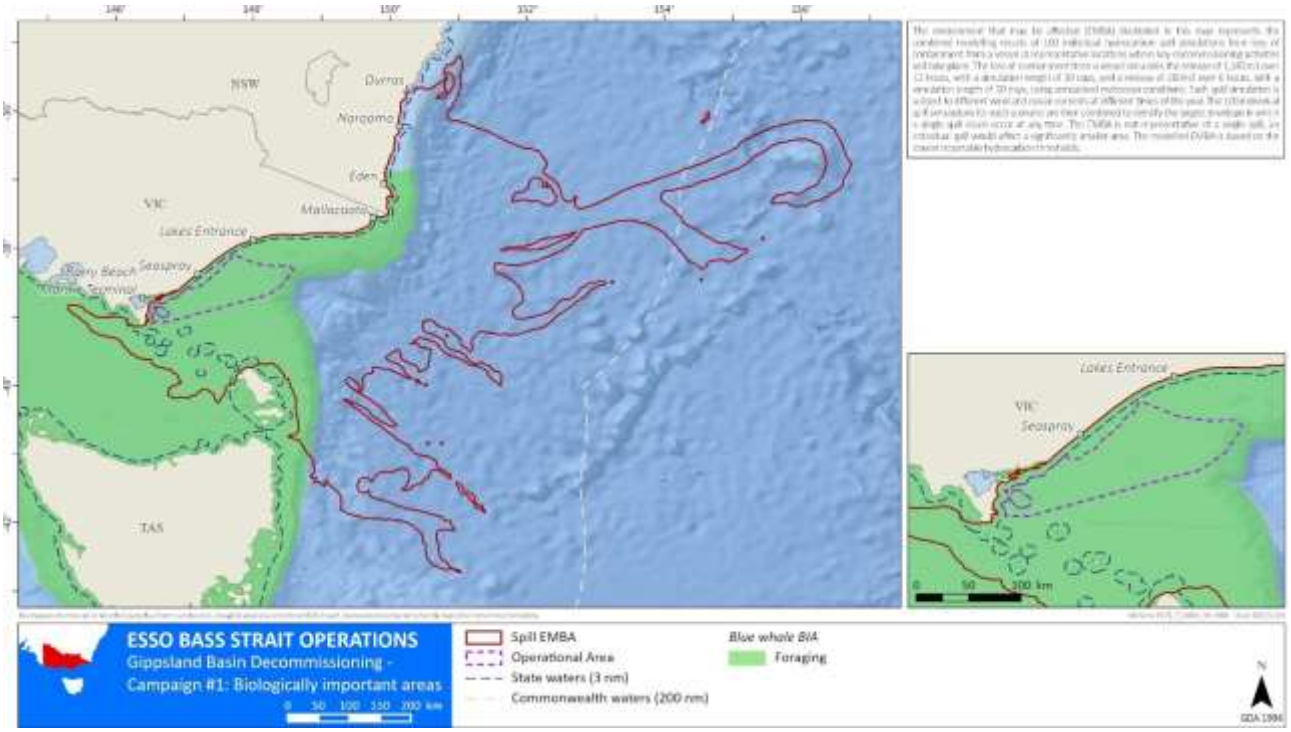

Figure A-25 PBW BIAs intersected by the EMBA

A.1.4.4.2.5 NEW ZEALAND PYGMY BLUE WHALE

Relatively little is known about New Zealand PBW. Antarctic blue whales are known to co-occur with PBW around New Zealand. Antarctic blue whale detections peaked during austral winter and spring, indicating that 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). PBW calls were highly concentrated in the South Taranaki Bight, particularly between March and May, suggesting that an aggregation may occur here (Warren, V., McPherson, C., Giorli, G., Goetz, K., & Radford, C, 2021).

The Upwelling East of Eden KEF is located within the EMBA and is a recognised upwelling system. Upwelling influence areas were mapped between September and May (austral spring, summer and autumn) each year for a period of 14 years (Sept 2002 to May 2016) along 4500km of the south-eastern coast of Australia using monthly MODIS sea surface temperature data (Huang & Hua Wang, 2019).

The study confirmed that there were three seasonal/semi-seasonal upwelling centres: the Bonney Upwelling; the Kangaroo Island Upwelling; and the Eyre Peninsula Upwelling, in the western Victorian/South Australian coastal upwelling system. The New South Wales 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 New South Wales/eastern Victorian upwelling system, centred on the Eden Upwelling, has a less distinct seasonal pattern (Figure A-26) (Huang & Hua Wang, 2019).

(Barlow, 2023) states that despite extensive acoustic recordings in eastern Australia, Bass Strait and Tonga, the New Zealand population has rarely been being detected in these locations. The New Zealand PBW is anticipated to be distributed northwards and eastwards of Tasmania (including Bass Strait and the eastern coast of Australia), and around New Zealand (Branch, 2023).

In light of the findings of (Barlow, 2023)and (Branch, 2023), it is likely the New Zealand PBW is present within the EMBA.

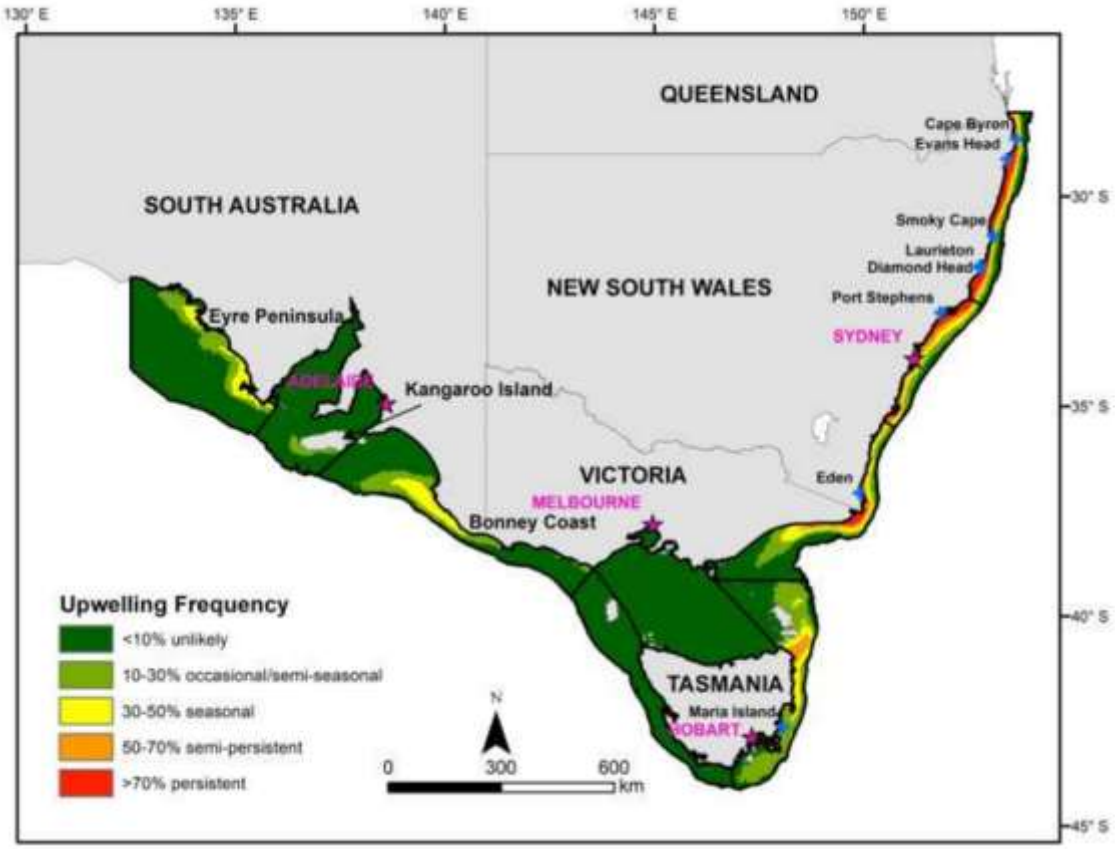

Figure A-26 Upwelling frequency (Huang & Hua Wang, 2019)

A.1.4.4.3 Humpback whales

Humpback whales (*Megaptera novaeangliae*) migrate annually along the eastern coast of Australia heading north to tropical calving grounds from May to August, and south to Southern Ocean feeding areas from August to November (Figure A-27). 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, 1996).

Most feeding grounds are south of Australian waters (TSSC, 2015b). A BIA for migration has been identified within the EMBA, along the east coast of Australia (Figure A-28). 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 New South Wales, 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).

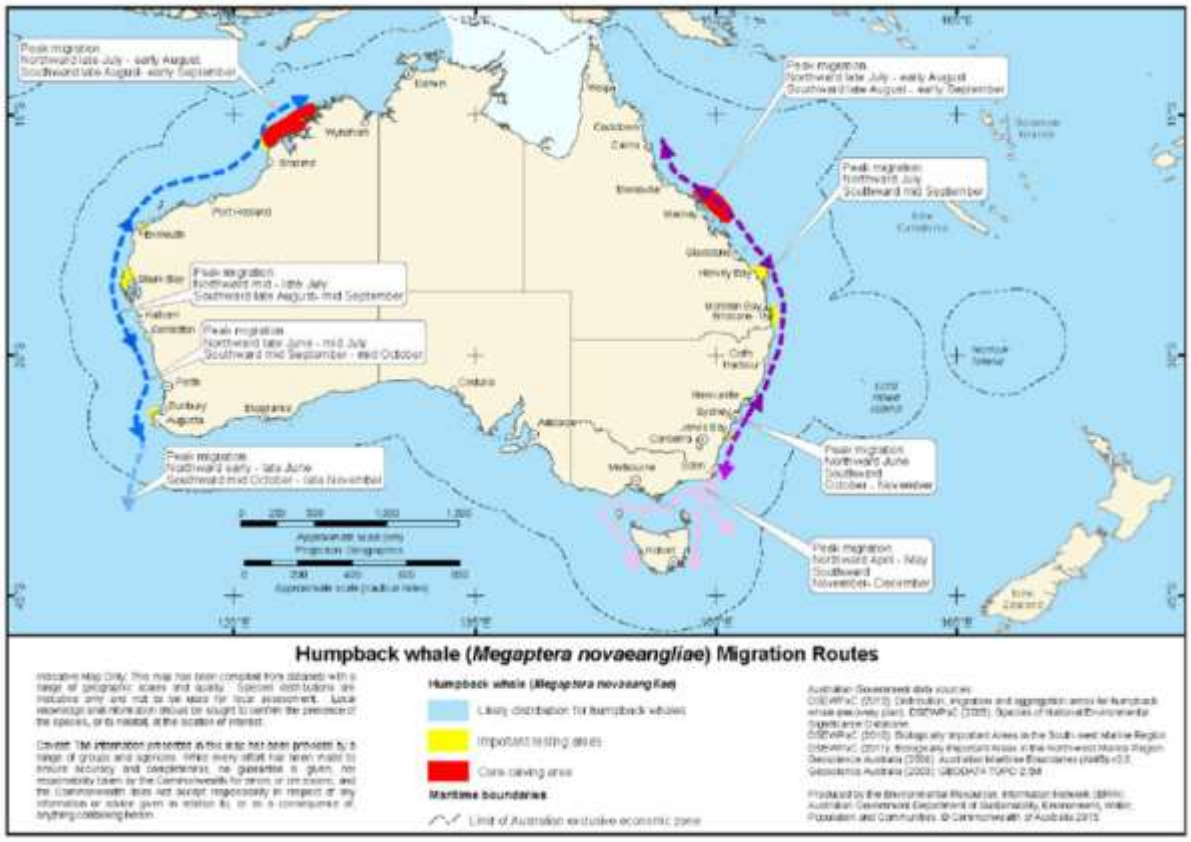

Figure A-27 Migration routes for humpback whales around Australia (TSSC, 2015b)

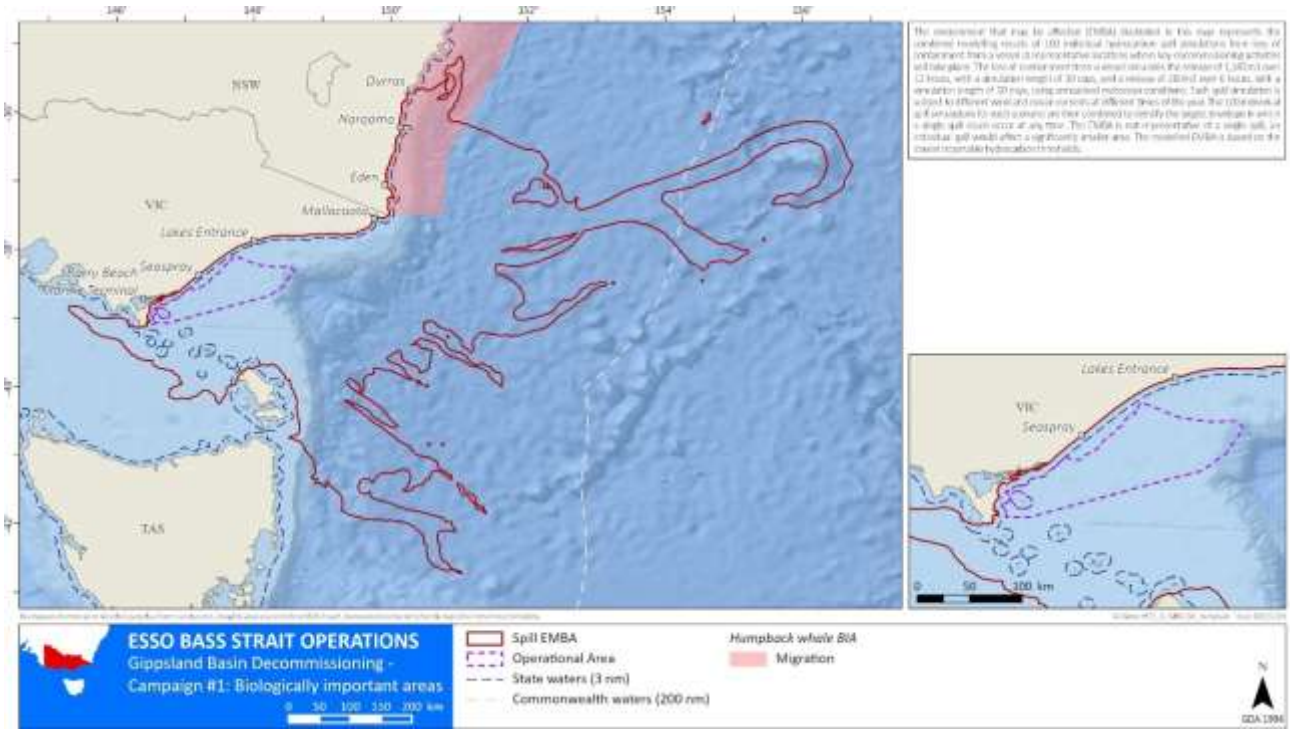

Figure A-28 Humpback whale BIAs intersected by the EMBA

A.1.4.4.4 Pygmy right whale

Records of pygmy right whales (*Caperea marginata*) 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 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).

A.1.4.4.5 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 600m or more and are uncommon in waters less than 300m (DCCEEW, 2023e). The PMST indicates that the species may occur within the EMBA. No BIAs for the species are recorded in the EMBA.

A.1.4.4.6 Antarctic minke whale

The Antarctic minke (*Balaenoptera bonaerensis*) whale is more robust than the other large baleen whales. The maximum length of Antarctic minke whales appears to be around 9.8m. 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 except 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 20,000km^2 (based on the Australian Economic Exclusion Zone) (DCCEEW, 2023e).

A.1.4.4.7 Bryde's whale

The Bryde's whale (*Balaenoptera edeni*) is restricted to tropical and temperate waters and has been recorded off all Australian states with exception of the Northern Territory (Bannister, 1996). Bryde's whales can be found in both oceanic (500-1000m isobath) and inshore waters (<200m 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 euphausids, copepods, pelagic red crabs and cephalopods.

A.1.4.4.8 Sei whale

Sei whales (*Balaenoptera borealis*) have been infrequently recorded in Australian waters; however occasional sightings have been recorded off Tasmania, New South Wales, Queensland and within the Great Australian Bight (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).

A.1.4.4.9 Fin whale

The distribution of fin whales (*Balaenoptera physalus*) 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 C. M., 2016).

Table A-5 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 A-5 Key threats to threatened whale species relevant to the activity

Common name	Recovery plan/conservation advice/management plan	Key threats (relevant to the activity)
Sei whale	*Approved Conservation Advice for Balaenoptera borealis (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 Balaenoptera physalus (fin whale)*	• Anthropogenic noise and acoustic disturbance. • Pollution (persistent toxic pollutants). • Vessel strike.
SRW	*National Recovery Plan for the Southern Right Whale* (DCCEEW, 2024)	• Entanglement (marine debris). • Habitat modification. • Anthropogenic underwater noise (vessel noise). • Collision (Vessel strike). • Pollution (chronic chemical pollution).

A.1.4.4.10 Killer whale

The killer whale (*Orcinus orca*) is the largest member of the dolphin family. The killer whale 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, 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, 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, 1996) (Morrice, 2004).

A.1.4.4.11 Dusky dolphin

The dusky dolphin (*Lagenorhynchus obscurus*) 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, 1996). The dusky dolphin occurs across southern Australia from Western Australia to Tasmania and there are confirmed sightings near Kangaroo Island, South Australia, and off Tasmania. No key localities or critical habitats in Australian waters have been identified (Bannister, 1996).

A.1.4.4.12 Indian Ocean bottlenose dolphin

The Indian Ocean bottlenose dolphin (*Tursiops aduncus*) 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 Port Phillip Bay (DSEWPC, 2012e)(only Twofold Bay is 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 BIA for breeding for the spotted bottlenose dolphin has been identified within New South Wales coastal waters (within the EMBA) (Figure A-29) (DoEE, 2015).

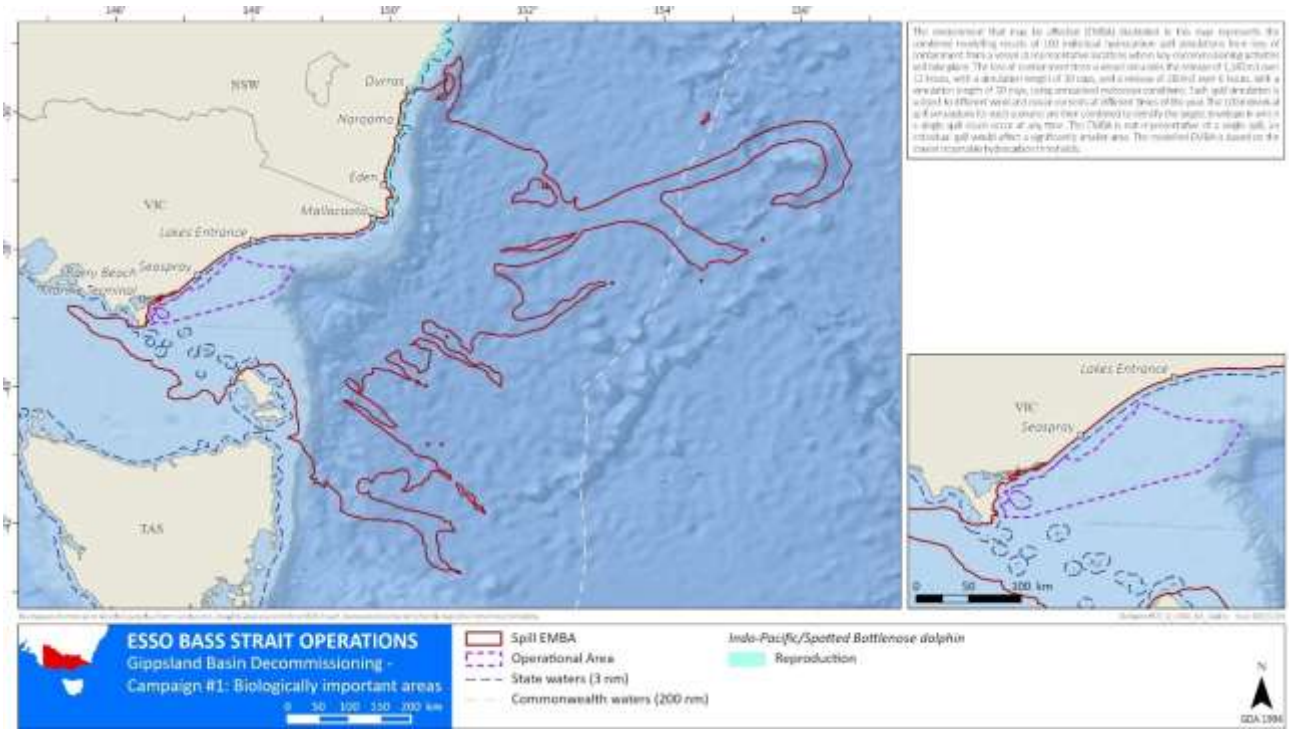

Figure A-29 Indian Ocean bottlenose dolphin BIAs intersected by the EMBA

A.1.4.5 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.

A.1.4.5.1 Australian fur seal

Australian fur seals (*Arctocephalus pusillus*) are endemic to southeastern Australian waters and have a relatively restricted distribution around the rocky islands of Bass Strait (Figure A-30). The species has been recorded in the waters off South Australia, Victoria, Tasmania, and New South Wales (Kirkwood, Warneke, & J.P., 2009), with an estimated population of 120,000 individuals (Kirkwood, et al., 2010).

There are 13 established breeding colonies of the Australian fur seal, including five colonies located in Victoria, seven located in Tasmania and one located in North Casuarina Island in South Australia (Kirkwood, et al., 2010). The largest of the established colonies occur at Seal Rocks adjacent Phillip Island (25.9% of the breeding population) and at Lady Julia Percy Island (25.5% of the breeding population), in Victoria. Both areas are located outside the EMBA.

Australian fur seal breeding colonies in Bass Strait that are within the EMBA, and estimated number of individuals at each location (Kirkwood, et al., 2010) are (Figure A-30):

- Rag Island (1500 Australian fur seals)
- Kanowna Island (15,000 Australian fur seals)
- the Skerries (14,000 Australian fur seals)
- Judgment Rock in the Kent Island Group (13,000 Australian fur seals)
- West Moncoeur Island (1100 Australian fur seals)
- Wright Rocks (690 Australian fur seals).

Australian fur seal haul-out sites listed by (Kirkwood, et al., 2010), and Parks Victoria (Conservation Action Plan: East Gippsland, 2023) that are within the EMBA (Figure A-30) include Gabo Island, East Island (in the Hogan Island group), and Beware Reef.

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 central Bass Strait. 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 - 80m (Hume F., 2004.) (Kirkwood A. J., 2007) (Robinson S., 2008) generally within 100k - 200km of the breeding colony for up to five days at a time (Hume F., 2004.). The lactation period lasts for between ten and eleven 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 kilometres 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.

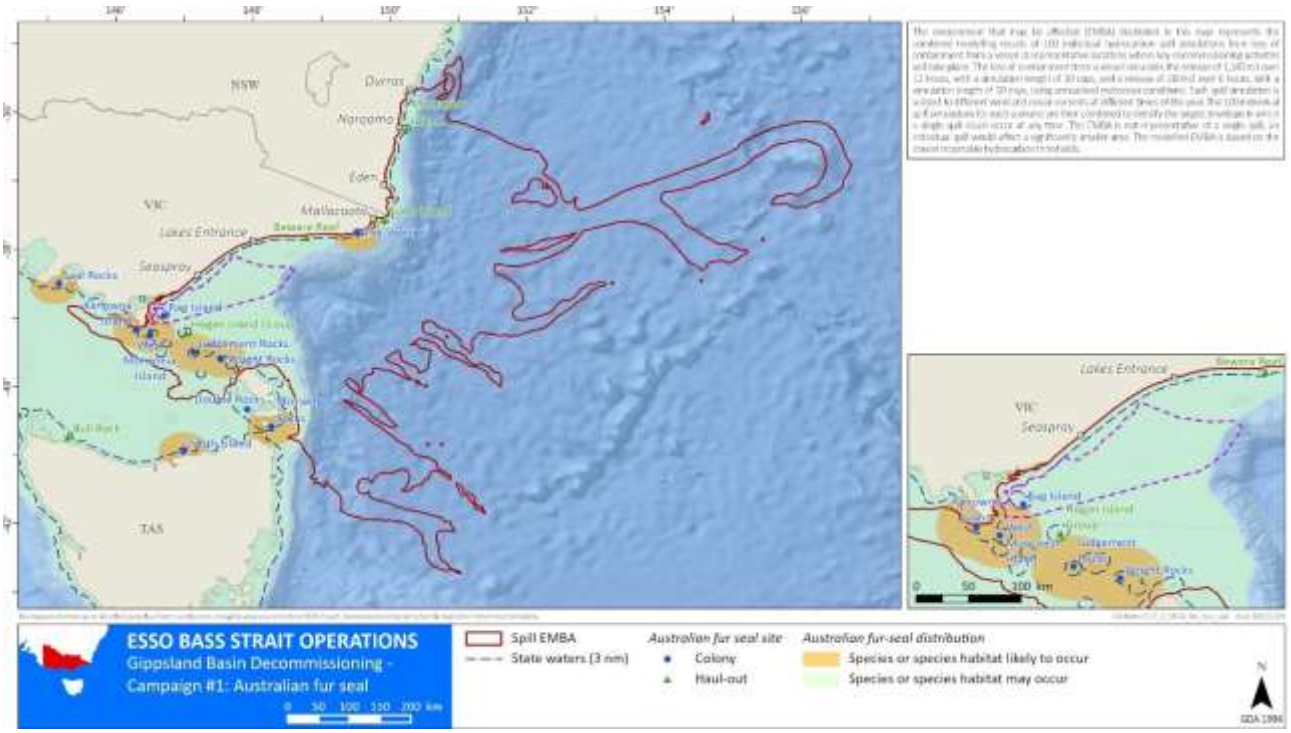

Figure A-30 Australian fur-seal distribution, breeding colonies and haul-out sites within the EMBA

A.1.4.5.2 New Zealand fur seal

New Zealand fur seals (*Arctocephalus forsteri*) are mostly found in central South Australian waters (Kangaroo Island to south Eyre Peninsula), with 77% of their population found here (outside the EMBA) (Shaughnessy, The action plan for Australian seals., 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). (Kirkwood, Warneke, & J.P., 2009) identified four breeding locations within Victoria, at Kanowna Island, off Wilsons Promontory, the Skerries (both located within the EMBA), and at the Lady Julia Percy Island and Cape Bridgewater (both located approximately 267km west of the EMBA) (Figure A-31).

During the summer period (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, The action plan for Australian seals., 1999).

New Zealand fur seals feed on small pelagic fish, squid, and seabirds, including little penguins (Shaughnessy, The action plan for Australian seals., 1999). Juvenile seals feed primarily in oceanic waters beyond the continental shelf, lactating females feed in mid-outer shelf waters (50 - 100km 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. (Chilvers, 2015) estimates the total population of New Zealand fur seals within Australia is approximately 117,400 individuals, increasing to approximately 200,000 individuals when considering the population within New Zealand waters.

Haul-out sites in Bass Strait, as reported by (Barton, 2012) and (OSRA, 2015) that are located within the EMBA include Beware Reef, Kanowna Island, the Hogan Islands Group and West Moncoeur Island.

There are 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.

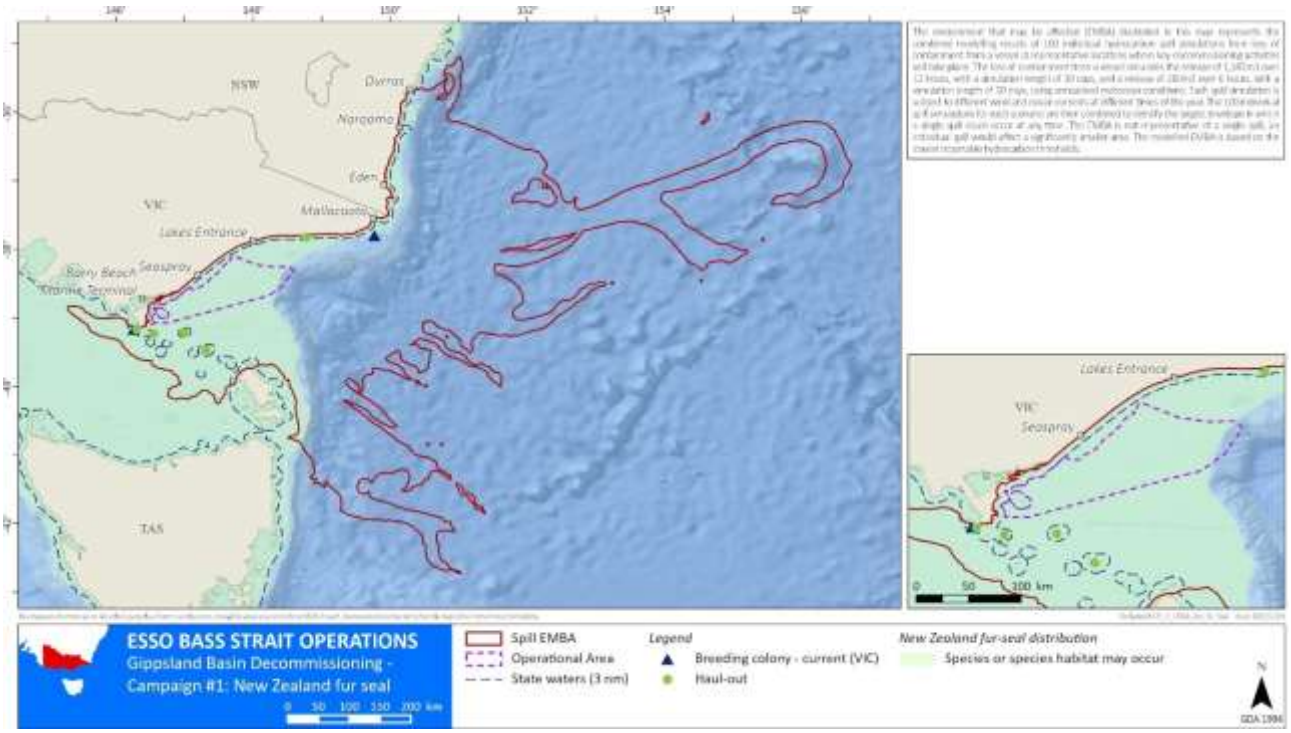

Figure A-31 New Zealand fur seal distribution, breeding colonies and haul-out sites within the EMBA

A.1.4.6 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 occur within the EMBA. All of which are described below. Table A-6 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 A-6 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		

Light pollution as a threat to marine turtles is also addressed by the *National Light Pollution Guidelines for Wildlife* (DCCEEW, 2023).

A.1.4.6.1 Loggerhead turtle

The loggerhead turtle (*Caretta caretta*) 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 3500 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.

A.1.4.6.2 Green turtle

Green turtles (*Chelonia mydas*) 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 8000 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.

A.1.4.6.3 Leatherback turtle

The leatherback turtle (*Dermochelys coriacea*) 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.

A.1.4.6.4 Hawksbill turtle

The hawksbill turtle (*Eretmochelys imbricata*) 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 New South Wales originate (DCCEEW, 2023e). No nesting or internesting, critical habitat, or BIAs, have been identified for the hawksbill turtle within the EMBA.

A.1.4.6.5 Flatback turtle

The flatback turtle (*Natator depressus*) 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.

A.1.4.7 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.

The coast and neighbouring islands within the EMBA provide feeding and nesting habitats for many coastal and migratory bird species.

Table B-3 in Appendix B of the EP lists the EPBC Act listed threatened, migratory and marine bird species (or species habitat) (see Appendix D of the EP for the full PMST report). Many of the birds are also listed in the following international conventions that aim to protect the birds themselves and their habitat:

- Republic of Korea Migratory Birds Agreement 2006
- 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
- 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
- Ramsar.

A.1.4.7.1 Albatrosses and petrels

Table B-3 in Appendix B of the EP lists the albatross and petrel species and EPBC Act listed status that have the potential to occur within the EMBA. BIAs for albatross and petrel species are shown in Figure A-32, Figure A-33, Figure A-34, Figure A-35 and Figure A-36.

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 15m 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 A-7) should be regarded as habitat that is potentially critical to the survival of albatrosses and petrels in Australia.

Table A-7 Albatross and petrel breeding site locations in Australia's jurisdiction

Site	Species	Approximate distance to the EMBA	Size (ha)
Albatross Island	Shy albatross	164km southwest	33
Mewstone	Shy albatross	460km southwest	13
Pedra Branca	Shy albatross	409km southwest	2.5
Macquarie Island	Black-browed albatross, grey-headed albatross, grey petrel, light-mantled albatross, wandering albatross, northern giant petrel, southern giant petrel	1443km southeast	13,000
Bishop and Clerk Islets	Black-browed albatross	1487km southeast	60
Heard Island	Black-browed albatross, light-mantled albatross, southern giant petrel	5496km southwest	36,800
McDonald Islands	Black-browed albatross, light-mantled albatross, southern giant petrel	5575km southwest	360
Giganteus Island	Southern giant petrel	5766km southwest	16
Hawker Island	Southern giant petrel	5112km southwest	190
Frazier Islands	Southern giant petrel	3690km southwest	60

Source: (CoA, 2022)

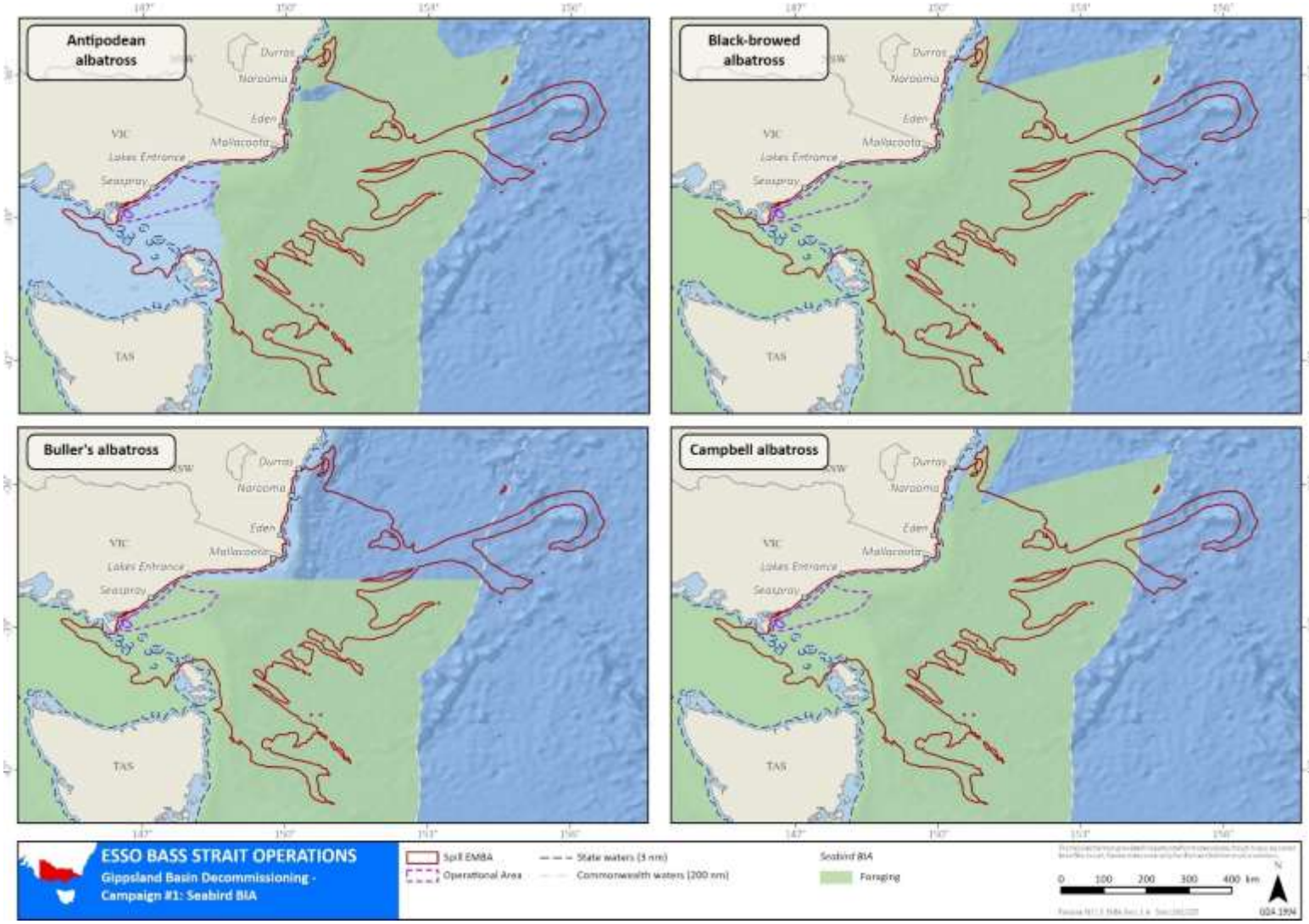

Figure A-32 BIAs for the antipodean, black browed, Buller's and Campbell albatrosses intersected by the EMBA

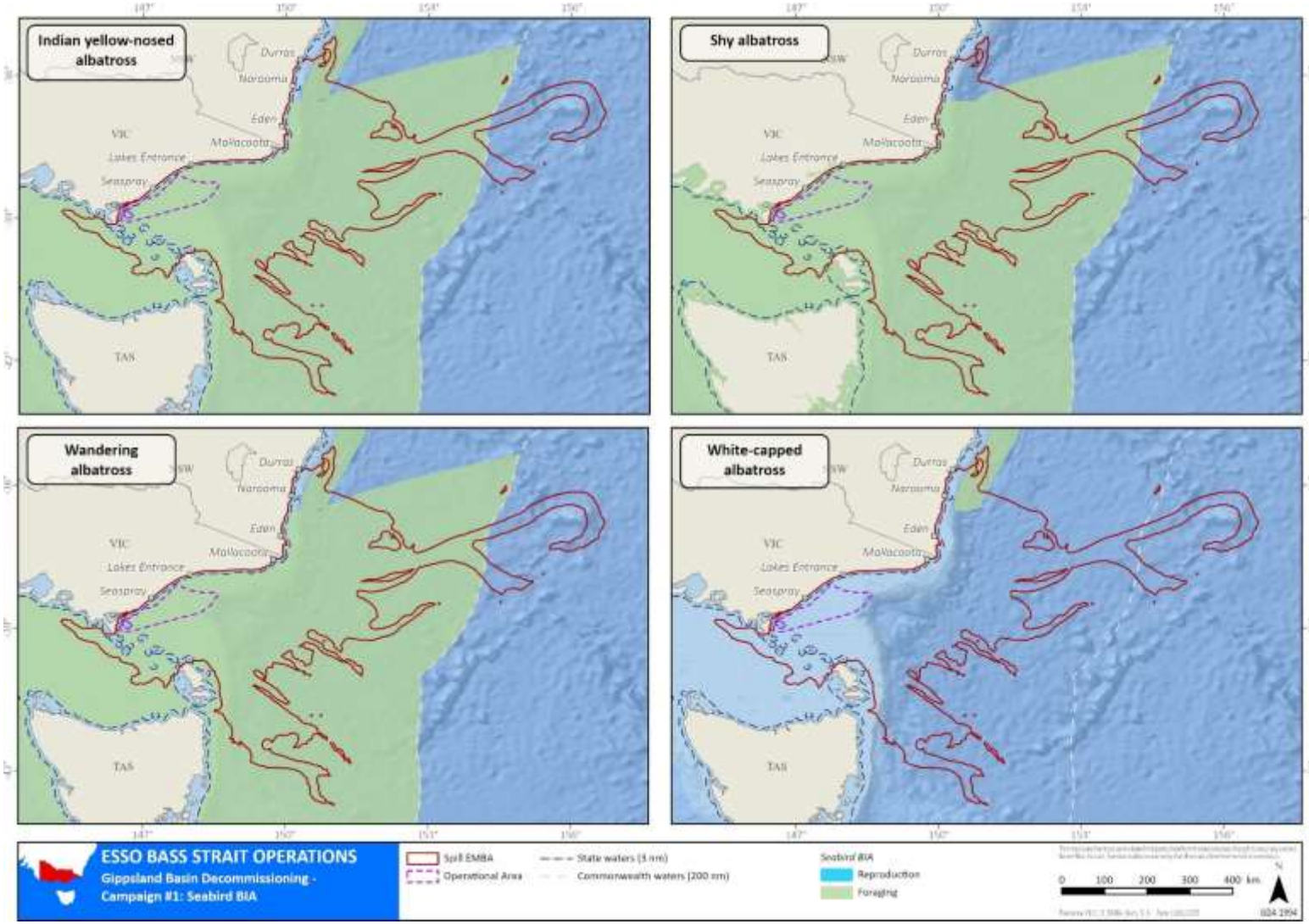

Figure A-33 BIAs for the Indian yellow-nosed, shy, wandering and white-capped albatrosses intersected by the EMBA

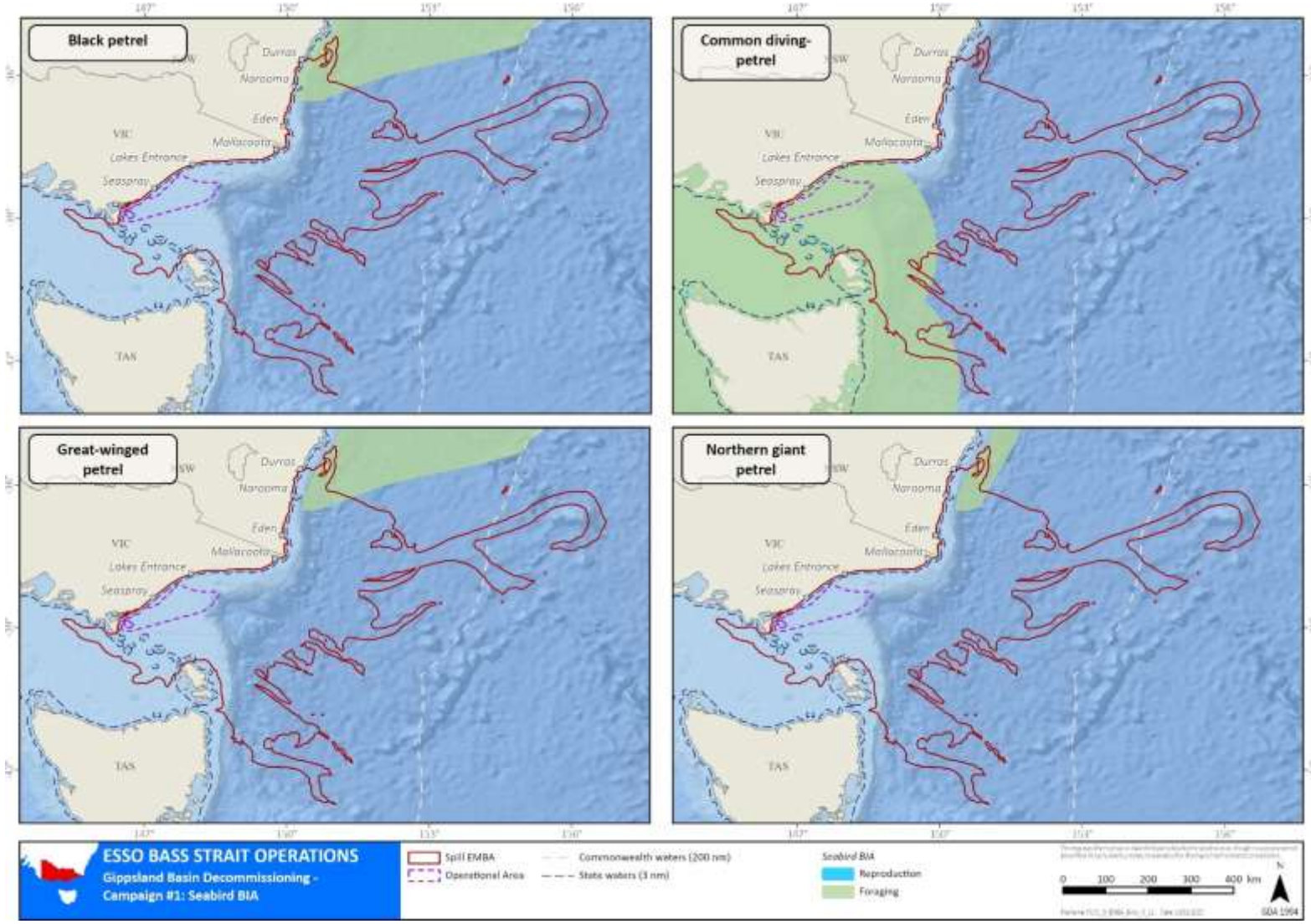

Figure A-34 BIAs for the black, common diving, great-winged and northern giant petrels intersected by the EMBA

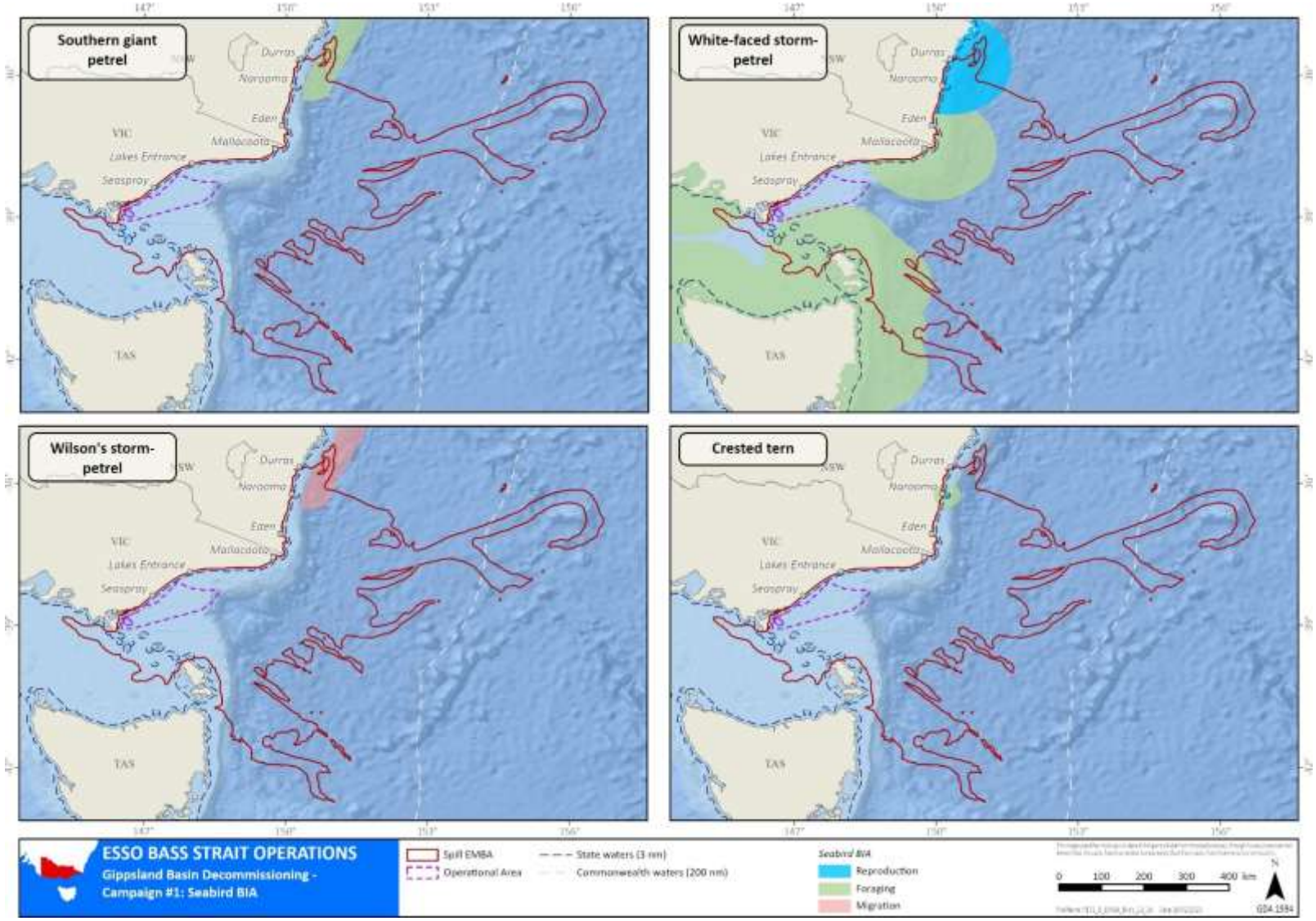

Figure A-35 BIAs for the southern giant, white-faced storm and Wilson's storm petrels and crested tern intersected by the EMBA

A.1.4.7.2 Shearwaters

Table B-3 in Appendix B of the EP lists the shearwater species and EPBC Act listed status that have the potential to occur within the EMBA. 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 New South Wales (such as Solitary Island, Cabbage Tree Island, Muttonbird Island and Bird Island) (DCCEEW, 2023e). Breeding season in southeastern 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 A-36.

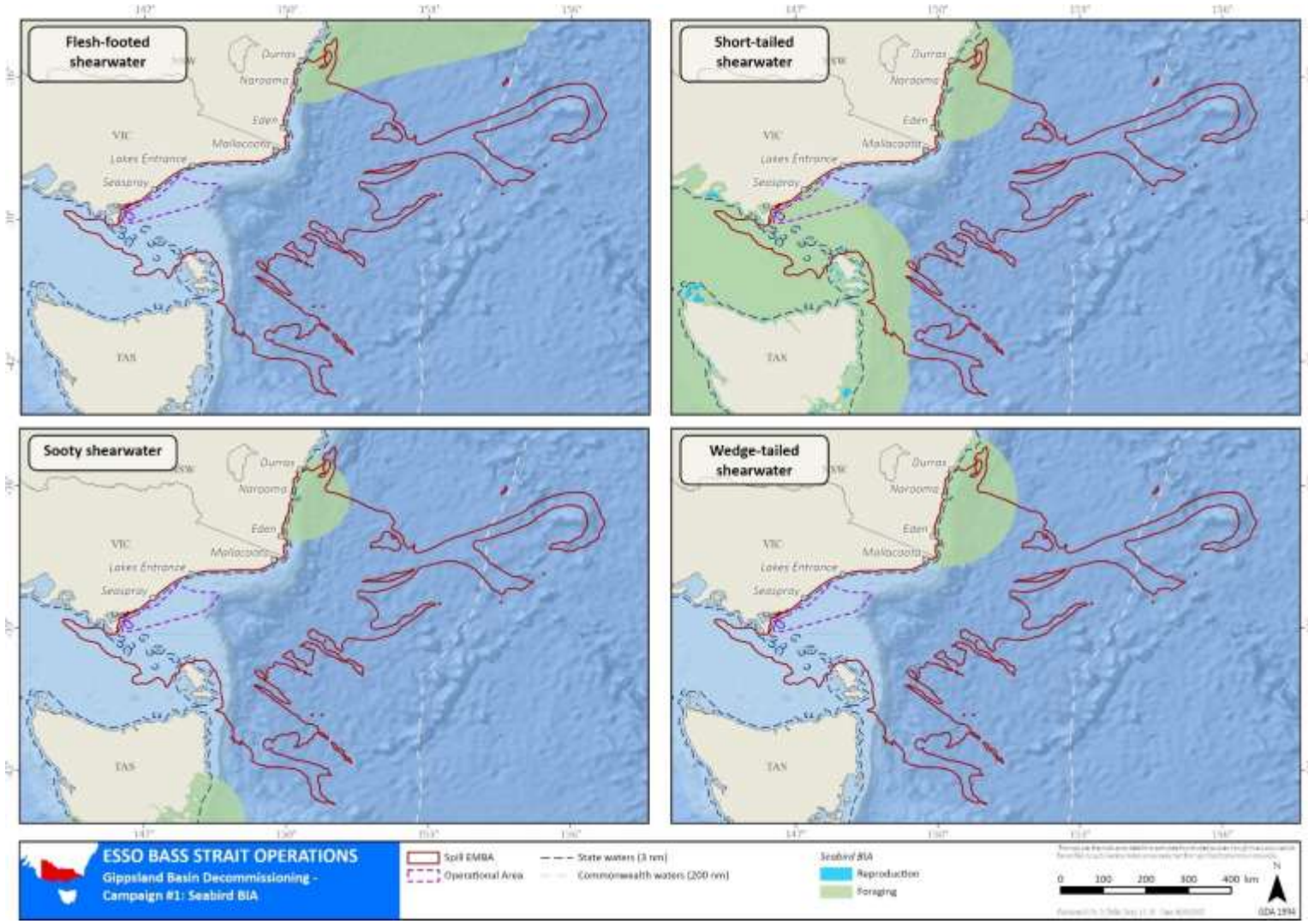

Figure A-36 BIAs for the flesh-footed, short-tailed, sooty and wedge-tailed shearwaters intersected by the EMBA

A.1.4.7.3 Other seabirds

Table B-3 in Appendix B of the EP lists the other seabird species and EPBC Act listed status that have the potential to occur within the EMBA and are described below:

- The fork-tailed swift (*Apus pacificus*) - 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 fairy prion (*Pachyptila tutur*) - 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 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 is likely to be present along the adjacent coastline of the EMBA.
- The osprey (*Pandion haliaetus*) - A common, medium-sized raptor that is present around the entire Australian coastline, with the breeding range restricted to the north coast of Australia (including many offshore islands) and an isolated breeding population in South Australia (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 is likely to 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 5000 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). BIA for the crested tern intercepted by the EMBA can be seen in Figure A-35.
- Noddies – One EPBC Act listed noddy species (common noddy; *Anous stolidus*) 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. No BIAs for noddy species are intercepted by the EMBA.
- The black-faced cormorant (*Phalacrocorax fuscescens*) - 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 2500 individuals (CoA, 2020). A section of a foraging BIA for the black-faced cormorant towards the northwest corner of Flinders Island limits with the boundary of the EMBA, as shown in Figure A-37.
- The little penguin (*Eudyptula minor*) - 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 New South Wales

(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 (DNP, 2025).

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 - 30m 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 - 25km of the coast, and at other times, foraging can occur up to 75km from the coast (SARDI, 2011).

Based on Oil Spill Response Atlas mapping, little penguin colonies in the Gippsland region that are within the EMBA are listed below and illustrated in Figure A-38:

- Shellback Island (400 breeding pairs)
- Norman Island (1000 breeding pairs)
- Glennie Group Islands (3400 breeding pairs)
- Anser Group of Islands (500 breeding pairs)
- Wattle Island (400 breeding pairs)
- Seal Island (1000 breeding pairs)
- Notch Island (1000 breeding pairs)
- Rag Island (400 breeding pairs)
- Rabbit Island (8000 breeding pairs)
- Rabbit Rock (200 breeding pairs)
- Tullaberga Island (900 breeding pairs)
- 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 illustrated in Figure A-38:

- Curtis Island Group (2000 individuals)
- Hogan Island Group (10,000 individuals)
- Furneaux Island group (> 40,000 pairs); and

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 New South Wales Department of Planning and Environment (DPI, 2019) approximately 25,000 pairs of little penguins nest on islands off the coast of New South Wales. The largest colonies are on the following islands, all of which are within the EMBA can be seen in Figure A-38:

- Montague Island
- Tollgate Island
- Brush Island.

The only known mainland breeding colony in New South Wales is in a secluded cove in the Manly area of Sydney Harbour which is outside the EMBA (DPI, 2019).The BIAs for little penguins within the EMBA is presented in Figure A-38.

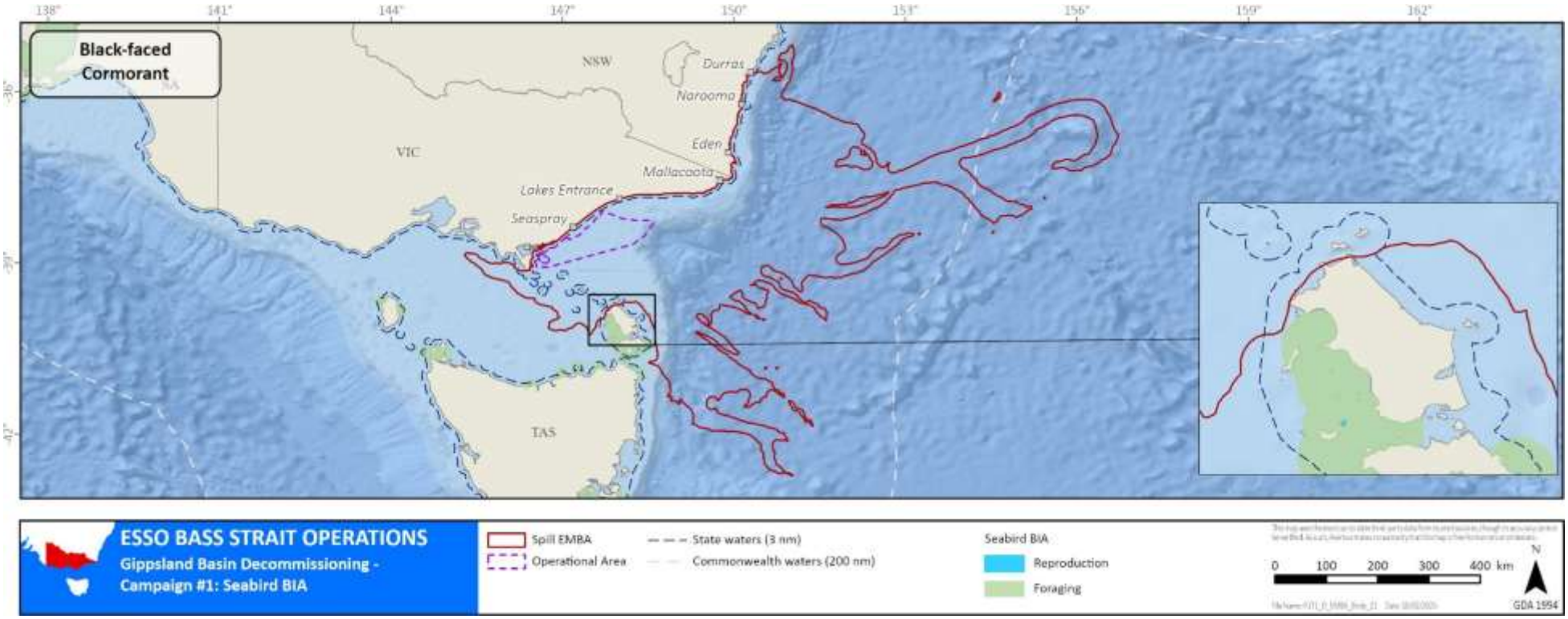

Figure A-37 BIAs for the black-faced cormorant proximal to the EMBA

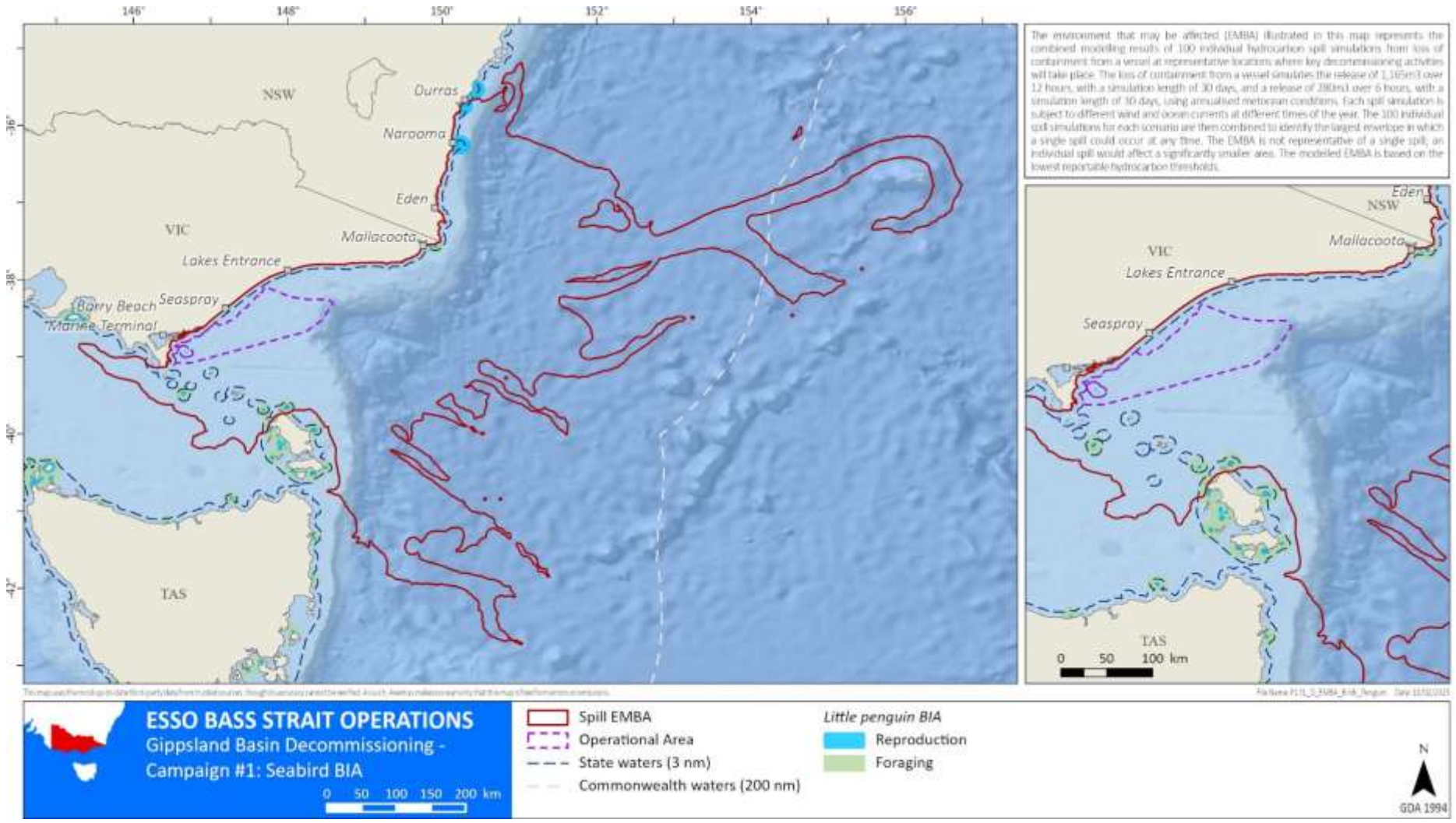

Figure A-38 Little penguin BIAs intersected by the EMBA

A.1.4.7.4 Orange-bellied parrot

The orange-bellied parrot (*Neophema chrysogaster*) 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 P. , 1999).

The parrot's breeding habitat is restricted to southwest Tasmania (outside of the EMBA) (see Figure A-39), where breeding occurs from November to mid-January mainly within 30km of the coast (Brown P. a., 1984). The species forage on the ground or in low vegetation (Brown P. a., 1980) (Brown P. a., 1984) (Loyn, 1986). During winter, on mainland Australia, orange-bellied parrots are found mostly within 3km 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 A-39.

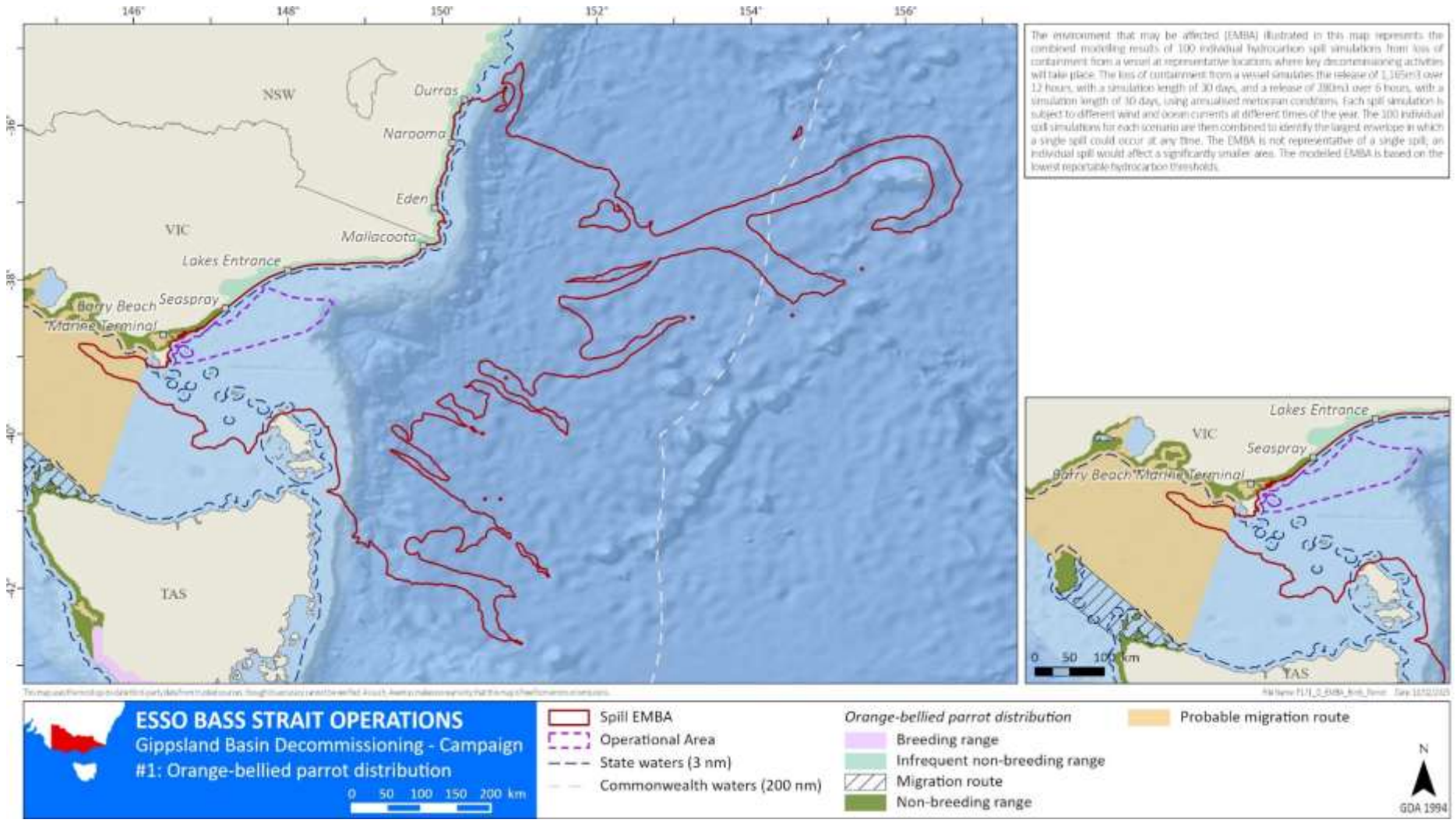

Figure A-39 The range and migration route of the orange-bellied parrot intersected by the EMBA

A.1.4.7.5 Shorebirds

Table B-3 in Appendix B of the EP lists the shorebird species and EPBC Act listed status and are described below:

- 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 lovers) breed in Asia and the Artic 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 3000 sharp-tailed sandpiper and up to 1800 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 two 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 southeastern 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 (5000) 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.

Table A-8 lists a summary of the relevant threats to marine species that may occur within the EMBA, as identified by management plans, conservation advice and recovery plan.

Table A-8 Relevant key threats identified in recovery plans, conservation advice and management plans for species that occur within the OA and EMBA

Common name	Recovery plan/conservation advice/management plan	Key threats (relevant to the activity)
All		
All vertebrate	*Threat Abatement Plan for the Impacts of Marine Debris on Vertebrate Wildlife of Australia's Coasts and Oceans* (CoA, 2018)	• Marine debris.
Sharks		
Whale shark	*Approved Conservation Advice on Rhincodon typus (whale shark)* (TSSC, 2015a)	• Habitat disruption from mineral exploration, production and transportation. • Marine debris. • Vessel disturbance.
Cetaceans, sirenia and pinnipeds		
Cetaceans and other marine megafauna	*National Strategy for Reducing Vessel Strike on Cetaceans and other Marine Megafauna* (CoA, 2017)	• Vessel strike.
Sei whale	*Conservation Advice for Balaenoptera borealis (sei whale)* (TSSC, 2015)	• 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* (Commonwealth of Australia, 2015)	• Noise interference. • Habitat modification from marine debris or chemical discharge. • Vessel strike.
Fin whale	*Conservation Advice for Balaenoptera physalus (fin whale)* (TSSC, 2015)	• Anthropogenic noise and acoustic disturbance. • Pollution (persistent toxic pollutants). • Vessel strike.

Common name	Recovery plan/conservation advice/management plan	Key threats (relevant to the activity)
SRW	*National Recovery Plan for the Southern Right Whale* (DCCEEW, 2024)	• Entanglement (marine debris). • Habitat modification. • Anthropogenic underwater noise (vessel noise). • Collision (vessel strike). • Pollution (chronic chemical pollution).
Turtles		
All marine turtles (flatback, green, hawksbill, leatherback, loggerhead)	*National Light Pollution Guidelines for Wildlife* (DCCEEW, 2023)	• Light pollution.
	Recovery Plan for Marine Turtles in Australia 2017–2027 (CoA, 2017)	• Marine debris. • Chemical discharge. • Light pollution. • Habitat modification. • Vessel disturbance. • Noise interference.
Leatherback turtle	*Approved Conservation Advice for Dermochelys coriacea* (TSSC, 2008)	• Vessel strike. • Marine debris.
Birds		
All seabirds and shorebirds	*National Light Pollution Guidelines for Wildlife* (DCCEEW, 2023)	• Light pollution.
Seabirds (refer to Table B-3 in Appendix B of the EP for a list of shorebirds within the EMBA)	*Wildlife Conservation Plan for Seabirds* (CoA, 2020)	• Light pollution. • Climate change.
Shorebirds (refer to Table B-3 in Appendix B of the EP for a list of shorebirds within the EMBA)	*Wildlife Conservation Plan for Migratory Shorebirds* (CoA, 2015)	• Pollution (marine debris, light, acute, chronic). • Climate variability and change.
Albatross and petrels (refer to Table B-3 in Appendix B of the EP for a list of albatross and petrel within the EMBA)	*National Recovery Plan for Albatrosses and Petrels (2022)* (CoA, 2022)	• Marine pollution (fuel/oil spills, chemical contaminants/marine debris). • Marine infrastructure interactions (including vessel collision and lighting).

A.1.4.8 Marine pests

It is widely recognised that marine pests can become invasive and cause significant impacts on economic, ecological, social and cultural values of marine environments. Impacts can include the introduction of new diseases, alteration of ecosystem processes and reduction of native biodiversity, causing major economic loss and disrupting human activities (Brusati, 2007).

A search on the Department of Agriculture, Fisheries and Forestry website (DAFF, 2024) and the National Introduced Marine Pest Information System (Australian Government, n.d.) indicates the following marine pests are found within waters of the EMBA:

Victoria:

- European shore crab (*Carcinus maenas*) – Prefers bays and estuaries but found on all types of shores at depths up to 60m, tolerates temperatures up to 30°C.
- Pacific oyster (*Crassostrea gigas*) – Found on hard substrate in intertidal and shallow subtidal areas in depths up to 3m, favours brackish waters in sheltered estuaries but tolerates a range of salinity and water quality and can occur offshore.
- Northern Pacific seastar (*Asterias amurensis*) - Found in bays, estuaries and reefs from high tide mark to 200m, in a range of habitats including seagrass, mussel beds, artificial structures, rock pools and rocky reefs.
- Asian date mussel (*Arcuatula senhousia*) – Is normally found in muddy estuaries and bays, burrowing into the mud or sitting on top of it (Australian Government, 2022).
- East Asian bivalve (*Theora lubrica*) – Lives in muddy sediments from the low tide mark to 50m, however it has been found at 100m. Adult: species does not migrate. Adults slowly move to deeper water (Australian Government, 2020).
- European clam (*Varicorbula gibba*) – A shallow burrower that inhabits thick, muddy sand. It has the ability to attach to gravel and stones by a single byssal thread. The adult species does not migrate (Australian Government, 2023).
- Asian kelp (*Undaria pinnatifida*) – Usually found in sheltered, rocky areas. It is also found on structures and boats and is present in Tasmania and southern Victoria (Australian Government, 2022a).
- Dead man's finger (*Codium fragile fragile*) – Found in a wide variety of areas, from very protected through to intermediately wave exposed in both intertidal and subtidal habitats. It grows profusely on any hard substrate including rocky reef, boulders, cobbles, shellfish, wharf pylons and marine farming equipment (Australian Government, 2022b).
- Devils tongue weed (*Grateloupia turuturu*) – Found attached to hard substrates in inshore waters within semi-exposed rocky intertidal pools or at shallow depths in sheltered waters. Generally found at or close to the waterline on vessels (Australian Government, 2022c).
- Rough seastar (*Astrostole scabra*) – Most commonly known from rocky bottoms, although it also occurs sub tidally on pebbles, reefs and hard clay. It is thought to prefer areas with turbulent water. Tasmanian records of this species range to 40m, however it has been found at a depth of 146m. The adult species does migrate. Organisms greater than 110mm in size appear to be found above 20m (Town,1980) and individuals smaller than this are rarely found below 20m (possible offshore migration of smaller individuals) (Australian Government, 2020a).

New South Wales:

- European shore crab (*Carcinus maenas*) – Prefers bays and estuaries but found on all types of shores at depths up to 60m, tolerates temperatures up to 30°C.
- European fan worm (*Sabella spallanzanii*) - Attaches to hard surfaces, artificial structures, rocks, shells and seagrass on soft sediments, found in sheltered waters and depths up to 30m.
- New Zealand screw shell (*Maoricolpus roseus*) - Prefers sand, mud or gravel in intertidal to subtidal areas, can be found in depths up to 30m.
- Pacific oyster (*Crassostrea gigas*) – Found on hard substrate in intertidal and shallow subtidal areas in depths up to 3m, favours brackish waters in sheltered estuaries but tolerates a range of salinity and water quality and can occur offshore.
- Toxic dinoflagellate (*Alexandrium catenella/Alexandrium minutum/Alexandrium tamarense*) – Found in temperate to warm temperate coastal and estuarine waters, though occasionally reported in tropical waters. It is found to 20m depth in inshore waters, though may be found deeper offshore. Cysts found in bloom areas are associated with fine, organic rich estuarine and coastal sediments. Vegetative Cell: Species does migrate. Vertical migration in the water column (Nishitani & Chew, 1983) (Australian Government, 2020b).
- Dead man's finger (*Codium fragile fragile*) – Found in a wide variety of areas, from very protected through to intermediately wave exposed in both intertidal and subtidal habitats. It grows profusely on any hard substrate including rocky reef, boulders, cobbles, shellfish, wharf pylons and marine farming equipment (Australian Government, 2022b).

- Colonial ascidian (*Botrylloides leachii*) – An encrusting species, growing on stones, shells, algae, seagrasses, other fouling species and man-made structures such as floats, ropes and aquaculture cages. It is found in the lower intertidal and shallow subtidal zones (Australian Government, 2022c).
- Bryozoan (*Bugula neritina*) – Grows well on pier piles, vessel hulls, buoys and similar submerged surfaces. They even grow heavily in ship's intake pipes and condenser chambers. In Australia, they occur primarily on artificial substrata. The adult species does not migrate (Australian Government, 2020c).
- Bryozoan (*Bugulina flabellata*) – Vertical, shaded, sub-littoral rock surfaces form substrata for this species. It has been recorded down to 35m (Australian Government, 2020d).
- Bryozoan (*Cryptosula pallasiana*) – Typical habitats include seagrasses, drift algae, oyster reef, artificial structures such as piers and breakwaters, man-made debris, rock, shells, ascidians, glass and vessel hulls. It has been reported from depths down to 35m (Australian Government, 2020e).
- Hydroid (*Obelia dichotoma*) – Found on a wide range of natural and man-made substrata. It appears to favour the blue mussel *Mytilus edulis* on which it grows in extensive colonies. It is also common on mussels and other invertebrate substrata and on port structures in temperate waters around the world. In Port Phillip Bay, Australia, it is found on cultured mussel farms (Australian Government, 2020f).
- Sponge isopod (*Paracerceis sculpta*) – Occurs throughout the intertidal zone, particularly associated with macroalgae, in sponges and under stones. It is also found amongst the fouling community on buoys, vessel hulls and other man-made structures. It lives in exposed areas and can withstand intense wave action (Australian Government, 2020g).

Tasmania:

- New Zealand screw shell (*Maoricolpus roseus*) - Prefers sand, mud or gravel in intertidal to subtidal areas, can be found in depths up to 30m.

A.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. Refer to Sections A.1.1.1, A.1.1.2 and A.1.1.3 for World, National and Commonwealth heritage sites relevant to the EMBA.

A.1.5.1 Indigenous

Gunaikurnai is the name of the Indigenous group who have inhabited the Gippsland region for at least 18,000 years (Ramahyuck, 2023). GLaWAC (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".

The Gunaikurnai people are recognised as Traditional Owners over approximately 1,330,000ha in Gippsland extending from west Gippsland near Warragul, east to the Snowy River, and north to the Great Dividing Range, and including 200m of offshore sea territory The Gunaikurnai people have interests and ancestral and historical connections to other places beyond this recognised area. Sea Country is considered to be equally important, with a huge diversity of marine life that supports rich tourism and fishing industries. Sea country is discussed further in Section A.1.5.1.3.

A.1.5.1.1 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. The Gunaikurnai signed an agreement with the Federal Government in 2022 to start the process of establishing a Sea Country IPA from Nanjit, east of Wilsons Promontory, to Mallacoota, on the Victoria/New South Wales border. Another project that commenced in 2022 is the Tayaritja Milaythina Muka IPA project, which involves the preparation of a management plan for this proposed IPA. It extends from northeast

Tasmania (Lutruwita) over the submerged ancient land bridge and surrounds Bass Strait Islands (Tayaritja), including the western portion of the Flinders Marine Park. There are also five established IPAs that occur nearby the EMBA, on and around Flinders Island to the southwest as seen in Figure A-40. They are all important rookeries for mutton birds and important cultural resources for Tasmanian Aboriginal people.



Figure A-40 IPAs nearby the EMBA

A.1.5.1.2 Indigenous Land Use Agreements

An Indigenous Land Use Agreement (ILUA) is a voluntary agreement between native title parties and other people or bodies about the use and management of areas of land and/or waters (NNTT, n.d.).

Registered ILUAs bind all native title holders to the terms of the agreement and also operate as a contract between the parties. A register of ILUAs is maintained by the Native Title Registrar. The register of ILUAs does not disclose the existence of any ILUA which overlaps with the OAs; however, the EMBA does overlap the areas of land and tidal waters (between the low water mark and the high water mark) of the Gunaikurnai Settlement ILUA and Gunaikurnai and Icon Energy ILUA.

A.1.5.1.3 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 which overlaps with the coastal waters of the EMBA. GLAWAC has commenced steps to establish the Sea Country IPA and is currently conducting Sea Country Assessments, (GLAWAC, 2024) undertaking information gathering and is actively seeking engagement with Traditional Owners on how the IPA should be managed, (GLAWAC, 2023). The proposed Sea Country IPA area 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).
- The Tayaritja Sea Country IPA located in north-east Tasmanian waters - It will link existing island IPAs and other islands (refer to Figure A-40). The project area includes Ramsar wetlands and ecologically significant coastal habitats. IPA staff will rehabilitate, restore, monitor and evaluate ecologically significant marine ecosystems, helping to protect threatened marine animals and seabirds and over 120 plant species. The project includes implementation of a cultural burning program and a pest animal and weed management program aimed at maintaining healthy coastal ecosystems (DCCEW, 2024). The Tasmanian Aboriginal Centre (TAC) is conducting actions towards the implementation of the proposed IPA such as consultation, development of a management plan, establishment of a Se Country Ranger group and actions to support Sea Country management (TAC, 2025).

A.1.5.1.4 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
- 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 45,000ha and extends from west Gippsland near Warragul, east to the Snowy River, and north to the Great Dividing Range, (Figure A-41). It also includes 200m of offshore sea territory between Lakes Entrance and Marlo. The area includes ten 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 5000 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 1km of the coast (LCC, 1993). Along the Gippsland coast, stone artefacts that have been found were mostly made from silcrete and quartz from the hinterland. Middens on offshore islands indicate that in the past, Aboriginal people from the area now known as Wilsons Promontory were likely to have visited (Jones & Allen, 1979).

The Gunaikurnai people see no distinction between the land and the sea – it is all part of Country (GLAWAC, 2023). Sea Country can include parts of open ocean, beaches, land and freshwater on the coast. It encompasses all living things, beliefs, values, creation spirits and cultural obligations connected to an area (Adelaide, 2023). Water is of particular cultural significance to First Nations people as an integral part of songs, ceremonies, hunting and collecting, and other activities that bind people to their country and each other, including fishing (Smyth L. E., 2018).

Coastal environments are an integrated cultural landscape/seascape that is conceptually very different from the broader Australian view of land and sea. Protecting this cultural heritage is a major concern for First Nation people (NOO, 2002b).

There are no native title determinations in New South Wales within the EMBA, however a Native Title Claimant Application was registered by the South Coast People (NSD1331/2017) for an area covering the New South Wales south coast from the south of Sydney to Eden, including the coastal waters (NNTT, 2018) (Figure A-41). Indigenous places along the southern New South Wales 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 IPAs nearby the EMBA, including Mt Chappell Island, Badger Island, Babel Island, Great Dog Island in the Ferneaux Group (DPMC, 2019).

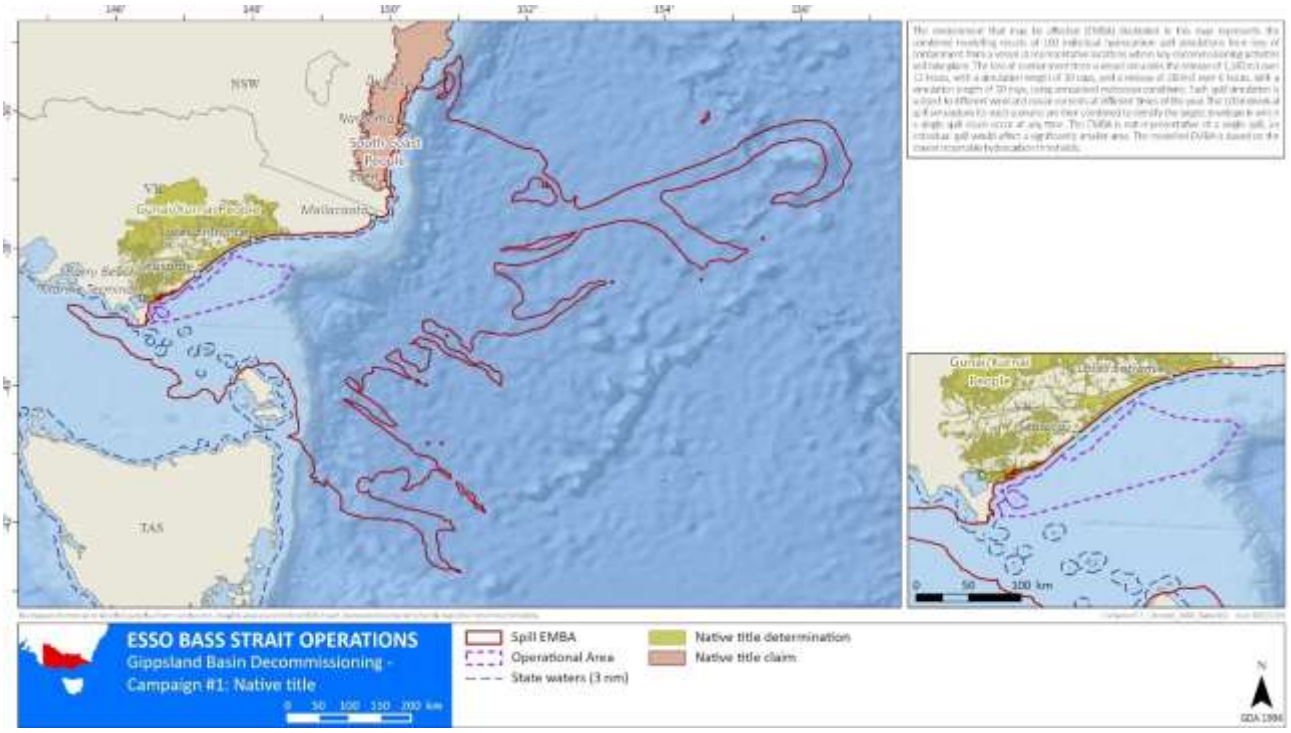

Figure A-41 Native Title claims and determinations intersected by the EMBA

A.1.5.2 Underwater cultural heritage

Shipwrecks, sunken aircraft and other types of UCH that have been underwater for more than 75 years old within Australian waters are protected under the UCH Act. Shipwrecks, sunken aircraft and other types of UCH that have been underwater for less than 75 years can be protected through an individual declaration by DCCEEW based on an assessment of heritage significance (DCCEEW, 2024). A search of the Australasian Underwater Cultural Heritage Database identified a large number of UCH sites within the EMBA (refer to Figure A-42).

In addition to the general protection provided to underwater heritage sites, the UCH Act 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 (refer to Figure A-43). There are no protection zones within the OA. The protection zones within the EMBA are listed below:

- *Clonmel (1841)* – Victoria (zone size: 50m radius)
- *SS Glenelg (1900)* – Victoria (zone size: 500m radius)
- *SS Federal (1901)* – Victoria (zone size: 800m radius)

Similarly, under the UCH Act, if a First Nations UCH site is discovered in Australian waters, it may be declared as protected under Section 19 of the UCH Act (DCCEEW, 2024). There are no known First Nations UCH sites within the OA or EMBA.

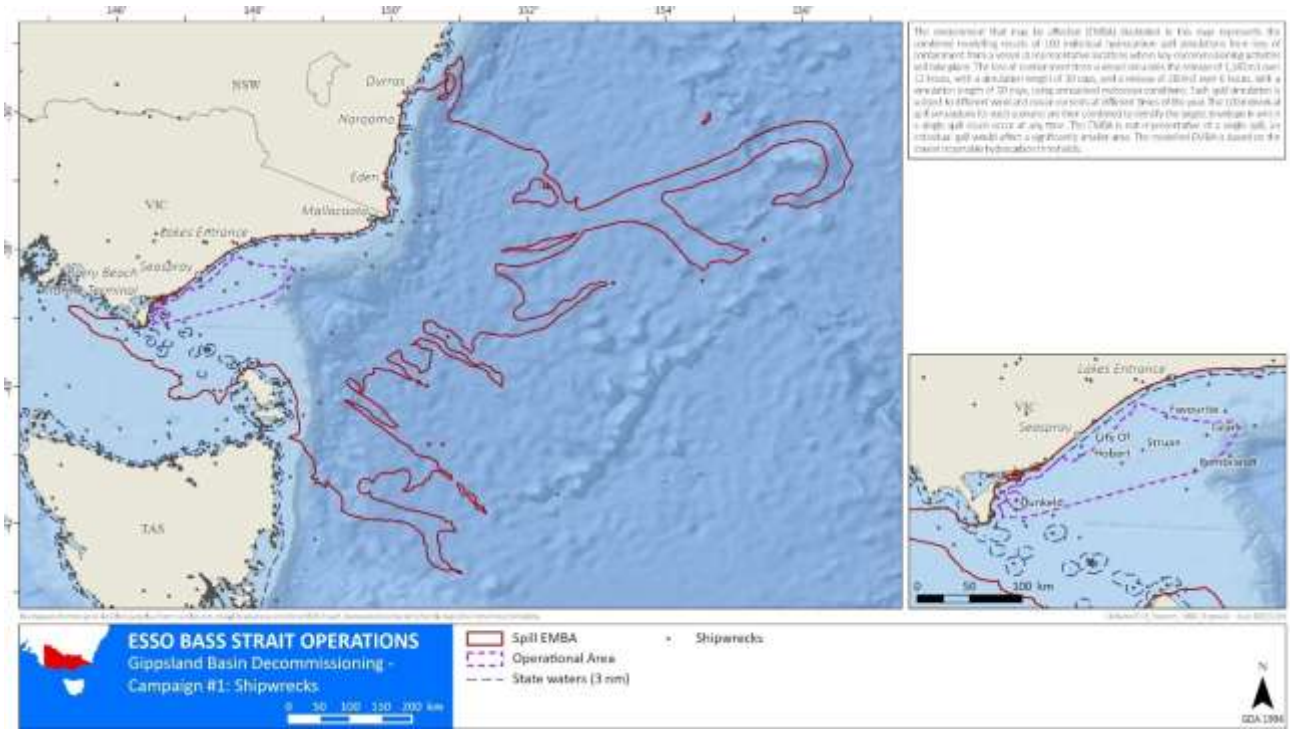

Figure A-42 Shipwrecks within the EMBA

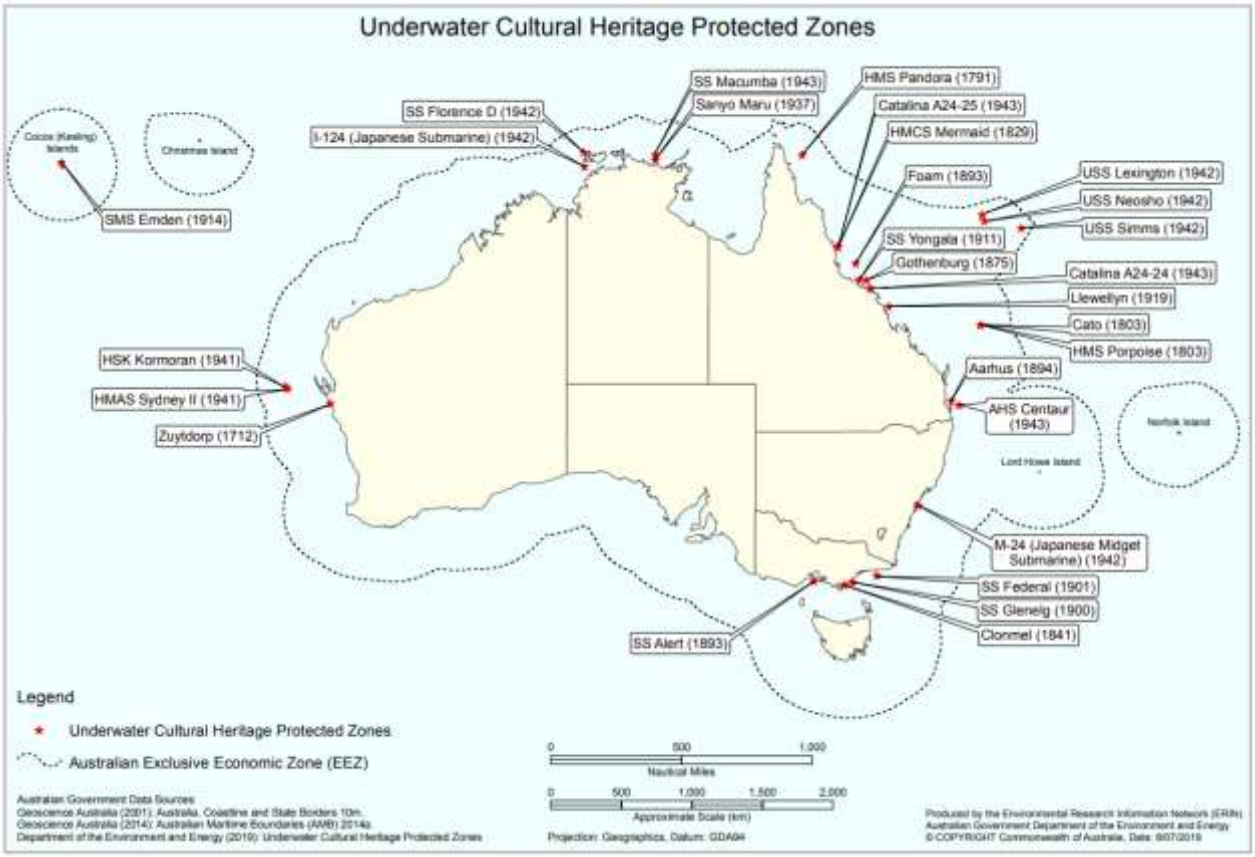

Figure A-43 Shipwreck protection zones within Australia

A.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.

A.1.6.1 Commercial fishing

Several Commonwealth, Victorian, Tasmanian and New South Wales commercial fisheries are licenced to operate in and around the EMBA. These are described in the following Sections.

A.1.6.2 Commonwealth fisheries

There are 22 Commonwealth fisheries that operate within Australian waters. Commonwealth fisheries are managed by the Australian Fisheries Management Authority under the *Fisheries Management Act 1991* (Cth). Their jurisdiction covers the area of ocean from 3nm from the coast out to the 200nm limit (the extent of the Australian Fishing Zone). Table A-9 summarises the Commonwealth fisheries with jurisdiction to fish within the EMBA based on the latest fishery status reports 2024 (Butler, 2024.).

Table A-9 Commonwealth fisheries within the EMBA

Commonwealth fishery	Target species	Description	Percentage overlap with the EMBA
BSCZSF	Commercial scallop (*Pecten fumatus*)	The BSCZSF operates in the central area of Bass Strait between the Victorian and Tasmanian scallop fisheries (see below sections). In 2023, fishing was permitted throughout the area of the fishery, except in four bed areas that were closed under	38.61%

the BSCZSF harvest strategy. Fishing intensity in 2023 was concentrated on western Bass Strait (

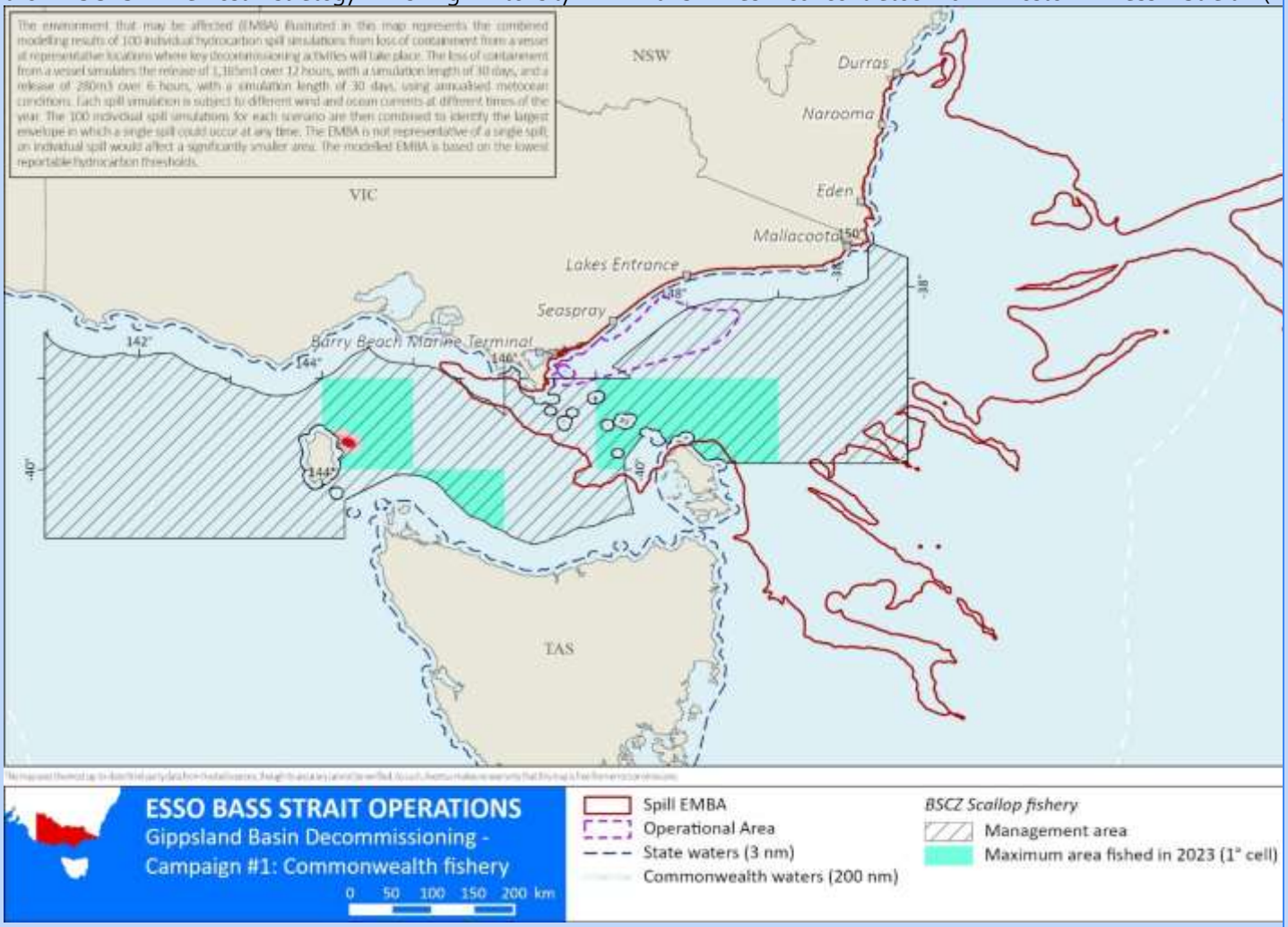

Figure A-44).

The 2023 fishing season attained a catch of 2063t valued at AUD$4.2M. Thirty-five fishing permits and nine fishing vessels were in active in 2023, and the primary landing ports were Beauty Point, Devonport, and Stanley (Tasmania); Apollo Bay,

Commonwealth fishery	Target species	Description	Percentage overlap with the EMBA
		Lakes Entrance, Melbourne, Port Welshpool, Queenscliff, and San Remo (Victoria). Scallop dredges are the fishing method used in this fishery.	
ETBF	Striped marlin (*Kajikia audax*), swordfish (*Xiphias gladius*), albacore (*Thunnus alalunga*), bigeye tuna (*Thunnus obesus*) and yellowfin tuna (*Thunnus albacares*)	The ETBF operates in the Exclusive Economic Zone and adjacent high seas, from Cape York Queensland to the Victoria – South Australian 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 2023 was concentrated around the entire New South Wales coast and a significant portion of the Queensland coast. (Figure A-45). Catch for the 2023 fishing season was 4040t valued at $40.1M. There were 79 fishing permits for longline boat, with 34 active vessels, and 83 fishing permits for minor-line boat, with 12 active vessels. The primary landing ports are Bermagui, Coffs Harbour and Ulladulla (New South Wales), Cairns, Mooloolaba and Southport (Queensland).	5.16%
SPF	Blue mackerel (*Scomber australasicus*), jack mackerel (*Trachurus declivis*), redbait (*Emmelichthys nitidus*) and Australian sardine	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 2023 - 2024 season was along the far eastern coast of Victoria and some areas along the New South Wales coast, as well as the eastern portion of the South Australia coast (Figure A-46). Catch for the 2023 - 2024 fishing season was 23,230t with no value assigned due to confidentiality. Twenty-eight fishing permits and a total of eight vessels (five vessels for purse seine fishing method and three vessels for midwater trawl fishing method) were active in the 2023 - 2024 fishing season, with the primary landing ports being Eden and Ulladulla (New South Wales).	5.52%

Commonwealth fishery	Target species	Description	Percentage overlap with the EMBA
	(*Sardinops sagax*)		
SESSF	See CTS, SHS, and the Gillnet Hook and Shark Hook	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 Australian Fishing Zone and spans both Commonwealth waters and the waters of several Australian States under Offshore Constitutional Settlement arrangements. Current management arrangements in the SESSF are structured around the following four primary sectors: • the CTS (overlap with the EMBA) • the Gillnet, Hook and Trap Sector which is comprised of the SHS, the Shark Gillnet and Shark Hook Sectors (SGSHS), and the Trap Sector (all of these overlap with the EMBA) • the East Coast Deepwater Trawl Sector (outside the EMBA) • the Great Australian Bight Trawl Sector (outside the EMBA). Refer to Figure A-47) for detail on the fishery management area and sub-areas covered by each sector that comprises the SESSF.	5.76%
CTS	The target species referenced here lists the main species within this sector, based on species catch data for the 2023 - 2024 fishing season. Blue grenadier	The CTS extends south from Barrenjoey Point in northern New South Wales to east of Kangaroo Island, South Australia and is a major domestic source of fresh fish for the Sydney and Melbourne markets. The CTS predominantly uses demersal otter trawl and Danish-seine fishing methods. For the 2023 - 2024 season, otter trawl fishing intensity was saturated around eastern and western Victoria, southern New South Wales, eastern South Australia and along the coast of Tasmania (excluding the northern coast) (Figure A-48). Fishing intensity for the Danish-seine method was saturated around eastern Victoria (Figure A-49). Features and statistics for the CTS and the SHS are combined. During the 2023 - 2024 fishing season the sectors attained a total catch of 12,919t, however, at the time of the publication the value of the catch was not available. There were 24 trawl vessels and 18 Danish-seine active vessels during the 2023 - 2024 fishing season. Eden, Sydney and Ulladulla (New South Wales), Hobart (Tasmania), Lakes Entrance and Portland (Victoria) are the primary landing ports.	14.78%

Commonwealth fishery	Target species	Description	Percentage overlap with the EMBA
	(*Macruronus novaezelandiae*), tiger flathead (*Neoplatycephalus richardsoni*), orange roughy (*Hoplostethus atlanticus*), pink ling (*Genypterus blacodes*) and eastern school whiting (*Sillago flindersi*)		
SHS	The target species referenced here lists the main species within this sector, based on species catch data for the 2023 -	The SHS extends around southeastern Australia to the border between South Australia and Western Australia (Figure A-50) and is a major domestic source of fresh fish for the Sydney and Melbourne markets. The SHS uses a variety of longline and dropline hook fishing methods, some of which are automated. The maximum area fished in the 2023 – 2024 occurred in eastern and western Victoria, along the eastern and central coast of South Australia, and along the coast of Tasmania (excluding the northern coast) (Figure A-50). See the CTS for the catch and value information during the 2023 - 2024 fishing season. There were 13 scalefish hook active vessels during the 2023 - 2024 fishing season. Eden, Sydney and Ulladulla (New South Wales), Hobart (Tasmania), Lakes Entrance and Portland (Victoria) are the primary landing ports.	6.11%

Commonwealth fishery	Target species	Description	Percentage overlap with the EMBA
	2024 fishing season. Blue grenadier (*Macruronus novaezelandiae*), tiger flathead (*Neoplatycephalus richardsoni*), orange roughy (*Hoplostethus atlanticus*), pink ling (*Genypterus blacodes*) and eastern school whiting (*Sillago flindersi*)		
SGSHS	Gummy shark (*Mustelus antarcticus*) Elephantfish (*Callorhincus millii*),	Most fishing in the SGSHS using nets occurs in Bass Strait, while most fishing using hooks occurs off South Australia. The SGSHS uses demersal gillnet and demersal longline to target gummy shark (*Mustelus antarcticus*) although, sawsharks (*Pristiophorus cirratus and P. nudipinnis*) and elephant fish (*Callorhinchus milii*) are caught as byproducts. School shark was historically the primary target species in the fishery, but biomass was reduced below the limit reference point around 1990. Although overfished, school shark remains the second most economically important stock in the fishery.	8.69%

Commonwealth fishery	Target species	Description	Percentage overlap with the EMBA
	Sawshark (*Pristiophorus cirratus, P. nudipinnis*, School shark (*Galeorhinus galeus*)	The Shark Gillnet Sector fishing intensity for 2023 - 2024 was saturated in central and eastern Victoria and northwest, northeast and east Tasmania (Figure A-51). The Shark Hook Sector maximum area fished in the 2023 - 2024 season included eastern and western Victoria, along the South Australia coast, and majority of the Tasmanian coast, with the highest fishing intensity presented in areas towards the southeast coast of South Australia (Figure A-51). During the 2023 - 2024 fishing season the SGSHS attained a total catch of 2116t, however, at the time of the publication the value of the catch was not available.	
SBTF	Southern bluefin tuna (*Thunnus maccoyii*)	The SBTF Fishery spans the Australian Fishing Zone. Young fish (one to four years of age) move from the spawning ground in the northeast Indian Ocean into the Australian Exclusive Economic Zone and southwards along the Western Australian coast. Since 1992, most of the Australian catch has been taken by purse seine, targeting juvenile southern bluefin tuna (two to four years of age) in the Great Australian Bight. This catch is transferred to aquaculture farming operations off the coast of Port Lincoln in South Australia, where the fish are grown to a larger size to achieve higher market prices. The fishing methods used by the Fishery include purse seine, pelagic longline and minor line. In the 2022 - 2023 season, the fishing intensity for the Fishery was saturated along the southeastern coast of New South Wales and northeast corner of the coast of Victoria (Figure A-53). The 2022-2023 fishing season attained 6034t of catch valued at $32.57 million. There were 85 fishing permits holders at the start of the season with a total of 30 active vessels divided into 24 purse seine vessels and six longline vessels. The primary landing port is Port Lincoln (South Australia).	2.47%
SSJF	Gould's squid (*Nototodarus gouldi*)	The SSJF is located off New South Wales, Victoria, Tasmania and South Australia, and in a small area of oceanic waters off southern Queensland. The fishery typically operates at night in continental-shelf waters between depths of 60m and 120m using a single-method (jigging). The maximum area fished during the 2023 season was in western and eastern Victoria as well as along the north, northeast and eastern coast of Tasmania. In the 2023 fishing season, the highest fishing intensity occurred towards the western coast of Victoria and the eastern coast of Tasmania (Figure A-54).	6.84%

Commonwealth fishery	Target species	Description	Percentage overlap with the EMBA
		During the 2023 fishing season the SSJF had eight active vessels attaining 963t of catch valued at $4 million. The primary landing ports are Devonport, Triabunna (Tasmania), Portland, Apollo Bay, Port Fairy and Queenscliff[6] (Victoria).	

Source: (Butler, 2024.)

[6] Table 12.9 of the Fishery Status Report (2024) describes Port Fairy and Queenscliff as ports within Tasmania

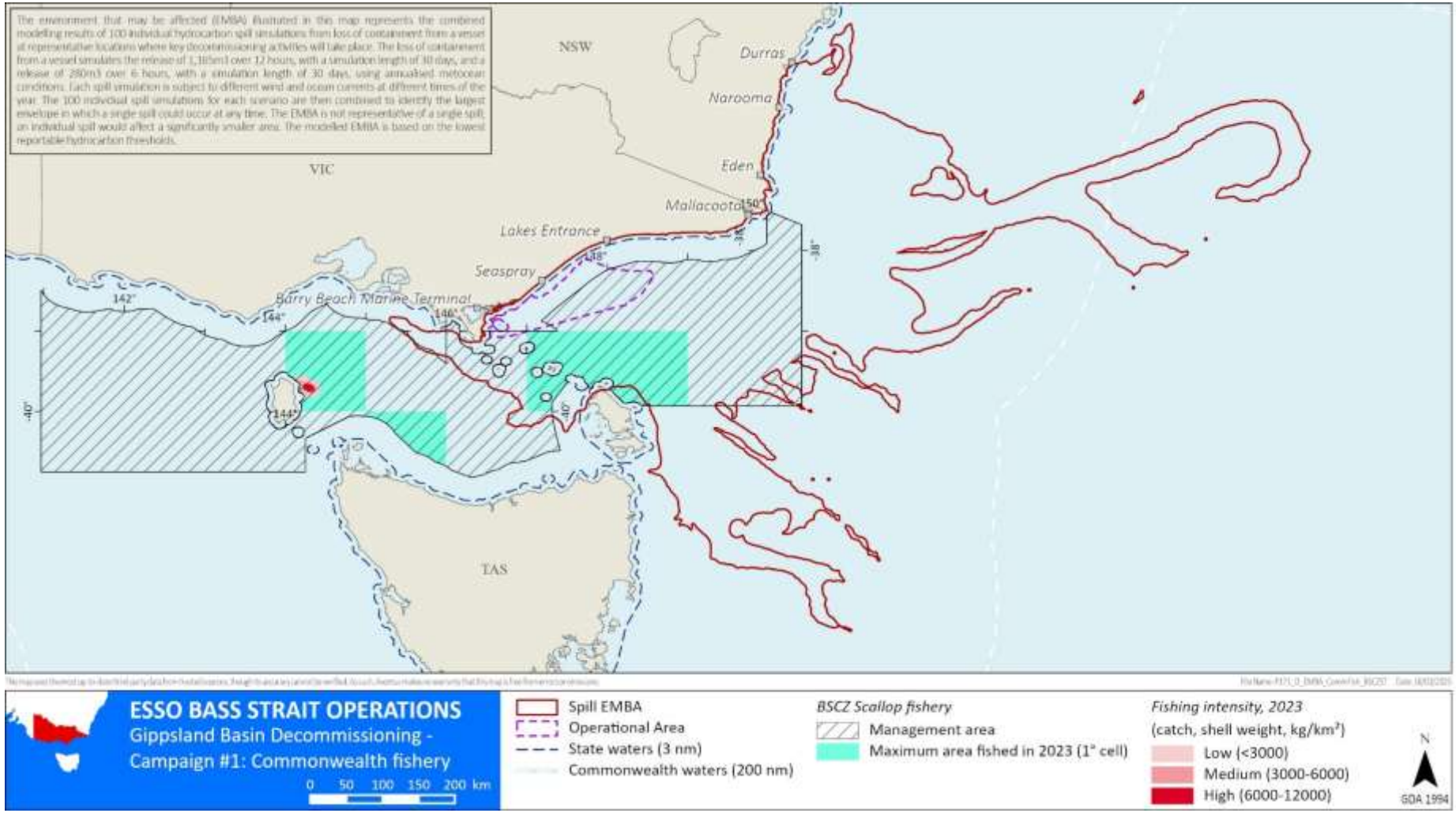

Figure A-44 BSCZSF jurisdiction and fishing intensity (2023 season) intersected by the EMBA

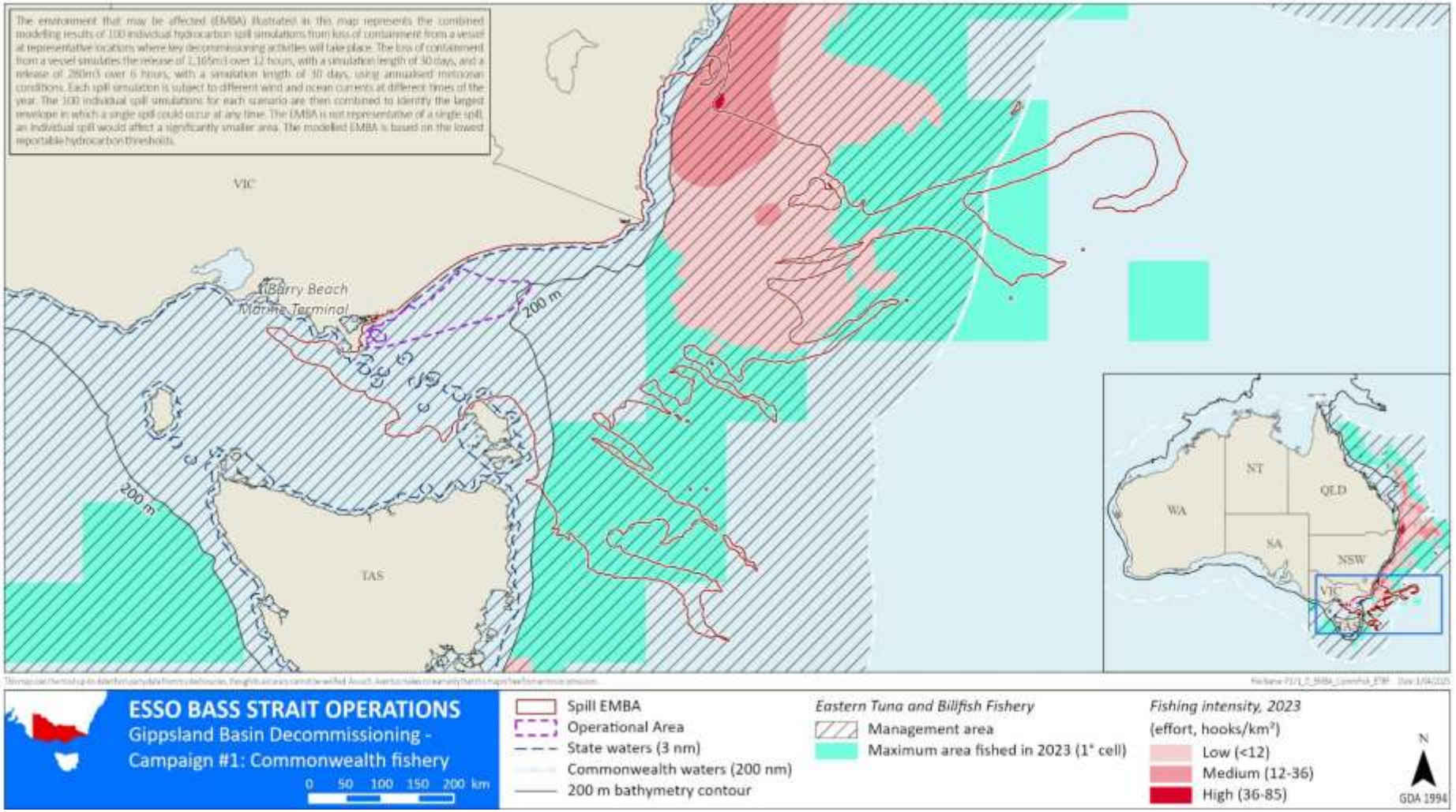

Figure A-45 ETBF jurisdiction and fishing intensity (2023 season) intersected by the EMBA

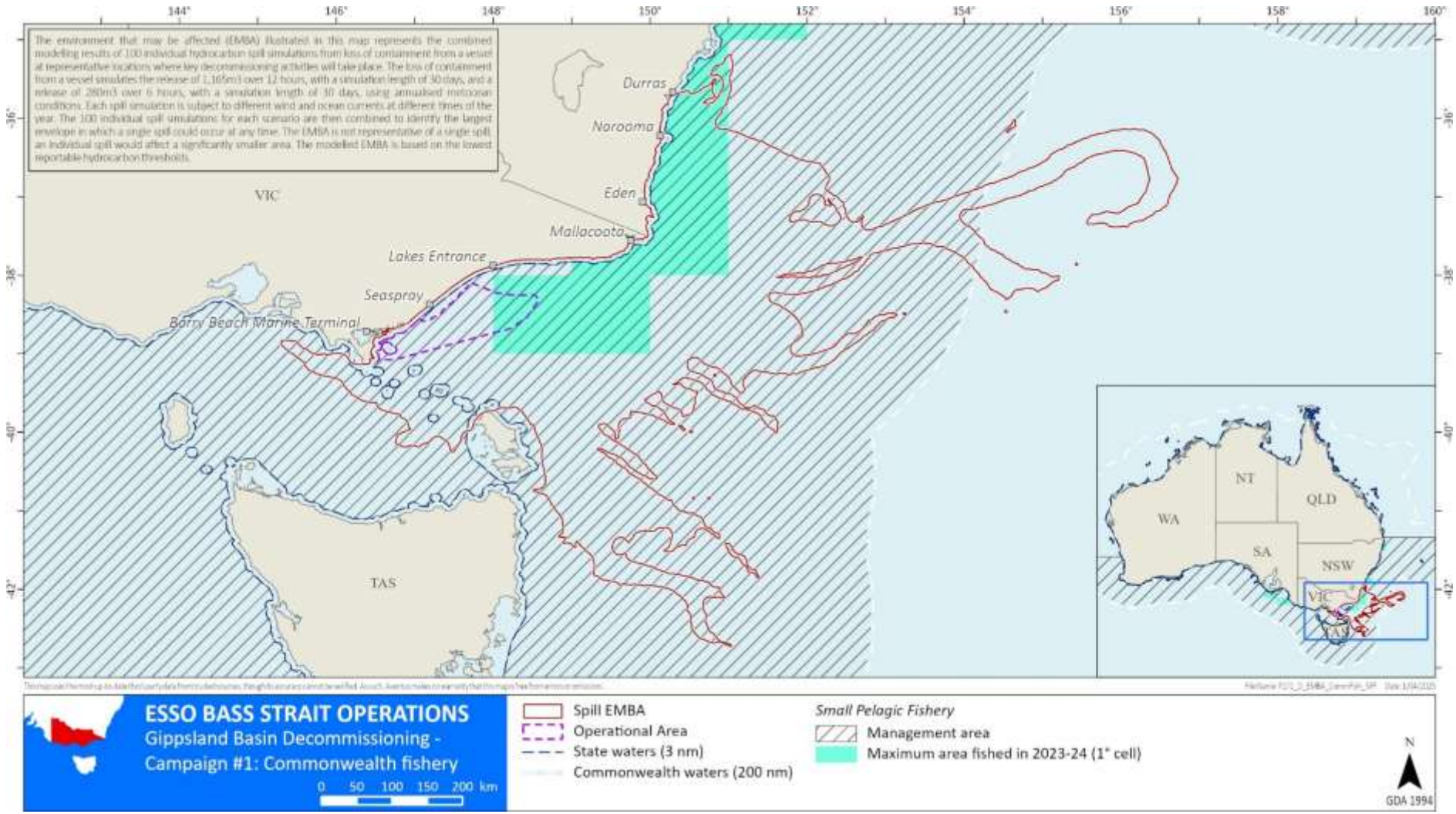

Figure A-46 SPF jurisdiction and fishing zones (2023 - 2024 season) intersected by the EMBA

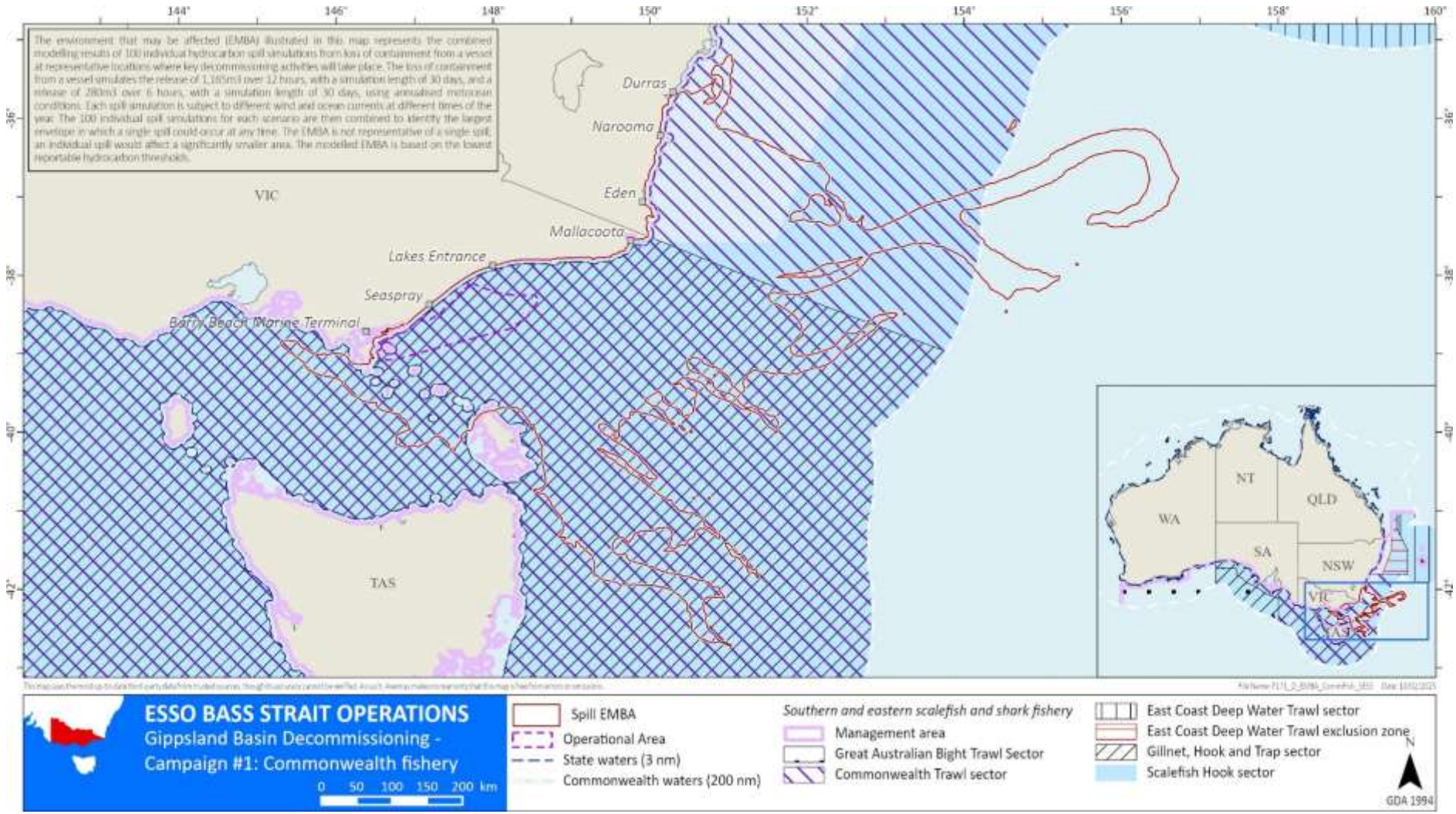

Figure A-47 SESSF Sector zones intersected by the EMBA

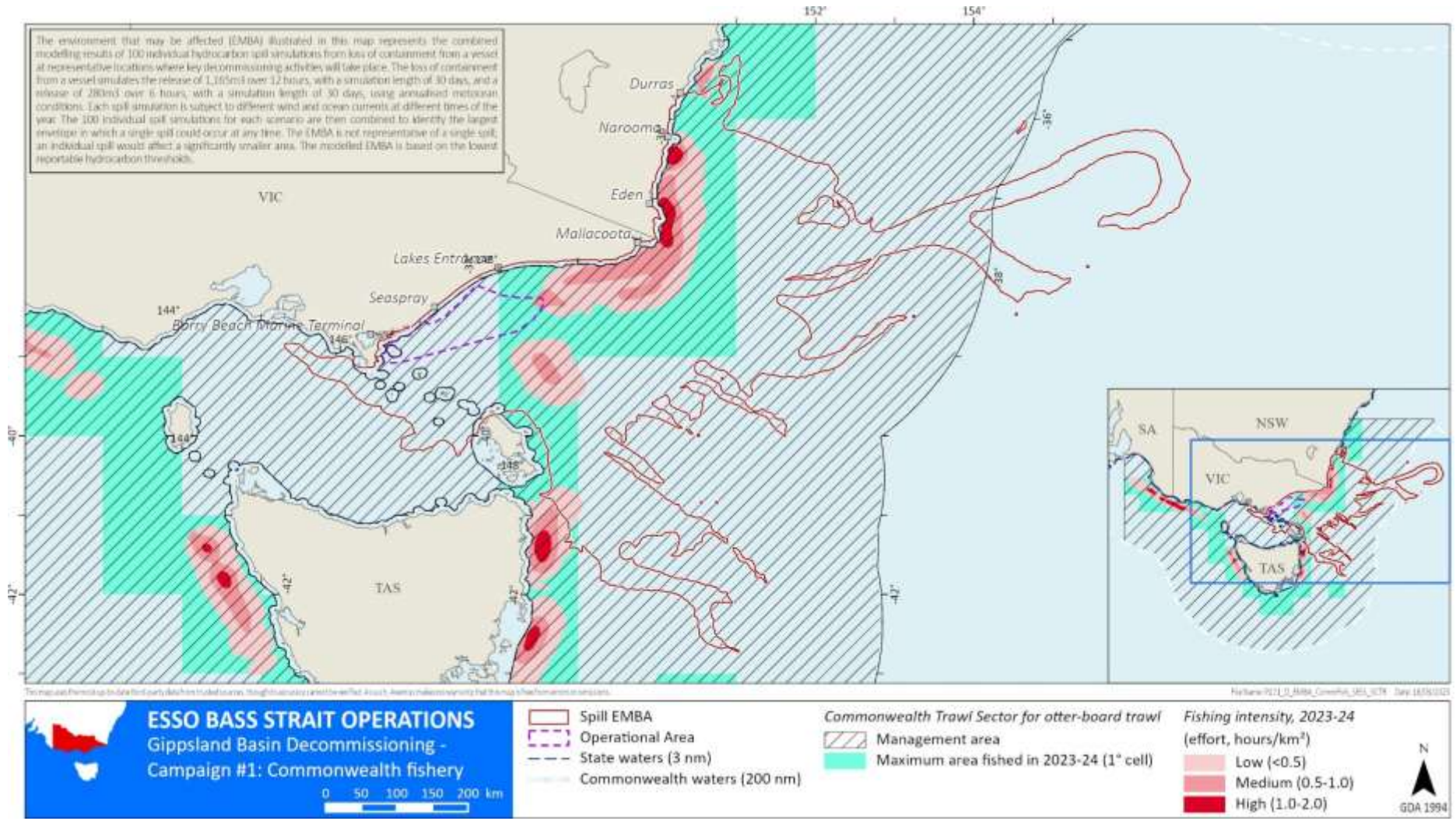

Figure A-48 SESSF CTS otter-board jurisdiction and fishing intensity (2023 - 2024 season) intersected by the EMBA

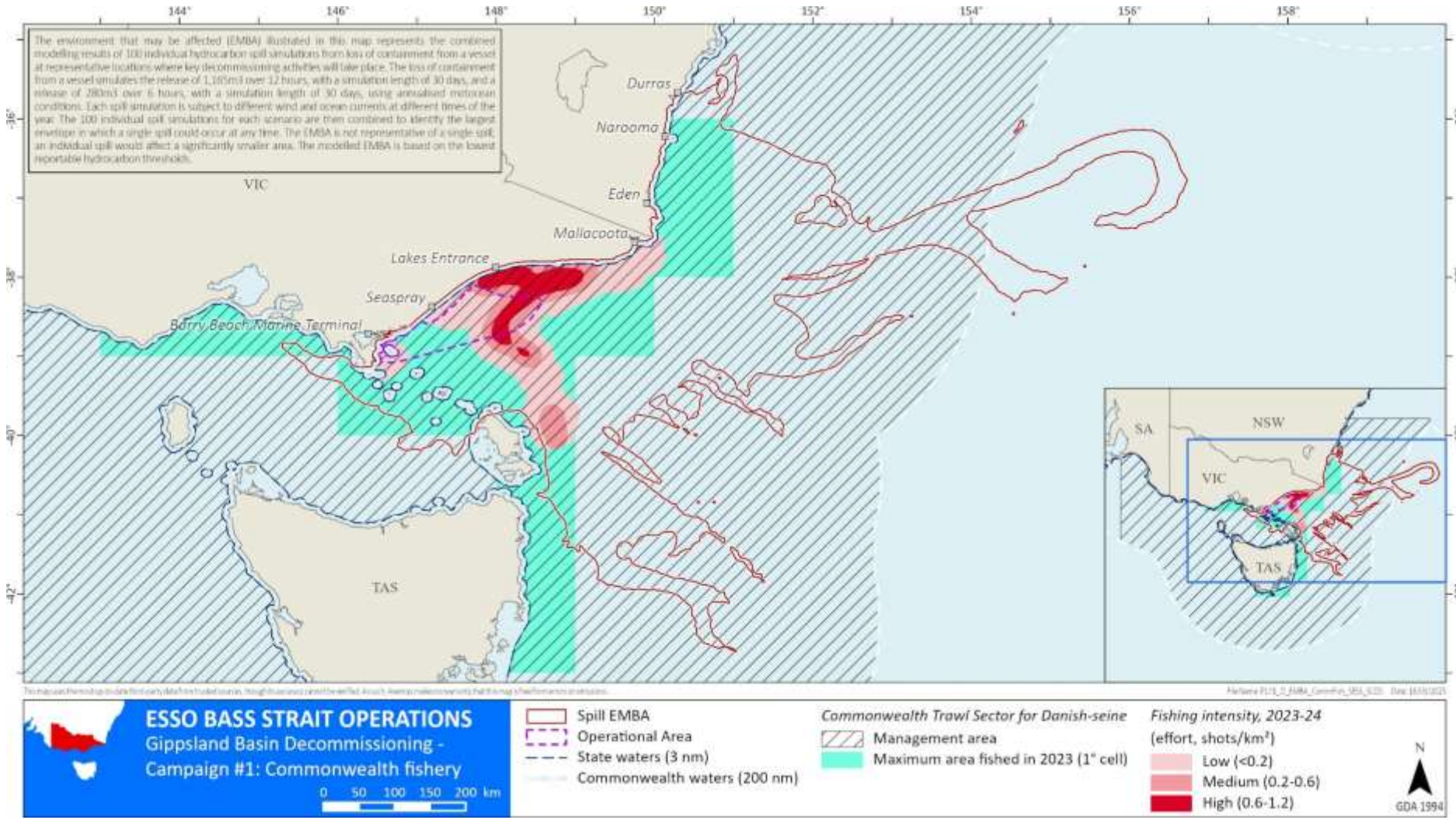

Figure A-49 SESSF CTS for Danish-seine jurisdiction and fishing intensity (2023 - 2024 season) intersected by the EMBA

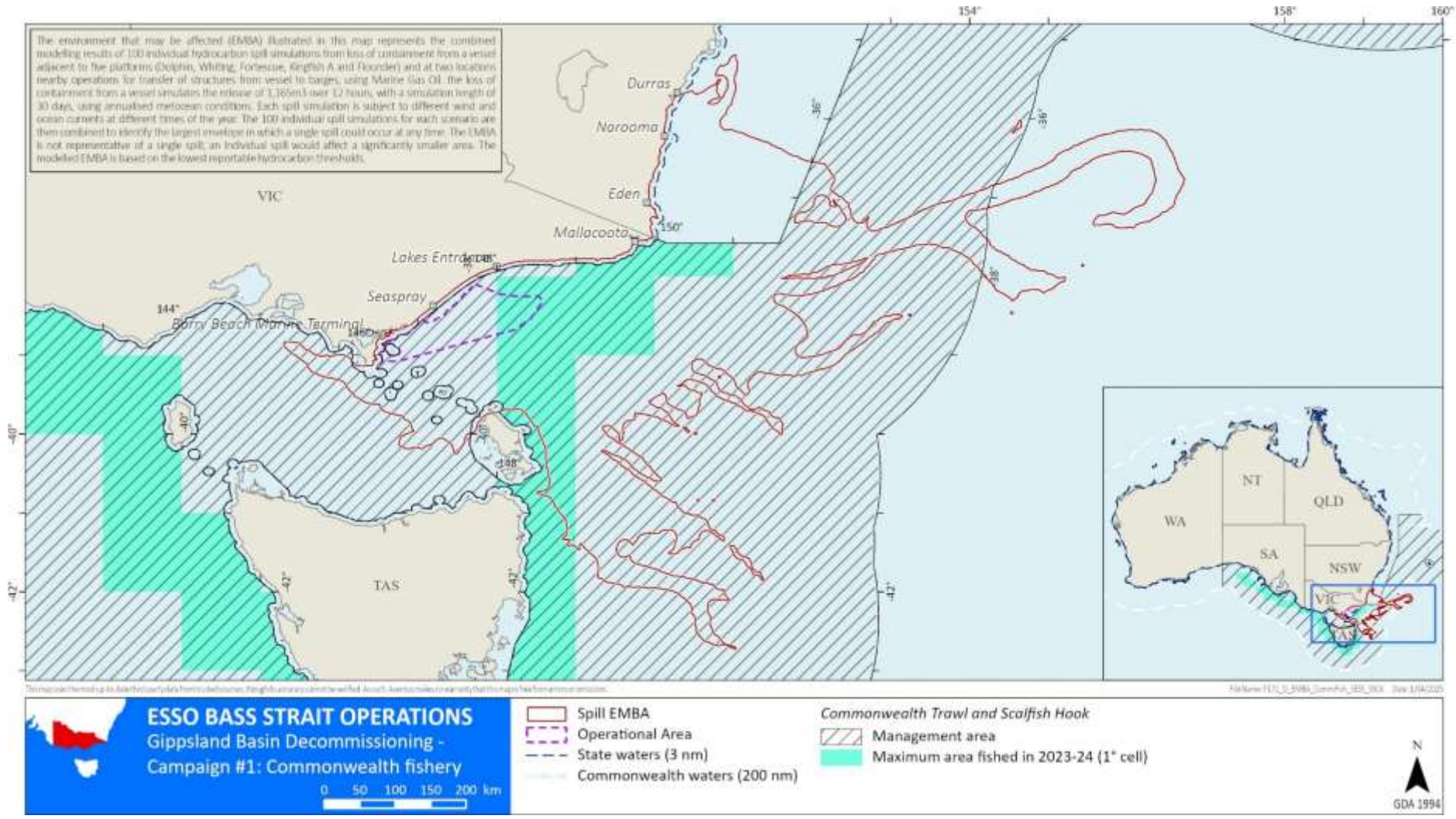

Figure A-50 CTS and SHS jurisdiction and fishing zones (2023 - 2024 season) intersected by the EMBA

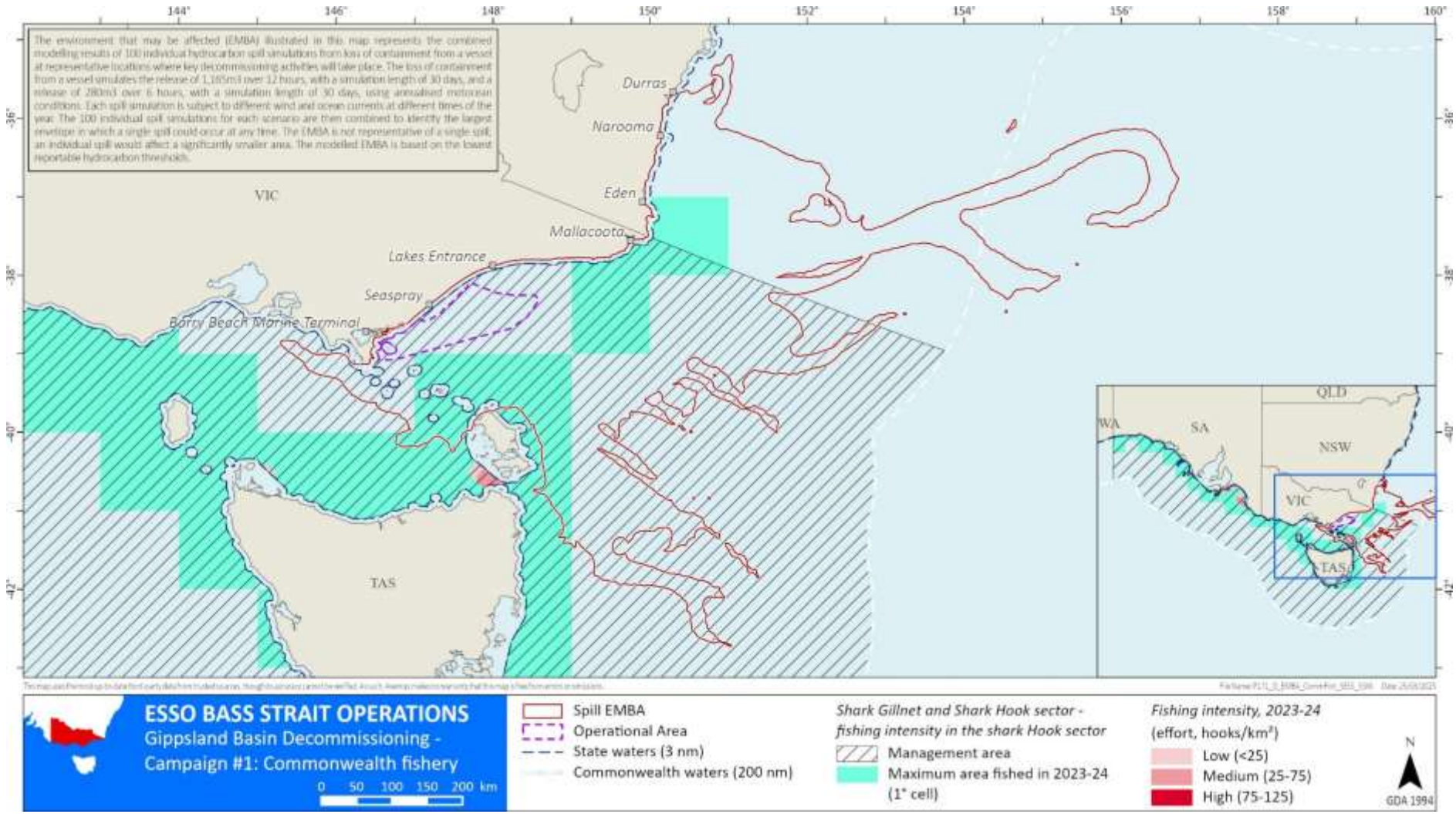

Figure A-51 Commonwealth SGSHS – Shark Hook Sector jurisdiction and fishing intensity (2023 - 2024 season) intersected by the EMBA

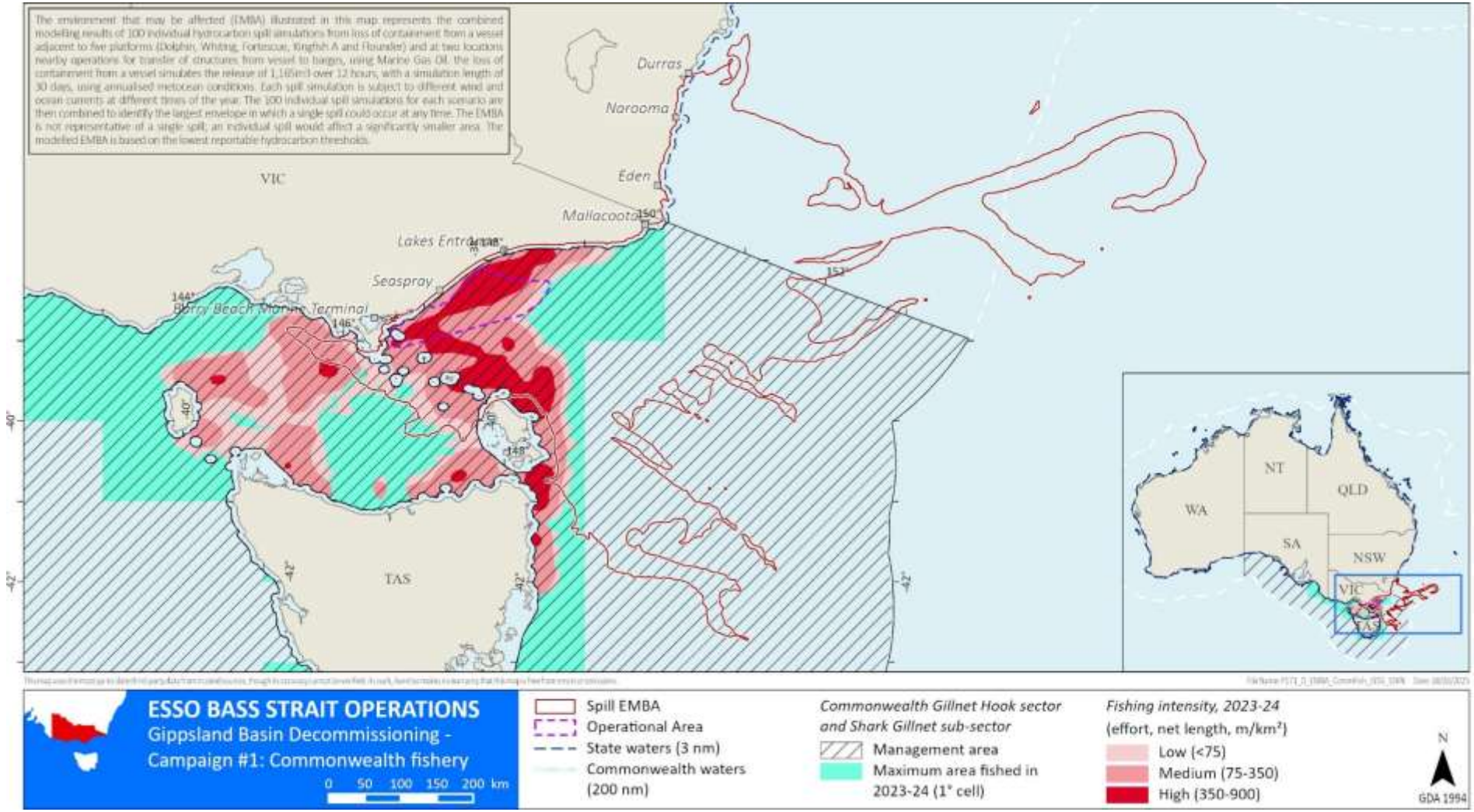

Figure A-52 Commonwealth SGSHS – Shark Gillnet Sector jurisdiction and fishing intensity (2023 - 2024 season) intersected by the EMBA

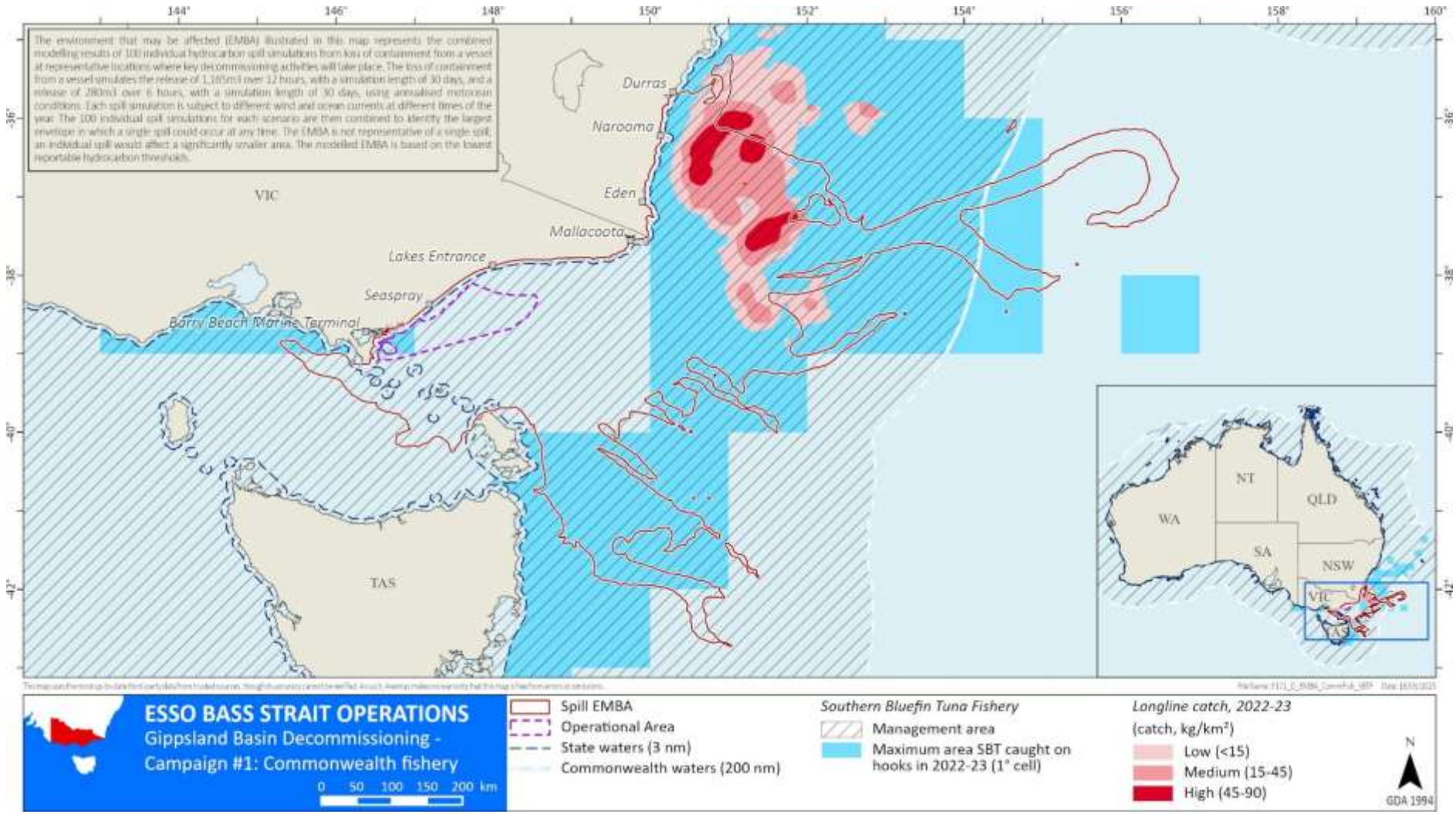

Figure A-53 SBTF jurisdiction and fishing intensity (2022 - 2023 season) intersected by the EMBA

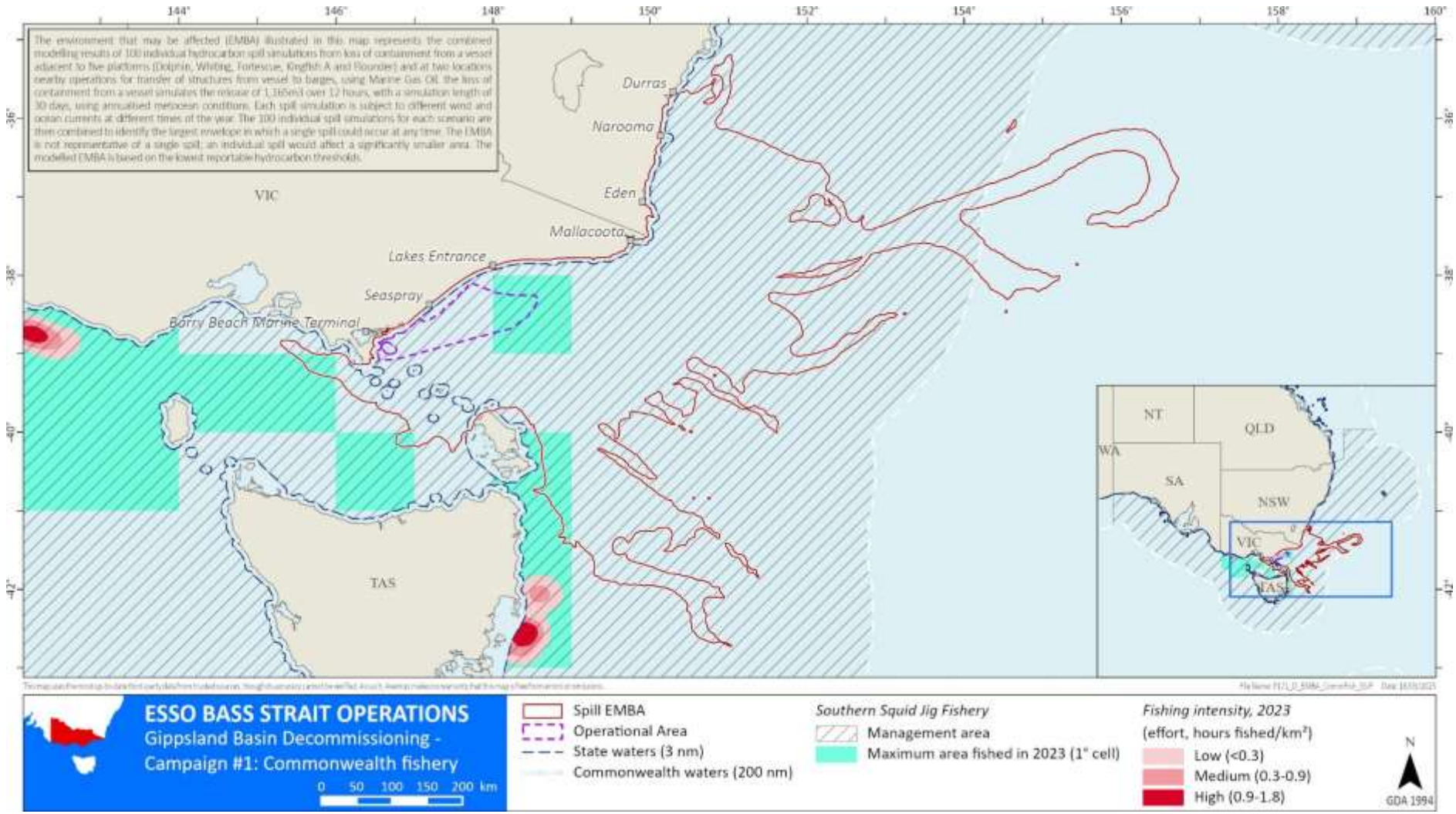

Figure A-54 SSJF jurisdiction and fishing intensity (2023 season) intersected by the EMBA

A.1.6.3 Victorian fisheries

Victorian-managed commercial fisheries with jurisdiction to fish in the waters of the EMBA are described in Table A-10.

Table A-10 Victorian managed fisheries within the EMBA

Victorian fishery	Target species	Description	Percentage overlap with the EMBA
Abalone Fishery (Figure A-55)	Blacklip abalone (*Haliotis rubra*) is the primary target, with greenlip abalone (*H. laevigata*) 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 30m 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.	46.15%
Bait Fishery	Sandworm (*Nereis pelagica*), blood cockle (*Tegillarca granosa*), pipi (*Donax deltoides*), eastern king prawn (*Melicertus plebejus*), ghost shrimp (*Trypaea australiensis*), Australian anchovy (*Engraulis australis*)	The Victorian commercial Bait Fishery encompasses the harvest of fish and invertebrates including crustaceans and molluscs from coastal areas, bays, inlets, estuaries and inland streams and waterbodies for commercial purposes (Ingram, Conron, Hall, & Hamar, 2016).	N/A. This fishery is permitted but not active within the EMBA (SETFIA, 2022)
Bays and Inlet Fisheries (Figure A-56 and Figure A-57)	Multi-species fishery including King George whiting (*Sillaginodes punctatus*), black bream (*Acanthopagrus*	Victorian bay, inlet and estuarine finfish fisheries are multi-species, multi-method fisheries that are subject to multiple competing uses and are characterised by large fluctuations in fish abundance that are driven more often by both natural and human induced changes in aquatic habitat and environmental conditions, than by the direct effects of fishing. The larger bay and inlet fisheries include Western Port, Port Phillip Bay, Corner Inlet/Nooramunga and Gippsland Lakes, and both commercial and recreational fishing occurs at those areas. Commercial netting was phased out in Western Port (in 2009),	As these fisheries include several locations, no percentage is provided on overlap with the EMBA

Victorian fishery	Target species	Description	Percentage overlap with the EMBA
	butcheri) and various species of snapper, flathead, mullet, garfish, flounder, anchovies and pilchards	Gippsland Lakes (in 2020) and Port Phillip (in 2022), (VFA, 2023a). Corner Inlet and Gippsland Lakes are within the EMBA. In 2022, a Fishery Management Plan was declared for Corner Inlet Fishery and it includes all marine waters inside the five main entrances from Bass Strait: Port Whelshpool Entrance, Port Albert Entrance, Kate Kearney Entrance, Shoal/Shallow Inlet Entrance, and McLoughlin's Beach Entrance. The Corner Inlet commercial fishery is now Victoria's largest bay and inlet commercial fishery, typically providing around 230 - 350t of fresh seafood annually. Total landed commercial catch is worth around $3 million per annum in gross value of production (Corner Inlet Fishery Management Plan, 2022). All commercial fishers in Corner Inlet are required to report any interactions with threatened, endangered and protected species. Interactions are defined as a fishing vessel, gear or operator coming into contact with a protected species, regardless of the outcome. The threatened, endangered and protected reporting records for Corner Inlet licence holders indicate a low number of interactions with protected species. Between 2015 and 2019, a total of 1214 interactions were reported, of which 1199 of the animals were returned to the water alive and 15 (approximately one per cent of interactions reported) were reported as injured or dead. Most reported incidences of threatened, endangered and protected interactions are from the seine netting method and mostly involve seahorses and pipefish, almost of all of which are released alive (Corner Inlet Fishery Management Plan, 2022). For the Corner Inlet Fishery, all forms of commercial and recreational fishing, including shellfish collection, are prohibited within the Corner Inlet Marine National Park boundaries. For the Gippsland Lakes Fishery, commercial netting was phased out in 2020 (VFA 2023).	
Giant Crab Fishery (Figure A-58)	Giant crabs (*Pseudocarcinus gigas*)	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.	45.87%
Pipi Fishery (Figure A-59)	Pipi (*Donax deltoides*)	The pipi fishery zone covers the entire Victorian coastline, excluding the intertidal zone of Port Phillip Bay, marine national parks, and sanctuaries where shellfish cannot be harvested. Pipis are found in habitats with high energy surf areas and sandy beaches. The known areas	55.12%

Victorian fishery	Target species	Description	Percentage overlap with the EMBA
		of harvestable quantities of pipi are beaches in Discovery Bay and surrounds in the west, and in Venus Bay and surrounds in the east.	
Rock Lobster Fishery (Figure A-58)	Southern rock lobster (*Jasus edwardsii*)	The fishery is divided into two separately managed zones: eastern and western. The eastern zone extends west from the New South Wales border to Apollo Bay; the western zone extends from Apollo Bay west to the border with South Australia. The main ports in the eastern zone are Queenscliff, San Remo and Lakes Entrance. The Southern Rock Lobster Fishery is Victoria's second most profitable fishery after abalone. Southern rock lobsters are found to depths of 150m, with most of the catch coming from inshore waters less than 100m deep.	45.87%
Scallop Fishery (Figure A-60)	Commercial scallop (*Pecten fumatus*)	The Victorian Scallop Fishery extends 20nm 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.	46.70%
Octopus Fishery (Figure A-61)	Primarily pale octopus (*Octopus pallidus)* however, maori octopus (*Macroctopus maorum)* and gloomy octopus (*Octopus tetricus*) 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/New South Wales border and out to 20nm offshore, except for marine reserves. Octopus fishing in the central and western zones is less established and is being managed by the Victorian Fisheries Authority through exploratory, temporary permits.	46.70%
Wrasse Fishery (Figure A-62)	Primary: bluethroat wrasse (*Notolabrus tetricus*), purple wrasse (*N. fucicola*) Other: rosy wrasse (*Pseudolabrus psittaculus*),	This commercial fishery extends along the entire length of the Victorian coastline and out to 20nm 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.	46.57%

Victorian fishery	Target species	Description	Percentage overlap with the EMBA
	senator wrasse (*Pictilabrus laticlavius*), southern maori wrasse (*Ophthalmolepis lineolatus*)		
Sea Urchin Fishery (Figure A-63)	White sea urchin (*Heliocidaris erythrogramma*), black, long-spined sea urchin (*Centrostephanus rodgersii*)	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 New South Wales border. The target species are the white sea urchin (*Heliocidaris erythrogramma*) and the black, long-spined sea urchin (*Centrostephanus rodgersii*). 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.	57.00%
Ocean (general) Fishery	A range of fish species 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 grids, 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.	Approx. 50.7%
Trawl (inshore)	A range of fish species including flathead, whiting and mackerel as well as eastern king prawns, eastern school pawns, bug,	This fishery jurisdiction is also the entire Victorian catch and effort grids, excluding bays and inlets. Trawling is the primary fishing method used.	Approx. 50.7%

Victorian fishery	Target species	Description	Percentage overlap with the EMBA
	sand crab and octopus.		

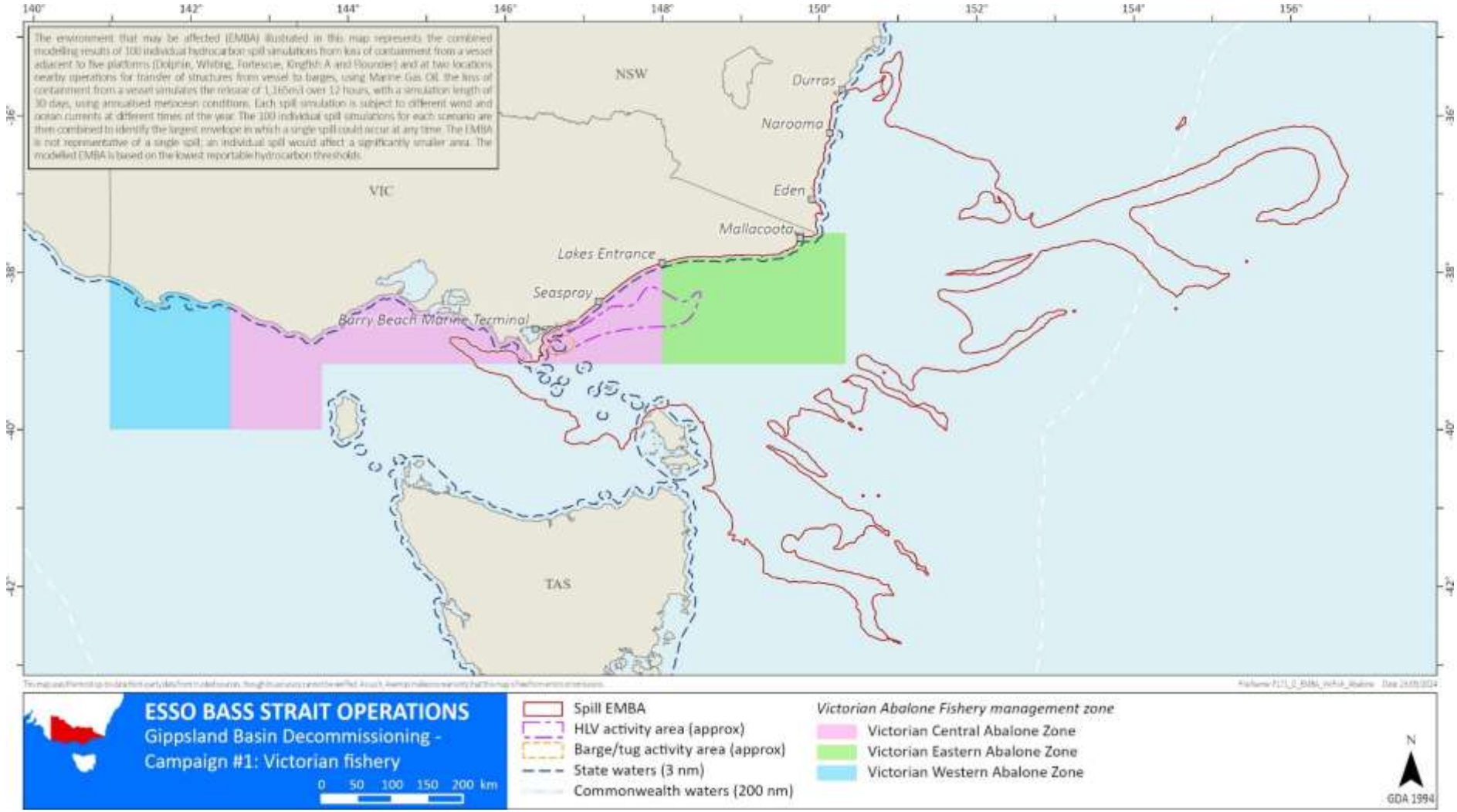

Figure A-55 Victorian Abalone Fishery jurisdiction intersected by the EMBA

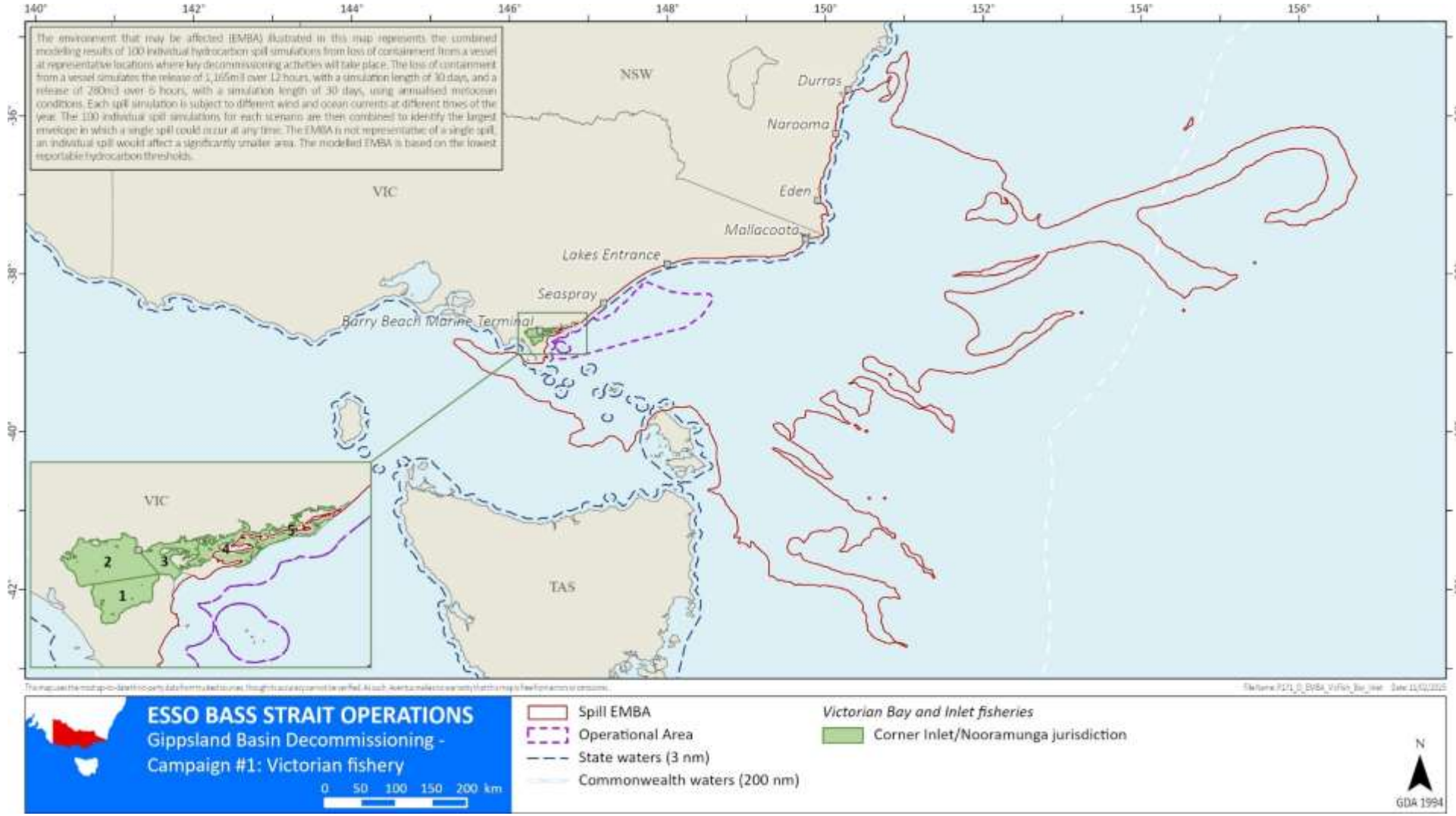

Figure A-56 Victorian Bay and Inlet fisheries – Corner Inlet/Nooramunga jurisdiction intersected by the EMBA

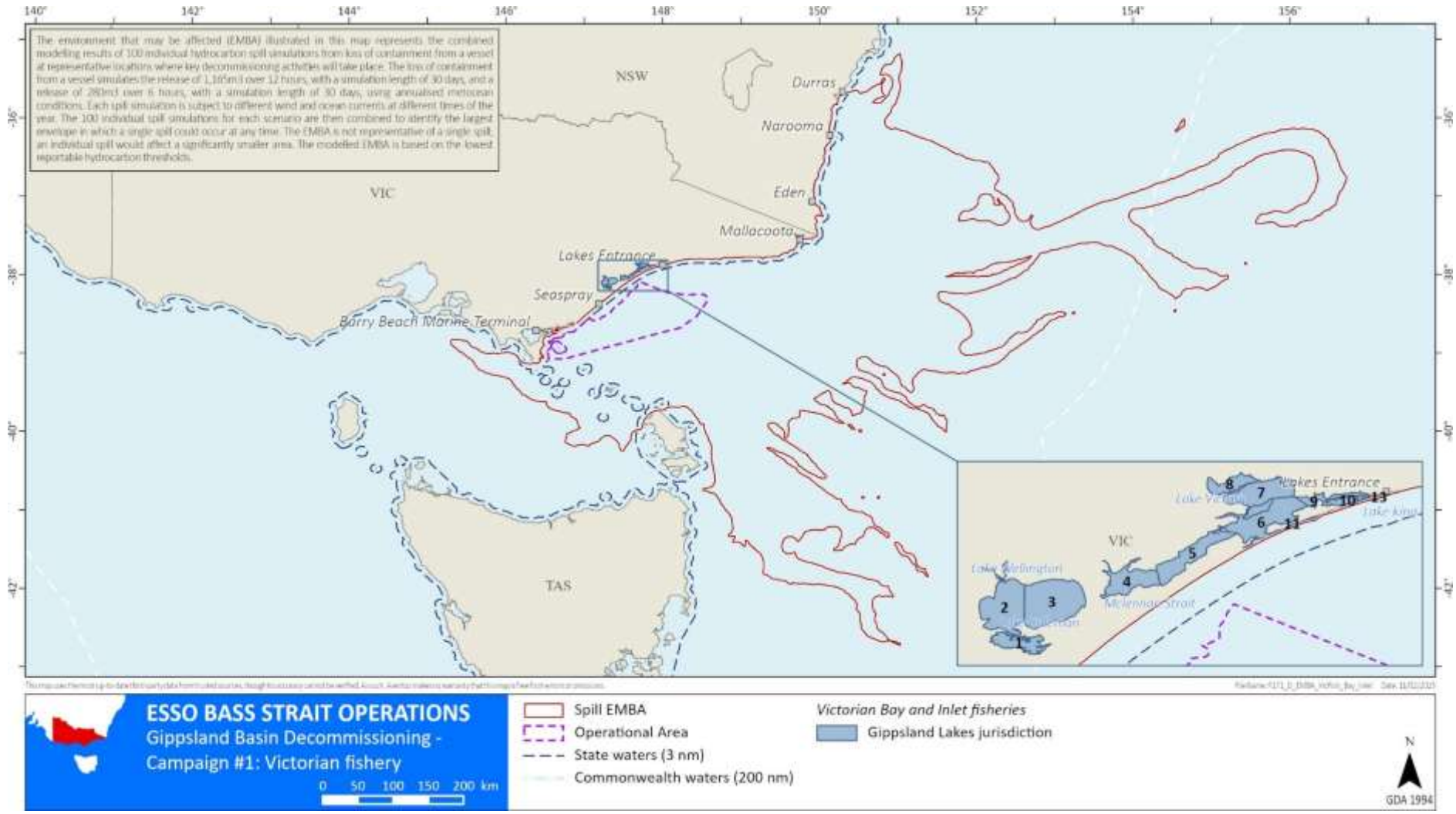

Figure A-57 Victorian Bay and Inlet fisheries – Gippsland Lakes jurisdiction intersected by the EMBA

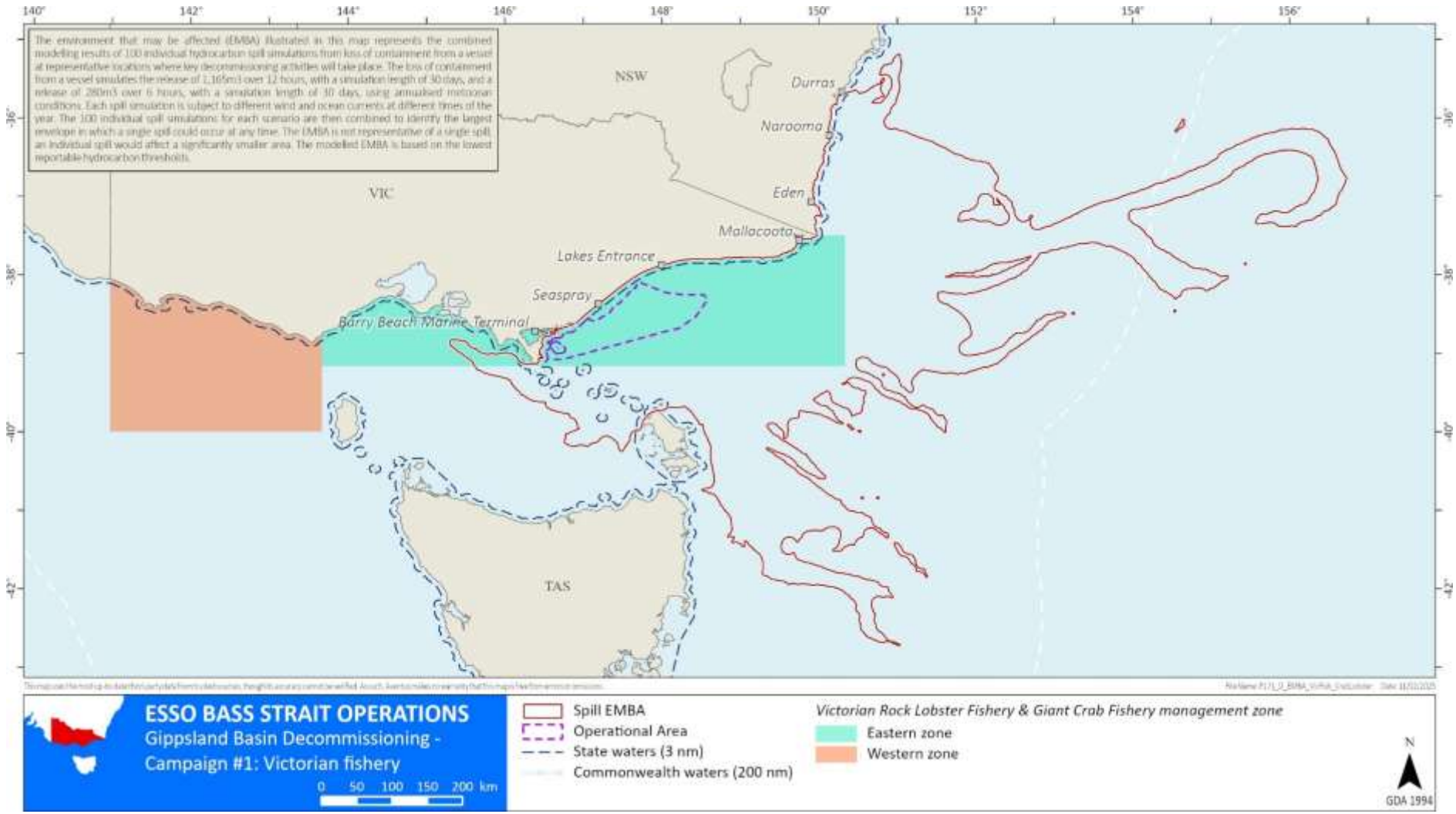

Figure A-58 Victorian Rock Lobster and Giant Crab Fishery jurisdiction intersected by the EMBA

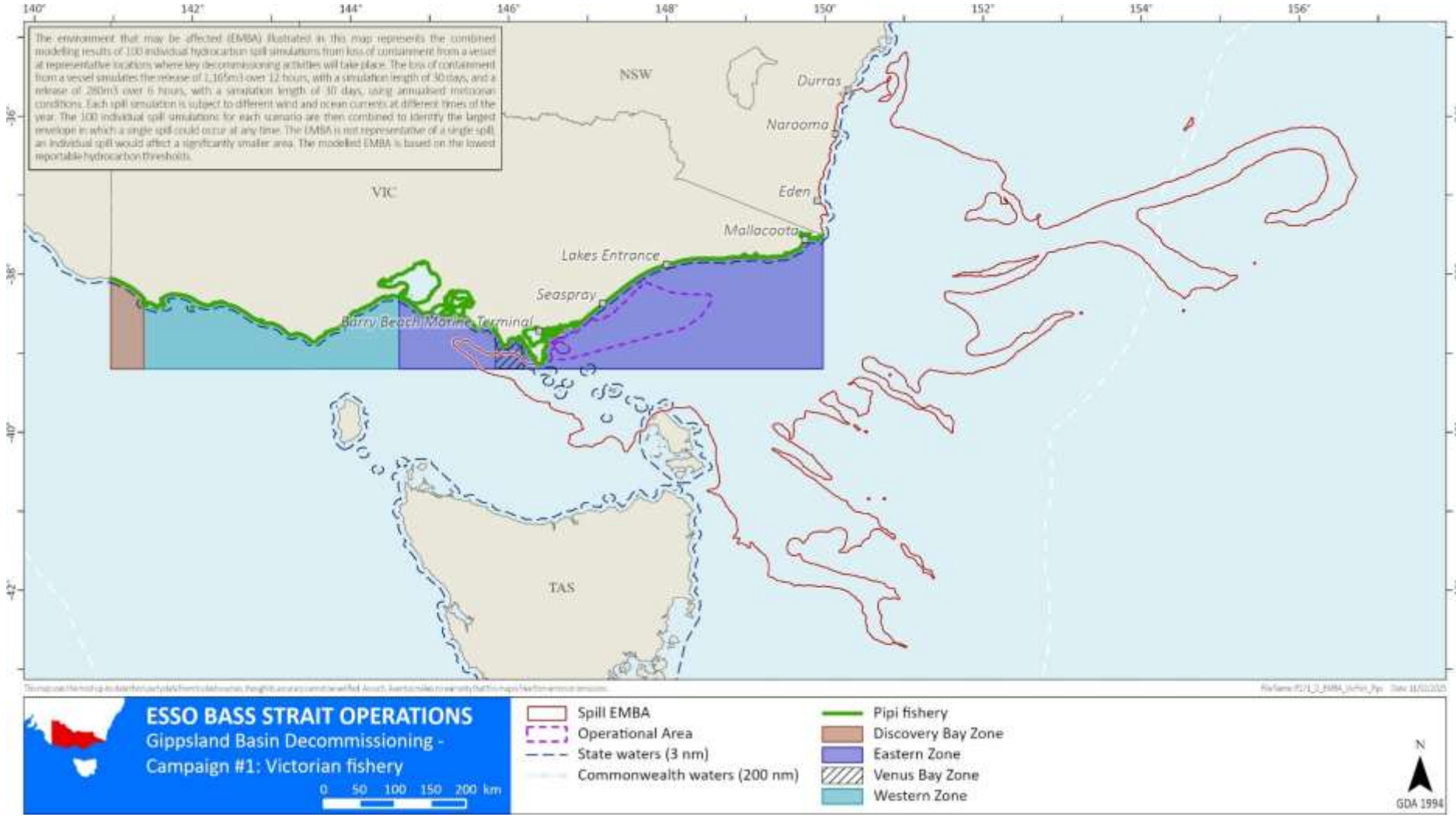

Figure A-59 Victorian Pipi Fishery jurisdiction intersected by the EMBA

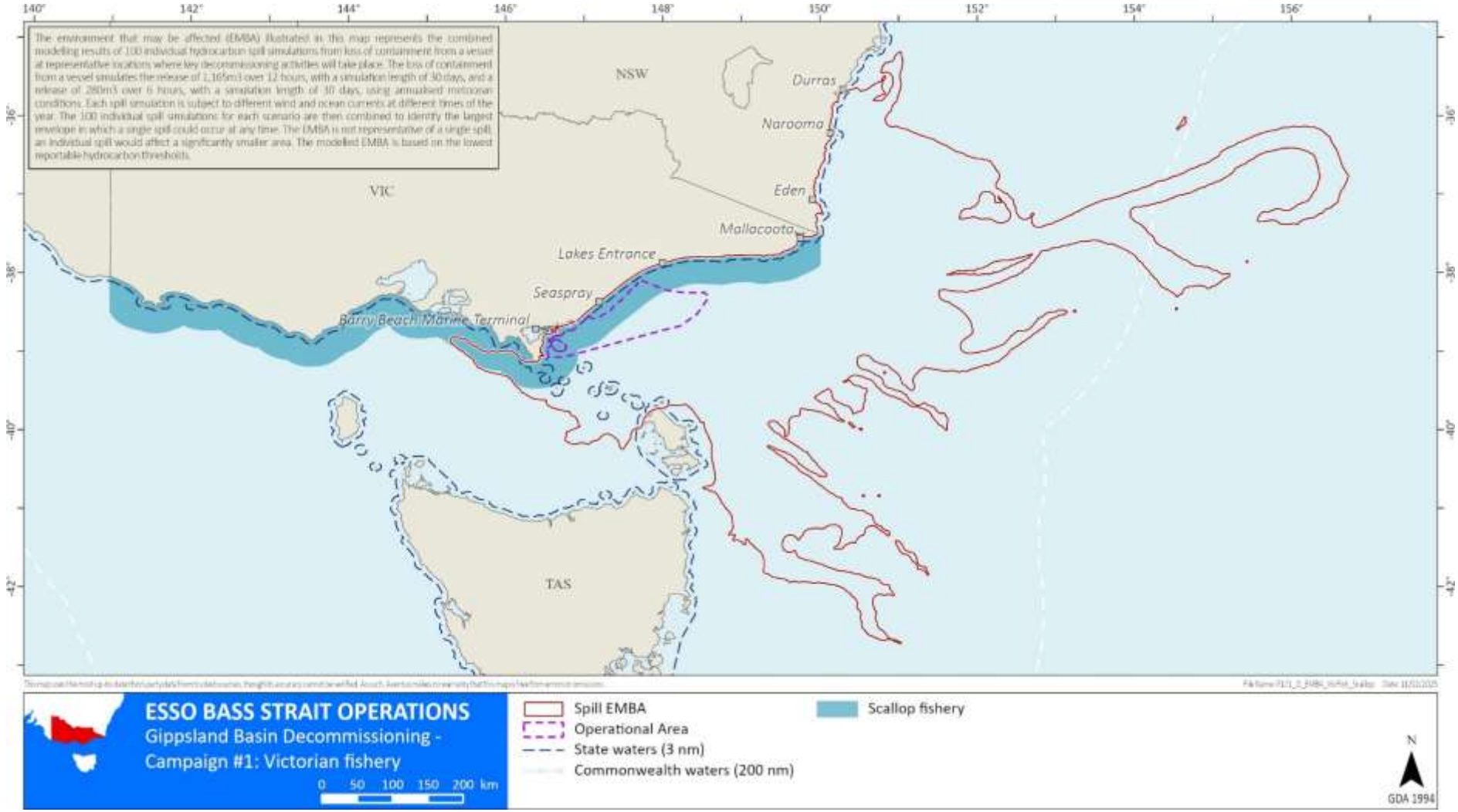

Figure A-60 Victorian Scallop Fishery jurisdiction intersected by the EMBA

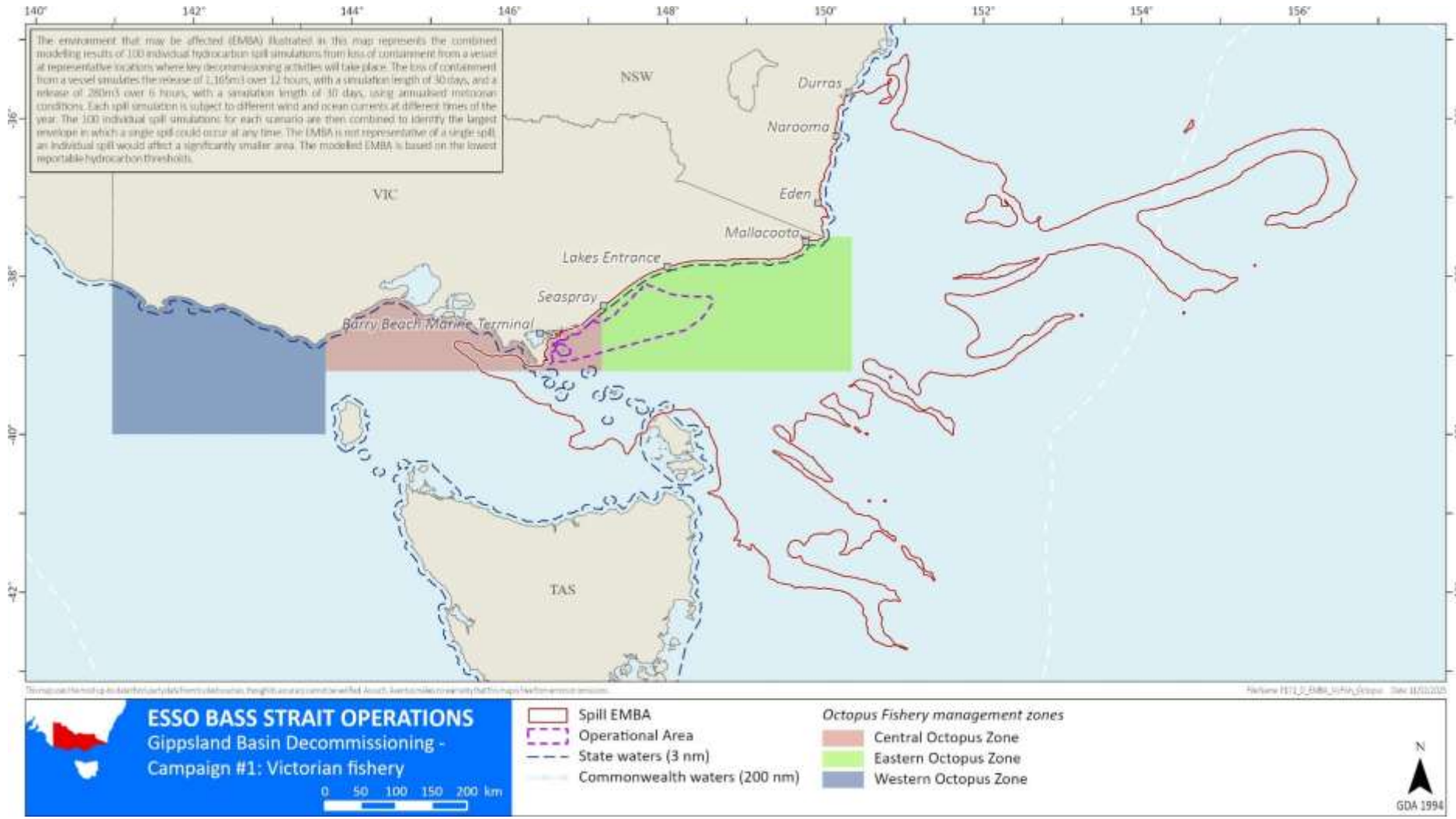

Figure A-61 Victorian Octopus Fishery jurisdiction intersected by the EMBA

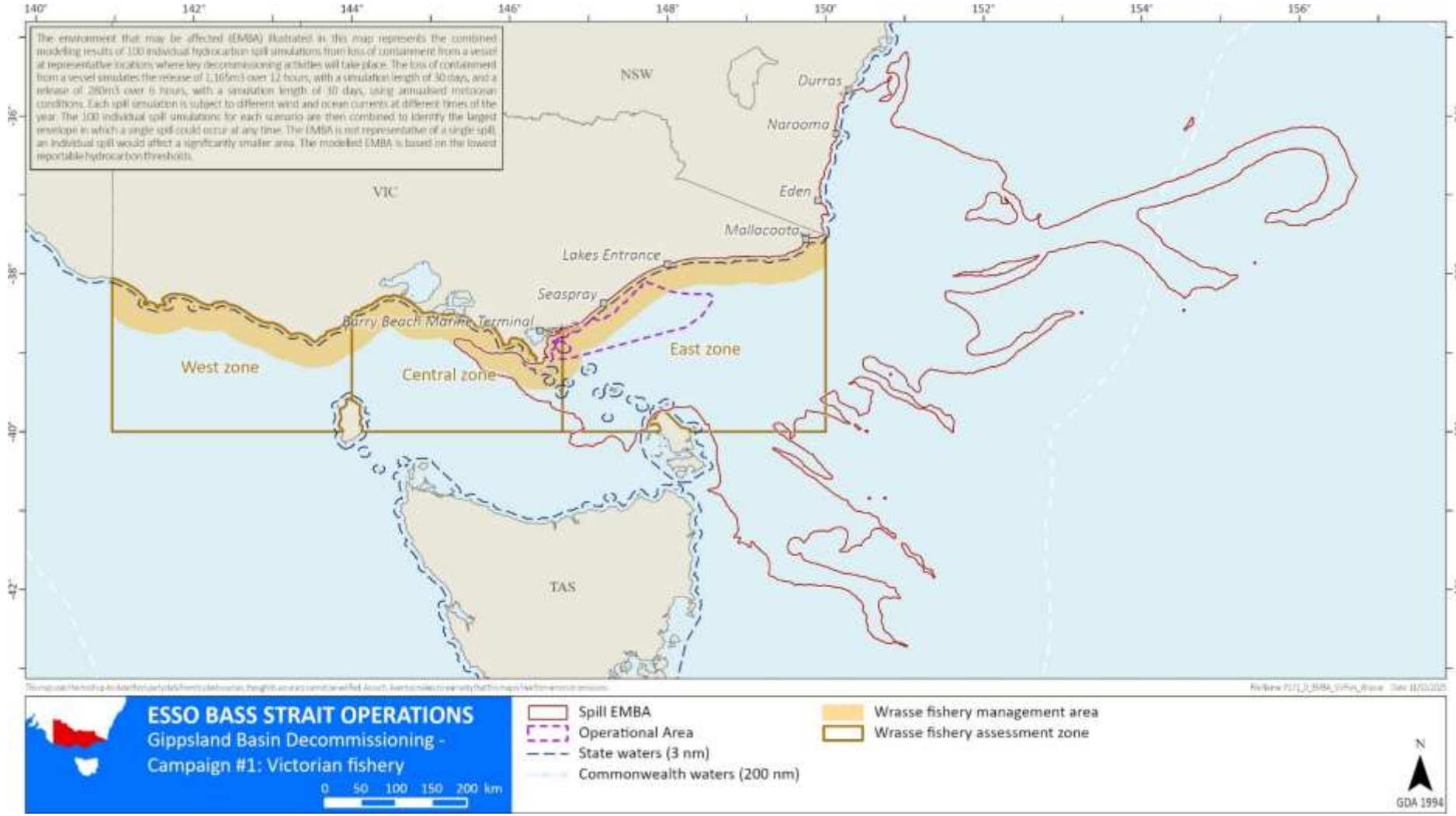

Figure A-62 Victorian Wrasse Fishery jurisdiction intersected by the EMBA

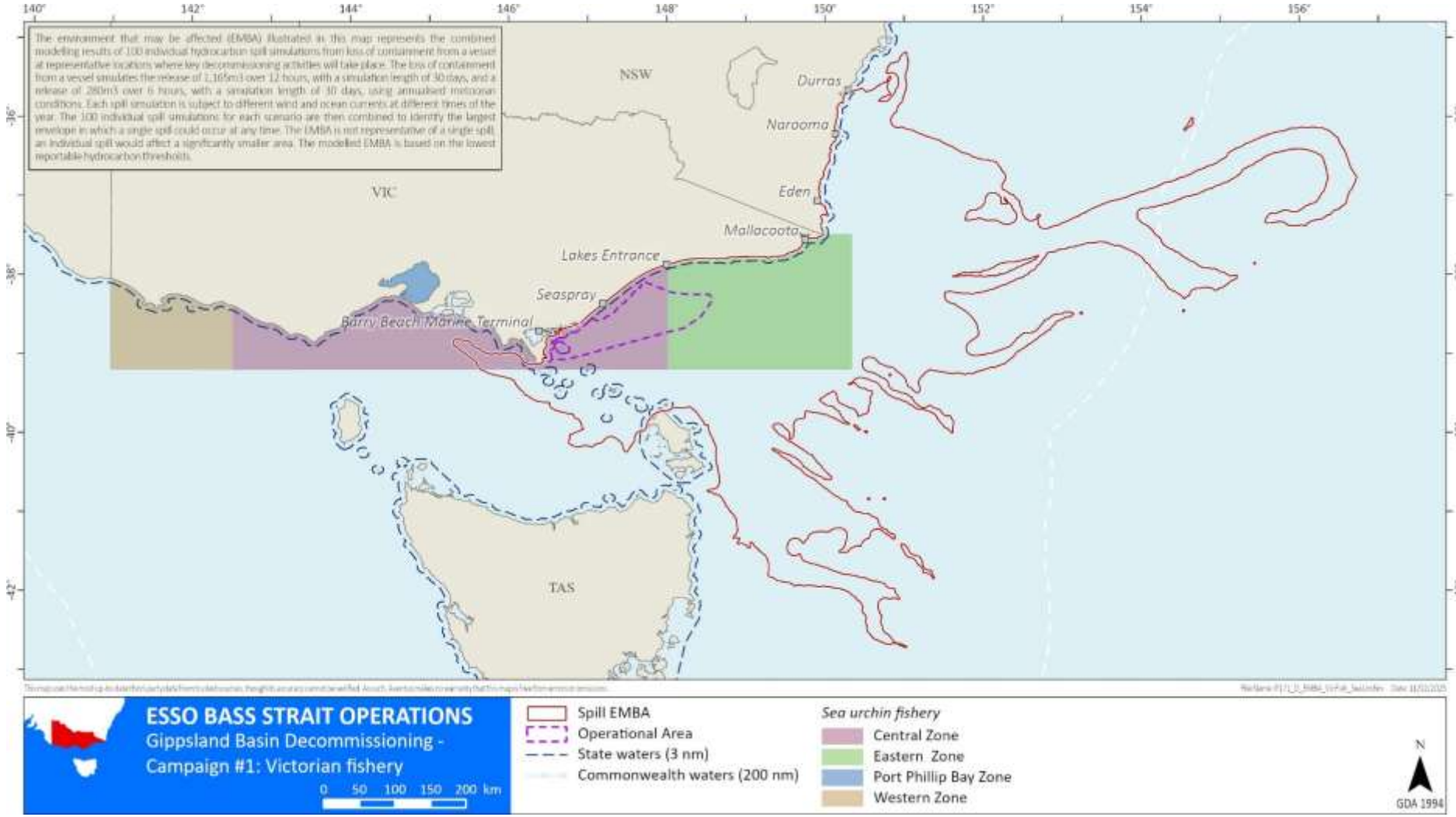

Figure A-63 Victorian Sea Urchin Fishery jurisdiction intersected by the EMBA

A.1.6.4 Tasmanian fisheries

Tasmanian-managed commercial fisheries with jurisdiction to fish in the waters of the EMBA are described in Table A-11.

Table A-11 Tasmanian managed fisheries within the EMBA

Tasmanian fishery	Target species	Description	Percentage overlap with the EMBA
Abalone Fishery (Figure A-64)	Blacklip abalone (*Haliotis rubra*), and greenlip abalone (*H. laevigata*)	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. The Tasmanian wild harvest abalone fishery for blacklip (*H. rubra*) and greenlip (*H. laevigata*) 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) (now Department of Natural Resources and Environment).	7.44%
Scalefish Fishery (Figure A-65)	Wrasse banded morwong (*Cheilodactylus spectabilis*) southern calamari (*Sepioteuthis australis*)	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, striped trumpeter and small pelagic species. 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) (now Department of Natural Resources and Environment).	13.09%
Rock Lobster Fishery (Figure A-66)	Southern rock lobster (*Jasus edwardsii*)	The Rock Lobster Fishery is a major Tasmanian industry providing significant benefits from exports from the commercial fishery. The southern rock lobster (*Jasus edwardsii*) 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. The fishery is managed by quota management, supplemented by size limits, gear restrictions and seasonal closures (DPIPWE, 2019c) (now Department of Natural Resources and Environment).	16.17%

Tasmanian fishery	Target species	Description	Percentage overlap with the EMBA
Giant Crab Fishery (Figure A-66)	Giant crabs (*Pseudocarcinus gigas*)	The Giant Crab Fishery is a comparatively small fishery with annual harvest quota for the 2024 - 2025 maintained at 20.7t, but is of relatively high value, with the landed valued estimated to be around AUD$2 million. The Tasmanian Giant Crab Fishery is managed by limited entry, setting a total annual commercial catch and by an individual transferable quota management system. This regime is supplemented by size limits, gear restrictions and seasonal closures. The permitted gear types are pot (or trap) for the commercial fishery (E Ogier, 2018).	16.17%
Scallop Fishery (Figure A-66)	Commercial scallop (*Pecten fumatus*)	This fishery targets commercial scallop (*Pecten fumatus*) using a scallop harvester (dredge). Although commercial fishers can legally take the doughboy scallop and the queen scallop, these species have only minor commercial significance in Tasmania. Pre-season surveys are carried out to determine which areas meet predetermined criteria and can be opened for scallop fishing. The market for commercial harvested scallops is largely domestic. Scallop beds occur on the shelf in water deeper than 20m (E Ogier, 2018).	16.17%
Commercial Dive Fishery (Figure A-67)	Shortspined sea urchin (*Heliocidaris erythrogramma*), wavy periwinkles (*Lunella undulata*) and longspined sea urchin (*Centrostephanus rodgersii*)	The fishery targets three key species by hand from small vessels, including the shortspined sea urchin wavy periwinkles and the longspined sea urchin. It operates entirely in State waters in five separate management zones (central eastern, southeastern, northeastern, northern and eastern) (DNRET, Commercial Dive Fishery, 2023a).	7.44%
Shellfish Fishery (Figure A-68)	Clams (*Veneruptis largillierti*), native oyster (*Ostrea angasi*), cockles (*Katelysia scalarina*) and wild Pacific	The commercial Shellfish Fishery includes clams and native oyster for which there are two licences each restricted to Georges Bay, and the wild Pacific oyster for which there is no cap in the number of licences that can be issued (DNRET, 2023b). Temperate climate bivalves generally have two spawning periods within a year following spring and autumnal peaks in phytoplankton production.	8.05%

Tasmanian fishery	Target species	Description	Percentage overlap with the EMBA
	oyster (*Crassostrea gigas*)		
Marine Plant Fishery	Wakame (*Undaria pinnatifida)* and bull kelp (*Durvillaea potatorum*)	The only marine plant that can be harvested directly from the water is wakame, a noxious pest species. This fishery is managed under limited introduced marine plant fishing licences 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 licence	N/A

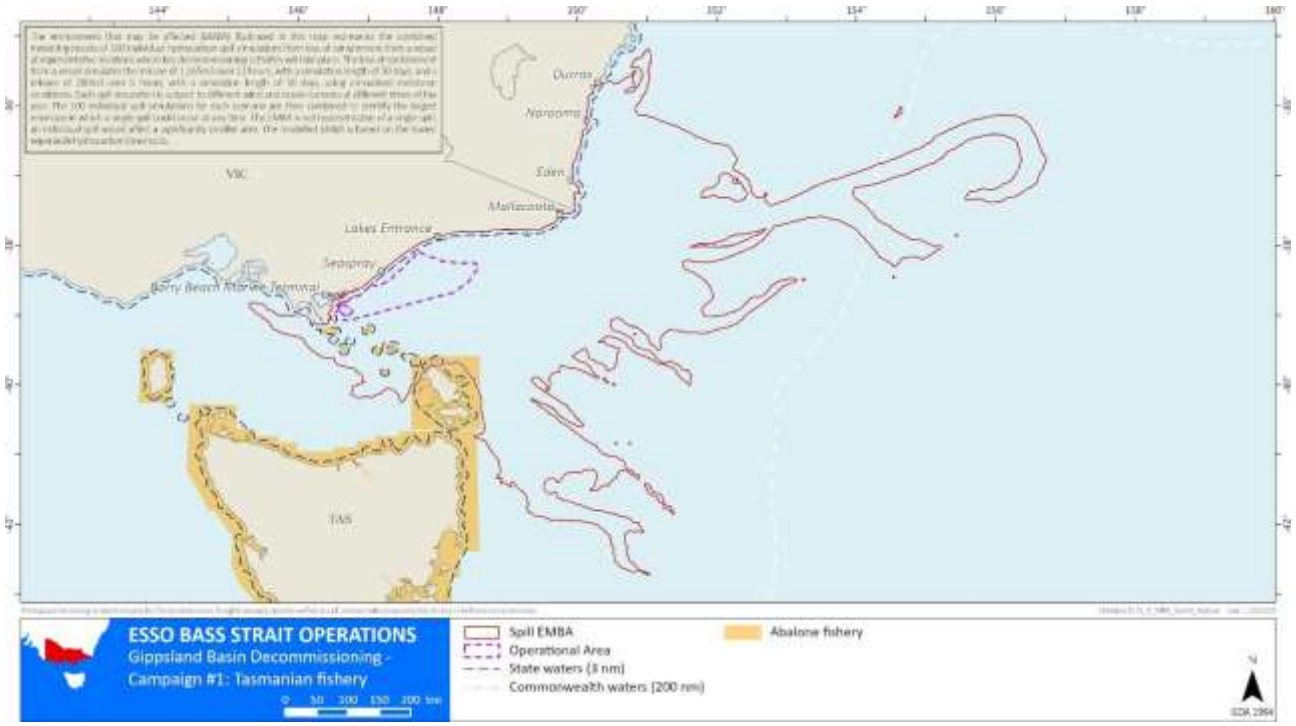

Figure A-64 Tasmanian Abalone Fishery jurisdiction intersected by the EMBA

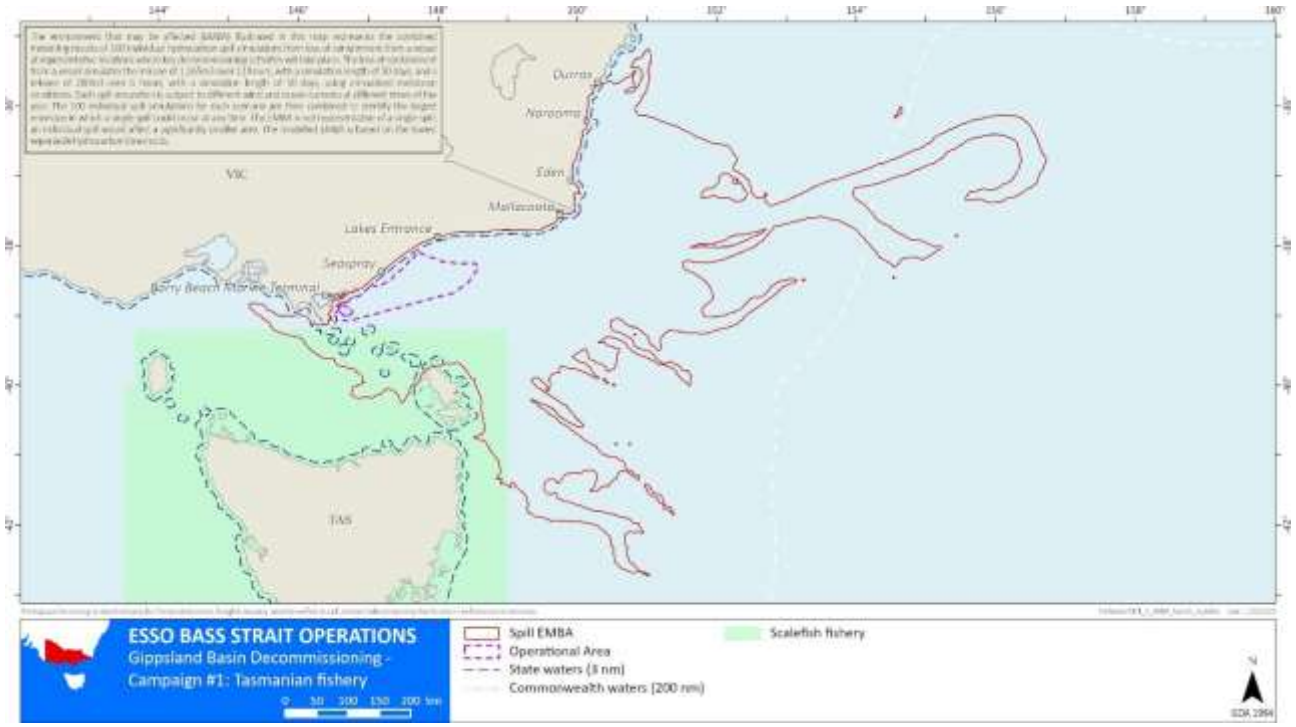

Figure A-65 Tasmanian Scalefish Fishery jurisdiction intersected by the EMBA

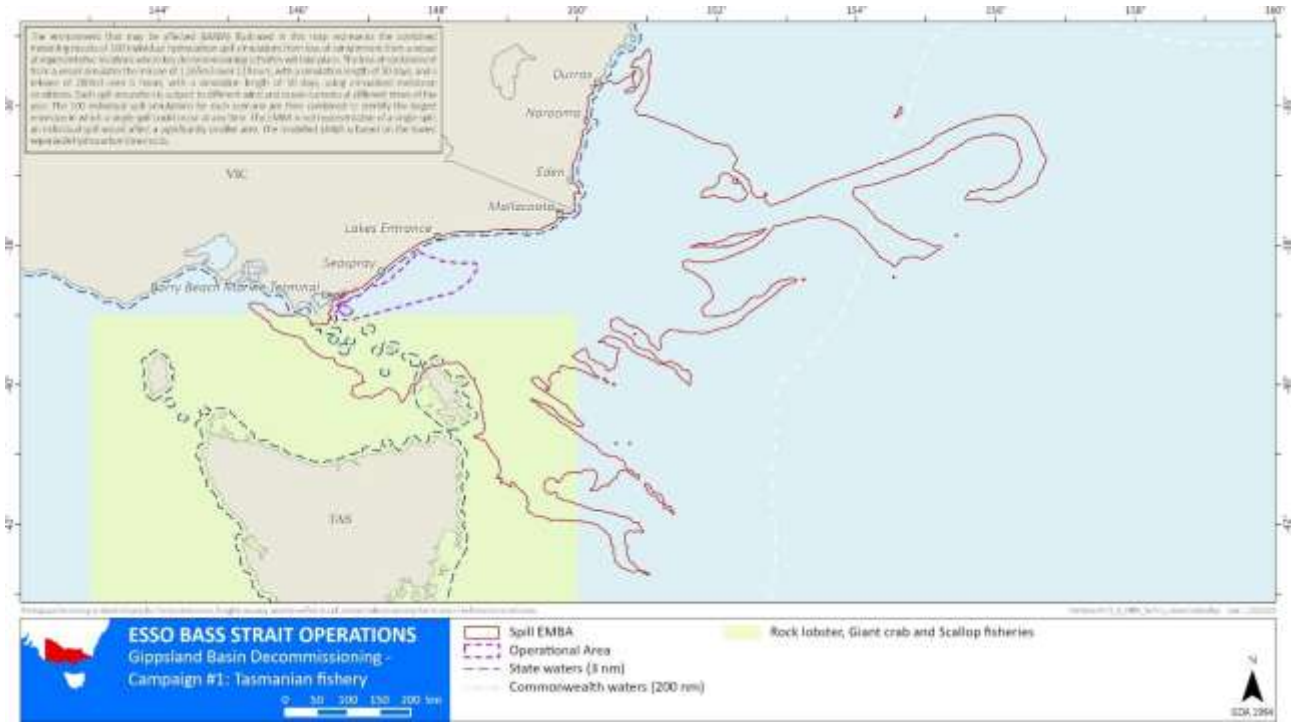

Figure A-66 Rock Lobster, Giant Crab and Scallop Fishery jurisdiction intersected by the EMBA

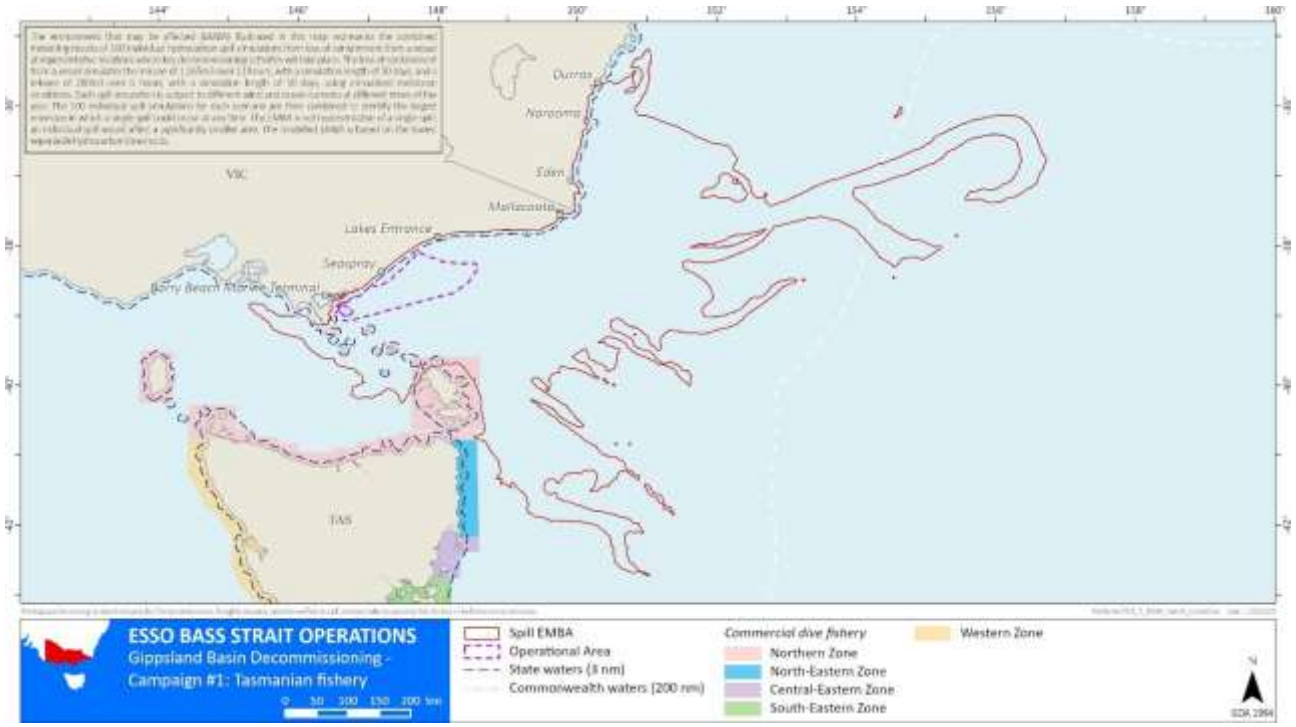

Figure A-67 Tasmanian Commercial Dive Fishery jurisdiction intersected by the EMBA

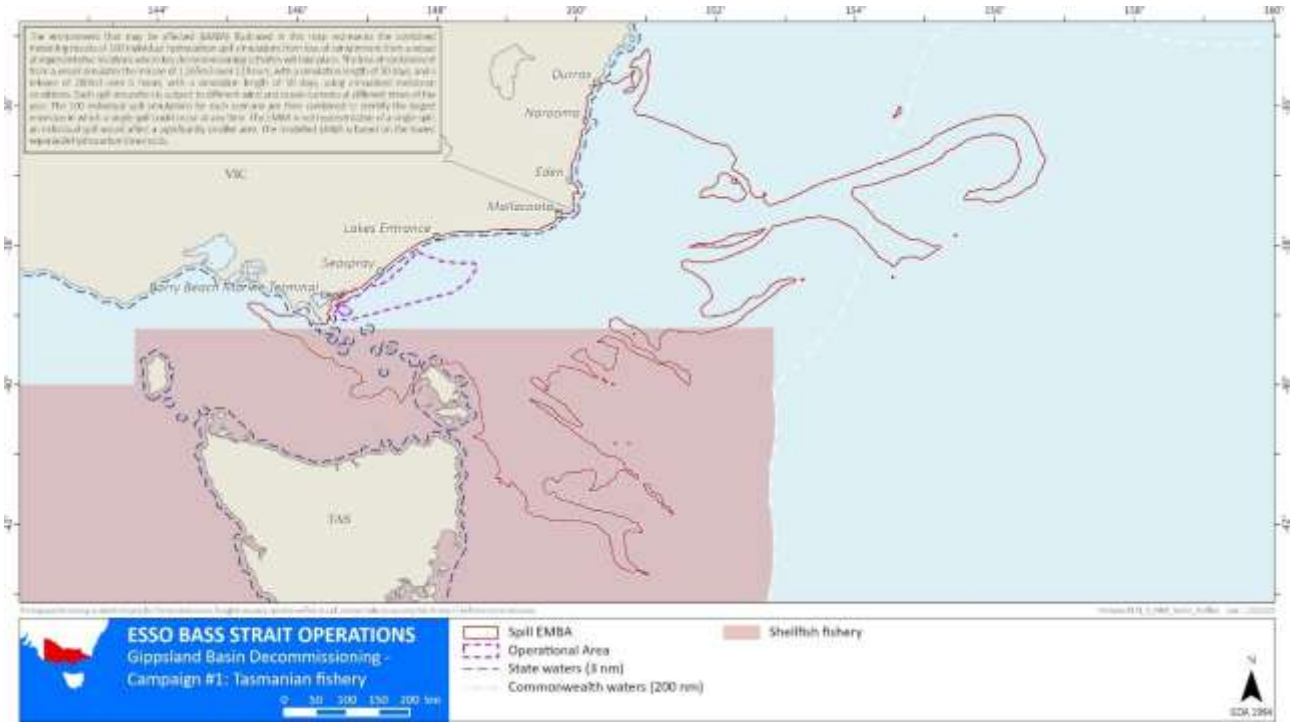

Figure A-68 Tasmanian Shellfish Fishery jurisdiction intersected by the EMBA

A.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 A-12. Please note that the New South Wales fisheries does not have data publicly available, therefore mapping and percentage overlaps cannot be attained.

Table A-12 NSW managed fisheries within the EMBA

New South Wales fishery	Target species	Description	Percentage overlap with the EMBA
Abalone Fishery	Blacklip abalone (*Haliotis rubra*)	The blacklip abalone forms the basis of the Abalone Fishery in New South Wales. 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 New South Wales, 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 (*Mugil cephalus*), luderick (*Girella tricuspidata*), yellowfin bream (*Acanthopagrus australis*), school prawn (*Metapenaeus macleayi*), blue swimmer crab (*Portunus pelagicus*), dusky flathead (*Platycephalus fuscus*), sand whiting (*Sillago ciliata*), pipi (*Donax deltoides*), mud crab (*Scylla serrata*), silver diddy (*Gerres subfasciatus*).	The Estuary General Fishery is a diverse multi-species multi-method fishery that may operate in 76 of the New South Wales estuarine systems. This fishery is a significant contributor to regional and state economies providing high quality seafood and bait to the community. The fishery includes all forms of commercial estuarine fishing (other than estuary prawn trawling) in addition to the gathering of pipis and beachworms from ocean beaches. The most frequently used fishing methods are mesh and haul netting. Other methods used include trapping, hand-lining and hand-gathering. Sea mullet, luderick, yellowfin bream, school prawn, blue swimmer crab, dusky flathead, sand whiting, pipi, mud crab and silver biddy make up over 80% of the catch (DPI, 2024).	N/A – data unavailable.
Lobster Fishery	Primary: eastern rock lobster (*Sagmaraisus verreauxi*). Other: southern rock lobster (*Jasus edwardsii*), tropical rock lobster (*Panulirus longipes* and *P. ornatus*).	The Lobster Fishery extends from the Queensland border to the Victorian border and includes all waters under jurisdiction of New South Wales to around 128km from the coast. It is characterised by inshore and offshore sectors. Inshore fishers use small beehive or square traps in waters up to 10m in depth, whilst offshore fishers use large rectangular traps.	N/A – data unavailable.

New South Wales fishery	Target species	Description	Percentage overlap with the EMBA
Ocean Hauling Fishery	Pilchards (*Sardinops sagax*), sea mullet (*Mugil cephalus*), Australian salmon (*Arripis trutta*), blue mackerel (*Scomber australasicus*), yellowtail scad (*Trachurus novaezelandiae*), yellowfin bream (*Acanthopagrus australis*)	The Ocean Hauling Fishery is broken up into seven regions along the New South Wales coast and targets approximately 20 finfish species using commercial hauling and purse seine nets from sea beaches and in ocean waters within 3nm of the coast.	N/A – data unavailable.
Ocean Trap and Line Fishery	Primary: snapper (*Pagrus auratus)*, yellowtail kingfish (*Seriola lalandi)*, leatherjackets (*Oligoplites saurus*), bonito (*Gymnosarda unicolor*), silver trevally (*Pseudocaranx georgianus*). Other: rubberlip (grey) morwong (*Nemadactylus douglasii*), blue-eye trevalla (*Hyperoglyphe antarctica*), sharks spp. various, bar cod (*Hyporthodus ergastularius*), yellowfin bream (*Acanthopagrus latus*), spanner crabs (*Ranina ranina*)	The Ocean Trap and Line Fishery is a multi-method, multi species fishery targeting demersal and pelagic fish along the entire New South Wales coast, in continental shelf and slope waters. The 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 (*Melicertus plebejus*), eastern school prawn (*Metapenaeus macleaya*), royal red prawn (*Haliporoides sibogae*),	There are two sectors to the ocean trawl fishery: the prawn trawl sector and the fish trawl sector. Both sectors use otter trawl nets. The fishery is a share management fishery; meaning commercial fishers must hold sufficient shares to be eligible for an endorsement to operate in the fishery. An endorsement authorises the use of specific gear to take fish for	N/A – data unavailable.

New South Wales fishery	Target species	Description	Percentage overlap with the EMBA
	balmain bug (*Ibacus spp.*), octopus spp. Various (*octopodidae*), cuttlefish (*Sepia spp*), southern calamari (*Sepioteuthis australis*), eastern school whiting (*Sillago flindersi*), stout whiting (*Sillago robusta*), tiger flathead (*Platycephalus richardsoni),* bluespotted flathead *(Platycephalus caeruleopunctatus*), silver trevally (*Pseudocaranx georgianus),* eastern shovelnose ray (*Aptychotrema rostrata*). Secondary: blue swimmer crab (*Portunus armatus*), squid spp. various (Class: *chephalopoda*) gurnard/latchet (*Pterygotrigla andertoni, Pterygotrigla polyommata, Chelidonichthys kumu*), John dory (*Zeus faber*) angel shark (*Squatina spp*), flounder spp various (*Pleuronectidae/Bothidae*), red mullet various (*Mullidae*), redfish (*Centroberyx affinis*), leatherjacket spp. various (*Monocanthidae*), ocean perch (*Helicolenus barathri, Helicolenus percoides),* mirror	sale from certain waters. Many of the fishers endorsed for fish trawling are also endorsed for prawn trawling.	

New South Wales fishery	Target species	Description	Percentage overlap with the EMBA
	dory (*Zenopsis nebulosus*), sole spp. various (*Soleidae*), grey morwong (*Nemadactylus douglasii),* pink tilefish *(Branchiostegus wardi),* giant boarfish (*Paristiopterus labiosus*), shark spp. various		
Sea Urchin and Turban Shell Restricted Fishery	Sea urchin (*Echinometridae*), turban shell (*Turbinidae*)	The New South Wales 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. Turban shells are harvested year-round for their fleshy foot (DPI, 2024). A number of the fishing sub regions have been closed to commercial fishing since 1994.	N/A – data unavailable.

A.1.6.6 Commercial aquaculture

The Sydney rock oyster (*Saccostrea glomerata*) is the main species grown in New South Wales. 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 New South Wales 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 three to four weeks as the larval stages of the oyster grow, with the 'spat' ultimately being caught on 'sticks'. Oysters are knocked off these sticks at six months to three years of age for growing intertidally on trays until maturity in three to four 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 is currently under way. The Victorian Fisheries Authority and the GLaWAC have partnered to develop a native oyster industry in Gippsland. A trial commenced in October 2022 with over 10,000 Sydney rock oysters placed in four sites near Flanagan Island and Hopetoun channel. On completion of a successful trial, it is envisaged GLaWAC will commence a commercial aquaculture operation at the selected trial sites (VFA, 2023b).

The Sydney rock oyster is also farmed south of Hervey Bay, Queensland, with most leases occurring in Moreton Bay. The seasonal occurrence of the disease QX in southeastern Queensland waters restricts the tidal areas where oysters can be viably produced and limits the growing season.

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.

A.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 (>5km 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 (Fisheries Research and Development Corporation, 2001).

The variation in recreational fishing intensity along the coast is illustrated in Figure A-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.

Recreational fishing occurs mostly amongst the Nooramunga Islands (near Corner Inlet), on the Gippsland Lakes, along Ninety Mile Beach, at Cape Conran Coastal Park and Croajingolong National Park and off the coast of Mallacoota, comprising both boat-based fishing and beach-based surf fishing. All these are outside the OA. Boat-based fishing includes charter operations and private craft launched from boat ramps in the region. Boatyards and slipways are located at Bullock Island (Lakes Entrance), Port Welshpool and Mallacoota. Common recreational fish species include tiger flathead (*Neoplatycephalus richardsoni*), bream, snapper, Australian salmon (*Arripis trutta*), and lobster. Offshore catches can include mackerel, tuna, groper and shark.

The Corner Inlet Fishery area is one of southern Gippsland's greatest tourist attractions and a popular fishing destination for Victoria's growing recreational fishing sector. Recreational fishing in Victoria contributes close to $3 billion annually to the economy and recreational fishing in and around the Corner Inlet Fishery makes a significant contribution to the Victorian economy at a local, regional and State level (VFA, 2022).

In 2020, the Victorian Fisheries Authority published the Gippsland Lakes Recreational Fishery Plan, which highlights the recovery strategies for this fishery, which includes improving fish habitat and waterway health (Gippsland Lakes Recreational Fishery Plan 2020).

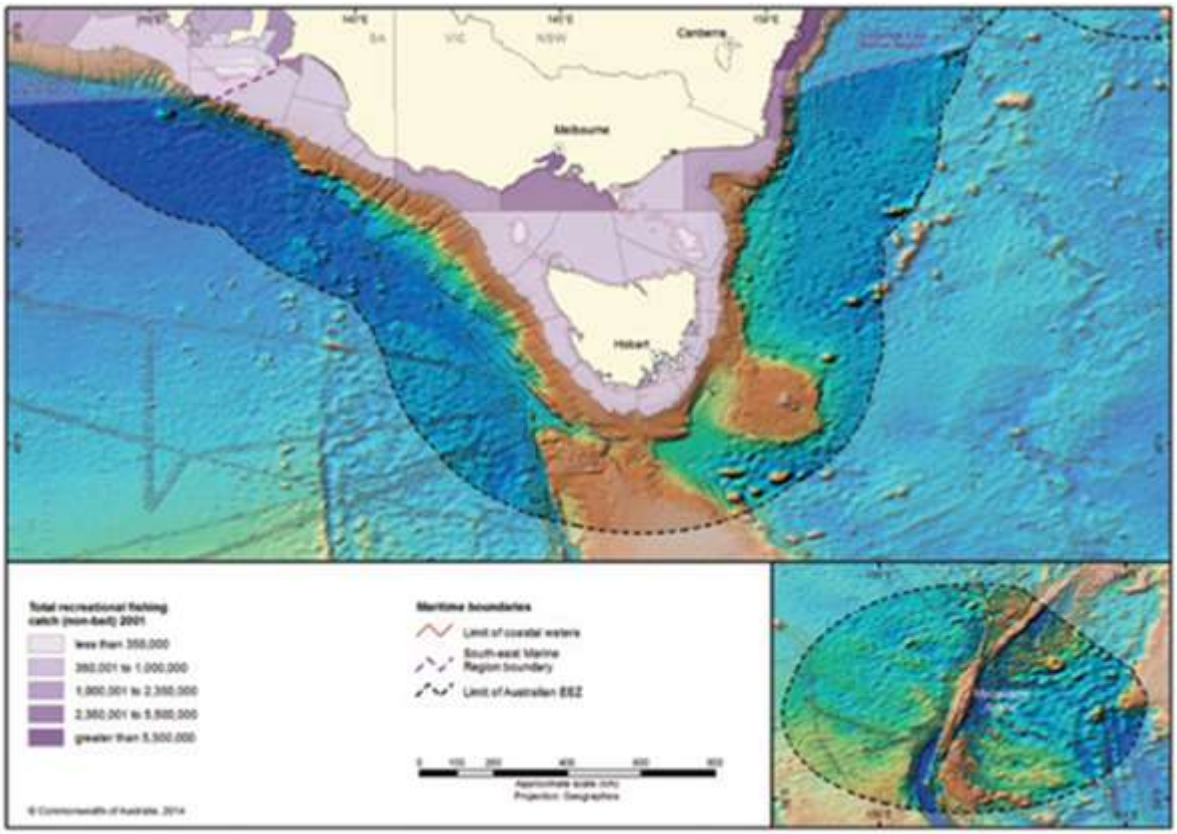

Figure A-69 Recreational fishing catch in temperate east (Commonwealth of Australia, 2015)

A.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.

For the financial year 2022 - 2023, the tourism industry contributed approximately $1.009 billion to the Gippsland economy, an increase of 7.3% compared to the 2018 - 2019 period, which represented a 5.7% contribution to the Victorian regional economy. Tourism also accounted for approximately 11,800 filled jobs in Gippsland for the 2022 - 2023 period, with a decrease of 1.7% from the 2018 - 2019 period, and represented a 8.9% contribution to the Victorian regional economy (DJSIR, 2024).In the year ending in September 2024, overnight visitors to the Gippsland area were predominantly Australian (99.1%), with low (0.9%) international visitors. The total number of visitors to the region reached 3,582,000 domestic daytrip visitors, 2,439,000 overnight domestic visitors, and 54,000 overnight international visitors (TourismVictoria, 2024). 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).

New South Wales is Australia's number one destination, with domestic and international visitors delivering almost $52.9 billion in expenditure to the State's visitor economy in the year ending September 2024 (DestinationNSW, 2024a). The South Coast Region includes all the towns from Wollongong to the Victorian border. In the year ending in June 2024, the South Coast Region had a total of 11.3 million visitors with an expenditure of $4.3 billon (DestinationNSW, 2024b). In the year ending in June 2024, the northern New South Wales regions, including Coffs Harbour, Ballina and North Coast. had a total of 13.2 million visitors with an expenditure of $5.9 billon (DestinationNSW, 2024c).

Tourism in Tasmania directly and indirectly contributes around $2.59 billion or about 6.7% to Tasmania's gross product in 2022 - 2023 (TourismTasmania, 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 (TourismTasmania, 2023).

A.1.6.9 Future industries

On December 2022, an area off Gippsland was declared as suitable for offshore renewable energy development.

Following the declaration, a total of 37 applications from offshore wind developers were received. In May 2024, the Australian Government announced the first successful feasibility licence applications for the Gippsland region (DEECA, 2024). DCCEEW website (last updated November 2024) indicates that from the 37 applications, the Australian Government has granted 12 feasibility licences for offshore wind projects in the Gippsland region (see Figure A-70). Licence holders are:

- High Sea Wind Pty Ltd
- Gippsland Skies Pty Ltd
- Blue Mackerel North Pty Ltd
- Kut-Wut Bratauallung Pty Ltd
- Ørsted Offshore Australia 1 Pty Ltd (Gippsland 01)
- Star of the South Wind Farm Pty Ltd (SOTS)
- Iberdrola Australia OW 2 Pty Ltd (Aurora Green)
- Gippsland Dawn OWP Project Pty Ltd (Gippsland Dawn)
- Navigator North Project Pty Ltd
- Ørsted Offshore Australia 1 Pty Ltd (Gippsland 02)
- Kent Offshore Wind Pty Ltd
- Greater Eastern Offshore Wind Farm Project Co Pty Ltd.

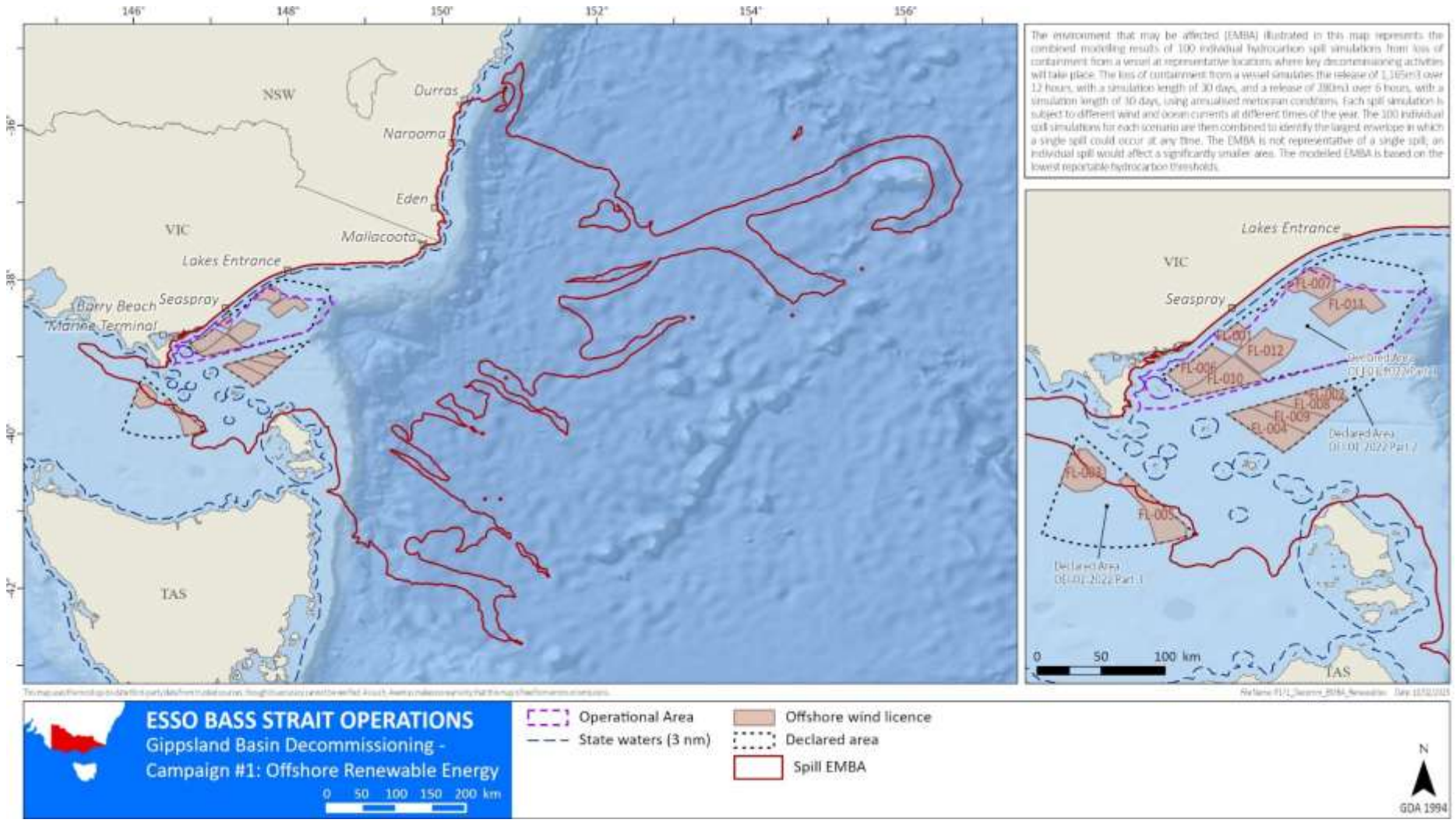

Figure A-70 Offshore renewable energy declared areas and licence areas within the EMBA

Licence holders must develop management plans for approval by the offshore infrastructure regulator. Construction can only begin after the feasibility stage is completed and developers have gained all environmental and management plans approvals (DCCEEW, 2024).

The EMBA overlaps with the 12 offshore wind projects that were granted feasibility licence (Figure A-70).

A.1.6.10 Oil and gas

Statistics from 2018–2019 showed that oil (nearly 39%) and gas (26%) remained Australia's largest energy sources (APPEA, 2021). The industry also contributed approximately $27.9 billion to the Australian economy during the 2019 – 2020 financial year (APPEA, 2021).

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 A-71). Information on the Production licences, Exploration Permits and Retention Leases within Gippsland Basin at the time of writing are presented in Table A-13.

The Gippsland Basin in southeastern Australia is located about 200km east of the city of Melbourne, covering about 46,000km^2, 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 1.64Tcf (1844.5PJ) of natural gas and ethane, and 94MMbbls (552.7PJ) of oil and natural gas liquids (GeoscienceAustralia, 2022). Several petroleum systems operate in the basin, with the largest oil and gas fields hosted by top-Latrobe Group (Eocene) shallow marine barrier sandstones, and additional discoveries made in intra-Latrobe Group (Upper Cretaceous–Paleocene) coastal plain and deltaic channel sandstones. Despite its mature status, parts of the basin remain underexplored and offer a variety of untested resources (GeoscienceAustralia, 2022).



Figure A-71 Petroleum Exploration and Production Permits, oil and gas fields and petroleum production infrastructure in the Gippsland Basin (NOPTA, n.d.)

Table A-13 Production Licences, Exploration Permits and Retention Leases within Gippsland Basin

Title	Title Holder/s	Field
Production Licences, Gippsland Basin		
VIC/L1	EARPL, Woodside Energy (Bass Strait) Pty Ltd	Barracouta/Tarwhine/Whiptail
VIC/L10	EARPL, Woodside Energy (Bass Strait) Pty Ltd	Snapper
VIC/L11	EARPL, Woodside Energy (Bass Strait) Pty Ltd	Flounder
VIC/L13-14	EARPL, Woodside Energy (Bass Strait) Pty Ltd	Bream
VIC/L15	EARPL, Woodside Energy (Bass Strait) Pty Ltd	Dolphin

Title	Title Holder/s	Field
VIC/L16	EARPL, Woodside Energy (Bass Strait) Pty Ltd	Torsk
VIC/L17	EARPL, Woodside Energy (Bass Strait) Pty Ltd	Perch
VIC/L18	EARPL, Woodside Energy (Bass Strait) Pty Ltd	Seahorse
VIC/L19	EARPL, Woodside Energy (Bass Strait) Pty Ltd	West Fortescue
VIC/L2	EARPL, Woodside Energy (Bass Strait) Pty Ltd	Barracouta/Whiting/Wirrah
VIC/L20	EARPL, Woodside Energy (Bass Strait) Pty Ltd	Blackback
VIC/L25	EARPL, Woodside Energy (Bass Strait) Pty Ltd, MEPAU	Kipper
VIC/L29	SGH Energy VIC54 Pty Ltd	Longtom
VIC/L3	EARPL, Woodside Energy (Bass Strait) Pty Ltd	Marlin/Turrum/North Turrum
VIC/L32	Cooper Energy	Sole
VIC/L4	EARPL, Woodside Energy (Bass Strait) Pty Ltd	Marlin/Turrum/Tuna/Baldfish/Flounder
VIC/L5	EARPL, Woodside Energy (Bass Strait) Pty Ltd	Halibut/Fortescue/Cobia/ Mackerel
VIC/L6	EARPL, Woodside Energy (Bass Strait) Pty Ltd	Mackerel/Flounder
VIC/L7-8	EARPL, Woodside Energy (Bass Strait) Pty Ltd	Kingfish
VIC/L9	EARPL, Woodside Energy (Bass Strait) Pty Ltd	Tuna
Exploration Permits, Gippsland Basin		
VIC/P47	Emperor Energy Ltd / Shelf Oil Pty Ltd	Judith/Moby
VIC/P72	Cooper Energy (MPG) Pty Ltd	-
VIC/P74	3D Energi Limited	-
VIC/P75	Cooper Energy (MPG) Pty Ltd	-
VIC/P77	Liberty Petroleum Corporation	-
VIC/P78	Liberty Petroleum Corporation	-
VIC/P80	Cooper Energy (MPG) Pty Ltd	-
Retention Leases, Gippsland Basin		
VIC/RL1	EARPL, Woodside Energy (Bass Strait) Pty Ltd	Golden Beach
VIC/RL13 VIC/RL14	Cooper Energy Limited	Basker, Manta, Gummy Field

Title	Title Holder/s	Field
VIC/RL15		
VIC/RL16	Cooper Energy	Related title: VIC/L21
VIC/RL17	Carnarvon Hibiscus Pty Ltd	Related title: VIC/L31

A.1.6.11 Shipping

The southeast 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 3000 vessels passing through Bass Strait each year (NOO, 2002a).

A shipping exclusion zone (ATBA) 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 A-72). Two traffic separation schemes have been implemented to enhance safety of navigation around the ATBA by separating shipping into one-direction lanes for vessels heading north-eastwards and those heading south-westwards. One separation area is located south of Wilsons Promontory, and the other south of the KBA platform.

Figure A-73 shows vessel traffic within the EMBA based on August 2023 AMSA data.

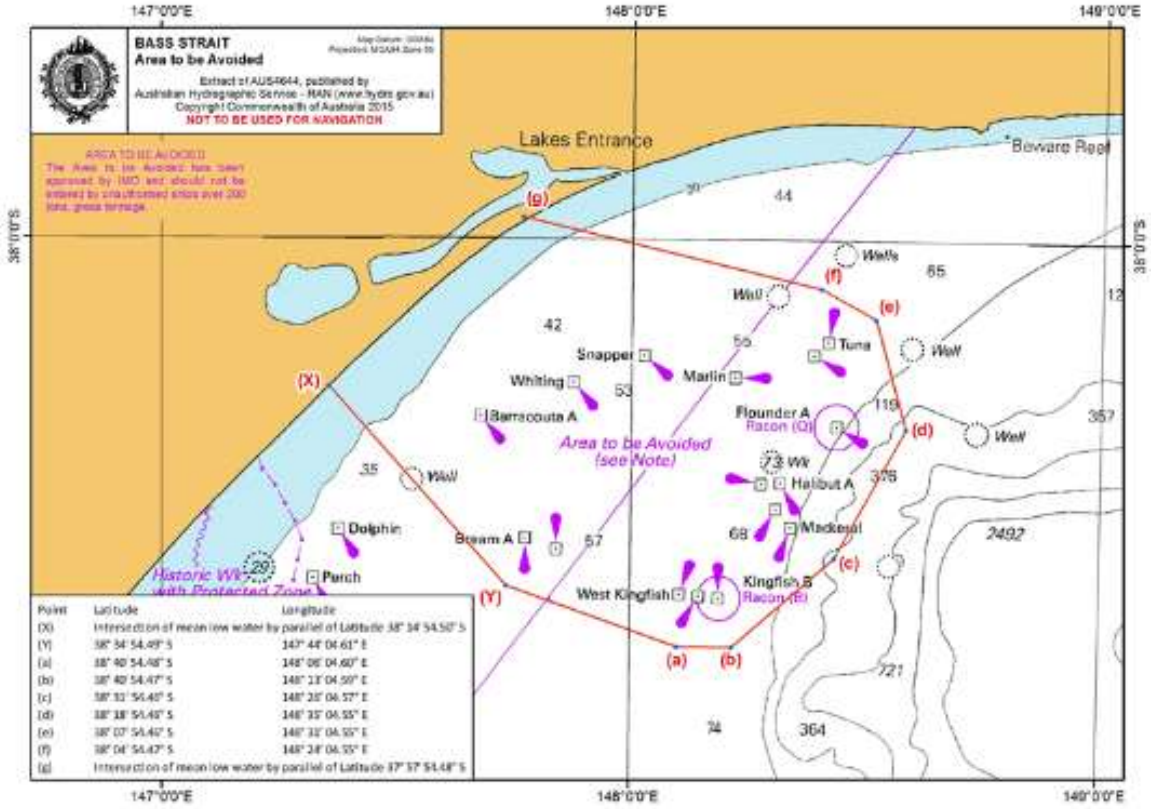

Figure A-72 Bass Strait ATBA (ABF, 2019)

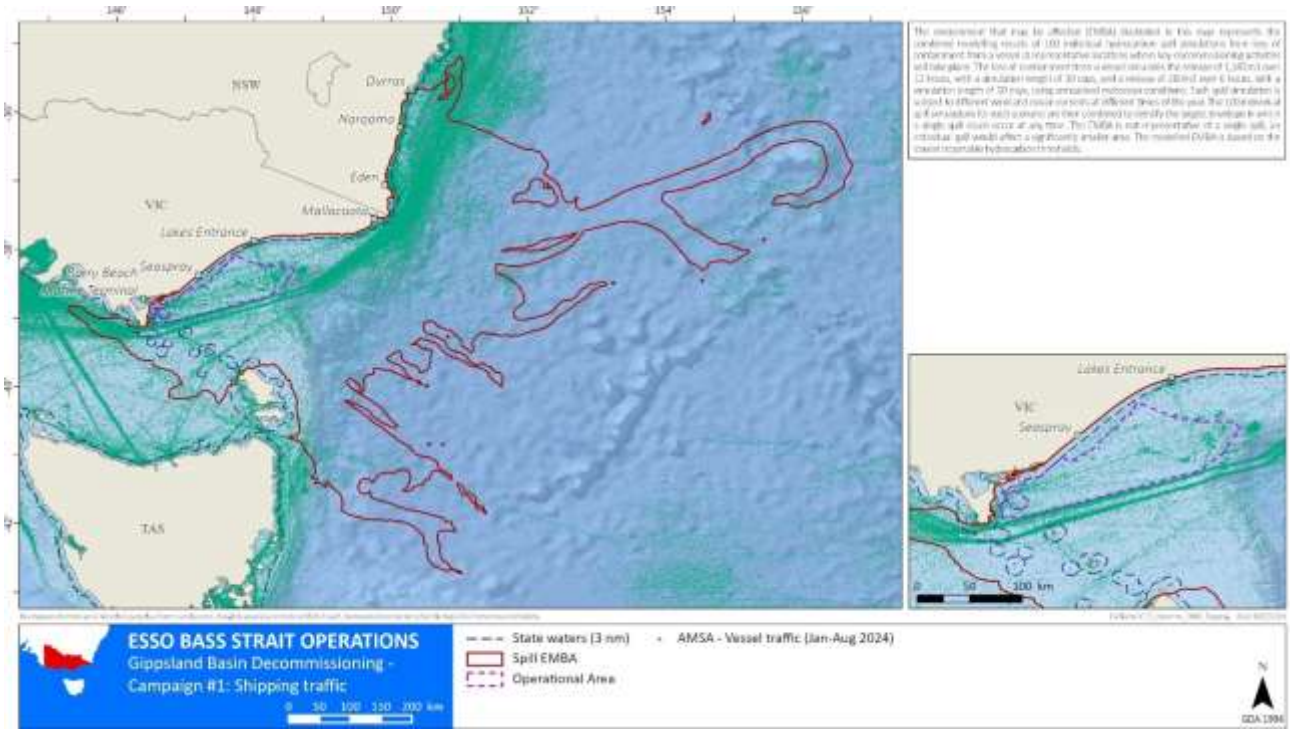

Figure A-73 Vessel traffic within the EMBA based on January – August 2024 AMSA data

A.1.6.12 Defence

The Australian Defence Force conducts a range of training, research activities, and preparatory operations in Australian waters (Figure A-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 (New South Wales).

Primary training locations within the EMBA include the east Australia exercise area off the south coast of New South Wales.

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 Wilsons Promontory.

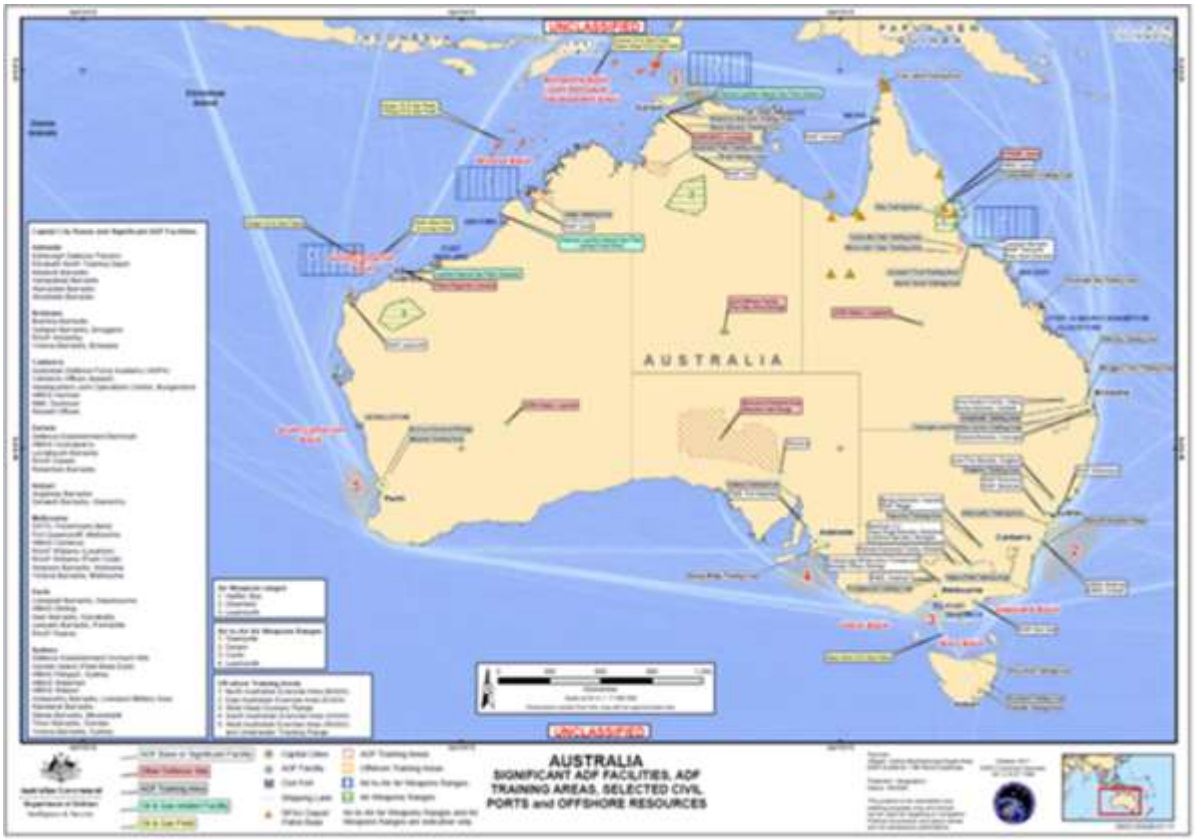

Figure A-74 Significant defence bases and facilities (Department of Defence, 2014)

Appendix B: EPBC Act Listed Species in the OA and EMBA

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

Scientific name	Common name	Threatened species	Migratory species	Listed marine species	BIA		Type of presence
					OA	EMBA	
Fish							
Acentronura tentaculata	Shortpouch pygmy pipehorse			✓			MO
Cosmocampus howensis	Lord Howe pipefish			✓			MO
Epinephelus daemelii	Black rockcod	V					LO
Galaxiella pusilla	Eastern dwarf galaxias	E					KO
Heraldia nocturna	Upside-down pipefish			✓			MO
Hippocampus abdominalis	Big-belly seahorse			✓			MO
Hippocampus breviceps	Short-head seahorse			✓			MO
Hippocampus minotaur	Bullneck seahorse			✓			MO
Hippocampus whitei	White's seahorse	E		✓			MO
Histiogamphelus briggsii	Crested pipefish			✓			MO
Histiogamphelus cristatus	Rhino pipefish			✓			MO
Hoplostethus atlanticus	Orange roughy	CD					LO
Hypselognathus rostratus	Knifesnout pipefish			✓			MO
Kaupus costatus	Deepbody pipefish, deep-bodied pipefish			✓			MO

Scientific name	Common name	Threatened species	Migratory species	Listed marine species	BIA		Type of presence
					OA	EMBA	
Kimblaeus bassensis	Trawl pipefish, Bass Strait pipefish			✓			MO
Leptoichthys fistularius	Brushtail pipefish			✓			MO
Lissocampus caudalis	Australian smooth pipefish			✓			MO
Lissocampus runa	Javelin pipefish			✓			MO
Maroubra perserrata	Sawtooth pipefish			✓			MO
Mitotichthys mollisoni	Mollison's pipefish			✓			MO
Mitotichthys semistriatus	Halfbanded pipefish			✓			MO
Mitotichthys tuckeri	Tucker's pipefish			✓			MO
Mordacia praecox	Non-parasitic lamprey	E					LO
Notiocampus ruber	Red pipefish			✓			MO
Phycodurus eques	Leafy seadragon			✓			MO
Phyllopteryx taeniolatus	Common seadragon			✓			MO
Prototroctes maraena	Australian grayling	V					KO
Pugnaso curtirostris	Pugnose pipefish			✓			MO
Rexea solandri (eastern Australian population)	Eastern gemfish	CD					LO
Seriolella brama	Blue warehou	CD					KO

Scientific name	Common name	Threatened species	Migratory species	Listed marine species	BIA		Type of presence
					OA	EMBA	
Solegnathus robustus	Robust pipehorse			✓			MO
Solegnathus spinosissimus	Spiny pipehorse			✓			MO
Solenostomus cyanopterus	Robust ghostpipefish			✓			MO
Stigmatopora argus	Spotted pipefish			✓			MO
Stigmatopora nigra	Widebody pipefish			✓			MO
Stipecampus cristatus	Ringback pipefish			✓			MO
Syngnathoides biaculeatus	Double-end pipehorse			✓			MO
Urocampus carinirostris	Hairy pipefish			✓			MO
Vanacampus margaritifer	Mother-of-pearl pipefish			✓			MO
Vanacampus phillipi	Port Phillip pipefish			✓			MO
Vanacampus poecilolaemus	Longsnout pipefish			✓			MO

Threatened Species:
V Vulnerable
E Endangered
CD Conservation Dependant

Type of Presence:
MO Species or species habitat may occur within the area
LO Species or species habitat likely to occur within the area
KO Species or species habitat known to occur within the area

Note: Shaded species occur in both the OA and the EMBA. Non shaded species occur only in the EMBA.

Note: BIA spatial data has undergone revision, and some changes were not detected by the PMST. Where gaps were identified, data has been updated to align with information from the AMSIS.

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

Scientific name	Common name	Threatened species	Migratory species	Listed marine species	BIA		Type of presence
					OA	EMBA	
Sharks and Rays							
Carcharias taurus	Grey nurse shark (east coast population)	CE	✓			f, r	KO
Carcharodon carcharias	Great white shark	V	✓		b, f	b, f	KO
Centrophorus harrissoni	Harrisson's dogfish	CD					LO
Carcharhinus longimanus	Oceanic whitetip shark		✓				MO
Centrophorus uyato	Little gulper shark	CD					LO
Galeorhinus galeus	School shark	CD					LO
Isurus oxyrinchus	Shortfin mako		✓				LO
Lamna nasus	Porbeagle		✓				LO
Mobula birostris	Giant manta ray		✓				KO
Rhincodon typus	Whale shark	V	✓				MO
Sphyrna lewini	Scalloped hammerhead	CD					MO

Threatened Species:
V Vulnerable
CE Critically Endangered
CD Conservation Dependant

Type of Presence:
MO Species or species habitat may occur within the area
LO Species or species habitat likely to occur within the area
KO Species or species habitat known to occur within the area

Biologically Important Areas:
b Breeding
f Foraging
m Migration

Scientific name	Common name	Threatened species	Migratory species	Listed marine species	BIA		Type of presence
					OA	EMBA	
				r Reproduction			

Note: Shaded species occur in both the OA and the EMBA. Non shaded species occur only in the EMBA.

Note: BIA spatial data has undergone revision, and some changes were not detected by the PMST. Where gaps were identified, data has been updated to align with information from the AMSIS.

Table B-3 EPBC Act listed seabird and shorebird species or species habitat that may occur within the OA and EMBA

Scientific name	Common name	Threatened species	Migratory species	Listed marine species	BIA		Type of presence
					OA	EMBA	
Seabirds							
Albatross							
Diomedea antipodensis	Antipodean albatross	V	✓ (M)	✓	f	f	FKO
Diomedea antipodensis gibsoni	Gibson's albatross	V		✓			FLO
Diomedea epomophora	Southern royal albatross	V	✓ (M)	✓			FLO
Diomedea exulans	Wandering albatross	V	✓ (M)	✓	f	f	FKO
Diomedea sanfordi	Northern royal albatross	E	✓ (M)	✓			FLO
Phoebetria fusca	Sooty albatross	V	✓ (M)	✓			LO
Thalassarche bulleri	Buller's albatross	V	✓ (M)	✓	f	f	FKO
Thalassarche bulleri platei	Northern Buller's albatross	V		✓			FLO
Thalassarche carteri	Indian Yellow-nosed albatross	V	✓ (M)	✓	f	f	FKO

Scientific name	Common name	Threatened species	Migratory species	Listed marine species	BIA		Type of presence
					OA	EMBA	
Thalassarche cauta	Shy albatross	E	✓ (M)	✓	f	f	FLO
Thalassarche chrysostoma	Grey-headed albatross	E	✓ (M)	✓			MO
Thalassarche eremita	Chatham albatross	E	✓ (M)	✓			FMO
Thalassarche impavida	Campbell albatross, Campbell black-browed albatross	V	✓ (M)	✓	f	f	FKO
Thalassarche melanophris	Black-browed albatross	V	✓ (M)	✓	f	f	FKO
Thalassarche salvini	Salvin's albatross	V	✓ (M)	✓			FLO
Thalassarche steadi	White-capped albatross	V	✓ (M)	✓		f	FKO
Petrels							
Fregetta grallaria grallaria	White-bellied storm petrel (Tasman Sea)	V					LO
Halobaena caerulea	Blue petrel	V		✓			MO
Macronectes giganteus	Southern giant petrel	E	✓ (M)	✓		f	FLO
Macronectes halli	Northern giant petrel	V	✓ (M)	✓		f	FLO
Oceanites oceanites	Wilson's storm petrel					m	MKO
Pelagodroma marina	White-faced storm petrel			✓	f	b, f	BKO
Pelecanoides urinatrix	Common diving petrel			✓	f	b,f	BKO
Pterodroma cervicalis	White-necked petrel			✓			BLO

Scientific name	Common name	Threatened species	Migratory species	Listed marine species	BIA		Type of presence
					OA	EMBA	
Pterodroma heraldica	Herald petrel	CE					LO
Pterodroma leucoptera leucoptera	Gould's petrel	E		✓			MO
Pterodroma mollis	Soft-plumaged petrel	V		✓			MO
Pterodroma neglecta neglecta	Kermadec petrel (western)	V					FMO
Procellaria parkinsoni	Black petrel					f	FLO
Pterodroma macroptera	Great-winged petrel					f	FLO
Shearwaters							
Ardenna carneipes	Flesh-footed shearwater		✓ (M)	✓		f	FKO
Ardenna grisea	Sooty shearwater	V	✓ (M)	✓		f, b	BKO
Ardenna pacifica	Wedge-tailed shearwater		✓ (M)	✓		b	BKO
Ardenna tenuirostris	Short-tailed shearwater		✓ (M)	✓	f	f, b	BKO
Calonectris leucomelas	Streaked shearwater		✓ (M)	✓			LO
Shorebirds and other seabirds							
Actitis hypoleucos	Common sandpiper		✓ (W)	✓			KO
Apus pacificus	Fork-tailed swift		✓ (M)	✓			LO
Anous stolidus	Common noddy		✓ (M)	✓			MO

Scientific name	Common name	Threatened species	Migratory species	Listed marine species	BIA		Type of presence
					OA	EMBA	
Anthochaera phrygia	Regent honeyeater	CE					KO
Aphelocephala leucopsis	Southern whiteface	V					KO
Arenaria interpres	Ruddy turnstone	V	✓ (W)	✓			RKO
Aquila audax fleayi	Tasmanian wedge-tailed eagle	E					BLO
Botaurus poiciloptilus	Australasian bittern	E					KO
Bubulcus ibis	Cattle egret						MO
Calidris acuminata	Sharp-tailed sandpiper	V	✓ (W)	✓			RKO
Calidris alba	Sanderling		✓ (W)	✓			RKO
Calidris canutus	Red knot	V	✓ (W)	✓			KO
Calidris ferruginea	Curlew sandpiper	CE	✓ (W)	✓			KO
Calidris melanotos	Pectoral sandpiper		✓ (W)	✓			KO
Calidris pugnax	Ruff		✓ (W)	✓			RKO
Calidris ruficollis	Red-necked stint		✓ (W)	✓			RKO
Calidris tenuirostris	Great knot	V	✓ (W)	✓			RKO
Callocephalon fimbriatum	Gang-gang cockatoo	E					KO
Calyptorhynchus lathami lathami	South-eastern glossy black cockatoo	V					KO

Scientific name	Common name	Threatened species	Migratory species	Listed marine species	BIA		Type of presence
					OA	EMBA	
Charadrius bicinctus	Double-banded plover		✓ (W)	✓			RKO
Charadrius leschenaultii	Greater sand plover	V	✓ (W)	✓			KO
Charadrius mongolus	Lesser sand plover	E	✓ (W)	✓			RKO
Charadrius ruficapillus	Red-capped plover			✓			RKO
Charadrius veredus	Oriental plover		✓ (W)	✓			KO
Chroicocephalus novaehollandiae	Silver gull			✓			BKO
Climacteris picumnus victoriae	Brown treecreeper (south-eastern)	V					KO
Cuculus optatus	Oriental cuckoo, Horsfield's cuckoo		✓ (T)				KO
Dasyornis brachypterus	Eastern bristlebird	E					KO
Eudyptula minor	Little penguin			✓		f, b	BKO
Falco hypoleucos	Grey falcon	V					LO
Fregata ariel	Lesser frigatebird		✓ (M)				LO
Fregata minor	Great frigatebird		✓ (M)	✓			MO
Gallinago hardwickii	Latham's snipe	V	✓ (W)	✓			KO
Gallinago megala	Swinhoe's snipe		✓ (W)	✓			RLO
Gallinago stenura	Pin-tailed snipe		✓ (W)	✓			KO

Scientific name	Common name	Threatened species	Migratory species	Listed marine species	BIA		Type of presence
					OA	EMBA	
Grantiella picta	Painted honeyeater	V					KO
Haliaeetus leucogaster	White-bellied sea eagle			✓			BKO
Himantopus himantopus	Pied stilt			✓			RKO
Hirundapus caudacutus	White-throated needletail	V	✓ (T)	✓			KO
Hydroprogne caspia	Caspian tern		✓ (M)	✓			BKO
Larus pacificus	Pacific gull			✓			BKO
Lathamus discolor	Swift parrot	CE		✓			KO
Limicola falcinellus	Broad-billed sandpiper		✓ (W)	✓			RKO
Limosa lapponica	Bar-tailed godwit		✓ (W)	✓			KO
Limosa lapponica baueri	Nunivak bar-tailed godwit	E					KO
Limosa limosa	Black-tailed godwit	E	✓ (W)	✓			RKO
Melanodryas cucullata cucullata	South-eastern hooded robin	E					LO
Merops ornatus	Rainbow bee-eater			✓			MO
Monarcha melanopsis	Black-faced monarch		✓ (T)	✓			KO
Motacilla flava	Yellow wagtail		✓ (T)	✓			MO
Myiagra cyanoleuca	Satin flycatcher		✓ (T)	✓			KO

Scientific name	Common name	Threatened species	Migratory species	Listed marine species	BIA		Type of presence
					OA	EMBA	
Neophema chrysogaster	Orange-bellied parrot	CE		✓			KO
Neophema chrysostoma	Blue-winged parrot	V		✓			KO
Numenius madagascariensis	Eastern curlew, far eastern curlew	CE	✓ (W)	✓			KO
Numenius minutus	Little curlew, little whimbrel		✓ (W)	✓			RLO
Numenius phaeopus	Whimbrel		✓ (W)	✓			RKO
Onychoprion fuscatus	Sooty tern			✓			RKO
Pachyptila turtur	Fairy prion	V		✓			KO
Pachyptila turtur subantarctica	Fairy prion (southern)	V					KO
Pandion haliaetus	Osprey		✓ (W)	✓			KO
Phaethon lepturus	White-tailed tropicbird		✓ (M)	✓			MO
Pardalotus quadragintus	Forty-spotted pardalote	E					FMO
Phalacrocorax fuscescens	Black-faced cormorant			✓		f	FKO
Pluvialis fulva	Pacific golden plover		✓ (W)	✓			RKO
Pluvialis squatarola	Grey plover	V	✓ (W)	✓			RKO
Pycnoptilus floccosus	Pilotbird	V					KO
Recurvirostra novaehollandiae	Red-necked avocet			✓			RKO

Scientific name	Common name	Threatened species	Migratory species	Listed marine species	BIA		Type of presence
					OA	EMBA	
Rhipidura rufifrons	Rufous fantail		✓ (T)	✓			KO
Rostratula australis	Australian painted snipe	E		✓			KO
Stagonopleura guttata	Diamond firetail	V					KO
Stercorarius antarcticus	Brown skua			✓			MO
Sterna striata	White-fronted tern			✓			BKO
Sternula albifrons	Little tern		✓ (M)	✓			BKO
Sternula nereis	Fairy tern			✓			BKO
Sternula nereis nereis	Australian fairy tern	V					KO
Symposiachrus trivirgatus	Spectacled monarch		✓ (T)	✓			KO
Thalasseus bergii	Greater crested tern		✓ (W)	✓		f, b	BKO
Thinornis cucullatus	Hooded plover			✓			KO
Thinornis cucullatus cucullatus	Eastern hooded plover	V		✓			KO
Tringa brevipes	Grey-tailed tattler		✓ (W)	✓			RKO
Tringa glareola	Wood sandpiper		✓ (W)	✓			RKO
Tringa nebularia	Common freenshank	E	✓ (W)	✓			KO
Tringa stagnatilis	Marsh sandpiper		✓ (W)	✓			RKO

Scientific name	Common name	Threatened species	Migratory species	Listed marine species	BIA		Type of presence
					OA	EMBA	
Xenus cinereus	Terek sandpiper		✓ (W)	✓			RKO

Threatened Species:	Type of Presence:
V Vulnerable	MO Species or species habitat may occur within the area
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
f Migration	BLO Breeding likely to occur within the area
Migratory Species:	BKO Breeding known to occur within the area
M Marine	RLO Roosting likely to occur within the area
W Wetland	RKO Roosting known to occur within the area
T Terrestrial	MKO Migration route known to occur within the area

Note: Shaded species occur in both the OA and the EMBA. Non shaded species occur only in the EMBA.

Note: BIA spatial data has undergone revision, and some changes were not detected by the PMST. Where gaps were identified, data has been updated to align with information from the AMSIS.

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

Scientific name	Common name	Threatened species	Migratory species	Listed marine species	BIA		Type of presence
					OA	EMBA	
Whales							
Balaenoptera acutorostrata	Minke whale						MO

Scientific name	Common name	Threatened species	Migratory species	Listed marine species	BIA		Type of presence
					OA	EMBA	
Balaenoptera bonaerensis	Antarctic minke whale		✓				LO
Balaenoptera borealis	Sei whale	V	✓				FLO
Balaenoptera edeni	Bryde's whale		✓				LO
Balaenoptera musculus	Blue whale	E	✓				LO
Balaenoptera musculus brevicauda	Pygmy blue whale	E	✓		f	f	KO
Balaenoptera physalus	Fin whale	V	✓				LO
Berardius arnuxii	Arnoux's beaked whale						MO
Caperea marginata	Pygmy right whale		✓				FLO
Eubalaena australis	Southern right whale	E	✓				KO
Feresa attenuata	Pygmy killer whale						MO
Globicephala macrorhynchus	Short-finned pilot whale						MO
Globicephala melas	Long-finned pilot whale						MO
Hyperoodon planifrons	Southern bottlenose whale						MO
Kogia breviceps	Pygmy sperm whale						MO
Kogia sima	Dwarf sperm whale						MO
Megaptera novaeangliae	Humpback whale		✓			m	KO

Scientific name	Common name	Threatened species	Migratory species	Listed marine species	BIA		Type of presence
					OA	EMBA	
Mesoplodon bowdoini	Andrew's beaked whale						MO
Mesoplodon densirostris	Blainville's beaked whale						MO
Mesoplodon ginkgodens	Gingko-toothed beaked whale						MO
Mesoplodon grayi	Gray's beaked whale						MO
Mesoplodon hectori	Hector's beaked whale						MO
Mesoplodon layardii	Strap-toothed beaked whale						MO
Mesoplodon mirus	True's beaked whale						MO
Orcinus orca	Killer whale		✓				LO
Peponocephala electra	Melon-headed whale						MO
Physeter macrocephalus	Sperm whale		✓				MO
Pseudorca crassidens	False killer whale						LO
Tasmacetus shepherdi	Shepherd's beaked whale						MO
Ziphius cavirostris	Cuvier's beaked whale						MO
Dolphins							
Delphinus delphis	Common dolphin						MO
Grampus griseus	Risso's dolphin						MO

Scientific name	Common name	Threatened species	Migratory species	Listed marine species	BIA		Type of presence
					OA	EMBA	
Lagenorhynchus obscurus	Dusky dolphin		✓				LO
Lissodelphis peronii	Southern right whale dolphin						MO
Steno bredanensis	Rough-toothed dolphin						MO
Tursiops aduncus	Indian Ocean bottlenose dolphin					b	LO
Tursiops truncatus s. str.	Bottlenose dolphin						MO

Threatened Species:
V Vulnerable
E Endangered
Biologically Important Areas:
b breeding
f foraging
m migration

Type of Presence:
MO Species or species habitat may occur within the area
LO Species or species habitat likely to occur within the area
KO Species or species habitat known to occur within the area
FLO Foraging, feeding or related behaviour likely to occur within the area

Note: Shaded species occur in both the OA and the EMBA. Non shaded species occur only in the EMBA.

Note: BIA spatial data has undergone revision, and some changes were not detected by the PMST. Where gaps were identified, data has been updated to align with information from the AMSIS.

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

Scientific name	Common name	Threatened species	Migratory species	Listed marine species	BIA		Type of presence
					OA	EMBA	
Seals							

Scientific name	Common name	Threatened species	Migratory species	Listed marine species	BIA		Type of presence
					OA	EMBA	
Arctocephalus forsteri	New Zealand fur seal			✓			MO
Arctocephalus pusillus	Australian fur seal			✓			BKO
Threatened Species: n/a Biologically Important Areas: n/a	Type of Presence: MO Species or species habitat may occur within the area BKO Breeding known to occur within the area						

Note: Shaded species occur in both the OA and the EMBA. Non shaded species occur only in the EMBA.

Note: BIA spatial data has undergone revision, and some changes were not detected by the PMST. Where gaps were identified, data has been updated to align with information from the AMSIS.

Table B-6 EPBC Act listed marine reptiles or species habitat that may occur within the OA and EMBA

Scientific name	Common name	Threatened species	Migratory species	Listed marine species	BIA		Type of presence
					OA	EMBA	
Turtles							
Caretta caretta	Loggerhead turtle	E	✓	✓			FKO
Chelonia mydas	Green turtle	V	✓	✓			FKO
Dermochelys coriacea	Leatherback turtle	E	✓	✓			FKO
Eretmochelys imbricata	Hawksbill turtle	V	✓	✓			FKO
Natator depressus	Flatback turtle	V	✓	✓			FKO
Threatened Species:	Type of Presence:						

Scientific name	Common name	Threatened species	Migratory species	Listed marine species	BIA		Type of presence
					OA	EMBA	
V Vulnerable E Endangered	FKO Foraging, feeding or related behaviour known to occur within the area						

Note: Shaded species occur in both the OA and the EMBA. Non shaded species occur only in the EMBA.

Note: BIA spatial data has undergone revision, and some changes were not detected by the PMST. Where gaps were identified, data has been updated to align with information from the AMSIS.

Appendix C: EPBC Act Protected Matters Report – Operational Area

EPBC Act Protected Matters Report

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

Report created: 11-Dec-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:	66
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:	13
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 likely to occur within area
Pterodroma leucoptera leucoptera Gould's Petrel, Australian Gould's Petrel [26033]	Endangered	Species or species habitat may occur within area
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 known to occur within area
Chelonia mydas		
Green Turtle [1765]	Vulnerable	Species or species habitat may occur within area
Dermochelys coriacea		
Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area
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 likely to occur within area
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area
Thalassarche 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 known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat may occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area
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]		Species or species habitat may occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
Migratory Wetlands Species		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area

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 likely to 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 caudalis Australian Smooth Pipefish, Smooth Pipefish [66249]		Species or species habitat may occur within area
Lissocampus runa Javelin Pipefish [66251]		Species or species habitat may occur within area
Maroubra perserrata Sawtooth Pipefish [66252]		Species or species habitat may occur within area
Mitotichthys semistriatus Halfbanded Pipefish [66261]		Species or species habitat may occur within area
Mitotichthys tuckeri Tucker's Pipefish [66262]		Species or species habitat may occur within area
Notiocampus ruber Red Pipefish [66265]		Species or species habitat may occur within area
Phycodurus eques Leafy Seadragon [66267]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Phyllopteryx taeniolatus Common Seadragon, Weedy Seadragon [66268]		Species or species habitat may occur within area
Pugnaso curtirostris Pugnose Pipefish, Pug-nosed Pipefish [66269]		Species or species habitat may occur within area
Solegnathus robustus Robust Pipehorse, Robust Spiny Pipehorse [66274]		Species or species habitat may occur within area
Solegnathus spinosissimus Spiny Pipehorse, Australian Spiny Pipehorse [66275]		Species or species habitat may occur within area
Stigmatopora argus Spotted Pipefish, Gulf Pipefish, Peacock Pipefish [66276]		Species or species habitat may occur within area
Stigmatopora nigra Widebody Pipefish, Wide-bodied Pipefish, Black Pipefish [66277]		Species or species habitat may occur within area
Stipecampus cristatus Ringback Pipefish, Ring-backed Pipefish [66278]		Species or species habitat may occur within area
Syngnathoides biaculeatus Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]		Species or species habitat may occur within area
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

Scientific Name	Threatened Category	Presence Text
[Vanacampus poecilolaemus](#) Longsnout Pipefish, Australian Long-snout Pipefish, Long-snouted Pipefish [66285]		Species or species habitat may occur within area
Mammal		
[Arctocephalus forsteri](#) Long-nosed Fur-seal, New Zealand Fur-seal [20]		Species or species habitat may occur within area
[Arctocephalus pusillus](#) Australian Fur-seal, Australo-African Fur-seal [21]		Species or species habitat likely to occur within area
Reptile		
[Caretta caretta](#) Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area
[Chelonia mydas](#) Green Turtle [1765]	Vulnerable	Species or species habitat may occur within area
[Dermochelys coriacea](#) Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area

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

Current Scientific Name	Status	Type of Presence
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat likely to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Berardius arnuxii Arnoux's Beaked Whale [70]		Species or species habitat may occur within area
Caperea marginata Pygmy Right Whale [39]		Foraging, feeding or related behaviour likely to occur within area
Delphinus delphis Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
Eubalaena australis Southern Right Whale [40]	Endangered	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

Current Scientific Name	Status	Type of Presence
[Lagenorhynchus obscurus](#) Dusky Dolphin [43]		Species or species habitat likely to occur within area
[Lissodelphis peronii](#) Southern Right Whale Dolphin [44]		Species or species habitat may occur within area
[Megaptera novaeangliae](#) Humpback Whale [38]		Species or species habitat known to occur within area
[Mesoplodon bowdoini](#) Andrew's Beaked Whale [73]		Species or species habitat may occur within area
[Mesoplodon densirostris](#) Blainville's Beaked Whale, Dense-beaked Whale [74]		Species or species habitat may occur within area
[Mesoplodon hectori](#) Hector's Beaked Whale [76]		Species or species habitat may occur within area
[Mesoplodon layardii](#) Strap-toothed Beaked Whale, Strap-toothed Whale, Layard's Beaked Whale [25556]		Species or species habitat may occur within area
[Mesoplodon mirus](#) True's Beaked Whale [54]		Species or species habitat may occur within area
[Orcinus orca](#) Killer Whale, Orca [46]		Species or species habitat likely to occur within area
[Physeter macrocephalus](#) Sperm Whale [59]		Species or species habitat may occur within area
[Pseudorca crassidens](#) False Killer Whale [48]		Species or species habitat likely to occur within area

Current Scientific Name	Status	Type of Presence
Tursiops aduncus Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area
Ziphius cavirostris Cuvier's Beaked Whale, Goose-beaked Whale [56]		Species or species habitat may occur within area

Extra Information

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		Completed
Blue Marlin Offshore Wind Energy Project	2023/09532		Completed
Gippsland Offshore Wind Farm Marine Survey Investigations	2023/09682		Completed
Gippsland Regional Port Project	2020/8667		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
Controlled action			

Title of referral	Reference	Referral Outcome	Assessment Status
Controlled action			
Star of the South Offshore Wind Farm Project	2020/8650	Controlled Action	Guidelines Issued
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
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

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
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
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	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
		(Particular Manner)	
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
Northern Fields 3D Seismic Survey	2001/140	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

Title of referral	Reference	Referral Outcome	Assessment Status
Referral decision			
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

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

Scientific Name	Behaviour	Presence
Thalassarche melanophris Black-browed Albatross [66472]	Foraging	Known to occur
Thalassarche melanophris impavida Campbell Albatross [82449]	Foraging	Known to occur
Sharks		
Carcharodon carcharias White Shark [64470]	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

Caveat

1 PURPOSE

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

The report contains the mapped locations of:

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

2 DISCLAIMER

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

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

3 DATA SOURCES

Threatened ecological communities

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

Threatened, migratory and marine species

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

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

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

4 LIMITATIONS

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

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

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

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

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

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

Acknowledgements

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

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

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

Please feel free to provide feedback via the Contact us page.

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Appendix D: EPBC Act Protected Matters Report – Environment That May Be Affected

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: 24-Jul-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	2
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	2
Listed Threatened Ecological Communities:	19
Listed Threatened Species:	160
Listed Migratory Species:	89

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:	28
Commonwealth Heritage Places:	3
Listed Marine Species:	135
Whales and Other Cetaceans:	36
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	7
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	128
Regional Forest Agreements:	5
Nationally Important Wetlands:	31
EPBC Act Referrals:	124
Key Ecological Features (Marine):	5
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	Buffer Status
Corner inlet	Within Ramsar site	In feature area
Gippsland lakes	Within Ramsar site	In feature area

Commonwealth Marine Area [Resource Information]

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

Feature Name	Buffer Status
Commonwealth Marine Areas (EPBC Act)	In feature area
Commonwealth Marine Areas (EPBC Act)	In feature area

Listed Threatened 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	Buffer Status
Araluen Scarp Grassy Forest	Endangered	Community may occur within area	In feature 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	In feature area
Brogo Vine Forest of the South East Corner Bioregion	Endangered	Community likely to occur within area	In feature area
Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community	Endangered	Community likely to occur within area	In feature area
Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland	Endangered	Community likely to occur within area	In feature area
Giant Kelp Marine Forests of South East Australia	Endangered	Community may occur within area	In feature area

Community Name	Threatened Category	Presence Text	Buffer Status
Gippsland Red Gum (Eucalyptus tereticornis subsp. mediana) Grassy Woodland and Associated Native Grassland	Critically Endangered	Community likely to occur within area	In feature area
Illawarra and south coast lowland forest and woodland ecological community	Critically Endangered	Community likely to occur within area	In feature area
Illawarra-Shoalhaven Subtropical Rainforest of the Sydney Basin Bioregion	Critically Endangered	Community likely to occur within area	In feature area
Littoral Rainforest and Coastal Vine Thickets of Eastern Australia	Critically Endangered	Community likely to occur within area	In feature area
Lowland Grassy Woodland in the South East Corner Bioregion	Critically Endangered	Community likely to occur within area	In feature area
Lowland Native Grasslands of Tasmania	Critically Endangered	Community likely to occur within area	In feature area
Natural Damp Grassland of the Victorian Coastal Plains	Critically Endangered	Community likely to occur within area	In feature area
Natural Temperate Grassland of the South Eastern Highlands	Critically Endangered	Community may occur within area	In buffer area only
River-flat eucalypt forest on coastal floodplains of southern New South Wales and eastern Victoria	Critically Endangered	Community likely to occur within area	In feature area
Subtropical and Temperate Coastal Saltmarsh	Vulnerable	Community likely to occur within area	In feature area
Tasmanian Forests and Woodlands dominated by black gum or Brookers gum (Eucalyptus ovata / E. brookeriana)	Critically Endangered	Community likely to occur within area	In feature area
Tasmanian white gum (Eucalyptus viminalis) wet forest	Critically Endangered	Community likely to occur within area	In feature area
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered	Community may occur within area	In feature area

Listed Threatened Species [Resource Information]

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

Scientific Name	Threatened Category	Presence Text	Buffer Status
BIRD			
Anthochaera phrygia			
Regent Honeyeater [82338]	Critically Endangered	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Aphelocephala leucopsis](#) Southern Whiteface [529]	Vulnerable	Species or species habitat known to occur within area	In feature area
[Aquila audax fleayi](#) Tasmanian Wedge-tailed Eagle, Wedge-tailed Eagle (Tasmanian) [64435]	Endangered	Breeding likely to occur within area	In feature area
[Ardenna grisea](#) Sooty Shearwater [82651]	Vulnerable	Breeding known to occur within area	In feature area
[Arenaria interpres](#) Ruddy Turnstone [872]	Vulnerable	Roosting known to occur within area	In feature area
[Botaurus poiciloptilus](#) Australasian Bittern [1001]	Endangered	Species or species habitat known to occur within area	In feature area
[Calidris acuminata](#) Sharp-tailed Sandpiper [874]	Vulnerable	Roosting known to occur within area	In feature area
[Calidris canutus](#) Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area	In feature area
[Calidris ferruginea](#) Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area	In feature area
[Calidris tenuirostris](#) Great Knot [862]	Vulnerable	Roosting known to occur within area	In feature area
[Callocephalon fimbriatum](#) Gang-gang Cockatoo [768]	Endangered	Species or species habitat known to occur within area	In feature area
[Calyptorhynchus lathami lathami](#) South-eastern Glossy Black-Cockatoo [67036]	Vulnerable	Species or species habitat known to occur within area	In feature area
[Charadrius leschenaultii](#) Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area	In feature area
Climacteris picumnus victoriae Brown Treecreeper (south-eastern) [67062]	Vulnerable	Species or species habitat known to occur within area	In feature area
Dasyornis brachypterus Eastern Bristlebird [533]	Endangered	Species or species habitat known to occur within area	In feature area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea antipodensis gibsoni Gibson's Albatross [82270]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In feature area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Fregetta grallaria grallaria White-bellied Storm-Petrel (Tasman Sea), White-bellied Storm-Petrel (Australasian) [64438]	Vulnerable	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat known to occur within area	In feature area
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat known to occur within area	In feature area
Halobaena caerulea Blue Petrel [1059]	Vulnerable	Species or species habitat may occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area	In feature area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Limosa lapponica baueri Nunivak Bar-tailed Godwit, Western Alaskan Bar-tailed Godwit [86380]	Endangered	Species or species habitat known to occur within area	In feature area
Limosa limosa Black-tailed Godwit [845]	Endangered	Roosting known to occur within area	In feature area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In feature area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Melanodryas cucullata cucullata South-eastern Hooded Robin, Hooded Robin (south-eastern) [67093]	Endangered	Species or species habitat likely to occur within area	In feature area
Neophema chrysogaster Orange-bellied Parrot [747]	Critically Endangered	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Neophema chrysostoma Blue-winged Parrot [726]	Vulnerable	Species or species habitat known to occur within area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Pachyptila turtur subantarctica Fairy Prion (southern) [64445]	Vulnerable	Species or species habitat known to occur within area	In feature area
Pardalotus quadragintus Forty-spotted Pardalote [418]	Endangered	Foraging, feeding or related behaviour may occur within area	In feature area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Pluvialis squatarola Grey Plover [865]	Vulnerable	Roosting known to occur within area	In feature area
Pterodroma heraldica Herald Petrel [66973]	Critically Endangered	Species or species habitat likely to occur within area	In feature area
Pterodroma leucoptera leucoptera Gould's Petrel, Australian Gould's Petrel [26033]	Endangered	Breeding known to occur within area	In feature area
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Species or species habitat may occur within area	In feature area
Pterodroma neglecta neglecta Kermadec Petrel (western) [64450]	Vulnerable	Foraging, feeding or related behaviour may occur within area	In feature area
Pycnoptilus floccosus Pilotbird [525]	Vulnerable	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat known to occur within area	In feature area
Stagonopleura guttata Diamond Firetail [59398]	Vulnerable	Species or species habitat known to occur within area	In feature area
Sternula nereis nereis Australian Fairy Tern [82950]	Vulnerable	Species or species habitat known to occur within area	In feature area
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Thalassarche bulleri platei Northern Buller's Albatross, Pacific Albatross [82273]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In feature area
Thalassarche chrysostoma Grey-headed Albatross [66491]	Endangered	Species or species habitat may occur within area	In feature area
Thalassarche eremita Chatham Albatross [64457]	Endangered	Foraging, feeding or related behaviour may occur within area	In feature area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
Thinornis cucullatus cucullatus Eastern Hooded Plover, Eastern Hooded Plover [90381]	Vulnerable	Species or species habitat known to occur within area	In feature area
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat known to occur within area	In feature area
Xenus cinereus Terek Sandpiper [59300]	Vulnerable	Roosting known to occur within area	In feature area
CRUSTACEAN			
Engaeus martigener Furneaux Burrowing Crayfish [67220]	Endangered	Species or species habitat may occur within area	In feature area
Euastacus bidawalus Bidhawal Crayfish, Bidawal Crayfish, East Gippsland Spiny Crayfish [83136]	Endangered	Species or species habitat known to occur within area	In feature area
Euastacus diversus Orbost Spiny Crayfish [66782]	Endangered	Species or species habitat may occur within area	In feature area
FISH			
Epinephelus daemelii Black Rockcod, Black Cod, Saddled Rockcod [68449]	Vulnerable	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Galaxiella pusilla			
Eastern Dwarf Galaxias, Dwarf Galaxias [56790]	Endangered	Species or species habitat known to occur within area	In feature area
Hippocampus whitei			
White's Seahorse, Crowned Seahorse, Sydney Seahorse [66240]	Endangered	Species or species habitat may occur within area	In feature area
Hoplostethus atlanticus			
Orange Roughy, Deep-sea Perch, Red Roughy [68455]	Conservation Dependent	Species or species habitat likely to occur within area	In feature area
Mordacia praecox			
Non-parasitic Lamprey, Precocious Lamprey [81530]	Endangered	Species or species habitat likely to occur within area	In feature area
Prototroctes maraena			
Australian Grayling [26179]	Vulnerable	Species or species habitat known to occur within area	In feature area
Rexea solandri (eastern Australian population)			
Eastern Gemfish [76339]	Conservation Dependent	Species or species habitat likely to occur within area	In feature area
Seriolella brama			
Blue Warehou [69374]	Conservation Dependent	Species or species habitat known to occur within area	In feature area
FROG			
Heleioporus australiacus			
Giant Burrowing Frog [1973]	Vulnerable	Species or species habitat known to occur within area	In feature area
Litoria aurea			
Green and Golden Bell Frog [1870]	Vulnerable	Species or species habitat known to occur within area	In feature 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	In feature area
Litoria watsoni			
Southern Heath Frog, Watson's Tree Frog [91509]	Endangered	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Mixophyes balbus Stuttering Frog, Southern Barred Frog (in Victoria) [1942]	Vulnerable	Species or species habitat known to occur within area	In feature area
Uperoleia martini Martin's Toadlet [1873]	Endangered	Species or species habitat known to occur within area	In feature area
MAMMAL			
Antechinus minimus maritimus Swamp Antechinus (mainland) [83086]	Vulnerable	Species or species habitat known to occur within area	In feature area
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat likely to occur within area	In feature area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Chalinolobus dwyeri Large-eared Pied Bat, Large Pied Bat [183]	Endangered	Species or species habitat known to occur within area	In feature 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	In feature area
Eubalaena australis Southern Right Whale [40]	Endangered	Species or species habitat known to occur within area	In feature area
Isoodon obesulus obesulus Southern Brown Bandicoot (eastern), Southern Brown Bandicoot (south-eastern) [68050]	Endangered	Species or species habitat known to occur within area	In feature area
Mastacomys fuscus mordicus Broad-toothed Rat (mainland), Tooarrana [87617]	Endangered	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Petauroides volans			
Greater Glider (southern and central) [254]	Endangered	Species or species habitat known to occur within area	In feature area
Petaurus australis australis			
Yellow-bellied Glider (south-eastern) [87600]	Vulnerable	Species or species habitat known to occur within area	In feature 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	In feature area
Potorous longipes			
Long-footed Potoroo [217]	Endangered	Species or species habitat known to occur within area	In feature area
Potorous tridactylus trisulcatus			
Long-nosed Potoroo (southern mainland) [86367]	Vulnerable	Species or species habitat known to occur within area	In feature area
Pseudomys fumeus			
Smoky Mouse, Konoom [88]	Endangered	Species or species habitat likely to occur within area	In feature area
Pseudomys novaehollandiae			
New Holland Mouse, Pookila [96]	Vulnerable	Species or species habitat known to occur within area	In feature area
Pteropus poliocephalus			
Grey-headed Flying-fox [186]	Vulnerable	Roosting known to occur within area	In feature area
PLANT			
Acacia caerulescens			
Limestone Blue Wattle, Buchan Blue, Buchan Blue Wattle [21883]	Vulnerable	Species or species habitat known to occur within area	In feature area
Acacia constablei			
Narrabarba Wattle [10798]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Acacia georgensis			
Bega Wattle [9848]	Vulnerable	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Acacia lanigera var. gracilipes [31652]	Endangered	Species or species habitat may occur within area	In feature area
Amphibromus fluitans River Swamp Wallaby-grass, Floating Swamp Wallaby-grass [19215]	Vulnerable	Species or species habitat known to occur within area	In feature area
Astrotricha crassifolia Thick-leaf Star-hair [10352]	Vulnerable	Species or species habitat may occur within area	In feature area
Astrotricha sp. Wingan Inlet (J.A.Jeanes 2268) Wingan Star-hair [85675]	Endangered	Species or species habitat known to occur within area	In feature area
Caladenia caudata Tailed Spider-orchid [17067]	Vulnerable	Species or species habitat may occur within area	In feature area
Caladenia orientalis Eastern Spider Orchid [83410]	Endangered	Species or species habitat known to occur within area	In feature area
Caladenia tessellata Thick-lipped Spider-orchid, Daddy Long-legs [2119]	Vulnerable	Species or species habitat known to occur within area	In feature area
Calochilus pulchellus Pretty Beard Orchid, Pretty Beard-orchid [84677]	Endangered	Species or species habitat known to occur within area	In feature area
Commersonia prostrata Dwarf Kerrawang [87152]	Endangered	Species or species habitat known to occur within area	In feature area
Correa baeuerlenii Chef's Cap [17007]	Vulnerable	Species or species habitat known to occur within area	In feature area
Correa lawrenceana var. genoensis Genoa River Correa [66626]	Endangered	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Corunastylis rhyolitica listed as Genoplesium rhyoliticum			
Pambula Midge-orchid, Rhyolite Midge Orchid [78697]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Corunastylis vernalis listed as Genoplesium vernale			
East Lynne Midge-orchid [78699]	Vulnerable	Species or species habitat known to occur within area	In feature area
Cryptostylis hunteriana			
Leafless Tongue-orchid [19533]	Vulnerable	Species or species habitat known to occur within area	In feature area
Deyeuxia ramosa			
Climbing Bent-grass [87970]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Dianella amoena			
Matted Flax-lily [64886]	Endangered	Species or species habitat known to occur within area	In feature area
Dodonaea procumbens			
Trailing Hop-bush [12149]	Vulnerable	Species or species habitat known to occur within area	In feature area
Eucalyptus stenostoma			
Jillaga Ash [3976]	Endangered	Species or species habitat may occur within area	In feature area
Eucalyptus strzeleckii			
Strzelecki Gum [55400]	Vulnerable	Species or species habitat known to occur within area	In feature area
Genoplesium baueri			
Yellow Gnat-orchid, Bauer's Midge Orchid, Brittle Midge Orchid [7528]	Endangered	Species or species habitat may occur within area	In feature area
Glycine latrobeana			
Clover Glycine, Purple Clover [13910]	Vulnerable	Species or species habitat known to occur within area	In feature area
Haloragis exalata subsp. exalata			
Wingless Raspwort, Square Raspwort [24636]	Vulnerable	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Leionema ralstonii [64926]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Lepidium hyssopifolium Basalt Pepper-cress, Peppercress, Rubble Pepper-cress, Pepperweed [16542]	Endangered	Species or species habitat likely to occur within area	In feature area
Persicaria elatior Knotweed, Tall Knotweed [5831]	Vulnerable	Species or species habitat known to occur within area	In feature area
Pomaderris cotoneaster Cotoneaster Pomaderris [2043]	Endangered	Species or species habitat may occur within area	In feature area
Pomaderris parrisiae Parris' Pomaderris [22119]	Vulnerable	Species or species habitat known to occur within area	In feature area
Prasophyllum affine Jervis Bay Leek Orchid, Culburra Leek-orchid, Kinghorn Point Leek-orchid [2210]	Endangered	Species or species habitat may occur within area	In feature 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	In feature area
Prasophyllum spicatum Dense Leek-orchid [55146]	Vulnerable	Species or species habitat known to occur within area	In feature area
Prostanthera galbraithiae Wellington Mintbush [64959]	Vulnerable	Species or species habitat known to occur within area	In feature area
Pterostylis chlorogramma Green-striped Greenhood [56510]	Vulnerable	Species or species habitat known to occur within area	In feature area
Pterostylis cucullata Leafy Greenhood [15459]	Vulnerable	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Pterostylis tenuissima Swamp Greenhood, Dainty Swamp Orchid [13139]	Vulnerable	Species or species habitat known to occur within area	In feature area
Rhizanthella slateri Eastern Underground Orchid [11768]	Endangered	Species or species habitat may occur within area	In feature area
Rhodamnia rubescens Scrub Turpentine, Brown Malletwood [15763]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Senecio psilocarpus Swamp Fireweed, Smooth-fruited Groundsel [64976]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Spyridium cinereum Tiny Spyridium [13564]	Endangered	Species or species habitat known to occur within area	In feature area
Syzygium paniculatum Magenta Lilly Pilly, Magenta Cherry, Daguba, Scrub Cherry, Creek Lilly Pilly, Brush Cherry [20307]	Vulnerable	Species or species habitat may occur within area	In feature area
Thelymitra epipactoides Metallic Sun-orchid [11896]	Endangered	Species or species habitat known to occur within area	In feature area
Thelymitra matthewsii Spiral Sun-orchid [4168]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Thelymitra orientalis Hoary Sun-orchid [88011]	Critically Endangered	Species or species habitat may occur within area	In buffer area only
Thesium australe Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat known to occur within area	In feature area
Westringia davidii [19079]	Vulnerable	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Xerochrysum palustre Swamp Everlasting, Swamp Paper Daisy [76215]	Vulnerable	Species or species habitat known to occur within area	In feature area
Zieria tuberculata Warty Zieria [56736]	Vulnerable	Species or species habitat known to occur within area	In feature area
REPTILE			
Aprasia parapulchella Pink-tailed Worm-lizard, Pink-tailed Legless Lizard [1665]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Caretta caretta Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area	In feature area
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
Delma impar Striped Legless Lizard, Striped Snake-lizard [1649]	Vulnerable	Species or species habitat may occur within area	In feature area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area	In feature area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
Hoplocephalus bungaroides Broad-headed Snake [1182]	Endangered	Species or species habitat may occur within area	In feature area
Lissolepis coventryi Swamp Skink, Eastern Mourning Skink [84053]	Endangered	Species or species habitat known to occur within area	In feature area

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

Listed Migratory Species			[Resource Information]
Scientific Name	Threatened Category	Presence Text	Buffer Status
Migratory Marine Birds			
Anous stolidus			
Common Noddy [825]		Species or species habitat may occur within area	In feature area
Apus pacificus			
Fork-tailed Swift [678]		Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Ardenna carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Foraging, feeding or related behaviour likely to occur within area	In feature area
Ardenna grisea Sooty Shearwater [82651]	Vulnerable	Breeding known to occur within area	In feature area
Ardenna pacifica Wedge-tailed Shearwater [84292]		Breeding known to occur within area	In feature area
Ardenna tenuirostris Short-tailed Shearwater [82652]		Breeding known to occur within area	In feature area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat likely to occur within area	In feature area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In feature area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat likely to occur within area	In feature area
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Hydroprogne caspia Caspian Tern [808]		Breeding known to occur within area	In feature area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In feature area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat may occur within area	In feature area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Sternula albifrons Little Tern [82849]		Breeding known to occur within area	In feature area
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In feature area
Thalassarche chrysostoma Grey-headed Albatross [66491]	Endangered	Species or species habitat may occur within area	In feature area
Thalassarche eremita Chatham Albatross [64457]	Endangered	Foraging, feeding or related behaviour may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Thalassarche impavida			
Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Thalassarche melanophris			
Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Thalassarche salvini			
Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Thalassarche steadi			
White-capped Albatross [64462]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
Migratory Marine Species			
Balaenoptera bonaerensis			
Antarctic Minke Whale, Dark-shoulder Minke Whale [67812]		Species or species habitat likely to occur within area	In feature area
Balaenoptera borealis			
Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Balaenoptera edeni			
Bryde's Whale [35]		Species or species habitat likely to occur within area	In feature area
Balaenoptera musculus			
Blue Whale [36]	Endangered	Species or species habitat likely to occur within area	In feature area
Balaenoptera physalus			
Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Caperea marginata			
Pygmy Right Whale [39]		Foraging, feeding or related behaviour likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Carcharhinus longimanus Oceanic Whitetip Shark [84108]		Species or species habitat may occur within area	In feature area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Breeding known to occur within area	In feature area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area	In feature area
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area	In feature area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
Eubalaena australis as Balaena glacialis australis Southern Right Whale [40]	Endangered	Species or species habitat known to occur within area	In feature area
Isurus oxyrinchus Shortfin Mako, Mako Shark [79073]		Species or species habitat likely to occur within area	In feature area
Lagenorhynchus obscurus Dusky Dolphin [43]		Species or species habitat likely to occur within area	In feature area
Lamna nasus Porbeagle, Mackerel Shark [83288]		Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Megaptera novaeangliae](#) Humpback Whale [38]		Foraging, feeding or related behaviour known to occur within area	In feature area
[Mobula birostris as Manta birostris](#) Giant Manta Ray [90034]		Species or species habitat known to occur within area	In feature area
[Natator depressus](#) Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
[Orcinus orca](#) Killer Whale, Orca [46]		Species or species habitat likely to occur within area	In feature area
[Physeter macrocephalus](#) Sperm Whale [59]		Species or species habitat may occur within area	In feature area
[Rhincodon typus](#) Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area	In feature area
Migratory Terrestrial Species			
[Cuculus optatus](#) Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat known to occur within area	In feature area
[Hirundapus caudacutus](#) White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area	In feature area
[Monarcha melanopsis](#) Black-faced Monarch [609]		Species or species habitat known to occur within area	In feature area
[Motacilla flava](#) Yellow Wagtail [644]		Species or species habitat may occur within area	In feature area
[Myiagra cyanoleuca](#) Satin Flycatcher [612]		Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Rhipidura rufifrons](#) Rufous Fantail [592]		Species or species habitat known to occur within area	In feature area
[Symposiachrus trivirgatus as Monarcha trivirgatus](#) Spectacled Monarch [83946]		Species or species habitat known to occur within area	In feature area
Migratory Wetlands Species			
[Actitis hypoleucos](#) Common Sandpiper [59309]		Species or species habitat known to occur within area	In feature area
[Arenaria interpres](#) Ruddy Turnstone [872]	Vulnerable	Roosting known to occur within area	In feature area
[Calidris acuminata](#) Sharp-tailed Sandpiper [874]	Vulnerable	Roosting known to occur within area	In feature area
[Calidris alba](#) Sanderling [875]		Roosting known to occur within area	In feature area
[Calidris canutus](#) Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area	In feature area
[Calidris ferruginea](#) Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area	In feature area
[Calidris melanotos](#) Pectoral Sandpiper [858]		Species or species habitat known to occur within area	In feature area
[Calidris pugnax as Philomachus pugnax](#) Ruff [91256]		Roosting known to occur within area	In feature area
[Calidris ruficollis](#) Red-necked Stint [860]		Roosting known to occur within area	In feature area
[Calidris tenuirostris](#) Great Knot [862]	Vulnerable	Roosting known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Charadrius bicinctus Double-banded Plover [895]		Roosting known to occur within area	In feature area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area	In feature area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area	In feature area
Charadrius veredus Oriental Plover, Oriental Dotterel [882]		Species or species habitat known to occur within area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat known to occur within area	In feature area
Gallinago megala Swinhoe's Snipe [864]		Roosting likely to occur within area	In feature area
Gallinago stenura Pin-tailed Snipe [841]		Species or species habitat known to occur within area	In feature area
Limicola falcinellus Broad-billed Sandpiper [842]		Roosting known to occur within area	In buffer area only
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area	In feature area
Limosa limosa Black-tailed Godwit [845]	Endangered	Roosting known to occur within area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Numenius minutus Little Curlew, Little Whimbrel [848]		Roosting likely to occur within area	In feature area
Numenius phaeopus Whimbrel [849]		Roosting known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Pandion haliaetus Osprey [952]		Species or species habitat known to occur within area	In feature area
Pluvialis fulva Pacific Golden Plover [25545]		Roosting known to occur within area	In feature area
Pluvialis squatarola Grey Plover [865]	Vulnerable	Roosting known to occur within area	In feature area
Thalasseus bergii Greater Crested Tern [83000]		Breeding known to occur within area	In feature area
Tringa brevipes Grey-tailed Tattler [851]		Roosting known to occur within area	In feature area
Tringa glareola Wood Sandpiper [829]		Roosting known to occur within area	In feature area
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat known to occur within area	In feature area
Tringa stagnatilis Marsh Sandpiper, Little Greenshank [833]		Roosting known to occur within area	In feature area
Xenus cinereus Terek Sandpiper [59300]	Vulnerable	Roosting known to occur within area	In feature 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	Buffer Status
Communications, Information Technology and the Arts - Australian Postal Corporation		
Commonwealth Land - Australian Postal Commission [12052]	NSW	In feature area
Communications, Information Technology and the Arts - Telstra Corporation Limited		
Commonwealth Land - Australian Telecommunications Commission [12014]	NSW	In feature area

Commonwealth Land Name	State	Buffer Status
Commonwealth Land - Australian Telecommunications Commission [12053]	NSW	In feature area
Commonwealth Land - Australian Telecommunications Commission [12265]	NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [15535]	NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [12050]	NSW	In feature area
Commonwealth Land - Australian Telecommunications Commission [15430]	NSW	In feature area
Commonwealth Land - Australian Telecommunications Commission [15461]	NSW	In feature area
Commonwealth Land - Australian Telecommunications Commission [15611]	NSW	In feature area
Commonwealth Land - Australian Telecommunications Commission [16089]	NSW	In buffer area only
Commonwealth Land - Telstra Corporation Limited [12051]	NSW	In feature area
Commonwealth Land - Telstra Corporation Limited [15888]	NSW	In feature area
Defence		
Defence - DUTSON BOMBING RANGE [20038]	VIC	In feature area
Defence - DUTSON BOMBING RANGE [20035]	VIC	In feature area
Defence - DUTSON BOMBING RANGE [20034]	VIC	In feature area
Defence - DUTSON BOMBING RANGE [20037]	VIC	In feature area
Defence - DUTSON BOMBING RANGE [20036]	VIC	In feature area
Defence - DUTSON BOMBING RANGE [20061]	VIC	In feature area
Defence - DUTSON BOMBING RANGE [20062]	VIC	In feature area
Defence - DUTSON BOMBING RANGE [20033]	VIC	In feature area
Unknown		
Commonwealth Land - [21488]	VIC	In feature area
Commonwealth Land - [21489]	VIC	In feature area
Commonwealth Land - [21487]	VIC	In feature area
Commonwealth Land - [21497]	VIC	In feature area
Commonwealth Land - [21496]	VIC	In feature area

Commonwealth Land Name	State	Buffer Status
Commonwealth Land - [21490]	VIC	In feature area
Commonwealth Land - [21498]	VIC	In feature area
Commonwealth Land - [21491]	VIC	In feature area

Commonwealth Heritage Places [Resource Information]

Name	State	Status	Buffer Status
Historic			
Gabo Island Lighthouse	VIC	Listed place	In feature area
Montague Island Lighthouse	NSW	Listed place	In feature area
Wilsons Promontory Lighthouse	VIC	Listed place	In feature area

Listed Marine Species [Resource Information]

Scientific Name	Threatened Category	Presence Text	Buffer Status
Bird			
Actitis hypoleucos			
Common Sandpiper [59309]		Species or species habitat known to occur within area	In feature area
Anous stolidus			
Common Noddy [825]		Species or species habitat may occur within area	In feature area
Apus pacificus			
Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area	In feature area
Ardenna carneipes as Puffinus carneipes			
Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Foraging, feeding or related behaviour likely to occur within area	In feature area
Ardenna grisea as Puffinus griseus			
Sooty Shearwater [82651]	Vulnerable	Breeding known to occur within area	In feature area
Ardenna pacifica as Puffinus pacificus			
Wedge-tailed Shearwater [84292]		Breeding known to occur within area	In feature area
Ardenna tenuirostris as Puffinus tenuirostris			
Short-tailed Shearwater [82652]		Breeding known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Arenaria interpres Ruddy Turnstone [872]	Vulnerable	Roosting known to occur within area	In feature area
Bubulcus ibis as Ardea ibis Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Roosting known to occur within area	In feature area
Calidris alba Sanderling [875]		Roosting known to occur within area	In feature area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat known to occur within area overfly marine area	In feature area
Calidris pugnax as Philomachus pugnax Ruff [91256]		Roosting known to occur within area overfly marine area	In feature area
Calidris ruficollis Red-necked Stint [860]		Roosting known to occur within area overfly marine area	In feature area
Calidris tenuirostris Great Knot [862]	Vulnerable	Roosting known to occur within area overfly marine area	In feature area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Charadrius bicinctus Double-banded Plover [895]		Roosting known to occur within area overfly marine area	In feature area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area	In feature area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area	In feature area
Charadrius ruficapillus Red-capped Plover [881]		Roosting known to occur within area overfly marine area	In feature area
Charadrius veredus Oriental Plover, Oriental Dotterel [882]		Species or species habitat known to occur within area overfly marine area	In feature area
Chroicocephalus novaehollandiae as Larus novaehollandiae Silver Gull [82326]		Breeding known to occur within area	In feature area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea antipodensis gibsoni as Diomedea gibsoni Gibson's Albatross [82270]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Diomedea sanfordi](#) Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In feature area
[Eudyptula minor](#) Little Penguin [1085]		Breeding known to occur within area	In feature area
[Fregata ariel](#) Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat likely to occur within area	In feature area
[Fregata minor](#) Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat may occur within area	In feature area
[Gallinago hardwickii](#) Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In feature area
[Gallinago megala](#) Swinhoe's Snipe [864]		Roosting likely to occur within area overfly marine area	In feature area
[Gallinago stenura](#) Pin-tailed Snipe [841]		Species or species habitat known to occur within area overfly marine area	In feature area
[Haliaeetus leucogaster](#) White-bellied Sea-Eagle [943]		Breeding known to occur within area	In feature area
[Halobaena caerulea](#) Blue Petrel [1059]	Vulnerable	Species or species habitat may occur within area	In feature area
[Himantopus himantopus](#) Pied Stilt, Black-winged Stilt [870]		Roosting known to occur within area overfly marine area	In feature area
[Hirundapus caudacutus](#) White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Hydroprogne caspia as Sterna caspia Caspian Tern [808]		Breeding known to occur within area	In feature area
Larus pacificus Pacific Gull [811]		Breeding known to occur within area	In feature area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
Limicola falcinellus Broad-billed Sandpiper [842]		Roosting known to occur within area overfly marine area	In buffer area only
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area	In feature area
Limosa limosa Black-tailed Godwit [845]	Endangered	Roosting known to occur within area overfly marine area	In feature area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In feature area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area	In feature area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area overfly marine area	In feature area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area overfly marine area	In feature area
Neophema chrysogaster Orange-bellied Parrot [747]	Critically Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
Neophema chrysostoma Blue-winged Parrot [726]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Numenius minutus Little Curlew, Little Whimbrel [848]		Roosting likely to occur within area overfly marine area	In feature area
Numenius phaeopus Whimbrel [849]		Roosting known to occur within area	In feature area
Onychoprion fuscatus as Sterna fuscata Sooty Tern [90682]		Breeding known to occur within area	In feature area
Pachyptila turtur Fairy Prion [1066]		Species or species habitat known to occur within area	In feature area
Pandion haliaetus Osprey [952]		Species or species habitat known to occur within area	In feature area
Pelagodroma marina White-faced Storm-Petrel [1016]		Breeding known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Pelecanoides urinatrix Common Diving-Petrel [1018]		Breeding known to occur within area	In feature area
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat may occur within area	In feature area
Phalacrocorax fuscescens Black-faced Cormorant [59660]		Breeding known to occur within area	In feature area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Pluvialis fulva Pacific Golden Plover [25545]		Roosting known to occur within area	In feature area
Pluvialis squatarola Grey Plover [865]	Vulnerable	Roosting known to occur within area overfly marine area	In feature area
Pterodroma cervicalis White-necked Petrel [59642]		Breeding likely to occur within area	In feature area
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Species or species habitat may occur within area	In feature area
Recurvirostra novaehollandiae Red-necked Avocet [871]		Roosting known to occur within area overfly marine area	In feature area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area overfly marine area	In feature 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	In feature area
Stercorarius antarcticus as Catharacta skua Brown Skua [85039]		Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Sterna striata White-fronted Tern [799]		Breeding known to occur within area	In feature area
Sternula albifrons as Sterna albifrons Little Tern [82849]		Breeding known to occur within area	In feature area
Sternula nereis as Sterna nereis Fairy Tern [82949]		Breeding known to occur within area	In feature area
Symposiachrus trivirgatus as Monarcha trivirgatus Spectacled Monarch [83946]		Species or species habitat known to occur within area overfly marine area	In feature area
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature 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	In feature area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In feature area
Thalassarche chrysostoma Grey-headed Albatross [66491]	Endangered	Species or species habitat may occur within area	In feature area
Thalassarche eremita Chatham Albatross [64457]	Endangered	Foraging, feeding or related behaviour may occur within area	In feature area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area

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

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Xenus cinereus](#) Terek Sandpiper [59300]	Vulnerable	Roosting known to occur within area overfly marine area	In feature area
Fish			
[Acentronura tentaculata](#) Shortpouch Pygmy Pipehorse [66187]		Species or species habitat may occur within area	In feature area
[Cosmocampus howensis](#) Lord Howe Pipefish [66208]		Species or species habitat may occur within area	In feature area
[Heraldia nocturna](#) Upside-down Pipefish, Eastern Upside-down Pipefish, Eastern Upside-down Pipefish [66227]		Species or species habitat may occur within area	In feature area
[Hippocampus abdominalis](#) Big-belly Seahorse, Eastern Potbelly Seahorse, New Zealand Potbelly Seahorse [66233]		Species or species habitat may occur within area	In feature area
[Hippocampus breviceps](#) Short-head Seahorse, Short-snouted Seahorse [66235]		Species or species habitat may occur within area	In feature area
[Hippocampus minotaur](#) Bullneck Seahorse [66705]		Species or species habitat may occur within area	In feature area
[Hippocampus whitei](#) White's Seahorse, Crowned Seahorse, Sydney Seahorse [66240]	Endangered	Species or species habitat may occur within area	In feature area
[Histiogamphelus briggsii](#) Crested Pipefish, Briggs' Crested Pipefish, Briggs' Pipefish [66242]		Species or species habitat may occur within area	In feature area
[Histiogamphelus cristatus](#) Rhino Pipefish, Macleay's Crested Pipefish, Ring-back Pipefish [66243]		Species or species habitat may occur within area	In feature area
[Hypselognathus rostratus](#) Knifesnout Pipefish, Knife-snouted Pipefish [66245]		Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Kaupus costatus Deepbody Pipefish, Deep-bodied Pipefish [66246]		Species or species habitat may occur within area	In feature area
Kimblaeus bassensis Trawl Pipefish, Bass Strait Pipefish [66247]		Species or species habitat may occur within area	In feature area
Leptoichthys fistularius Brushtail Pipefish [66248]		Species or species habitat may occur within area	In feature area
Lissocampus caudalis Australian Smooth Pipefish, Smooth Pipefish [66249]		Species or species habitat may occur within area	In feature area
Lissocampus runa Javelin Pipefish [66251]		Species or species habitat may occur within area	In feature area
Maroubra perserrata Sawtooth Pipefish [66252]		Species or species habitat may occur within area	In feature area
Mitotichthys mollisoni Mollison's Pipefish [66260]		Species or species habitat may occur within area	In feature area
Mitotichthys semistriatus Halfbanded Pipefish [66261]		Species or species habitat may occur within area	In feature area
Mitotichthys tuckeri Tucker's Pipefish [66262]		Species or species habitat may occur within area	In feature area
Notiocampus ruber Red Pipefish [66265]		Species or species habitat may occur within area	In feature area
Phycodurus eques Leafy Seadragon [66267]		Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Phyllopteryx taeniolatus Common Seadragon, Weedy Seadragon [66268]		Species or species habitat may occur within area	In feature area
Pugnaso curtirostris Pugnose Pipefish, Pug-nosed Pipefish [66269]		Species or species habitat may occur within area	In feature area
Solegnathus robustus Robust Pipehorse, Robust Spiny Pipehorse [66274]		Species or species habitat may occur within area	In feature area
Solegnathus spinosissimus Spiny Pipehorse, Australian Spiny Pipehorse [66275]		Species or species habitat may occur within area	In feature area
Solenostomus cyanopterus Robust Ghostpipefish, Blue-finned Ghost Pipefish, [66183]		Species or species habitat may occur within area	In feature area
Stigmatopora argus Spotted Pipefish, Gulf Pipefish, Peacock Pipefish [66276]		Species or species habitat may occur within area	In feature area
Stigmatopora nigra Widebody Pipefish, Wide-bodied Pipefish, Black Pipefish [66277]		Species or species habitat may occur within area	In feature area
Stipecampus cristatus Ringback Pipefish, Ring-backed Pipefish [66278]		Species or species habitat may occur within area	In feature area
Syngnathoides biaculeatus Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]		Species or species habitat may occur within area	In feature area
Urocampus carinirostris Hairy Pipefish [66282]		Species or species habitat may occur within area	In feature area
Vanacampus margaritifer Mother-of-pearl Pipefish [66283]		Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Vanacampus phillipi](#) Port Phillip Pipefish [66284]		Species or species habitat may occur within area	In feature area
[Vanacampus poecilolaemus](#) Longsnout Pipefish, Australian Long-snout Pipefish, Long-snouted Pipefish [66285]		Species or species habitat may occur within area	In feature area
Mammal			
[Arctocephalus forsteri](#) Long-nosed Fur-seal, New Zealand Fur-seal [20]		Species or species habitat may occur within area	In feature area
[Arctocephalus pusillus](#) Australian Fur-seal, Australo-African Fur-seal [21]		Breeding known to occur within area	In feature area
Reptile			
[Caretta caretta](#) Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area	In feature area
[Chelonia mydas](#) Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
[Dermochelys coriacea](#) Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area	In feature area
[Eretmochelys imbricata](#) Hawksbill Turtle [1766]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
[Natator depressus](#) Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area

Whales and Other Cetaceans			[Resource Information]
Current Scientific Name	Status	Type of Presence	Buffer Status
Mammal			

Current Scientific Name	Status	Type of Presence	Buffer Status
Balaenoptera acutorostrata Minke Whale [33]		Species or species habitat may occur within area	In feature area
Balaenoptera bonaerensis Antarctic Minke Whale, Dark-shoulder Minke Whale [67812]		Species or species habitat likely to occur within area	In feature area
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat likely to occur within area	In feature area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat likely to occur within area	In feature area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Berardius arnuxii Arnoux's Beaked Whale [70]		Species or species habitat may occur within area	In feature area
Caperea marginata Pygmy Right Whale [39]		Foraging, feeding or related behaviour likely to occur within area	In feature area
Delphinus delphis Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area	In feature area
Eubalaena australis Southern Right Whale [40]	Endangered	Species or species habitat known to occur within area	In feature area
Feresa attenuata Pygmy Killer Whale [61]		Species or species habitat may occur within area	In buffer area only

Current Scientific Name	Status	Type of Presence	Buffer Status
Globicephala macrorhynchus Short-finned Pilot Whale [62]		Species or species habitat may occur within area	In feature area
Globicephala melas Long-finned Pilot Whale [59282]		Species or species habitat may occur within area	In feature area
Grampus griseus Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area	In feature area
Hyperoodon planifrons Southern Bottlenose Whale [71]		Species or species habitat may occur within area	In feature area
Kogia breviceps Pygmy Sperm Whale [57]		Species or species habitat may occur within area	In feature area
Kogia sima Dwarf Sperm Whale [85043]		Species or species habitat may occur within area	In feature area
Lagenorhynchus obscurus Dusky Dolphin [43]		Species or species habitat likely to occur within area	In feature area
Lissodelphis peronii Southern Right Whale Dolphin [44]		Species or species habitat may occur within area	In feature area
Megaptera novaeangliae Humpback Whale [38]		Foraging, feeding or related behaviour known to occur within area	In feature area
Mesoplodon bowdoini Andrew's Beaked Whale [73]		Species or species habitat may occur within area	In feature area
Mesoplodon densirostris Blainville's Beaked Whale, Dense-beaked Whale [74]		Species or species habitat may occur within area	In feature area

Current Scientific Name	Status	Type of Presence	Buffer Status
Mesoplodon ginkgodens Gingko-toothed Beaked Whale, Gingko-toothed Whale, Gingko Beaked Whale [59564]		Species or species habitat may occur within area	In feature area
Mesoplodon grayi Gray's Beaked Whale, Scamperdown Whale [75]		Species or species habitat may occur within area	In feature area
Mesoplodon hectori Hector's Beaked Whale [76]		Species or species habitat may occur within area	In feature area
Mesoplodon layardii Strap-toothed Beaked Whale, Strap-toothed Whale, Layard's Beaked Whale [25556]		Species or species habitat may occur within area	In feature area
Mesoplodon mirus True's Beaked Whale [54]		Species or species habitat may occur within area	In feature area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat likely to occur within area	In feature area
Peponocephala electra Melon-headed Whale [47]		Species or species habitat may occur within area	In buffer area only
Physeter macrocephalus Sperm Whale [59]		Species or species habitat may occur within area	In feature area
Pseudorca crassidens False Killer Whale [48]		Species or species habitat likely to occur within area	In feature area
Steno bredanensis Rough-toothed Dolphin [30]		Species or species habitat may occur within area	In buffer area only
Tasmacetus shepherdi Shepherd's Beaked Whale, Tasman Beaked Whale [55]		Species or species habitat may occur within area	In feature area

Current Scientific Name	Status	Type of Presence	Buffer Status
Tursiops aduncus Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area	In feature area
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area	In feature area
Ziphius cavirostris Cuvier's Beaked Whale, Goose-beaked Whale [56]		Species or species habitat may occur within area	In feature area

Australian Marine Parks [Resource Information]

Park Name	Zone & IUCN Categories	Buffer Status
Jervis	Habitat Protection Zone (IUCN IV)	In feature area
Flinders	Marine National Park Zone (IUCN II)	In feature area
Freycinet	Marine National Park Zone (IUCN II)	In feature area
Beagle	Multiple Use Zone (IUCN VI)	In feature area
East Gippsland	Multiple Use Zone (IUCN VI)	In feature area
Flinders	Multiple Use Zone (IUCN VI)	In feature area
Jervis	Special Purpose Zone (Trawl) (IUCN VI)	In feature area

Extra Information

State and Territory Reserves [Resource Information]

Protected Area Name	Reserve Type	State	Buffer Status
Agnes Falls S.R.	Natural Features Reserve	VIC	In feature area
Anser Island	Reference Area	VIC	In feature area
Baawang	Reference Area	VIC	In feature area
Bancroft Bay - Kalimna G.L.R.	Natural Features Reserve	VIC	In feature area
Bass Pyramid	Nature Reserve	TAS	In feature area
Batemans	Marine Park	NSW	In feature area

Protected Area Name	Reserve Type	State	Buffer Status
Baxter Island G.L.R.	Natural Features Reserve	VIC	In feature area
Bell Bird Creek	Nature Reserve	NSW	In buffer area only
Bemm, Goolengook, Arte and Errinundra Rivers	Heritage River	VIC	In feature area
Ben Boyd	National Park	NSW	In feature area
Benedore River	Reference Area	VIC	In feature area
Bennison F.F.R.	Nature Conservation Reserve	VIC	In feature area
Bermaguee	Nature Reserve	NSW	In feature area
Bermagui	Flora Reserve	NSW	In feature area
Beware Reef	Marine Sanctuary	VIC	In feature area
Biamanga	National Park	NSW	In feature area
Blond Bay G.L.R.	Natural Features Reserve	VIC	In feature area
Blond Bay W.R.	Natural Features Reserve	VIC	In feature area
Blyth Point	Conservation Area	TAS	In feature area
Bournda	National Park	NSW	In feature area
Bournda	Nature Reserve	NSW	In buffer area only
Brodribb River F.F.R	Nature Conservation Reserve	VIC	In feature area
Broulee Island	Nature Reserve	NSW	In feature area
Bun Beetons Point	Conservation Area	TAS	In feature area
Bunurong	Marine National Park	VIC	In buffer area only
Cabbage Tree Creek F.R	Nature Conservation Reserve	VIC	In feature area
Cape Conran Coastal Park	Conservation Park	VIC	In feature area
Cape Howe	Wilderness Zone	VIC	In feature area
Cape Howe	Marine National Park	VIC	In feature area
Cape Liptrap Coastal Park	Conservation Park	VIC	In feature area

Protected Area Name	Reserve Type	State	Buffer Status
Clyde River	National Park	NSW	In feature area
Cone Islet	Conservation Area	TAS	In feature area
Corner Inlet	Marine National Park	VIC	In feature area
Corner Inlet Marine and Coastal Park	National Parks Act Schedule 4 park or reserve	VIC	In feature area
Craggy Island	Conservation Area	TAS	In feature area
Croajingolong	National Park	VIC	In feature area
Cullendulla Creek	Nature Reserve	NSW	In feature area
Curtis Island	Nature Reserve	TAS	In feature area
Darriman H29 B.R	Natural Features Reserve	VIC	In feature area
Devils Tower	Nature Reserve	TAS	In feature area
Double Creek	Natural Catchment Area	VIC	In feature area
East Gippsland Coastal streams	Natural Catchment Area	VIC	In feature area
East Moncoeur Island	Conservation Area	TAS	In feature area
Egg Beach	Conservation Area	TAS	In feature area
Entrance Point	Reference Area	VIC	In feature area
Eurobodalla	National Park	NSW	In feature area
Ewing Morass W.R	Natural Features Reserve	VIC	In feature area
First and Second Islands F.R.	Nature Conservation Reserve	VIC	In feature area
Flannagan Island G.L.R.	Natural Features Reserve	VIC	In feature area
Franklin River SS.R.	Natural Features Reserve	VIC	In feature area
Fraser Island G.L.R.	Natural Features Reserve	VIC	In feature area
Fresh-water Swamp, Woodside Beach W.R	Natural Features Reserve	VIC	In feature area

Protected Area Name	Reserve Type	State	Buffer Status
Giffard H31 B.R	Natural Features Reserve	VIC	In feature area
Gippsland Lakes Coastal Park	Conservation Park	VIC	In feature area
Gulaga	National Park	NSW	In feature area
Hogan Group	Conservation Area	TAS	In feature area
Illawong	Nature Reserve	NSW	In feature area
Jack Smith Lake W.R	Natural Features Reserve	VIC	In feature area
Jacksons Cove	Conservation Area	TAS	In feature area
Kent Group	National Park	TAS	In feature area
Killiecrankie	Nature Recreation Area	TAS	In feature area
Lake Coleman W.R	Natural Features Reserve	VIC	In feature area
Lake Corringle W.R	Natural Features Reserve	VIC	In feature area
Lake Curlip W.R.	Natural Features Reserve	VIC	In feature area
Lake Denison W.R	Natural Features Reserve	VIC	In feature area
Lake Tyers S.P.	State Park	VIC	In feature area
Little Island	Conservation Area	TAS	In feature area
Low Point	Conservation Area	TAS	In feature area
Mallacoota B.R.	Natural Features Reserve	VIC	In feature area
Metung B.R.	Natural Features Reserve	VIC	In feature area
Mimosa Rocks	National Park	NSW	In feature area
Montague Island	Nature Reserve	NSW	In feature area
Morley Swamp G.L.R.	Natural Features Reserve	VIC	In feature area
Mortimers Paddock B.R.	Natural Features Reserve	VIC	In feature area
Mount Tanner	Nature Recreation Area	TAS	In feature area

Protected Area Name	Reserve Type	State	Buffer Status
Mount Vereker Creek	Natural Catchment Area	VIC	In feature area
Mumbulla	Flora Reserve	NSW	In feature area
Murrah	Flora Reserve	NSW	In feature area
Murramarang	National Park	NSW	In feature area
Nadgee	Nature Reserve	NSW	In feature area
Ninety Mile Beach	Marine National Park	VIC	In feature area
Nooramunga Marine & Coastal Park	National Parks Act Schedule 4 park or reserve	VIC	In feature area
North East Islet	Nature Reserve	TAS	In feature area
North East River	Game Reserve	TAS	In feature area
Nungurner B.R.	Natural Features Reserve	VIC	In feature area
Nyerimilang Park G.L.R.	Natural Features Reserve	VIC	In feature area
Palana Beach	Nature Recreation Area	TAS	In feature area
Pasco Group	Conservation Area	TAS	In feature area
Point Hicks	Marine National Park	VIC	In feature area
Rame Head	Remote and Natural Area - Schedule 6, National Parks Act	VIC	In feature area
Raymond Island G.L.R.	Natural Features Reserve	VIC	In feature area
Rigby Island G.L.R.	Natural Features Reserve	VIC	In feature area
Rodondo Island	Nature Reserve	TAS	In feature area
Roydon Island	Conservation Area	TAS	In feature area
Salt Lake - Backwater Morass G.L.R.	Natural Features Reserve	VIC	In feature area
Sandpatch	Wilderness Zone	VIC	In feature area
Seal Creek	Reference Area	VIC	In feature area
Seal Islands W.R.	Nature Conservation Reserve	VIC	In feature area

Protected Area Name	Reserve Type	State	Buffer Status
Sentinel Island	Conservation Area	TAS	In feature area
Sister Islands	Conservation Area	TAS	In feature area
Snowy River	Heritage River	VIC	In feature area
South East Forest	National Park	NSW	In buffer area only
Southern Wilsons Promontory	Remote and Natural Area - Schedule 6, National Parks Act	VIC	In feature area
Steel Bay - Newland Backwater G.L.R.	Natural Features Reserve	VIC	In feature area
Sugarloaf Rock	Conservation Area	TAS	In feature area
Tanja	Flora Reserve	NSW	In feature area
Tarra Tarra B.R	Natural Features Reserve	VIC	In feature area
The Dock	Conservation Covenant	TAS	In feature area
The Lakes	National Park	VIC	In feature area
Tollgate Islands	Nature Reserve	NSW	In feature area
Unnamed P0155	Private Nature Reserve	VIC	In feature area
Vereker Creek	Reference Area	VIC	In feature area
Warrigal Creek SS.R.	Natural Features Reserve	VIC	In buffer area only
Wattle Point G.L.R.	Natural Features Reserve	VIC	In buffer area only
Welshpool H17 B.R	Natural Features Reserve	VIC	In feature area
West Moncoeur Island	Nature Reserve	TAS	In feature area
William Hunter F.R	Nature Conservation Reserve	VIC	In feature area
Wilsons Promontory	National Park	VIC	In feature area
Wilsons Promontory	Wilderness Zone	VIC	In feature area
Wilsons Promontory	Marine National Park	VIC	In feature area
Wilsons Promontory Islands	Remote and Natural Area - Schedule 6, National Parks Act	VIC	In feature area

Protected Area Name	Reserve Type	State	Buffer Status
Wilsons Promontory Marine Park	National Parks Act Schedule 4 park or reserve	VIC	In feature area
Wilsons Promontory Marine Reserve	National Parks Act Schedule 4 park or reserve	VIC	In feature area
Wingaroo	Nature Reserve	TAS	In feature area
Woodside H26 B.R.	Natural Features Reserve	VIC	In buffer area only
Woodside H27 B.R	Natural Features Reserve	VIC	In buffer area only
Woodside H28 B.R	Natural Features Reserve	VIC	In buffer area only
Wright Rock	Nature Reserve	TAS	In feature area

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	Buffer Status
East Gippsland RFA	Victoria	In feature area
Eden RFA	New South Wales	In feature area
Gippsland RFA	Victoria	In feature area
Southern RFA	New South Wales	In feature area
Tasmania RFA	Tasmania	In feature area

Nationally Important Wetlands [Resource Information]

Wetland Name	State	Buffer Status
Benedore River	VIC	In feature area
Bondi Lake	NSW	In feature area
Clyde River Estuary	NSW	In feature area
Coila Creek Delta	NSW	In feature area
Corner Inlet	VIC	In feature area
Cullendulla Creek and Embayment	NSW	In feature area
Durras Lake	NSW	In buffer area only

Wetland Name	State	Buffer Status
Ewing's Marsh (Morass)	VIC	In feature area
Jack Smith Lake State Game Reserve	VIC	In feature area
Lake Bunga	VIC	In feature area
Lake King Wetlands	VIC	In feature area
Lake Tyers	VIC	In feature area
Lake Victoria Wetlands	VIC	In feature area
Lake Wellington Wetlands	VIC	In feature area
Lower Snowy River Wetlands System	VIC	In feature area
Mallacoota Inlet Wetlands	VIC	In feature area
Merimbula Lake	NSW	In feature area
Moruya River Estuary Saltmarshes	NSW	In feature area
Nadgee Lake and tributary wetlands	NSW	In feature area
Nargal Lake	NSW	In feature area
Nelson Lagoon	NSW	In feature area
Pambula Estuarine Wetlands	NSW	In buffer area only
Snowy River	VIC	In feature area
Sydenham Inlet Wetlands	VIC	In feature area
Tamboon Inlet Wetlands	VIC	In feature area
Tambo River (Lower Reaches) East Swamps	VIC	In feature area
Thurra River	VIC	In feature area
Tuross River Estuary	NSW	In feature area
Waldrons Swamp	NSW	In feature area
Wallaga Lake	NSW	In feature area
Wallagoot Lagoon (Wallagoot Lake)	NSW	In feature area

EPBC Act Referrals				[Resource Information]
Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Bermagui Golf Club Proposed Subdivision (Stages 3-8)	2022/09242		Post-Approval	In feature area

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Blue Marlin Offshore Wind Energy Project	2023/09532		Referral Decision	In feature area
Broulee Beach Estate residential development subdivision	2023/09551		Completed	In feature area
Eurobodalla Regional Hospital	2023/09506		Completed	In feature area
Gelliondale Wind Farm Project	2023/09577		Assessment	In feature area
Gippsland Offshore Wind Farm Marine Survey Investigations	2023/09682		Completed	In feature area
Greater Gippsland Offshore Wind Project	2022/09379		Assessment	In feature area
Greater Gippsland Offshore Wind Project Initial Marine Field Investigations	2022/09374		Completed	In feature area
Marine Route Survey for Subsea Fibre Optic Data Cable System - Australia East	2024/09795		Completed	In feature area
Preliminary Site Investigations for Great Eastern Offshore Wind Project	2024/09890		Referral Decision	In feature area
Proposed residential subdivision	2023/09632		Completed	In feature area
Seadragon Offshore Wind, Early Marine Surveys	2023/09670		Completed	In feature area
Seadragon Offshore Wind Farm	2022/9163		Completed	In feature area
South East Australia Carbon Capture and Storage Project, Commonwealth waters	2023/09732		Referral Decision	In feature area
South East Australia Carbon Capture and Storage Project, Onshore and State waters	2023/09731		Referral Decision	In feature area
Controlled action				
Alberton Wind Farm, Sth Gippsland, Vic	2017/7854	Controlled Action	Post-Approval	In feature area
Bald Hills Wind Farm 80 Turbines	2002/730	Controlled Action	Post-Approval	In buffer area only
Gippsland Lakes Mosquito Control Aerial /Hovercraft Spraying	2001/491	Controlled Action	Completed	In feature area

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Controlled action				
Gippsland Regional Port Project	2020/8667	Controlled Action	Assessment Approach	In feature area
Golden Beach Gas Project	2019/8513	Controlled Action	Post-Approval	In feature area
Maintenance Dredging of Toora Boat Ramp Channel	2008/4376	Controlled Action	Completed	In feature area
Star of the South Offshore Wind Farm Project	2020/8650	Controlled Action	Guidelines Issued	In feature area
Thomson River Mercury Recovery Project	2010/5734	Controlled Action	Completed	In feature area
Wellington Waters Canal Estate	2001/332	Controlled Action	Completed	In buffer area only
Windfarm	2003/1109	Controlled Action	Completed	In feature area
Not controlled action				
2004/2005 drilling program for exploration and production (VIC 01-06, 09-11, 16, 18 & 19 and VIC/RL	2003/1282	Not Controlled Action	Completed	In feature area
2D seismic Survey in VIC/P55, VIC/RL2 and VIC/P41	2004/1876	Not Controlled Action	Completed	In feature area
55m lattice tower & infrastructure	2003/1159	Not Controlled Action	Completed	In feature area
Acquistion of 2D seismic data in State Waters adjacent to Ninety Mile Beach-VIC/P39(V)	2004/1889	Not Controlled Action	Completed	In feature area
Allmans Levee Track - Maintenance Work	2003/1053	Not Controlled Action	Completed	In feature area
Angas and Galloway Exploration Wells VIC/P39(v)	2005/2330	Not Controlled Action	Completed	In feature area
Basker-Manta-Gummy Oil Development	2011/6052	Not Controlled Action	Completed	In feature area
Basker-Manta-Gummy Oil Field Development	2007/3402	Not Controlled Action	Completed	In feature area
Basker-Manta Oil Field Development	2005/2026	Not Controlled Action	Completed	In feature area
Batemans Bay Marina Redevelopment	2008/4265	Not Controlled Action	Completed	In feature area
Beardie-1 Field wildcat oil well	2001/505	Not Controlled Action	Completed	In feature area

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Not controlled action				
Biodiversity Impacts Audit	2011/6191	Not Controlled Action	Completed	In feature area
Caswell Street - Moruya East	2020/8781	Not Controlled Action	Completed	In feature area
Communications tower extension	2003/1099	Not Controlled Action	Completed	In feature area
Construction of an ocean access boat ramp at Bastion Point	2004/1407	Not Controlled Action	Completed	In feature area
Cunninghame Arm Redevelopment (Stage 3)	2002/618	Not Controlled Action	Completed	In feature area
Development of Kipper gas field within Vic/L3, Vic/L4 Vic/RL2	2005/2484	Not Controlled Action	Completed	In feature area
Development of Turrum Oil Field and associated infrastructure	2003/1204	Not Controlled Action	Completed	In feature area
DOFA weed eradication program at Goorooyaroo NSW	2003/1270	Not Controlled Action	Completed	In feature area
Dredging of Tuross Lake channel and depositon of spoil in lake	2004/1554	Not Controlled Action	Completed	In feature area
Drilling and side track completion at Baleen gas production well in Production Licence area VIC/L21	2004/1535	Not Controlled Action	Completed	In feature area
Drilling of 'Culverin' oil exploration well, permit VIC/P56	2005/2279	Not Controlled Action	Completed	In feature area
Drilling of Scallop-1 Exploration Well	2003/917	Not Controlled Action	Completed	In feature area
East Pilchard exploration well	2001/137	Not Controlled Action	Completed	In feature area
Eden Wind Farm	2011/6037	Not Controlled Action	Completed	In feature area
Ferry Service Infrastructure Development	2001/269	Not Controlled Action	Completed	In feature area
George Bass Drive Lilli Pilli Road Realignment	2021/8876	Not Controlled Action	Completed	In feature area
Gippsland Basin Seismic Programme	2004/1866	Not Controlled Action	Completed	In feature area
Gippsland Lakes Composting Toilet Program	2000/66	Not Controlled Action	Completed	In feature area
Hemingway1/Oil Exploration	2001/177	Not Controlled Action	Completed	In feature area

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Not controlled action				
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed	In feature area
INDIGO Central Submarine Telecommunications Cable	2017/8127	Not Controlled Action	Completed	In feature area
Installation of optic fibre cable from Inverloch, Victoria to Stanley, Tasmania	2002/906	Not Controlled Action	Completed	In feature area
Kipper Tuna Turrum Project Maintenance Dredging	2010/5430	Not Controlled Action	Completed	In feature area
Longtom-3 Gas Appraisal Well, VIC/P54	2005/2494	Not Controlled Action	Completed	In feature area
Longtom Gas Pipeline Development, VIC/P54	2006/3072	Not Controlled Action	Completed	In feature area
Marlin-Snapper Gas Pipeline Project	2006/3197	Not Controlled Action	Completed	In feature area
Melville 1 Oil Exploration Well	2001/167	Not Controlled Action	Completed	In feature area
Milton/Ulladulla Sewerage Scheme	2001/251	Not Controlled Action	Completed	In feature area
Northright-1 Exploration Well	2001/209	Not Controlled Action	Completed	In feature area
Offshore Petroleum Exploration	2001/289	Not Controlled Action	Completed	In feature area
Offshore Seismic Survey	2001/498	Not Controlled Action	Completed	In feature area
Port Welshpool Harbour Dredging	2007/3521	Not Controlled Action	Completed	In feature area
Pump station upgrades and rising main construction, Lakes Entrance, Victoria	2016/7646	Not Controlled Action	Completed	In feature area
Sole-2 appraisal gas well, VIC/RL3	2002/636	Not Controlled Action	Completed	In feature area
Sole gas field development	2003/937	Not Controlled Action	Completed	In feature area
To undertake maintenance dredging of the Toora Boat Ramp Channel, VIC	2014/7225	Not Controlled Action	Completed	In feature area
Turrum Phase 2 Development Project	2008/4191	Not Controlled Action	Completed	In feature area

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Not controlled action				
Venus Bay Outfall Extension	2004/1555	Not Controlled Action	Completed	In feature area
West Triton Drilling Program - Gippsland Basin	2007/3915	Not Controlled Action	Completed	In feature area
Not controlled action (particular manner)				
2D Seismic Aquisition Survey	2008/4041	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
2D Seismic Survey	2008/4131	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
2D Seismic Survey	2008/4066	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
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	In feature area
2D seismic survey Permit Area VIC/P49	2006/2943	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
2D Seismic Survey Program in Bass Strait	2008/4040	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
3D Seismic Survey	2008/4528	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
Apache 3D seismic exploration survey	2006/3146	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
Bass Basin 2D and 3D seismic surveys (T/38P & T/37P)	2007/3650	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
Bream 3D seismic survey	2006/2556	Not Controlled Action (Particular Manner)	Post-Approval	In feature area

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Not controlled action (particular manner)				
Construction of wharf	2003/1050	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
Dalrymple 3D Seismic Survey	2010/5680	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
Eden Breakwater Wharf extension, NSW	2015/7582	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
Eden Breakwater Wharf Extension, NSW	2016/7828	Not Controlled Action (Particular Manner)	Completed	In feature area
Gas Pipeline	2000/20	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
Gippsland 2D Marine Seismic Survey - VIC/P-63, VIC/P-64 and T/46P	2009/5241	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
Golden Beach gas field development	2003/1031	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
INDIGO Marine Cable Route Survey (INDIGO)	2017/7996	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
Inspection of project vessels for presence of invasive marine pests in Commonwealth waters off Victo	2012/6362	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
Lakes Entrance Sand Management Program Trial Dredging	2007/3852	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
Lakes Entrance Sand Management Program Trial Dredging	2007/3694	Not Controlled Action (Particular Manner)	Completed	In feature area
Longtom-5 Offshore Production Drilling (Vic/L29), VIC	2012/6498	Not Controlled Action (Particular	Post-Approval	In feature area

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Not controlled action (particular manner)				
		Manner)		
Longtom South -1 Exploration Drilling	2011/6217	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
Maintenance Dredging of Oceanic Sand	2011/5932	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
Non-exclusive 3-D Marine Seismic Survey, Bass Strait	2002/775	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
Northern Fields 3D Seismic Survey	2001/140	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
OTE10 2D Marine Seismic Survey	2009/5223	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
Pelican 3D Marine Seismic Survey, Gippsland Basin, Vic	2017/8097	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
Seismic Exploration in Permit VIC/P41	2001/267	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
Seismic Survey	2001/206	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
Seismic survey, Gippsland Basin	2001/525	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
Shearwater 2D and 3D marine seismic survey	2005/2180	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
Soil and Organic Recycling Facility	2005/2216	Not Controlled Action (Particular Manner)	Post-Approval	In feature area

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Not controlled action (particular manner)				
Southern Flanks 2D Marine Seismic Survey	2010/5288	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
Southern Margins 3D Seismic Survey VIC/P55	2007/3780	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
supersonic missile launch facility	2000/120	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
Tap Oil Ltd Molson 2D Seismic Survey T47P	2008/3967	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
Tuskfish 3D Seismic Survey, Bass Strait	2002/864	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
West Seahorse Oil Development Project, Commonwealth waters offshore Victoria	2013/6973	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
Referral decision				
All actions taken in response to the current severe bushfires in Victoria.	2009/4787	Referral Decision	Completed	In feature area
Beardie-1 Field wildcat oil well	2001/469	Referral Decision	Completed	In feature area
Breeding program for Grey Nurse Sharks	2007/3245	Referral Decision	Completed	In feature area
Darymple 3D Seismic Survey, Petroleum Exploration Permit T/41P	2010/5322	Referral Decision	Completed	In feature area
Holloman 2010 Vic/P60 3D Seismic Acquisition Survey Program	2009/5251	Referral Decision	Completed	In feature area
Longtom 5 Offshore Production Drilling (VIC/L29)	2012/6404	Referral Decision	Completed	In feature area
Longtom-5 Offshore Production Drilling (Vic/L29)	2012/6413	Referral Decision	Completed	In feature area
Shark 3D Seismic Survey	2007/3294	Referral Decision	Completed	In feature area

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Referral decision				
Stanton 3D Marine Seismic Survey	2013/6764	Referral Decision	Completed	In feature area
Upgrade of Corringle Road	2009/4825	Referral Decision	Completed	In feature area

Key Ecological Features [Resource Information]

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

Name	Region	Buffer Status
Big Horseshoe Canyon	South-east	In feature area
Canyons on the eastern continental slope	Temperate east	In feature area
Seamounts South and east of Tasmania	South-east	In feature area
Shelf rocky reefs	Temperate east	In feature area
Upwelling East of Eden	South-east	In feature area

Biologically Important Areas [Resource Information]

Scientific Name	Behaviour	Presence	Buffer Status
Dolphins			
Tursiops aduncus			
Indo-Pacific/Spotted Bottlenose Dolphin [68418]	Breeding	Likely to occur	In feature area
Seabirds			
Ardenna carneipes			
Flesh-footed Shearwater [82404]	Foraging	Known to occur	In feature area
Ardenna grisea			
Sooty Shearwater [82651]	Breeding	Known to occur	In feature area
Ardenna grisea			
Sooty Shearwater [82651]	Foraging	Likely to occur	In feature area
Ardenna pacifica			
Wedge-tailed Shearwater [84292]	Breeding	Known to occur	In feature area
Ardenna tenuirostris			
Short-tailed Shearwater [82652]	Breeding	Known to occur	In feature area
Ardenna tenuirostris			
Short-tailed Shearwater [82652]	Foraging	Likely to occur	In feature area

Scientific Name	Behaviour	Presence	Buffer Status
Ardenna tenuirostris Short-tailed Shearwater [82652]	Foraging	Known to occur	In feature area
Ardenna tenuirostris Short-tailed Shearwater [82652]	Foraging	Likely to occur	In feature area
Diomedea exulans (sensu lato) Wandering Albatross [1073]	Foraging	Likely to occur	In feature area
Diomedea exulans (sensu lato) Wandering Albatross [1073]	Foraging	Known to occur	In feature area
Diomedea exulans antipodensis Antipodean Albatross [82269]	Foraging	Known to occur	In feature area
Eudyptula minor Little Penguin [1085]	Breeding	Known to occur	In feature area
Eudyptula minor Little Penguin [1085]	Breeding	Likely to occur	In feature area
Eudyptula minor Little Penguin [1085]	Foraging	Known to occur	In feature area
Macronectes giganteus Southern Giant Petrel [1060]	Foraging	Known to occur	In feature area
Macronectes halli Northern Giant Petrel [1061]	Foraging	Known to occur	In feature area
Oceanites oceanites Wilsons Storm Petrel [1034]	Migration	Known to occur	In feature area
Pelagodroma marina White-faced Storm-petrel [1016]	Breeding	Known to occur	In feature area
Pelagodroma marina White-faced Storm-petrel [1016]	Foraging	Known to occur	In feature area
Pelecanoides urinatrix Common Diving-petrel [1018]	Breeding	Known to occur	In feature area
Pelecanoides urinatrix Common Diving-petrel [1018]	Foraging	Known to occur	In feature area

Scientific Name	Behaviour	Presence	Buffer Status
Phalacrocorax fuscescens Black-faced Cormorant [59660]	Foraging	Known to occur	In feature area
Procellaria parkinsoni Black Petrel [1048]	Foraging	Likely to occur	In feature area
Pterodroma macroptera Great-winged Petrel [1035]	Foraging	Likely to occur	In feature area
Thalassarche bulleri Bullers Albatross [64460]	Foraging	Known to occur	In feature area
Thalassarche cauta cauta Shy Albatross [82345]	Foraging likely	Likely to occur	In feature area
Thalassarche cauta steadi White-capped Albatross [82344]	Foraging	Known to occur	In feature area
Thalassarche chlororhynchos bassi Indian Yellow-nosed Albatross [85249]	Foraging	Known to occur	In feature area
Thalassarche melanophris Black-browed Albatross [66472]	Foraging	Known to occur	In feature area
Thalassarche melanophris impavida Campbell Albatross [82449]	Foraging	Known to occur	In feature area
Thalassarche melanophris impavida Campbell Albatross [82449]	Foraging	Likely to occur	In feature area
Thalasseus bergii Crested Tern [83000]	Breeding	Known to occur	In feature area
Thalasseus bergii Crested Tern [83000]	Foraging	Likely to occur	In feature area
Sharks			
Carcharias taurus Grey Nurse Shark [64469]	Foraging	Known to occur	In feature area
Carcharias taurus Grey Nurse Shark [64469]	Reproduction	Known to occur	In feature area
Carcharodon carcharias White Shark [64470]	Breeding (nursery area)	Known to occur	In feature area

Scientific Name	Behaviour	Presence	Buffer Status
Carcharodon carcharias White Shark [64470]	Foraging	Known to occur	In feature area
Whales			
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Foraging	Likely to be present	In feature area
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Known Foraging Area	Known to occur	In feature area
Megaptera novaeangliae Humpback Whale [38]	Migration (north and south)	Known to occur	In feature area

Bioregional Assessments			[Resource Information]
SubRegion	BioRegion	Website	Buffer Status
Sydney	Sydney Basin	BA website	In feature area
Gippsland	Gippsland Basin	BA website	In feature area

Caveat

1 PURPOSE

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

The report contains the mapped locations of:

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

2 DISCLAIMER

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

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

3 DATA SOURCES

Threatened ecological communities

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

Threatened, migratory and marine species

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

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

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

4 LIMITATIONS

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

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

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

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

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

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

Acknowledgements

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

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

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

Please feel free to provide feedback via the Contact us page.

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Appendix 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 AFMA 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 AHO as a Level 1 consultation as they provide Notice to Mariners and therefore have a function in the OA of the planned activity.
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 AMSA 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
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 CarbonNet as a Level 2 consultation as their function is in the ATBA of the planned activity.
340	Department of Agriculture, Fisheries and Forestry	OA	Function as a Commonwealth government department that manages biosecurity risks to Australia for agriculture, fisheries and forestry, industry growth and resilience and sustainability.	L1	Esso has applied its methodology and assessed DAFF as a Level 1 consultation as their function is in the OA of the planned activity.
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 DCCEEW as a Level 1 consultation as their function is in the OA of the planned activity.
103	Department of Climate Change, Energy, the Environment and Water - Director of National Parks	OA	Function as a Commonwealth entity responsible for the management of Commonwealth terrestrial and marine protected areas.	L1	Esso has applied its methodology and assessed person or organisation 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 DoD 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
612	Department of Employment and Workforce Relations - Gippsland	EMBA	Function as a government agency that bring together businesses, employment and skills services and community organisations to connect people to training, jobs and support services.	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.
576	Department of Energy, Environment and Climate Action - Agriculture Victoria	ATBA	Function as department of the Victorian Government working with industry and the community to grow and protect profitable, sustainable farms in thriving regional and rural communities across Victoria.	L2	Esso has applied its methodology and assessed DEECA as a Level 2 consultation as their function is in the ATBA of the planned activity.
529	Department of Energy, Environment and Climate Action (DEECA)	ATBA	Function as department of the Victorian Government working with industry and the community to develop Victoria's secure and sustainable energy future. Responsible for earth resources exploration, licensing, approval of applications, and enforcement on land and state waters. Responsible for protection of biodiversity and biosecurity on land and in State waters. Has responsibility to approve sea dumping applications in State waters.	L2	Esso has applied its methodology and assessed DEECA as a Level 2 consultation as their function is in the ATBA of the planned activity.
334	Department of Industry, Science, Energy and Resources	OA	Function as department or agency of the Commonwealth responsible for consolidating the Government's efforts to drive economic growth, productivity and competitiveness by bringing together industry, energy, resources and science.	L2	Esso has applied its methodology and assessed DISER as a Level 2 consultation as their function is in the ATBA of the planned activity.
44	Department of Industry, Science, Energy and Resources	ATBA	Function as a Victorian State government department for economic recovery and business and industry engagement.	L2	Esso has applied its methodology and assessed DJSIR as a Level 2 consultation as their function is in the ATBA of the planned activity.

ID	Person/organisation	Geo. area	Function, interest or activity	Consultation Level	Classification justification
334	Department of Industry, Science, Energy and Resources	OA	Function as department or agency of the Commonwealth responsible for consolidating the Government's efforts to drive economic growth, productivity and competitiveness by bringing together industry, energy, resources and science.	L2	Esso has applied its methodology and assessed DISER as a Level 2 consultation as their function is in the ATBA of the planned activity.
44	Department of Jobs, Skills, Industry and Regions	ATBA	Function as a Victorian State government department for economic recovery and business and industry engagement.	L2	Esso has applied its methodology and assessed DJSIR as a Level 2 consultation as their function is in the ATBA of the planned activity.
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 function is in the EMBA and no impact from 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 department or agency as a Level 3 consultation as their function is in the EMBA and no impact from planned activity.
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 department or agency as a Level 3 consultation as their function is in the EMBA and no impact from planned activity.

ID	Person/organisation	Geo. area	Function, interest or activity	Consultation Level	Classification justification
191	Energy Safe Victoria	N/A	Function as independent government agency responsible for the safe generation, supply and use of electricity, gas and pipelines.	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.
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 department or agency as a Level 3 consultation as their function is in the EMBA and no impact from planned activity.
63	Environmental Protection Agency (Tas) (used to be DPIPWE)	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 department or agency as a Level 3 consultation as their function is in the EMBA and no impact from planned 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.
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 department or agency as a Level 3 consultation as their function is in the EMBA and no impact from planned activity.

ID	Person/organisation	Geo. area	Function, interest or activity	Consultation Level	Classification justification
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.
645	Latrobe Valley Authority	N/A	Function as Victorian Government authority works with. government, business, industry, education, and the community across Gippsland to deliver projects, programs, and services to support the region.	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.
538	Major Road Projects Victoria	N/A	Function as State government office delivering essential freeway and road upgrades across Victoria.	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.
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 in the EMBA and no impact from planned activity.
93	Mornington Peninsula Shire	EMBA	Function as department or agency of Victoria as Local Council.	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.

ID	Person/organisation	Geo. area	Function, interest or activity	Consultation Level	Classification justification
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 NOPTA as a Level 1 consultation as their function is in the OA of the planned activity.
129	Parks Australia (part of DCCEEW)	OA	Function as Commonwealth government agency responsible for managing Commonwealth parks, reserves and conservation zones.	L1	Esso has applied its methodology and assessed person or organisation as a Level 1 consultation as their function is in the OA of the planned activity.
27	Parks Victoria	ATBA	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.	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.
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 department or agency as a Level 3 consultation as their function is in the EMBA and no impact from planned activity.
42	Safe Transport Victoria - Maritime	EMBA	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.	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.

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 department or agency as a Level 3 consultation as their function is in the EMBA and no impact from planned activity.
413	Southern Rural Water	EMBA	Function as a government-owned statutory corporation, governed by a skills-based Board appointed by the Minister for Water.	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.
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 in the EMBA and no impact from planned activity.
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.
710	Victorian Marine and Coastal Council	EMBA	Function as Victorian Government advisory body about coastal and marine issues, established under the Marine and Coastal Act 2018.	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.
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 occur in the EMBA and no impact from planned activity.

ID	Person/organisation	Geo. area	Function, interest or activity	Consultation Level	Classification justification
20	Wellington Shire Council	ATBA	Function as department or agency of Victoria as Local Council.	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.
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 department or agency 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
371	Department of Energy, Environment and Climate Action	ATBA	Function as department of the Victorian Government Department of the responsible State Minister.	L2	Esso has applied its methodology and assessed DEECA as a Level 2 consultation as their function is in the ATBA of the planned activity.

Relevant persons consultation levels for Regulation 25(1)(d) relevant persons

ID	Person/organisation	Geo. area	Function, interest or activity	Consultation Level	Classification justification
847	3D Energi	OA	Activity as oil and gas company with licenses offshore from Gippsland.	L1	Esso has applied its methodology and assessed person or organisation as a Level 1 consultation as their function is in the OA of the planned activity.
686	Australian Anglers Association (Victoria)	EMBA	Activity as recreational sportsfishing association in Victoria.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation

ID	Person/organisation	Geo. area	Function, interest or activity	Consultation Level	Classification justification
					as their activity may occur in the EMBA and no impact from planned activity.
516	Australian Conservation Foundation	EMBA	Interest as an 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 occur in the EMBA and no impact from planned activity.
346	Australian Council of Trade Unions	EMBA	Activities as largest peak body representing workers in Australia. It is a national trade union centre of 46 affiliated unions and eight trades and labour councils.	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.
347	Australian Institue of Marine and Power Engineers	EMBA	Activity as a 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 activity may occur in the EMBA and no impact from planned activity.
338	Australian Manufacturing Workers Union	OA	Activities as a trade union for Automotive, Food, Metals, Engineering, Printing, and Kindred Industries.	L1	Esso has applied its methodology and assessed person or organisation as a Level 1 consultation as their function is in the OA of the planned 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 activity may occur in the EMBA and no impact from planned activity.
687	Australian National Sportsfishing Association (Victoria)	EMBA	Activity as recreational sportsfishing association in Victoria.	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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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 activity may occur in the EMBA and no impact from planned activity.
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 occur in the EMBA and no impact from planned activity.
337	Australian Workers Union	OA	Activities as negotiating workplace enterprise agreements.	L1	Esso has applied its methodology and assessed person or organisation as a Level 1 consultation as their function is in the OA of the 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.
636	Birdlife Australia	EMBA	Not-for-profit organisation advocating for native birds and the conservation of their habitats across 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.
630	Blue Mackerel North Pty Ltd	OA	Organisation with a feasibility licence for an offshore wind farm project off the South Coast of Gippsland.	L1	Esso has applied its methodology and assessed person or organisation as a Level 1 consultation

ID	Person/organisation	Geo. area	Function, interest or activity	Consultation Level	Classification justification
					as their function is in the OA of the 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.
333	Centre of Decommissioning Australia	N/A	Interest as an independent initiative working with industry, government and the community to create a collaborative and sustainable approach to decommissioning Australia's aging oil and gas infrastructure.	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.
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 occur in the EMBA and no impact from planned activity.

ID	Person/organisation	Geo. area	Function, interest or activity	Consultation Level	Classification justification
149	Committee for Mornington Peninsula	EMBA	Interests as independent group established to represent all sectors of industry, business, not-for-profits, and local government to enhance social, economic, and environmental sustainability and improve the region's liveability, growth, and sustainability.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their interest may occur in the EMBA and no impact from planned activity.
76	Commonwealth Fisheries Association	OA	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 occur in the EMBA and no impact from planned activity.
496	Construction, Forestry, Maritime, Mining and Energy Union	OA	Activities as trade union in building and construction, forestry and furnishing products, maritime and mining and energy production.	L1	Esso has applied its methodology and assessed person or organisation as a Level 1 consultation as their function is in the OA of the planned activity.
34	Cooper Energy	OA	Organisation with activities as oil and gas company with licenses offshore from Gippsland.	L1	Esso has applied its methodology and assessed person or organisation as a Level 1 consultation as their function is in the OA of the 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.

ID	Person/organisation	Geo. area	Function, interest or activity	Consultation Level	Classification justification
689	Corner Inlet Landcare Group	EMBA	Not for proift organisation that is part of South Gippsland Landcare Network working towards a sustainable environment with due regard to the diverse nature of landholdings around South West areas of Corner Inlet.	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.
296	Country Fire Authority	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.
635	Destination Gippsland	EMBA	Not-for-profit public company, a member of One Gippsland, that assists the Gippsland tourism sector and works in partnership with the industry and government to deliver rewarding and lasting economic, environmental and social outcomes.	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 interest 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.
136	Eastern Zone Abalone Industry Association	ATBA	Activities as the wild catch abalone industry sector that operates in the Mallacoota regions of Victoria.	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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786	Ecolands Collective	EMBA	Not for profit group of environmental organisations in Victoria committed to private land conservation, better land stewardship and empowering individuals and communities to leave a living legacy for future generations.	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.
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	OA	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.	L1	Esso has applied its methodology and assessed person or organisation as a Level 1 consultation as their function is in the OA of the planned 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.
615	Energy Australia	N/A	Function as an energy retailer and generator across eastern 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.
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 may occur in the EMBA and no impact from planned activity.

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691	Evolve Surplus	N/A	Interest as a local buisness in South 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.
363	Extinction Rebellion Australia	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 occur in the EMBA and no impact from planned 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	OA	Activities as independent group established to consider commercial fishing vessel damage claims resulting from interaction with Esso equipment/facilities.	L1	Esso has applied its methodology and assessed person or organisation as a Level 1 consultation as their function is in the OA 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 occur in the EMBA and no impact from planned activity.
634	Friends of the Prom	EMBA	Interest as eNGO working to protect and/or educate about the natural environment at Wilsons Promontory National Park.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their interest may occur in the EMBA and no impact from planned activity.
197	Game Fishing Association of Victoria	OA	Activities as the governing body for Game Fishing in Victoria.	L1	Esso has applied its methodology and assessed person or organisation as a Level 1 consultation as their function is in the OA of the planned activity.
827	GB Energy	EMBA	Function as developer of natural gas field in state waters for gas production and CO_2 sequestration.	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.
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 activity may occur in the EMBA and no impact from planned activity.
694	Gippsland Angling Clubs Association	EMBA	Activity as recreational sportsfishing association in Victoria.	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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637	Gippsland Climate Change Network	N/A	Interest as s not for profit and registered charity focussed on connecting and collaborating with local communities, businessess and government organisations around climate change awareness and solutions.	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 OWP Project Pty Ltd	OA	Organisation with a feasibility licence for an offshore wind farm project off the South Coast of Gippsland.	L1	Esso has applied its methodology and assessed person or organisation as a Level 1 consultation as their function is in the OA 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.
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 Pty Ltd	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 activity may occur in the EMBA and no impact from planned activity.

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650	Great Eastern Offshore Wind Farm Project Co Pty Ltd	OA	Organisation with a feasibility licence for an offshore wind farm project off the South Coast of Gippsland.	L1	Esso has applied its methodology and assessed person or organisation as a Level 1 consultation as their function is in the OA of the 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 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 person or organisation as a Level 1 consultation as their function is in the OA of the planned activity.
652	High Sea Winds Pty Ltd (Ocean Winds)	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.
631	Iberdrola Australia OW 2 Pty Limited	OA	Organisation with a feasibility licence for an offshore wind farm project off the South Coast of Gippsland.	L1	Esso has applied its methodology and assessed person or organisation as a Level 1 consultation as their function is in the OA of the planned activity.
649	Kent Offshore Wind Pty Ltd	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.
742	Kurnai clans	OA	Organisation representing Traditional Owners.	L1	Esso has applied its methodology and assessed person or organisation as a Level 1 consultation

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					as their function is in the OA of the 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.
17	Lakes Entrance Fishermen Limited	OA	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.	L1	Esso has applied its methodology and assessed person or organisation as a Level 1 consultation as their function is in the OA 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.
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.
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	OA	Activities as union for waterside workers, seafarers, port workers, professional divers, and office workers associated with Australian ports.	L1	Esso has applied its methodology and assessed person or organisation as a Level 1 consultation

ID	Person/organisation	Geo. area	Function, interest or activity	Consultation Level	Classification justification
					as their function is in the OA of the planned activity.
699	McLoughlins Beach Angling Club	EMBA	Activity as recreational sportsfishing association in Victoria.	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.
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.
211	Mitchelson Fisheries	OA	Activities as commercial fishing company based in Lakes Entrance who represent themselves.	L1	Esso has applied its methodology and assessed person or organisation as a Level 1 consultation as their function is in the OA of the planned activity.
585	Navigator North Project Pty Ltd	OA	Organisation with a feasibility licence for an offshore wind farm project off the South Coast of Gippsland.	L1	Esso has applied its methodology and assessed person or organisation as a Level 1 consultation as their function is in the OA of the 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.
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.

ID	Person/organisation	Geo. area	Function, interest or activity	Consultation Level	Classification justification
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.
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.
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.
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.
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.
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.

ID	Person/organisation	Geo. area	Function, interest or activity	Consultation Level	Classification justification
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.
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.
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.
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.
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 person or organisation as a Level 3 consultation as their function may occur in the EMBA and no impact from planned activity.
616	One Gippsland	EMBA	Interest as the regional advocacy body representing the Gippsland region.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their interest may occur in the EMBA and no impact from planned activity.

ID	Person/organisation	Geo. area	Function, interest or activity	Consultation Level	Classification justification
586	Orsted Offshore Australia 1 Pty Ltd - 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.
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.
838	People & Parks Foundation	EMBA	Interest as a not for profit charity working with Parks Victoria on the Prom Sanctuary at Wilsons Promontory National Park.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their interest may occur in the EMBA and no impact from planned activity.
684	Port Albert Fishing Club	EMBA	Activity as a recreational fishing club located on the coast of Corner Inlet, South 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.
704	Port Anthony Stevedoring Services	N/A	Interest as a local buisness in South 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.
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.

ID	Person/organisation	Geo. area	Function, interest or activity	Consultation Level	Classification justification
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.
666	Prom Coast Ecolink	EMBA	Not for profit group of local volunteers working to connect a network of nature corridors throughout the Prom Coast across South Gippsland between Wilsons Prom National Park and the Strzelecki Ranges.	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.
792	Relevant Person #792	EMBA	Activity as a commercial fisher in Corner Inlet.	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.
793	Relevant Person #793	EMBA	Activity as a commercial fisher in Corner Inlet.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their activity may occur in the EMBA and no impact from planned activity.
214	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 occur in the EMBA and no impact from 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 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
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 occur in the EMBA and no impact from planned activity.
33	Seafood Industry Victoria	OA	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.	L1	Esso has applied its methodology and assessed person or organisation as a Level 1 consultation as their function is in the OA 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.
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 interest 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	OA	Activities as incorporated association representing commercial fishers in Commonwealth South East Trawl Sector; Scalefish Hook Sector; Shark Hook, Shark Gillnet Sectors; small pelagic fishery.	L1	Esso has applied its methodology and assessed person or organisation 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
706	South Gippsland Landcare network	EMBA	Not-for-profit organisation working to preserve and protect the natural environment, while also enhancing the long-term sustainability of farming in tSouth 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.
790	South Gippsland Water	EMBA	Function as organisation that authorises and regulates licensed use of water from waterways, dams and bores within Gippsland.	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.
708	Southern Boat Fishing Club	EMBA	Activity as recreational fishing club in Victoria.	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.
77	Southern Shark Industry Alliance	OA	Activities as incorporated association with members from the Southern and Eastern Scalefish Hook Sector; Shark Hook, Shark Gillnet Sectors; small pelagic fishery.	L1	Esso has applied its methodology and assessed person or organisation as a Level 1 consultation as their function is in the OA of the planned activity.
638	Star of the South Wind Farm Pty Ltd (FL005) and Kut-Wut Bratualung Pty Ltd (FL006)	OA	Organisation as commercial venture proposing an offshore wind farm project of the South Coast of Gippsland.	L1	Esso has applied its methodology and assessed person or organisation as a Level 1 consultation as their function is in the OA of the 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 occur in the EMBA and no impact from planned activity.

ID	Person/organisation	Geo. area	Function, interest or activity	Consultation Level	Classification justification
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 activity may occur in the EMBA and no impact from planned 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 funtion 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 funtion 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 funtion 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 funtion may occur in the EMBA and no impact from planned activity.
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 funtion may occur in the EMBA and no impact from planned activity.

ID	Person/organisation	Geo. area	Function, interest or activity	Consultation Level	Classification justification
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 funtion 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 funtion may occur in the EMBA and no impact from planned activity.
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 funtion may occur in the EMBA and no impact from planned activity.
421	Tasmanian Aboriginal Centre	EMBA	Function as organisation representing Traditional Owners.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their funtion may occur in the EMBA and no impact from planned activity.
678	Tasmanian Gas Pipeline	EMBA	Organisation with activities as oil and gas company supplying natural gas from Longford in Victoria, under Bass Strait, to Bell Bay 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.
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.

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 occur in the EMBA and no impact from planned activity.
624	The Wellgear Group	N/A	Interest as a local business in South 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.
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 interest 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 occur in the EMBA and no impact from planned 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
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.
633	Victorian National Parks Association	EMBA	Interest as a not for profit association that advocates for evidence-based policy to safeguard wildlife, habitat and protected areas.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their interest 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 person or organisation as a Level 3 consultation as their function may occur in the EMBA and no impact from planned activity.
349	Victorian Trades Hall Council	EMBA	Activities as trade union in Victoria for trades and labour.	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.
839	Wildlife Coast Cruises	EMBA	Activity as recreational cruise company operating around Phillip Island and Wilsons Promontory.	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
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 occur in the EMBA and no impact from planned activity.
713	Woorarra Dairies	EMBA	Activity as dairy farms operating in South Gippsland, along Barry Beach Road near Corner Inlet.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their activity is in the EMBA and no impact from planned 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 occur in the EMBA and no impact from planned 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 occur in the EMBA and no impact from planned activity.
714	Yarrum Yarrum landcare network	EMBA	Interest as a not-for profit, incorporated association working to protect remnant vegetation and revegetation, invasive plant and animal control, sustainable agriculture, and environmental education from Strzelecki Ranges to the Ramsar-listed wetlands of Corner Inlet and Nooramunga Marine and Coastal Park, encompassing the Giffard Plain, along the Ninety Mile Beach to Seaspray.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their interest may occur in the EMBA and no impact from planned 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 person or organisation as a Level 3 consultation as their function may occur in the EMBA and no impact from planned activity.
537	Democratic Labour Party	N/A	Interest as a member of the Democratic Labour Party, an Australian political party.	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.
657	Merrington Real Estate	N/A	Interest as a 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.
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 occur in the EMBA and no impact from planned activity.
356	Relevant Person #356	N/A	Interest as a 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	N/A	Interest as a 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
508	Relevant Person #508	N/A	Interest as a 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	N/A	Interest as a 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	N/A	Interest as a 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.
562	Relevant Person #562	N/A	Interest as a 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	N/A	Interest as a 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	N/A	Interest as a 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
608	Relevant Person #608	N/A	Interest as a 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.
609	Relevant Person #609	N/A	Interest as a 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.
611	Relevant Person #611	N/A	Interest as a 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.
613	Relevant Person #613	N/A	Interest as a 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.
618	Relevant Person #618	N/A	Interest as a 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.
621	Relevant Person #621	N/A	Interest as a 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
623	Relevant Person #623	N/A	Interest as a 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.
627	Relevant Person #627	N/A	Interest as a 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.
628	Relevant Person #628	N/A	Interest as a 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.
641	Relevant Person #641	N/A	Interest as a 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.
642	Relevant Person #642	N/A	Interest as a 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.
644	Relevant Person #645	N/A	Interest as a 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
646	Relevant Person #646	N/A	Interest as a 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.
656	Relevant Person #656	N/A	Interest as a 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.
659	Relevant Person #659	N/A	Interest as a 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.
660	Relevant Person #660	N/A	Interest as a 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.
661	Relevant Person #661	N/A	Interest as a 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.
663	Relevant Person #663	N/A	Interest as a 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
664	Relevant Person #664	N/A	Interest as a 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.
670	Relevant Person #670	N/A	Interest as a 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.
683	Relevant Person #683	N/A	Interest as a 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.
685	Relevant Person #685	N/A	Interest as a 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.
709	Relevant Person #709	N/A	Interest as a 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.
716	Relevant Person #716	N/A	Interest as a 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
717	Relevant Person #717	N/A	Interest as a 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.
718	Relevant Person #718	N/A	Interest as a 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.
736	Relevant Person #736	N/A	Interest as a 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.
743	Relevant Person #743	N/A	Interest as a 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.
744	Relevant Person #744	N/A	Interest as a 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.
753	Relevant Person #753	N/A	Interest as a 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
773	Relevant Person #773	N/A	Interest as a 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.
778	Relevant Person #778	N/A	Interest as a 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.
779	Relevant Person #779	N/A	Interest as a 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.
782	Relevant Person #782	N/A	Interest as a 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.
783	Relevant Person #783	N/A	Interest as a 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.
784	Relevant Person #784	N/A	Interest as a 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
799	Relevant Person #799	N/A	Interest as a 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.
800	Relevant Person #800	N/A	Interest as a 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.
802	Relevant Person #802	N/A	Interest as an environmental consultant.	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.
804	Relevant Person #804	N/A	Interest as a 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.
805	Relevant Person #805	N/A	Interest as a 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.
811	Relevant Person #811	N/A	Interest as a 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
824	Relevant Person #824	N/A	Interest as a 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.
825	Relevant Person #825	N/A	Interest as a 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.
828	Relevant Person #828	N/A	Interest as a 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.
840	Relevant Person #840	N/A	Interest as a 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.
842	Relevant Person #842	N/A	Interest as a 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.
843	Relevant Person #843	N/A	Interest as a 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
844	Relevant Person #844	N/A	Interest as a 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.
841	Zenith Energy Australia	N/A	Interest as a 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.

Appendix E-2: Consultation report (Summary)

Regulation 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 Campaign #1 specific emails during 2024 in March, July, September and December 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 19 community information sessions between February 2024 and November 2024 in various locations around Gippsland to discuss activity description, location and potential impacts. Additional emails were sent throughout February 2024 and August 2024 with updates on current activities including Campaign #1 - links to proposed activity information available via Consultation hub e.g. Information bulletins and webpages, including EMBA information and consultation submission dates.

Regulation 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 60 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Since the start of consultation, as noted in the 'Date' column, which continued until January 2025 sufficient time has been provided, giving the relevant person the opportunity to provide feedback over a period greater than 60 business days.

Esso engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Esso will apply its OIMS System 7-1 Management of Change (see Section 8.12).

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 responses 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	Esso Australia Consultation: Consultation on offshore activities (EMBA).		
From	28/03/2024	Email	Automatic response received.		
To	14/05/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).		
From	14/05/2024	Email	Automatic response received.		
To	11/06/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).		
From	11/06/2024	Email	Automatic response received.		

To	06/07/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - EMBA. Includes link to Information Bulletin #3 (Appendix F-3).
From	30/09/2024	Email	Automatic response received.

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
Stakeholder attended the Decommissioning – Removals Stakeholder Forum. Feedback from forums has been incorporated into the EP, where applicable. Stakeholder requested to continue to be consulted on Decommissioning activities. Esso confirmed Stakeholder will continue to receive consultation material.	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	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
To	25/04/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	20/05/2024	Email	Invitation: Esso Australia: Decommissioning – Removals Stakeholder Forum.
From	20/05/2024	Email	Confirming interest to attend Decommissioning – Removals Stakeholder Forum.
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
From	28/05/2024	Email	Email confirming attendance at online forum for SPJ removals on the 5 June 2024.
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.

To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	13/08/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
From	09/10/2024	Email	Stakeholder response to Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update.
To	29/10/2024	Email	Email to stakeholder confirming continued consultation.
To	01/11/2024	Email	REMINDER: Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update.
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	28/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).
To	16/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).
From	16/12/2024	Email	Confirming stakeholder nominates to be consulted for Decommissioning Campaign #1 Onshore Reception Centre.
From	18/12/2024	Email	Request to be further consulted on Decommissioning Campaign #1 Onshore Reception Centre.

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

Stakeholder provided feedback they have no concerns with any of the activities proposed. Stakeholder requested to be consulted on this activity. Esso confirmed Stakeholder will continue to receive consultation material.	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	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
From	02/04/2024	Email	Acknowledgement of receipt.
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
From	11/04/2024	Email	Automatic response received.
To	25/04/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	20/05/2024	Email	Invitation: Esso Australia: Decommissioning – Removals Stakeholder Forum.
From	20/05/2024	Email	Response to invitation to attend Decommissioning – Removals Stakeholder Forum.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
From	17/06/2024	Email	Stakeholder thanking Esso for the information and the Stakeholder has no concerns with the proposed activity.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	13/08/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
From	11/09/2024	Email	Stakeholder response to Decommissioning Campaign #1 Execution Environment Plan.
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).

From	01/10/2024	Email	Confirmation no further comments on Decommissioning Campaign #1 Execution Environment Plan.
To	01/11/2024	Email	REMINDER: Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update.
From	04/11/2024	Email	Stakeholder response to Decommissioning Campaign #1 Execution Environment Plan.
From	08/11/2024	Email	Stakeholder response to Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan.
From	08/11/2024	Email	Automatic response received.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).
From	16/12/2024	Email	Update to contact details.
From	16/12/2024	Email	Stakeholder confirmed no objections or issues on Decommissioning Campaign #1 Onshore Reception Centre (December 2024) update.
From	16/12/2024	Email	Acknowledgement of receipt Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update.

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
Stakeholder requested to be consulted on this activity. Esso confirmed Stakeholder will continue 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	16/01/2024	Email	Meeting request.		
To	16/01/2024	Email	Scheduling meeting.		
To	16/01/2024	Email	Update to Stakeholder contact.		
From	16/01/2024	Email	Update to Stakeholder contact.		
To	06/02/2024	Meeting - Online	Provided update on SPJ decommissioning.		
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).		

To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
To	25/04/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
From	11/06/2024	Email	Automatic response received.
To	12/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
From	05/07/2024	Email	Stakeholder requesting to continue participating in consultation for decommissioning Campaign.
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	11/07/2024	Email	Esso thanking the Stakeholder for the collaboration and support.
From	11/07/2024	Email	Request for future meeting.
From	29/07/2024	Email	Stakeholder would like to continue participating in the consultation process for the duration of the decommissioning Campaign.
To	08/08/2024	Email	Esso sending Stakeholders information about Bass Strait decommissioning.
To	13/08/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
From	30/09/2024	Email	Request to continue receiving updates on Decommissioning Campaign #1 Execution Environment Plan.
To	30/09/2024	Email	Confirmation stakeholder will continue to receive updates on Decommissioning Campaign #1 Execution Environment Plan.
To	01/11/2024	Email	REMINDER: Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update.
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
From	12/11/2024	Email	Automatic response received.

To	28/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).
From	13/12/2024	Email	Automatic response received.
To	16/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

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 responses 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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.		
From	01/12/2023	Email	Automatic response received.		
To	28/03/2024	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA).		
From	28/03/2024	Email	Automatic response received.		
To	14/05/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).		
From	14/05/2024	Email	Automatic response received.		
To	20/05/2024	Email	Invitation: Esso Australia: Decommissioning – Removals Stakeholder Forum.		
From	20/05/2024	Email	Automatic response received.		
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.		
From	24/05/2024	Email	Automatic response received.		
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.		
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.		

From	11/06/2024	Email	Automatic response received.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
From	01/07/2024	Email	Automatic response received.
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
From	06/07/2024	Email	Automatic response received.
To	09/07/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).
To	09/07/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).
To	31/07/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
From	31/07/2024	Email	Automatic response received.
To	07/08/2024	Email	REMINDER: Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
From	07/08/2024	Email	Automatic response received.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
From	10/09/2024	Email	Automatic response received.
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - EMBA. Includes link to Information Bulletin #3 (Appendix F-3).
From	30/09/2024	Email	Automatic response received.
From	30/09/2024	Email	Automatic response received.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).
From	13/12/2024	Email	Automatic response received.

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

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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	20/05/2024	Email	Invitation: Esso Australia: Decommissioning – Removals Stakeholder Forum.
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	28/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

Department of Agriculture, Fisheries and Forestry [340]

Summary of responses received and Esso's consideration and response	Summary of 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 met with Stakeholder to present an overview of the decommissioning plans. Stakeholder provided feedback on risks of invasive marine species in relation to the structures cut at 55m below mean sea level. Stakeholder requested to continue to be consulted on decommissioning activities in Commonwealth waters that may pose biosecurity risk. Esso has continued to provide Stakeholder with consultation material.	Stakeholder provided advice regarding invasive marine species.	Esso has considered feedback on invasive marine species in the controls of the EP	Esso will provide updates of the activity as necessary. Esso has considered feedback on invasive marine species in the controls of the EP.

To/ from	Date	Method	Reg 24(b)(i): Summary of each response
To	11/01/2024	Email	Esso requested meeting to discuss Campaign #1 decommissioning.
To	11/01/2024	Email	Scheduling meeting.
To	11/01/2024	Email	Scheduling meeting.
From	11/01/2024	Email	Scheduling meeting.
From	11/01/2024	Email	Scheduling meeting.
To	12/01/2024	Email	Scheduling meeting.
To	12/01/2024	Email	Scheduling meeting.
From	12/01/2024	Email	Scheduling meeting.
From	12/01/2024	Email	Scheduling meeting.
To	25/01/2024	Email	Provided upcoming meeting agenda.
From	25/01/2024	Email	Provided upcoming meeting agenda.
To	30/01/2024	Meeting - Online	Meeting held to discuss Esso decommissioning activities and invasive marine species.
To	07/02/2024	Email	Follow up to meeting 30th January 2024.
To	07/02/2024	Email	Esso sending the Stakeholder meeting minutes.

From	07/02/2024	Email	Response to email (links to the relevant resources).
From	09/02/2024	Email	Stakeholder response to decommissioning meeting minutes.
To	20/02/2024	Email	Follow up on feedback on SPJ decommissioning.
From	26/02/2024	Email	Feedback from Stakeholder regarding SPJ decommissioning.
To	20/05/2024	Email	Invitation: Esso Australia: Decommissioning – Removals Stakeholder Forum.
From	20/05/2024	Email	Automatic response received.
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
From	24/05/2024	Email	Automatic response received.
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.
From	03/06/2024	Email	Automatic response received.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
From	11/06/2024	Email	Automatic response received.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
From	01/07/2024	Email	Automatic response received.
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
From	06/07/2024	Email	Automatic response received.
To	16/07/2024	Email	Request for DCCEEW contact.
From	29/07/2024	Email	Follow up on request for DCCEEW contact.
To	29/07/2024	Email	Follow up on feedback.
From	31/07/2024	Email	Confirmation no further feedback on Campaign 1.
To	13/08/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
From	10/09/2024	Email	Automatic response received.

To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
From	30/09/2024	Email	Automatic response received.
To	01/11/2024	Email	REMINDER: Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update.
From	01/11/2024	Email	Automatic response received.
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
From	11/11/2024	Email	Automatic response received.
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	28/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
From	28/11/2024	Email	Automatic response received.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).
From	13/12/2024	Email	Automatic response received.
To	16/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

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
Stakeholder requested a meeting with Esso to gain update on decommissioning activities. Nature Positive Regulation Division confirmed no comment on decommissioning Campaign #1.			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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.		
From	01/12/2023	Email	Automatic response received.		

To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
From	28/03/2024	Email	Request for email resend.
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	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
To	25/04/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
From	25/04/2024	Email	Automatic response received.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
From	14/05/2024	Email	Automatic response received.
To	20/05/2024	Email	Invitation: Esso Australia: Decommissioning – Removals Stakeholder Forum.
From	20/05/2024	Email	Automatic response received.
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.
From	03/06/2024	Email	Request for meeting to gain update on decommissioning activities.
To	04/06/2024	Email	Scheduling meeting.
To	05/06/2024	Email	Scheduling meeting.
From	05/06/2024	Email	Scheduling meeting.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
From	11/06/2024	Email	Automatic response received.
To	20/06/2024	Email	Scheduling meeting.
From	21/06/2024	Email	Scheduling meeting.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
From	01/07/2024	Email	Automatic response received.

To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
From	06/07/2024	Email	Automatic response received.
To	14/07/2024	Email	Follow-up to discussion re Esso's proposed decommissioning activities.
To	16/07/2024	Email	Follow-up re discussion re Esso's proposed decommissioning activities.
To	07/08/2024	Email	Notifying stakeholder of SPJ End State EP withdrawal.
To	07/08/2024	Email	Email clarification.
From	07/08/2024	Email	Confirmation email received. Stakeholder advising no longer in sea dumping department.
To	13/08/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
From	10/09/2024	Email	Automatic response received.
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
From	30/09/2024	Email	Automatic response received.
To	17/10/2024	Email	Coordinating meeting to discuss Decommissioning Campaign 1 - Onshore Reception Centre focus.
From	18/10/2024	Meeting – In person	Meeting held.
To	24/10/2024	Email	Follow-up on meeting to discuss Decommissioning Campaign 1 - Onshore Reception Centre focus.
From	25/10/2024	Email	Follow-up on meeting to discuss Decommissioning Campaign 1 - Onshore Reception Centre focus.
To	01/11/2024	Email	REMINDER: Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update.
From	01/11/2024	Email	Automatic response received.
From	04/11/2024	Email	Stakeholder response to Decommissioning Campaign #1 Execution Environment Plan.
From	04/11/2024	Email	Automatic response received.
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
From	11/11/2024	Email	Automatic response received.

To	12/11/2024	Email	Consultation on the Bass Strait State Waters Environment Plan
From	13/11/2024	Email	Esso request received and forwarded to appropriate section.
To	28/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	29/11/2024	Meeting - Online	Meeting held.
To	05/12/2024	Email	Esso's Decommissioning Campaign 1 Onshore Reception Centre EPBC referral plan.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).
From	13/12/2024	Email	Automatic response received.
From	19/12/2024	Email	Response to Esso's Decommissioning Campaign 1 Onshore Reception Centre EPBC referral plan.

Department of Climate Change, Energy, the Environment and Water - 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
The Stakeholder confirmed the planned activities do not overlap any Australian Marine Parks, therefore there are no authorisation requirements from the 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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.
From	06/12/2023	Email	Stakeholder response to offshore activities in Bass Strait update; activities do not overlap any Australian Marine Parks
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	20/05/2024	Email	Invitation: Esso Australia: Decommissioning – Removals Stakeholder Forum.

To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
From	11/07/2024	Email	Stakeholder response received; planned activities do not overlap Australian Marine Parks.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	01/11/2024	Email	REMINDER: Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update.
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

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
Stakeholder confirmed the activity areas are located outside of any Defence Training Areas and restricted airspace.			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	18/01/2024	Email	Updates on offshore activities in Bass Strait		

To	28/01/2024	Phone call	Request for suitable contact.
To	31/01/2024	Email	Updates on offshore activities in Bass Strait.
To	07/02/2024	Email	Request for feedback on Campaign 1 decommissioning in Bass Strait.
To	07/02/2024	Email	Request for feedback on Campaign 1 decommissioning in Bass Strait.
From	23/02/2024	Email	Stakeholder response to Esso Australia - Updates on offshore activities in Bass Strait and request for feedback on the proposed end states for decommissioning of Steel Piled Jackets.
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
To	25/04/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	20/05/2024	Email	Invitation: Esso Australia: Decommissioning – Removals Stakeholder Forum.
From	21/05/2024	Email	Response to invitation to Decommissioning – Removals Stakeholder Forum.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	13/08/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
From	19/08/2024	Email	Automatic response received.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	01/11/2024	Email	REMINDER: Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update.
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.

To	28/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

Department of Employment and Workforce Relations - Gippsland [612]

Summary of responses received and Esso's consideration and response	Summary of 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 attended the Decommissioning – Removals Stakeholder Forum Sale session. Feedback from forums has been incorporated into the EP, where applicable.	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	03/06/2024	Email	Confirmed registration for Decommissioning – Removals Stakeholder Forum, details provided.
From	03/06/2024	Email	Confirmation to attend Decommissioning – Removals Stakeholder Forum Sale session.
To	04/06/2024	Meeting – In Person	Stakeholder Forum for SPJ Removals - Campaign 1.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

Department of Energy, Environment and Climate Action - Agriculture Victoria [576]

Summary of responses received and Esso's consideration and response	Summary of 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 met with Stakeholder to present an overview of the decommissioning plans. Stakeholder provided feedback on risks of invasive marine species in relation to the structures cut at 55m below mean sea level. Esso provided Stakeholder with a summary of the Decommissioning – Removals Stakeholder Forum.	Stakeholder provided advice regarding invasive marine species.	Esso has considered feedback on invasive marine species in the controls of the EP	Esso will provide updates of the activity as necessary. Esso has considered feedback on invasive marine species in the controls of the EP.

To/ from	Date	Method	Reg 24(b)(i): Summary of each response
To	11/01/2024	Email	Esso requested a meeting.
From	12/01/2024	Email	Confirmation of meeting request.
To	15/01/2024	Email	Scheduling meeting.
From	15/01/2024	Email	Scheduling meeting.
To	22/01/2024	Email	Scheduling meeting.
From	22/01/2024	Email	Scheduling meeting.
To	25/01/2024	Email	Providing agenda for upcoming meeting.
To	30/01/2024	Meeting - Online	Meeting held to discuss Esso decommissioning activities.
To	07/02/2024	Email	Follow up from meeting held.
From	09/02/2024	Email	Feedback from Stakeholder regarding SPJ decommissioning.
From	20/05/2024	Email	The Stakeholder is registering for the Removals Stakeholder Forum.
To	24/05/2024	Email	Invitation to additional sessions for Decommissioning – Removals Stakeholder Forum.
From	27/05/2024	Email	Confirmation to attend Decommissioning – Removals Stakeholder Forum online session.
From	03/06/2024	Email	No longer able to attend Decommissioning – Removals Stakeholder Forum online session.
To	11/06/2024	Email	Confirmation email received.

From	11/06/2024	Email	Automatic response received.
From	11/06/2024	Email	Automatic response received.
From	13/06/2024	Email	Confirmation email received.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
From	06/07/2024	Email	Automatic response received.
To	13/08/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

Department of Energy, Environment and Climate Action (DEECA) [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
Stakeholder requested summary of Decommissioning – Removals Stakeholder Forum. Esso sent Stakeholder summary.	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	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
From	10/04/2024	Email	Automatic response received.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	20/05/2024	Email	Invitation: Esso Australia: Decommissioning – Removals Stakeholder Forum.

To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
From	01/07/2024	Email	Automatic response received.
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
From	06/07/2024	Email	Automatic response received.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	28/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).
From	13/12/2024	Email	Automatic response received.

Department of Industry, Science, Energy and Resources [334]

Summary of responses received and Esso's consideration and response			Summary of 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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.		

To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
To	20/05/2024	Email	Invitation: Esso Australia: Decommissioning – Removals Stakeholder Forum.
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	13/08/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

Department of Jobs, Skills, Industry and Regions [44]

Summary of responses received and Esso's consideration and response	Summary of 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 expressed an interest in the impact of decommissioning on socio economic aspects of the region and potential partnership opportunities. Esso continues to consult with 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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).

To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	20/05/2024	Email	Invitation: Esso Australia: Decommissioning – Removals Stakeholder Forum.
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.
From	05/06/2024	Email	Stakeholder request for meeting.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	12/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	17/06/2024	Email	Scheduling meeting.
To	17/06/2024	Email	Scheduling meeting.
From	17/06/2024	Email	Scheduling meeting.
From	17/06/2024	Email	Scheduling meeting.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
From	02/07/2024	Email	Stakeholder requested the inclusion of six contacts on email distribution list for consultation material.
To	03/07/2024	Email	Confirmation emails have been added to EAPL distribution list.
To	03/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	08/07/2024	Email	Advised Esso will attend meeting online.
To	08/07/2024	Email	Acknowledgement from Esso that email had been received.
From	08/07/2024	Meeting - Online	Meeting between EAPL and stakeholder to discuss decommissioning activities.
From	08/07/2024	Email	Acknowledgement of change in meeting plan.
To	10/07/2024	Email	Follow up from meeting.
To	10/07/2024	Email	Seeking interest from Regional Development Victoria Gippsland committee.
From	10/07/2024	Email	Follow up from meeting.
From	10/07/2024	Email	Automatic response received.

From	12/07/2024	Email	Stakeholder request for presentation.
To	16/07/2024	Email	Scheduling meeting.
From	18/07/2024	Email	Follow up from meeting.
To	23/07/2024	Email	Follow up from meeting.
To	24/07/2024	Email	Scheduling meeting.
From	24/07/2024	Email	Scheduling meeting.
From	24/07/2024	Email	Scheduling meeting.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
From	30/09/2024	Email	Automatic response received.
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
From	12/11/2024	Email	Automatic response received.
From	18/11/2024	Email	Stakeholder requested meeting.
To	18/11/2024	Email	Scheduling meeting.
From	18/11/2024	Email	Scheduling meeting.
To	18/11/2024	Email	Scheduling meeting.
From	18/11/2024	Email	Scheduling meeting.
From	18/11/2024	Email	Registration to attend community information session.
To	19/11/2024	Email	Scheduling meeting.
To	19/11/2024	Community Information Session	A Community Information Session was held in Sale on 19 November 2024. The objective of the session was to provide information on Esso's current proposed activities, with a focus on Campaign 1 decommissioning, the Onshore Reception Centre, and for stakeholders to consider and provide feedback on how activities might impact their functions, interest and activities.
To	25/11/2024	Meeting - Online	Online meeting.
To	25/11/2024	Email	Esso's November Community Information Sessions – Thank you.

To	28/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).
From	13/12/2024	Email	Automatic response received.
To	16/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

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
Stakeholder requested to be consulted on oil spill response plans related to the activity. Esso met with Stakeholder and provided details on Decommissioning Campaign #1 activities and had advised that will be sending Quick Reference Guide (QRG) for review. Esso provided Stakeholder QRG for review in December 2024. No feedback on QRG received. Stakeholder registered and attended Community Information Session. Feedback from community information sessions has been incorporated into the EP, where applicable.	Concerns raised in Community Information Sessions include potential environmental and social impacts.	Concerns raised in Community Information Sessions were recorded and incorporated into the EP, where applicable. Feedback specific to Onshore Reception Centre has been included in applicable regulatory submissions.	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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
To	02/04/2024	Email	Esso is sending the Stakeholder JUR P&A Quick Reference Information and asking the Stakeholder for feedback.
From	05/04/2024	Email	Stakeholder would like the opportunity to review any OPEP and related documents.

To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	20/05/2024	Email	Invitation: Esso Australia: Decommissioning – Removals Stakeholder Forum.
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
From	01/07/2024	Email	Automatic response received.
From	02/07/2024	Email	Stakeholder advised they are to be consulted on any risk assessments and response arrangements (e.g. OPEPs) in relation to all proposed activities.
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	11/07/2024	Email	EAPL request for meeting with Stakeholder.
From	15/07/2024	Email	Scheduling meeting.
To	16/07/2024	Email	Scheduling meeting.
From	17/07/2024	Email	Scheduling meeting.
To	05/08/2024	Email	Scheduling meeting.
From	05/08/2024	Email	Scheduling meeting.
From	09/08/2024	Meeting - In Person	Meeting held between Esso and Stakeholder.
To	09/08/2024	Email	Follow-up email from meeting.
From	09/08/2024	Email	Follow-up email from meeting.
To	09/09/2024	Email	Scheduling meeting.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
From	24/09/2024	Email	Registration to attend Community Information Session.

To	24/09/2024	Email	Confirmation of registration to attend Community Information Session.
To	25/09/2024	Community Information Session	A Community Information Session was held in Welshpool 25 September 2024. The objective of the session was to provide information on Esso's current proposed activities, with a focus on Campaign 1 decommissioning, the Onshore Reception Centre, and for stakeholders to consider and provide feedback on how activities might impact their functions, interest and activities.
To	26/09/2024	Email	Community Information Session attendance - Thank you.
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
From	30/09/2024	Email	Automatic response received.
To	29/10/2024	Email	Coordinating introductory meeting Esso Decommissioning Campaign 1.
From	30/10/2024	Meeting - Online	Introductory Meeting Decommissioning Campaign 1 - Onshore Reception Centre focus.
To	06/11/2024	Email	Esso Decommissioning Campaign 1 - Onshore Reception Centre (at Barry Beach Marine Terminal (BBMT)) site readiness.
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	29/11/2024	Meeting - Online	Meeting Decommissioning Campaign 1 - Onshore Reception Centre focus.
From	02/12/2024	Email	Request from stakeholder regarding sharing of Tactical Response Plan (TRP)s.
To	03/12/2024	Email	Response to stakeholder re request for Tactical Response Plan (TRP)
To	05/12/2024	Email	Follow-up to discussion on Esso's Decommissioning Campaign 1 Onshore Reception Centre EES referral plan.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).
To	13/12/2024	Email	Quick reference guide sent to Stakeholder for review.
From	13/12/2024	Email	Automatic response received.
To	16/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

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
Stakeholder attended the Decommissioning – Removals Stakeholder Forum. Feedback from forums has been incorporated into the EP, where applicable			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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.		
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).		
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.		
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.		
To	20/05/2024	Email	Invitation: Esso Australia: Decommissioning – Removals Stakeholder Forum.		
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.		
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.		
From	03/06/2024	Email	Registered to attend Decommissioning – Removals Stakeholder online session.		
To	03/06/2024	Email	Confirmed registration for Decommissioning – Removals Stakeholder Forum, details provided.		
To	05/06/2024	Meeting – Online	Stakeholder Forum for SPJ Removals - Campaign 1.		
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.		
To	12/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.		
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).		
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.		
From	06/07/2024	Email	Automatic response received.		

To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).
From	13/12/2024	Email	Automatic response received.

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
Stakeholder attended the Decommissioning – Removals Stakeholder Forum and Community Information Session. Feedback from forums and community information sessions has been incorporated into the EP, where applicable.	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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.
From	01/12/2023	Email	Automatic response received.
From	07/12/2023	Email	Stakeholder requested information for drop-in session.
To	08/12/2023	Email	Drop-in session – Thank you.
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
To	28/03/2024	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA).
From	28/03/2024	Email	Automatic response received.
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.

From	10/04/2024	Email	Automatic response received.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	14/05/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).
From	14/05/2024	Email	Automatic response received.
To	20/05/2024	Email	Invitation: Esso Australia: Decommissioning – Removals Stakeholder Forum.
From	20/05/2024	Email	Automatic response received.
From	20/05/2024	Email	Registered to attend Decommissioning – Removals Stakeholder Forum.
From	20/05/2024	Email	Registered to attend Decommissioning – Removals Stakeholder Forum
To	24/05/2024	Email	Invitation to additional sessions for Decommissioning – Removals Stakeholder Forum.
From	24/05/2024	Email	Automatic response received.
From	27/05/2024	Email	Registered to attend Decommissioning – Removals Stakeholder Forum.
From	27/05/2024	Email	Registered to attend Decommissioning – Removals Stakeholder Forum.
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.
From	03/06/2024	Email	Automatic response received.
To	05/06/2024	Meeting – Online	Stakeholder Forum for SPJ Removals - Campaign 1.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	11/06/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).
From	11/06/2024	Email	Automatic response received.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
From	01/07/2024	Email	Automatic response received.
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	06/07/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).
From	06/07/2024	Email	Automatic response received.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).

From	10/09/2024	Email	Automatic response received.
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - EMBA. Includes link to Information Bulletin #3 (Appendix F-3).
From	30/09/2024	Email	Automatic response received.
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
From	11/11/2024	Email	Automatic response received.
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).
From	13/12/2024	Email	Automatic response received.

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
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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.		
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).		
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.		
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.		
To	20/05/2024	Email	Invitation: Esso Australia: Decommissioning – Removals Stakeholder Forum.		
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.		

To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
From	10/09/2024	Email	Automatic response received.
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

Energy Safe Victoria [191]

Summary of responses received and Esso's consideration and response			Summary of 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	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.		
From	11/06/2024	Email	Automatic response received.		
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).		
From	01/07/2024	Email	Automatic response received.		
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.		

From	06/07/2024	Email	Automatic response received.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
From	30/09/2024	Email	Automatic response received.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).
From	13/12/2024	Email	Automatic response received.

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
Stakeholder attended the Decommissioning – Removals Stakeholder Forum Sale session. Feedback from forums has been incorporated into the EP, where applicable. Esso met with Stakeholder to discuss Decommissioning activities; Stakeholder expressed interest in emergency response. Esso provided Quick Reference Guide to Stakeholder for review. No feedback on Quick Reference Guide has been 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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
From	11/04/2024	Email	Request to be added to email list regarding consultation and engagement based in Gippsland. .
To	11/04/2024	Email	Confirmation Stakeholder will be added to email distribution list. .

To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
From	14/05/2024	Email	Automatic response received.
To	20/05/2024	Email	Invitation: Esso Australia: Decommissioning – Removals Stakeholder Forum.
From	20/05/2024	Email	Declined to attend Decommissioning removals Stakeholder Forum.
From	21/05/2024	Email	Registered to attend Decommissioning – Removals Stakeholder Forum.
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
From	27/05/2024	Email	Registered to attend Decommissioning – Removals Stakeholder Forum.
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.
To	04/06/2024	Meeting – In Person	Stakeholder Forum for SPJ Removals - Campaign 1.
From	04/06/2024	Email	Request for meeting to discuss emergency response planning and decommissioning.
To	05/06/2024	Email	Online Forum details provided.
From	05/06/2024	Email	Request for meeting regarding decommissioning Campaign #1.
From	05/06/2024	Email	Registered to attend Decommissioning – Removals Stakeholder Forum.
From	05/06/2024	Email	Stakeholder questions on decommissioning.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	11/06/2024	Email	Scheduling meeting regarding decommissioning.
From	11/06/2024	Email	Request to be consulted on all Esso activities in Gippsland.
To	12/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
From	12/06/2024	Email	Scheduling meeting.
From	12/06/2024	Email	Automatic response received.
From	12/06/2024	Email	Stakeholder is sending Esso a Customer Service Survey.
To	14/06/2024	Email	Scheduling meeting.
From	17/06/2024	Email	Scheduling meeting.
From	17/06/2024	Email	Scheduling meeting.

To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
From	01/07/2024	Email	Automatic response received.
From	04/07/2024	Email	Stakeholder query regarding Esso mailing list.
To	04/07/2024	Email	Confirmed stakeholder will receive consultation material via the Esso mailing list.
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	11/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	25/07/2024	Meeting – In Person	Meeting to discuss Decommissioning Campaign 1.
From	01/08/2024	Email	Stakeholder requested details on community information sessions.
To	01/08/2024	Email	Esso answered Stakeholder's query regarding details on community information sessions.
From	06/09/2024	Meeting - In Person	Meeting held to discuss decommissioning and Longford Operations.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
From	30/09/2024	Email	Automatic response received.
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).
To	16/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

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

Esso met with Stakeholder and provided details on Decommissioning Campaign #1 activities. Esso provided Stakeholder with Quick Reference Guide (QRG) to review. No feedback has been received from 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	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).		
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.		
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.		
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.		
To	11/07/2024	Email	Meeting request.		
To	15/07/2024	Email	Scheduling meeting.		
From	15/07/2024	Email	Scheduling meeting.		
From	19/08/2024	Meeting - Online	Meeting held.		
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.		
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.		
To	13/12/2024	Email	Quick reference guide sent to Stakeholder for review.		

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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.		

To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
From	28/03/2024	Email	Automatic response received.
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	20/05/2024	Email	Invitation: Esso Australia: Decommissioning – Removals Stakeholder Forum.
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

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
Esso met with Stakeholder to provide updates on Campaign #1 activities. Esso will continue to engage with Stakeholder as the project progresses. Queries addressed.			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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.
From	01/12/2023	Questionnaire	Stakeholder responded to Esso Consultation Questionnaire and selected to be consulted on this activity.
To	08/12/2023	Email	Esso Consultation Questionnaire – Thank you.
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
To	28/03/2024	Email	Requested meeting to discuss decommissioning.
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
From	10/04/2024	Meeting - Online	Meeting between with Stakeholder on Campaign #1 activities.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	20/05/2024	Email	Invitation: Esso Australia: Decommissioning – Removals Stakeholder Forum.
From	20/05/2024	Email	Registered to attend Decommissioning – Removals Stakeholder Forum.
From	20/05/2024	Email	Registered to attend Decommissioning – Removals Stakeholder Forum.
From	20/05/2024	Email	Registered to attend Decommissioning – Removals Stakeholder Forum.
To	24/05/2024	Email	Notifying stakeholder of additional Decommissioning – Removals Stakeholder Forum.
To	24/05/2024	Email	Invitation: Esso Australia: Decommissioning – Removals Stakeholder Forum.
From	24/05/2024	Email	Automatic response received.
From	24/05/2024	Email	Automatic response received.
From	27/05/2024	Email	Registered to attend Decommissioning – Removals Stakeholder Forum.
From	28/05/2024	Email	Registered to attend Decommissioning – Removals Stakeholder Forum.
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.
From	03/06/2024	Email	Registered to attend Decommissioning – Removals Stakeholder Forum.
To	03/06/2024	Email	Confirmed registration for Decommissioning – Removals Stakeholder Forum, details provided.

To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
From	11/06/2024	Email	Stakeholder will pass the email on to management.
To	12/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	13/06/2024	Email	Esso thanking the Stakeholder to forwarding to management.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
From	06/07/2024	Email	Automatic response received.
To	14/08/2024	Email	Request to verify staff email addresses.
From	15/08/2024	Email	Response to verification of email addresses.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
From	10/09/2024	Email	Automatic response received.
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
From	30/09/2024	Email	Automatic response received.
From	30/09/2024	Email	Automatic response received.
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).
From	13/12/2024	Meeting - Online	Meeting - Esso Gippsland decommissioning - General update.

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

Stakeholder attended the Decommissioning – Removals Stakeholder Forum Online session. Feedback from forums has been incorporated into the EP, where applicable.	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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
From	14/05/2024	Email	Automatic response received.
To	20/05/2024	Email	Invitation: Esso Australia: Decommissioning – Removals Stakeholder Forum.
From	20/05/2024	Email	Automatic response received.
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
From	27/05/2024	Email	Registered to attend Decommissioning – Removals Stakeholder Forum.
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.
To	05/06/2024	Meeting – Online	Stakeholder Forum for SPJ Removals - Campaign 1.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
From	10/09/2024	Email	Automatic response received.
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).

From	30/09/2024	Email	Automatic response received.
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).
To	16/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

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
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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.		
From	01/12/2023	Email	Automatic response received.		
To	28/03/2024	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA).		
To	14/05/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).		
To	20/05/2024	Email	Invitation: Esso Australia: Decommissioning – Removals Stakeholder Forum.		
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.		
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.		
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.		
To	11/06/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).		
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).		
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.		

To	06/07/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - EMBA. Includes link to Information Bulletin #3 (Appendix F-3).
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	28/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

Latrobe Valley Authority [645]

Summary of responses received and Esso's consideration and response			Summary of 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
Completed Esso Consultation Questionnaire. Esso continues to provide Stakeholder with consultation material.			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	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).		
From	01/07/2024	Email	Automatic response received.		
From	02/07/2024	Questionnaire	Stakeholder responded to Esso Consultation Questionnaire.		
To	23/07/2024	Email	Esso Consultation Questionnaire – Thank you.		
To	31/07/2024	Email	Invitation: Esso Australia: Decommissioning – Removals Stakeholder Forum.		
From	01/08/2024	Email	Declined to attend Decommissioning – Removals Stakeholder Forum (requested information from the Forum be provided).		

To	01/08/2024	Email	Esso will release information bulletin with a summary of the Decommissioning – Removals Stakeholder Forum presentation and feedback received.
From	02/08/2024	Email	Stakeholder requested Decommissioning – Removals Stakeholder Forum information bulletin.
To	07/08/2024	Email	REMINDER: Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
From	30/09/2024	Email	Automatic response received.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

Major Road Projects Victoria [538]

Summary of responses received and Esso's consideration and response			Summary of 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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.		
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).		
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.		
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.		
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.		
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).		

To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.		
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).		
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.		
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.		
To	20/05/2024	Email	Invitation: Esso Australia: Decommissioning – Removals Stakeholder Forum.		
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.		
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.		
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.		
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).		
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.		

To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

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
Stakeholder attended the Decommissioning – Removals Stakeholder Forum. Feedback from forums has been incorporated into the EP, where applicable.	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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.
From	01/12/2023	Email	Automatic response received.
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
To	28/03/2024	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA).
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	14/05/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).
To	20/05/2024	Email	Invitation: Esso Australia: Decommissioning – Removals Stakeholder Forum.
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	03/06/2024	Email	Confirmed registration for Decommissioning – Removals Stakeholder Forum, details provided.

To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.
From	03/06/2024	Email	Confirmation to attend Decommissioning removals Stakeholder Forum - online session.
To	05/06/2024	Meeting – Online	Stakeholder Forum for SPJ Removals - Campaign 1.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	09/07/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
From	10/09/2024	Email	Automatic response received.
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
From	30/09/2024	Email	Automatic response received.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).
To	16/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

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
Esso met with Stakeholder to provide updates on Campaign #1 activities. Queries addressed.			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	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
From	28/03/2024	Email	Automatic response received.
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
From	10/04/2024	Email	Automatic response received.
To	25/04/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	20/05/2024	Email	Invitation: Esso Australia: Decommissioning – Removals Stakeholder Forum.
From	20/05/2024	Email	Automatic response received.
From	20/05/2024	Email	Declined to attend Decommissioning – Removals Stakeholder Forum.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
From	06/07/2024	Email	Automatic response received.
To	08/08/2024	Email	Update on Campaign #1 Steel piled jacket End State Environment Plan (EP).
From	08/08/2024	Email	Confirmed receipt of update on Campaign #1 Steel piled jacket End State Environment Plan (EP); requested discussion in next meeting scheduled for September 2024.
To	13/08/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
From	13/08/2024	Email	Automatic response received.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
From	30/09/2024	Email	Automatic response received.
From	15/10/2024	Meeting - Online	6 monthly update.

To	01/11/2024	Email	REMINDER: Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update.
From	01/11/2024	Email	Automatic response received.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).
From	13/12/2024	Email	Automatic response received.

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
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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.		
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).		
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.		
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.		
To	20/05/2024	Email	Invitation: Esso Australia: Decommissioning – Removals Stakeholder Forum.		
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.		
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.		
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.		
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).		
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.		

To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	01/11/2024	Email	REMINDER: Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update.
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	28/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	28/11/2024	Email	EAPL request for meeting with stakeholder.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).
From	13/12/2024	Email	Automatic response received.
To	16/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

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
Esso met with Stakeholder to discuss Campaign #1 activities. Stakeholder provided feedback on mitigation measures for invasive marine species and vessel lighting. Esso has incorporated this feedback into the relevant section of the EP.			Stakeholder provided feedback on mitigation measures for invasive marine species and vessel lighting.	Not applicable as no objections or claims were made.	Esso will provide updates of the activity as necessary. Esso has considered Stakeholder feedback within EP controls.
To/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.		
From	01/12/2023	Email	Automatic response received.		

To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
From	28/03/2024	Email	Automatic response received.
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	20/05/2024	Email	Invitation: Esso Australia: Decommissioning – Removals Stakeholder Forum.
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	12/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	22/07/2024	Email	Esso sending the Stakeholder what they are currently working on and who they have been engaging with.
To	31/07/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	07/08/2024	Email	REMINDER: Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
From	13/08/2024	Email	Scheduling meeting.
To	15/08/2024	Email	Scheduling meeting.
To	02/09/2024	Email	Follow up on meeting request.
From	05/09/2024	Email	Suggested meeting availability.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
From	10/09/2024	Email	Automatic response received.
From	12/09/2024	Meeting - Online	Online meeting to discuss Campaign #1.
To	13/09/2024	Email	Follow up from meeting held.

To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
From	30/09/2024	Email	Automatic response received.
To	21/10/2024	Email	Request for contact at Parks Australia.
To	07/11/2024	Email	Response to stakeholder providing requested information.
From	07/11/2024	Email	Stakeholder providing EAPL with requested information.
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
From	11/11/2024	Email	Automatic response received.
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).
From	13/12/2024	Email	Automatic response received.

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
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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
From	14/05/2024	Email	Automatic response received.
To	20/05/2024	Email	Invitation: Esso Australia: Decommissioning – Removals Stakeholder Forum.
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.

To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	12/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

Safe Transport Victoria - Maritime [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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	20/05/2024	Email	Invitation: Esso Australia: Decommissioning – Removals Stakeholder Forum.

To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	16/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

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
Esso met with Stakeholder throughout 2024 to discuss Campaign #1 activities. Queries addressed. Stakeholder attended the Decommissioning – Removals Stakeholder Forum and Community Information Session. Feedback from forums and community information sessions has been incorporated into the EP, where applicable.			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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.		

From	01/12/2023	Email	Automatic response received.
To	14/02/2024	Email	Esso Australia - Updates on offshore activities in Bass Strait
From	22/02/2024	Meeting - In Person	Discussion on decommissioning.
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
From	28/03/2024	Email	Automatic response received.
To	28/03/2024	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA).
From	28/03/2024	Email	Automatic response received.
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
From	10/04/2024	Email	Automatic response received.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
From	14/05/2024	Email	Automatic response received.
To	14/05/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).
From	14/05/2024	Email	Automatic response received.
From	16/05/2024	Phone call	Discussion on decommissioning.
To	20/05/2024	Email	Invitation: Esso Australia: Decommissioning – Removals Stakeholder Forum.
From	20/05/2024	Email	Automatic response received.
From	20/05/2024	Email	The Stakeholder is registering for the Removals Stakeholder Forum.
From	20/05/2024	Phone call	Discussion on decommissioning.
To	24/05/2024	Email	Invitation to additional sessions for Decommissioning – Removals Stakeholder Forum.
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
From	24/05/2024	Email	Automatic response received.
From	27/05/2024	Email	Registered to attend Decommissioning – Removals Stakeholder Forum online session.
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.
To	05/06/2024	Meeting – Online	Stakeholder Forum for SPJ Removals - Campaign 1.

To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
From	11/06/2024	Email	Automatic response received.
To	11/06/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).
From	11/06/2024	Email	Automatic response received.
From	26/06/2024	Meeting - In Person	Decommissioning briefing to Stakeholder.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
From	01/07/2024	Email	Automatic response received.
From	03/07/2024	Phone call	Discussion on decommissioning.
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	06/07/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).
To	05/08/2024	Email	Invitation: Esso Australia: Decommissioning – Removals Stakeholder Forum.
From	05/08/2024	Email	Automatic response received.
To	07/08/2024	Email	REMINDER: Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
From	07/08/2024	Email	Registered to attend Community Information Session.
To	07/08/2024	Email	Community Information Session - confirmation of registration.
From	07/08/2024	Email	Automatic response received.
From	22/08/2024	Phone call	Discussion on decommissioning.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
From	10/09/2024	Email	Automatic response received.
To	23/09/2024	Email	Invitation to attend community information sessions in South Gippsland.
From	23/09/2024	Email	Automatic response received.

To	23/09/2024	Email	Invitation to attend community information sessions in South Gippsland.
From	23/09/2024	Email	Automatic response received.
From	24/09/2024	Email	Registered to attend Community Information Session.
To	24/09/2024	Email	Confirmation of registration to attend Community Information Session.
To	25/09/2024	Community Information Session	A Community Information Session was held in Leongatha on 25 September 2024. The objective of the session was to provide information on Esso's current proposed activities, with a focus on Campaign 1 decommissioning, the Onshore Reception Centre, and for stakeholders to consider and provide feedback on how activities might impact their functions, interest and activities.
To	26/09/2024	Email	September Community Information Session – Thank you.
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - EMBA. Includes link to Information Bulletin #3 (Appendix F-3).
From	30/09/2024	Email	Automatic response received.
To	24/10/2024	Community Information Session	A Community Information Session was held in Leongatha on October 24th 2024. The objective of the session was to provide information on Esso's current proposed activities, with a focus on Campaign 1 decommissioning, the Onshore Reception Centre, and for stakeholders to consider and provide feedback on how activities might impact their functions, interest and activities.
To	04/11/2024	Email	October Community Information Sessions – Thank you.
To	21/11/2024	Meeting - In Person	ORC early works (site readiness) meeting.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).
From	13/12/2024	Email	Automatic response received.
To	16/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

Southern Rural Water [413]

Summary of responses received and Esso's consideration and response	Summary of 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 attended the Decommissioning – Removals Stakeholder Forum Sale session. Feedback from forums has been incorporated into the EP, where applicable.	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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.
From	01/12/2023	Email	Automatic response received.
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
From	28/03/2024	Email	Automatic response received.
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
From	10/04/2024	Email	Automatic response received.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
From	14/05/2024	Email	Automatic response received.
To	20/05/2024	Email	Invitation to attend Esso Australia: Decommissioning – Removals Stakeholder Forum.
From	20/05/2024	Email	Automatic response received.
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
From	27/05/2024	Email	Registered to attend Decommissioning – Removals Stakeholder Forum.
To	28/05/2024	Email	Provided Decommissioning – Removals Stakeholder Forum details.
From	28/05/2024	Email	Registered to attend Decommissioning – Removals Stakeholder Forum Sale session.
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.
From	03/06/2024	Email	Automatic response received.

To	04/06/2024	Meeting – In Person	Stakeholder Forum for SPJ Removals - Campaign 1.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
From	11/06/2024	Email	Automatic response received.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
From	01/07/2024	Email	Automatic response received.
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
From	10/09/2024	Email	Automatic response received.
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
From	30/09/2024	Email	Automatic response received.
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).
From	13/12/2024	Email	Automatic response received.

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
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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.		

From	01/12/2023	Email	Automatic response received.
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	20/05/2024	Email	Invitation to attend Esso Australia: Decommissioning – Removals Stakeholder Forum.
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
From	08/07/2024	Email	Stakeholder advised they do not need to be consulted for this activity.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	20/05/2024	Email	Invitation to attend Esso Australia: Decommissioning – Removals Stakeholder Forum.
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
From	11/06/2024	Email	Automatic response received.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	31/07/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	07/08/2024	Email	REMINDER: Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

Victorian Marine and Coastal Council [710]

Summary of responses received and Esso's consideration and response	Summary of 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	31/07/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	07/08/2024	Email	REMINDER: Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

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
To	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	20/05/2024	Email	Invitation to attend Esso Australia: Decommissioning – Removals Stakeholder Forum.

To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

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
Stakeholder attended the Decommissioning – Removals Stakeholder Forum. Feedback from forums has been incorporated into the EP, where applicable. Stakeholder completed Esso Consultation Questionnaire.	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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.
From	01/12/2023	Email	Automatic response received.
To	14/02/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
To	28/03/2024	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA).

From	28/03/2024	Email	Automatic response received.
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
From	10/04/2024	Email	Automatic response received.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	14/05/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).
From	14/05/2024	Email	Automatic response received.
To	20/05/2024	Email	Invitation to attend Esso Australia: Decommissioning – Removals Stakeholder Forum.
From	20/05/2024	Email	Automatic response received.
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
From	24/05/2024	Email	Automatic response received.
From	27/05/2024	Email	Registered to attend Decommissioning – Removals Stakeholder Forum.
From	27/05/2024	Email	Registered to attend Decommissioning Removals Stakeholder Forum.
From	28/05/2024	Email	Registered to attend the Decommissioning – Removals Stakeholder Forum.
From	28/05/2024	Questionnaire	Stakeholder responded to Esso Consultation Questionnaire and selected to be consulted on this activity.
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.
From	03/06/2024	Email	Registered to attend Decommissioning - Removals Stakeholder Forum online session.
To	03/06/2024	Email	Confirmed registration for Decommissioning – Removals Stakeholder Forum, details provided.
From	04/06/2024	Email	Registered to attend Decommissioning – Removals Stakeholder Forum.
To	04/06/2024	Meeting – In Person	Stakeholder Forum for SPJ Removals - Campaign 1.
To	04/06/2024	Email	Advised stakeholder the forum had occurred; provided details for online forum.
From	05/06/2024	Email	Requested details for Decommissioning – Removals Stakeholder Forum – online.
To	05/06/2024	Email	Provided details for online forum.

To	05/06/2024	Meeting – Online	Stakeholder Forum for SPJ Removals - Campaign 1.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	11/06/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).
From	11/06/2024	Email	Unable to attend the Decommissioning – Removals Stakeholder Forum online
From	11/06/2024	Email	Automatic response received.
To	19/06/2024	Email	Esso Consultation Questionnaire – Thank you.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
From	01/07/2024	Email	Automatic response received.
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	06/07/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).
To	26/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
From	30/07/2024	Email	Registered to attend at Golden Beach community presentation.
To	31/07/2024	Email	Confirmed registration to attend Golden Beach community presentation
To	31/07/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
From	01/08/2024	Email	Registered to attend Decommissioning – Removals Stakeholder Forum.
From	01/08/2024	Email	Registered to attend Decommissioning – Removals Stakeholder Forum.
To	07/08/2024	Email	Confirmation of registration to attend Decommissioning – Removals Stakeholder Forum.
To	07/08/2024	Email	Confirmation of registration to attend Decommissioning – Removals Stakeholder Forum.
From	07/08/2024	Email	Stakeholder unable to attend decommissioning forum.
To	29/08/2024	Drop-in Session - In Person	Community presentation on all current activities (JUR, G&G, Kipper, Turrum, SEA CCS, Decommissioning - All).
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).

From	10/09/2024	Email	Automatic response received.
From	10/09/2024	Email	Automatic response received.
From	10/09/2024	Email	Automatic response received.
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - EMBA. Includes link to Information Bulletin #3 (Appendix F-3).
From	30/09/2024	Email	Automatic response received.
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
From	11/11/2024	Email	Automatic response received.
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
From	12/11/2024	Email	Automatic response received.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).
From	13/12/2024	Email	Automatic response received.

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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.		
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).		
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.		
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.		

To	20/05/2024	Email	Invitation to attend Esso Australia: Decommissioning – Removals Stakeholder Forum.
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	31/07/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	07/08/2024	Email	REMINDER: Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).
To	16/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

Consultation report (Summary) for Regulation 25 (1)(b) relevant persons

Department of Energy, Environment and Climate Action [371]

Summary of responses received and Esso's consideration and response	Summary of 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 met with Stakeholder to provide update on decommissioning. Stakeholder completed Esso Consultation Questionnaire. Esso continues to provide Stakeholder consultation material.	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	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
From	28/03/2024	Email	Automatic response received.
To	03/06/2024	Meeting - In Person	Meeting notes.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
From	11/06/2024	Email	Automatic response received.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	11/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
From	31/07/2024	Email	Automatic response received.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
From	30/09/2024	Email	Automatic response received.
From	02/10/2024	Questionnaire	Stakeholder responded to Esso Consultation Questionnaire.
To	07/10/2024	Email	Esso thanking the Stakeholder for completing the Esso Consultation Questionnaire and will continue to keep the Stakeholder updated.
To	07/10/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update.
To	17/10/2024	Email	Confirmation stakeholder email address has been updated.
From	17/10/2024	Email	Stakeholder notifying change of email address to keep updated on Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan.
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	28/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.

From	28/11/2024	Email	Automatic response received.
From	28/11/2024	Email	Automatic response received.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

Consultation report (Summary) for Regulation 25 (1)(d) relevant persons

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Summary of responses received and Esso's consideration and response	Summary of 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	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	20/05/2024	Email	Invitation to attend Esso Australia: Decommissioning – Removals Stakeholder Forum.
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).

To	11/12/2024	Email	REMINDER: Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

Australian Anglers Association (Victoria) [686]

Summary of responses received and Esso's consideration and response			Summary of 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	31/07/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.		
To	07/08/2024	Email	REMINDER: Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.		
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).		
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).		

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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.		
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).		

To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	20/05/2024	Email	Invitation to attend Esso Australia: Decommissioning – Removals Stakeholder Forum.
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

Australian Council of Trade Unions [346]

Summary of responses received and Esso's consideration and response			Summary of 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	20/05/2024	Email	Invitation to attend Esso Australia: Decommissioning – Removals Stakeholder Forum.		
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.		
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.		
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.		

To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

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
Stakeholder registered for Decommissioning – Removals Stakeholder Forum; unable to attend. Esso continues to provide consultation material.	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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	20/05/2024	Email	Invitation to attend Esso Australia: Decommissioning – Removals Stakeholder Forum.
From	20/05/2024	Email	Registered to attend Decommissioning - Removals Stakeholder Forum.
To	24/05/2024	Email	Notifying stakeholder of additional Decommissioning - Removals Stakeholder Forum.
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.

To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

Australian Manufacturing Workers Union [338]

Summary of responses received and Esso's consideration and response	Summary of 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 attended the Decommissioning – Removals Stakeholder Forum Sale session. Feedback from forums has been incorporated into the EP, where applicable. Esso held meetings with Stakeholder 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. Stakeholder queries have been addressed.	Concerns raised in Stakeholder Forums include potential environmental and social impacts.	Concerns raised in Stakeholder Forums were recorded and incorporated into the EP, where applicable. Feedback specific to Onshore Reception Centre has been included in applicable regulatory submissions.	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	18/01/2024	Email	Esso request for meeting availability.
From	13/03/2024	Meeting - Online	Meeting held.
To	22/03/2024	Email	Request to review draft meeting notes.
To	15/04/2024	Email	Final meeting notes.
To	20/05/2024	Email	Invitation to attend Esso Australia: Decommissioning – Removals Stakeholder Forum.

To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.
From	03/06/2024	Email	Registered to attend Decommissioning – Removals Stakeholder Forum Sale session.
To	03/06/2024	Email	Confirmed registration for Decommissioning – Removals Stakeholder Forum, details provided.
To	04/06/2024	Meeting – In Person	Stakeholder Forum for SPJ Removals - Campaign 1.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	12/08/2024	Email	Meeting request.
From	12/08/2024	Email	Scheduling meeting.
From	12/08/2024	Email	Scheduling meeting.
To	05/09/2024	Email	Scheduling meeting.
From	05/09/2024	Email	Scheduling meeting.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	17/09/2024	Email	Meeting held.
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	09/10/2024	Email	Reminder -Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update.
To	23/10/2024	Email	Meeting notes.
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	22/11/2024	Phone call	Follow up response to question raised by stakeholder.

To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

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
Completed Esso Consultation Questionnaire. Esso continues to provide Stakeholder with consultation material.	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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	20/05/2024	Email	Invitation to attend Esso Australia: Decommissioning – Removals Stakeholder Forum.
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.
From	03/06/2024	Email	Registered to attend Decommissioning – Removals Stakeholder Forum.
To	03/06/2024	Email	Confirmed registration to attend Decommissioning – Removals Stakeholder Forum, details provided.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
From	11/06/2024	Email	Automatic response received.
From	12/06/2024	Questionnaire	Stakeholder responded to Esso Consultation Questionnaire and selected to be consulted on this activity.
To	13/06/2024	Email	Esso Consultation Questionnaire – Thank you.

To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).
From	16/12/2024	Email	Stakeholder nominated to be consulted for Decommissioning Campaign #1.
To	31/12/2024	Email	Confirming stakeholder has been added to Stakeholder Database.
From	31/12/2024	Email	Automatic response received.

Australian National Sportfishing Association (Victoria) [687]

Summary of responses received and Esso's consideration and response			Summary of 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
Completed Esso Consultation Questionnaire. Esso continues to provide Stakeholder with consultation material.			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	31/07/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.		
To	07/08/2024	Email	REMINDER: Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.		
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).		
From	05/10/2024	Questionnaire	Stakeholder responded to Esso Consultation Questionnaire and selected to be consulted on this activity.		
To	07/10/2024	Email	Esso Consultation Questionnaire – Thank you.		

To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	20/05/2024	Email	Invitation to attend Esso Australia: Decommissioning – Removals Stakeholder Forum.
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	31/07/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	07/08/2024	Email	REMINDER: Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).

To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

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
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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.		
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).		
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.		
To	25/04/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.		
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.		
To	20/05/2024	Email	Invitation to attend Esso Australia: Decommissioning – Removals Stakeholder Forum.		
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.		
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.		
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.		
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).		
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.		

To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	20/05/2024	Email	Invitation to attend Esso Australia: Decommissioning – Removals Stakeholder Forum.
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.

To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

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
Esso held meetings with Stakeholder throughout the consultation period and provided detailed consultation on all offshore activities including Campaign #1 decommissioning including activity description, location, timing and potential impacts and risks. Stakeholder queries have been addressed.	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	18/01/2024	Email	Esso requesting availability for meeting.
From	18/01/2024	Email	AMU providing availability for meeting.
From	18/01/2024	Email	Confirmation from AMU member on availability for meeting.
To	13/03/2024	Meeting - online	Meeting held.
To	22/03/2024	Email	Meeting notes for review.
To	15/04/2024	Email	Finalised meeting notes.
To	20/05/2024	Email	Invitation to attend Esso Australia: Decommissioning – Removals Stakeholder Forum.
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.

To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
From	05/07/2024	Questionnaire	Stakeholder responded to Esso Consultation Questionnaire and selected to be consulted on this activity.
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	23/07/2024	Email	Esso Consultation Questionnaire – Thank you.
To	26/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	12/08/2024	Email	Meeting request.
From	12/08/2024	Email	Scheduling meeting.
From	12/08/2024	Email	Scheduling meeting.
To	05/09/2024	Email	Scheduling meeting.
From	06/09/2024	Email	Scheduling meeting.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
From	17/09/2024	Meeting - Online	Meeting held.
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	09/10/2024	Email	Follow up to Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update reminder.
To	23/10/2024	Email	Meeting notes.
To	24/10/2024	Email	Follow up email with meeting notes.
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
From	11/11/2024	Email	Automatic response received.
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	22/11/2024	Phone call	Response to question raised by stakeholder.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	20/05/2024	Email	Invitation to attend Esso Australia: Decommissioning – Removals Stakeholder Forum.
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	12/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).

Birdlife Australia [636]

Summary of responses received and Esso's consideration and response	Summary of 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 requested to continue to be consultation on Decommissioning Campaign #1 Execution Environment Plan. Esso continues to provide Stakeholder with consultation material.			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	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).	
From	01/07/2024	Email	Automatic response received.	
To	17/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.	
From	17/07/2024	Email	Automatic response received.	
To	31/07/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.	
From	31/07/2024	Email	Automatic response received.	
To	07/08/2024	Email	REMINDER: Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.	
From	07/08/2024	Email	Automatic response received.	
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).	
From	10/09/2024	Email	Automatic response received.	
From	13/09/2024	Email	Registering for future consultations.	
To	16/09/2024	Email	Registering for future consultations - response.	
From	16/09/2024	Email	Registering for future consultations - out of office.	
To	17/09/2024	Email	EAPL request for meeting with stakeholder. .	
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).	
From	30/09/2024	Email	Automatic response received.	
To	08/10/2024	Email	Esso asking if the Stakeholder has any questions on the Campaign 1 Decommissioning Information Bulletin.	

To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).
From	13/12/2024	Email	Automatic response received.

Blue Mackerel North Pty Ltd [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
Meetings held with Stakeholder to discuss Bass Strait offshore activities; queries have been addressed.	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. OWP impacts have been considered in the development of the EP.

To/ from	Date	Method	Reg 24(b)(i): Summary of each response
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
From	04/07/2024	Email	Email introduction and meeting request.
From	04/07/2024	Email	Scheduling meeting.
To	04/07/2024	Email	Scheduling meeting.
From	05/07/2024	Email	Scheduling meeting.
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	11/07/2024	Meeting - Online	Initial introduction meeting.
To	12/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	15/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	15/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
From	18/07/2024	Email	Stakeholder request to be consulted on multiple activities.
To	24/07/2024	Email	Response to Stakeholder questions. Scheduling meeting.
From	31/07/2024	Email	Scheduling meeting.
From	02/08/2024	Email	Scheduling meeting.
To	05/08/2024	Email	Scheduling meeting.

From	05/08/2024	Email	Scheduling meeting.
To	16/08/2024	Email	Esso Australia: Consultation on the Gippsland Basin Geophysical and Geotechnical Investigations Environment Plan.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
From	16/09/2024	Email	Stakeholder introduction and request for meeting. .
To	17/09/2024	Email	Scheduling meeting.
From	17/09/2024	Email	Scheduling meeting.
To	19/09/2024	Email	Scheduling meeting.
To	20/09/2024	Email	Scheduling meeting.
From	20/09/2024	Email	Scheduling meeting.
From	20/09/2024	Email	Scheduling meeting.
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
From	30/09/2024	Email	Automatic response received.
From	02/10/2024	Meeting - Online	Meeting held.
From	04/10/2024	Email	Meeting follow up.
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
From	11/11/2024	Email	Automatic response received.
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	11/12/2024	Email	REMINDER: Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).
From	13/12/2024	Email	Automatic response received.

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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	20/05/2024	Email	Invitation to attend Esso Australia: Decommissioning – Removals Stakeholder Forum.
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	31/07/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	07/08/2024	Email	REMINDER: Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

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
Esso provided details on Campaign #1 via email and a meeting. Queries addressed.	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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.
To	12/03/2024	Email	EAPL request for meeting with stakeholder.
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
To	28/03/2024	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA).
To	08/04/2024	Email	Request for meeting.
From	08/04/2024	Email	Scheduling meeting.
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
To	11/04/2024	Email	Scheduling meeting.
From	12/04/2024	Email	Scheduling meeting.
To	12/04/2024	Email	Scheduling meeting.
To	18/04/2024	Email	Scheduling meeting.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	14/05/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).
To	20/05/2024	Email	Invitation to Decommissioning – Removals Stakeholder Forum; offered alternative consultation format to suit stakeholder.
From	04/06/2024	Email	Stakeholder contact is leaving organisation, provided alternative contacts.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	11/06/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).
From	11/06/2024	Email	Automatic response received.

To	27/06/2024	Email	Request for meeting (introduction and activity updates).
From	27/06/2024	Email	Stakeholder forwarded meeting request.
To	28/06/2024	Email	Scheduling meeting.
To	28/06/2024	Email	Scheduling meeting.
To	28/06/2024	Email	Scheduling meeting.
From	28/06/2024	Email	Scheduling meeting.
From	28/06/2024	Email	Scheduling meeting.
From	28/06/2024	Email	Scheduling meeting.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	02/07/2024	Email	Update on Decommissioning Campaign 1 and other activities, for discussion during meeting.
From	04/07/2024	Email	Scheduling meeting.
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	06/07/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).
From	06/07/2024	Email	Automatic response received.
To	29/07/2024	Email	Scheduling meeting.
From	29/07/2024	Email	Scheduling meeting.
To	31/07/2024	Email	Scheduling meeting.
To	31/07/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
From	31/07/2024	Email	Scheduling meeting.
To	02/08/2024	Email	Scheduling meeting.
From	02/08/2024	Email	Scheduling meeting.
To	02/08/2024	Email	Scheduling meeting.
From	02/08/2024	Email	Scheduling meeting.
To	06/08/2024	Email	Esso informing the Stakeholder that Esso has decided to withdraw our Bass Strait decommissioning end-state Deviation Environment Plan from NOPSEMA and provided key points to why.

To	07/08/2024	Email	REMINDER: Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	26/08/2024	Meeting - In Person	Meeting to discuss Esso proposed activities and consultation.
To	28/08/2024	Email	Meeting notes for review.
From	29/08/2024	Email	Meeting notes, additional information provided.
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - EMBA. Includes link to Information Bulletin #3 (Appendix F-3).
To	06/11/2024	Email	Meeting follow-up.
To	07/11/2024	Email	Esso thanking the Stakeholder for the feedback and will get back to them as soon as they follow up internally.
From	07/11/2024	Email	Meeting follow-up.
To	12/11/2024	Email	Meeting follow-up.
From	12/11/2024	Email	Meeting follow-up.
To	15/11/2024	Email	Meeting follow-up.
To	21/11/2024	Email	Meeting follow-up.
From	21/11/2024	Email	Esso & BLCAC meeting - follow-up.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).
From	13/12/2024	Email	Automatic response received.
To	23/12/2024	Email	Discussion on consultation methods.
From	23/12/2024	Email	Automatic response received.

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. Update to stakeholder contact details.			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	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #1 (Appendix F-1).		
From	28/03/2024	Email	Automatic response received.		
To	14/05/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).		
From	14/05/2024	Email	Update to stakeholder contact details.		
To	11/06/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).		
To	06/07/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).		
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - EMBA. Includes link to Information Bulletin #3 (Appendix F-3).		

Centre of Decommissioning Australia [333]

Summary of responses received and Esso's consideration and response			Summary of 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	Esso Australia: Consultation on Bass Strait offshore activities.		
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).		
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.		
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).		
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).		

To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

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
Stakeholder registered for Decommissioning – Removals Stakeholder Forum, although did not attend. Esso continues to provide consultation material.	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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
From	28/03/2024	Email	Automatic response received.
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
From	10/04/2024	Email	Automatic response received.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	20/05/2024	Email	Invitation to attend Esso Australia: Decommissioning – Removals Stakeholder Forum.
From	20/05/2024	Email	Update to stakeholder contact details.
From	21/05/2024	Email	Registered to attend the Decommissioning – Removals Stakeholder Forum.
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.

To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

Committee for Mornington Peninsula [149]

Summary of responses received and Esso's consideration and response	Summary of 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 registered for Decommissioning – Removals Stakeholder Forum, although did not attend. Esso continues to provide consultation material.	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	20/05/2024	Email	Invitation to attend Esso Australia: Decommissioning – Removals Stakeholder Forum.
From	20/05/2024	Email	Registered to attend the Decommissioning – Removals Stakeholder Forum.
To	24/05/2024	Email	Invitation to additional sessions for Decommissioning – Removals Stakeholder Forum.
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).

To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

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. Esso consults with local commercial fishing representatives SETFIA, LEFL and SIV.	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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	20/05/2024	Email	Invitation to attend Esso Australia: Decommissioning – Removals Stakeholder Forum.
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).

To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

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
Stakeholder attended the Decommissioning – Removals Stakeholder Forum and Community Information Sessions. Feedback from forums and community information sessions has been incorporated into the EP, where applicable.	Concerns raised in Stakeholder Forums and Community Information Sessions include potential environmental and social impacts.	Concerns raised in Community Information Sessions were recorded and incorporated into the EP, where applicable. Feedback specific to Onshore Reception Centre has been included in applicable regulatory submissions.	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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	20/05/2024	Email	Invitation to attend Esso Australia: Decommissioning – Removals Stakeholder Forum.
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
From	26/05/2024	Email	Registered to attend the Decommissioning – Removals Stakeholder Forum.
To	04/06/2024	Meeting – In Person	Stakeholder Forum for SPJ Removals - Campaign 1.

To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
From	13/11/2024	Email	Registered to attend community information session.
To	14/11/2024	Email	Confirmation of registration to attend community information session.
To	19/11/2024	Community Information Session	A Community Information Session was held in Sale on 19 November 2024. The objective of the session was to provide information on Esso's current proposed activities, with a focus on Campaign 1 decommissioning, the Onshore Reception Centre, and for stakeholders to consider and provide feedback on how activities might impact their functions, interest and activities.
To	25/11/2024	Email	November Community Information Sessions – Thank you.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

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
Esso held meetings with Stakeholder 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. Stakeholder queries have been addressed.			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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.
To	09/02/2024	Meeting - Online	Meeting with Stakeholder to discuss SPJ and Pipelines Decommissioning.
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	20/05/2024	Email	Invitation to attend Esso Australia: Decommissioning – Removals Stakeholder Forum.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	12/08/2024	Email	Scheduling meeting.
From	15/08/2024	Email	Scheduling meeting.
To	16/08/2024	Email	Scheduling meeting.
To	05/09/2024	Email	Scheduling meeting.
From	17/09/2024	Meeting - Online	Meeting held.
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	09/10/2024	Email	Follow up to Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update reminder.
To	14/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	22/11/2024	Phone call	Response to question raised by stakeholder.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

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

Completed Esso Consultation Questionnaire. Esso continues to provide Stakeholder with consultation material.	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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
From	10/04/2024	Email	Automatic response received.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	20/05/2024	Email	Invitation to attend Esso Australia: Decommissioning – Removals Stakeholder Forum.
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
From	30/09/2024	Email	Automatic response received.
To	11/11/2024	Email	Esso Consultation Questionnaire – Thank you.
From	11/11/2024	Questionnaire	Stakeholder responded to Esso Consultation Questionnaire and selected to be consulted on this activity.
To	12/11/2024	Email	Esso Consultation Questionnaire – Thank you.
From	12/11/2024	Email	Acknowledgement from stakeholder.

To	11/12/2024	Email	REMINDER: Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).
From	13/12/2024	Email	Automatic response received.

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
Stakeholder attended the Decommissioning – Removals Stakeholder Forum. Feedback from forums has been incorporated into the EP, where applicable.	Concerns raised in Stakeholder Forums include potential environmental and social impacts.	Concerns raised in Stakeholder Forums were recorded and incorporated into the EP, where applicable. Feedback specific to Onshore Reception Centre has been included in applicable regulatory submissions.	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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	20/05/2024	Email	Invitation to attend Esso Australia: Decommissioning – Removals Stakeholder Forum.
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	17/06/2024	Email	Invitation to Decommissioning – Removals Stakeholder Forum

To	20/06/2024	Meeting – In Person	Introduction meeting with Stakeholder and discussion on decommissioning Campaign #1.
To	27/06/2024	Email	Decommissioning – Removals Stakeholder Forum – Thank you. Additional imagery provided, and request for more information. Advised of upcoming SPJ Decommissioning forum dates.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	04/07/2024	Email	Coordinating details for proposed SPJ Decommissioning Forum.
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
From	09/07/2024	Email	Coordinating details for SPJ Decommissioning Forum.
To	10/07/2024	Email	Coordinating details for proposed SPJ Decommissioning Forum.
To	18/07/2024	Email	Coordinating details for proposed SPJ Decommissioning Forum.
To	19/07/2024	Email	Coordinating details for proposed SPJ Decommissioning Forum.
From	19/07/2024	Email	Coordinating details for proposed SPJ Decommissioning Forum.
To	19/07/2024	Email	Coordinating details for proposed SPJ Decommissioning Forum.
To	06/08/2024	Email	Coordinating details for proposed SPJ Decommissioning Forum.
To	07/08/2024	Email	REMINDER: Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	08/08/2024	Meeting – In Person	Stakeholder Forum for SPJ Removals - Campaign 1.
From	29/08/2024	Email	Introduction of interested parties for environmental focus in Corner Inlet.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

Corner Inlet Landcare Group [689]

Summary of responses received and Esso's consideration and response	Summary of 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	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	31/07/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	07/08/2024	Email	REMINDER: Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

Country Fire Authority [296]

Summary of responses received and Esso's consideration and response	Summary of 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	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.

To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	20/05/2024	Email	Invitation to attend Esso Australia: Decommissioning – Removals Stakeholder Forum.
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	16/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

Destination Gippsland [635]

Summary of responses received and Esso's consideration and response			Summary of 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	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).		
From	01/07/2024	Email	Automatic response received.		
To	31/07/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.		

To	07/08/2024	Email	REMINDER: Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
From	07/08/2024	Email	Automatic response received.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
To	25/04/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	20/05/2024	Email	Invitation to attend Esso Australia: Decommissioning – Removals Stakeholder Forum.
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.

To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	20/05/2024	Email	Invitation to attend Esso Australia: Decommissioning – Removals Stakeholder Forum.
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.

To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

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
Stakeholder attended the Decommissioning – Removals Stakeholder Forum. Feedback from forums has been incorporated into the EP, where applicable.	Concerns raised in Stakeholder Forums include potential environmental and social impacts.	Concerns raised in Stakeholder Forums were recorded and incorporated into the EP, where applicable. Feedback specific to Onshore Reception Centre has been included in applicable regulatory submissions.	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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	20/05/2024	Email	Invitation to attend Esso Australia: Decommissioning – Removals Stakeholder Forum.

To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.
From	03/06/2024	Email	Registered to attend Decommissioning – Removals Stakeholder Forum online session.
To	05/06/2024	Meeting – Online	Stakeholder Forum for SPJ Removals - Campaign 1.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

Ecolands Collective [786]

Summary of responses received and Esso's consideration and response	Summary of 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	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).

To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

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	Esso Australia Consultation: Consultation on offshore activities (EMBA).
To	14/05/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).
To	11/06/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).
To	06/07/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - EMBA. Includes link to Information Bulletin #3 (Appendix F-3).

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
Esso held meetings with Stakeholder 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. Stakeholder queries have been addressed Completed Esso Consultation Questionnaire. Esso continues to provide Stakeholder with consultation material.	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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.

To	18/01/2024	Email	Meeting request.
From	30/01/2024	Email	Scheduling meeting.
From	30/01/2024	Email	Scheduling meeting.
To	13/03/2024	Meeting - Online	Meeting with stakeholder.
To	22/03/2024	Email	Meeting notes for review.
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
From	28/03/2024	Email	Automatic response received.
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
From	10/04/2024	Email	Automatic response received.
To	15/04/2024	Email	Finalised meeting notes.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	20/05/2024	Email	Invitation to attend Esso Australia: Decommissioning – Removals Stakeholder Forum.
From	23/05/2024	Questionnaire	Stakeholder responded to Esso Consultation Questionnaire.
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	19/06/2024	Email	Esso Consultation Questionnaire – Thank you.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	26/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	12/08/2024	Email	Meeting request.
From	12/08/2024	Email	Scheduling meeting.
From	12/08/2024	Email	Scheduling meeting.

To	05/09/2024	Email	Scheduling meeting.
From	06/09/2024	Email	Scheduling meeting.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	17/09/2024	Meeting - Online	Meeting with stakeholder.
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	09/10/2024	Email	Follow up to Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update reminder.
To	23/10/2024	Email	Meeting notes.
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	22/11/2024	Phone call	Response to question raised by stakeholder.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.

To	20/05/2024	Email	Invitation to attend Esso Australia: Decommissioning – Removals Stakeholder Forum.
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	12/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).
To	16/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

Energy Australia [615]

Summary of responses received and Esso's consideration and response			Summary of 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
Completed Esso Consultation Questionnaire. Esso continues to provide Stakeholder with consultation material. Stakeholder attended Community Information Session. Feedback from community information sessions has been incorporated into the EP, where applicable.			Concerns raised in Community Information Sessions include potential environmental and social impacts.	Concerns raised in Community Information Sessions were recorded and incorporated into the EP, where applicable. Feedback specific to Onshore Reception Centre has been included in applicable regulatory submissions.	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		

From	23/05/2024	Email	Registered to attend Decommissioning – Removals Stakeholder Forum.
To	23/05/2024	Email	Confirmed registration for Decommissioning – Removals Stakeholder Forum.
From	23/05/2024	Questionnaire	Stakeholder responded to Esso Consultation Questionnaire.
To	30/05/2024	Email	Decommissioning – Removals Stakeholder Forum – Thank you.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	19/06/2024	Email	Esso Consultation Questionnaire – Thank you.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
From	10/09/2024	Email	Automatic response received.
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).
From	13/12/2024	Email	Automatic response received.

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
Stakeholder requested to be consultation on Decommissioning Campaign #1 Execution Environment Plan.			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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.		

From	01/12/2023	Email	Automatic response received.
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	20/05/2024	Email	Invitation to attend Esso Australia: Decommissioning – Removals Stakeholder Forum.
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
From	08/07/2024	Email	Stakeholder nominated to be considered a relevant person.
To	09/07/2024	Email	Acknowledged Stakeholder request to be considered a Relevant Person for Decommissioning Campaign #1.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
From	01/10/2024	Email	Stakeholder request to remain on consultation list for Decommissioning Campaign #1 Execution Environment Plan.
To	01/10/2024	Email	Confirmation Stakeholder will continue to receive consultation material for Decommissioning Campaign #1 Execution Environment Plan.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

Evolve Surplus [691]

Summary of 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

		objection or claim and its response	
Stakeholder attended Community Information Session. Feedback from sessions has been incorporated into the EP, where applicable.	Concerns raised in Community Information Sessions include potential environmental and social impacts.	Concerns raised in Community Information Sessions were recorded and incorporated into the EP, where applicable. Feedback specific to Onshore Reception Centre has been included in applicable regulatory submissions.	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	31/07/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	07/08/2024	Email	REMINDER: Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
From	23/09/2024	Email	Registered to attend Community Information Session.
To	23/09/2024	Email	Confirmed registration to attend Community Information Session.
To	25/09/2024	Community Information Session	A Community Information Session was held in Welshpool 25 September 2024. The objective of the session was to provide information on Esso's current proposed activities, with a focus on Campaign 1 decommissioning, the Onshore Reception Centre, and for stakeholders to consider and provide feedback on how activities might impact their functions, interest and activities.
To	26/09/2024	Email	Community Information Session – Thank you.
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

Extinction Rebellion Australia [363]

Summary of responses received and Esso's consideration and response	Summary of 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	20/05/2024	Email	Invitation to attend Esso Australia: Decommissioning – Removals Stakeholder Forum.
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

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
Stakeholder attended the Decommissioning – Removals Stakeholder Forum. Feedback from forums has been incorporated into the EP, where applicable.	Concerns raised in Stakeholder Forums include potential environmental	Concerns raised in Stakeholder Forums were recorded and incorporated into the EP, where applicable. Feedback specific to Onshore	Esso will provide updates of the activity as necessary. No additional measures or controls are required.

			and social impacts.	Reception Centre has been included in applicable regulatory submissions.	

To/ from	Date	Method	Reg 24(b)(i): Summary of each response
To	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	20/05/2024	Email	Invitation to attend Esso Australia: Decommissioning – Removals Stakeholder Forum.
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	27/05/2024	Meeting – In Person	Stakeholder Forum for SPJ Removals - Campaign 1.
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

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	Esso Australia Consultation: Consultation on offshore activities (EMBA).
To	14/05/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).
To	11/06/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).
To	06/07/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - EMBA. Includes link to Information Bulletin #3 (Appendix F-3).

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
Stakeholder attended the Decommissioning – Removals Stakeholder Forum. Feedback from forums has been incorporated into the EP, where applicable.	Concerns raised in Stakeholder Forums include potential environmental and social impacts.	Concerns raised in Stakeholder Forums were recorded and incorporated into the EP, where applicable. Feedback specific to Onshore Reception Centre has been included in applicable regulatory submissions.	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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.

To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	20/05/2024	Email	Invitation to attend Esso Australia: Decommissioning – Removals Stakeholder Forum.
From	20/05/2024	Email	Declined invitation to attend Decommissioning – Removals Stakeholder Forum.
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	26/05/2024	Email	Reply to Stakeholder attending Decommissioning – Removals Stakeholder Forum.
From	26/05/2024	Email	Stakeholder confirming attending Decommissioning – Removals Stakeholder Forum.
To	27/05/2024	Meeting – In Person	Stakeholder Forum for SPJ Removals - Campaign 1.
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

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	Esso Australia Consultation: Consultation on offshore activities (EMBA).		
To	14/05/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).		
To	11/06/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).		
To	06/07/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).		
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - EMBA. Includes link to Information Bulletin #3 (Appendix F-3).		

Friends of the Earth [353]

Summary of responses received and Esso's consideration and response			Summary of 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 registered for Decommissioning – Removals Stakeholder Forum, although did not attend. Completed Esso Consultation Questionnaire. Stakeholder requested to be considered relevant person for all Esso activities. Esso continues to provide Stakeholder with consultation material.			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		
From	05/12/2023	Questionnaire	Stakeholder responded to Esso Consultation Questionnaire.		
To	08/12/2023	Email	Thanking the recipient for doing the Esso Consultation Questionnaire.		
From	06/03/2024	Phone call	FoE called to discuss Sea Dumping Permit.		
From	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.		
To	20/05/2024	Email	Invitation to attend Esso Australia: Decommissioning – Removals Stakeholder Forum.		
From	20/05/2024	Email	Response to Decommissioning removals Stakeholder Forum - accept.		

From	21/05/2024	Email	Confirmation of interest to attend online Esso Australia: Decommissioning – Removals Stakeholder Forum.
To	24/05/2024	Email	Notifying stakeholder of additional Decommissioning – Removals Stakeholder Forum.
To	24/05/2024	Email	Invitation to additional sessions for Decommissioning – Removals Stakeholder Forum.
To	03/06/2024	Email	Confirmed registration for Decommissioning – Removals Stakeholder Forum, details provided.
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.
From	03/06/2024	Email	Registered to attend decommissioning – Removals Stakeholder Forum - Sale session.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
From	11/06/2024	Email	Automatic response received.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
From	01/07/2024	Email	Automatic response received.
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
From	25/07/2024	Email	Stakeholder nominated to be considered a relevant person for all projects.
From	30/08/2024	Email	Stakeholder response to Decommissioning Campaign #1 community information sessions.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
From	10/09/2024	Email	Automatic response received.
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
From	30/09/2024	Email	Automatic response received.
To	02/10/2024	Email	EAPL request for meeting with stakeholder.
To	02/10/2024	SMS	EAPL request for meeting with stakeholder.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

To	16/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

Friends of the Prom [634]

Summary of responses received and Esso's consideration and response	Summary of 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	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	17/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	31/07/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	07/08/2024	Email	REMINDER: Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

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
Stakeholder attended the Decommissioning – Removals Stakeholder Forum. Feedback from forums has been incorporated into the EP, where applicable.	Concerns raised in Stakeholder Forums include potential environmental and social impacts.	Concerns raised in Stakeholder Forums were recorded and incorporated into the EP, where applicable. Feedback specific to Onshore Reception Centre has been	Esso will provide updates of the activity as necessary. No additional measures or controls are required.

Esso met with Stakeholder to provide updates on Campaign 1, queries have been addressed.		included in applicable regulatory submissions.	

To/ from	Date	Method	Reg 24(b)(i): Summary of each response
To	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	20/05/2024	Email	Invitation to attend Esso Australia: Decommissioning – Removals Stakeholder Forum.
From	20/05/2024	Email	Registered to attend the Decommissioning – Removals Stakeholder Forum.
From	21/05/2024	Email	Registered to attend the Decommissioning – Removals Stakeholder Forum.
From	22/05/2024	Email	Registered to attend the Decommissioning – Removals Stakeholder Forum.
To	24/05/2024	Email	Invitation to additional sessions for Decommissioning – Removals Stakeholder Forum.
To	03/06/2024	Email	Confirmed registration for Decommissioning – Removals Stakeholder Forum, details provided.
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.
From	03/06/2024	Email	Registered to attend Decommissioning – Removals Stakeholder Forum online session.
From	04/06/2024	Email	Registered to attend for Decommissioning – Removals Stakeholder Forum.
To	05/06/2024	Meeting – Online	Stakeholder Forum for SPJ Removals - Campaign 1.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
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	Discussion on SPJ decommissioning forum and offshore activities.
From	20/06/2024	Email	Scheduling meeting.
To	21/06/2024	Email	Scheduling meeting.
From	21/06/2024	Email	Scheduling meeting.
To	25/06/2024	Email	Scheduling meeting.
From	25/06/2024	Email	Scheduling meeting.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	02/07/2024	Meeting - In Person	Meeting to discuss Esso's current activities.
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	10/07/2024	Email	Esso providing the contact for NOPSEMA. Details for the decommissioning forum to follow.
From	12/07/2024	Email	Scheduling meeting.
To	15/07/2024	Email	Scheduling meeting.
From	15/07/2024	Email	Scheduling meeting.
From	23/07/2024	Email	Response from stakeholder thanking Esso for presenting to their group and advising they will distribute information to members.
To	08/08/2024	Email	Notifying stakeholder of Bass Strait decommissioning end-state Deviation Environment Plan Update.
From	08/08/2024	Email	Requested update regarding Repeater Station at Lakes Entrance.
To	19/08/2024	Email	Scheduling meeting.
To	19/08/2024	Email	Scheduling meeting.
From	19/08/2024	Email	Scheduling meeting.
From	19/08/2024	Email	Scheduling meeting.
From	20/08/2024	Email	Scheduling meeting.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).

From	11/09/2024	Email	Discussion on proposed repeater station
To	12/09/2024	Email	Discussion on proposed repeater station.
From	12/09/2024	Email	Discussion on proposed repeater station
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

GB Energy [827]

Summary of responses received and Esso's consideration and response			Summary of 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	25/11/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - EMBA.		
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).		

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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	20/05/2024	Email	Invitation to attend Esso Australia: Decommissioning – Removals Stakeholder Forum.
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	28/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

Gippsland Angling Clubs Association [694]

Summary of responses received and Esso's consideration and response	Summary of 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	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	31/07/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	07/08/2024	Email	REMINDER: Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

Gippsland Climate Change Network [637]

Summary of responses received and Esso's consideration and response	Summary of 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	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	31/07/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	07/08/2024	Email	REMINDER: Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).

To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

Gippsland Dawn OWP Project Pty Ltd [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
Stakeholder requested to be consulted on Campaign #1. Esso provided details on Campaign #1 via meeting. All queries have been addressed. Esso confirmed Stakeholder will continue to be consulted on this activity.	Stakeholder requested to be kept informed of project timing to consider for OWP planning, cumulative impacts and be included in Esso emergency response planning.	Esso continues to provide Stakeholder with necessary project updates and will notify Stakeholder in the event of an emergency.	Esso will provide updates of the activity as necessary. OWP impacts have been considered in the development of the EP.

To/ from	Date	Method	Reg 24(b)(i): Summary of each response
To	14/12/2023	Email	Meeting request.
From	14/12/2023	Email	Scheduling meeting.
To	15/12/2023	Email	Scheduling meeting.
To	19/02/2024	Meeting - Online	Discussion on Esso Bass Strait decommissioning activities.
From	09/01/2024	Email	Feedback from meeting.
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
From	31/03/2024	Email	Automatic response received.
From	03/04/2024	Email	Confirmation email received.
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
From	12/04/2024	Email	Follow up on feedback.
To	22/04/2024	Email	Confirmation of email received.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	20/05/2024	Email	Invitation to attend Esso Australia: Decommissioning – Removals Stakeholder Forum.

From	20/05/2024	Email	Registered to attend Decommissioning – Removals Stakeholder Forum.
To	21/05/2024	Email	Response to feedback.
From	21/05/2024	Email	Confirmation response received.
To	24/05/2024	Email	Invitation to additional sessions for Decommissioning – Removals Stakeholder Forum.
From	27/05/2024	Email	Registered to attend Decommissioning – Removals Stakeholder Forum.
From	03/06/2024	Questionnaire	Stakeholder responded to Esso Consultation Questionnaire.
To	05/06/2024	Meeting – Online	Stakeholder Forum for SPJ Removals - Campaign 1.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
From	11/06/2024	Email	Automatic response received.
To	19/06/2024	Email	Esso Consultation Questionnaire – Thank you.
From	19/06/2024	Email	Automatic response received.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
From	06/07/2024	Email	Automatic response received.
To	15/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
From	23/07/2024	Email	Online meeting invite.
From	29/07/2024	Meeting - Online	Online meeting.
From	30/07/2024	Email	Stakeholder meeting notes.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
From	10/09/2024	Email	Automatic response received.
To	11/09/2024	Email	Confirmation stakeholder emails have been added to distribution list.
From	11/09/2024	Email	Confirmation from Stakeholder.
From	11/09/2024	Email	Stakeholder request to be consulted on Decommissioning Campaign #1 Execution Environment Plan.

To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	07/11/2024	Email	Follow up request for feedback on Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update.
From	07/11/2024	Email	Stakeholder confirming no further comments.
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	28/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).
From	13/12/2024	Email	Stakeholder response to Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update.
To	16/12/2024	Email	Response to stakeholder query and request for meeting.
From	16/12/2024	Email	Stakeholder reply to meeting request.

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
Esso presented updates on offshore activities. Queries addressed.			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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.		
To	20/02/2024	Email	Scheduling presentation		
To	20/02/2024	Email	Scheduling presentation.		
From	20/02/2024	Email	Scheduling presentation.		
From	20/02/2024	Email	Scheduling presentation.		
From	20/02/2024	Email	Scheduling presentation.		

To	06/03/2024	Community Group Meeting	Presentation on current Esso activities.
From	21/03/2024	Email	Follow up from Presentation.
To	21/03/2024	Email	Request for another meeting.
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
From	28/03/2024	Email	Confirmation email received and will be passed onto club members.
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
To	25/04/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	20/05/2024	Email	Invitation to attend Esso Australia: Decommissioning – Removals Stakeholder Forum.
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	19/08/2024	Email	Meeting request.
To	19/08/2024	Email	Request for presentation.
From	19/08/2024	Email	Forwarding request for presentation. request.
From	19/08/2024	Email	Stakeholder agreeing to the timeframe for the meeting.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	12/09/2024	Email	Update to Stakeholder details.
From	12/09/2024	Email	Request for presentation.

From	12/09/2024	Email	Update to Stakeholder details.
From	12/09/2024	Email	Update to Stakeholder details.
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
From	15/10/2024	Email	Request for presentation.
From	15/10/2024	Email	Update to Stakeholder details.
From	16/10/2024	Email	Update to Stakeholder details.
From	16/10/2024	Email	Update to Stakeholder details.
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	20/05/2024	Email	Invitation to attend Esso Australia: Decommissioning – Removals Stakeholder Forum.
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.

To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

Gippsland Skies Pty Ltd [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
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	Esso Australia: Consultation on Bass Strait offshore activities.
To	15/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	16/08/2024	Email	Esso Australia: Consultation on the Gippsland Basin Geophysical and Geotechnical Investigations Environment Plan.
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).
From	13/12/2024	Email	Automatic response received.

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
Stakeholder attended the Decommissioning – Removals Stakeholder Forum. Feedback from forums has been incorporated into the EP, where applicable.			Concerns raised in Stakeholder Forums include potential environmental and social impacts.	Concerns raised in Stakeholder Forums were recorded and incorporated into the EP, where applicable. Feedback specific to Onshore Reception Centre has been included in applicable regulatory submissions.	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		
From	05/12/2023	Email	Meeting request.		
To	07/12/2023	Email	Scheduling meeting.		
To	08/12/2023	Email	Esso Consultation Questionnaire – Thank you.		
To	29/12/2023	Email	Scheduling meeting.		
From	08/01/2024	Email	Scheduling meeting.		
To	09/01/2024	Email	Scheduling meeting.		
From	09/01/2024	Email	Scheduling meeting.		
To	15/02/2024	Email	Confirmation of Esso's attendance at schedule meeting.		
To	15/02/2024	Meeting - In Person	Meeting held.		
From	18/02/2024	Email	Letter regarding recent meeting.		
To	22/02/2024	Email	Advertisement details.		
From	22/02/2024	Email	Advertisement details.		
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).		
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.		
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.		
To	20/05/2024	Email	Invitation: Esso Australia: Decommissioning – Removals Stakeholder Forum.		

To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
From	24/05/2024	Email	Registered to attend Decommissioning – Removals Stakeholder Forum.
To	04/06/2024	Meeting – In Person	Stakeholder Forum for SPJ Removals - Campaign 1.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	01/07/2024	Phone call	Discussion on Community information session.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	10/07/2024	Email	Community Information Session details.
From	10/07/2024	Email	Community Information Session details.
To	15/07/2024	Email	Community Information Session details.
From	15/07/2024	Email	Community Information Session details.
To	22/07/2024	Email	Community Information Session details.
To	25/07/2024	Email	Community Information Session details.
To	26/07/2024	Email	Community Information Session details.
From	26/07/2024	Email	Community Information Session details.
From	27/07/2024	Email	Community Information Session details.
To	29/07/2024	Email	Community Information Session details.
From	29/07/2024	Email	Community Information Session details.
To	30/07/2024	Email	Community Information Session details.
To	31/07/2024	Email	Community Information Session details.
To	31/07/2024	Email	Community Information Session details.
From	31/07/2024	Email	Community Information Session details.
To	29/08/2024	Community Information Session.	Community Information Session.

To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

Great Eastern Offshore Wind Farm Project Co Pty Ltd [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 Stakeholder shared information on OWP.			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. OWP impacts have been considered in the development of the EP.
To/ from	**Date**	**Method**	**Reg 24(b)(i): Summary of each response**		
To	11/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities – Introduction email.		
To	15/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.		
From	15/07/2024	Email	Automatic response received.		
To	16/08/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.		
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).		
From	07/11/2024	Email	Stakeholder sharing information on offshore wind project.		
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.		
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.		
To	11/12/2024	Email	REMINDER: Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update.		
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).		

GreenPeace [362]

Summary of responses received and Esso's consideration and response			Summary of 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	20/05/2024	Email	Invitation: Esso Australia: Decommissioning – Removals Stakeholder Forum.		
From	20/05/2024	Email	Automatic response received.		
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.		
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.		
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.		
From	11/06/2024	Email	Automatic response received.		
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).		
From	01/07/2024	Email	Automatic response received.		
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.		
From	06/07/2024	Email	Automatic response received.		
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).		
From	10/09/2024	Email	Automatic response received.		
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).		
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).		
From	13/12/2024	Email	Automatic response received.		

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
Esso held regular meetings with Stakeholder 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. Stakeholder 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
From	15/12/2023	Email	Scheduling meeting.
To	17/12/2023	Email	Scheduling meeting.
To	05/02/2024	Email	Scheduling meeting.
To	06/02/2024	Phone call	Scheduling meeting.
From	06/02/2024	Email	Scheduling meeting.
From	16/02/2024	Email	Scheduling meeting (Teams meeting invitation)
To	16/02/2024	Meeting - In Person	Meeting held. All parties agreed to monthly consultation meetings.
To	16/02/2024	Email	Meeting follow up – presentation material provided.
To	17/02/2024	Email	Coordinating monthly consultation meetings (content / logistics).
From	19/02/2024	Email	Coordinating monthly consultation meetings (content / logistics).
To	29/02/2024	Email	GLaWAC Esso Consultation Discussion notes – February, for review.
From	29/02/2024	Phone call	Phone call from GLaWAC in response to 16/02/2024 discussion notes and information sharing.
From	29/02/2024	Email	Automatic response received.
To	12/03/2024	Email	Coordinating monthly consultation meetings (content / logistics).
From	12/03/2024	Email	Coordinating monthly consultation meetings (content / logistics).
To	12/03/2024	Email	Coordinating monthly consultation meetings (content / logistics).

To	18/03/2024	Email	Coordinating monthly consultation meetings (content / logistics). Seeking co-design of consultation.
To	20/03/2024	Email	Coordinating monthly consultation meetings (content / logistics).
From	20/03/2024	Email	Coordinating monthly consultation meetings (content / logistics). Seeking co-design of consultation.
To	21/03/2024	Meeting - Online	Meeting to discuss current proposed and existing operational activities.
From	21/03/2024	Email	Coordinating monthly consultation meetings (content / logistics).
To	25/03/2024	Email	Coordinating monthly consultation meetings (content / logistics).
To	25/03/2024	Email	Organising information sharing session.
From	25/03/2024	Email	Coordinating monthly consultation meetings (content / logistics).
From	25/03/2024	Email	Coordinating monthly consultation meetings (content / logistics).
To	28/03/2024	Email	GLaWAC Esso Consultation Discussion notes – March, for review.
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
To	28/03/2024	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA).
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	03/04/2024	Email	Coordinating monthly consultation meetings (content / logistics).
To	03/04/2024	Email	Coordinating monthly consultation meetings (content / logistics).
From	03/04/2024	Email	Coordinating monthly consultation meetings (content / logistics).
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
From	10/04/2024	Email	Automatic response received.
To	17/04/2024	Email	Coordinating monthly consultation meetings (content / logistics).
From	17/04/2024	Email	Coordinating monthly consultation meetings (content / logistics).
To	18/04/2024	Meeting - Online	Meeting to discuss current proposed and existing operational activities.
To	26/04/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	26/04/2024	Email	GLaWAC Esso Consultation Discussion notes – April, for review.

To	01/05/2024	Email	Coordinating Site Visit
To	02/05/2024	Phone call	Coordinating Site Visit.
From	03/05/2024	Email	Coordinating Site Visit.
From	03/05/2024	Email	Coordinating monthly consultation meetings (content / logistics).
To	13/05/2024	Email	Coordinating Site Visit
From	13/05/2024	Email	Automatic response received.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	14/05/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).
To	15/05/2024	Email	Coordinating Site Visit
To	20/05/2024	Email	Esso sending the Stakeholder a registration for Decommissioning – Removals Stakeholder Forum.
To	20/05/2024	Email	Offered alternative consultation format to Decommissioning – Removals Stakeholder Forums.
From	20/05/2024	Email	Automatic response received.
To	23/05/2024	Email	Coordinating monthly consultation meetings (content / logistics).
To	23/05/2024	Email	Coordinating monthly consultation meetings (content / logistics).
To	23/05/2024	Meeting - Online	Meeting to discuss current proposed and existing operational activities.
From	23/05/2024	Email	Coordinating monthly consultation meetings (content / logistics).
From	24/05/2024	Email	Provided GLaWAC contact information for the cultural awareness training
To	28/05/2024	Email	GLaWAC Esso Consultation Discussion notes – May, for review.
To	06/06/2024	Email	Coordinating Site Visit.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	11/06/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).
To	11/06/2024	Email	Acknowledging receipt of email and request to cancel field trip.
To	11/06/2024	Email	Coordinating Site Visit
From	11/06/2024	Email	Coordinating Site Visit
From	11/06/2024	Email	Cultural Service Request form received.

From	11/06/2024	Email	Coordinating Site Visit
To	13/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	13/06/2024	Email	Coordinating monthly consultation meetings (content / logistics).
To	13/06/2024	Email	Requested information on stakeholder consultation materials.
From	13/06/2024	Email	Coordinating monthly consultation meetings (content / logistics).
To	19/06/2024	Email	Coordinating monthly consultation meetings (content / logistics).
To	20/06/2024	Meeting - Online	Meeting to discuss current proposed and existing operational activities.
To	24/06/2024	Email	Coordinating Site Visit.
From	24/06/2024	Email	Coordinating Site Visit.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	02/07/2024	Email	Sent Stakeholder relevant consultation materials.
From	05/07/2024	Email	Coordinating monthly consultation meetings (content / logistics).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	06/07/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).
To	09/07/2024	Email	GLaWAC Esso Consultation Discussion notes – June, for review.
From	10/07/2024	Email	Coordinating Site Visit.
To	17/07/2024	Email	Coordinating Site Visit.
To	17/07/2024	Email	Coordinating Site Visit.
To	17/07/2024	Email	Coordinating Site Visit.
To	17/07/2024	Email	Coordinating Site Visit.
From	17/07/2024	Email	Coordinating Site Visit.
From	17/07/2024	Email	Coordinating Site Visit.
From	17/07/2024	Email	Coordinating Site Visit.
To	18/07/2024	Email	Request for Cultural Awareness training.
To	18/07/2024	Email	Coordinating Site Visit. Coordinating monthly consultation meetings (content / logistics).

To	18/07/2024	Email	Coordinating Site Visit. Coordinating monthly consultation meetings (content / logistics).
From	18/07/2024	Email	Coordinating monthly consultation meetings (content / logistics).
From	18/07/2024	Email	Coordinating Site Visit. Coordinating monthly consultation meetings (content / logistics). Coordinating Site Visit.
To	31/07/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	05/08/2024	Email	Request for Cultural Awareness training.
To	05/08/2024	Email	Coordinating Site Visit. Coordinating monthly consultation meetings (content / logistics).
From	05/08/2024	Email	Request for Cultural Awareness training.
From	05/08/2024	Email	Coordinating Site Visit. Coordinating monthly consultation meetings (content / logistics).
To	06/08/2024	Email	Esso informing the Stakeholder that Esso has decided to withdraw the Bass Strait decommissioning end-state Deviation Environment Plan from NOPSEMA and provided key points to why.
From	06/08/2024	Email	Stakeholder acknowledged update on Esso's decision on withdrawing from Bass Strait decommissioning end-state Deviation Environment Plan from NOPSEMA. .
To	07/08/2024	Email	REMINDER: Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	13/08/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	21/08/2024	Email	Coordinating Site Visit.
To	21/08/2024	Email	Coordinating Site Visit.
From	21/08/2024	Email	Coordinating Site Visit.
From	21/08/2024	Email	Coordinating Site Visit.
To	09/09/2024	Email	Coordinating Site Visit. Coordinating monthly consultation meetings (content / logistics).
From	09/09/2024	Email	Coordinating Site Visit. Coordinating monthly consultation meetings (content / logistics).
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	12/09/2024	Email	Esso site visit (August) follow-up and future site visit coordination.
From	12/09/2024	Email	Esso site visit (August) follow-up and future site visit coordination.

To	19/09/2024	Meeting - Online	Meeting to discuss current proposed and existing operational activities.
To	19/09/2024	Email	Coordinating Site Visit. Coordinating monthly consultation meetings (content / logistics).
To	19/09/2024	Email	Coordinating Site Visit. Coordinating monthly consultation meetings (content / logistics).
From	19/09/2024	Email	Coordinating Site Visit. Coordinating monthly consultation meetings (content / logistics).
To	23/09/2024	Email	Coordinating Site Visit.
From	23/09/2024	Email	Coordinating Site Visit.
From	23/09/2024	Email	Coordinating Site Visit. Coordinating monthly consultation meetings (content / logistics).
To	25/09/2024	Community Information Session	A Community Information Session was held in Leongatha on 25 September 2024. The objective of the session was to provide information on Esso's current proposed activities, with a focus on Campaign 1 decommissioning, the Onshore Reception Centre, and for stakeholders to consider and provide feedback on how activities might impact their functions, interest and activities.
To	26/09/2024	Email	Community Information Session - Thank you.
To	26/09/2024	Email	Links to 2023 Annual Decommissioning Report.
To	26/09/2024	Email	Registered to attend Community Information Session.
From	26/09/2024	Email	Response from stakeholder noting date and time of next scheduled Community Information Session.
From	26/09/2024	Email	Coordinating Site Visit. Coordinating monthly consultation meetings (content / logistics).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - EMBA. Includes link to Information Bulletin #3 (Appendix F-3).
From	30/09/2024	Email	Automatic response received.
To	11/10/2024	Email	GLaWAC Esso Consultation Discussion notes – September, for review.
To	14/10/2024	Email	Coordinating monthly consultation meetings (content / logistics). Coordinating Site Visit.
From	14/10/2024	Email	Coordinating monthly consultation meetings (content / logistics).

To	15/10/2024	Email	Provided community information session details.
From	17/10/2024	Email	GLaWAC Esso Consultation Discussion notes – September, for review. (request to resend)
To	17/10/2024	Email	GLaWAC Esso Consultation Discussion notes – September, for review. (resent)
From	18/10/2024	Email	Received community information session details.
To	21/10/2024	Email	Provided community information session details.
To	30/10/2024	Email	Corner Inlet Indigenous Consultation discussion.
To	01/11/2024	Email	REMINDER: Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update.
To	07/11/2024	Email	Coordinating Site Visit.
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	11/11/2024	Email	Coordinating Site Visit.
From	11/11/2024	Email	Coordinating Site Visit.
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	15/11/2024	Email	Coordinating Site Visit.
From	15/11/2024	Email	Coordinating Site Visit.
To	18/11/2024	Email	Coordinating Site Visit.
From	18/11/2024	Email	Coordinating Site Visit.
To	20/11/2024	Email	Coordinating monthly consultation meetings (content / logistics).
From	20/11/2024	Email	Coordinating monthly consultation meetings (content / logistics).
To	21/11/2024	Email	Coordinating monthly consultation meetings (content / logistics).
To	21/11/2024	Email	Coordinating monthly consultation meetings (content / logistics).
To	21/11/2024	Email	Coordinating monthly consultation meetings (content / logistics).
From	21/11/2024	Phone call	Coordinating monthly consultation meetings (content / logistics).
From	21/11/2024	Email	Coordinating monthly consultation meetings (content / logistics).
From	25/11/2024	Phone call	Phone call to discuss GLaWAC joining Esso survey vessel (December 2024). Coordinating monthly consultation meetings (content / logistics).
To	28/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.

To	10/12/2024	Email	Coordinating Site Visit
To	10/12/2024	Email	Coordinating Site Visit
To	10/12/2024	Meeting - Online	Meeting to discuss current proposed and existing operational activities.
To	11/12/2024	SMS	Coordinating Site Visit.
From	11/12/2024	SMS	Coordinating Site Visit
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).
To	08/01/2025	Email	GLaWAC Esso Consultation Discussion notes – December for review.
To	08/01/2025	Email	GLaWAC Esso Consultation Discussion notes – December for review (resent)

High Sea Winds Pty Ltd (Ocean Winds) [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	11/07/2024	Email	Introduction email.
To	15/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	15/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	16/08/2024	Email	Esso Australia: Consultation on the Gippsland Basin Geophysical and Geotechnical Investigations Environment Plan.
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

Iberdrola Australia OW 2 Pty Limited [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
Esso provided details on Campaign #1 activities during meetings with Stakeholder. Stakeholder confirmed no issues with Campaign #1 activities.	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. OWP impacts have been considered in the development of the EP.

To/ from	Date	Method	Reg 24(b)(i): Summary of each response
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	15/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	16/08/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
From	10/09/2024	Email	Automatic response received.
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
From	30/09/2024	Email	Automatic response received.
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
From	06/12/2024	Email	Stakeholder providing update on offshore wind activities.
To	11/12/2024	Email	REMINDER: Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).
From	13/12/2024	Email	Scheduling meeting.
To	17/12/2024	Email	Scheduling meeting.
To	17/12/2024	Email	Scheduling meeting.

From	17/12/2024	Email	Scheduling meeting.
From	17/12/2024	Email	Scheduling meeting.
From	20/12/2024	Email	REMINDER: Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update.
From	20/12/2024	Meeting - Online	Meeting held.

Kent Offshore Wind Pty Ltd [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
Esso provided Stakeholder with information on Campaign 1, no feedback 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	Esso Australia: Consultation on Bass Strait offshore activities.
To	15/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	16/08/2024	Email	Esso Australia: Consultation on the Gippsland Basin Geophysical and Geotechnical Investigations Environment Plan.
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

Kurnai clans [742]

Summary of responses received and Esso's consideration and response	Summary of 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 attended Community Information Session. Feedback from forums sessions has been incorporated into the EP, where applicable. Esso met with Stakeholder to provide further updates on Campaign #1 activities. Queries addressed.	Concerns raised in Community Information Sessions include potential environmental and social impacts.	Concerns raised in Community Information Sessions were recorded and incorporated into the EP, where applicable. Feedback specific to Onshore Reception Centre has been included in applicable regulatory submissions.	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	24/10/2024	Email	Response to stakeholder's email.
To	24/10/2024	Community Information Session	A Community Information Session was held in Leongatha on October 24th 2024. The objective of the session was to provide information on Esso's current proposed activities, with a focus on Campaign 1 decommissioning, the Onshore Reception Centre, and for stakeholders to consider and provide feedback on how activities might impact their functions, interest and activities.
From	24/10/2024	Email	Registered to attend Community Information Session.
To	04/11/2024	Email	Esso's October Community Information Sessions – Thank you.
To	07/11/2024	Email	Follow-up to Esso's October Community Information Sessions.
From	07/11/2024	Email	Esso's October Community Information Sessions – Thank you acknowledgement.
From	25/11/2024	Email	Stakeholder request for meeting.
To	02/12/2024	Email	Coordinating meeting with stakeholder.
To	02/12/2024	Email	Coordinating meeting with stakeholder.
From	02/12/2024	Email	Coordinating meeting with stakeholder.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).
To	17/12/2024	Meeting – In Person	Meeting held.

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

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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.		
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).		
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.		
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.		
To	20/05/2024	Email	Invitation: Esso Australia: Decommissioning – Removals Stakeholder Forum.		
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.		
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.		
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.		
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).		
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.		
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).		
From	10/09/2024	Email	Automatic response received.		
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).		
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.		
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.		
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).		

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
Esso held regular meetings with Stakeholder 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. Stakeholder queries have been answered. Stakeholder attended the Decommissioning – Removals Stakeholder Forum. Feedback from forums has been incorporated into the EP, where applicable.	Concerns raised in Stakeholder Forums include potential environmental and social impacts. Commercial fishers raised potential safety and displacement concerns.	Concerns raised in Stakeholder Forums were recorded and incorporated into the EP, where applicable. Feedback specific to Onshore Reception Centre has been included in applicable regulatory submissions.	Esso will provide updates of the activity as necessary. Commercial fishing feedback has been incorporated into the EP.

To/ from	Date	Method	Reg 24(b)(i): Summary of each response
From	04/12/2023	Email	Response to Esso decommissioning in Bass Strait.
From	05/12/2023	Email	Meeting request.
To	13/02/2024	Email	Scheduling meeting.
From	15/02/2024	Email	Scheduling meeting.
To	21/02/2024	Email	Scheduling meeting.
To	27/02/2024	Email	Scheduling meeting.
To	27/02/2024	Email	Scheduling meeting.
From	27/02/2024	Email	Scheduling meeting.
To	29/02/2024	Meeting - In Person	Meeting to discuss current and proposed offshore activities.
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
To	15/04/2024	Email	Decommissioning – Removals Stakeholder Forum– details.
To	16/04/2024	Email	Decommissioning – Removals Stakeholder Forum– details.
From	16/04/2024	Email	Decommissioning – Removals Stakeholder Forum– details.

To	18/04/2024	Email	Decommissioning – Removals Stakeholder Forum– details.
To	22/04/2024	Email	Decommissioning – Removals Stakeholder Forum– details.
To	22/04/2024	Email	Decommissioning – Removals Stakeholder Forum– details.
From	22/04/2024	Email	Decommissioning – Removals Stakeholder Forum– details.
From	22/04/2024	Email	Decommissioning – Removals Stakeholder Forum– details.
To	24/04/2024	Email	Decommissioning – Removals Stakeholder Forum– details.
To	25/04/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
From	30/04/2024	Email	Decommissioning – Removals Stakeholder Forum– details.
To	01/05/2024	Email	Decommissioning – Removals Stakeholder Forum– details.
To	03/05/2024	Email	Decommissioning – Removals Stakeholder Forum– details.
From	03/05/2024	Email	Decommissioning – Removals Stakeholder Forum– details.
To	13/05/2024	Email	Decommissioning – Removals Stakeholder Forum– details.
From	13/05/2024	Email	Decommissioning – Removals Stakeholder Forum– details.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	20/05/2024	Email	Invitation: Esso Australia: Decommissioning – Removals Stakeholder Forum.
To	20/05/2024	Email	Decommissioning – Removals Stakeholder Forum– details.
From	20/05/2024	Email	Registered to attend Decommissioning – Removals Stakeholder Forum.
From	20/05/2024	Email	Decommissioning – Removals Stakeholder Forum– details.
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	27/05/2024	Meeting – In Person	Stakeholder Forum for SPJ Removals - Campaign 1.
To	29/05/2024	Email	Scheduling meeting.
To	30/05/2024	Meeting - In Person	Quarterly meeting.
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.

To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	19/08/2024	Email	Scheduling meeting.
To	19/08/2024	Email	Scheduling meeting.
From	19/08/2024	Email	Scheduling meeting.
To	22/08/2024	Meeting - In Person	Quarterly meeting.
From	06/09/2024	Email	Organising quarterly meeting.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	10/09/2024	Email	Organising quarterly meeting.
To	19/09/2024	Email	Scheduling meeting.
From	19/09/2024	Email	Scheduling meeting.
From	19/09/2024	Email	Scheduling meeting.
To	23/09/2024	Email	Scheduling meeting.
To	25/09/2024	Meeting - In Person	Quarterly meeting.
To	25/09/2024	Email	Scheduling meeting.
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
From	30/09/2024	Email	Scheduling meeting.
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	09/12/2024	Meeting - In Person	Quarterly meeting.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	20/05/2024	Email	Invitation: Esso Australia: Decommissioning – Removals Stakeholder Forum.
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.		
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).		
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.		
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.		
To	20/05/2024	Email	Invitation: Esso Australia: Decommissioning – Removals Stakeholder Forum.		
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.		
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.		
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.		
To	12/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.		
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).		
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.		
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).		
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).		
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.		
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.		

To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

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
Stakeholder provided details of Decommissioning - Removals Stakeholder Forums to 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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	20/05/2024	Email	Invitation: Esso Australia: Decommissioning – Removals Stakeholder Forum.
From	20/05/2024	Email	Decommissioning – Removals Stakeholder Forum - query.
To	21/05/2024	Email	Decommissioning – Removals Stakeholder Forum - query response.
From	21/05/2024	Email	Decommissioning – Removals Stakeholder Forum invite distribution.
From	22/05/2024	Email	Decommissioning – Removals Stakeholder Forum - query.
To	24/05/2024	Email	Decommissioning – Removals Stakeholder Forum - query response.
From	27/05/2024	Email	Confirmation Decommissioning – Removals Stakeholder Forum distribution to members.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
From	01/07/2024	Email	Automatic response received.

To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).
From	13/12/2024	Email	Automatic response received.

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
Esso held meetings with Stakeholder 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. Stakeholder queries have been addressed. Stakeholder attended the Decommissioning – Removals Stakeholder Forum. Feedback from forums has been incorporated into the EP, where applicable.			Concerns raised in Stakeholder Forums include potential environmental and social impacts.	Concerns raised in Stakeholder Forums were recorded and incorporated into the EP, where applicable. Feedback specific to Onshore Reception Centre has been included in applicable regulatory submissions.	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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.		
From	28/02/2024	Email	Scheduling meeting.		
To	04/03/2024	Email	Scheduling meeting.		
To	19/03/2024	Email	Scheduling meeting.		
From	19/03/2024	Email	Scheduling meeting.		

To	21/03/2024	Email	Scheduling meeting.
From	21/03/2024	Email	Scheduling meeting.
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
To	22/04/2024	Email	Scheduling meeting.
To	29/04/2024	Email	Scheduling meeting.
To	03/05/2024	Meeting - Online	Meeting held.
To	09/05/2024	Email	Request review of meeting notes.
From	10/05/2024	Email	Meeting notes review.
To	14/05/2024	Email	Meeting notes review – confirmation.
To	14/05/2024	Email	Final meeting notes.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	20/05/2024	Email	Invitation: Esso Australia: Decommissioning – Removals Stakeholder Forum.
From	20/05/2024	Email	Stakeholder is registering for the Removals Stakeholder Forum.
To	24/05/2024	Email	Invitation to additional sessions for Decommissioning – Removals Stakeholder Forum.
From	27/05/2024	Email	Registered to attend Decommissioning – Removals Stakeholder Forum.
To	05/06/2024	Meeting – Online	Stakeholder Forum for SPJ Removals - Campaign 1.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	12/08/2024	Email	Meeting request.
From	06/09/2024	Email	Meeting request accepted.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).

To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	09/10/2024	Email	REMINDER: Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update.
To	23/10/2024	Meeting - Online	Meeting with MUA.
To	23/10/2024	Email	Follow up email with meeting notes.
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	13/11/2024	Phone call	Phone conversation with stakeholder.
To	18/11/2024	Email	Follow up with stakeholder regarding meeting actions.
To	22/11/2024	Phone call	Follow up response to question raised by stakeholder.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

McLoughlins Beach Angling Club [699]

Summary of responses received and Esso's consideration and response			Summary of 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 advised Esso they were unable to attend Decommissioning – Removals Stakeholder Forum. Esso continues to provide Stakeholder with consultation material.			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	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).		
To	31/07/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.		
To	07/08/2024	Email	REMINDER: Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.		

From	08/08/2024	Email	Stakeholder unable to attend decommissioning forum.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

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	Esso Australia Consultation: Consultation on offshore activities (EMBA).		
To	14/05/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).		
To	11/06/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).		
To	06/07/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).		
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - EMBA. Includes link to Information Bulletin #3 (Appendix F-3).		

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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
To	25/04/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	20/05/2024	Email	Invitation: Esso Australia: Decommissioning – Removals Stakeholder Forum.
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	11/12/2024	Email	REMINDER: Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

Navigator North Project Pty Ltd [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
Esso held a meeting with Stakeholder 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. Stakeholder queries have been addressed	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. OWP impacts have been considered in the development of the EP.

Completed Esso Consultation Questionnaire. Stakeholder provided feedback on Campaign #1 activities. Esso will continue consultation with Stakeholder.			

To/ from	Date	Method	Reg 24(b)(i): Summary of each response
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
From	12/07/2024	Questionnaire	Stakeholder responded to Esso Consultation Questionnaire.
From	12/07/2024	Email	Meeting request.
To	15/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	15/07/2024	Email	Scheduling meeting.
To	18/07/2024	Meeting - Online	Initial introduction meeting.
To	23/07/2024	Email	Esso Consultation Questionnaire – Thank you.
To	16/08/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	11/12/2024	Email	REMINDER: Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update.
From	12/12/2024	Email	Consultation on the Gippsland Basin Decommissioning Campaign - query.
To	12/12/2024	Email	Consultation on the Gippsland Basin Decommissioning Campaign – response to query.

To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).
From	20/12/2024	Email	Consultation on the Gippsland Basin Decommissioning Campaign.

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	Esso Australia: Consultation on offshore activities (EMBA).
To	14/05/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).
To	11/06/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).
To	06/07/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - EMBA. Includes link to Information Bulletin #3 (Appendix F-3).

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	Esso Australia Consultation: Consultation on offshore activities (EMBA).
To	14/05/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).
To	11/06/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).
To	06/07/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).

To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - EMBA. Includes link to Information Bulletin #3 (Appendix F-3).
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.

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	14/02/2024	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA).		
To	28/03/2024	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA).		
To	14/05/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).		
To	11/06/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).		
To	06/07/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).		
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - EMBA. Includes link to Information Bulletin #3 (Appendix F-3).		

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	14/02/2024	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA).		

To	28/03/2024	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA).
To	14/05/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).
To	11/06/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).
To	06/07/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - EMBA. Includes link to Information Bulletin #3 (Appendix F-3).
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.

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	Esso Australia Consultation: Consultation on offshore activities (EMBA).		
From	28/03/2024	Email	Automatic response received.		
To	14/05/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).		
To	11/06/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).		
From	11/06/2024	Email	Automatic response received.		
To	06/07/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).		
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - EMBA. Includes link to Information Bulletin #3 (Appendix F-3).		

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	14/02/2024	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA).		
To	28/03/2024	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA).		
To	14/05/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).		
To	11/06/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).		
To	06/07/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).		
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - EMBA. Includes link to Information Bulletin #3 (Appendix F-3).		

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	14/02/2024	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA).		
To	28/03/2024	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA).		
To	14/05/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).		
To	11/06/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).		
To	06/07/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).		
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - EMBA. Includes link to Information Bulletin #3 (Appendix F-3).		

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	14/02/2024	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA).		
To	28/03/2024	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA).		
To	14/05/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).		
To	11/06/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).		
To	06/07/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).		
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - EMBA. Includes link to Information Bulletin #3 (Appendix F-3).		

NSW Local Aboriginal Land Council: Wagonga [451]

Summary of responses received and Esso's consideration and response			Summary of 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	14/02/2024	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA).		
To	14/05/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).		
To	11/06/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).		
To	06/07/2024	Email	Esso Australia: Consultation on offshore activities (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	14/02/2024	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA).		
To	28/03/2024	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA).		
From	28/03/2024	Email	Automatic response received.		
To	14/05/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).		
From	14/05/2024	Email	Automatic response received.		
To	11/06/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).		
From	11/06/2024	Email	Automatic response received.		
To	06/07/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).		
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - EMBA. Includes link to Information Bulletin #3 (Appendix F-3).		
From	30/09/2024	Email	Automatic response received.		
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.		
From	11/11/2024	Email	Automatic response received.		
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.		
From	12/11/2024	Email	Automatic response received.		

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	14/02/2024	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA).
To	28/03/2024	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA).
From	28/03/2024	Email	Automatic response received.
To	14/05/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).
To	11/06/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).
To	06/07/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - EMBA. Includes link to Information Bulletin #3 (Appendix F-3).

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	Esso Australia Consultation: Consultation on offshore activities (EMBA).
To	14/05/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).
To	11/06/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).
To	06/07/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - EMBA. Includes link to Information Bulletin #3 (Appendix F-3).

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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.		
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).		
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.		
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.		
To	20/05/2024	Email	Invitation: Esso Australia: Decommissioning – Removals Stakeholder Forum.		
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.		
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.		
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.		
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).		
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.		
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).		
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).		
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).		

One Gippsland [616]

Summary of responses received and Esso's consideration and response	Summary of 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	20/05/2024	Email	Invitation: Esso Australia: Decommissioning – Removals Stakeholder Forum.
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	31/07/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	07/08/2024	Email	REMINDER: Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

Orsted Offshore Australia 1 Pty Ltd - 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

Stakeholder requested to continue to be consultation on Decommissioning Campaign #1 Execution Environment Plan. Esso continues to provide Stakeholder with consultation material.			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	20/05/2024	Email	Invitation: Esso Australia: Decommissioning – Removals Stakeholder Forum.	
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.	
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.	
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.	
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).	
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.	
To	11/07/2024	Email	Introduction email- Esso Australia: Consultation on Bass Strait offshore activities.	
To	15/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.	
From	16/07/2024	Email	Request to be consulted on Esso Australia: Bass Strait offshore activities.	
To	16/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.	
To	16/07/2024	Email	Confirmation stakeholder will continue to be consulted.	
To	16/08/2024	Email	Esso Australia: Consultation on the Gippsland Basin Geophysical and Geotechnical Investigations Environment Plan.	
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).	
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).	
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).	
From	13/12/2024	Email	Automatic response received.	

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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	20/05/2024	Email	Invitation: Esso Australia: Decommissioning – Removals Stakeholder Forum.
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

People & Parks Foundation [838]

Summary of responses received and Esso's consideration and response	Summary of 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	27/11/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

Port Albert Fishing Club [684]

Summary of responses received and Esso's consideration and response	Summary of 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 attended Community Information Session. Feedback from community information sessions has been incorporated into the EP, where applicable. Stakeholder suggested contact with Victorian Recreational Fishing (VRFish). Esso contacted VRFish.	Concerns raised in Community Information Sessions include potential environmental and social impacts.	Concerns raised in Community Information Sessions were recorded and incorporated into the EP, where applicable. Feedback specific to Onshore Reception Centre has been included in applicable regulatory submissions.	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	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	31/07/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	07/08/2024	Email	REMINDER: Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).

From	23/09/2024	Email	Registered to attend Community Information Session.
To	23/09/2024	Email	Community Information Session - confirmation of registration.
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
From	01/10/2024	Email	Esso Australia Bass Strait Decommissioning and Artificial Reefs.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

Port Anthony Stevedoring Services [704]

Summary of responses received and Esso's consideration and response	Summary of 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	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	31/07/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	07/08/2024	Email	REMINDER: Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	20/05/2024	Email	Invitation: Esso Australia: Decommissioning – Removals Stakeholder Forum.
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	31/07/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	07/08/2024	Email	REMINDER: Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

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	01/12/2023	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	20/05/2024	Email	Invitation: Esso Australia: Decommissioning – Removals Stakeholder Forum.
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

Prom Coast Ecolink [666]

Summary of 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

			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	04/09/2024	Email	Community Information Session – Thank you.	
To	26/09/2024	Community Information Session	A Community Information Session was held in Foster on September 26th, 2024. The objective of the session was to provide information on Esso's current proposed activities, with a focus on Campaign 1 decommissioning, the Onshore Reception Centre, and for stakeholders to consider and provide feedback on how activities might impact their functions, interest and activities.	
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).	
To	01/10/2024	Email	Community Information Session – Thank you.	
To	23/10/2024	Community Information Session	A Community Information Session was held in Foster on October 23rd, 2024. The objective of the session was to provide information on Esso's current proposed activities, with a focus on Campaign 1 decommissioning, the Onshore Reception Centre, and for stakeholders to consider and provide feedback on how activities might impact their functions, interest and activities.	
To	04/11/2024	Email	Esso's October Community Information Sessions – Thank you.	
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).	

Relevant Person #792 [792]

Summary of responses received and Esso's consideration and response			Summary of 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	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

Relevant Person #793 [793]

Summary of responses received and Esso's consideration and response			Summary of 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	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).		
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).		
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).		

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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.		

To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.		
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).		
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.		
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.		
To	20/05/2024	Email	Invitation: Esso Australia: Decommissioning – Removals Stakeholder Forum.		
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.		

To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	31/07/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	07/08/2024	Email	REMINDER: Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.		
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).		
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.		
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.		
To	20/05/2024	Email	Invitation: Esso Australia: Decommissioning – Removals Stakeholder Forum.		
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.		

To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

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 Stakeholder 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. Stakeholder queries have been addressed. Stakeholder attended the Decommissioning – Removals Stakeholder Forum. Feedback from forums has been incorporated into the EP, where applicable.	Concerns raised in Stakeholder Forums include potential environmental and social impacts. Commercial fishers raised potential safety and displacement concerns.	Concerns raised in Stakeholder Forums were recorded and incorporated into the EP, where applicable. Feedback specific to Onshore Reception Centre has been included in applicable regulatory submissions.	Esso will provide updates of the activity as necessary. Commercial fishing feedback has been incorporated into the EP.

To/ from	Date	Method	Reg 24(b)(i): Summary of each response
From	15/01/2024	Email	Feedback on proposed activities.
To	14/02/2024	Email	Meeting request.
From	14/02/2024	Email	Automatic response received.
From	15/02/2024	Email	Response to meeting request.

To	19/03/2024	Email	Scheduling meeting.
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. 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	Email format error.
From	09/04/2024	Email	Agreeing on format for consulting with members.
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
To	10/04/2024	Email	Confirmation on consulting with members.
From	12/04/2024	Email	Confirmation on consulting with members.
From	15/04/2024	Email	Suggest online Decommissioning – Removals Stakeholder Forum.
To	16/04/2024	Email	Decommissioning - Removals Stakeholder Forum – details.
From	17/04/2024	Email	Decommissioning - Removals Stakeholder Forum – details.
To	18/04/2024	Email	Decommissioning - Removals Stakeholder Forum – details.
To	25/04/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	10/05/2024	Email	Decommissioning - Removals Stakeholder Forum – details.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
From	14/05/2024	Email	Decommissioning - Removals Stakeholder Forum – details.
To	20/05/2024	Email	Decommissioning - Removals Stakeholder Forum – details.
From	20/05/2024	Email	Request for meeting and to distribute information - confirmation.
To	20/05/2024	Email	Decommissioning - Removals Stakeholder Forum – details.
To	20/05/2024	Email	Scheduling meeting.
From	20/05/2024	Email	Decommissioning - Removals Stakeholder Forum – details.
To	21/05/2024	Email	Decommissioning - Removals Stakeholder Forum – details.
To	21/05/2024	Email	Decommissioning - Removals Stakeholder Forum – details.
From	21/05/2024	Email	Decommissioning - Removals Stakeholder Forum – details.
To	23/05/2024	Phone call	Discussion on decommissioning activities.
To	23/05/2024	Meeting - Online	Meeting held.

From	27/05/2024	Email	Registered to attend Decommissioning – Removals Stakeholder Forum.
To	29/05/2024	Email	Request for discussion.
To	29/05/2024	Email	Decommissioning – Removals Stakeholder Forum invitation.
To	29/05/2024	Email	Quarterly meeting details.
From	29/05/2024	Phone call	Discussion- current and upcoming activities.
To	05/06/2024	Meeting – Online	Stakeholder Forum for SPJ Removals - Campaign 1.
To	06/06/2024	Phone call	Discussion- current and upcoming activities.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	12/06/2024	Email	Decommissioning - Removals Stakeholder Forum – details.
From	12/06/2024	Email	Decommissioning - Removals Stakeholder Forum – details.
To	13/06/2024	Email	Scheduling meeting.
To	13/06/2024	Email	Scheduling meeting.
To	18/06/2024	Meeting - In Person	Quarterly meeting.
To	21/06/2024	Phone call	Discussion on current and proposed activities.
To	01/07/2024	Email	Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
From	01/07/2024	Email	Automatic response received.
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	11/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
From	16/07/2024	Email	Information distribution request.
To	16/07/2024	Email	Information distribution request.
From	16/07/2024	Email	Information distribution request.
From	16/07/2024	Email	Scheduling quarterly meeting.
To	18/07/2024	Email	Information distribution request confirmation.
From	23/07/2024	Email	Stakeholder acknowledged SPJ Decommissioning Forum invite.
To	24/07/2024	Email	Acknowledgement of stakeholder's email.
To	29/07/2024	Email	Decommissioning – Removals Stakeholder Forum - details.

From	29/07/2024	Email	Decommissioning – Removals Stakeholder Forum - details.
To	30/07/2024	Email	Acknowledge stakeholder's response to distribute information for decommissioning forum.
To	07/08/2024	Email	REMINDER: Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	08/08/2024	Meeting – In Person	Stakeholder Forum for SPJ Removals - Campaign 1.
To	12/09/2024	Email	Request to move quarterly meeting.
From	16/09/2024	Email	Scheduling quarterly meeting.
From	17/09/2024	Email	Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan – information distribution.
To	18/09/2024	Email	Confirmation for Stakeholder to circulate consultation information.
To	18/09/2024	Email	Community Information Session – information distribution request.
From	19/09/2024	Email	Community Information Session – information distribution request.
To	02/10/2024	Meeting - Online	Quarterly meeting.
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
From	13/11/2024	Email	Information distribution request.
To	13/11/2024	Email	Information distribution request.
To	10/12/2024	Email	Confirming quarterly meeting.
From	10/12/2024	Email	Confirming quarterly meeting.
To	12/12/2024	Meeting - Online	Quarterly meeting.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	20/05/2024	Email	Invitation: Esso Australia: Decommissioning – Removals Stakeholder Forum.
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

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

Completed Esso Consultation Questionnaire. Esso confirmed Stakeholder will continue 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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.		
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).		
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.		
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.		
To	20/05/2024	Email	Invitation: Esso Australia: Decommissioning – Removals Stakeholder Forum.		
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.		
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.		
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.		
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).		
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.		
From	19/07/2024	Questionnaire	Stakeholder responded to Esso Consultation Questionnaire.		
To	23/07/2024	Email	Esso Consultation Questionnaire – Thank you.		
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).		
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).		
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.		
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.		
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).		

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	14/02/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).
To	28/03/2024	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA).
To	14/05/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	09/07/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - EMBA. Includes link to Information Bulletin #3 (Appendix F-3).

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 objection or claim and its response	Reg 34(g) (ii): EP controls
Esso held regular meetings with Stakeholder 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. Stakeholder queries have been addressed. Stakeholder attended the Decommissioning – Removals Stakeholder Forum. Feedback from forums has been incorporated into the EP, where applicable.	Concerns raised in Stakeholder Forums include potential environmental and social impacts. Commercial fishers raised potential safety and displacement concerns.	Concerns raised in Stakeholder Forums were recorded and incorporated into the EP, where applicable. Feedback specific to Onshore Reception Centre has been included in applicable regulatory submissions.	Esso will provide updates of the activity as necessary. Commercial fishing feedback has been incorporated into the EP.

To/ from	Date	Method	Reg 24(b)(i): Summary of each response

From	04/12/2023	Email	SETFIA response to letter regarding Esso decommissioning in Bass Strait.
To	07/02/2024	Email	Additional meeting request.
From	07/02/2024	Email	Agreed to the quarterly meeting.
To	19/02/2024	Email	Invitation to Community Information Session.
From	19/02/2024	Email	Confirmation Community Information Sessions circulated to members.
From	19/02/2024	Email	Registered to attend Community Information Session.
To	19/02/2024	Email	Community Information Session - confirmation of registration.
From	28/02/2024	Email	New member information.
To	28/02/2024	Email	Confirmation information received.
To	29/02/2024	Meeting - In Person	SETFIA / Esso quarterly meeting.
From	29/02/2024	Community Information Session	Attended Community Information Session.
To	13/03/2024	Email	Community Information Session – Thank you.
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
To	15/04/2024	Email	Scheduling Decommissioning - Removals Stakeholder Forum.
To	16/04/2024	Email	Scheduling Decommissioning - Removals Stakeholder Forum.
To	25/04/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	13/05/2024	Email	Decommissioning - Removals Stakeholder Forum details.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
From	14/05/2024	Email	Confirmation on Quarterly meeting.
To	15/05/2024	SMS	SMS inviting stakeholders to SPJ decommissioning forum.
To	20/05/2024	Email	Scheduling Quarterly meeting.
To	20/05/2024	Email	REMINDER: Decommissioning - Removals Stakeholder Forum.
From	22/05/2024	Email	REMINDER: Decommissioning - Removals Stakeholder Forum - confirmation circulation to members.

To	23/05/2024	Email	Requested for confirmation of notification.
From	23/05/2024	Email	REMINDER: Decommissioning - Removals Stakeholder Forum - confirmation circulation to members.
To	27/05/2024	Meeting – In Person	Stakeholder Forum for SPJ Removals - Campaign 1.
To	30/05/2024	Meeting - In Person	SETFIA / Esso quarterly consultation meeting.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
From	12/06/2024	Email	Decommissioning - Removals Stakeholder Forum details.
To	01/07/2024	Email	Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
From	01/07/2024	Email	Automatic response received.
From	02/07/2024	Email	Decommissioning Campaign #1 Execution Environment Plan – confirmation received.
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
From	23/07/2024	Email	Stakeholder will not be at the office day of quarterly meeting.
From	23/07/2024	Email	Discussion on offshore software and equipment.
To	24/07/2024	Email	Discussion on offshore software and equipment.
To	31/07/2024	Email	Decommissioning - Removals Stakeholder Forum - details.
From	01/08/2024	Email	Response from stakeholder about decommissioning removals forum.
To	05/08/2024	SMS	Decommissioning - Removals Stakeholder Forum and Community Information Session details.
From	05/08/2024	Email	Decommissioning - Removals Stakeholder Forum - confirmation circulation to members.
To	06/08/2024	Email	Information on Bass Strait decommissioning end-state Deviation Environment Plan.
From	07/08/2024	Email	Confirmation information received and queries on decommissioning.
To	19/08/2024	Email	Scheduling quarterly meeting.
From	19/08/2024	Email	Scheduling quarterly meeting.
To	19/08/2024	Email	Scheduling quarterly meeting.
From	19/08/2024	Email	Scheduling quarterly meeting.

From	21/08/2024	Email	Stakeholder will continue to progress the proposal for software upgrades.
To	26/08/2024	Email	Scheduling quarterly meeting.
From	26/08/2024	Email	Scheduling quarterly meeting.
To	13/09/2024	Meeting - In Person	SETFIA / Esso quarterly meeting.
To	16/09/2024	Email	Request for Stakeholder to circulate upcoming community information sessions.
To	17/09/2024	SMS	SMS sent to Eastern fishing fleet advising of upcoming community sessions.
To	17/09/2024	Email	Confirmation of community information session details.
From	17/09/2024	Email	Confirmation of details of community information sessions.
From	17/09/2024	Email	Confirmation community information sessions has been circulated.
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
From	07/10/2024	Email	Meeting request.
To	23/10/2024	SMS	SMS to advise members of upcoming community information sessions.
To	28/10/2024	Email	Follow up email with meeting notes.
To	28/10/2024	Email	Response to SMS email.
From	28/10/2024	Email	Response to follow up email and query regarding wellheads.
From	28/10/2024	Email	Community Information Session – details.
From	28/10/2024	Email	Meeting date not suitable.
To	30/10/2024	Email	Scheduling meeting.
From	31/10/2024	Email	Details on offshore software and equipment.
From	01/11/2024	Email	Stakeholder confirming the SMS is correct before sending it out to the fishing feet.
To	06/11/2024	Email	Community Information Session – details.
From	07/11/2024	Email	Community Information Session – details.
To	07/11/2024	Email	Community Information Session – details.
From	07/11/2024	Email	Community Information Session – details.

To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

South Gippsland Landcare network [706]

Summary of responses received and Esso's consideration and response	Summary of 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	31/07/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
From	31/07/2024	Email	Automatic response received.
To	07/08/2024	Email	REMINDER: Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
From	07/08/2024	Email	Automatic response received.
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).
From	13/12/2024	Email	Automatic response received.

South Gippsland Water [790]

Summary of responses received and Esso's consideration and response	Summary of 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	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	16/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

Southern Boat Fishing Club [708]

Summary of responses received and Esso's consideration and response	Summary of 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	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	31/07/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	07/08/2024	Email	REMINDER: Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.		
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).		
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.		
To	25/04/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.		
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.		
To	20/05/2024	Email	Invitation: Esso Australia: Decommissioning – Removals Stakeholder Forum.		
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.		
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.		
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.		
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).		
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.		
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).		
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).		
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.		
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.		

To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

Star of the South Wind Farm Pty Ltd (FL005) and Kut-Wut Bratualung 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
Esso held regular meetings with Stakeholder 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. Stakeholder queries have been addressed. Stakeholder attended the Decommissioning – Removals Stakeholder Forum. Feedback from forums has been incorporated into the EP, where applicable.	Concerns raised in Stakeholder Forums include potential environmental and social impacts.	Concerns raised in Stakeholder Forums were recorded and incorporated into the EP, where applicable. Feedback specific to Onshore Reception Centre has been included in applicable regulatory submissions.	Esso will provide updates of the activity as necessary. OWP impacts have been considered in the development of the EP.

To/ from	Date	Method	Reg 24(b)(i): Summary of each response
To	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
From	16/05/2024	Meeting - Online	Ongoing project environmental discussions.
To	20/05/2024	Email	Invitation: Esso Australia: Decommissioning – Removals Stakeholder Forum.
From	20/05/2024	Email	Registered to attend Decommissioning – Removals Stakeholder Forum.
From	23/05/2024	Email	Decommissioning – Removals Stakeholder Forum - query.
To	23/05/2024	Email	Decommissioning – Removals Stakeholder Forum – query response.
From	23/05/2024	Email	Registered to attend Decommissioning – Removals Stakeholder Forum.

To	04/06/2024	Meeting – In Person	Stakeholder Forum for SPJ Removals - Campaign 1.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	01/07/2024	Email	Meeting request.
From	01/07/2024	Email	Scheduling meeting.
To	01/07/2024	Email	Scheduling meeting.
From	01/07/2024	Email	Scheduling meeting.
To	01/07/2024	Email	Scheduling meeting.
To	03/07/2024	Meeting - In Person	Meeting to discuss all current and proposed offshore activities. .
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	15/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	28/07/2024	Meeting - In Person	Meeting to discuss Esso current activities.
To	16/08/2024	Email	Esso Australia: Consultation on the Gippsland Basin Geophysical and Geotechnical Investigations Environment Plan.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	11/12/2024	Email	REMINDER: Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update.
From	12/12/2024	Meeting - Online	Meeting between EAPL and Stakeholder.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	20/05/2024	Email	Invitation: Esso Australia: Decommissioning – Removals Stakeholder Forum.
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	20/05/2024	Email	Invitation: Esso Australia: Decommissioning – Removals Stakeholder Forum.
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

TAS Local Government Area / Council: Break ODay [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	14/02/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).
From	14/02/2024	Email	Automatic response received.
To	28/03/2024	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA).
To	14/05/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).
To	11/06/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).
From	11/06/2024	Email	Automatic response received.
To	06/07/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - EMBA. Includes link to Information Bulletin #3 (Appendix F-3).
From	30/09/2024	Email	Automatic response received.

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	14/02/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).
From	14/02/2024	Email	Automatic response received.
To	28/03/2024	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA).

From	28/03/2024	Email	Automatic response received.
To	14/05/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).
To	09/07/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - EMBA. Includes link to Information Bulletin #3 (Appendix F-3).
From	30/09/2024	Email	Automatic response received.

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	14/02/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).
To	28/03/2024	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA).
To	14/05/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).
From	14/05/2024	Email	Automatic response received.
To	11/06/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).
From	11/06/2024	Email	Automatic response received.
To	06/07/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - EMBA. Includes link to Information Bulletin #3 (Appendix F-3).
From	30/09/2024	Email	Automatic response received.

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	14/02/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).		
To	28/03/2024	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA).		
To	14/05/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).		
To	11/06/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).		
To	06/07/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).		
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - EMBA. Includes link to Information Bulletin #3 (Appendix F-3).		

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	14/02/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).		
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).		
To	28/03/2024	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA).		
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.		
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.		
To	14/05/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).		
To	11/06/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).		
To	06/07/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).		

To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - EMBA. Includes link to Information Bulletin #3 (Appendix F-3).

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	14/02/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).
To	28/03/2024	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA).
From	28/03/2024	Email	Automatic response received.
To	14/05/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).
To	09/07/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - EMBA. Includes link to Information Bulletin #3 (Appendix F-3).

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 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	14/02/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).
To	28/03/2024	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA).
To	14/05/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.

To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	09/07/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - EMBA. Includes link to Information Bulletin #3 (Appendix F-3).

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	14/02/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).
To	14/05/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).
From	14/05/2024	Email	Automatic response received.
To	11/06/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).
From	11/06/2024	Email	Automatic response received.
To	06/07/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - EMBA. Includes link to Information Bulletin #3 (Appendix F-3).
From	30/09/2024	Email	Automatic response received.

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	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	06/07/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - EMBA. Includes link to Information Bulletin #3 (Appendix F-3).

Tasmanian Gas Pipeline [678]

Summary of responses received and Esso's consideration and response			Summary of 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	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).		
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).		

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	14/02/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).		
To	14/05/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).		
To	11/06/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).		
To	06/07/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).		

To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - EMBA. Includes link to Information Bulletin #3 (Appendix F-3).

The Nature Conservancy [373]

Summary of responses received and Esso's consideration and response	Summary of 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	20/05/2024	Email	Invitation: Esso Australia: Decommissioning – Removals Stakeholder Forum.
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

The Wellgear Group [624]

Summary of responses received and Esso's consideration and response	Summary of 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 attended the Decommissioning – Removals Stakeholder Forum Sale session.	Concerns raised in Stakeholder Forums include	Concerns raised in Stakeholder Forums were recorded and	Esso will provide updates of the activity as necessary. No additional

Feedback from forums has been incorporated into the EP, where applicable.	potential environmental and social impacts.	incorporated into the EP, where applicable. Feedback specific to Onshore Reception Centre has been included in applicable regulatory submissions.	measures or controls are required.

To/ from	Date	Method	Reg 24(b)(i): Summary of each response
From	30/05/2024	Email	Registered to attend Decommissioning – Removals Stakeholder Forum.
To	30/05/2024	Email	Decommissioning - Removals Stakeholder Forum - confirmation of registration.
To	04/06/2024	Meeting – In Person	Stakeholder Forum for SPJ Removals - Campaign 1.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

The Wilderness Society [345]

Summary of responses received and Esso's consideration and response	Summary of 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 attended the Decommissioning – Removals Stakeholder Forum Sale session. Feedback from forums has been incorporated into the EP, where applicable. Stakeholder requested to continue participating in consultation for decommissioning. Esso	Concerns raised in Stakeholder Forums include potential environmental and social impacts.	Concerns raised in Stakeholder Forums were recorded and incorporated into the EP, where applicable. Feedback specific to Onshore Reception Centre has been included in applicable regulatory submissions.	Esso will provide updates of the activity as necessary. No additional measures or controls are required.

continues to provide Stakeholder with consultation material.			

To/ from	Date	Method	Reg 24(b)(i): Summary of each response
From	17/04/2024	Email	Stakeholder request to be consulted on decommissioning.
To	22/04/2024	Email	Decommissioning consultation – confirmation.
From	02/05/2024	Email	Meeting request.
To	09/05/2024	Email	Confirmation email has been passed onto relevant department.
From	09/05/2024	Email	Confirmation of email received.
To	20/05/2024	Email	Invitation: Esso Australia: Decommissioning – Removals Stakeholder Forum.
From	20/05/2024	Email	Registered to attend Decommissioning – Removals Stakeholder Forum.
From	20/05/2024	Email	Stakeholder identified as relevant person.
To	24/05/2024	Email	Invitation to additional sessions for Decommissioning – Removals Stakeholder Forum.
From	27/05/2024	Email	Registered to attend Decommissioning – Removals Stakeholder Forum.
To	05/06/2024	Meeting – Online	Stakeholder Forum for SPJ Removals - Campaign 1.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

Trust For Nature [365]

Summary of responses received and Esso's consideration and response	Summary of 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	20/05/2024	Email	Invitation: Esso Australia: Decommissioning – Removals Stakeholder Forum.
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

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
Stakeholder registered for Decommissioning – Removals Stakeholder Forum, although did not attend. Esso continues to provide consultation material.	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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	20/05/2024	Email	Invitation: Esso Australia: Decommissioning – Removals Stakeholder Forum.
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
From	29/05/2024	Email	Registered to attend Decommissioning – Removals Stakeholder Forum.
To	30/05/2024	Email	Decommissioning - Removals Stakeholder Forum - confirmation of registration.
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
From	02/07/2024	Email	Stakeholder industry position statement.
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	29/07/2024	Email	Stakeholder industry position statement - response.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
To	25/04/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	20/05/2024	Email	Invitation: Esso Australia: Decommissioning – Removals Stakeholder Forum.
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	31/07/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	07/08/2024	Email	REMINDER: Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).

To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
To	20/05/2024	Email	Invitation: Esso Australia: Decommissioning – Removals Stakeholder Forum.
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	12/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	11/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

Victorian National Parks Association [633]

Summary of responses received and Esso's consideration and response	Summary of 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 requested to be considered relevant person for the activity. Esso continues to provide Stakeholder with consultation material.	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	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
From	01/10/2024	Email	Request to be considered relevant person for Decommissioning Campaign #1 Execution Environment Plan.
To	02/10/2024	Email	Confirmation stakeholder will receive consultation material relating to Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

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
Completed Esso Consultation Questionnaire. Esso continues to provide Stakeholder with consultation material.	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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.

From	01/12/2023	Email	Automatic response received.
To	25/04/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
From	25/04/2024	Email	Automatic response received.
To	20/05/2024	Email	Invitation: Esso Australia: Decommissioning – Removals Stakeholder Forum.
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
From	24/05/2024	Email	Automatic response received.
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
From	01/07/2024	Email	Automatic response received.
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	31/07/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	07/08/2024	Email	REMINDER: Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	08/08/2024	Email	Notifying stakeholder of Bass Strait decommissioning end-state Deviation Environment Plan Update.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
From	11/09/2024	Questionnaire	Stakeholder responded to Esso Consultation Questionnaire.
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	07/10/2024	Email	Esso Consultation Questionnaire – Thank you.
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
From	11/11/2024	Email	Automatic response received.
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.

To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).
From	13/12/2024	Email	Automatic response received.

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
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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	20/05/2024	Email	Invitation: Esso Australia: Decommissioning – Removals Stakeholder Forum.
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).

To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

Victorian Trades Hall Council [349]

Summary of responses received and Esso's consideration and response	Summary of 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
Completed Esso Consultation Questionnaire. Esso continues to provide Stakeholder with consultation material. Stakeholder attended the Decommissioning – Removals Stakeholder Forum. Feedback from forums has been incorporated into the EP, where applicable.	Concerns raised in Stakeholder Forums include potential environmental and social impacts.	Concerns raised in Stakeholder Forums were recorded and incorporated into the EP, where applicable. Feedback specific to Onshore Reception Centre has been included in applicable regulatory submissions.	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	20/05/2024	Email	Invitation: Esso Australia: Decommissioning – Removals Stakeholder Forum.
From	21/05/2024	Questionnaire	Stakeholder responded to Esso Consultation Questionnaire.
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.
From	03/06/2024	Email	Registered to attend Decommissioning – Removals Stakeholder Forum.
To	03/06/2024	Email	Decommissioning - Removals Stakeholder Forum - confirmation of registration.
To	05/06/2024	Meeting – Online	Stakeholder Forum for SPJ Removals - Campaign 1.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	19/06/2024	Email	Esso Consultation Questionnaire – Thank you.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
From	01/07/2024	Email	Automatic response received.

To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

Wildlife Coast Cruises [839]

Summary of responses received and Esso's consideration and response	Summary of 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	27/11/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update.

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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.

To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	20/05/2024	Email	Invitation: Esso Australia: Decommissioning – Removals Stakeholder Forum.
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

Woorarra Dairies [713]

Summary of responses received and Esso's consideration and response			Summary of 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 attended the Decommissioning – Removals Stakeholder Forum Sale session. Feedback from forums has been incorporated into the EP, where applicable.			Concerns raised in Stakeholder Forums include potential environmental and social impacts.	Concerns raised in Stakeholder Forums were recorded and incorporated into the EP, where applicable. Feedback specific to Onshore Reception Centre has been included in applicable regulatory submissions.	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	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).		

To	31/07/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
From	06/11/2024	Phone call	Discussion on decommissioning works (Onshore Reception Centre).
To	08/11/2024	Meeting - In Person	Meeting to discuss Campaign 1.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).
To	18/12/2024	Phone call	Phone call with Stakeholder.

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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
From	28/03/2024	Email	Automatic response received.
From	02/04/2024	Email	Acknowledgement of receipt.
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
From	10/04/2024	Email	Automatic response received.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.

To	20/05/2024	Email	Invitation: Esso Australia: Decommissioning – Removals Stakeholder Forum.
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
From	24/05/2024	Email	Automatic response received.
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.
From	03/06/2024	Email	Automatic response received.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
From	10/09/2024	Email	Automatic response received.
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
From	30/09/2024	Email	Automatic response received.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).
From	13/12/2024	Email	Automatic response received.

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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.		

To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	20/05/2024	Email	Invitation: Esso Australia: Decommissioning – Removals Stakeholder Forum.
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

Yarrum Yarrum landcare network [714]

Summary of responses received and Esso's consideration and response			Summary of 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	31/07/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.		

To	07/08/2024	Email	REMINDER: Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

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
Stakeholder registered for the Decommissioning – Removals Stakeholder Forum, but did not attend. Esso continues to provide Stakeholder with consultation material.	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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	20/05/2024	Email	Invitation: Esso Australia: Decommissioning – Removals Stakeholder Forum.
From	20/05/2024	Email	Registered to attend Decommissioning – Removals Stakeholder Forum.
To	24/05/2024	Email	Offering additional sessions for Esso Australia: Decommissioning – Removals Stakeholder Forum.
From	27/05/2024	Email	Confirmation to attend Decommissioning Removals Stakeholder.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.

To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

Democratic Labour Party [537]

Summary of responses received and Esso's consideration and response	Summary of 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
Completed Esso Consultation Questionnaire prior to consultation period for this EP nominating to be consulted for decommissioning. Esso continues to provide Stakeholder with consultation material.	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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.

To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

Merrington Real Estate [657]

Summary of responses received and Esso's consideration and response	Summary of 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 attended Community Information Session. Feedback from community information sessions has been incorporated into the EP, where applicable. Stakeholder raised queries on decommissioning. All queries addressed.	Concerns raised in Community Information Sessions include potential environmental and social impacts.	Concerns raised in Community Information Sessions were recorded and incorporated into the EP, where applicable. Feedback specific to Onshore Reception Centre has been included in applicable regulatory submissions.	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
From	14/08/2024	Email	Request for details on Community Information Sessions.
To	19/08/2024	Email	Esso Australia Community Information Sessions.
From	20/08/2024	Email	Esso Australia Community Information Sessions.
To	23/08/2024	Email	Esso Australia Community Information Sessions.
To	30/08/2024	Email	Reply to Stakeholder providing information bulletin.
From	30/08/2024	Email	Feedback on Community Information Sessions.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	12/09/2024	Email	Esso Australia Community Information Sessions.

To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	23/10/2024	Community Information Session	A Community Information Session was held in Foster on October 23rd, 2024. The objective of the session was to provide information on Esso's current proposed activities, with a focus on Campaign 1 decommissioning, the Onshore Reception Centre, and for stakeholders to consider and provide feedback on how activities might impact their functions, interest and activities.
To	04/11/2024	Email	Esso's October Community Information Sessions – Thank you.
From	18/11/2024	Email	Stakeholder question on decommissioning.
To	19/11/2024	Community Information Session	A Community Information Session was held in Foster on November 19th, 2024. The objective of the session was to provide information on Esso's current proposed activities, with a focus on Campaign 1 decommissioning, the Onshore Reception Centre, and for stakeholders to consider and provide feedback on how activities might impact their functions, interest and activities.
To	25/11/2024	Email	Esso's November Community Information Sessions – Thank you.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).
From	14/12/2024	Email	Stakeholder requesting clarification on recycling volumes for Decommissioning Campaign #1.
To	19/12/2024	Email	Response to Stakeholder requesting clarification on recycling volumes for Decommissioning Campaign #1.
From	19/12/2024	Email	Stakeholder requesting clarification on recycling volumes & traffic for Decommissioning Campaign #1.
To	27/12/2024	Email	Response to Stakeholder requesting clarification on recycling volumes & traffic for Decommissioning Campaign #1.

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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.
From	01/12/2023	Email	Automatic response received.
To	28/03/2024	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA).
From	28/03/2024	Email	Automatic response received.
To	14/05/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).
From	14/05/2024	Email	Automatic response received.
To	20/05/2024	Email	Invitation: Esso Australia: Decommissioning – Removals Stakeholder Forum.
To	24/05/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
From	24/05/2024	Email	Automatic response received.
To	03/06/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum - Registration Reminder.
From	03/06/2024	Email	Automatic response received.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	11/06/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).
From	11/06/2024	Email	Automatic response received.
From	11/06/2024	Email	Automatic response received.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
From	01/07/2024	Email	Automatic response received.
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	06/07/2024	Email	Esso Australia: Consultation on offshore activities (EMBA).
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
From	10/09/2024	Email	Automatic response received.
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - EMBA. Includes link to Information Bulletin #3 (Appendix F-3).

From	30/09/2024	Email	Automatic response received.
From	30/09/2024	Email	Automatic response received.
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).
From	13/12/2024	Email	Automatic response received.

Relevant Person #356 [356]

Summary of responses received and Esso's consideration and response			Summary of 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 had questions on Esso decommissioning. Queries addressed.			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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.		
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).		
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.		
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.		
From	28/05/2024	Email	Stakeholder questions on Esso decommissioning.		
From	29/05/2024	Email	Stakeholder providing their research on Australia's Oil Reserves.		
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.		
From	14/06/2024	Email	Stakeholder providing their research on Australia's Oil Reserves.		
From	28/06/2024	Email	Stakeholder following up on previous email.		
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).		
From	04/07/2024	Email	Stakeholder following up on their query on Australia's oil reserves.		
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.		

From	07/07/2024	Email	Copy of NOPTA response to stakeholder.
From	26/08/2024	Email	Stakeholder email response to Australia's oil reserves query.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
From	10/09/2024	Email	Stakeholder providing their research on Australia's Oil Reserves.
To	17/09/2024	Email	Esso informing the Stakeholder on decommissioning.
From	18/09/2024	Email	Stakeholder thanking Esso for the information.
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
From	01/11/2024	Email	Stakeholder providing feedback on Esso's end of oil production.
From	29/11/2024	Email	Stakeholder providing feedback on Esso's end of oil production.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

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
Completed Esso Consultation Questionnaire prior to consultation period for this EP nominating to be consulted for decommissioning. Esso continues to provide Stakeholder with consultation material.	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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.

To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

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
Completed Esso Consultation Questionnaire prior to consultation period for this EP nominating to be consulted for decommissioning. Esso continues to provide Stakeholder with consultation material.	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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.

To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

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
Completed Esso Consultation Questionnaire. Esso continues to provide Stakeholder with consultation material.	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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.

From	08/09/2024	Questionnaire	Stakeholder responded to Esso Consultation Questionnaire.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
From	30/09/2024	Email	Stakeholder enquiry on Esso Community Information Sessions.
To	10/10/2024	Email	EAPL response to Stakeholder query on Community Information Sessions.
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

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
Completed Esso Consultation Questionnaire prior to consultation period for this EP nominating to be consulted for decommissioning. Esso continues to provide Stakeholder with consultation material.	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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.

To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

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
Completed Esso Consultation Questionnaire prior to consultation period for this EP nominating to be consulted for decommissioning. Esso continues to provide Stakeholder with consultation material.	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	01/12/2023	Email	Esso Australia - Updates on offshore activities in Bass Strait and CCS activities in Gippsland.
From	01/12/2023	Email	Response to update on Esso Australia offshore activities in Bass Strait.
To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
From	28/03/2024	Email	Response to Esso Australia: Consultation on offshore activities.
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.

To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

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
Completed Esso Consultation Questionnaire. Stakeholder attended Community Information Session. Feedback from community information sessions has been incorporated into the EP, where applicable. Esso continues to provide Stakeholder with consultation material.	Concerns raised in Community Information Sessions include potential environmental and social impacts.	Concerns raised in Community Information Sessions were recorded and incorporated into the EP, where applicable. Feedback specific to Onshore Reception Centre has been included in applicable regulatory submissions.	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	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
From	28/03/2024	Email	Request to resend email.
To	29/03/2024	Email	Resent information on consultation on offshore activities in a different format.
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
From	14/05/2024	Questionnaire	Stakeholder responded to Esso Consultation Questionnaire.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.

To	19/06/2024	Email	Esso Consultation Questionnaire – Thank you.
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
From	05/08/2024	Email	Registered to attend Community Information Session.
To	06/08/2024	Email	Request to resend email.
From	06/08/2024	Email	Query on Community Information Session.
To	06/08/2024	Email	Community Information Session details.
From	12/08/2024	Email	Interested in asking questions at drop-in about removal of topsides, jackets, and pipelines.
To	13/08/2024	Email	Community Information Session details.
From	13/08/2024	Email	Advising unable to attend Community Information Session.
To	13/08/2024	Email	Acknowledgement Stakeholder cannot attend Community Information Session.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

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
Completed Esso Consultation Questionnaire. Esso continues to provide Stakeholder with consultation material.			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**		
From	21/02/2024	Questionnaire	Responded to Esso Consultation Questionnaire.		
To	19/03/2024	Email	Esso Consultation Questionnaire – Thank you.		

To	28/03/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities. Includes link to Information Bulletin #1 (Appendix F-1).
To	10/04/2024	Email	Esso Australia: 2023 Annual Decommissioning Report.
To	14/05/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
From	30/09/2024	Email	Automatic response received.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

Relevant Person #608 [608]

Summary of responses received and Esso's consideration and response	Summary of 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 registered and attended Community Information Session. Feedback from community information sessions has been incorporated into the EP, where applicable.	Concerns raised in Community Information Sessions include potential environmental and social impacts.	Concerns raised in Community Information Sessions were recorded and incorporated into the EP, where applicable. Feedback specific to Onshore Reception Centre has been included in applicable regulatory submissions.	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
From	28/05/2024	Email	Registered to attend the Community Information Session.
To	29/05/2024	Email	Acknowledgement email of registration.
To	31/05/2024	Email	Esso inviting Stakeholders to the Decommissioning - Removals Stakeholder Forum.

To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

Relevant Person #609 [609]

Summary of responses received and Esso's consideration and response	Summary of 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 registered and attended Community Information Session. Feedback from community information sessions has been incorporated into the EP, where applicable.	Concerns raised in Community Information Sessions include potential environmental and social impacts.	Concerns raised in Community Information Sessions were recorded and incorporated into the EP, where applicable. Feedback specific to Onshore Reception Centre has been included in applicable regulatory submissions.	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
From	26/05/2024	Email	Registered to attend Community Information Session.
To	29/05/2024	Email	Thank you email for registering.
To	30/05/2024	Drop-in Session - In Person	Thank you for attending Community Information Session.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).

To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

Relevant Person #611 [611]

Summary of responses received and Esso's consideration and response	Summary of 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 registered via Relevant Person #623 and attended Community Information Session. Feedback from community information sessions has been incorporated into the EP, where applicable.	Concerns raised in Community Information Sessions include potential environmental and social impacts.	Concerns raised in Community Information Sessions were recorded and incorporated into the EP, where applicable. Feedback specific to Onshore Reception Centre has been included in applicable regulatory submissions.	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	Esso Australia: Consultation on Bass Strait offshore activities.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

Relevant Person #613 [613]

Summary of responses received and Esso's consideration and response	Summary of 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
Completed Esso Consultation Questionnaire. Esso continues to provide Stakeholder with consultation material.	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
From	29/05/2024	Questionnaire	Stakeholder responded to Esso Consultation Questionnaire.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	19/06/2024	Email	Esso telling the Stakeholder what projects they will be updated on based on the Esso Consultation Questionnaire.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

Relevant Person #618 [618]

Summary of responses received and Esso's consideration and response	Summary of 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
Completed Esso Consultation Questionnaire. Stakeholder attended Community Information Session. Feedback from community information sessions has been incorporated into the EP, where applicable.	Concerns raised in Community Information Sessions include potential environmental	Concerns raised in Community Information Sessions were recorded and incorporated into the EP, where applicable. Feedback specific to Onshore Reception Centre has been included in	Esso will provide updates of the activity as necessary. No additional measures or controls are required.

			and social impacts.	applicable regulatory submissions.	

To/ from	Date	Method	Reg 24(b)(i): Summary of each response
To	08/12/2023	Email	Esso thanking the Stakeholder for attending Community Information Session.
From	08/12/2023	Questionnaire	Stakeholder responded to Esso Consultation Questionnaire.
To	12/02/2024	Email	Esso providing a follow up to the Stakeholder's questionnaire they took.
From	15/02/2024	Questionnaire	Stakeholder responded to Esso Consultation Questionnaire.
To	11/04/2024	Email	Esso following up with the Stakeholder about the previous email that was sent out.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

Relevant Person #621 [621]

Summary of responses received and Esso's consideration and response	Summary of 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

Completed Esso Consultation Questionnaire. Esso continues to provide Stakeholder with consultation material.	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
From	27/05/2024	Questionnaire	Stakeholder responded to Esso Consultation Questionnaire.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	19/06/2024	Email	Esso telling the Stakeholder what projects they will be updated on based on the Esso Consultation Questionnaire.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
From	06/07/2024	Email	Stakeholder thanks for the update.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

Relevant Person #623 [623]

Summary of responses received and Esso's consideration and response	Summary of 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 attended the Decommissioning – Removals Stakeholder Forum and Community Information Sessions. Feedback from forums and community information sessions has been incorporated into the EP, where applicable.	Concerns raised in Stakeholder Forum and Community Information Sessions include potential environmental and social impacts.	Concerns raised in Stakeholder Forum and Community Information Sessions were recorded and incorporated into the EP, where applicable. Feedback specific to Onshore Reception Centre has been included in applicable regulatory submissions.	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	30/05/2024	Email	Thanks for coming to community information session.
From	30/05/2024	Email	Stakeholder registering themself and another for the online Forum.
To	31/05/2024	Email	Esso thanking the Stakeholder for registering and given the Stakeholder all the information they need for the Forum.
From	31/05/2024	Email	Stakeholder saying thank you and will keep an eye out for the Zoom link for the Forum.
To	05/06/2024	Meeting – Online	Stakeholder Forum for SPJ Removals - Campaign 1.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

Relevant Person #627 [627]

Summary of responses received and Esso's consideration and response	Summary of 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 attended the Decommissioning – Removals Stakeholder Forum and Community Information Sessions. Feedback from forums and community information sessions has been incorporated into the EP, where applicable.	Concerns raised in Stakeholder Forum and Community Information Sessions include potential environmental and social impacts.	Concerns raised in Stakeholder Forum and Community Information Sessions were recorded and incorporated into the EP, where applicable. Feedback specific to Onshore Reception Centre has been included in applicable regulatory submissions.	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	30/05/2024	Email	Community Information Session – Thank you.
From	04/06/2024	Email	Registered to attend Decommissioning – Removals Stakeholder Forum.
To	04/06/2024	Email	Decommissioning - Removals Stakeholder Forum - confirmation of registration.
To	04/06/2024	Meeting – In Person	Stakeholder Forum for SPJ Removals - Campaign 1.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

Relevant Person #628 [628]

Summary of responses received and Esso's consideration and response			Summary of 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 attended the Decommissioning – Removals Stakeholder Forum and Community Information Sessions. Feedback from forums and community information sessions has been incorporated into the EP, where applicable.			Concerns raised in Stakeholder Forum and Community Information Sessions include potential environmental and social impacts.	Concerns raised in Stakeholder Forum and Community Information Sessions were recorded and incorporated into the EP, where applicable. Feedback specific to Onshore Reception Centre has been included in applicable regulatory submissions.	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	30/05/2024	Email	Community Information Session – Thank you.		

From	30/05/2024	Email	Registered to attend Decommissioning – Removals Stakeholder Forum.
To	31/05/2024	Email	Decommissioning - Removals Stakeholder Forum - confirmation of registration.
To	04/06/2024	Meeting – In Person	Stakeholder Forum for SPJ Removals - Campaign 1.
To	11/06/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	01/07/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to Information Bulletin #2 (Appendix F-2).
To	06/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

Relevant Person #641 [641]

Summary of responses received and Esso's consideration and response	Summary of 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
Completed Esso Consultation Questionnaire prior to consultation period for this EP nominating to be consulted for decommissioning. Esso continues to provide Stakeholder with consultation material.	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	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).

To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

Relevant Person #642 [642]

Summary of responses received and Esso's consideration and response			Summary of 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
Completed Esso Consultation Questionnaire. Esso continues to provide Stakeholder with consultation material.			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	26/07/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.		
From	20/08/2024	Questionnaire	Stakeholder responded to Esso Consultation Questionnaire.		
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).		
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).		
To	11/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.		
To	12/11/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.		
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).		

Relevant Person #645 [644]

Summary of responses received and Esso's consideration and response			Summary of 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
Completed Esso Consultation Questionnaire. Esso continues to provide Stakeholder with consultation material.			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		

From	27/05/2024	Questionnaire	Stakeholder responded to Esso Consultation Questionnaire.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

Relevant Person #646 [646]

Summary of responses received and Esso's consideration and response	Summary of 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 had questions on decommissioning. Queries addressed.	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
From	16/07/2024	Email	Stakeholder asking questions on the removal of the de-commissioned Bass Strait Oil Rigs.
To	18/07/2024	Email	Decommissioning Campaign #1 Execution Environment Plan - Stakeholder Consultation emailed to stakeholder.
From	18/07/2024	Email	Acknowledgment from stakeholder for supplying them information.
From	20/07/2024	Email	Response from stakeholder requesting contact information.
To	22/07/2024	Email	Follow up email to voice mail message.
To	22/07/2024	Email	Reply to stakeholder requesting clarification of nature of enquiry.
To	22/07/2024	Email	Response to stakeholder outlining reason for delay in replying.
To	22/07/2024	Phone call	Voice mail message left for stakeholder.
From	22/07/2024	Email	Response from stakeholder requesting opportunity to discuss matters raised.
From	22/07/2024	Email	Acknowledgement of Esso's response.
From	23/07/2024	Phone call	Stakeholder left phone message returning call.

From	23/07/2024	Phone call	Missed phone call from stakeholder.
To	24/07/2024	Phone call	Voice mail message left in response to call from stakeholder.
To	24/07/2024	Email	Follow up to voice mail message.
From	25/07/2024	SMS	Stakeholder requested project manager details for BBMT.
From	25/07/2024	Phone call	Missed phone call from stakeholder.
To	26/07/2024	Email	Response to stakeholder seeking information about BBMT site.
From	26/07/2024	Email	Acknowledgement from stakeholder re: forwarding of contact information.
From	26/07/2024	SMS	Reply from stakeholder.
From	26/07/2024	SMS	Response from stakeholder requesting confirmation that information had been forwarded.
From	26/07/2024	SMS	Response from stakeholder re: BBMT site.
From	26/07/2024	Phone call	Cancelled phone call from stakeholder.
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).
From	24/12/2024	Email	Acknowledgement of Esso's response from stakeholder.
To	07/01/2025	Email	Acknowledgement of stakeholder's email.

Relevant Person #656 [656]

Summary of responses received and Esso's consideration and response	Summary of 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 registered and attended Community Information Session. Feedback from community information sessions has been incorporated into the EP, where applicable.	Concerns raised in Community Information Sessions include potential environmental and social impacts.	Concerns raised in Community Information Sessions were recorded and incorporated into the EP, where applicable. Feedback specific to Onshore Reception Centre has been included in applicable regulatory submissions.	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
From	21/08/2024	Email	Registered to attend Community Information Session.
To	21/08/2024	Email	Community Information Session - confirmation of registration.
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

Relevant Person #659 [659]

Summary of responses received and Esso's consideration and response	Summary of 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
Completed Esso Consultation Questionnaire. Esso continues to provide Stakeholder with consultation material.	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
From	25/07/2024	Questionnaire	Stakeholder responded to Esso Consultation Questionnaire.
To	25/08/2024	Email	Esso Consultation Questionnaire – Thank you.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

Relevant Person #660 [660]

Summary of responses received and Esso's consideration and response	Summary of 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

Completed Esso Consultation Questionnaire. Esso continues to provide Stakeholder with consultation material.			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		
From	01/08/2024	Questionnaire	Stakeholder responded to Esso Consultation Questionnaire.		
To	25/08/2024	Email	Esso Consultation Questionnaire – Thank you.		
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).		
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).		
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).		

Relevant Person #661 [661]

Summary of responses received and Esso's consideration and response			Summary of 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
Completed Esso Consultation Questionnaire. Esso continues to provide Stakeholder with consultation material.			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		
From	21/08/2024	Questionnaire	Stakeholder responded to Esso Consultation Questionnaire.		
To	25/08/2024	Email	Esso Consultation Questionnaire – Thank you.		
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).		
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).		
To	29/10/2024	Email	Esso Australia: Consultation on Bass Strait offshore activities.		

To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

Relevant Person #663 [663]

Summary of responses received and Esso's consideration and response			Summary of 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
Completed Esso Consultation Questionnaire. Esso continues to provide Stakeholder with consultation material.			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		
From	26/08/2024	Questionnaire	Stakeholder responded to Esso Consultation Questionnaire.		
To	30/08/2024	Email	Esso Consultation Questionnaire – Thank you.		
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).		
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).		
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).		

Relevant Person #664 [664]

Summary of responses received and Esso's consideration and response			Summary of 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
Completed Esso Consultation Questionnaire. Esso continues to provide Stakeholder with consultation material.			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		
From	26/08/2024	Questionnaire	Stakeholder responded to Esso Consultation Questionnaire.		
To	30/08/2024	Email	Esso Consultation Questionnaire – Thank you.		

To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

Relevant Person #670 [670]

Summary of responses received and Esso's consideration and response	Summary of 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 attended Community Information Sessions. Feedback from community information sessions has been incorporated into the EP, where applicable. Stakeholder had questions on Esso decommissioning. Queries addressed.	Concerns raised in Community Information Sessions include potential environmental and social impacts.	Concerns raised in Community Information Sessions were recorded and incorporated into the EP, where applicable. Feedback specific to Onshore Reception Centre has been included in applicable regulatory submissions.	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
From	26/08/2024	Other	Stakeholder requested information regarding Community Information session.
To	27/08/2024	Phone call	Response to Stakeholder query regarding community information session.
From	04/09/2024	Phone call	Request for information.
To	05/09/2024	Phone call	Call to Stakeholder regarding query on decommissioning report.
To	05/09/2024	SMS	SMS to Stakeholder for follow phone call.
To	05/09/2024	Phone call	Return phone call to Stakeholder regarding query on decommissioning report.
From	05/09/2024	Phone call	Missed call from Stakeholder.
To	10/09/2024	Email	Esso Australia: Stakeholder Forums on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan. Includes link to stakeholder forum info sheet (Appendix F-5).

From	10/09/2024	Email	Stakeholder response to Decommissioning Campaign #1 Execution Environment Plan.
To	25/09/2024	Community Information Session	A Community Information Session was held in Leongatha on 25 September 2024. The objective of the session was to provide information on Esso's current proposed activities, with a focus on Campaign 1 decommissioning, the Onshore Reception Centre, and for stakeholders to consider and provide feedback on how activities might impact their functions, interest and activities.
To	26/09/2024	Email	Community Information Session – Thank you.
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
From	30/09/2024	Email	Response to Decommissioning Campaign #1 Execution Environment Plan.
To	01/10/2024	Email	Confirmation Stakeholder will continue to receive consultation material.
From	02/10/2024	Email	Response to Decommissioning Campaign #1 Execution Environment Plan.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).
From	14/12/2024	Email	Request for consultation in Hastings.

Relevant Person #683 [683]

Summary of responses received and Esso's consideration and response			Summary of 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 registered and attended Community Information Session. Feedback from community information sessions has been incorporated into the EP, where applicable.			Concerns raised in Community Information Sessions include potential environmental and social impacts.	Concerns raised in Community Information Sessions were recorded and incorporated into the EP, where applicable. Feedback specific to Onshore Reception Centre has been included in applicable regulatory submissions.	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		
From	18/09/2024	Email	Registered to attend Community Information Session.		

To	23/09/2024	Email	Community Information Session - confirmation of registration.
To	25/09/2024	Community Information Session	A Community Information Session was held in Welshpool 25 September 2024. The objective of the session was to provide information on Esso's current proposed activities, with a focus on Campaign 1 decommissioning, the Onshore Reception Centre, and for stakeholders to consider and provide feedback on how activities might impact their functions, interest and activities.
To	26/09/2024	Email	Community Information Session – Thank you.
From	26/09/2024	Email	Acknowledgement from stakeholder registration received.
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

Relevant Person #685 [685]

Summary of responses received and Esso's consideration and response			Summary of 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 registered and attended Community Information Session. Feedback from community information sessions has been incorporated into the EP, where applicable.			Concerns raised in Community Information Sessions include potential environmental and social impacts.	Concerns raised in Community Information Sessions were recorded and incorporated into the EP, where applicable. Feedback specific to Onshore Reception Centre has been included in applicable regulatory submissions.	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		
From	23/09/2024	Email	Registered to attend community information session.		
To	23/09/2024	Email	Community Information Session - confirmation of registration		
To	25/09/2024	Community Information Session	A Community Information Session was held in Welshpool 25 September 2024. The objective of the session was to provide information on Esso's current proposed activities, with a focus on Campaign 1 decommissioning, the Onshore Reception Centre, and for stakeholders to consider and provide feedback on how activities might impact their functions, interest and activities.		

To	26/09/2024	Email	Community Information Session – Thank you.
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

Relevant Person #709 [709]

Summary of responses received and Esso's consideration and response	Summary of 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 attended the Decommissioning – Removals Stakeholder Forum. Feedback from forums has been incorporated into the EP, where applicable.	Concerns raised in Stakeholder Forum include potential environmental and social impacts.	Concerns raised in Stakeholder Forum were recorded and incorporated into the EP, where applicable. Feedback specific to Onshore Reception Centre has been included in applicable regulatory submissions.	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	31/07/2024	Email	Esso Australia: Decommissioning – Removals Stakeholder Forum Corner Inlet.
From	03/08/2024	Email	Registered to attend Decommissioning – Removals Stakeholder Forum.
To	07/08/2024	Email	Decommissioning - Removals Stakeholder Forum - confirmation of registration
To	08/08/2024	Meeting – In Person	Stakeholder Forum for SPJ Removals - Campaign 1.
From	10/09/2024	Email	Stakeholder sending their interest in Port Welshpool project.
To	11/09/2024	Email	Response to Stakeholder query.
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).

To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

Relevant Person #716 [716]

Summary of responses received and Esso's consideration and response			Summary of 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 attended the Decommissioning – Removals Stakeholder Forum Sale session. Feedback from forums has been incorporated into the EP, where applicable.			Concerns raised in Stakeholder Forum include potential environmental and social impacts.	Concerns raised in Stakeholder Forum were recorded and incorporated into the EP, where applicable. Feedback specific to Onshore Reception Centre has been included in applicable regulatory submissions.	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		
From	08/08/2024	Email	Registered to attend Decommissioning – Removals Stakeholder Forum.		
To	08/08/2024	Meeting – In Person	Stakeholder Forum for SPJ Removals - Campaign 1.		
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).		
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).		

Relevant Person #717 [717]

Summary of responses received and Esso's consideration and response	Summary of 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 registered and attended Community Information Session. Feedback from community information sessions has been incorporated into the EP, where applicable.	Concerns raised in Community Information Sessions include potential environmental and social impacts.	Concerns raised in Community Information Sessions were recorded and incorporated into the EP, where applicable. Feedback specific to Onshore Reception Centre	Esso will provide updates of the activity as necessary. No additional measures or controls are required.

			has been included in applicable regulatory submissions.	

To/ from	Date	Method	Reg 24(b)(i): Summary of each response
From	24/09/2024	Email	Registered to attend community information session.
To	24/09/2024	Email	Community Information Session - confirmation of registration.
To	25/09/2024	Community Information Session	A Community Information Session was held in Welshpool 25 September 2024. The objective of the session was to provide information on Esso's current proposed activities, with a focus on Campaign 1 decommissioning, the Onshore Reception Centre, and for stakeholders to consider and provide feedback on how activities might impact their functions, interest and activities.
To	26/09/2024	Email	Community Information Session – Thank you.
From	26/09/2024	Email	Response from stakeholder.
To	26/09/2024	Email	Response to stakeholder's question.
From	26/09/2024	Email	Stakeholder acknowledgement of response.
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

Relevant Person #718 [718]

Summary of responses received and Esso's consideration and response	Summary of 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 registered and attended Community Information Session. Feedback from community information sessions has been incorporated into the EP, where applicable.	Concerns raised in Community Information Sessions include potential environmental and social impacts.	Concerns raised in Community Information Sessions were recorded and incorporated into the EP, where applicable. Feedback specific to Onshore Reception Centre has been included in applicable	Esso will provide updates of the activity as necessary. No additional measures or controls are required.

			regulatory submissions.	

To/ from	Date	Method	Reg 24(b)(i): Summary of each response
From	24/09/2024	Email	Registered to attend community information session.
To	24/09/2024	Email	Community Information Session - confirmation of registration.
To	26/09/2024	Community Information Session	A Community Information Session was held in Foster on September 26th, 2024. The objective of the session was to provide information on Esso's current proposed activities, with a focus on Campaign 1 decommissioning, the Onshore Reception Centre, and for stakeholders to consider and provide feedback on how activities might impact their functions, interest and activities.
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	01/10/2024	Email	Community Information Session – Thank you.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

Relevant Person #736 [736]

Summary of responses received and Esso's consideration and response	Summary of 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
Completed Esso Consultation Questionnaire. Esso continues to provide Stakeholder with consultation material. Stakeholder registered and attended Community Information Session. Feedback from community information sessions has been incorporated into the EP, where applicable.	Concerns raised in Community Information Sessions include potential environmental and social impacts.	Concerns raised in Community Information Sessions were recorded and incorporated into the EP, where applicable. Feedback specific to Onshore Reception Centre has been included in applicable regulatory submissions.	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
From	12/09/2024	Questionnaire	Stakeholder responded to Esso Consultation Questionnaire.

To	25/09/2024	Community Information Session	A Community Information Session was held in Welshpool 25 September 2024. The objective of the session was to provide information on Esso's current proposed activities, with a focus on Campaign 1 decommissioning, the Onshore Reception Centre, and for stakeholders to consider and provide feedback on how activities might impact their functions, interest and activities.
To	26/09/2024	Email	Community Information Session – Thank you.
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

Relevant Person #743 [743]

Summary of responses received and Esso's consideration and response			Summary of 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 registered and attended Community Information Session. Feedback from community information sessions has been incorporated into the EP, where applicable.			Concerns raised in Community Information Sessions include potential environmental and social impacts.	Concerns raised in Community Information Sessions were recorded and incorporated into the EP, where applicable. Feedback specific to Onshore Reception Centre has been included in applicable regulatory submissions.	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	23/10/2024	Community Information Session	A Community Information Session was held in Foster on October 23rd, 2024. The objective of the session was to provide information on Esso's current proposed activities, with a focus on Campaign 1 decommissioning, the Onshore Reception Centre, and for stakeholders to consider and provide feedback on how activities might impact their functions, interest and activities.		
From	23/10/2024	Email	Email from stakeholder registering to attend future community information session.		
To	24/10/2024	Email	Response acknowledging stakeholder's email registration.		
To	04/11/2024	Email	Community Information Session – Thank you.		
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).		

Relevant Person #744 [744]

Summary of responses received and Esso's consideration and response			Summary of 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 registered and attended Community Information Session. Feedback from community information sessions has been incorporated into the EP, where applicable.			Concerns raised in Community Information Sessions include potential environmental and social impacts.	Concerns raised in Community Information Sessions were recorded and incorporated into the EP, where applicable. Feedback specific to Onshore Reception Centre has been included in applicable regulatory submissions.	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	23/10/2024	Community Information Session	A Community Information Session was held in Foster on October 23rd, 2024. The objective of the session was to provide information on Esso's current proposed activities, with a focus on Campaign 1 decommissioning, the Onshore Reception Centre, and for stakeholders to consider and provide feedback on how activities might impact their functions, interest and activities.		
From	23/10/2024	Email	Email from stakeholder registering to attend future community information session.		
To	24/10/2024	Email	Response to stakeholder's email acknowledging registration.		
To	04/11/2024	Email	Community Information Session – Thank you.		
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).		

Relevant Person #753 [753]

Summary of responses received and Esso's consideration and response			Summary of 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
Completed Esso Consultation Questionnaire. Esso continues to provide Stakeholder with consultation material.			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	23/10/2024	Community Information Session	A Community Information Session was held in Foster on October 23rd, 2024. The objective of the session was to provide information on Esso's current proposed activities, with a focus on Campaign 1 decommissioning, the Onshore Reception Centre, and for stakeholders to consider and provide feedback on how activities might impact their functions, interest and activities.
From	23/10/2024	Questionnaire	Stakeholder responded to Esso Consultation Questionnaire.
To	04/11/2024	Email	Community Information Session – Thank you.
To	14/11/2024	Email	Esso Consultation Questionnaire – Thank you.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

Relevant Person #773 [773]

Summary of responses received and Esso's consideration and response	Summary of 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 registered and attended Community Information Session. Feedback from community information sessions has been incorporated into the EP, where applicable.	Concerns raised in Community Information Sessions include potential environmental and social impacts.	Concerns raised in Community Information Sessions were recorded and incorporated into the EP, where applicable. Feedback specific to Onshore Reception Centre has been included in applicable regulatory submissions.	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	23/10/2024	Community Information Session	A Community Information Session was held in Foster on October 23rd, 2024. The objective of the session was to provide information on Esso's current proposed activities, with a focus on Campaign 1 decommissioning, the Onshore Reception Centre, and for stakeholders to consider and provide feedback on how activities might impact their functions, interest and activities.
From	25/10/2024	Email	Feedback on October Community Information Session.
To	28/10/2024	Email	Response to feedback on October Community Information Session.
To	04/11/2024	Email	Community Information Session – Thank you.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

Relevant Person #778 [778]

Summary of responses received and Esso's consideration and response			Summary of 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 registered and attended Community Information Session via Relevant Person #779. Feedback from community information sessions has been incorporated into the EP, where applicable.			Concerns raised in Community Information Sessions include potential environmental and social impacts.	Concerns raised in Community Information Sessions were recorded and incorporated into the EP, where applicable. Feedback specific to Onshore Reception Centre has been included in applicable regulatory submissions.	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	23/10/2024	Community Information Session	A Community Information Session was held in Foster on October 23rd, 2024. The objective of the session was to provide information on Esso's current proposed activities, with a focus on Campaign 1 decommissioning, the Onshore Reception Centre, and for stakeholders to consider and provide feedback on how activities might impact their functions, interest and activities.		
To	04/11/2024	Email	Community Information Session – Thank you.		
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).		

Relevant Person #779 [779]

Summary of responses received and Esso's consideration and response			Summary of 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 registered and attended Community Information Session. Feedback from community information sessions has been incorporated into the EP, where applicable.			Concerns raised in Community Information Sessions include potential environmental and social impacts.	Concerns raised in Community Information Sessions were recorded and incorporated into the EP, where applicable. Feedback specific to Onshore Reception Centre has been included in applicable regulatory submissions.	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		
From	22/10/2024	SMS	Registered to attend community information session.		

To	22/10/2024	Email	Community Information Session - confirmation of registration.
To	04/11/2024	Email	Community Information Session – Thank you.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

Relevant Person #782 [782]

Summary of responses received and Esso's consideration and response	Summary of 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 registered and attended Community Information Session. Feedback from community information sessions has been incorporated into the EP, where applicable.	Concerns raised in Community Information Sessions include potential environmental and social impacts.	Concerns raised in Community Information Sessions were recorded and incorporated into the EP, where applicable. Feedback specific to Onshore Reception Centre has been included in applicable regulatory submissions.	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
From	21/10/2024	Email	Registered to attend community information session.
To	22/10/2024	Email	Community Information Session - confirmation of registration.
To	04/11/2024	Email	Community Information Session – Thank you.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

Relevant Person #783 [783]

Summary of responses received and Esso's consideration and response	Summary of 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 registered and attended Community Information Session. Feedback from community information sessions has been incorporated into the EP, where applicable.	Concerns raised in Community Information Sessions include potential environmental and social impacts.	Concerns raised in Community Information Sessions were recorded and incorporated into the EP, where applicable. Feedback specific to Onshore Reception Centre has been included in applicable regulatory submissions.	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
From	18/10/2024	Email	Registered to attend community information session.
To	22/10/2024	Email	Community Information Session - confirmation of registration.
To	24/10/2024	Community Information Session	A Community Information Session was held in Leongatha on October 24th 2024. The objective of the session was to provide information on Esso's current proposed activities, with a focus on Campaign 1 decommissioning, the Onshore Reception Centre, and for stakeholders to consider and provide feedback on how activities might impact their functions, interest and activities.
To	04/11/2024	Email	Community Information Session – Thank you.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

Relevant Person #784 [784]

Summary of responses received and Esso's consideration and response	Summary of 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 registered and attended Community Information Session. Feedback from community information sessions has been incorporated into the EP, where applicable.	Concerns raised in Community Information Sessions include potential environmental and social impacts.	Concerns raised in Community Information Sessions were recorded and incorporated into the EP, where applicable. Feedback specific to Onshore Reception Centre has been included in applicable regulatory submissions.	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
From	22/10/2024	Email	Registered to attend Community Information Session.
To	22/10/2024	Email	Community Information Session - confirmation of registration.
To	24/10/2024	Community Information Session	A Community Information Session was held in Leongatha on October 24th 2024. The objective of the session was to provide information on Esso's current proposed activities, with a focus on Campaign 1 decommissioning, the Onshore Reception Centre, and for stakeholders to consider and provide feedback on how activities might impact their functions, interest and activities.
To	04/11/2024	Email	Community Information Session – Thank you.

To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

Relevant Person #799 [799]

Summary of responses received and Esso's consideration and response			Summary of 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
Completed Esso Consultation Questionnaire. Esso continues to provide Stakeholder with consultation material.			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**		
From	16/09/2024	Questionnaire	Stakeholder responded to Esso Consultation Questionnaire.		
To	07/10/2024	Email	Esso Consultation Questionnaire – Thank you.		
To	07/10/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update.		
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).		

Relevant Person #800 [800]

Summary of responses received and Esso's consideration and response			Summary of 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
Completed Esso Consultation Questionnaire. Esso continues to provide Stakeholder with consultation material.			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**		
From	21/10/2024	Questionnaire	Stakeholder responded to Esso Consultation Questionnaire.		
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).		

Relevant Person #802 [802]

Summary of responses received and Esso's consideration and response	Summary of 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
Completed Esso Consultation Questionnaire. Esso continues to provide Stakeholder with consultation material.	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
From	06/11/2024	Questionnaire	Stakeholder responded to Esso Consultation Questionnaire.
To	07/11/2024	Email	Esso Consultation Questionnaire – Thank you.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

Relevant Person #804 [804]

Summary of responses received and Esso's consideration and response	Summary of 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 registered and attended Community Information Session. Feedback from community information sessions has been incorporated into the EP, where applicable.	Concerns raised in Community Information Sessions include potential environmental and social impacts.	Concerns raised in Community Information Sessions were recorded and incorporated into the EP, where applicable. Feedback specific to Onshore Reception Centre has been included in applicable regulatory submissions.	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
From	08/11/2024	Email	Registered to attend Community Information Session.
To	08/11/2024	Email	Community Information Session - confirmation of registration.
To	19/11/2024	Community Information Session	A Community Information Session was held in Sale on 19 November 2024. The objective of the session was to provide information on Esso's current proposed activities, with a focus on Campaign 1 decommissioning, the Onshore Reception Centre, and for stakeholders to consider and provide feedback on how activities might impact their functions, interest and activities.

To	25/11/2024	Email	Esso's November Community Information Sessions – Thank you.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).
From	03/01/2025	Email	Stakeholder requesting details for the next community information sessions.
To	06/01/2025	Email	Esso response to Stakeholder email about Community Information Sessions.

Relevant Person #805 [805]

Summary of responses received and Esso's consideration and response			Summary of 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 registered and attended Community Information Session. Feedback from community information sessions has been incorporated into the EP, where applicable.			Concerns raised in Community Information Sessions include potential environmental and social impacts.	Concerns raised in Community Information Sessions were recorded and incorporated into the EP, where applicable. Feedback specific to Onshore Reception Centre has been included in applicable regulatory submissions.	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		
From	13/11/2024	Email	Registered to attend Community Information Session.		
To	14/11/2024	Email	Community Information Session - confirmation of registration.		
From	14/11/2024	Email	Response acknowledged by stakeholder.		
To	19/11/2024	Community Information Session	A Community Information Session was held in Foster on November 19th, 2024. The objective of the session was to provide information on Esso's current proposed activities, with a focus on Campaign 1 decommissioning, the Onshore Reception Centre, and for stakeholders to consider and provide feedback on how activities might impact their functions, interest and activities.		
To	25/11/2024	Email	Esso's November Community Information Sessions – Thank you.		
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).		

Relevant Person #811 [811]

Summary of responses received and Esso's consideration and response			Summary of 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 registered and attended Community Information Session. Feedback from community information sessions has been incorporated into the EP, where applicable.			Concerns raised in Community Information Sessions include potential environmental and social impacts.	Concerns raised in Community Information Sessions were recorded and incorporated into the EP, where applicable. Feedback specific to Onshore Reception Centre has been included in applicable regulatory submissions.	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		
From	18/11/2024	Email	Registered to attend Community Information Session.		
To	18/11/2024	Community Information Session	A Community Information Session was held in Lakes Entrance on 18 November 2024. The objective of the session was to provide information on Esso's current proposed activities, with a focus on Campaign 1 decommissioning, the Onshore Reception Centre, and for stakeholders to consider and provide feedback on how activities might impact their functions, interest and activities.		
To	25/11/2024	Email	Esso's November Community Information Sessions – Thank you.		
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).		

Relevant Person #824 [824]

Summary of responses received and Esso's consideration and response	Summary of 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 registered and attended Community Information Session. Feedback from community information sessions has been incorporated into the EP, where applicable.	Concerns raised in Community Information Sessions include potential environmental and social impacts.	Concerns raised in Community Information Sessions were recorded and incorporated into the EP, where applicable. Feedback specific to Onshore Reception Centre has been included in applicable regulatory submissions.	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
From	17/11/2024	Email	Registered to attend Community Information Session.
From	17/11/2024	Email	Registration for additional attendee at community information session.
To	18/11/2024	Email	Community Information Session - confirmation of registration.
From	18/11/2024	Email	Details on location of Community Information Session.
To	18/11/2024	Email	Acknowledgement of registration.
To	18/11/2024	Community Information Session	A Community Information Session was held in Welshpool November 18th 2024. The objective of the session was to provide information on Esso's current proposed activities, with a focus on Campaign 1 decommissioning, the Onshore Reception Centre, and for stakeholders to consider and provide feedback on how activities might impact their functions, interest and activities.
To	25/11/2024	Email	Esso's November Community Information Sessions – Thank you.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

Relevant Person #825 [825]

Summary of responses received and Esso's consideration and response	Summary of 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 registered and attended Community Information Session. Feedback from community information sessions has been incorporated into the EP, where applicable.	Concerns raised in Community Information Sessions include potential environmental and social impacts.	Concerns raised in Community Information Sessions were recorded and incorporated into the EP, where applicable. Feedback specific to Onshore Reception Centre has been included in applicable regulatory submissions.	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
From	19/11/2024	Email	Registered to attend Community Information Session.
To	19/11/2024	Email	Community Information Session - confirmation of registration.

From	20/11/2024	Community Information Session	A Community Information Session was held in Leongatha on November 20th 2024. The objective of the session was to provide information on Esso's current proposed activities, with a focus on Campaign 1 decommissioning, the Onshore Reception Centre, and for stakeholders to consider and provide feedback on how activities might impact their functions, interest and activities.
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).

Relevant Person #828 [828]

Summary of responses received and Esso's consideration and response			Summary of 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 attended Community Information Session. Feedback from community information sessions has been incorporated into the EP, where applicable. Stakeholder raised queries on decommissioning. All queries addressed.			Concerns raised in Community Information Sessions include potential environmental and social impacts.	Concerns raised in Community Information Sessions were recorded and incorporated into the EP, where applicable. Feedback specific to Onshore Reception Centre has been included in applicable regulatory submissions.	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	18/11/2024	Community Information Session	A Community Information Session was held in Welshpool November 18th 2024. The objective of the session was to provide information on Esso's current proposed activities, with a focus on Campaign 1 decommissioning, the Onshore Reception Centre, and for stakeholders to consider and provide feedback on how activities might impact their functions, interest and activities.		
To	25/11/2024	Email	Esso's November Community Information Sessions – Thank you.		
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).		
From	14/12/2024	Email	Stakeholder nominated to be informed for activities in Gippsland marine and land area.		

Relevant Person #840 [840]

Summary of responses received and Esso's consideration and response	Summary of 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 registered and attended Community Information Session. Feedback from community information sessions has been incorporated into the EP, where applicable.			Concerns raised in Community Information Sessions include potential environmental and social impacts.	Concerns raised in Community Information Sessions were recorded and incorporated into the EP, where applicable. Feedback specific to Onshore Reception Centre has been included in applicable regulatory submissions.	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		
From	25/09/2024	Email	Registered to attend Community Information Session.		
To	25/09/2024	Community Information Session	A Community Information Session was held in Welshpool 25 September 2024. The objective of the session was to provide information on Esso's current proposed activities, with a focus on Campaign 1 decommissioning, the Onshore Reception Centre, and for stakeholders to consider and provide feedback on how activities might impact their functions, interest and activities.		
To	26/09/2024	Email	Community Information Session – Thank you.		
From	30/09/2024	Email	Response from stakeholder regarding community information session.		
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update.		

Relevant Person #842 [842]

Summary of responses received and Esso's consideration and response			Summary of 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
Completed Esso Consultation Questionnaire. Esso continues to provide Stakeholder with consultation material.			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		
From	12/11/2024	Questionnaire	Completed Esso Consultation Questionnaire.		
To	04/12/2024	Email	Esso Consultation Questionnaire – Thank you		
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).		

Relevant Person #843 [843]

Summary of responses received and Esso's consideration and response			Summary of 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
Completed Esso Consultation Questionnaire. Esso continues to provide Stakeholder with consultation material.			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		
From	16/09/2024	Phone call	Phone call from Stakeholder interested in the decommissioning project.		
To	20/09/2024	Email	Response to Stakeholder enquiry on decommissioning.		
To	30/09/2024	Email	Esso Australia: Consultation on the Gippsland Basin Decommissioning Campaign #1 Execution Environment Plan - September 2024 Update. Includes link to Information Bulletin #3 (Appendix F-3).		
From	15/11/2024	Questionnaire	Completed Esso Consultation Questionnaire.		
To	04/12/2024	Email	Esso Consultation Questionnaire – Thank you.		
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).		

Relevant Person #844 [844]

Summary of responses received and Esso's consideration and response			Summary of 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
Completed Esso Consultation Questionnaire. Esso continues to provide Stakeholder with consultation material.			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		
From	17/11/2024	Questionnaire	Completed Esso Consultation Questionnaire.		
To	04/12/2024	Email	Esso Consultation Questionnaire – Thank you.		
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).		

Zenith Energy Australia [841]

Summary of responses received and Esso's consideration and response			Summary of 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
Completed Esso Consultation Questionnaire. Esso continues to provide Stakeholder with consultation material.			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		
From	11/11/2024	Questionnaire	Stakeholder responded to Esso Consultation Questionnaire.		
To	04/12/2024	Email	Esso Consultation Questionnaire – Thank you.		
To	13/12/2024	Email	Esso Australia: Consultation on the Decommissioning Campaign #1 Onshore Reception Centre - December 2024 Update. Includes link to Information Bulletin #4 (Appendix F-4).		

Appendix F: Sufficient information materials

Appendix F-1: Information Bulletin #1 (March 2024)

ExxonMobil

INFORMATION BULLETIN
March 2024



CONSULTATION

Gippsland Basin Decommissioning

Decommissioning Campaign #1 Project Update

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.

After delivering energy to Australia for over 50 years, many of the Bass Strait fields are now reaching the end of their productive life. As a result, Esso is planning to undertake the first Bass Strait decommissioning campaign. Activities proposed as part of the Decommissioning Campaign #1 Project include the removal of the topsides of up to 13 facilities, the removal of two monotowers and the removal of the upper jacket sections of up to 10 steel piled jacket (SPJ) facilities.

Following an extensive heavy lift vessel (HLV) contracting exercise, Esso has awarded an execution contract to Allseas Marine Contractors Australia. The Allseas HLV *Pioneering Spirit*, along with support vessels, will be used to remove and transport the topsides and steel substructures to Barry Beach Marine Terminal for dismantling, recycling and disposal.

This bulletin provides information on the activities planned to be conducted as part of the Decommissioning Campaign #1 Project, so that relevant persons and interested stakeholders can make an informed decision as to whether their functions, interests or activities are affected.

Activity location

Esso's operations are located in Bass Strait, off Victoria's Gippsland coast in Australia. The area lies entirely within the South-west Marine Region. The facilities to be removed as part of Campaign #1 activities are located in water depths ranging from 38 metres (Dolphin) to 94 metres (Mackerel). Their distance from the coast ranges from 21 kilometres (Dolphin) to 77 kilometres (Kingfish B).

The potential location (or locations) at which the HLV or construction support vessels (CSVs) will transfer the removed topsides and jacket sections to a barge for transport on to Barry Beach Marine Terminal is to be confirmed and further information will be communicated in future information bulletins. It is expected this location will be in sheltered waters closer to Barry Beach.

Activity timing

Estimated commencement of activities: Preparation activities using a CSV are expected to commence in the fourth quarter of 2026. The HLV *Pioneering Spirit* is expected to arrive in the field in the third quarter of 2027.

Estimated duration of offshore activities: The removal campaign timing window is expected to extend from the fourth quarter of 2026 until early 2028. Activities will not be continuous and the timing and order of activities will be contingent on regulatory approvals, joint venture approvals, suitable weather conditions and vessel schedules.

The HLV *Pioneering Spirit* is expected to be in the field for approximately four months. Offshore activities will be conducted on a 24 hours per day basis.



↑ Cover: Fortescue platform

→ The Allseas HLV *Pioneering Spirit* utilising its topside lift system

Consultation and notifications will be conducted with relevant persons prior to commencement of and throughout the activities.

Activity description

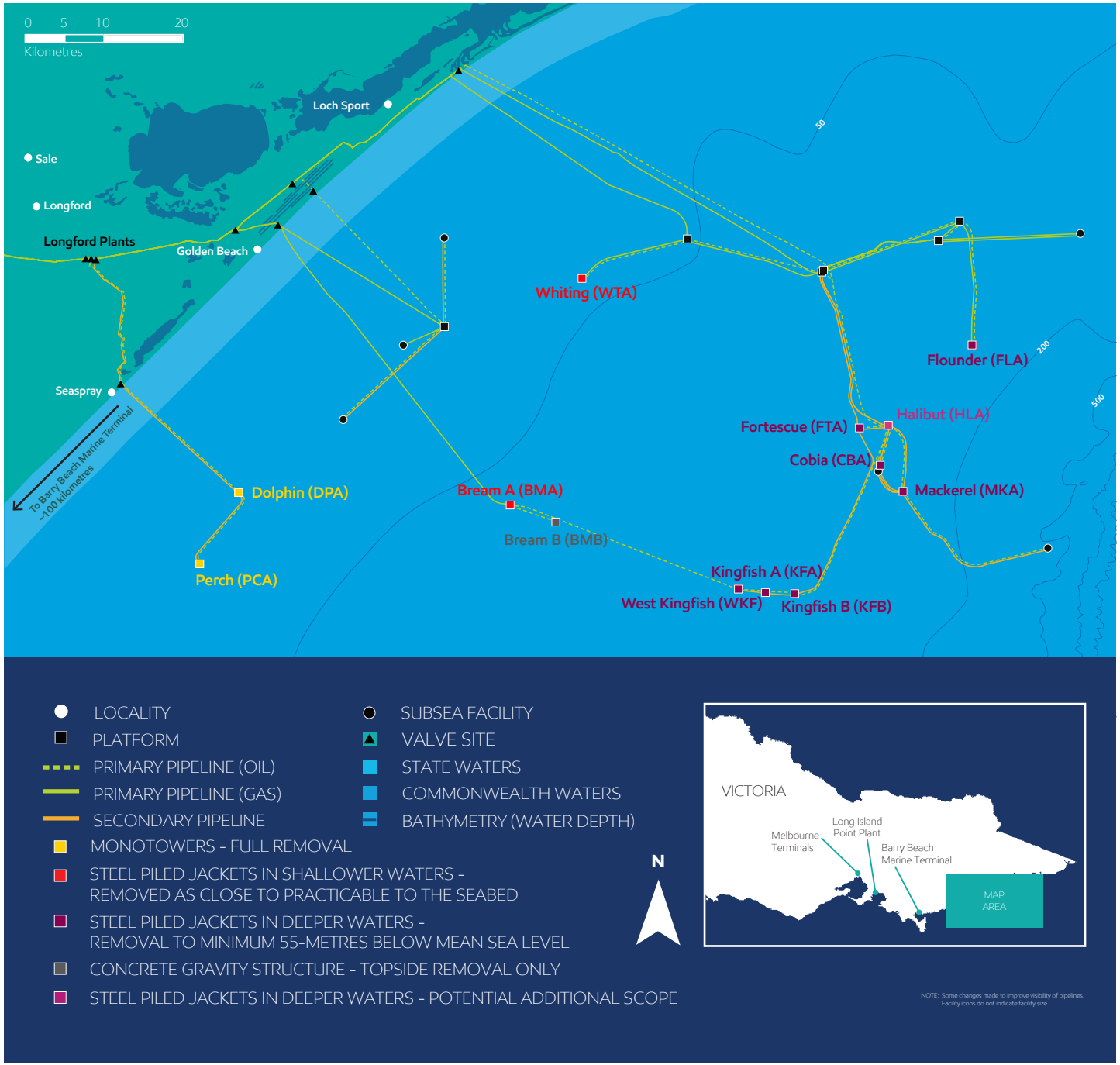
Scope of Decommissioning Campaign #1

The scope and facilities included in Decommissioning Campaign #1 Project are:

- Full removal of two monotowers (Perch, Dolphin)
- Removal of the topsides from the Bream B platform that sits on a concrete gravity structure (CGS)
- Removal of the topsides and upper jacket sections (and potentially well conductors) on seven SPJs in deeper water (Kingfish A, Kingfish B, West Kingfish, Cobia, Mackerel, Fortescue and Flounder) to a depth of at least 55-metres below mean sea level
- Removal of the topsides and upper jacket sections of one SPJ in shallower water (Whiting) to as close as practicable to the seabed. This may be below, or just above the seabed.
- One of two removal options for the Bream A facility, dependant on the requirement for reuse of this facility as part of the South-east Australia Carbon Capture and Storage project (SEA CCS);
  - Removal of the flare boom and radio tower only; or
  - Removal of the topsides and the jacket to as close as practicable to the seabed.

Contingent on vessel availability schedules and the timing of the completion of facility preparation activities (including well plug and abandonment), additional activities may include the removal of the topsides and upper jacket sections (to at least 55-metres below mean sea level) of one further facility (Halibut).

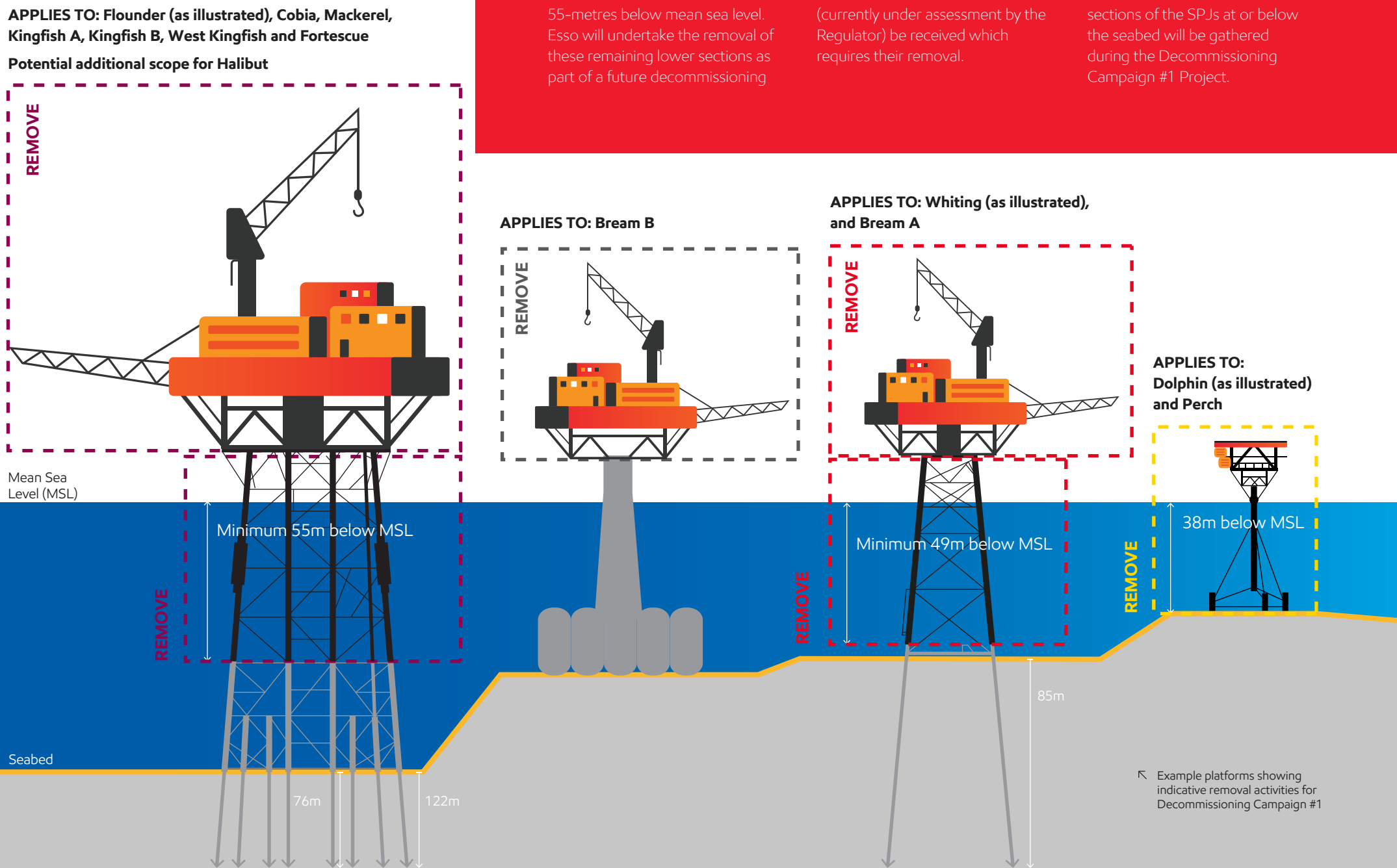
The Bream B CGS base will remain in place, with appropriate navigational aids installed, until a decision is made on the final end state for this facility.



→ Map of activity location for Decommissioning Campaign #1

The lower sections of the SPJs in deeper water will remain in place on the seabed, with the clearance above these sections at least 55-metres below mean sea level. Esso will undertake the removal of these remaining lower sections as part of a future decommissioning campaign, should a decision on the *Gippsland Basin Decommissioning Campaign #1 Steel Piled Jackets End State Environment Plan* (currently under assessment by the Regulator) be received which requires their removal.

Information required to inform detailed engineering of the appropriate methodology to execute the removal of the lower sections of the SPJs at or below the seabed will be gathered during the Decommissioning Campaign #1 Project.



↖ Example platforms showing indicative removal activities for Decommissioning Campaign #1



Removal activities

Activities to be undertaken offshore during the Decommissioning Campaign #1 Project include:

- Preparation of the facilities for removal by the HLV - either by a CSV or personnel on the facility while it is still operating. Cuts will be made either by diamond wire saw or hydraulic shears in strategic locations on the structure to allow for the removal of the topsides and jackets.
- The Dolphin and Perch topsides will be lifted by a CSV.
- The HLV *Pioneering Spirit* will use a motion compensated topside lift system to lift the other facility topsides in one piece and a jacket lift system to lift the jacket substructures and monotower bases in large pieces.
- All removed components will be transferred from a CSV or the HLV onto a barge in a sheltered water location.
- Tugs will then transport the barge from the transfer location to Barry Beach Marine Terminal, where the removed structures will be offloaded, segregated and dismantled for recycling and disposal.

The HLV *Pioneering Spirit* is the largest offshore construction vessel in the world and has undertaken installation and decommissioning projects throughout the Northern Hemisphere. Further information on the *Pioneering Spirit*, including photos and videos can be found here.

Additional vessels such as supply vessels, barges and tugs will be used to support the decommissioning campaign offshore activities from removal through to loading of the structures at Barry Beach Marine Terminal.

← *Pioneering Spirit* using its jacket lift system to remove a SPJ in the North Sea

The main components of the removed topsides and the jacket and monotower substructures are steel and concrete.

Esso will ensure the maximum practicable amount of material from the removed structures is recycled and that the environmental impacts and risks associated with onshore waste handling, transportation and disposal are managed to As Low As Reasonably Practicable (ALARP) and in accordance with relevant legislation governing waste management onshore.

Following the completion of the Decommissioning Campaign #1 Project activities, surveys will be undertaken to confirm activities have been completed in accordance with relevant permissioning documents.

The existing 500-metre Petroleum Safety Zones (PSZ) around the facilities will be reassessed to determine the appropriate status after decommissioning activities have been completed. This risk-based assessment will identify if the PSZ for those facilities can be removed or reduced, as they will no longer be operational.

Remaining structures will continue to be marked on nautical charts to ensure other users of the sea are aware of their presence.

POTENTIAL IMPACTS, CONSEQUENCES AND CONTROL MEASURES

Esso's aim is to minimise environmental and social impacts associated with the Decommissioning Campaign #1 Project activities. As such, Esso will undertake an impact and risk assessment to identify potential impacts and consequences to the environment resulting from the proposed activities, considering timing, duration, location, values and sensitivities.

For impacts and risks identified, Esso will develop control measures, as applicable, to reduce them to ALARP and acceptable levels.

Consultation with relevant persons will take place throughout preparation of the execution Environment Plan, and Esso will analyse feedback received to inform the impact and risk assessment, including control measures, for Campaign #1 activities.



ENVIRONMENT PLAN

Under the *Offshore Petroleum and Greenhouse Gas Storage Act 2006*, before any petroleum-related activities in Commonwealth waters can commence, an Environment Plan must be accepted by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA).

An Environment Plan is being developed for the Decommissioning Campaign #1 Project activities. This is a comprehensive document that describes the existing environment, including relevant persons, and how Esso will undertake Campaign #1 Project activities to avoid, minimise or manage potential environmental impacts to ALARP and acceptable levels.

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 Environment Plan, 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.

Submission to NOPSEMA of the Environment Plan for the Decommissioning Campaign #1 Project activities is expected in the first quarter of 2025.



Regular inspection, maintenance and repairs continue to be conducted at the Fortescue platform →

Environmental studies

Esso is undertaking a set of environmental studies to inform preparation of the Environment Plan for Decommissioning Campaign #1 activities.

The results of these studies will be used to inform the impacts and risks assessment, including controls to ensure identified environmental impacts and risks are reduced to ALARP and acceptable levels.

The outcomes of these studies will be communicated to relevant persons as part of future consultation activities in 2024 as well as being detailed in the Environment Plan.

Studies currently being planned or undertaken include:

- Spill dispersion modelling to understand the 'Environment that May be Affected' in the event of an unplanned spill event during execution activities
- Underwater noise assessment, including modelling to understand any impacts on sensitive marine fauna as a result of noise from vessel and execution activities
- Sediment dispersion modelling to understand any impacts to the marine environment as a result of disturbance of seabed sediments during activities to remove facilities to at or below the seabed.
- A light emissions assessment to understand any impacts on light sensitive marine fauna as a result of the use of lights on vessels during execution activities
- Greenhouse gas and air emission calculations for execution activities.
- An invasive marine species (IMS) risk assessment to assess the risk of the introduction or spread of IMS as a result of the decommissioning activities and ensure these risks are reduced to ALARP and acceptable levels.



↗ Fishing vessels at Lakes Entrance

Consultation

Esso is committed to ongoing engagement with the communities where we operate. Your functions, interests and activities may mean you, your business or your organisation are a relevant person for these activities. Your participation will help Esso to better understand the impacts and risks that may arise from the activities.

As such, we're seeking your feedback on the activities outlined in this bulletin. Consultation for this Environment Plan will close in the fourth quarter of 2024. Your feedback and our response will be included in our Environment Plan for the proposed activities, which will be submitted to NOPSEMA for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009*.

Please let us know if your feedback is sensitive and we will make this known to NOPSEMA upon submission of the Environment Plan, in order for this information to remain confidential to NOPSEMA.

Further consultation regarding Decommissioning Campaign #1 Project activities and potential environmental impacts and risks associated with the activities will be provided in a further information bulletin in the second or third quarter of 2024. A series of stakeholder forums are also being planned for the second quarter of 2024. If you would like to participate in these forums, comment on the proposed activities or would like any additional information, please contact us.

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.

ExxonMobil

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

Appendix F-2: Information Bulletin #2 (June 2024)

ExxonMobil



CONSULTATION

Gippsland Basin Decommissioning

Decomissioning Campaign #1 - Environmental impacts and risks

INFORMATION BULLETIN
June 2024

Esso is committed to engaging with the communities where we operate and helping our stakeholders to understand our business. In the course of preparing an Environment Plan, a titleholder must consult with relevant persons in accordance with Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023 (Cth), Division 3, and demonstrate that the measures (if any) that the titleholder has adopted, or proposes to adopt, because of the consultations are appropriate.

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.

After delivering energy to Australia for over 50 years, many of the Bass Strait fields are now reaching the end of their productive life. As a result, Esso is planning to undertake the first Bass Strait decommissioning campaign. Activities proposed as part of the Decommissioning Campaign #1 Project include removal of the: topsides of up to 13 facilities; two monotowers; and upper jacket sections of up to 10 steel piled jacket (SPJ) facilities.

Following an extensive heavy lift vessel (HLV) contracting exercise, Esso has awarded an execution contract to Allseas Marine Contractors Australia. The Allseas HLV *Pioneering Spirit*, along with support vessels, will be used to remove and transport topsides and steel substructures via barges to Barry Beach Marine Terminal for dismantling. Once dismantled, materials will be transported from Barry Beach Marine Terminal to appropriate facilities for recycling and disposal.

This bulletin provides preliminary information on the potential environmental impacts and risks associated with the activities planned to be conducted as part of Decommissioning Campaign #1, so that relevant persons and interested stakeholders can make an informed decision as to whether their functions, interests or activities are affected. Further details on potential impacts and risks will be obtained through analysis of the results of environmental studies, relevant persons consultation and impact and risk workshops scheduled for mid-2024. These further details will be provided in a future information bulletin.

Activity location

Esso's operations are located in Bass Strait, off Victoria's Gippsland coast in Australia. The area lies entirely within the South-west Marine Region. The facilities to be removed as part of Campaign #1 activities are located in water depths ranging from 38 metres (Dolphin) to 94 metres (Mackerel). Their distance from the coast ranges from 21 kilometres (Dolphin) to 77 kilometres (Kingfish B).

The indicative area of operation of the HLV or Construction Support Vessels (CSVs) is shown on the map provided. The HLV or CSV will transport the removed topsides and jacket sections to a sheltered location closer to the Corner Inlet shipping channel (the 'transfer area'). At the transfer area the removed topsides and jacket sections will be transferred onto barges for transport to the Onshore Reception Centre at the Barry Beach Marine Terminal. Due to the HLV size and draft requirements, this vessel will not enter Corner Inlet. The exact location of each transfer within this indicative area will depend on the prevailing weather and sea conditions at the time.

Following the transfer of removed topsides and jacket sections onto barges, the barges will be towed by tugs individually from the transfer location, through the Corner Inlet shipping channel, before being moored at Barry Beach Marine Terminal for offloading. It is anticipated there will be approximately 20 barge movements (accompanied by tugs) in and out of Corner Inlet over the approximate four-month period the HLV is undertaking removal activities.

Activity timing

The timing and order of activities will be contingent on regulatory approvals, joint venture approvals, suitable weather conditions and vessel schedules.

- Preparation activities using a CSV expected to commence Q4, 2026
- HLV expected to arrive in field 3Q 2027
- Expected removal campaign timing window 4Q 2026 - 1Q 2028
- HLV in the field for approximately 4 months
- Marine activities conducted on a 24 hour per day basis

Activity description

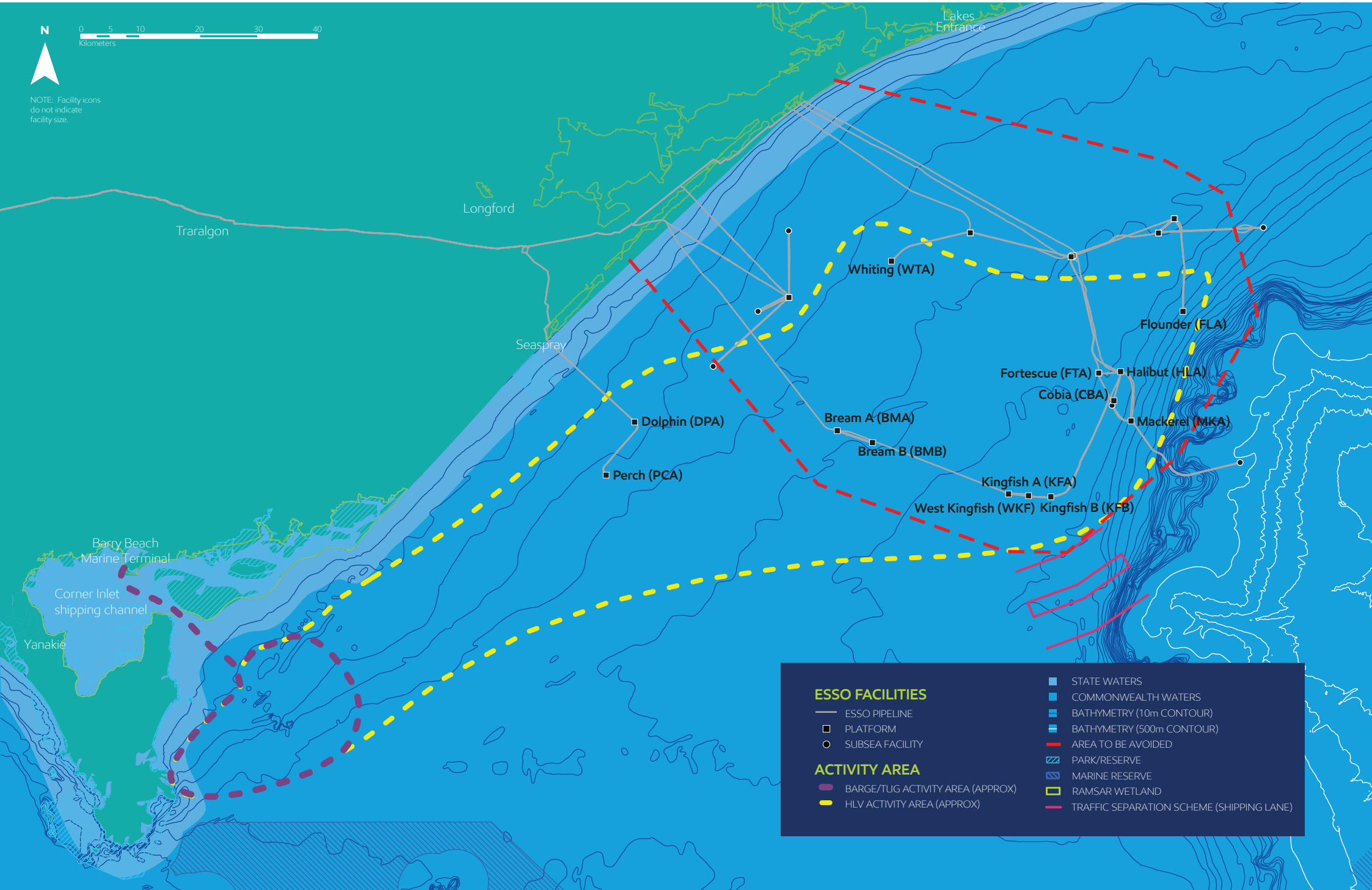
Information on the proposed activities was provided in the previous project update issued in March 2024, which can be accessed at this link.

The scope of Decommissioning Campaign #1, including updates that have occurred since March 2024, is as follows:

- full removal of two monotowers (Perch, Dolphin)
- removal of the topsides and module support frame from the Bream B platform that sits on a concrete gravity structure (CGS). The Bream B CGS base will remain in place, with appropriate navigational aids installed, until a decision is made on the final end state for this base
- removal of the topsides and upper jacket sections (and potentially well conductors) on six SPJs in deeper water (Kingfish A, Kingfish B, West Kingfish, Cobia, Mackerel and Flounder) to a depth of at least 55 metres below mean sea level
- removal of the topsides and the jacket of one SPJ in shallower water (Whiting) to as close as practicable to the seabed. This may be below, or just above the seabed

↑ Cover: Allseas *Pioneering Spirit*

→ Next page: Map of activity location


N
0 5 10 20 30 40
Kilometers
NOTE: Facility icons do not indicate facility size.
Lakes Entrance
Longford
Traralgon
Seaspray
Whiting (WTA)
Flounder (FLA)
Fortescue (FTA)
Halibut (HLA)
Cobia (CBA)
Mackerel (MKA)
Bream A (BMA)
Bream B (BMB)
Dolphin (DPA)
Perch (PCA)
Kingfish A (KFA)
West Kingfish (WKF)
Kingfish B (KFB)
Barry Beach Marine Terminal
Corner Inlet shipping channel
Yanakie
ESSO FACILITIES
ESSO PIPELINE
PLATFORM
SUBSEA FACILITY
ACTIVITY AREA
BARGE/TUG ACTIVITY AREA (APPROX)
HLV ACTIVITY AREA (APPROX)
STATE WATERS
COMMONWEALTH WATERS
BATHYMETRY (10m CONTOUR)
BATHYMETRY (500m CONTOUR)
AREA TO BE AVOIDED
PARK/RESERVE
MARINE RESERVE
RAMSAR WETLAND
TRAFFIC SEPARATION SCHEME (SHIPPING LANE)

- one of two removal options for Fortescue, depending on the outcome of detailed removal engineering:
  - removal of the topsides and the jacket to as close as practicable to the seabed. This may be below, or just above the seabed, or
  - removal of the topsides and the jacket to a depth of at least 55 metres below mean sea level
- one of two removal options for the Bream A facility, dependent on the requirement for reuse of this facility as part of the South-East Australia Carbon Capture and Storage (SEA CCS) Project:
  - removal of the topsides and the jacket to as close as practicable to the seabed, or
  - removal of the flare boom and radio tower only.

Contingent on the requirement for ongoing gas production the scope may include the removal of the topsides and upper jacket sections (to at least 55 metres below mean sea level) of one further facility (Halibut).

The lower sections of the SPJs in deeper water below -55 metres will remain in place on the seabed. Esso will undertake the removal of these remaining lower sections as part of a future decommissioning campaign, should a decision on the *Gippsland Basin Decommissioning Campaign #1 Steel Piled Jackets End State Environment Plan* (currently under assessment by the Regulator) be received which requires their removal. Information required to inform detailed engineering of the appropriate methodology to execute the removal of the lower sections of the SPJs at or below the seabed will be gathered during Decommissioning Campaign #1.



- Campaign #1 includes removal of approximately 60,000 tonnes of offshore facilities (topsides and jackets).
- The facilities are predominantly comprised of steel (>80%) with the remainder primarily construction materials such as concrete, stainless steel, copper, wood and plastic.
- A very small amount of hazardous waste will come onshore with the facilities and will be efficiently recycled or disposed of safely in accordance with legislative requirements. These materials include light bulbs, fire extinguishers, batteries and Naturally Occurring Radioactive Material.
- Over 95% of the materials brought to shore are planned to be recycled.



ONSHORE RECEPTION CENTRE

The removed topsides and upper jacket sections will be transferred from the HLV or CSV to barges and towed through the Corner Inlet shipping channel to Barry Beach Marine Terminal. These structures will be offloaded at the Onshore Reception Centre at Barry Beach Marine Terminal, where they will be dismantled over 2-3 years and then sent for recycling or disposal. Barry Beach Marine Terminal is an existing port facility, which has been part of South Gippsland's industrial precinct for over six decades. It is where most of the Esso offshore facilities were constructed since the 1960s and has been continuously operating as the supply depot for Bass Strait oil and gas operations since this time.

The activities at Barry Beach Marine Terminal will be managed under relevant Commonwealth and State legislation and contractor environmental management processes and plans. All waste will be handled, transported and disposed of in accordance with applicable legislative requirements.



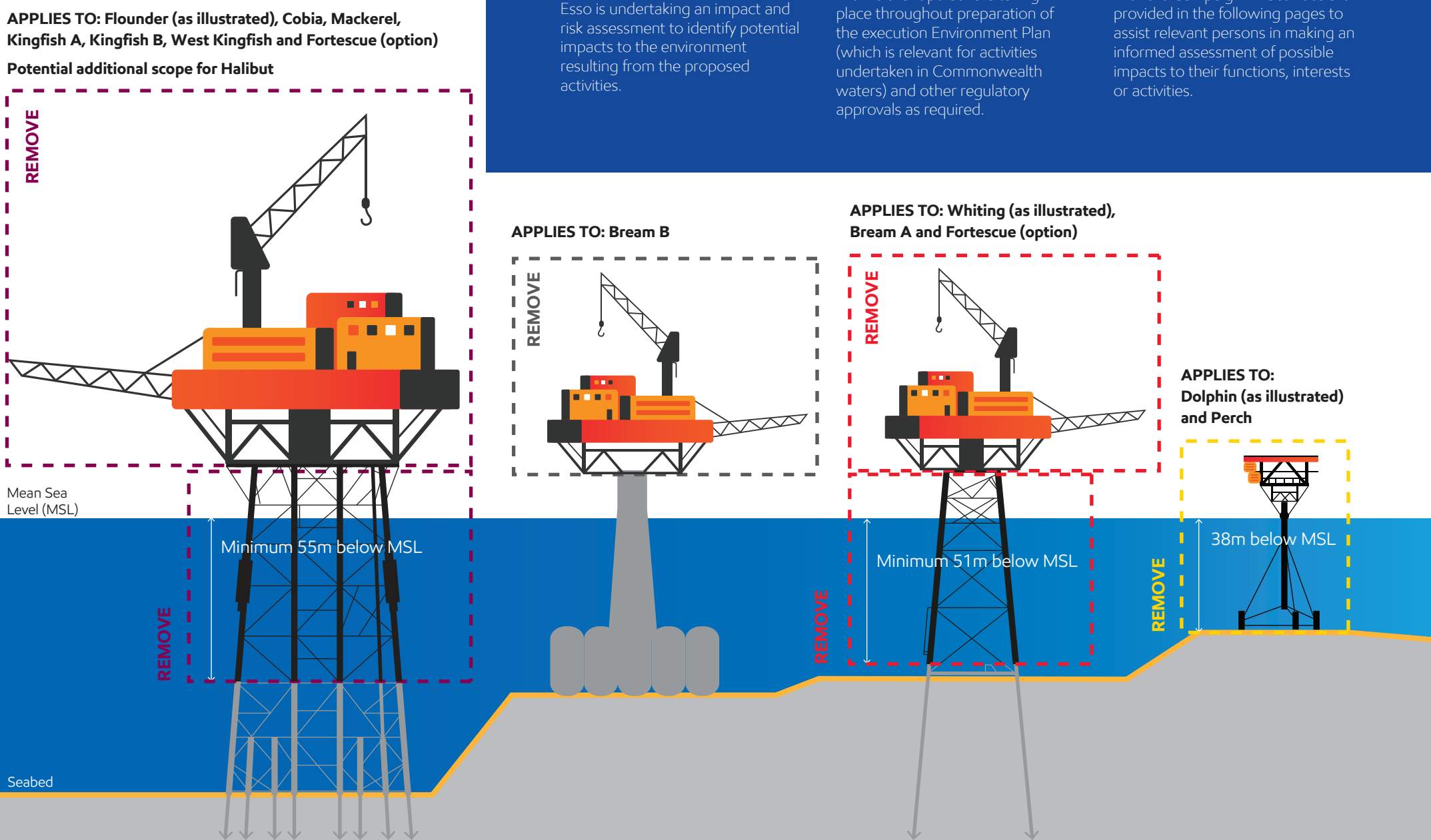
↗ Barry Beach Marine Terminal with proposed Onshore Reception Centre zones
→ One of the Kingfish jackets being prepared for transport from Barry Beach Marine Terminal in 1969

Potential impacts, risks and control measures

Esso's aim is to minimise environmental and social impacts associated with Decommissioning Campaign #1 activities. As such, Esso is undertaking an impact and risk assessment to identify potential impacts to the environment resulting from the proposed activities.

For impacts and risks identified, Esso will develop control measures, as applicable, to reduce them to As Low As Reasonably Practicable (ALARP) and acceptable levels. Consultation with relevant persons is taking place throughout preparation of the execution Environment Plan (which is relevant for activities undertaken in Commonwealth waters) and other regulatory approvals as required.

Esso is analysing feedback received to inform the impact and risk assessment for the Campaign #1 activities. A preliminary outline of the key potential impacts and risks and control measures associated with the Campaign #1 activities are provided in 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	POTENTIAL CONTROL MEASURES
Physical presence – interaction with other marine users	• Changes to the function, interests or activities of other users through disruption to activities.	• Removal activities such as cutting and lifting will take place within existing Petroleum Safety Zones (PSZs). • Relevant persons whose activities are within activity locations outside of PSZs will be informed in advance of the commencement of activities. • Structures remaining on the seabed at the end of the removal campaign will continue to be marked on nautical charts to ensure other users of the sea are aware of their presence. • The removal methodology (single lift) minimises the number of vessel movements required, as infrastructure can be removed in large sections.
Physical presence – seabed disturbance	• Smothering/alteration of benthic habitats; localised and temporary increase in turbidity near the seabed.	• Seabed disturbance will be localised and minimised as far as reasonably practicable. • Platforms in shallower water will be removed to below seabed where cuts can be executed inside jacket piles. If not feasible, cuts will be made as close to seabed as possible, hence limiting seabed disturbance.
Planned vessel discharges to the marine environment i.e. sewage and food waste. Bilge water, deck drainage and brine and cooling water may also be discharged	• Temporary and localised impacts to water quality.	• Routine discharges from vessels will be managed in accordance with legislative requirements, consistent with all vessels in Commonwealth Waters.
Noise emissions	• Temporary impacts to noise sensitive fauna.	• Noise modelling is being undertaken to inform on potential controls relating to noise emissions.
Light emissions	• Short term attraction of light sensitive species. • Short term change in fauna behaviour.	• Lighting will be kept to a minimum while still meeting navigational and workplace safety requirements. • Light modelling is being undertaken to inform on potential controls relating to light emissions.
Air emissions	• Temporary and localised impacts to air quality • Contribution to the global greenhouse gas effect.	• Marine engines are routinely maintained and air emissions will be reduced to ALARP.

↑ Potential key impacts, risks and control measures – Decommissioning Campaign #1 activities

→ Next page: Potential key impacts, risks and control measures – Decommissioning Campaign #1 activities continued

POTENTIAL IMPACTS	POTENTIAL CONSEQUENCES	POTENTIAL CONTROL MEASURES
Waste management	• Contribution to onshore landfill. • Air, water and land pollution if waste is not managed appropriately.	• A waste and resource recovery strategy will be developed in conjunction with disposal contractors which incorporates consideration of the waste hierarchy, ensures waste is handled in accordance with applicable legislation, monitors and tracks waste and sets targets for the recycling/reuse of recovered infrastructure. • Over 95% of the material removed will be recycled. • Environmental and waste management plans will be developed and implemented at the Onshore Reception Centre.
Unplanned interaction with marine fauna (vessel strike)	• Impacts to marine fauna.	Vessels will comply with Environment Protection and Biodiversity Conservation Regulations 2000 (Cth) Part 8 Division 8.1 interacting with cetaceans.
Unplanned introduction of invasive marine species	• Displacement of native species and habitat domination.	• The HLV and support vessels will have a Ballast Water Management Plan and comply with the associated Australian requirements. • A biofouling risk assessment process will be completed to determine controls. • Study is being undertaken to assess the risk of the translocation of invasive marine species via the movement of previously submerged equipment through the activity area.
Unplanned release of hydrocarbons (marine diesel oil) due to vessel collision	• Impacts to water quality and marine ecosystems.	• Compliance with legislative requirements for the prevention of vessel collisions and safety and emergency arrangements. • Consultation with other marine users prior to activities to reduce the likelihood of a collision. • Emergency response preparedness including: Oil Pollution Emergency Plan, Operational and Scientific Monitoring Plan and Shipboard Oil Pollution Emergency Plan.
Accidental release of materials/waste	• Temporary and localised: - increase in turbidity - burial of benthic habitat in immediate seabed area - potential toxicity impacts.	• Topside systems will be isolated and made safe for removal. • Waste handling, storage and disposal on vessels will meet Australian requirements. • Lifting equipment certified and routinely maintained.

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 on the activities outlined in this bulletin.

Your feedback and our response will be included in our Environment Plan for the proposed activities, which will be submitted to NOPSEMA for acceptance in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023 (Cth) in first quarter 2025.

Please let us know if your feedback is sensitive and we will make this known to NOPSEMA upon submission of the Environment Plan, in order for this information to remain confidential to NOPSEMA.

Further consultation regarding Decommissioning Campaign #1 activities and more detail on the potential environmental impacts and risks associated with the activities will be provided in a further information bulletin in the third quarter of 2024. If you would like to comment on the proposed activities or would like any additional information, please contact us.



Esso Australia acknowledges the Traditional Custodians of Country, and the land and sea upon which our operations are located.

We recognise the Traditional Custodians continuing connection to land, sea, culture and community, and pay our respects to Elders past and present.

ExxonMobil

How to contact us

For more information, visit our Consultation Hub using the QR Code below, or contact our Consultation team at:

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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

Appendix F-3: Information Bulletin #3 (September 2024)



CONSULTATION

Gippsland Basin Decommissioning

Decomissioning Campaign #1 - Impacts and risks update

INFORMATION BULLETIN
September 2024

Esso is committed to engaging with the communities where we operate and helping our stakeholders understand our business. In the course of preparing an Environment Plan, a titleholder must consult with relevant persons in accordance with Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023 (Cth), Division 3, and demonstrate that the measures (if any) that the titleholder has adopted, or proposes to adopt, because of the consultations are appropriate.

Information bulletins have been issued in March and June 2024 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.

This information bulletin provides further information on the potential environmental impacts and risks associated with the activities planned to be conducted as part of Decommissioning Campaign #1, including those to be undertaken offshore in Bass Strait and onshore at the Onshore Reception Centre.

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.

After delivering energy to Australia for over 50 years, many of the Bass Strait fields are now reaching the end of their productive life. As a result, Esso is undertaking the first Bass Strait decommissioning campaign. Activities proposed as part of the Decommissioning Campaign #1 Project include the removal of the topsides of up to 13 facilities, the removal of two monotowers and the removal of the upper jacket sections of up to 10 steel piled jacket (SPJ) facilities.

↑ Cover: Allseas *Fortitude* (example of CSV)

→ Next page: Map of activity location

Esso has awarded an execution contract to Allseas Marine Contractors Australia. The Allseas Heavy Lift Vessel (HLV) *Pioneering Spirit*, along with support vessels, will be used to remove and transport the topsides and steel substructures via barges or heavy transport vessels to an Onshore Reception Centre within the existing Barry Beach Marine Terminal for dismantling. Once dismantled, materials will be transported from the Onshore Reception Centre to appropriate licenced facilities for recycling or disposal.

Activity location

Esso's operations are located in Bass Strait, off Victoria's Gippsland coast in Australia. The area lies entirely within the South-west Marine Region. The facilities to be removed as part of Campaign #1 activities are located in water depths ranging from 38 metres (Dolphin) to 94 metres (Mackerel). Their distance from the coast ranges from 21 kilometres (Dolphin) to 77 kilometres (Kingfish B).

The indicative area of operation of the HLV or Construction Support Vessels (CSVs) is shown on the map provided. The HLV or CSV will transport the removed topsides and jacket sections to a sheltered location closer to the Corner Inlet shipping channel (the 'transfer area'). At the transfer area the removed topsides and jacket sections will be transferred onto barges or heavy transport vessels for transport to the Onshore Reception Centre at the Barry Beach Marine Terminal. Due to the HLV's size and draft requirements, this vessel will not enter Corner Inlet. CSVs may enter Corner Inlet. The exact location of each transfer within this indicative area will depend on the prevailing weather and sea conditions at the time.

If the transfer of removed topsides and jacket sections is made onto barges, the barges will be towed by tugs individually from the transfer location, through the Corner Inlet shipping channel, before being moored at Barry Beach Marine Terminal for offloading. Heavy transport vessels will follow the same route – but will not require towing. It is anticipated there will be approximately twenty barge (accompanied by tugs) or heavy transport vessel movements in and out of Corner Inlet over the approximate four-month period the HLV (and CSVs) are undertaking removal activities.

While conducting removal and transport activities, the HLV, CSVs, barges/ tugs and heavy transport vessels will potentially be visible from the shore at some locations.

Activity timing

Estimated commencement and duration of activities is outlined below but will be contingent on regulatory approvals, suitable weather conditions and vessel schedules:

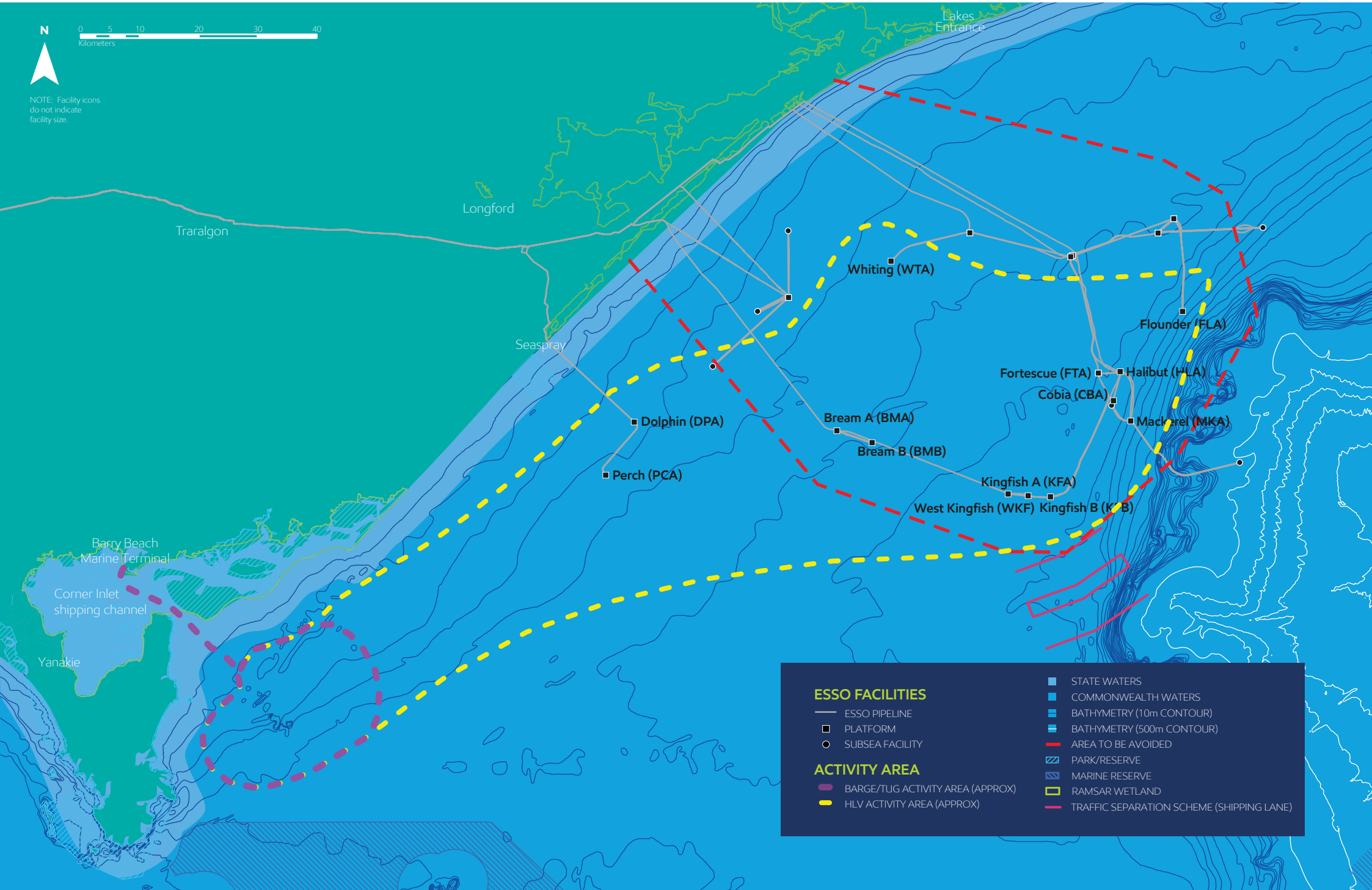
- Removal preparation activities using a CSV expected to commence 4Q 2026.
- HLV *Pioneering Spirit* is expected to arrive in the field in the 3Q 2027 and is estimated to be in the field for approximately four months, until early 2028.
- Marine activities will be conducted on a 24 hour per day basis.
- Load-in and dismantling activities at the Onshore Reception Centre are expected to take place over 3-4 years, commencing 3Q 2027.
- Site readiness activities will be completed in the 2-3 years prior.

Activity description

Information on the proposed activities was provided in the previous bulletins issued in March and June 2024, which can be accessed at this link.

Decommissioning Campaign #1 is the first of the decommissioning campaigns for the Bass Strait oil and gas facilities and involves facilities that are either at or near the end of their production life.

Esso is also planning for the eventual decommissioning of all producing facilities and associated infrastructure (such as pipelines) in Bass Strait, while continuing to safely operate producing offshore platforms and subsea facilities.


N
0 5 10 20 30 40
Kilometers
NOTE: Facility icons do not indicate facility size.
Lakes Entrance
Longford
Traralgon
Seaspray
Whiting (WTA)
Flounder (FLA)
Fortescue (FTA)
Halibut (HLA)
Cobia (CBA)
Mackerel (MKA)
Dolphin (DPA)
Bream A (BMA)
Bream B (BMB)
Perch (PCA)
Kingfish A (KFA)
West Kingfish (WKF)
Kingfish B (KFB)
Barry Beach Marine Terminal
Corner Inlet shipping channel
Yanakie
ESSO FACILITIES
ESSO PIPELINE
PLATFORM
SUBSEA FACILITY
ACTIVITY AREA
BARGE/TUG ACTIVITY AREA (APPROX)
HLV ACTIVITY AREA (APPROX)
STATE WATERS
COMMONWEALTH WATERS
BATHYMETRY (10m CONTOUR)
BATHYMETRY (500m CONTOUR)
AREA TO BE AVOIDED
PARK/RESERVE
MARINE RESERVE
RAMSAR WETLAND
TRAFFIC SEPARATION SCHEME (SHIPPING LANE)

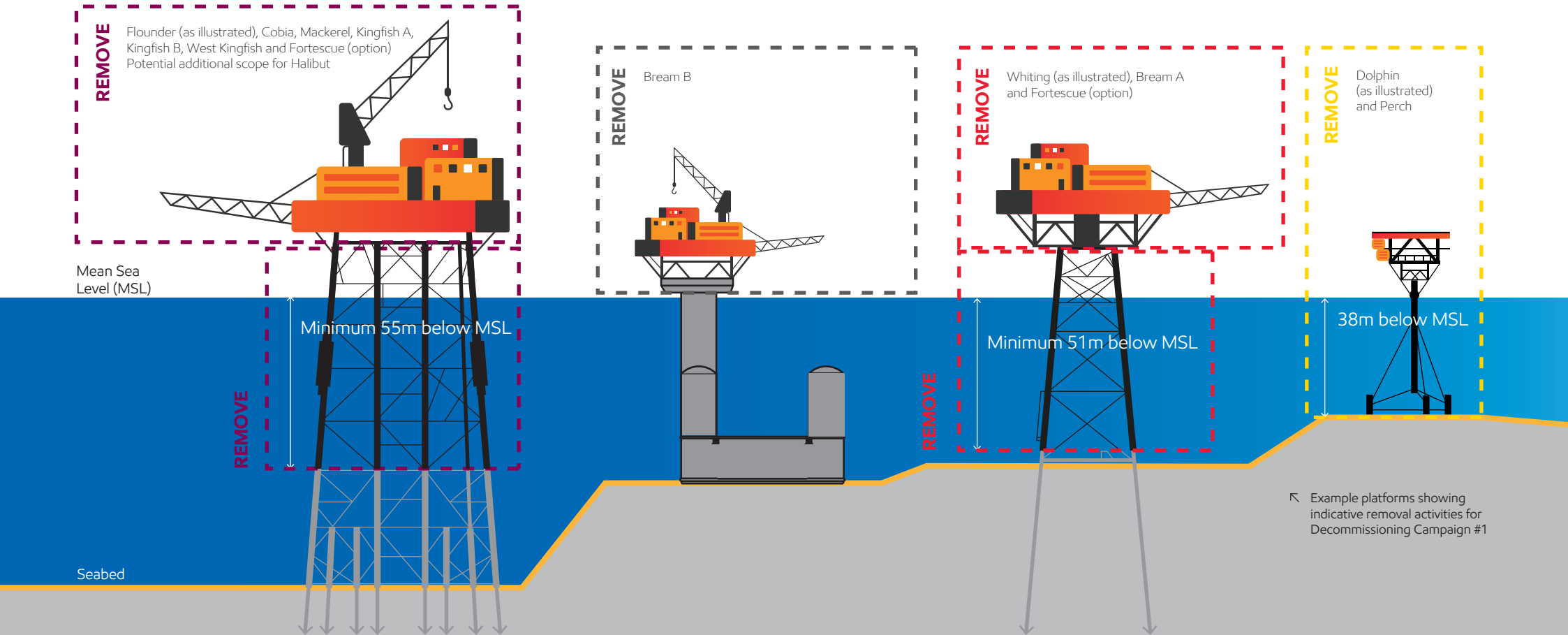
A summary of the scope of Decommissioning Campaign #1, is as follows:

- full removal of two monotowers (Perch, Dolphin)
- removal of the topsides and module support frame from the Bream B platform that sits on a concrete gravity structure (CGS). The Bream B CGS base will remain in place, with appropriate navigational aids installed, until a decision is made on the final end state for this base
- removal of the topsides and upper jacket sections (and potentially well conductors) on six SPJs in deeper water (Kingfish A, Kingfish B, West Kingfish, Cobia, Mackerel and Flounder) to a depth of at least 55-metres below mean sea level
- removal of the topsides and the jacket of one SPJ in shallower water (Whiting) to as close as practicable to the seabed. This may be below, or just above the seabed
- one of two removal options for Fortescue, depending on the outcome of detailed removal engineering:
  - removal of the topsides and the jacket to as close as practicable to the seabed. This may be below, or just above the seabed, or
  - removal of the topsides and the jacket to a depth of at least 55-metres below mean sea level
- one of two removal options for Bream A, dependent on the requirement for reuse of this facility as part of the South-East Australia Carbon Capture and Storage (SEA CCS) Project:
  - removal of the topsides and the jacket to as close as practicable to the seabed; or
  - removal of the flare boom and radio tower only.

Contingent on the requirement for ongoing gas production the scope may include the removal of the topsides and upper jacket sections (to at least 55 metres below mean sea level) of one further facility (Halibut).

The lower sections of the SPJs in deeper water below -55 meters will remain in place on the seabed. Esso will undertake the removal of these remaining lower sections as part of a future decommissioning campaign, unless an alternative end state is proposed and accepted by the Regulator.

The removed topsides and upper jacket sections will be transferred from the HLV or CSV to barges or heavy transport vessels and transported through the Corner Inlet shipping channel to Barry Beach Marine Terminal. The structures will be offloaded at the Onshore Reception Centre at Barry Beach Marine Terminal, where they will be dismantled and the resulting material then sent offsite for recycling or disposal.



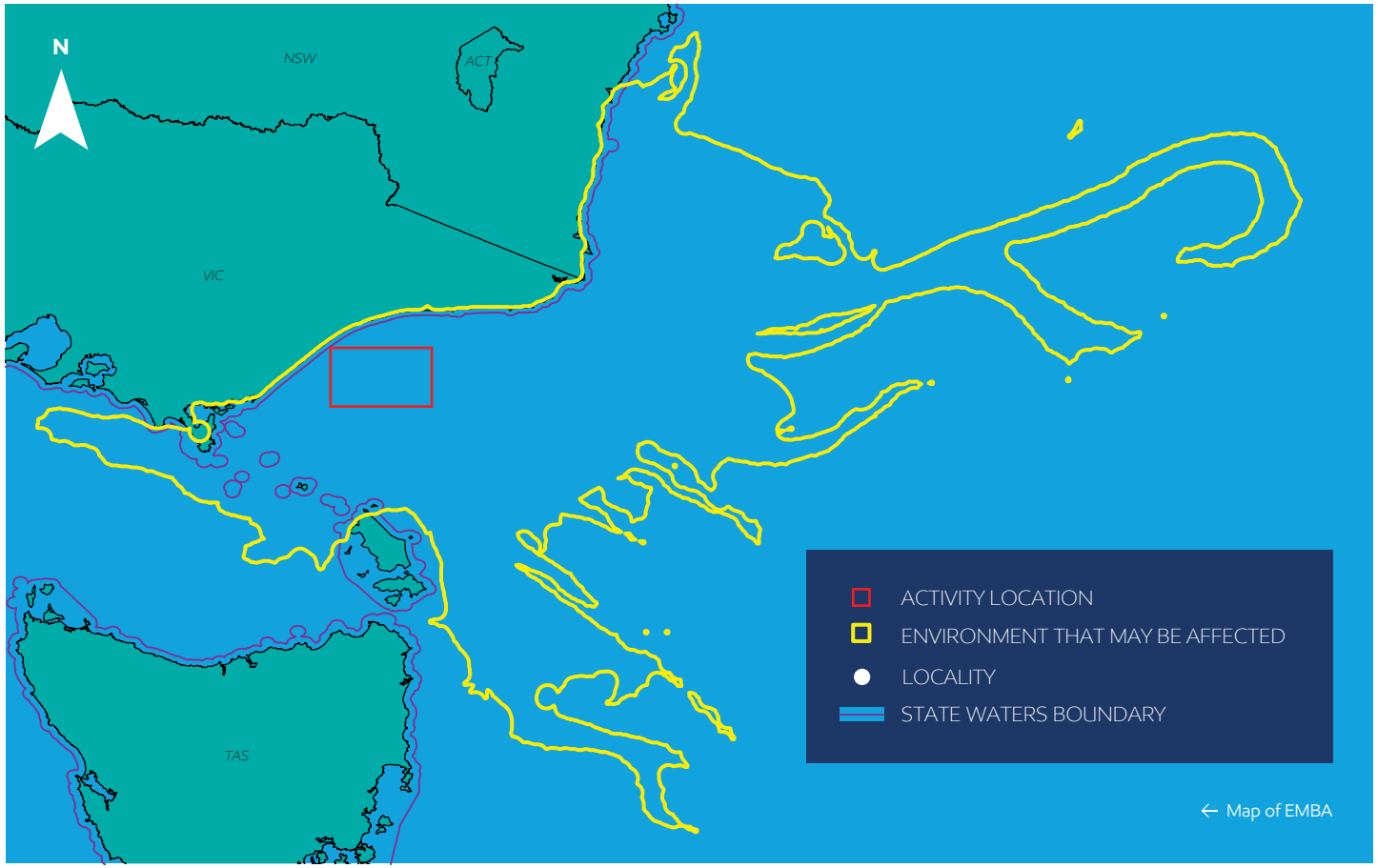
Example platforms showing indicative removal activities for Decommissioning Campaign #1

Barry Beach Marine Terminal is an existing port facility, which has been part of South Gippsland's industrial precinct for over six decades. It is where most of the Esso offshore facilities were constructed since the 1960s and has been continuously operating as the supply depot for Bass Strait oil and gas operations since this time.

The activities at the Onshore Reception Centre will be managed under relevant Commonwealth and State legislation and contractor and site environmental management processes and plans. Site readiness works will be completed at the Onshore Reception Centre prior to any structures being loaded-in. There is no plan to modify the depth or width of the shipping channels in Corner Inlet via dredging to allow transport or load-in of the structures.

Separate regulatory applications and permits will be attained for the Onshore Reception Centre activities.

- Campaign #1 includes removal of approximately 60,000 tonnes of offshore facilities (topsides and jackets).
- The facilities are predominantly comprised of steel (>80%) with the remainder primarily construction materials such as concrete, stainless steel, copper, wood and plastic.
- Over 95% of the materials brought to shore are planned to be recycled.
- All waste will be handled, transported and tracked through to disposal in accordance with applicable legislative requirements.



← Map of EMBA

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). The broadest extent of the EMBA takes into consideration planned and unplanned activities and for this activity, is determined by the worst case potential spill scenario of a release of marine gas oil to the environment in the highly unlikely event of a vessel collision. The EMBA is defined for every project carried out offshore.

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 Dolphin, Whiting, Fortescue, Kingfish A, Flounder facilities and barge/heavy vessel transfer locations.

Petroleum Safety Zones and Exclusion Zones

The facilities to be removed are within existing designated 500-metre Petroleum Safety Zones (PSZs), hence it is a legal requirement that the area is avoided during decommissioning activities, as has been the case throughout the facilities life cycle.

A temporary 500-metre exclusion zone is also intended to be in place around the HLV and CSVs when these vessels are undertaking removal and transfer operations. This exclusion zone will be communicated via a Notice to Mariners issued by the Australian Hydrographic Service and AUSCOAST warnings issued by the Australian Maritime Safety Authority.

Temporary restrictions on vessel movements within the Corner Inlet shipping channel may be required during transport of the removed structures from the transfer location to Barry Beach Marine Terminal and during load-in operations to the Onshore Reception Centre. These restrictions will be implemented in conjunction with the relevant port authority, short in duration and communicated to relevant persons prior to activities commencing.

Oil pollution response arrangements

Under Commonwealth environment legislation, Esso must demonstrate and document oil spill response arrangements. An Oil Pollution Emergency Plan (OPEP) forms part of an Environment Plan submission and demonstrates Esso's capability to respond in the unlikely event of a hydrocarbon spill. Esso has an existing OPEP which covers production operations in Bass Strait. This OPEP is reviewed and revised if required for all offshore activities (i.e. drilling, decommissioning, new developments). Project vessels will also have a Shipboard Oil Pollution Emergency Plan (SOPEP) which outlines actions to be taken in the event of a hydrocarbon spill.

As the wells associated with the facilities to be removed will be plugged and abandoned prior to the commencement of removal activities, the worst-case potential spill scenario associated with Decommissioning Campaign #1 activities is a loss of marine gas oil from a vessel due to a very unlikely event such as a collision.

Esso is a member of the Australian Marine Oil Spill Centre, a co-operative national oil spill response organisation, which provides access to additional oil spill response resources if required. Esso's OPEP interfaces with national, state and industry response plans prepared and implemented by the Australian Government via the Australian Maritime Safety Authority (NATPLAN), the Victorian Government (Maritime Emergencies (non-search and rescue) Plan), the Tasmanian Government (TASPLAN), the NSW Government (NSW Marine Oil and Chemical Spill Contingency Plan) and the Australian Oil industry's Australian Marine Oil Spill Plan (AMOSPLAN) administered by the Australian Marine Oil Spill Centre. The OPEP and the vessel SOPEP defines spill response options which may be applied to a spill event. The selected spill response option(s) would depend upon the size and type of spill; environmental sensitivities within the spill path; prevailing weather conditions; access restrictions and available resources. In all instances, a Net Environmental Benefits Assessment is undertaken, in consultation with relevant government agencies, to determine the most appropriate spill response option.



→ Perch platform

Potential impacts, risks and control measures

Esso's aim is to minimise environmental and social impacts associated with Decommissioning Campaign #1 activities. As such, Esso is undertaking an impact and risk assessment to identify potential impacts and consequences to the environment resulting from the proposed activities.

For impacts and risks identified, control measures are proposed, as summarised in Table 1 and Table 2, to reduce them to As Low As Reasonably Practicable (ALARP) and acceptable levels. Further details on the impacts and risks associated with the offshore removal activities, as well as relevant control measures, will be provided in the Environment Plan proposed to be submitted to NOPSEMA in 1Q 2025.

Esso is separately undertaking studies and assessments to support additional State and Commonwealth assessments and approvals required for site readiness, materials transit and operational activities associated with the Onshore Reception Centre.

Table 1: Potential key environmental impacts and control measures – Decommissioning Campaign #1 activities

An impact relates to a planned event and is defined by the environmental consequence of the event.

POTENTIAL IMPACTS AND SOURCE	POTENTIAL CONSEQUENCES	POTENTIAL CONTROL MEASURES
Physical presence of vessels – interaction with other marine users Activities will be undertaken using a range of project vessels (HLV, CSVs, barges/tugs, heavy transport vessels and supply vessels) Temporary exclusion zones and shipping lane restrictions will be in place to minimise the chance of interactions with other marine users.	• Changes to the function, interests or activities of other users through disruption to activities: - commercial fishing - recreational fishing - other marine users.	• Removal activities such as cutting and lifting will take place within existing PSZs. • Relevant persons whose activities are within activity locations outside of PSZs will be informed in advance of the commencement of activities. • The removal methodology (single lift) minimises the number of vessel movements required, as infrastructure can be removed in large sections. • Removed structures will be transported from the transfer location to the Onshore Reception Centre at Barry Beach Marine Terminal utilising existing shipping lanes. Any required restrictions on vessel movements in the shipping lanes during transit operations will be short in duration and communicated to relevant persons in advance (in collaboration with the port authority). • Structures remaining on the seabed at the end of the removal campaign will continue to be marked on nautical charts to ensure other users of the sea are aware of their presence.
Physical presence – seabed disturbance Resulting from: • creating/clearing access for cutting tools around structures • post decommissioning sediment sampling and visual surveys (remotely operated vehicle (ROV) operating near the seabed).	• Smothering/alteration of benthic habitats. • Localised and temporary increase in turbidity near the seabed.	• Seabed disturbance will be localised and minimised as far as reasonably practicable via cutting methods and locations. • Platforms in shallower water will be removed to below seabed - where cuts can be executed inside jacket piles. If not feasible, cuts will be made as close to the seabed as possible, hence limiting seabed disturbance. • Barges and heavy transport vessels will be selected to enable transport operations to take place in Corner Inlet without the need to modify the depth or width of the shipping channels beyond current conditions. Maintenance activities may be required.

POTENTIAL IMPACTS AND SOURCE	POTENTIAL CONSEQUENCES	POTENTIAL CONTROL MEASURES
Planned discharges to the marine environment Vessels including treated sewage and food waste, treated bilge and deck wash, cooling water and brine.	• Temporary and localised impacts to water quality. • Temporary change to predator/prey dynamics.	• 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).
Planned discharges to the marine environment During lifting of jackets and cutting of pipelines and umbilicals: • Some residual fluid in pipelines, skimmer piles and umbilicals will be released during cutting to allow removal of jackets. Fluid is seawater, with minor volumes of residual hydrocarbons, biocide, corrosion inhibitor and water based hydraulic fluid • Small quantities of metal particles and, titanium-iron oxide mineral sand (used during historical modifications of the Kingfish A and Kingfish B jackets) will also be released during cutting and lifting of the jackets.	• Temporary and localised impacts to water quality. • Smothering/alteration of benthic habitats.	• Hydrocarbon will be flushed and drained from all facilities and pipelines as part of the facility preparation scope prior to cutting and lifting. • Residual hydrocarbons within fluids that may be discharged will meet specified discharge limits (achieved during decommissioning preparation activities). • Residual chemicals will undergo an environmental assessment to confirm suitability for discharge.
Noise emissions Vessels and cutting activities will generate underwater noise as a result of the use of vessel thrusters and cutting tools. Onshore Reception Centre site readiness and operational activities will also generate noise.	• Temporary impacts to noise sensitive fauna and amenity.	• Vessels will comply with Environment Protection and Biodiversity Conservation Regulations 2000 (Cth) Part 8 Division 8.1 interacting with cetaceans. • Fauna observations will be undertaken by trained personnel. • Activities will be undertaken to ensure consistency with relevant Conservation Management Plans for species that may be present in the area. • Underwater noise modelling has been undertaken to inform impact assessments and management plans. • Studies are being undertaken to inform the development of the Onshore Reception Centre environmental management plan.

POTENTIAL IMPACTS AND SOURCE	POTENTIAL CONSEQUENCES	POTENTIAL CONTROL MEASURES
Light emissions Artificial light is required 24 hours a day on vessels during the activity to maintain operational and navigational safety.	• Short term attraction of light sensitive species.	• Lighting installed at the Onshore Reception Centre will be 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. • Light modelling for offshore marine operations is being undertaken to provide further guidance on potential impacts and controls.
Air emissions Emissions to the air will occur as a result of fuel combustion on vessels.	• Temporary and localised impacts to air quality. • Contribution to the global greenhouse gas effect.	• Compliance with legislative and regulatory requirements for marine air pollution. • Vessels have been selected to ensure offshore activities are completed in the most efficient and expedient manner, so as to minimise air emissions. • Marine engines are routinely maintained.
Dust emissions Generated during dismantling of the removed infrastructure at the Onshore Reception Centre.	• Temporary and localised impacts to local air quality and amenity.	• Dust suppression measures will be implemented to minimise potential impacts.
Odour Generated as a result of the decay of marine growth presence on removed infrastructure at the Onshore Reception Centre.	• Temporary impacts to amenity.	• Odour impacts are expected to be intermittent and short term and in accordance with relevant site environmental licences. • An odour study is underway using marine growth samples from a steel piled jacket to confirm the nature and extent of any odour that may be generated. • Odour generating materials will be appropriately disposed of offsite.
Traffic movements During dismantling of removed infrastructure at the Onshore Reception Centre.	• Temporary impacts to amenity.	• Traffic assessment will inform the development of the Onshore Reception Centre environmental management plan.
Waste management	• Contribution to onshore landfill. • Air, water and land pollution if waste is not managed appropriately.	• Waste management procedures will be developed in conjunction with dismantling contractors which will incorporate consideration of the waste hierarchy and ensure waste is handled, monitored and tracked in accordance with applicable legislation and applicable transportation and Environment Protection Agency licencing requirements. • Over 95% of the material removed will be recycled. • Environmental and waste management plans will be developed and implemented at the Onshore Reception Centre, in accordance with site environmental licences.

Table 2: Potential key environmental risks and control measures – Decommissioning Campaign #1 activities

A risk relates to an 'unplanned event' and is defined by a combination of the probability of the event occurring and the environmental consequence if the event does occur.

POTENTIAL RISKS AND SOURCE	POTENTIAL CONSEQUENCES	POTENTIAL CONTROL MEASURES
Unplanned interaction with marine fauna (vessel strike)	• Impacts to marine fauna.	• Vessels will comply with Environment Protection and Biodiversity Conservation Regulations 2000 (Cth) Part 8 Division 8.1 interacting with cetaceans. • Any injury/mortality of *Environment Protection and Biodiversity Conservation Act 1999*-listed fauna will be reported to appropriate regulatory departments.
Unplanned introduction of invasive marine species	• Displacement of native species and habitat domination.	• All vessels will be assessed and managed appropriately to prevent the introduction of invasive marine species. • All vessels will comply with Australian biosecurity and ballast water requirements and guidance. • Invasive marine species have not been identified on the submerged areas of the jackets during visual surveys undertaken during decommissioning planning.
Unplanned release of hydrocarbons (marine gas oil) due to vessel collision	• Impacts to water quality and marine ecosystems. • Temporary closure of areas (fishing grounds, beaches). • Visual amenity. • Physical harm to marine fauna resulting from ingestion, inhalation or skin contact with hydrocarbons.	• Compliance with legislative requirements for the prevention of vessel collisions and safety and emergency arrangements. • Marine users will be informed (including Notices to Mariners and in conjunction with the relevant port authority) prior to commencement of the activities so they will be able to plan their activities and avoid unexpected interference. • Emergency response preparedness including: OPEP, SOPEP and Operational and Scientific Monitoring Plan.
Unplanned release of hydrocarbons (marine gas oil) during refuelling operations	• Impacts to water quality and marine ecosystems. • Temporary closure of areas (fishing grounds, beaches). • Visual amenity. • Physical harm to marine fauna resulting from ingestion, inhalation or skin contact with hydrocarbons.	• Continuous visual monitoring of hoses, connections and tank levels during operations. • Checklists and communication protocols followed. • Refuelling will take place in a safe location and commencement will be contingent on suitable weather and sea state conditions.

POTENTIAL RISKS AND SOURCE	POTENTIAL CONSEQUENCES	POTENTIAL CONTROL MEASURES
Accidental release of materials/waste	• Temporary and localised: - increase in turbidity - burial of benthic habitat in immediate seabed area - potential toxicity impacts.	• Vessels will comply with MARPOL Annex V which includes measures to prevent loss of waste to the marine environment. • Topside systems will be isolated and made safe (sea fastened) for removal and transportation. • Lifting equipment routinely maintained and inspected. • Detailed engineering of cutting and removal activities and testing of lift points.

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 on the activities outlined in this bulletin.

Your feedback and our response will be included in our Environment Plan for the proposed activities, which will be submitted to NOPSEMA for acceptance in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023 (Cth) in 1Q 2025.

Please let us know if your feedback is sensitive and we will make this known to NOPSEMA upon submission of the Environment Plan, in order for this information to remain confidential to NOPSEMA.

If you would like to comment on the proposed activities or require any additional information, please contact us.



→ Fishing vessels at Lakes Entrance

ExxonMobil

How to contact us

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Scan to access the Consultation Hub and Esso Consultation Questionnaire

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Esso Australia acknowledges the Traditional Custodians of Country, and the land and sea upon which our operations are located.

We recognise the Traditional Custodians continuing connection to land, sea, culture and community, and pay our respects to Elders past and present.

Appendix F-4: Information Bulletin #4 (December 2024)

ExxonMobil



CONSULTATION

Gippsland Basin Decommissioning

Onshore Reception Centre

INFORMATION BULLETIN
December 2024

What is Decommissioning Campaign #1?

After delivering energy to Australia for over 50 years, many of the Bass Strait fields are now reaching the end of their productive life. Esso's planning and preparation to remove non-producing platforms during the first Bass Strait Decommissioning Campaign #1, is well underway. This includes activities to start removing assets that have ended their productive life in accordance with the National Offshore Petroleum Safety and Environmental Management Authority General Direction 817 as soon as reasonably practicable and no later than 30 September 2027. Activities proposed as part of Decommissioning Campaign #1 include the removal of the topsides of up to 13 facilities, the removal of two monotowers and the removal of jacket sections of up to 10 steel piled jacket facilities.

Removal of the facilities will be completed by a heavy lift vessel (HLV), supported by one or more construction support vessels (CSV). The HLV or CSV will transport the removed topsides and jacket sections to a sheltered location closer to shore within Commonwealth waters (referred to as the transfer area) where the removed topsides and jacket sections will be transferred onto barges or heavy transport vessels. The topsides and removed sections of the steel piled jackets will be transported from the transfer area through existing Corner Inlet shipping channels and be offloaded to an Onshore Reception Centre (ORC) within the established Barry Beach Marine Terminal.

Removal, transit and offloading is expected to take around four months.

Once the removed structures are set down at the ORC laydown areas, a dismantling and recycling contractor will carefully dismantle the structures. Materials will be segregated and sent offsite for recycling and/or disposal. Dismantling is expected to take between two to three years to complete.

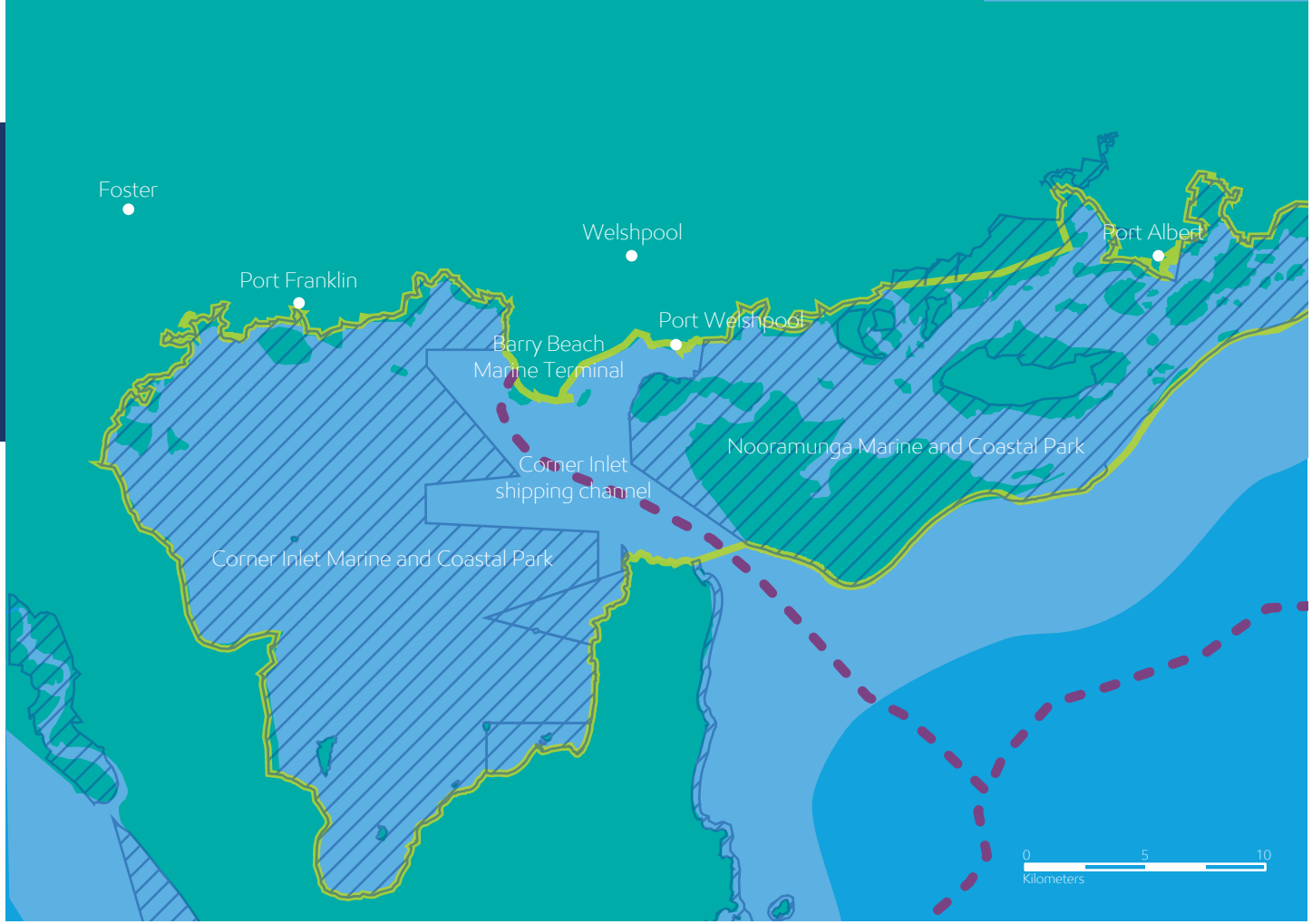
Decommissioning the Campaign #1 offshore facilities is a complex project. The extent of detailed planning, technical and environmental studies required to safely conduct decommissioning of this nature and scale is significant.

To do this, Esso has staged the decommissioning activities to eliminate or reduce the highest impacts and risks early in the process. This includes design decisions such as the removal of platform topsides in a single lift and the use of barges or heavy transport vessels to avoid the need for increasing the depth or width of the shipping channels in Corner Inlet via dredging. This forms part of Esso's commitment to work safely and minimise environmental impacts.

Following on from previous information distributed for Campaign #1, this bulletin provides information on the detailed planning activities and environmental studies that are currently underway to assess the potential environmental impacts and risks associated with the activities planned to be conducted at the ORC at Barry Beach Marine Terminal.

↑ Cover: Barry Beach Marine Terminal
→ Fortescue platform





Esso at Barry Beach Marine Terminal - Our history

Barry Beach Marine Terminal is an existing port facility owned by Esso and has been part of South Gippsland's industrial precinct for over six decades. It is where most of the Esso offshore infrastructure was constructed from the 1960s and has been continuously operating as the supply depot for Bass Strait oil and gas operations since that time.

The facility consists of a marine operations terminal, which includes boat servicing, quays, storage and construction facilities, warehouse and office buildings, the offloading, storage and dismantling of offshore equipment, infrastructure and goods for offshore use. Barry Beach Marine Terminal has a long history of being continuously used as the main operations, maintenance and supply base for Esso's Bass Strait oil and gas operations, including decommissioning activities. It is well placed to support this next phase of Esso's decommissioning program.

Why an Onshore Reception Centre at Barry Beach Marine Terminal?

Esso Australia identified Barry Beach Marine Terminal as the preferred ORC to dismantle the facilities given its suitability and existing similar use, as well as its close proximity to the Bass Strait fields to minimise potential higher risks associated with transporting removed structures in open water over long distances.

Barry Beach Marine Terminal is where most of Esso's offshore facilities have been fabricated, offloaded onto barges and transported offshore for installation over the past 50 years. The terminal has the capacity and space to accommodate all Decommissiioning Campaign #1 facilities, which will be delivered over a short period of approximately four months. This process is effectively a reversal of the process used to deliver the platforms to their offshore locations.

Activity description

Esso is undertaking detailed planning, studies and engineering designs for Decommissioning Campaign #1 to ensure regulatory submissions comply with regulatory requirements. To support this work, regulatory submissions will be staged based on the following activities:

1. ORC Early Works (site readiness)
2. Transportation, offloading and set-down operations including transit of the removed structures (via HLV or CSVs) in State waters and offloading of the structures at the ORC
3. Onshore dismantling operations at the ORC.

Detailed studies and engineering works are underway to mitigate potential impacts of Early Works activities.

These activities have the highest level of design maturity and have entered the detailed design phase. Studies to inform planning for the transport, offloading and dismantling activities have also commenced. This bulletin is focused on the ORC Early Works activities, which involves the following:

- modification and strengthening of two land areas associated with the existing wharf
- building an impervious dismantling pad
- building a washbay for decontaminating any potentially contaminated equipment and items
- potential modifications to the existing stormwater system.

In addition, the following supporting activities will occur:

- refurbishing (ground maintenance) existing hardstand areas
- building concrete set-down pads
- constructing a gatehouse and parking area
- establishing temporary site offices and amenities
- establishing service connections to temporary site offices and an additional gatehouse (including fire services, power and telecommunications).

Early Works will be completed prior to Campaign #1 decommissioned structures being offloaded at Barry Beach Marine Terminal. There will be no requirement to increase the depth or width of the shipping channels in Corner Inlet via dredging to allow transport or offloading of structures during Campaign #1.

Activity timing

The staged approach for regulatory submissions has been discussed with relevant regulators. Sequencing submissions in this manner ensures sufficient planning is undertaken to avoid and minimise environmental impacts, and allows for increased certainty around activity scope and methodology.



↗ Aerial depiction and description of areas to be used to house facilities during dismantling phase at Barry Beach Marine Terminal

It is anticipated that regulatory submissions for ORC Early Works will be provided to the relevant regulators in Q1 2025. Submissions will be published on regulators websites for public comment.

Pending regulatory decisions, the ORC Early Works are anticipated to commence in 2H 2025.

Minimising environmental impacts

Decommissioning planning and engineering design is being undertaken to minimise potential impacts to the environment.

Esso has extensively consulted with stakeholders for Campaign #1, including discussing the ORC, and the feedback from this consultation has enabled Esso to align its plans to address stakeholder feedback. Examples of measures being implemented in response to stakeholder feedback are:

- removal of the topsides and jacket sections via a single lift methodology using the HLV rather than removal in multiple smaller sections. This minimises potential safety and environmental risks associated with removal of the structures. This single lift removal methodology significantly reduces vessel trips involved in removal and offloading activities
- transport of topsides and jacket sections via barge and tug avoids the need to increase the depth or width of the shipping channels in Corner Inlet via dredging
- leveraging existing hardstand and laydown areas avoids clearing native vegetation and expansion beyond the existing footprint and site boundary
- rationalised offloading design and modification work to the wharf avoids needing to replace the existing wharf and removes the need to extend the quay wall out into the Ramsar wetlands. This change also significantly reduces the number of piles required, which in turn reduces noise, vibration and other environmental impacts
- retaining and working around existing buildings in the ORC area avoids the need to move or rebuild these buildings and the associated environmental impacts
- utilisation of self-propelled modular transporters to offload the jacket substructures avoids constructing a new skidway.

Early Works (site readiness) activities – Potential key impacts and risks

Esso is firmly committed to designing solutions to avoid or minimise impacts to the environment.

Corner Inlet is an internationally recognised Ramsar wetland that supports a range of sensitive marine habitats and ecosystems including seagrass, intertidal mud flats, mangroves and saltmarshes. These habitats are important for migratory, wader and shorebird species.

Regulatory processes

Early Works at the ORC will be managed under relevant Commonwealth and State legislation, as well as contractor and site environmental management processes and plans. For site readiness activities, applications will be made to the relevant Authorities under the following Acts:

- South Gippsland Shire Council under the *Planning and Environment Act 1987* (Vic)
- Department of Transport and Planning under the *Environment Effects Act 1978* (Vic)
- Department of Climate Change, Energy, the Environment and Water under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth)
- Department of Energy, Environment and Climate Action under the *Marine and Coastal Act 2018* (Vic).



→ One of the Kingfish jackets being prepared for transport from Barry Beach Marine Terminal in 1969

Corner Inlet is highly valued for its commercial and recreational fisheries, boating and tourism.

The wetland is also highly valued by the local community and visitors for its recreational value, including for bird watching from the Toora Bird Hide.

The ORC's proximity to Corner Inlet means it is important to understand and manage potential impacts that could affect the surrounding area. Early Works at the ORC are being designed to protect Corner Inlet and its ecology.

Esso has commissioned technical and environmental studies to assess potential impacts of the Early Works on Corner Inlet Ramsar wetland values.

Studies currently underway include:

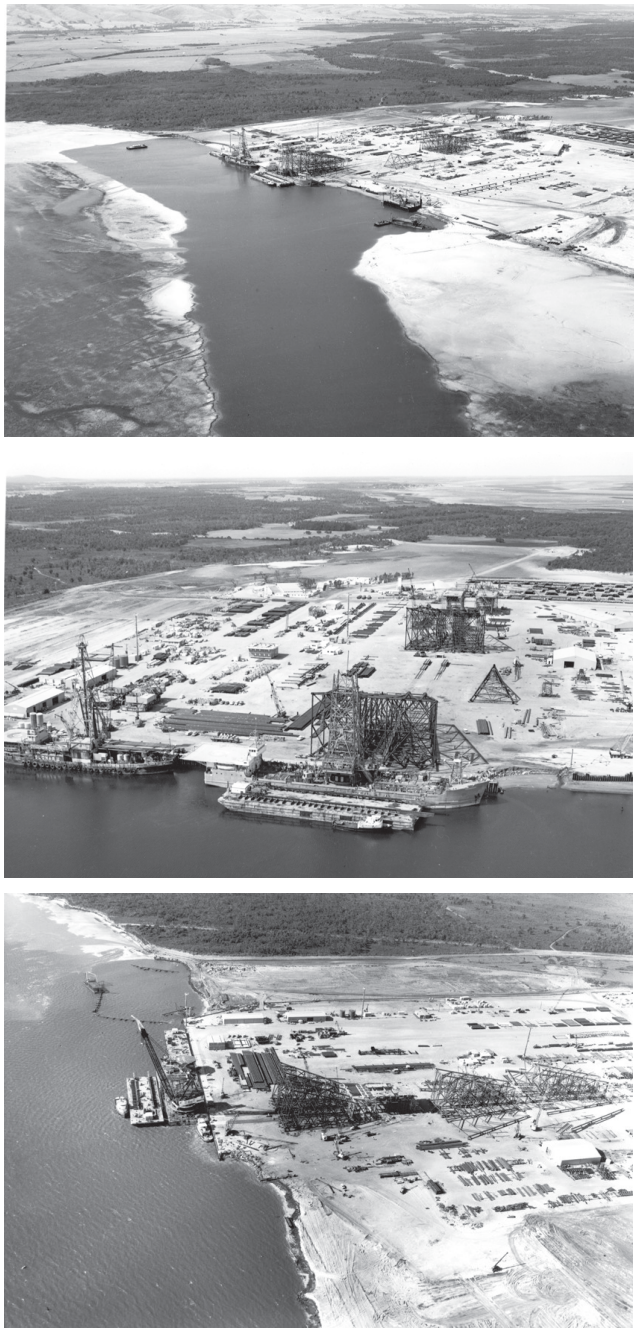
- infrastructure condition
- detailed site investigation
- road traffic
- terrestrial ecology
- cultural heritage assessment
- marine water quality monitoring
- terrestrial noise and vibration
- shorebirds and waders
- benthic habitat and marine ecology
- bushfire assessment
- flood assessment.

Results from these studies will inform Esso's evaluation of potential impacts or risks associated with the proposed Early Works along with appropriate control measures to avoid and minimise impacts wherever possible.

Findings from the environmental studies will also be included in regulatory submissions.

POTENTIAL IMPACTS AND SOURCE	POTENTIAL CONSEQUENCES	POTENTIAL CONTROL MEASURES
Noise emissions	• Temporary impacts to fauna (for example shorebirds) and amenity.	• Shrouds will be used during piling to minimise noise impacts. • Noise study being undertaken to inform the development of the ORC environmental management plan and other mitigating measures to minimise potential impacts. • Timing will be restricted to outside of the shorebird breeding season.
Light emissions	• Short term attraction of light sensitive species.	• Lighting installed at the ORC will be in accordance with the *National Light Pollution Guidelines for Wildlife*. • Lighting will be kept to a minimum as Early Works will be conducted during daytime hours only.
Dust emissions	• Temporary and localised impacts to local air quality and amenity.	• Proven dust suppression measures (for example keeping surfaces wetted down) will be implemented.
Traffic movements	• Temporary impacts to amenity.	• Traffic assessment study will inform the development of the site environmental management plan and relevant control measures.
Waste	• Contribution to onshore landfill. • Air, water and land pollution if waste is not managed appropriately.	• Waste management procedures will be developed in conjunction with the construction contractor, which will incorporate consideration of the waste hierarchy and ensure waste is handled, monitored and tracked in accordance with applicable legislation and licencing requirements.

↑ ORC early works potential key environmental impacts and control measures



↑ Historical images of Barry Beach Marine Terminal

Additional engineering design planning and studies are underway to support future regulatory submissions for the transport, offloading and dismantling stages.

Esso will provide progress updates on these later activity stages once further detailed design has progressed.

Consultation

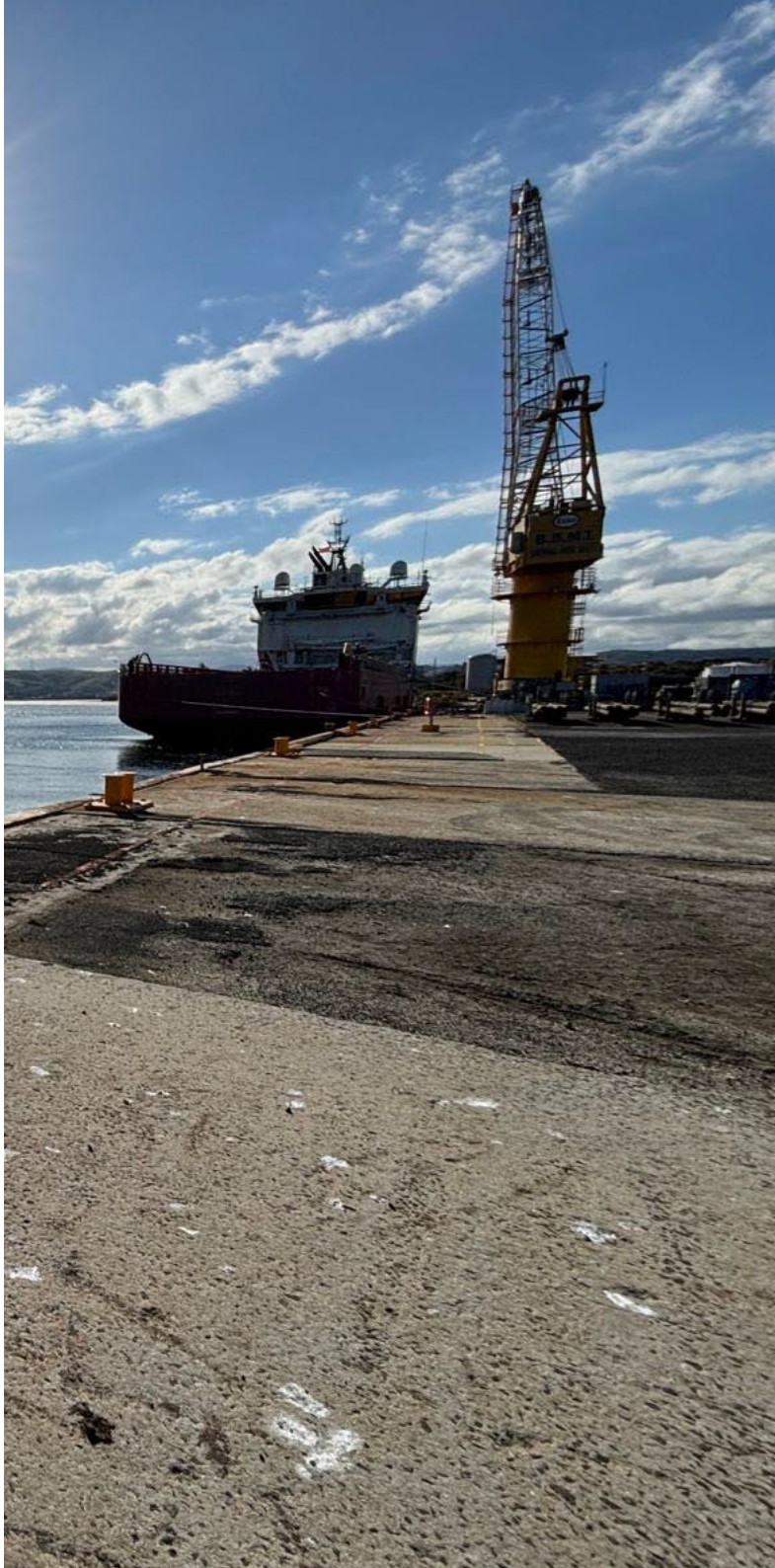
Esso is committed to ongoing engagement with the communities where the Company operates.

Functions, interests and activities of stakeholders may mean that an individual, their business or organisation are considered to be a relevant person for decommissioning activities. Stakeholder participation will help Esso better understand the impacts and risks that may arise from decommissioning activities. As such, Esso is seeking stakeholder feedback on the activities outlined in this bulletin.

Your feedback and Esso's response will be included in plans for the proposed decommissioning activities, which will be submitted to regulators for acceptance in accordance with applicable regulatory requirements.

Please let us know if your feedback is sensitive and we will make this known to regulators upon submission of Esso's plans so this information remains confidential to the applicable regulator.

If you would like to comment on the proposed activities or would like any additional information, please contact us.



Acknowledgement of traditional owners

Esso Australia acknowledges the Traditional Custodians of Country, and the land and sea upon which our operations are located.

We recognise the Traditional Custodians continuing connection to land, sea, culture and community, and pay our respects to Elders past and present.

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Appendix F-5: Stakeholder forum info sheet (June – August 2024)

ExxonMobil

Decommissioning - Removals



June - August 2024

Stakeholder
Forums

Introduction

Thank you for attending one of Esso Australia Pty Ltd's (Esso's) recent stakeholder forums about Campaign #1 platform removal as part of decommissioning in Bass Strait.

At the forums held at Lakes Entrance, Sale, Port Welshpool and online between June and August, 64 people from across a range of different backgrounds took the opportunity to learn more about what was being considered to decommission the Esso platforms and to hear from each other about the potential risks and impacts of options being considered and how these could be managed.

Background

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). Esso's assets consist of 19 platforms with 421 wells, six subsea facilities and more than 800 kilometres of subsea pipelines that extract, process and store oil and gas, then transport it onshore for further processing and distribution to customers.

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. Esso is committed to identifying and actively engaging with communities to find solutions that balance environmental impacts and benefits with the needs of the community, all within regulatory requirements.

The purpose of consultation is to help relevant persons make an informed assessment of the possible consequences of decommissioning activities on their functions, interests and activities and to advise Esso of any potential impacts or risks that may affect them and help to inform the identification of the impacts and risks and consider mitigations that may be required to address these risks.

During planning for Campaign #1, relevant persons and other interested stakeholders were invited to learn more about the decommissioning activities being considered and to discuss the potential impacts and risks of these activities as part of Esso's consultation-related regulatory obligations.

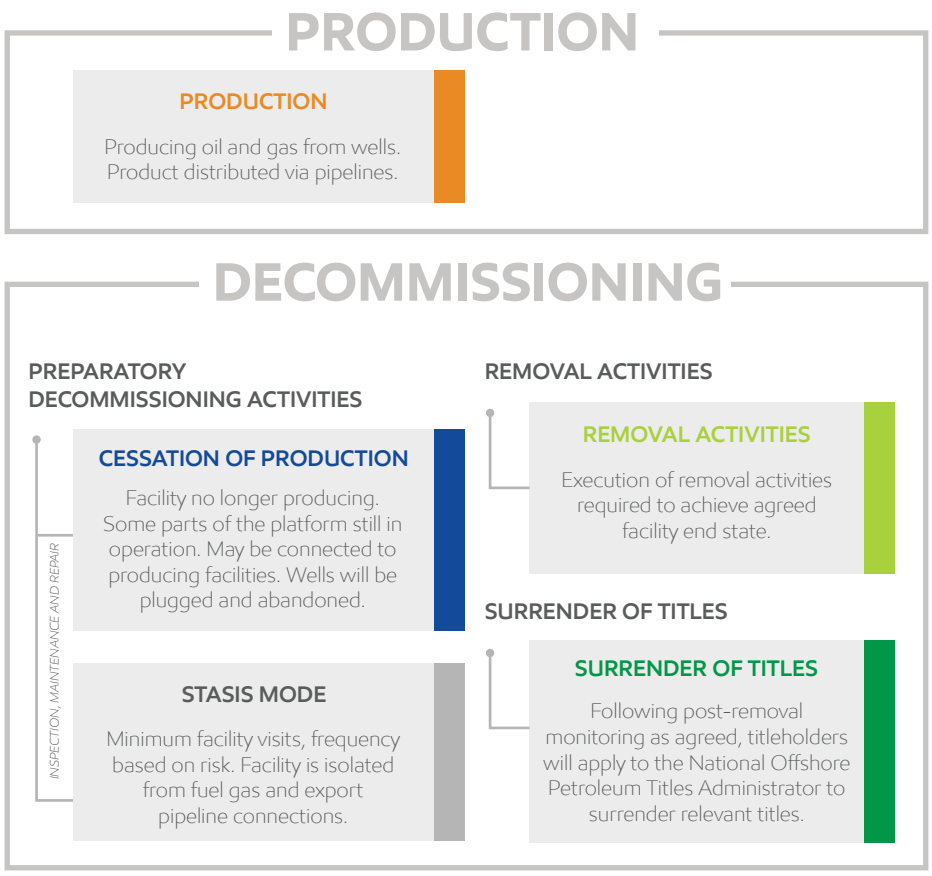


↑ Flounder platform

The forums provided an opportunity for engagement with relevant persons and interested stakeholders to help build an understanding about how these activities might affect their functions, interests, and activities. They are also key to meeting Esso's consultation-related regulatory obligations.

A range of stakeholders attended the forums and shared their knowledge including:

- commercial and recreational fishing groups
- government representatives (State (Victoria) and local councils)
- unions
- environmental non-government organisations
- research institutes
- community groups and local businesses
- energy sector organisations.



↑ Facility lifecycle

The forums aimed to:

- provide an opportunity for stakeholders to gain an understanding of Esso's operations, specifically Campaign #1 removals activities
- learn from participants what they consider important in the process
- enhance existing stakeholder relationships and establish relationships with new stakeholders.

What the forums covered

The forums were facilitated by Richard Perry, Esso's Australia Major Projects Decommissioning Project Manager and supported by Esso's Consultation team and Environment and Regulatory team.

The forums included a presentation that covered:

- an overview of Esso's operations
- the facility lifecycle
- Esso's approach to decommissioning
- details of vessels involved in Campaign #1
- information on transfer locations
- recycling and disposal plans
- an outline of impacts and risks associated with Campaign #1
- overview of the regulatory process.

Highlights of the information presented during the forums is provided in the following sections.

Approach to decommissioning

In accordance with the facility lifecycle, Esso's approach to decommissioning involves:

1. Preparatory Decommissioning Activities

Preparatory Decommissioning Activities are activities required to cease production, ensure the integrity of the facility is maintained and prepare the facility for removal. This includes activities that fall within the Cessation of Production and Stasis Mode stages. *Preparatory Decommissioning Activities* are conducted in accordance with relevant Safety Cases and managed through the Bass Strait Environment Plan and other Environment Plans as appropriate.

Specific *Preparatory Decommissioning Activities* include:

- topsides purge, and draining/isolation of liquids
- pipeline flushing and cleaning
- powering down platforms and shutting down systems including living quarters
- air gapping (cutting) of piping and topside structures
- making safe for removal and transport.

2. Removal Activities

Removal Activities encompass the removal of facilities to progress towards the approved facility end state.

Removal Activities are managed in accordance with approved Execution Environment Plans and will be undertaken by aggregating facilities and removal activities into 'campaigns' that involve the use of specialist vessels.

Campaign #1 involves:
- full removal of the Perch and Dolphin monotower platforms
- removal of topsides and jackets to seabed, which applies to Whiting and Bream A platforms in shallower water
- removal of topsides and upper jacket sections to at least 55 metres below mean sea level, which applies to the Cobia, Flounder, Fortescue, Kingfish A, Kingfish B, Mackerel, West Kingfish and Halibut platforms in deeper water
- removal of topside only for the Bream B concrete gravity structure.

Specific *Removal Activities* required for Campaign #1 include:
- topside removal:
  - cuts made by diamond wire saw or hydraulic shears on the structure to allow for the removal of the topside from the jacket
  - the *Pioneering Spirit* Heavy Lift Vessel (HLV) will use a motion compensated topside lift system to lift topsides in one piece
  - Dolphin and Perch topsides will be lifted by a Construction Support Vessel (CSV)
- jacket removal:
  - the *Pioneering Spirit* HLV will use a jacket lift system to lift the jacket substructures (in large pieces) or a crane as needed for the monotower bases
  - lift and removal is expected to take approximately 6 -12 hours per facility
- removed topsides, jackets and monotower bases will be sea fastened and transported to a sheltered location
- at this location they will be transferred to barges for onward transport to the Onshore Reception Centre.

Vessels

Vessels assisting in *Preparatory Decommissioning Activities* include DOF *Skandi Darwin* and Allseas *Fortitude*.

Vessels undertaking *Removal Activities* include Allseas *Pioneering Spirit*, Allseas *Fortitude* and support vessels such as: a second CSV, around six transport barges and towing tugs.



ALLSEAS *PIONEERING SPIRIT*

Esso has contracted Allseas to undertake removal activities using the *Pioneering Spirit* 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 approximately 4 months.

Attendees were shown a video indicating how topsides and jackets will be removed using the Allseas *Pioneering Spirit*. The video can be visited at:

www.allseas.com/equipment/pioneering-spirit-offshore-construction-vessel/

Transfer locations and Onshore Reception Centre

All removed components will be transferred from a CSV or the HLV onto a barge in a sheltered water location close to Corner Inlet. Tugs will transport the barge from the transfer location through Corner Inlet to the Onshore Reception Centre where removed structures will be offloaded, segregated and dismantled onsite then transported for recycling or disposal.

Barry Beach Marine Terminal has been identified as the Onshore Reception Centre for transfer of removed infrastructure. Qube Holdings will undertake the development and management of the Onshore Reception Centre.

Recycling and disposal

Topsides will be delivered to the Onshore Reception Centre. The deconstruction process includes:

- make safe, survey, assess and remove hazardous materials and equipment
- mechanical demolition of the sections.

The jackets will go through a deconstruction process, with sections processed into smaller pieces to enable recycling. The deconstruction process includes:

- removal of marine growth
- lowering of jacket sections to ground level
- mechanical demolition of jacket sections into pieces for further processing.



↓ DOF *SKANDI DARWIN*

In February 2022, Esso entered into a multi-year agreement with DOF Subsea Australia Pty Ltd to charter the *Skandi Darwin* as the Multi-Purpose Support Vessel (MPSV).

The MPSV *Skandi Darwin* arrived in Bass Strait in August 2022 and is key to executing multiple work scopes.



← ALLSEAS *FORTITUDE*

The CSV *Fortitude* is expected to arrive in Bass Strait in 4Q, 2026 and will undertake work to prepare the facilities for removal such as:

- installation of lift points
- cutting of jackets and pipelines.

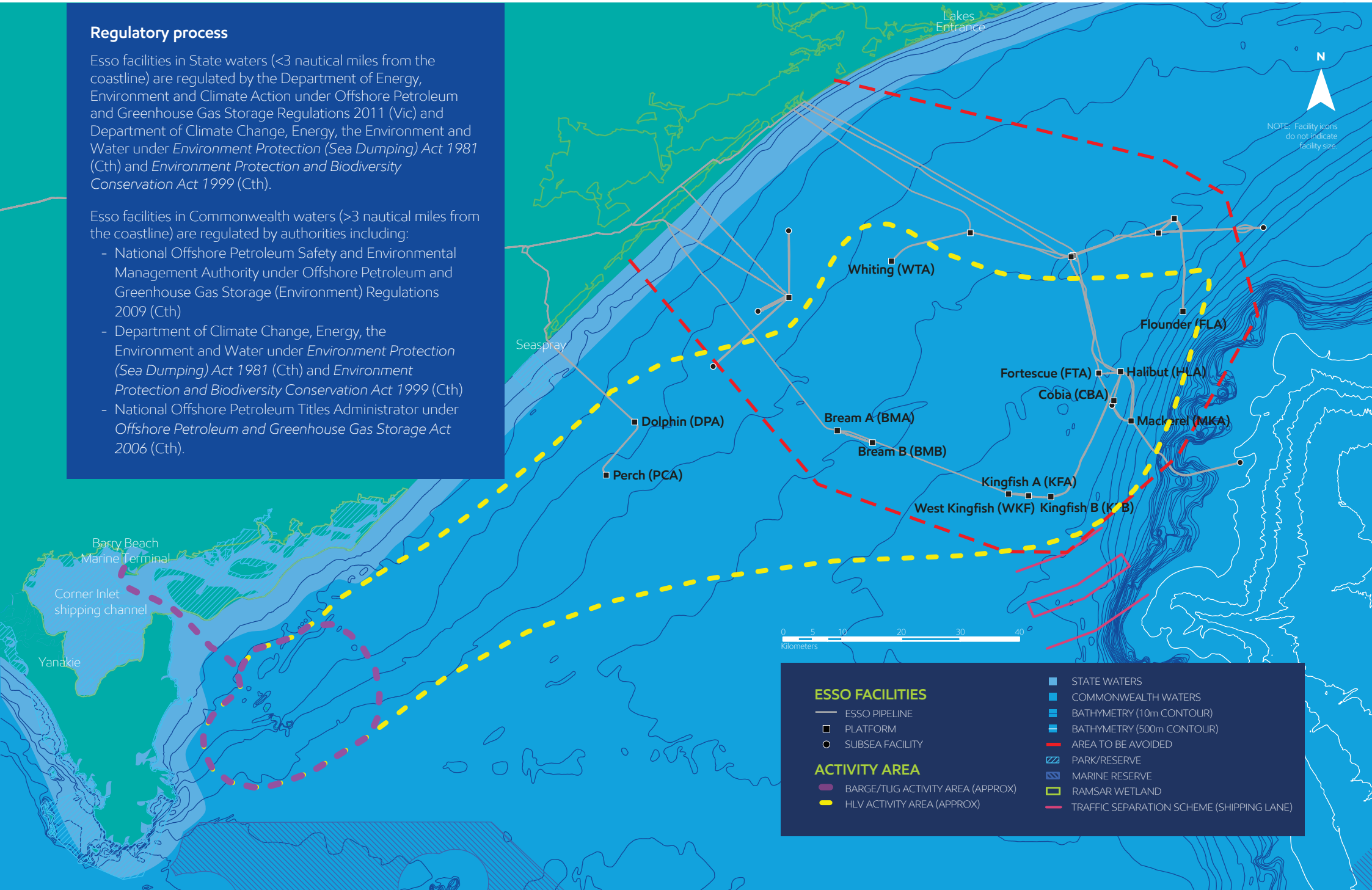
The *Fortitude* will likely remove the Dolphin and Perch topsides.

Regulatory process

Esso facilities in State waters (<3 nautical miles from the coastline) are regulated by the Department of Energy, Environment and Climate Action under Offshore Petroleum and Greenhouse Gas Storage Regulations 2011 (Vic) and Department of Climate Change, Energy, the Environment and Water under *Environment Protection (Sea Dumping) Act 1981* (Cth) and *Environment Protection and Biodiversity Conservation Act 1999* (Cth).

Esso facilities in Commonwealth waters (>3 nautical miles from the coastline) are regulated by authorities including:

- National Offshore Petroleum Safety and Environmental Management Authority under Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth)
- Department of Climate Change, Energy, the Environment and Water under *Environment Protection (Sea Dumping) Act 1981* (Cth) and *Environment Protection and Biodiversity Conservation Act 1999* (Cth)
- National Offshore Petroleum Titles Administrator under *Offshore Petroleum and Greenhouse Gas Storage Act 2006* (Cth).





↑ Kingfish A platform

Impacts and risks

Esso aims to minimise environmental and social impacts of Campaign #1 activities. *Potential* impacts, risks and control measures have been identified and are provided in the Decommissioning Campaign #1 Project Update information bulletin, which is available for download from:

https://corporate.exxonmobil.com/locations/australia/our-operations/bass-strait/decommissioning-in-the-bass-strait

Impacts and risk assessment will identify possible impacts and consequences from activities (duration, location, values and sensitivities taken into consideration).

Consultation and feedback will help inform impacts and risk assessment and potential control measures, which will be developed to reduce impacts and risks to As Low As Reasonably Practicable and acceptable levels.

Forum feedback

Opportunities were provided during the stakeholder forums for questions to be raised and responded to. Discussion topics on Campaign #1 raised by participants are as follows.

- Opportunities to increase transferable skills and job capacity in the area
- Clarification of removal campaign activity details, such as load in operations at Barry Beach and vessel exclusion zones
- Feedback on potential impacts and risks of removal campaign activities – disturbance to established ecosystems on jackets, residual debris presenting a snag risk, displacement of seals and seabirds
- Feedback on potential controls associated with these impacts and risks – provision of navigational aids, regular notifications
- Benefits of leaving infrastructure in situ - retain established marine ecosystems and provide recreational fishing opportunities
- Potential impacts (positive and negative) on tourism and local businesses
- Opportunities to share research associated with infrastructure removal and/or leaving in situ.
- Corner Inlet seagrass monitoring opportunities.

What we've done with the information

Information gathered at the forums, where applicable, is informing the environmental impacts and risks assessment which is being undertaken as part of preparing the Environment Plan and will also identify appropriate measures and controls to manage impacts and risks to As Low As Reasonably Practicable and acceptable levels.

An update on the outcomes of the impacts and risks assessment will be provided to stakeholders for feedback prior to submitting the Environment Plan to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA).



↑ Fabrication of the first offshore platforms at Barry Beach Marine Terminal in the late 1960s

Next steps

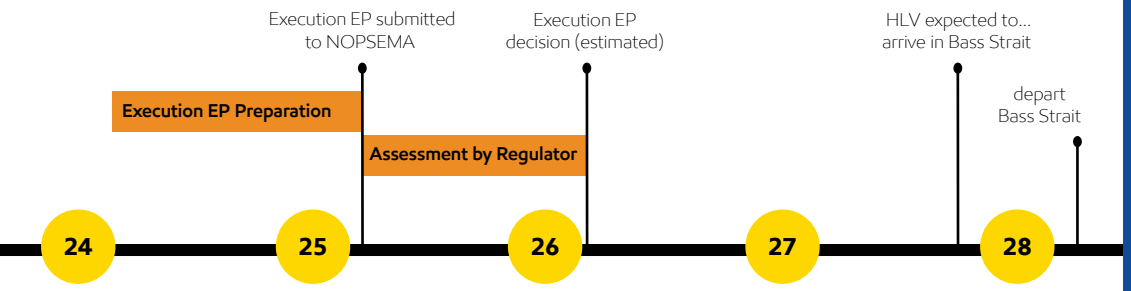
As new information becomes available from environmental and technical studies, we will provide further communication to assist you in understanding whether decommissioning platforms will affect your functions, interests or activities.

We appreciate your interest and contribution to our planning process and look forward to continuing to engage with you about decommissioning platforms for Esso's Bass Strait oil and gas fields.

Legislative and regulatory requirements

In the course of preparing an Environment Plan, a titleholder must consult with relevant persons in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023 (Cth) Division 3, and demonstrate that the measures (if any) that the titleholder has adopted, or proposes to adopt, because of the consultations are appropriate.

↓ Decommissioning Campaign #1 regulatory timeline



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Like to stay involved?

If you'd like to discuss anything further, please contact the Consultation team at:

T: +61 3 9261 0000

E: consultation@exxonmobil.com

If you'd like to know more, please use the QR Code below to easily access our Consultation Hub for further information about our activities.

To help us better understand what activities you're interested in, how you want to be consulted, and any questions or feedback you may have, please complete our 'Esso Consultation Questionnaire'.

Once again, we thank you for your participation in the forums. We value your knowledge and contributions to inform the decision-making process for Campaign #1 removals activities.

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Appendix G: Advertisement materials



The Bairnsdale Regional Health Service's dental team - Sharon Favaloro, Susan Dare and Mika Tuimaseve.

Free dental services for kids

Get the dental care your children need without putting the bite on the family budget through Bairnsdale Regional Health Service's (BRHS) dental clinic.

Children under the age of 13 are eligible for free dental treatment through BRHS.

Treatment is also free for children from their 13th birthday on if their parent or carer has a concession card, are eligible for Services Australia's Child Dental Benefits Schedule (CDBS) through Medicare or are Aboriginal or a Torres Strait Islander.

If you and your children don't qualify, there is a low one-off fee of $37 for care at BRHS' dental service.

BRHS executive community wellbeing and aged care, Sonia Reisenhofer, said the initiative is another way that BRHS supports East Gippsland families.

"Dental health is crucial to everyone's overall health," Ms Reisenhofer said.

"Getting dental health right means a brighter and healthier future for children, so we're happy to open our doors to any children that need dental care.

"Our dental staff are friendly and very well qualified. With free or very low-cost appointments available, there's no reason for children to miss out on good dental care."

To book an appointment, or if you are unsure if your child aged 13 or over qualifies for free dental care, please phone BRHS' dental service.

GIPPSLAND GRAIN STORE
STOCKFEED · PET SUPPLIES · ANIMAL SUPPLEMENTS · ELGAS · RURAL HARDWARE
5152 3093 | 157 MACLEOD STREET, BAIRNSDALE
GRAIN GIPPSLAND STORES

HISTORY'S MYSTERIES



Can you identify the people in this photo (above) from the East Gippsland Historical Society collection?

The photo is from a tennis party at Bruthen circa 1898.

If you have any information, please contact the *Advertiser*.

A new mystery will appear in next week's edition.

Information was received for last week's photo (below) of the Bairnsdale Westdale Kindergarten pupils circa 1965. Pictured amongst the group are: David Mosele, Kerrie Widdis, Sue Stewart, Robert Freeman, Ian Neville, Hugo Graves, Perter Terrill and Jan Ross.



ShelterReport



We are in desperate need for wet Whiskas food.
Donations are greatly appreciated.

ANIMAL AID
EAST GIPPSLAND
EN1590
Ph: 03 5152 1389 | 40 Giles St. Bairnsdale | animalaid.org.au
Open 11am - 3pm weekdays & 10.30am - 12.30pm
All stray animals at the shelter are listed on the EG Shire website at egipps.vic.gov.au
Domestic Animal Business No: 1-2009-DABPND

EN20439
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Esso's oil and gas facilities in Bass Strait

Esso Australia Pty Ltd (Esso), a wholly owned subsidiary of Exxon Mobil 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 & 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
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To find out more information
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ST BRENDAN'S: Hudson Gibbs and Blair Mills.



ST BRENDAN'S: Hudson Fearnley.



ST BRENDAN'S: Hazel Scicluna.



ST BRENDAN'S: Franklin Friend.



ST BRENDAN'S: Layla Clark.



ST BRENDAN'S: Taylah Downing.



ST BRENDAN'S: Lee Evans, Ollie Lowcock and Taylor Clay-Hooper.



ST BRENDAN'S: Kaison Condon and Henry Vermazen.

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Last Tuesday in sweltering 36-degree heat, the junior year levels of the Orbost Community College had their house swimming carnival at the Orbost Outdoor Pool. PICTURED: Tannah Price, Harrison Clay and Sadie Lindfield had their house coloured tutus on for cheering on the sidelines.



Amara Martin finishes her race with a smile.



Besties Savannah Lindfield and Ahna Reddy try to stay cool in the shade.



Finn Donnellan was on hand to assist Leo Whitehead.



Laurie Downey takes the lead in the assisted noodle race.



Most of the years prep–2 took time to have a rest before heading back off to school.

LABOUR DAY WEEKEND - SATURDAY, MARCH 9

HINNOMUNJIE PICNIC RACES

HEAD TO THE HIGH COUNTRY

for an action-packed Labour Day long weekend!

Experience picnic racing at its best with 6 trophy races and a wide range of side attractions, the Hinnomunjie Races is a great family day out.

Gates open at 11am

- Free camping available at the Hinnomunjie & Benambra Rec. Reserves
- Afterparty hosted by the Benambra Hotel. Entertainment by The Jimmy's and catering by True Blue Burgers.

General Admission Tickets at the gate or prebook at
country.racing.com/omeo.
Memberships available, but be quick!

Bus Time Table: Pickup: Swifts Creek 10.45am, Omeo 11.15am, Benambra Hotel & Recreation Reserve 12 Midday. *Return Buses depart Racecourse at 5.30 for all destinations.*

Race Sponsors: • Bet 365 • Elders Rural • Benambra Hotel • W J Cook • Alpine Airwork • Omeo Rural Hardware • TAC Race Ready • Eastern Quarries • Alpine Angus • Grinter's Transport

EN21388

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WALKS THE WALK



PENELOPE CRUZ



RACHEL BROSNAHAN



MERYL STREEP



REESE WITHERSPOON



JESSICA CHASTAIN


EMMA STONE



MELISSA MCCARTHY


ANNE HATHAWAY

maurice blackburn lawyers

Asbestos

Did you work for LM Ericsson Proprietary Limited in Broadmeadows in the early 1970s?

We want to hear from former employees and contractors who worked at LM Ericsson Proprietary Limited in Broadmeadows in the 1970s.

If you can help, please call **Anita Arian** of Maurice Blackburn Lawyers on

03 9605 2624
aarian@mauriceblackburn.com.au

V1 - MHSE01Z02MA

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Engaging and innovative - Claire brings a brilliant backstory

EmpowHer East Gippsland is hosting its biggest ever event in Bairnsdale at 7.30pm on Friday, March 8, at The Forge Theatre and Arts Hub.

The EmpowHer EG committee is excited to announce that the keynote speaker is well-known Australian comedian, Claire Hooper.

Claire Hooper started on the stage, crafting engaging, innovative live shows that blended stand-up, theatre and some hammer dancing. Her 2006 show, *Oh*, earned her both critical acclaim and a nomination for the Melbourne Comedy Festival's best newcomer award. A born storyteller with a sharp wit, Claire has gone on to regularly perform at festivals and comedy rooms all over the country.

For four years Claire shared a set with Paul McDermott and Mikey Robbins on the iconic comedy show *Good News Week* as a team captain.

Over the past decade Claire has been captivating audiences touring solo shows across the country, hosting popular television and streaming shows and is a regular on screen, often co-hosting Channel Ten's *The Project* as well as regular appearances on ABC's *Question Everything*, *Spicks & Specks*, SBS' *Celebrity Letters & Numbers* and Channel Ten's *Would I Lie to You?*

Last but not least, in what is possibly Claire's proudest achievement to date, her debut children's book *Princess Benjamin Has A Very Cheeky Bum* was released in 2021. Claire has loved sharing the joy of this book with kids all around the country.

"Part of EmpowHer's mission is to bring speakers to East Gippsland," EmpowHer president and Bairnsdale lawyer, Katherine Argentino, said.

"We decided that our community deserved a big event with a high-profile speaker for International Women's Day 2024. The committee has worked incredibly hard to make this happen, and I cannot wait to see it all come together."

International Women's Day is a global day with origins dating back to the beginning of the 20th century. It is a day of celebration, recognising the social, economic, cultural, and political achievements of women. The 2024 theme is 'Count Her In: Invest in Women. Accelerate Progress'.

"We have organised a panel of local women in leadership, financial counselling and business who will share their stories and provide practical tips on matters such as employment pathways, financial services, and financial literacy. It's an opportunity to come together to celebrate local women's achievements and advocate for women's economic inclusion."

Women leave EmpowHer EG events feeling positive, with new connections, information, inspiration, and tools to succeed.

Katherine said this event will be no exception.

"We want women to have equal access to participating in the economy," Katherine said.

"Women need opportunities to build their capabilities locally. EmpowHer events provide opportunity for education and connection. For me personally, the benefits of simply surrounding yourself with a group of supportive and inspiring women are immeasurable.

"At this event, we aim to empower women in East Gippsland to learn, earn and lead."

An exciting highlight of the evening will be the release and performance of a new song dedicated to International Women's Day. The artist will be announced soon, promising an uplifting addition to the celebration.

This is a jam-packed night of entertainment that is not to be missed.



Well-known Australian comedian, Claire Hooper, will be the special guest speaker at EmpowHer East Gippsland's biggest ever event at Forge Theatre and Arts Hub on Friday, March 8. (PS)



Offer available in store for all prescriptions and online for +/-6. Available when choosing two pairs from the $149 range or above. Price includes single-vision lenses. Other lens types and options available at extra cost. Both pairs for same person. Use with other offers restricted. Offer valid 1 February – 28 February 2024.

Expanding coverage

Telstra will be upgrading its mobile base station at Bairnsdale by adding additional infrastructure to bring better 4G and 5G services, as well as expanding coverage to more parts of the region.

The works will however require some temporary outages or reduction in mobile coverage.

These improvements will temporarily impact Telstra mobile coverage at various times until March 8.

Telstra mobile customers have been sent text messages advising of the upcoming work.

Landline services, NBN internet services and mobile coverage from other providers will not be impacted. Any calls to Triple Zero from a Telstra mobile when the site is off air will automatically be diverted to any working mobile network for connection to emergency services.

Telstra regional general manager, Jenny Gray, said while crews need to work during daylight for safety, we'll only be switching off the site when we need to and will have it back on as quickly as possible.

"The works will be delivering new and improved mobile coverage to Bairnsdale and the surrounding area, providing faster speeds and higher capacity to more parts of the region," Ms Gray said.

"Customers may notice slower data speeds during the works. We have other mobile sites in the area that will deliver some overlapping coverage in the area.

"There's never a good time to undertake this sort of work but recent events have highlighted the importance of connectivity in rural and regional communities. and this will mean better mobile services for local residents.

"As a company, we heavily invest in improving regional connectivity. Over the past seven years to the end of FY23, Telstra invested $11 billion in our mobile network nationally, with $4 billion of this invested in our regional mobile network."

For mobile coverage in the interim, if residents have access to a Wi-Fi signal at home or at work, Telstra encourages residents to activate Wi-Fi calling. This is a free setting on most popular mobile phones and allows your mobile to use a Wi-Fi network to make and receive mobile calls. To find out more they can google Telstra WIFI calling or search in your settings icon on your phone.

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For all your advertising needs

email: advertising@koorimail.com

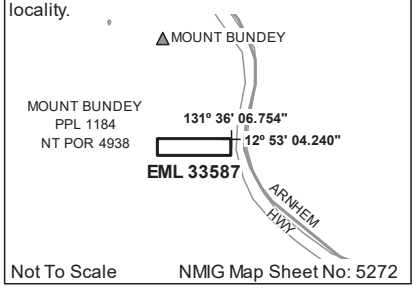
NOTICE OF PROPOSED GRANT OF AN EXTRACTIVE MINERAL LEASE

NATIVE TITLE ACT 1993 (CTH) SECTION 29

The Honourable Mark Monaghan MLA, the Northern Territory Minister for Mining, C/- Department of Industry, Tourism and Trade, GPO Box 4550 DARWIN NT 0801, hereby gives notice in accordance with section 29 of the *Native Title Act 1993* (Commonwealth) of her intent to do an act(s) namely to grant the following extractive mineral lease application.

The application to which this notice applies:

Extractive Mineral Lease 33587 sought by OSTOJIC GROUP PTY LTD, ACN 009 629 805 over an area of 16 Hectares depicted below for a term of 10 years, within the MARY RIVER locality.



Nature of act(s): The grant of an extractive mineral lease under the *Mineral Titles Act 2010* authorises the holder to extract or remove (whether by quarrying or other means) from, on or below the natural surface of the land, extractive mineral(s) for a term not exceeding 10 years and to seek renewal(s). The term for which it is intended to grant the extractive mineral lease/s referred to in this notice commences from the date of grant. Further information about the act may be obtained from the Department of Industry, Tourism and Trade, GPO Box 4550, Darwin NT 0801 or Centrepoint Building 48-50 Smith Street Darwin NT 0800, telephone (08) 8999 5213.

Native Title Parties: Any person who is, or becomes a "native title party" within the meaning of the *Native Title Act 1993* is entitled to the negotiation and/or procedural rights provided in Part 2, Division 3, Subdivision P of the *Native Title Act 1993*. Under section 30 of the *Native Title Act 1993*, persons have until 3 months after the notification day to take certain steps to become native title parties in relation to this notice. Enquiries concerning becoming a native title party should be directed to the National Native Title Tribunal, GPO Box 9973, Brisbane QLD 4001, or telephone (07) 3307 5000.

Notification Day: 28 February 2024

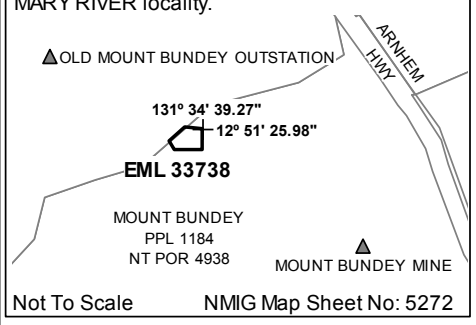
NOTICE OF PROPOSED GRANT OF AN EXTRACTIVE MINERAL LEASE

NATIVE TITLE ACT 1993 (CTH) SECTION 29

The Honourable Mark Monaghan MLA, the Northern Territory Minister for Mining, C/- Department of Industry, Tourism and Trade, GPO Box 4550 DARWIN NT 0801, hereby gives notice in accordance with section 29 of the *Native Title Act 1993* (Commonwealth) of his intent to do an act(s) namely to grant the following extractive mineral lease application.

The application to which this notice applies:

Extractive Mineral Lease 33738 sought by MOUSELLIS & SONS PTY. LTD., ACN 009 654 791 over an area of 4 Hectares depicted below for a term of 10 years, within the MARY RIVER locality.



Nature of act(s): The grant of an extractive mineral lease under the *Mineral Titles Act 2010* authorises the holder to extract or remove (whether by quarrying or other means) from, on or below the natural surface of the land, extractive mineral(s) for a term not exceeding 10 years and to seek renewal(s). The term for which it is intended to grant the extractive mineral lease/s referred to in this notice commences from the date of grant. Further information about the act may be obtained from the Department of Industry, Tourism and Trade, GPO Box 4550, Darwin NT 0801 or Centrepoint Building 48-50 Smith Street Darwin NT 0800, telephone (08) 8999 5213.

Native Title Parties: Any person who is, or becomes a "native title party" within the meaning of the *Native Title Act 1993* is entitled to the negotiation and/or procedural rights provided in Part 2, Division 3, Subdivision P of the *Native Title Act 1993*. Under section 30 of the *Native Title Act 1993*, persons have until 3 months after the notification day to take certain steps to become native title parties in relation to this notice. Enquiries concerning becoming a native title party should be directed to the National Native Title Tribunal, GPO Box 9973, Brisbane QLD 4001, or telephone (07) 3307 5000.

Notification Day: 28 February 2024

NOTICE OF PROPOSED RENEWAL AND GRANT OF MINING LEASES

***NATIVE TITLE ACT 1993* (CTH) SECTION 29**

The Queensland Minister for Resources and Critical Minerals, PO Box 15216, City East, Queensland, 4002, hereby gives notice in accordance with section 29 of the *Native Title Act 1993* (Cth) of the proposed renewal of Mining Lease (ML) 20312, and the grant of ML 100376 subject to the provisions of the *Mineral Resources Act 1989* (Qld).

Nature of Act(s): The renewal of Mining Lease 20312 under the *Mineral Resources Act 1989* (Qld) authorises the holder to mine and carry out associated activities subject to the *Mineral Resources Act 1989* (Qld) for a term not exceeding twenty (20) years with the possibility of renewals for terms not exceeding twenty (20) years. The grant of Mining Lease 100376 under the *Mineral Resources Act 1989* (Qld) authorises the holder to mine and carry out associated activities subject to the *Mineral Resources Act 1989* (Qld) for a term not exceeding ten (10) years with the possibility of renewals for terms not exceeding ten (10) years.

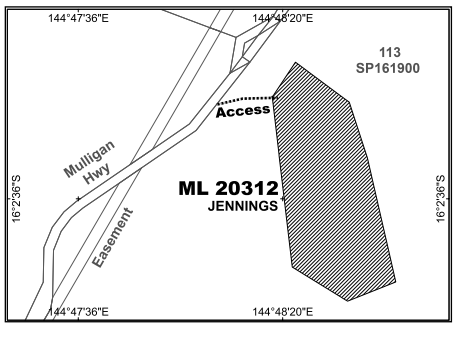
Name and Address of person doing Act(s): It is proposed that the Mining Leases be renewed and granted subject to the provisions of the *Mineral Resources Act 1989* (Qld) by the Queensland Minister for Resources and Critical Minerals, PO Box 15216, City East, Queensland, 4002.

Native Title Parties: Under the *Native Title Act 1993* (Cth) any person who is a "native title party" is entitled to certain rights in relation to the proposed renewal and grant of the Mining Leases. Under section 30 of the *Native Title Act 1993* (Cth), persons have until three (3) months after the Notification Day to take certain steps to become native title parties in relation to this notice. Enquiries in relation to filing a native title determination application may be directed to the Federal Court, Brisbane Registry, Level 6, Harry Gibbs Commonwealth Law Courts Building, 119 North Quay, Brisbane, Queensland, 4000. Telephone: 1300 720 980 or Email: nativetitleQLD@fedcourt.gov.au. Enquiries in relation to the registration of a native title determination application may be directed to the National Native Title Tribunal, Brisbane Registry, Level 5, Harry Gibbs Commonwealth Law Courts Building, 119 North Quay, Brisbane, Queensland, 4000. Telephone: (07) 3052 4040.

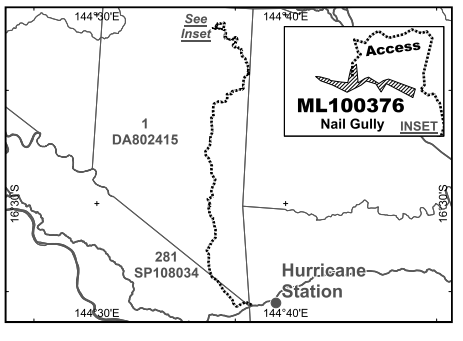
Further Information: May be obtained from the Department of Resources, Mineral Assessment Hub, Level 9, Verde Tower, 445 Flinders Street, Townsville, Qld, 4810.Telephone: (07) 4447 9230 or Email: MineralHub@resources.qld.gov.au.

Notification Day: 13 March 2024

ML 20312 renewal applied for by Edmund Henry Jennings, over an area of 78.5549 ha centred approximately 8 kms northeast of the Palmer River Roadhouse, in the locality of the Cook Shire Council.



ML 100376 grant applied for by Dennis Ronald Fitzgerald, over an area of 7.3960 ha centred approximately 60 kms northwest of Mount Carbine, in the locality of the Mareeba Shire Council.



M11394

Queensland Government



Gippsland Lakes Complete Health's 2024 trainees Hilary, Lucia, Nikita and Ilona as they explored GLCH's facilities on their first day on the job. (PS)

New trainees arrive at GLCH

The 2024 intake of trainees has arrived at Gippsland Lakes Complete Health (GLCH).

Now in its third year, GLCH's traineeship program brings together talented young school-leavers and adults seeking a career change to continue to add skills and depth to the local health sector workforce.

Each of the trainees will be undertaking a nationally recognised tertiary qualification and completing on-the-job learning. They will receive paid study time, mentoring and regular group education sessions to set them up for a rewarding and inspiring career in community health.

GLCH's general manager people and culture, Paul Hopkins, said the trainees showed a tremendous amount of promise and their time with GLCH would be full of learning opportunities and development.

"They will complete their traineeship with a nationally recognised qualification, and we hope they stay on at GLCH, where we can further support them with career development in the health field of their choice," Mr Hopkins said.

"We are really pleased with this team and wish Ilona, Lucia, Nikita and Hilary every success in their studies and stay with us during the next 12 months."

The four trainees will work across GLCH's home and community support services and support, therapy, education and prevention units and work towards qualifications in allied health assistance, business, health promotion, and leisure and health over the course of this year.

If you, or someone you know, is keen to pursue a career in health, visit the careers page on the GLCH website or contact the recruitment team to learn more.

THUMBS UP / THUMBS DOWN

THUMBS DOWN: To the customers who think it is ok to abuse the customer greeters at Kmart. We are real people with real feelings. If you have an issue with Kmart operations, contact Head Office and voice your opinion there.

THUMBS UP: A big shout out to all the essential service personnel who worked tirelessly during the storm on Tuesday night and continued on with their work on the Wednesday. The speed at which electricity was restored and streets cleared was much appreciated.

THUMBS DOWN: To the two individuals who stood and watched a young woman in West Bairnsdale during the recent storm who was trying to retrieve large fence panels that had blown off. It proves two things, one being you're not real men and two you obviously have no Christian values. God judges us all from our actions or lack of. But **THUMBS UP:** To the 88-year-old and his sidekick who came to her aid.

THUMBS DOWN: To drivers reversing out of centre parking into oncoming traffic. The law for this offence needs to be enforced before a serious accident occurs.

THUMBS UP: To the lovely man in Coles car park last Thursday morning who took time to assist me with a car problem, which he corrected and explained to me how it happened. Thank you so much for your kindness.

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Submit your thumbs up or thumbs down thumbs@eastvicmedia.com.au or online at www.bairnsdaleadvertiser.com.au

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Esso's oil and gas facilities in Bass Strait

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EN20439

Esso Australia Pty Ltd (Esso), a wholly owned subsidiary of Exxon Mobil 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 & 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:

Like to be consulted about these activities?

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Australian National University

Apply for the 2025 Master of Philosophy in Applied Epidemiology (MAE) Program

Applications Open: 3 June 2024
Applications Close: 21 July 2024

Information Evening: Thursday 16 May - Join us for a virtual info session https://nceph.anu.edu.au/news-events/events/information-session-are-you-applying-master-applied-epidemiology-2025. to learn more about becoming a MAE with an opportunity to ask questions.

Do you want to be on the frontline addressing public health priorities? Do you want to develop sound skills in field epidemiology and to be able to use these to make a difference? If so, the MAE is for you.

The Master of Philosophy in Applied Epidemiology (MAE) Program is Australia's long standing and globally recognised Field Epidemiology Training Program. This is a two-year research degree that emphasises learning by doing. You will spend the majority of your time in a field placement (typically a government health department or other appropriate health organisation) conducting useful and important projects under the supervision of a field and academic supervisor while supported via a tax-free scholarship of $64,273 in 2025 with an increase in 2026 to $66,908 per annum.

The MAE has been run by the National Centre for Epidemiology and Population Health at the Australian National University since 1991. The scholars before you have investigated over 500 outbreaks, including important roles in the COVID-19 pandemic, established, evaluated, and strengthened multiple surveillance systems, conducted important projects into communicable and non-communicable disease. Many have gone on to hold senior positions in health in Australia or work with international organisations including the World Health Organisation. The MAE is committed to supporting First Nations Scholars. Fifteen per cent of graduates are Aboriginal or Torres Strait Islander persons. Hear from some of the First Nations graduates (https://health.anu.edu.au/study/research/master-philosophy-applied-epidemiology-mae).

First Nations MAE Scholars can apply for top up scholarships.

For more information see the Leonard Broom HDR Scholarship (https://www.anu.edu.au/study/scholarships/find-a-scholarship/leonard-broom-hdr-research-award).

If you are interested in the MAE, please see the MAE website and How to Apply Master of Philosophy in Applied Epidemiology (MAE) (Australia's Field Epidemiology Training Program) I ANU College of Health & Medicine

If you require additional information please contact: mae.nceph@anu.edu.au.

The application portal at https://health.anu.edu.au/study/research/master-philosophy-applied-epidemiology-mae will open on 16 May. The portal will provide the application requirements/application guidelines.

Lifeline
13 11 14



An artwork titled *Australia in Colour, 2021* by artist Vincent Namatjira, which includes a portrait of Gina Rinehart, is seen at the National Gallery of Australia, Canberra,

Vain attempt to remove artwork

AUS

MINING billionaire Gina Rinehart has demanded the National Gallery of Australia remove her portrait from an exhibition by award-winning Aboriginal artist Vincent Namatjira.

The image is one of 21 portraits that make up an artwork titled *Australia in Colour, 2021*, which the gallery acquired as part of its 40th anniversary celebrations in 2022.

The artwork is on show as part of the Archibald prize-winning artist's first major survey exhibition which opened in Canberra in March.

The National Gallery has rebuffed efforts to have the picture taken down and said in a statement that it welcomed public dialogue on its collection and displays.

"Since 1973, when the National Gallery acquired Jackson Pollock's *Blue Poles*, there has been a dynamic discussion on the artistic merits of works in the national collection, and/or on display at the gallery," it said.

"We present works of art to the Australian public to inspire people to explore, experience and learn about art."

The portrait of Mrs Rinehart sits alongside images of Queen Elizabeth II and football player Adam Goodes and is set to be on display until July 21.

Before going on show in Canberra, the painting was on public display in Adelaide for months during the exhibition's initial run at the Art Gallery of South Australia from October 2023 until January 2024.

The SA gallery has confirmed it did not field any requests for the removal of the painting.

A reproduction of the image is also part of a prestigious Thames & Hudson monograph about Vincent Namatjira's work, published to accompany the survey show.

Mrs Rinehart is listed as a friend of the National Gallery after donating between $4999 and $9999 to the institution.

In 2023, Mrs Rinehart withdrew a $15 million



Gina Rinehart is Australia's richest person.

sponsorship of Netball Australia after Indigenous netballer Donnell Wallam asked for her uniform not to carry the Hancock Prospecting logo.

Mrs Rinehart later set up a $3 million fund to reward athletes who won gold medals or set world records in swimming, artistic swimming, rowing and volleyball.

In 2020 Namatjira became the first Aboriginal artist to win the Archibald Prize with his portrait of former AFL player Adam Goodes, with his paintings an attempt to change people's perspectives by using satirical humour as a commentary on power.

For example, in one of his recent works included in the show, King Charles III stands in his regalia in the central desert, looking decidedly uncomfortable and out of place, as an artistic way of depriving the royal family of their power and entitlement.

Namatjira was born in Alice Springs and raised in foster care in Perth from the age of six, which meant losing his connection to family, Country and culture.

He grew up not knowing of his link to famed watercolourist Albert Namatjira – Vincent is his great-grandson – until he was an adult, and was astonished to discover his artistic legacy and the significance of his family name. ***–AAP***

Australian Government
National Indigenous Australians Agency

NIAA

Have your say on the design of the Remote Jobs and Economic Development Program

A new jobs program is coming to remote communities and the Australian Government wants to hear from you about how it should work.

People living in remote communities are invited to provide feedback to help design the new program.

You can have your say at an upcoming meeting in your area, or fill out a survey on the NIAA website.

To find out more visit **www.niaa.gov.au/rjed-consultations**, call **1800 079 098** or visit **your local NIAA office**.

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Gippslanders 'worse off' under Albanese

Gippslanders will be worse off under the Albanese Government's third Budget as prices continue to rise and place pressure on local families, according to local MP Darren Chester.

The Federal Member for Gippsland said he was disappointed that regional Australia had been largely ignored in the Budget, with the government failing to invest in critical road, rail, telecommunications, and much-needed community infrastructure.

"Regional Australia is simply not on the radar for this city-focused Prime Minister, and there's no funding for new infrastructure projects that would improve safety and productivity on our transport system and telecommunication connectivity, which are all vital for regional growth," Mr Chester said.

"There's no new funding for local councils to deliver community infrastructure, and the decision to launch an inquiry into the financial sustainability of local government is another broken promise and just a cynical attempt to stall action to deliver more support for six councils across Gippsland.

"Before the 2022 Federal election, the Labor Party promised 'fair increases' to local government funding but has actually delivered cuts to regional programs which local councils relied on.

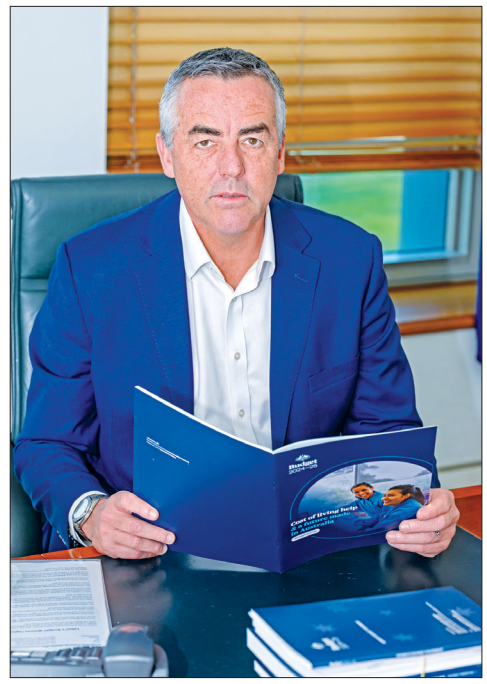
"Instead of keeping its promise, we have yet another review from a government that has failed to deliver a single project under its regional grants program after almost two years in office.

"In the middle of a cost of living crisis, the burden will fall on family budgets as Gippsland ratepayers will be forced to fund the widening gaps in demand for new infrastructure, maintenance and critical services."

Mr Chester said families were struggling with higher mortgages, energy, fuel and food bills while the Federal Government was adding to inflationary pressures in the economy.

"This is a government with the wrong priorities. It wasted two years and more than $400 million on the failed Voice referendum, and despite increased revenue, the Budget will be in deficit for years to come because of more wasteful spending," he said.

"Since coming to government, the Labor Party has added 36,000 bureaucrats in Canberra but cut regional programs that would deliver safer roads and improved community facilities. At the same time, the Albanese Government has increased cost pressures on farmers and small business owners."



Federal Member for Gippsland Darren Chester says the Federal Budget has failed Gippslanders and all regional Australians.

Native timber support available now

Native timber harvesting has ended in Victoria but support is still available.

Native timber businesses, workers and communities can continue to access a range of support including:

- **The Victorian Forestry Worker Support Program** –including payments and training, 1:1 case management, employment services, health and wellbeing support.
- **Business support** – including exit packages and funding to help diversify.
- **Community support** – health and wellbeing services and community development planning and funding.

For more information:

- Forestry Transition hotline - 1800 318 182
- Victorian Forestry Worker Support Program - 1800 122 001 vic.gov.au/forestry

VICTORIA State Government

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Experience you can count on

Asbestos at Safeway - can you help?

Did you work at these Safeway stores between:

Warragul: 1965 – 1967
Morwell: 1967 – 1970
Bairnsdale: 1974 – 1976
Sale: 1976 – 1979
Leongatha: 1979 – 1984

We want to hear from former employees/contractors who worked at these Safeway (now Woolworths) locations regarding the presence of asbestos.

If you can help, please call **Mariana Mejia** at **Maurice Blackburn Lawyers** on

03 8102 2056

mmejia@mauriceblackburn.com.au

EN23872

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Esso's oil and gas facilities in Bass Strait

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EN23274

View your local car dealers online, anytime.

www.bairnsdaleadvertiser.com.au

THUMBS UP / THUMBS DOWN

THUMBS UP: To the cleaning team for the improved cleanliness of the Orbost public toilets as well as the kind and thoughtful individual who is placing a jar of fresh flowers in the female toilets. Thanks for brightening the space.

THUMBS DOWN: To all those disrespectful and downright lazy owners who will not pick up after their dogs. Our parks and trails are a disgrace and a potential health hazard to other users.

THUMBS DOWN: In reply to a thumbs down last week - Mallacoota public toilets. To set the record straight, they are cleaned around 9am Monday and Friday restocked with soap and paper. After this, it is out of control of the cleaners.

THUMBS UP: Thank you to the kind and honest person who found my daughters wallet, containing cash and other items, in a trolley at Woolies and handed it in a few weeks ago. Very much appreciated. Good karma coming your way.

THUMBS UP: To Maharajas Palace in Bairnsdale. We took Mum there for Mother's Day and it was a real hit! Beautiful food and great service.

THUMBS UP: To the wonderful people who helped me when I had a fall outside the library on Monday morning. Great help, I would not have got up otherwise.

THUMBS UP: To the helpers after our car accident on the Stratford side of the Billabong after we hit the centre barriers. You are wonderful people.

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Making fishing better

VRFish, the peak body for recreational fishing in Victoria, is calling on Victorian recreational fishers to have their say on how we can make fishing better via the annual VRFish advocacy priorities survey.

"Our latest survey gives every Victorian recreational fisher the opportunity to shape what VRFish advocates for on their behalf. We encourage all recreational fishers to provide their valuable input by completing the survey," VRFish chair Rob Loats said.

The survey aims to gather the views of Victorian recreational fishers and understand the issues that are deeply important to the recreational fishing community.

Recreational fisher input and feedback collected from the survey will be used in advocacy planning to ensure VRFish is representing recreational fishers on the issues that matter most to them.

"Our last advocacy survey received almost 5000 responses. We're eager to hear from even more recreational fishers for this survey, as the more support VRFish has, the stronger our voice when advocating for better recreational fishing," Mr Loats said.

Recreational fisher involvement in previous surveys activated successful campaigns to restore fish habitat in our waterways, access brand new fisheries, provide more support for fishing clubs, fix our boat ramps and secure a new native fish hatchery, to name a few.

"Have your say in our survey and let's make fishing even better in Victoria," Mr Loats said.

The survey is open until June 17.

Recreational fishers can complete the survey on the Survey Monkey website.



One of the first fish caught during the Hooked On Lakes free kids fishing clinics, run by Fishcare Victoria earlier this year. VRFish is seeking recreational fishers to have their say on how they can make fishing better via an online survey.

Affected by a recent major emergency?

You may be eligible for recovery support.

For more information vic.gov.au/recovery



EMERGENCY RECOVERY VICTORIA

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REC. 9764

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Door Installer

Does your home need new doors? I can supply/ install doors/locks incl. security doors. Over 32 yrs exp. Free quote. Get your doors hung right the 1st time by Lennie 0438 850 287.

Home Maintenance

ELECTRICIAN

Specialising in all domestic work. REC.4188. Phone Peter 0438 177 153 or Carol 5126 2110.

Emerald Fencing

Specialising in paling fences, post and wire, 26 years exp. Call Peter on 0417 907 037.

Home Maintenance

FENCING

All types of residential fences and gates. Free quote, call or text Doug 0409 433 110.

JS PAINTING

Specialising in commercial, residential work, over 30 years experience. For prompt and reliable service to all the Gippsland region phone Joe 0421 374 463.

PRUNING

Fruit tree and rose pruning service. All areas. Hedges, natives. Over 25 years experience. 0478 658 025.

Storage Units Cleared and Cleaned

Call Richard, Chauncey The Gardener 0401 345 345. ABN 17268203656.

Vic Marino's Painting

Residential, commercial, int./ext. No job too small. Free quotes. Qualified tradesman. 0408 086 776.

Business Opportunities

Looking for a lifestyle change? Wanting to be your own boss?

Jim's Mowing

Jim's Mowing is looking for a Franchisee in the Latrobe Valley area.

CONTACT 131 546
For a no-obligation free Info Kit

Situations Vacant

DELIVERERS WTD

Would you like to deliver the Latrobe Valley Express newspaper to individual homes on Tuesday and/or Wednesday afternoons in Morwell, Traralgon, Moe, Newborough and Churchill? Please apply to the Circulation Manager 0456 000 541.
Please note: Children must be 11 years or over as we will need to apply for a government Child Employment Permit. Children younger than 11 cannot or will not be accepted. Adult deliverers also welcome.

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VALLEY EARTHMOVING

EXPERIENCED TRUCK DRIVER

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- HC driver's licence required
- Tipping experience preferred
- Clean driving record
- Reliable, punctual and self motivated
- Plantation forestry work environment in a Sustainable Industry

Please send resume to:
valleyearthmoving@valleygroup.com.au

Gippsland GRAMMAR

We seek committed and enthusiastic individuals to join our school in the following roles:

Head of Digital Learning

- Position of responsibility attracting 0.6FTE time allowance and $5,341 annual monetary allowance in addition to a teaching load. Garnsey Campus.

Secondary Teacher

- Fixed-term part-time teaching position available in the areas of Science, Maths and Applied Computing.

School Chaplain

- Ongoing full-time position, with a teaching allocation of RAVE at Garnsey Campus.

For more detail on the requirements, duties and responsibilities of these roles, visit the employment page of the Gippsland Grammar website at careers.gippslandgs.vic.edu.au

gippslandgrammar.au
A REGIONAL ANGLICAN CO-EDUCATIONAL BOARDING SCHOOL

Situations Vacant

ADVERTISERS PLEASE NOTE:

Much hardship and difficulty is caused to job seekers by misleading advertising placed in the employment columns. Our **Situations Vacant** columns are reserved for advertisements which carry a specific and genuine offer of employment. Ads for `Business Opportunities' and `Training Courses' and `Employment Services' should be submitted under those headings.

Placing misleading ads is an offence against the Trades Practices Act and state/territory fair trading acts and all advertisements are subject to the publisher's approval. For further advice, contact the Australian Competition and Consumer Commission on 1300 302 502 or your state consumer affairs agency.

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Apply Now!

St Paul's Anglican Grammar School is seeking applications for the following position:

Classroom Music Teacher
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Part-time, ongoing

See full position description and apply at
stpaulsags.vic.edu.au

GP1670812

Public Notices

PUBLIC NOTICE

Proposed Long Term Lease
Crinigan Road South Reserve, Morwell

In accordance with *Section 115, of the Local Government Act 2020* (the Act), Council proposes to enter into a long term lease with Optus Mobile Pty Ltd (the tenant) for a telecommunications tower located on part of Lot 1 on Title Plan 876353.

Written submissions regarding this proposal will be considered by Council, in accordance with Section 223 of the Act, if received within the prescribed time.

A submission must:

- be in writing to the Latrobe City Council, PO Box 264, Morwell, 3840 or via email latrobe latrobe.vic.gov.au
- be received by Friday 6 June 2024.
- state clearly whether you (or a representative on your behalf) wish to be heard in support of your written submission.

Submissions received, including the name of the submitter, may be published on Council's website and may form part of the public record of the relevant Council and Committee meetings. Personal contact details and any offensive, defamatory, or third-party personal information will not be published.

Any submissions received will be considered at a future unscheduled Council Meeting. All persons submitting a written submission will be advised of the Council Meeting date and invited to attend.

In the event that no submissions are received objecting to the lease, Council will enter into the lease agreements.

Further information and a locality plan can be obtained from the Latrobe City Council website: https://www.latrobe.vic.gov.au/sites/default/files/OC_06052024_MIN.pdf or contact Mr Josh Graham, telephone 1300 367 700.

STEVEN PIASENTE
Chief Executive Officer

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Public Notices

PUBLIC NOTICE

Proposed Long Term Lease
Neaves Road, Callignee

In accordance with *Section 115, of the Local Government Act 2020* (the Act), Council proposes to enter a long-term lease with Amplitel Pty Ltd (the tenant) for a telecommunications tower located on part of Crown Folio Volume 11792 Folio 64.

Written submissions regarding this proposal will be considered by Council, in accordance with Section 223 of the Act, if received within the prescribed time.

A submission must:

- be in writing to the Latrobe City Council, PO Box 264, Morwell, 3840 or via email latrobe latrobe.vic.gov.au
- be received by Thursday 6 June 2024.
- state clearly whether you (or a representative on your behalf) wish to be heard in support of your written submission.

Submissions received, including the name of the submitter, may be published on Council's website and may form part of the public record of the relevant Council and Committee meetings. Personal contact details and any offensive, defamatory, or third-party personal information will not be published.

Any submissions received will be considered at a future unscheduled Council Meeting. All persons submitting a written submission will be advised of the Council Meeting date and invited to attend.

If no submissions are received objecting to the lease, Council will enter into the lease agreements.

Further information and a locality plan can be obtained from the Latrobe City Council website: www.latrobe.vic.gov.au/sites/default/files/OC_06052024_MIN.pdf or contact Mr Josh Graham, telephone 1300 367 700.

STEVEN PIASENTE
Chief Executive Officer

www.latrobe.vic.gov.au
LatrobeCity a new energy

Scam warning

Recently, an elderly Marlo resident who wishes to remain anonymous was the latest to be targeted by scammers.

The resident received a phone call from a perpetrator pretending to be a NBN representative who managed to keep her on the line for approximately two hours before convincing the Marlo resident to hand over her credit card details.

Later that evening, in a series of transactions, $6000 was taken from her account and her financial institution had contacted her and blocked any further transactions.

This serves as a timely reminder that financial details should not be given over the phone and if in doubt, contact the proposed company to check its legitimacy.

If you happen to be scammer then report the matter to the local police and Australian Cyber Security Centre (ACSC).

If you have provided remote access to your computer or mobile device or given personal or financial information to a scammer, contact IDCARE.

Try to record as much information as possible including phone numbers, names, or any remote access ID.

Remote access companies such as TeamViewer also accept direct reports of scams via their website to investigate and block fraudulent accounts.

To protect others, report scams to the Australian Competition and Consumer Commission (ACCC) via Scamwatch.

Scamwatch data is provided to many companies and is invaluable in helping our efforts to educate the community about scams.



The National Water Week Poster competition is back this year, and East Gippsland Water is encouraging all kinder, early learning, prep and primary school students to enter the competition. PICTURED: Prep/foundation – State and regional winner for 2023, Maizie – Swan Reach Primary School.

Poster competition open for entries

East Gippsland Water is calling on all kinder, early learning, prep and primary school students and teachers to enter this year's National Water Week Poster competition.

This annual competition is a great way for students to learn and develop a deep understanding of the importance of water and using it efficiently, in an enjoyable way.

Students are encouraged to get creative and design a poster on the theme "Water for all, inspiring action" exploring the importance of water and how everyone has a part to play in saving water and being more water efficient now and into the future.

Last year, East Gippsland received 287 fantastic entries from 14 schools with three out of the five regional winners also claiming wins in the State-wide competition.

"Each year that we host this competition, I am overwhelmed by the interest, support and talent of our young people across East Gippsland," East Gippsland Water executive manager customers, community and communications, David Radford, said.

"I am anticipating that we will receive some fantastic entries from the students this year. So, I'd like to encourage them to get out their coloured pencils, textas, paints, paper or digital technology ready and get creative producing their A3 poster.

"This is a fun, creative activity for the home or the classroom for schools and children from across our region to get involved in."

National Water Week runs from October 21 to 25, 2024, and the winners of the competition will be announced during that week.

There are a number of categories available and some great prizes up for grabs for individuals and schools.

Closing date for entries is 5pm Friday, August 30, 2024.

For further information and to enter visit the National Water Week website.

First prize winners from each category will automatically be entered into the state level competition.

ExxonMobil

Esso's oil and gas facilities in Bass Strait

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- Thursday, 30 May 2024 at Bellevue on the Lakes, Lakes Entrance

Please email us at consultation@exxonmobil.com

Please connect us with other interested people

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EN23274

Native timber support available now

Native timber harvesting has ended in Victoria but support is still available.

Native timber businesses, workers and communities can continue to access a range of support including:

- **The Victorian Forestry Worker Support Program** –including payments and training, 1:1 case management, employment services, health and wellbeing support.
- **Business support** – including exit packages and funding to help diversify.
- **Community support** – health and wellbeing services and community development planning and funding.

For more information:

- Forestry Transition hotline - 1800 318 182
- Victorian Forestry Worker Support Program - 1800 122 001
vic.gov.au/forestry

VICTORIA State Government

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Meeting the demand for social workers

FEDERATION University Australia and Anglicare Victoria are teaming up to create a pipeline of skilled family violence social workers to meet a growing demand.

Brooke Pym has been working at Anglicare Victoria in Gippsland for 11 years, working as an Integrated Family Services Team Leader, and has recently enrolled in the Bachelor of Social Work at Federation to enhance her skillset.

"I am enjoying learning the theory around the work I have been doing for many years now, gaining a deeper understanding into the work that I do and why we work in the manner that we do," Ms Pym said.

Ms Pym feels lucky to be working in her chosen profession while completing a Bachelor's degree, and says there is a massive demand for skilled and experienced social workers in the region.

"There is such high demand for front line workers in child protection, family violence and family services that we need as many new graduates as we can get," she said.

Anglicare Victoria Gippsland Regional Director, Vicki Levey says that more social workers are needed to fit the current demand in the region.

"The demand for skilled social workers in the Gippsland region is very high, specifically in the family violence space," she said.

"As part of the recommendations from the 2015 Royal Commission in Family Violence, we need more social workers who are qualified or becoming qualified in family violence roles by July 2026, particularly as part of The Orange Door network."

According to the Victorian Skills Authority, the demand for social workers continues to increase in Gippsland and throughout the state, with an additional 2349 workers required Victoria-wide by 2026.

"We need to train workers locally as we are more likely to maintain the workforce if they don't have to travel long distances, and they will gain familiarity with the region and its specific needs," Ms Levey said.

"The community can only benefit by the support of skilled and qualified workers, and our partnership with Federation University is imperative to ensure we continue to have those staff numbers in Gippsland.

"It's important we're responding locally to meet the demand."

Federation University Discipline Lead, Social Work, Community and Human Services, Jennifer Martin, said the degree had been thoroughly considered.

"Federation has had strong engagement from the Gippsland community to co-design a degree to meet local workforce demands with local people," she said.

"The Social Work curriculum has been designed with local Gippsland human services providers to ensure teaching and learning content, delivery and assessment is tailored to the needs of the local Gippsland social work workforce."

Drink driving not worth the risk

ONE in five drink drivers fined in Victoria are caught during daylight hours.

New Victoria Police analysis also reveals half of detections were on a weekday.

The force is warning police are out anywhere, any time, to make sure motorists aren't over the limit.

It comes amid a danger month on Victoria's roads with 29 people killed in May last year with alcohol a contributor in multiple deaths. So far this May, 12 people have died.

Figures show about 1200 of the near 4900 drivers caught drink driving in the last financial year were nabbed between 6am and 6pm.

More than 400 were caught between 6am and noon alone.

Victoria Police has been scheduling special daytime and early-morning operations to keep drink drivers on their toes, and remind all drivers police are out testing for alcohol anywhere, any time.

The night, 6pm to midnight, remains the most prolific time for drink drivers on the road, with 1900 detected, followed by midnight to 6am when almost 1800 were caught last financial year.

Saturday accounts as the most detections of any day, with 1200, ahead of Sunday, Friday and Thursday. About 400 drink drivers were caught on a Monday and 350 on a Tuesday.

Most drink drivers fined - more than 40 per cent - recorded a blood alcohol content between 0.07 and 0.10.

About a third blew between 0.05 and 0.07.

Anyone caught drink driving faces heavy fines and a loss of licence, and those with higher readings must go to court where a magistrate imposes a fine and driving disqualification period.

About a quarter of all fatal crashes involve a driver or rider over the legal blood alcohol limit of 0.05.

Assistant Commissioner Glenn Weir, Road Policing Command, said the consequences of being involved in a crash are even more serious and last a lifetime.

"People might think drink driving is something that only occurs after dark but this data shows there's a lot of offending in the day," he said.

"That's why police are out breath testing motorists around-the-clock."

Police Beat
with Stefan Bradley

45km/h over the limit

IN the early hours of Sunday, May 19, Sale Police say they detected a vehicle travelling south bound on Rosedale-Maffra Road at a speed greater than 45km/h over the posted speed limit.

As a result, the vehicle was intercepted and impounded for a period of 30 days at a cost of $1333 to the driver.

He will be summonsed to attend court at a later date.

Drugs and imitation firearm seized

POLICE have arrested four people and seized an imitation firearm, methylamphetamine, GHB and cannabis as part of an operation targeting alleged drug trafficking in Orbost.

East Gippsland Crime Investigation Unit detectives, Dog Squad, and local police from Orbost, Bairnsdale and Cann River executed five search warrants at properties across Orbost on Thursday, May 16.

Police seized an imitation firearm, traffickable amounts of dried cannabis, methylamphetamine, GHB, three cannabis plants, and a laser pointer.

Those arrested by police include:

- A 49-year-old Orbost man, expected to be charged with cultivating cannabis, possessing cannabis, possessing GHB, using cannabis and possessing prohibited weapon. He is expected to appear in court at a later date;
- A 21-year-old Orbost man, charged with eight offences including burglary, trespassing, criminal damage, possessing imitation firearm, possessing drug of dependence, and refusing to comply with 465AAA direction. He was bailed to appear at Orbost Magistrates Court in August;
- A 22-year-old Orbost man, charged with possessing cannabis and was bailed to appear at Orbost Magistrates Court in August, and;
- A 24-year-old Orbost woman, charged with possessing drug of dependence following a search warrant at a residence in Orbost. She was released pending summons.

Anyone with information about illicit firearm or drug activity is urged to contact Crime Stoppers on 1800 333 000 or submit a confidential crime report to crimestoppersvic.com.au



Sale Police detected a vehicle travelling south bound on the Rosedale-Maffra Road well over the speed limit last Sunday.

Photo: Contributed

Have your say

REFCL draft guidelines community feedback

Energy Safe Victoria invites community feedback on draft guidelines for the safe operation of Victoria's rapid earth fault current limiters (REFCLs).

REFCLs help to prevent fire and electrocution by quickly detecting faults on 22 kilovolt distribution powerlines and reducing the energy flowing through the affected line.

Register for an online information session

Find out how REFCLs are protecting your community and how you can contribute to the consultation at an online info session:

- Sunday 26 May, 2pm
- Monday 27 May, 7pm
- Thursday 30 May, 12pm.

Register online: esv.vic.gov.au/consultations

Have your say

Feedback on the draft guidelines is open until Monday 8 July 2024.

More info: esv.vic.gov.au/consultations

To have a consultation pack posted to you call, 03 9203 9700.

energysafe VICTORIA

VICTORIA State Government

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Contact us by email or phone

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Miners flex their $74bn revenue muscles

EXCLUSIVE

GEOFF CHAMBERS
CHIEF POLITICAL CORRESPONDENT

Miners have poured a record $74bn into the coffers of federal, state and territory governments, with the Albanese government pocketing $42.5bn in company tax revenue, and Queensland and NSW cashing in on booming coal royalties.

After Jim Chalmers announced a second budget surplus anchored by strong mining exports and commodity prices, an EY royalty and company tax payments report, released on Monday, reveals miners have paid governments almost $360bn in taxes and royalties over a decade.

With Peter Dutton promising a Coalition government will adopt a "pro-mining mindset" and the Greens demanding an end to coal and gas, Anthony Albanese is under pressure to balance Labor's emissions reduction ambitions with support for traditional mining.

Commissioned by the Minerals Council of Australia, whose members include BHP, Rio Tinto, Lynas Rare Earths, Glencore and Peabody, the annual report shows a $9.3bn increase in payments to governments. The $74bn payday for governments in 2022-23 included a decade-high $31.5bn in royalties. As well as traditional mining revenue associated with iron ore and coal, The Australian this month revealed oil and gas companies are on track to pay a record $17.1bn in taxes and royalties across 2023-24.

With the mining industry paying the highest average wages, contributing the most company taxes and delivering the bulk of export revenue, MCA chief executive Tania Constable warned against holding back miners with "draconian 1970s industrial relations agendas, high energy, environmental, planning and taxation costs". The MCA will launch a national advertising blitz on Monday.

"The recent federal budget revealed that government spending is on the rise and it is our country's mining sector that foots the bill, paying more than half of the company tax paid by large corporations and international businesses," Ms Constable told The Australian.

"Despite underwriting our nation's prosperity, living standards and security, the path forward for the mining industry remains uncertain. Our tax system is increasingly uncompetitive, and our regulatory environment is becoming more cumbersome.

"Approvals are taking too long, tied up in endless red tape, well-funded lawfare and multi-layered government bureaucracy, wasting taxpayers' money and holding back Australia's economy from realising its full potential."

Queensland's share of national royalty payments increased from 32.5 to 47.2 per cent off the back of higher coal royalty rates, with NSW claiming a $4.7bn royalties windfall. In the battleground election state of Western Australia, iron ore remained the biggest earner despite lower revenue and prices in 2022-23.

"Total mineral sector royalties reached approximately $31.5bn in 2022-23, increasing by $7.6bn from the previous year. The yearly growth in royalties was primarily due to an increase of $7.1bn in royalty taxes paid in Queensland due to the introduction of progressive coal royalty rates," the EY report said.

"Western Australia's royalty income is largely attributed to iron ore. In 2022-23, iron ore production volumes were similar to 2021-22, so changes in WA's royalties were largely driven by changes in iron ore prices.

"Iron ore prices declined in the second quarter of 2022-23 and remained lower in early 2023 due to production restrictions in China."

With mining companies and associated supply chains supporting 1.1 million jobs, Ms Constable said the sector was helping keep "Australia solvent".

"A robust mining sector is critical if we want to sustain public spending, advance Australia's broader economic agenda, and keep the budget in the black," she said. "This is revenue that supports families, builds communities, and funds essential services like the NDIS, childcare subsidies and aged care."

The mining industry has warned the Prime Minister that at a time of "decaying productivity and looming long-term structural fiscal deficits, the government is imposing regressive policies on the sector that dampen the investment growth critical to achieving economic potential".

Less than a year out from the election, Mr Albanese and Mr Dutton will ramp up campaigning in the resources-rich jurisdictions of WA and Queensland and the Northern Territory.

While Mr Albanese has used his Future Made in Australia policy to support critical minerals, Mr Dutton promised in his budget reply to cut red tape and rollback Labor's sweeping IR reforms.

Migration cuts will harm economy: business

RHIANNON DOWN

The peak body representing hotels has told the Coalition its pledge to slash net migration to 160,000 would have a "knock on effect" on the economy, amid mounting concerns from key sectors the move will exacerbate existing skill shortages.

Australian Hotels Association chief executive Stephen Ferguson will lobby the opposition to reconsider its proposal to cut overseas arrivals by 25 per cent when parliament sits this week, urging that any major decline in temporary migrants would cripple the hospitality industry.

Mr Ferguson said he was seeking clarity from Peter Dutton on which visa category his proposed measures would target, raising concerns about the Opposition Leader's promise to prioritise skilled visas in the construction sector, which could place hospitality workers back of the queue.



Ferguson

He said the industry was grappling with a protracted shortage of chefs to staff kitchens and was locked in a contest to recruit trained cooks from around the world, with employers sponsoring 2841 overseas chefs to come to Australia in 2022-23.

"There's a knock on effect, first in terms of employment; not only does the key position of the chef not get filled, but neither do people like waiters, barman and baristas and all the other people associated with the restaurant or the bistro," Mr Ferguson told The Australian.

"Once the restaurant and bistro closes, there's a knock on across the whole business.

"So it's a massive decrease in our productivity if these numbers come to fruition."

Aged Care Industry Association chief executive Peter Hoppo said about 30 per cent of the sector's 370,000 workers were migrants, and any reduction in migration would be "catastrophic" for the industry.

"While we acknowledge the housing and other cost-of-living challenges faced by Australians, a significant reduction in immigration would be catastrophic for the aged-care sector if not managed carefully," Mr Hoppo said.

Aged & Community Care Providers Association general manager policy and advocacy Roald Versteeg said the sector needed to recruit 110,000 direct care workers by 2030, with migration forming a key pillar of how this could be achieved, adding that migration was an "important part of the workforce supply".

Business Council of Australia chief executive Bran Black said slashing migration could "compound our existing skill shortages and make it harder to do business ... I'm concerned about any proposal to further reduce temporary skilled migration, through a cut in Net Overseas Migration, due to the negative impact it may have on the economy," he said.

Opposition Treasury spokesman Angus Taylor refused to reveal the Coalition's plan for net migration beyond the 2025-26 financial year, saying the "right balance" needed to be struck to ease the housing crisis after international student numbers soared.

Mr Taylor said the "absolute collapse" of productivity under Labor was to blame for the skills shortage, declaring the government had "lost control" on migration.

Greens leader Adam Bandt accused both Labor and the Coalition of engaging in a "migrant-bashing race to the bottom" while refusing to clarify his party's stance on migration.

He told Sky News it wasn't migrants who were to blame but investors with a "big fat cheque in their pocket from Anthony Albanese".



NCA NEWSWIRE / GARY RAMAGE

Clkockwise from main: Hollie Hughes; Alex Hawke; Jess Collins; and Andrew Bragg







Hawke's time is 'over' as Libs clean up state slate

ALEXI DEMETRIADI
NSW POLITICAL REPORTER

Liberal centre-right powerbroker Alex Hawke's influence is not waning "but terminal", a party insider has claimed as the conservative-aligned Jess Collins dumped senator Hollie Hughes from a winnable spot on the party's Senate ticket.

The result, which saw moderate senator Andrew Bragg take top spot and the conservative-backed Ms Collins claim the second, dealt a blow to Scott Morrison ally Mr Hawke and his centre-right faction.

The party's once division-riddled right faction was "over the moon", said one source, and appeared to have got its house in order. "Hawke's influence isn't waning, mate – it's gone," one senior Liberal source from the right said. "It's terminal."

Ms Collins, a research fellow at the Lowy Institute, is aligned with the state party's conservative wing and had previously run unsuccessfully to fill the casual vacancy created by the retirement of Marise Payne, which went to Dave Sharma, and in the North Sydney preselection, which went to Gisele Kapterian.

Senior centre-right sources, however, said while they were "disappointed" with the result, they didn't accept any doomsaying about the influence and strength of the faction. "You lose one preselection and people start saying (the faction is finished)," one senior insider said. "You win some, you lose some."

A senior moderate, however, called it a "terrible result" for former immigration minister Mr Hawke and the centre right: "It has shown the decline of the faction in a post-Morrison world."

That source, speaking on the condition of anonymity, said Senator Hughes had "defied expectations" to grab the No. 1 spot at the previous preselection when the faction was at its peak during Mr Morrison's leadership.

"It's a different dynamic now; the right have got their act together and unified," they said.

"They coalesced behind Collins ... the few that went to Lincoln Parker (the fourth candidate standing) also almost entirely flowed through to her."

Senator Hughes was recently appointed as the Coalition's assistant National Disability Insurance Scheme spokeswoman.

Multiple sources, from different factions, said the vote was not just on Senator Hughes but on her faction's powerbroker. "It was a bit about sending a message to Hawke," one party source said.

"Holly is seen as a factional foot soldier."

The Australian revealed last week how former prime minister John Howard urged leaders to take a lead in stamping out factionalism from within the party, calling it an "absolute curse".

"A lot (of us) echo Howard's concerns about the factions," one source said. "(The vote) was a message to stop playing games."

Another, from the centre-right, admitted it wasn't entirely unexpected. "I think we've seen the collapse of the soft right with Mr Morrison's downfall," they said. "A few members I talked to wanted to punish Holly for the sins of the faction. They voted in that way to send a message."

Other senior centre-right sources said its defeat "wasn't a smashing" and if some members had turned up as promised, "it's a different story".

"It wasn't like a 50-vote smashing, it was a pretty fine result," they said. "We're not saying 'the end is nigh', we're a large faction in a three-faction system."

Senator Bragg won 196 votes in the first round of voting in the party's preferential system, followed by Ms Collins on 146, Senator Hughes on 145, and Mr Parker on 51. Ms Collins won the third round of voting against Senator Hughes, 191 to 167.

Labor's green tax breaks on hold

GREG BROWN

Labor will delay introducing legislation to provide tax breaks for hydrogen and critical minerals producers until the second half of the year, as senior government figures negotiate with industry and the crossbench over the final outcome of the $13.7bn package.

A government source said the Future Made in Australia Act – providing a framework for commonwealth investment – would be introduced to parliament ahead of the July winter break.

But this would not include tax production credits for hydrogen producers and critical minerals processing, with a parliamentary debate on the issue later this year.

Despite Anthony Albanese talking up Future Made in Australia as a central plank of his policy agenda, there will be no legislation introduced on the issue in parliament this week.

With the Coalition opposed to the production tax credits – the centrepiece of the Made in Australia program – Labor needs the support of the Greens and the crossbench for the legislation to pass the Senate.

Greens leader Adam Bandt said he would push for an end to new coal and gas development as part of his negotiations. He also flagged a push for a domestic hydrogen reservation scheme and a requirement for some public ownership in the sectors.

"Government and public ownership of these critical industries in the future is going to be very important to avoid making the same mistakes that Labor has made with gas where they allow the big corporations to do whatever they like and all of a sudden, it creates a series of problems," Mr Bandt said.

"The second issue is this: it's becoming apparent that Labor's Future Made in Australia is a future for coal and gas past 2050. Now, you can't have your foot on the accelerator and the brake at the same time."

Opposition Treasury spokesman Angus Taylor said wealthy business people such as Andrew Forrest should not receive tax credits for producing hydrogen.

"It is the equivalent of going to every cafe owner in Australia and saying the government is going to give you a buck every time you produce a coffee," he told Sky News.

In the first sitting week since the May 14 budget, Jim Chalmers and the Prime Minister will focus on cost-of-living relief through the budget that has provided tax cuts to workers and electricity rebates to households.

The Coalition, meanwhile, will try to keep the focus on Labor's immigration bungles and Mr Albanese's failure to unequivocally back Israel.

While the House of Representatives will spend the next fortnight debating in the chamber, upper house MPs will probe bureaucrats in Senate estimates.

During hearings this week, Home Affairs secretary Stephanie Foster will face a grilling over the handling of the NZYQ case and its implications.

Over the fortnight of estimates, bureaucrats are expected to be grilled on the inflationary impact of the budget, anti-Semitism in universities, Australia's position on the Gaza conflict and the handling of the China relationship.

The Coalition is also expected to probe the $450m investment in US-based company PsiQuantum.

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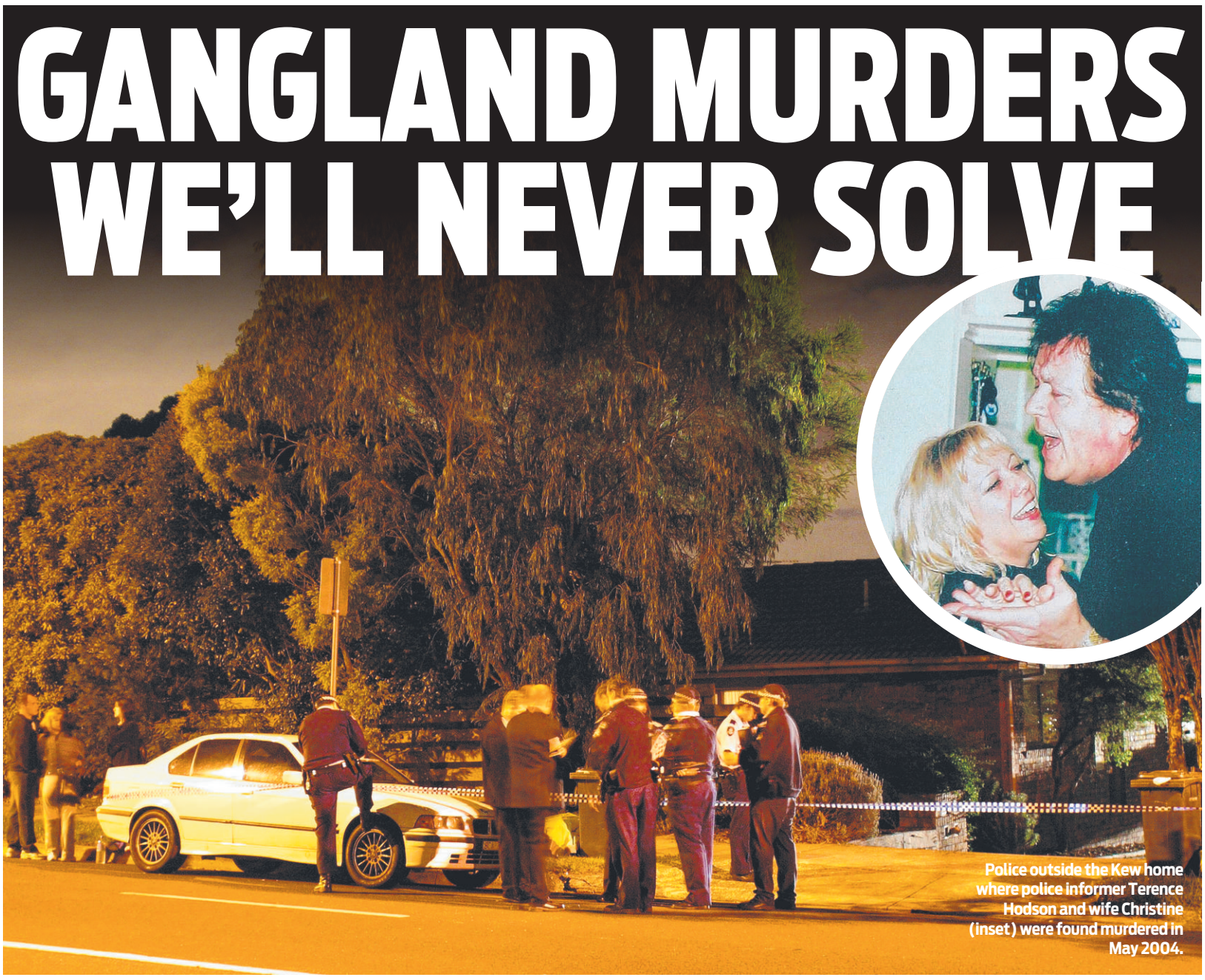
GANGLAND MURDERS WE'LL NEVER SOLVE



Police outside the Kew home where police informer Terence Hodson and wife Christine (inset) were found murdered in May 2004.

Hodson case to forever 'sit in a box'

EXCLUSIVE
Mark Buttler

The lead detective in the murders of police informer Terry Hodson and his wife Christine says there is no chance of the killing ever being solved.

It is 20 years this month since the Hodsons were shot execution-style at their Harp Rd, Kew, home in a crime that still reverberates today.

Former homicide squad senior sergeant Charlie Bezzina said any prospect of justice being done for the events of May 16, 2004, was long gone.

Mr Bezzina said high-level police meddling, the secrecy of his superiors, the silence of those in the know and the deaths of key suspects meant there could never be a result.

The inquiry was difficult and complex from the start.

Hodson was facing charges over the 2003 burglary of a drug house at Oakleigh East he carried out with drug squad detective Dave Miechel.

He had agreed to testify that Miechel's colleague Paul Dale was involved.

Hodson's previous co-operation with police had become common knowledge in the underworld after the leaking of sensitive intelligence reports outlining his assistance.

"It was scattered around like confetti," Mr Bezzina told the Herald Sun.

The former senior sergeant recalled interviewing high-profile figures in the aftermath of the murders, among them drug kingpin Tony Mokbel who, Mr Bezzina said, was linked to a fax machine used to distribute reports that exposed Hodson's informing.

Mr Bezzina said Mokbel gave the appearance of being "nonplussed" when the evidence was put to him.

Mokbel has always declined to talk about what he knows of the events at Kew. Police suspect he ran the Oakleigh East drug house where $8.5m in ecstasy was found.

Miechel was ultimately jailed and Hodson murdered before he could be prosecuted.

Mr Dale was charged over the drug house burglary but the case was withdrawn after Hodson's death. He was later charged with murdering the Hodsons but the case was abandoned when drug boss Carl Williams – the star witness – was bludgeoned to death inside Barwon Prison in 2010.

Mr Bezzina also interviewed lawyer Nicola Gobbo, who had been co-operating with police.



Charlie Bezzina

He said she was "s--ting herself", concerned about her work with law enforcement being exposed, though this crucial detail had been kept from Mr Bezzina at the time.

"There was no hope of us solving it," he said.

Ms Gobbo was of interest to investigators to the point that the Petra task force, which examined the Hodson killings, put together a profile on her.

"It is believed that Gobbo may have knowledge of intimate details of the planning of the murders of Terence and Christine Hodson," was its stated reason for her being under scrutiny.

The leaking of the information reports on Hodson after he agreed to testify over the Oakleigh burglary was a challenging element of an already difficult gangland probe.

"That's why our suspect pool was so large," Mr Bezzina said.

He said two men he was certain were principal players in the crime were dead. He said there was no doubt feared gunman Rodney Charles Collins was the triggerman and that Williams had arranged the hit.

Collins died in jail from natural causes in 2018 and Williams was bludgeoned to death by prison heavy Matthew Johnson in 2010.

The Hodsons' daughter Mandy said the case was once solvable but now it would always sit in a box.

Ms Hodson said her father would have turned 77 on Saturday. She said on each anniversary of her parents' deaths, she would play them songs and have a cry.

"Sometimes it seems like an eternity ago and sometimes it seems like yesterday," she said.

V1 - MHSE01Z01MA

Musk to run major AI project

WASHINGTON: Billionaire tech mogul Elon Musk has told investors that he plans to build a supercomputer dubbed "giga-factory of compute" to support the development of his artificial intelligence start-up xAI, reports say.

Mr Musk wants the supercomputer – which will string together 100,000 Nvidia chips – operational by mid-late 2025, and "will hold himself personally responsible for delivering it on time", industry news outlet The Information said on Saturday.



Elon Musk

The planned supercomputer would be "at least four times the size of the biggest GPU clusters that exist today", such as those used by Meta to train its AI models, Mr Musk was quoted as saying.

Since OpenAI's generative AI tool ChatGPT exploded on the scene in 2022, the technology has been an area of fierce competition between tech giants Microsoft and Google, as well as Meta and start-ups such as Anthropic and Stability AI.

xAI is developing a chatbot named Grok, which can access social media platform X, also owned by Mr Musk, in real time.

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Half Light are Rennie Pearson and Bob McNeill, coming to Valencia Creek Hall in a couple of weeks. Photo: Contributed

Half Light visits Valencia

VIRTUOSO wooden flute and Irish tin whistle player Rennie Pearson, and multi-award winning guitarist and songwriter Bob McNeill, are touring Victoria and New South Wales this winter as Half Light.

Their music is a journey from toe tapping jigs and reels to mysterious, mystical slow airs and finely crafted songs.

Half Light are coming to Valencia Creek Hall to perform a concert on Thursday, June 13, at 7.30pm.

Both Rennie and Bob are luminaries in the folk music scene of New Zealand and Australia, boasting extensive touring experience as solo artists and group members. They are revered experts in their craft, having shared their knowledge and talents at NZ's Irish music school 'Ceol Aneas' and numerous festivals and workshops.

Bob's intricate and evocative songwriting and Rennie's mastery of wooden flutes, Irish tin whistles, and other instruments promise an evening of intricately crafted and diverse folk music that will resonate with audiences of all ages.

Half Light's magic lies in their ability to take these folk melodies and songs, both old and new, and weave them into fresh and exciting arrangements. Drawing inspiration from a rich tapestry of musical styles, they transport listeners to faraway lands with one melody and have them tapping their toes and clapping their hands with the next.

Tickets are $25.

Make a booking by calling 0439 454 428 or on Rennie Pearson's website: renniepearsonmusic.com

Wedge Roaring Twenties



Garage Girls perform at The Wedge this Friday. Photo: Contributed

IMAGINE... 1920s Melbourne-the advent of the motorcar! Society reels from the aftermath of war and a second wave of Spanish flu wreaks havoc on the streets. Theatres buzz with vaudeville hacks and men with an eye for enterprise seize every opportunity to weasel wealth.

Meanwhile, one small woman defies convention and makes her mark. Inspired by actual events and with a healthy dose of magic realism, breathtaking sound design and many colourful characters, played by five actors - *Garage Girls* is a rollicking ride celebrating a Victorian icon.

Check out Garage Girls at The Wedge this Friday (May 31), from 12pm and 8pm.

Visit The Wedge website for more.

Dr Todd returns home for book tour



The Todd family of Wayne, Jeremy, Claudia, Anthea, Harrison, Morgan and Angela during Dr Anthea's book tour. Photo: Contributed

IN a heartfelt homecoming, Sale local, best selling author and women's health advocate, Dr Anthea Todd returned home recently for a special book tour.

Her debut book, *What's My Body Telling Me*?, has been making waves for its empowering message that encourages women to see their bodies not as problems, but as solutions.

Dr Todd's visit included a stop at her alma mater, Gippsland Grammar, where she was warmly received by patients and faculty alike.

The highlight of her visit was a reunion with her past patients, being back at her old school with all of her siblings and parents and her reunion with Julie Ripon, her Year 12 Chemistry teacher.

Dr Todd fondly recalls how Mrs Ripon's unique teaching style profoundly impacted her, not just in understanding chemistry but in learning how to think critically and independently.

"Mrs Ripon didn't just teach us the subject matter; she taught us how to think, how to question, and how to explore," Dr Todd reminisced.

"Her influence has been a cornerstone in my career and my approach to healthcare and writing."

The book tour was more than just a nostalgic trip down memory lane; it was a celebration of community and connection.

Dr Todd's visit to Sale was a heartfelt reunion with past patients, friends, and familiar faces. The warmth and support from the community was palpable, as many gathered to hear her speak about the book that has resonated with so many women across the country.

What's My Body Telling Me? delves into the intricate ways women's bodies communicate their needs and stresses. Dr Todd's holistic approach encourages readers to listen to their bodies and understand that symptoms are often signals of deeper issues. Her message is clear: our bodies are not the problem; they are the solution.

One of the standout moments of the tour was a book signing event at Collins Booksellers in Sale, where Dr Todd was featured alongside Natasha from the Sale bookstore.

"Seeing my book on the shelves of a store that I used to spend so much time wandering the isles of was surreal,," Dr Todd said.

Natasha from Collins Booksellers expressed her excitement about hosting Dr Todd.

"Having Dr. Todd here is a tremendous honor. Her book is not just informative but transformative for many women. We are thrilled to see such a positive response from our local community," she said.

Dr Todd said it was a great buzz to be back home where it all started.

"It's wonderful to be back in Sale, to see so many familiar faces, and to share this journey with the people who have been such a big part of my life," she said.

"I hope my book continues to inspire women to listen to their bodies and embrace the solutions within."

For those who missed the event, What's My Body Telling Me? is available at Collins Booksellers in Sale, and Dr Todd's insights can be followed on her social media platforms.

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Dr Greg Steele



Dr Reeha Nandha

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5148 3450

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Faith For Today

Seventh-day Adventist

Situated at 455 Princes Highway, Lucknow, our multi purposed facility provides a service to those in need in the community. The ADRA Food Relief program operates from 8-12pm each Monday, with our ADRA Furniture shop and Gems & Jams Opportunity shop operating from Mondays to Fridays. Join us on Monday mornings for a free snack and cuppa at the Smile Awhile Cafe.

Our community worship services are held each Saturday (Sabbath) morning, starting at 10-11am with Bible study for all age groups. Our main family worship service starts at 11.15am. Mid week prayer and Bible study groups are available.

For more information contact Pastor Rian van Deventer (0436 105 124), https://bairnsdale.adventist.org.au/

Anglican Parish of Lakes Entrance and Metung

We seek to be a loving, caring, listening Christian community joyfully serving Jesus Christ in the world and making Him known.

Warm welcome to all to come and worship with us.

Lakes Entrance every Sunday at 10.30am Holy Communion at St Nicholas' Church at 11 Church Street, Lakes Entrance (opposite Woolworths). Cuppa and fellowship after the service.

Metung at historic St John's Church, Stirling Road, Metung worship every Sunday at 8.45am Holy Communion. Cuppa and fellowship after the service. Please join us for breakfast on fourth Sundays.

St Brendan's Catholic Parish Lakes Entrance

Weekend Mass Times:

Saturday: 9:30am on 1st, 2nd, 4th and 5th week.

Sunday: 9:00am.

Weekday Mass Times:

Tuesday and Friday: 9:30am

St Joseph's Swan Reach

Saturday Vigil: 5:00pm on the 1st, 3rd and 5th week.

Nursing Homes

Opal 11am on the first Thursday of the month.

Calvary Kalimna 11am on the first Friday of the month.

Baptist Church

At Lakes Entrance Baptist Church, we're committed to building lasting community.

We are a family who follow Jesus, serve our neighbours, seek to be a voice of hope and known by love.

You're very welcome at 10am Sunday mornings - there's something for all the family at 141 Princes Highway.

Net-Work Bible Study Groups on various days, Prayer Fellowship, Messy Church.

Blokes On Bikes/Women Walking - 9.15am Wednesdays.

Tiny Turtles Playgroup – 10 - 11.30am Thursdays/Fridays.

For information 0427 731 331.

Lakes Entrance Uniting Church

We extend a warm welcome to our service of worship which will be held each Sunday at 10a.m. at the Uniting Church, 181 Esplanade, Lakes Entrance. Worship is a blend of contemporary and traditional style.

Morning tea and a time of fellowship follow the service.

We seek to connect with God and our community through practical and meaningful ways.

One of these is the on-site Op Shop open 10am -2pm weekdays and 10am-1pm Saturday.

Lakes Community Church

Come and experience the love and grace of God. We are a contemporary worshipping church and love to celebrate the goodness of God and to share the good news of Jesus Christ, who remains relevant for every generation.

Jesus said: "I came so you might have and enjoy life and have it in abundance - to the full - til it over- flows" (John 10:10b).

Sunday meetings: 10.30am on Palmers Road (up past the Aquadome). Enquiries - 5155 3277.



Open Mic at the Slipway was held recently in Lakes Entrance with a supportive group of musicians and audience members enjoying and encouraging the performers. Musician Olivia Lay (third from left) organised the event and was pleased with the turn out. "We will hold our next Open Mic in the shed at Slipway on Friday, June 14, all welcome as either a performer or to enjoy the talent on show," she said.



Christine Waterson from Metung opened the evening with some original songs and covers.



Nick Evangelou and Ashley Carmody were enjoying the evening.



Sandy and Tony performed on the evening.

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SALTY GROMS CAFE LAKES ENTRANCE

STAY SALTY

Come vibe with us

575 ESPLANADE, LAKES ENTRANCE

- OPEN: 5:30AM - 2PM DAILY
- P: 5155 1411

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EN16808



Awardees Liz Hansen and John Hanson, chief executive officer Ernie Metcalf, and awardees Grace Jobling, Christopher Dean and Kaye Thurbon.

Honouring local disability work

Distinctive Options recently reviewed and considered the best ways to acknowledge extraordinary work and/or contributions to the organisation, now and moving forward.

Unlike Noweyung Ltd, which had the scope and facility within its constitution to award life memberships in recognition of outstanding service, this is not within Distinctive Options' constitution.

The board of Distinctive Options, following its review, approved a new criteria to be able to honour outstanding service and/or contributions via a new lifetime fellowship awards.

The first recipients for this award due to their outstanding contributions were made to the six living life members of Noweyung.

The lifetime fellowship award ensures an important, ongoing link, between Noweyung and Distinctive Options post the recent merger/acquisition.

At an award ceremony on May 21 in Bairnsdale, Distinctive Options' chief executive officer, Ernie Metcalf, met with five of the proud lifetime fellowship awardees who all live in East Gippsland.

Lifetime fellowship awardees all commented how humble and delighted they are to be recognised by Distinctive Options for their long and ongoing contributions to the disability sector.

The CEO advised the sixth recipient, Tony Graham who lives in Port Melbourne, will be presented separately with his award.

Echo Bend gearing up for winter festival

Don't want to travel too far for a few days away? Head out to Echo Bend Camping Park for the King's Birthday break.

Coinciding with the East Gippsland Winter Festival, Julie will be once again allowing people to join in some fun on Saturday, June 8, and make some lovely lanterns to decorate your camp site or the grounds ready for winter.

This unique caravan/camping park is a hidden gem.

There are powered and unpowered sites for tents, roof tops, camper vans and caravans.

There are also clean amenities with hot showers.

You can find a secluded spot, observe the wildlife or bring a group and enjoy telling stories around a camp fire while cooking marshmallows, a nice way to relax for a few days away from the house, business or farm.

You may even be lucky to spot some friendly wallabies in the nearby bush.

To get a bit of exercise you can venture on a small trail from the camp ground to the National Park, visit the Den of Nargun.

The camping park adjoins the Mitchell River National Park, just 45 minutes from Bairnsdale on the Linde-now-Dargo Road.



Echo Bend Camping Park will once again be holding lantern making workshops over the King's Birthday break, coinciding with the East Gippsland Winter Festival. (PS)

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1/493 Main St, Bairnsdale
bairnsdalehorsecentre.com.au
Bairnsdale Horse Centre
bairnsdalehorsecentre

Bairnsdale HORSE CENTRE

EN16184

Situations Vacant

Request for Tenders / Expression of Interest - School Cleaning Contract

Submissions are invited in accordance with the tender / EOI documents for the cleaning contract of Moe (Elizabeth St) Primary School.

Cleaners are required to attend a site inspection to be conducted at 4pm on Wednesday 19th June. Contract documents will be available at that time. Register attendance on 03 5127 2607 or email moe.ps@education.vic.gov.au

All applicants must have Department approved cleaning panel status to clean any Victorian government school.

Only short-listed applicants will be contacted.

CLOSING: Friday, 14th June 2024.

Use the Latrobe Valley Express to turn your clutter into cash!!

Cash in Hand!

It's easy, just call 5135 4455 and put an ad in the paper today!

Monthly Support Group East Gippsland

Jesuit Social Services
Building a Just Society

Support After Suicide
www.supportaftersuicide.org.au

For those who have lost a loved one to suicide

This is a support group providing a safe space to connect with others bereaved by suicide who understand and care.

Meets first Tuesday of each month

At The Star Hotel, in The Sails Function Room. Private entry via the car park at the rear of the hotel 7pm - 9pm

Next meeting: 4 June

For more information contact
Chris Hobbs 0424 258 466 or
David Hobbs 0427 235 470

ALL WELCOME

Situations Vacant

VALLEY EARTHMOVING

EXPERIENCED TRUCK DRIVER

Currently we have a full time permanent position available for an experienced Truck Driver.

- HC driver's licence required
- Tipping experience preferred
- Clean driving record
- Reliable, punctual and self motivated
- Plantation forestry work environment in a Sustainable Industry

Please send resume to:
valleyearthmoving@valleygroup.com.au

Situations Vacant

MONASH University

Lecturer (Pharmacology) Monash Rural Health

Monash Rural Health Churchill is seeking to appoint a Lecturer to coordinate and deliver pharmacology education within the graduate entry medical program. You will contribute to program administration and research, develop teaching materials and play a key role in unit assessment. If you have a suitable tertiary qualification, relevant experience and a strong teaching record, you are encouraged to apply.

This is a part-time position (0.9 FTE) on a continuing appointment.

At Monash University, we are committed to being a Child Safe organisation. This position will require the incumbent to hold a valid Working with Children Check.

Your application must address the selection criteria. For further information, Position Description and to apply, please visit:

www.monash.edu/jobs
Search Job No.: 665042

Enquiries: Associate Professor Marianne Tare +61 3 9902 7485

Closing date: Monday, 3 June 2024, 11.55pm AEDT.

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Situations Vacant

BendigoTAFE KANGAN INSTITUTE

Seeking Teachers at Fulham Correctional Centre!

Kangan Institute is seeking:

A Literacy Teacher to teach Indigenous students

Teachers for Trade and Cleaning courses

to join its Corrections Education Team at Fulham Correctional Centre.

You must have:

- TAE40110 (including TAEASS501 and TAELLN411) or TAE40116
- Excellent communication skills.
- Problem solving skills.
- Able to work in a team and autonomously.
- Competent in Windows software applications.

If you're interested (or have any queries); send your resume to Kerry Henry - khenry@kangan.edu.au - subject 'Teaching Position – Fulham Correctional Centre'.

NOTE: BKI reserves the right to withdraw this advertised position at any stage.

R40597 GP1670680

St Paul's ANGLICAN GRAMMAR SCHOOL

Apply Now!

St Paul's Anglican Grammar School is seeking applications for the following position:

Classroom Music Teacher
Traralgon Junior School
Part-time, ongoing

See full position description and apply at **stpaulsags.vic.edu.au**

GP1671003

Careers at Latrobe

Latrobe City Council has exciting opportunities for enthusiastic and forward-thinking individuals with a passion for providing excellent services to our community.

- **Team Leader Drainage & Signs** – Permanent Full Time
- **Senior Roads Engineer** – Permanent Full Time
- **Team Leader Urban Maintenance - West** – Permanent Full Time
- **Senior Statutory Planner** – Permanent Full Time
- **Senior Project Engineer - Capital Works** – Permanent Full Time
- **Aboriginal Community Liaison Officer** – Permanent Full Time or Part Time
- **School Holiday Program Facilitator** – Temporary Part Time
- **Additional Assistant Educator - Early Childhood Educator** – Fixed Term Part Time
- **Experienced Maintenance Employee - Tree Maintenance** – Permanent Full Time
- **Fitness Instructors** – Casual
- **Childcare and Preschool Educators - Cert 3 and Diploma** – Casual Positions
- **Maternal and Child Health Nurse** – Casual
- **Learn to Swim Instructor** – Casual Positions

For further information including how to apply, position descriptions and application closing dates, please visit our website www.latrobe.vic.gov.au/careers

Please note successful applicants will be required to apply for and satisfactorily obtain a National Police Check and Working with Children Check.

SCAN ME

www.latrobe.vic.gov.au/careers

LatrobeCity a new energy

GP1671020

Situations Vacant

DELIVERERS WTD

Would you like to deliver the Latrobe Valley Express newspaper to individual homes on Tuesday and/or Wednesday afternoons in Morwell, Traralgon, Moe, Newborough and Churchill? Please apply to the Circulation Manager 0456 000 541.

Please note: Children must be 11 years or over as we will need to apply for a government Child Employment Permit. Children younger than 11 cannot or will not be accepted. Adult deliverers also welcome.

ADVERTISERS PLEASE NOTE:

Much hardship and difficulty is caused to job seekers by misleading advertising placed in the employment columns. Our **Situations Vacant** columns are reserved for advertisements which carry a specific and genuine offer of employment. Ads for `Business Opportunities' and `Training Courses' and `Employment Services' should be submitted under those headings.

Placing misleading ads is an offence against the Trades Practices Act and state/territory fair trading acts and all advertisements are subject to the publisher's approval. For further advice, contact the Australian Competition and Consumer Commission on 1300 302 502 or your state consumer affairs agency.

ARE YOU LOOKING FOR HAY OR FIREWOOD

Check out the **"FOR SALE"** listings in the **Classifieds**



Latrobe Valley Express
5135 4455

Does your current marketing reach all your media potential?

Advertise your car, caravan, boat or motorcycle to reach MORE people.
More than 9 out of 10 people read The Express

LATROBE VALLEY EXPRESS CLASSIFIEDS
5135 4455

LATROBE VALLEY Express We've got news for you



Gavin Joiner speaking to Orbost History Walk participants outside the Butter Factory. Twenty-one people took part in the walk held on Monday, May 20, which was organised by the Orbost and District Historical Society.

Stepping through time on history walk

Looking at Orbost History while taking a gentle stroll on a cold day seems like a good way to spend an hour.

Add a good cuppa at the end and a chat with friends at a local café and that's even better.

Twenty-one people, a combination of newer residents and people who have lived in the region for many years, joined in the Orbost and District Historical Society's Orbost History Walk on Monday, May 20.

Organiser, Lynn Craig, herself a newbie to Orbost, said how much she enjoyed being involved.

"I've learned a lot about Orbost as a result," she said.

"I was thrilled to meet people who enjoy living here and want to know a bit more about Orbost's history.

"For instance, we stood outside the disused Mechanics Hall in Browning Street which has witnessed many of the major events in Orbost over the past 100+ years and I thought 'If only these walls could speak'. Imagine the din and excitement of roller-skating, of concerts and balls, parties, political meetings, flower shows, and silent and talking pictures. In fact, roller-skating was so popular here that it wore out the floor!

"I also realised that guest houses most definitely have a lot of stories to tell. Before the days of motels, hotels and guest houses provided accommodation for anyone coming to Orbost. We saw two of these on our History Walk - Orbost House in McLeod Street, and Orotava House in Clarke Street.

"As well, we walked past nurse Caroline Jensen's home in Clarke Street. Ms Jensen was a 'ladies nurse' and used her home as a place where babies were born and where anyone in need of medical and nursing care could stay. This was in the days before Orbost Hospital existed.

"Another building with a long and interesting history is the old butter factory in Forest Road. After the butter and cheese making era finished, it was used by local farmers as a bean-sorting shed.

"Special thanks go to Gavin Joiner who told us about the dried culinary bean industry in the Orbost district.

"One of the last sites that we passed in McLeod Street was where Orbost Motor Works used to be. This was right next door to the Club Hotel's stables. During World War II, Orbost Motor Works was a hive of activity (and probably 24 hour-a-day noise as well), because this was where sprockets for Brengun carriers were tooled with a lathe.

"And lastly, a thank you to all who came on our Orbost History Walk and I hope you enjoyed it as much as I did," Lynn said.

Esso™ ExxonMobil

Esso's oil and gas facilities in Bass Strait

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:

- Thursday, 30 May 2024 at Bellevue on the Lakes, Lakes Entrance

Please email us at consultation@exxonmobil.com

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* 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.

EN28274



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INVITATION

Gippsland Basin Decommissioning

Platform Decommissioning Workshop

Esso Australia is the operator of offshore facilities in Bass Strait which extract, process and store oil and gas, then transported onshore for further processing and distribution to customers. Esso's assets consist of 421 wells, 19 platforms, five subsea facilities and more than 800 kilometres of subsea pipeline.

After delivering energy to Australia for over 50 years, some of Esso's Bass Strait facilities are no longer producing oil and gas. As **planning for decommissioning** progresses, we are focused on safely shutting-down non-producing facilities and ensuring they stay safe throughout the entire decommissioning process. We are committed to identifying and actively engaging with communities to find solutions that balance environmental impacts and benefits with the needs of the community and within the regulatory requirements.

Esso Australia would like to invite you to attend a stakeholder forum to discuss platform removal as part of our decommissioning activities in Bass Strait.

Forum attendees will hear more about decommissioning activities for the platforms and can discuss how these activities may impact their functions, interests, and activities.

Date: Wednesday 19 June 2024

Time: 2pm – 5pm

Venue: Welshpool Golf Club
95 Port Welshpool Road, Port Welshpool

Please register your interest at consultation@exxonmobil.com.

During our planning for platform removal as part of our decommissioning in Bass Strait, it has been identified you may be **a relevant person based on your functions, interests and activities** and may wish to be consulted about these platform removal decommissioning activities.

The purpose of consultation is to help you make an informed assessment of the possible consequences of decommissioning activities on your functions, interests and activities and to advise us of any potential impacts or risks that may affect you. Your involvement will help to inform the identification of the impacts and risks and to consider what mitigations may be required to address these risks. You can find more information on our Decommissioning activities on **our website**. We're continuing consultation on our Decommissioning activities in the Bass Strait, you can view the latest **Information Bulletin here**.

If you'd like to know more, please use the link to **Esso's Consultation Hub** or use the QR Code below to easily access information about our activities.

To help us better understand what activities you're interested in, how you want to be consulted, and any questions or feedback you may have, please complete our '**Esso Consultation Questionnaire**'.

If you'd like to discuss further, please contact the Consultation Team at **consultation@exxonmobil.com** or via phone on 03 9261 0000.

A summary of forum discussions will be provided to participants. Outputs from the forums will be used by Esso to inform the environment plan submitted to the regulator for consideration as part of the regulatory approval process.



↑ Cover: Perch platform

→ Fishing vessels at Lakes Entrance

Acknowledgement of Traditional Custodians



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.

ExxonMobil

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

Slow down, pay attention on roads

Police in East Gippsland and Wellington shires are encouraging drivers to slow down and pay attention, after recent collision data showed a 66 per cent increase compared to the same time last year.

Superintendent Mark Edwards said speeding and the use of mobile phones while driving were two significant factors playing a role in the collision jump.

"We're seeing some concerning behaviours around driver behaviour, particularly around some of the rural back roads, speeding," Supt. Edwards said.

"We're certainly keeping an eye on speed, because speed is factoring into a lot of our collision data, particularly on these rural back roads.

"The age demographic of people that are being killed (on the roads) generally sits in the male drivers under 25 but at the moment with the fatal collision data, it's older drivers that are featuring more in our data, so the 50s to 70s.

"Drivers around East Gippsland and Wellington will notice there have been speed reductions in certain areas where we believe that the speed zones are set too high for the type of roads that they are.

"We've done a bit of work in reducing those speed zones, but we've also doing a fair bit of work in policing those speed zones as well because we know from our collision data people are still driving too fast on regional back roads."

Supt. Edwards said the majority of those being caught using their phone are younger drivers.

"We've got issues around people who are on their devices, we've already had one fatal collision this year where a person on a mobile phone has struck and killed a cyclist," he said.

"Your license can disappear pretty quick if you choose to be on your phone, and our data tells us that people who are on their devices and being distracted are featuring in the collision data, in our serious injury data and the fatal collisions data.

"It's not just about the money and the demerit points, it's actually about your life, so stay off it."



Superintendent Mark Edwards has urged road users to take care, after recent collision data showed a 66 per cent increase compared to the same time last year in East Gippsland and Wellington shires.

It's not only driver inattention and speeding contributing to collisions, but the condition of the road itself.

"If you have a look around the region, roads in some areas have deteriorated with weather and traffic, so we're seeing some more broken up roads and potholes," Supt. Edwards said.

"Everybody has to be more vigilant, and a little bit more careful and reduce your speeds accordingly with the wet and icy conditions."

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



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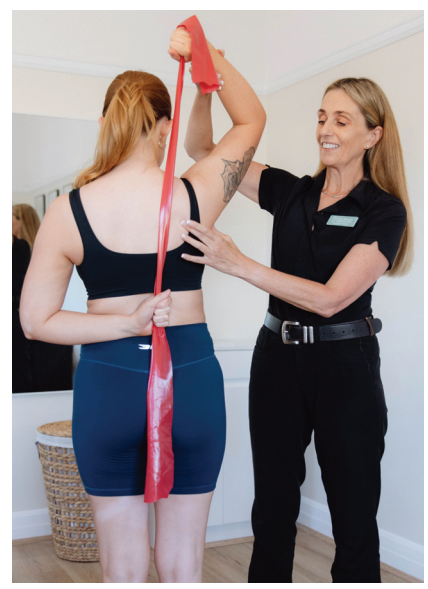
EN23927



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We treat:

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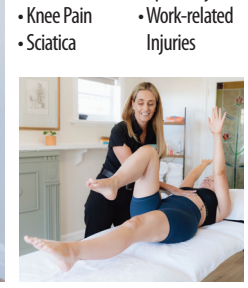

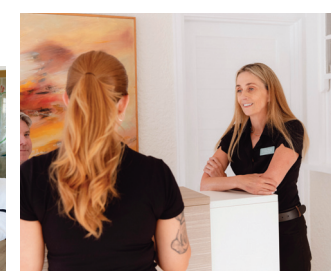

Twin Rivers Osteopathy
(03) 4135 2701 | (Mob) 0491 169 509 | 60 Ligar Street, Bairnsdale
admin@tr-osteo.com.au | www.tr-osteo.com.au

EN16041

Classifieds 5135 4455

classifieds@lvexpress.com.au

MONDAY TO FRIDAY 9AM-5PM

2015210

How to place your classified in our WEDNESDAY PUBLICATION

Phone:
ALL CLASSIFICATIONS BEFORE 3PM MONDAY

In person:
Latrobe Valley Express
21 George St, Morwell
Nextra Lotto Moe
1-3 Moore St, Moe

PLEASE NOTE: that ad payment is required prior to publication unless a full account is held with the Latrobe Valley Express.

Email:
classifieds@lvexpress.com.au

PLEASE NOTE: **Confirm** your email if you have not received a confirmation email from us, emails **ARE NOT ALWAYS RELIABLE** and we don't always receive them

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21 George Street, Morwell 3840

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Most Newsagents act as our agents and will accept your advertisements up until the same deadlines as above

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When placing your advertisement over the phone or via email you charge it to your Mastercard or Visa

EXPRESS CLASSIFIEDS
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For Sale

HAY
Approximately 200, small squares. Phone 0409 839 803.

Landscaping Mulch
Beautify your garden. Bulk quantity available, $30m3, $50 delivery. 0412 613 443 or 1800 468 733.

NEWSPRINT REEL ENDS
Price: $6 each or 2 for $11 (GST incl).
Available at the Latrobe Valley Express Office
21 George Street Morwell
Enquiries: 5135 4444

For Sale

MATTRESS, king single, Crown Posturepedic, Australian made, spotless, excellent condition $200. Phone 5633 2492.

BUDGET BLINDS
Lenny
0418 514 132

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Fathers' Day gift 4 Dad. Get dad a light up sign for his bar or mancave. 120 signs on display, made in Yallourn North. Call Ned on 0447 601 244.

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WANTED TO BUY
- Antiques and collectables
- Old furniture
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FREE QUOTE
Phone Johnny on
0412 525 340
Yarragon Vintage Barn

Garage Sales

MOE, 3 Mervyn Street, Saturday and Sunday, 9am-2pm. Men's workshop tools, fasteners, CDs, DVDs, fishing gear, bric-a-brac and lots more.

Advertise in the OUR PAPER if you want to reach more locals with your GARAGE SALE
NOT EVERYONE HAS FACEBOOK
We have an audience of OVER 76,000 you're guaranteed to reach MORE LOCALS
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Garage Sales

T'GON, 166 Shakespeare St, Saturday, 8am-4pm and Sunday, 8am-2pm. House for sale - so everything must go, come and make an offer!!

Accommodation

ROOM TO RENT
Moe, own toilet and bathroom, fully furnished, close to town and own carpark. Phone 0433 441 645.

Personals

MALE
70 year old, slim, widower, easy going seeking easy going lady, no strings. Ph 0451 776 821.

Latrobe Valley Express
We've got news for you
EXPRESS CLASSIFIEDS

Public Notices

Gippy Shuttle
Airport drop offs and pick ups. For bookings go to our website.
www.gippyshuttle.net.au

Public Notices



Help support our local Tradies while they service, build and repair in our local communities - check out our **Business Guide Pages** and **Home Maintenance Section** in the Classifieds every Wednesday, for your **local Tradies**

Latrobe Valley Express Partnership



HELLO BABY IN THE EXPRESS

The Latrobe Valley Express welcomes photos of your newest arrival.

Parents are welcome to email a copy of your newborn photos for publication to our editorial staff - **news@lvexpress.com.au** with the subject line 'baby photo'.

Please include the following details:
- Baby's first and middle name/s
- Baby's surname
- D.O.B.
- Mum's maiden name
- Mum and Dad's names
- Location of Hospital
- Hometown

Public Notices

GUITAR LESSONS
Gippsland Guitar School, all ages, 8-80, beginners to advanced, banjo and ukulele lessons also available. 0439 111 610.

Moe Self Storage
various sizes from $85 p.c.m. Contact Strzelecki Realty on 5127 1333.

Responsibility
PLEASE CHECK YOUR AD

Please check your ad on the **first day** and bring any errors to the attention of the Classifieds Department immediately.

The Latrobe Valley Express makes every effort to avoid errors. **We regret that we cannot be responsible** for any errors beyond the first day if you fail to bring it to our attention.

No allowances can be made for errors not materially affecting the effectiveness of the ad.

Position cannot will not be guaranteed.

All claims for adjustment of credit must be made within seven days after billing date.

We reserve the right to revise or restrict any ad we deem objectionable and to change the classification when necessary to conform to the policy of this newspaper.

In the event an ad is omitted from publication, we assume no liability for such omission.

Latrobe Valley Express

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Place a 6 line "For Sale" section classified ad with the goods to the **TOTAL VALUE OF $200 or LESS** and you receive the ad for **HALF PRICE!**

ONLY $14.25 - for one edition
This offer is for NON BUSINESS customers

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Keeping you in touch with the sales market

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Livestock

DAIRY SALE
Monday, 19th August 2024 at 11am
VLE Koonwarra Saleyards
88 Holstein & Holstein/Jersey x Cows & Heifers 88

A/C WATERSIDE OPERATIONS
50 - 2yo Holstein & Holstein / Jersey x Heifers. PTIC to Jersey bulls to commence calving 20th August for 6 weeks

A/C OAKDALE DAIRIES
30 - Freshly calved Holstein Cows & Heifers

A/C V YOUNGER
8 - Holstein Heifer. PTIC to Al Holstein, depastured with Jersey & Holstein Bulls, September calving

For further details contact:
Michael Robertson 0484 041 653
Phil Malcolm 0408 559 408
Tom Hanrahan 0437 718 055

Nutrien Livestock

Livestock

BULLS for Hire/Sale
Angus, Limousin, Jersey, Hereford and Friesian, very quiet. 0447 331 762.

MALTESE X Poodles, 4M, vet check, vacc. m/chip 95600001647564 / 04301/ 97693 / 05399. RB 211780, $1,000. Phone Kath on 0438 453 063.

Old Port Poultry Farm
Delivering 18 week old Isa Brown, laying hens to your area, **Sun.** 25 Aug. $30 each. Ph 0438 832 535.

MARKET DAYS

- Wednesday prime sales
- Monthly store sales
- Fortnightly lamb sales



At the Gippsland Regional Livestock Exchange SALE

Nutrien Ag Solutions GREENWOOD LIVESTOCK

CONTACT
Ben Greenwood 0429 193 136
Gordon Conners 0408 131 720
Bailey Anderson 0409 614 167

GP1672961

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Esso's oil and gas facilities in Bass Strait

Esso

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All artists

By JILLIAN MUNDY

TAS

FIRST Nations arts leader Tina Baum encourages more Aboriginal and Torres Strait Islander artists to enter Australia's richest landscape competition – the Hadley Art Prize.

It is awarded each August with a top prize of $100,000 and the winner's work going into the Hadley's Orient Hotel's permanent art collection in Nipaluna/Hobart.

Baum, a Gulumirrgin/Wardaman/Karajarri woman, and curator of Aboriginal and Torres Strait Islander Art at Australia's National Gallery was one of this year's judges.

"I would love to see more of our communities enter and really show what their connections to their Country means to them," she told the *Koori Mail*.

"We've got a lot of stories to tell whether it's about cultural connections or climate change, Sky Country, land, Country, water Country – it's all connected and we have a rich, rich connection.

"These notions of country are not devoid of the plants, the animals that are in there and the cultural layers that are in that landscape that are really important to many of the Aboriginal and Torres Strait Islander artists."

Continued next page



Tina Baum in the Hadley Art Award Exhibition beside the honourably mentioned work of Pitjantjatjara artist Iluwanti Ken. Tina encourages more First Nations artists to paint about their country and enter the lucrative annual Hadley Art Award.

NSW Aboriginal Woman of the Year 2025

Do you know the next NSW Aboriginal Woman of the Year?

A dedicated pillar of her community, the NSW Aboriginal Woman of the Year is a role model who promotes economic, cultural or social opportunities for Aboriginal people in NSW. If you have someone in mind, make sure you nominate her today.

Nominations now open

Open to all Aboriginal and Torres Strait Islander women.
Nominate now at **nsw.gov.au/wotya25** or scan the QR code.
Nominations close Sunday 15 September 2024.

NSW GOVERNMENT

LP2467

THUMBS UP / THUMBS DOWN

THUMBS UP: To the shire for considering the proposal of a footpath in Punt Road this will make it a lot safer for residents and rowers alike as all walk in the road at the moment.

THUMBS DOWN: To the able people who go to the pool and use the disability change rooms. There are only two, they make people with disabilities wait wet and cold, how rude. Also the people that use disability car parks without a disability permit, shame.

THUMBS DOWN: To the drunk people in the Nicholson Street Mall - kindness is free, why target innocent people? I hope you're seeking help for your problems.

THUMBS UP: To the staff at the Picnic Point Apple Farm who generously donate their product to the Salvation Army. God bless you all.

If submitting a Thumbs Up/Down

All items submitted for consideration for publication in Thumbs Up, Thumbs Down, must be signed and include the address and telephone number of the writer. (This information is not for publication but is required under the Newspaper Act.) Items should be limited to 30 words, and writers should note that due to the numbers received, only a selection can be published. No specific business names will be mentioned in Thumbs Up/Thumbs Down. **Write to 'Tom', c/- 'The News'**

Submit your thumbs up or thumbs down thumbs@eastvicmedia.com.au or online at www.bairnsdaleadvertiser.com.au



Grade five Toorloo Arm Primary School student Max Friend speaking to one of the many visitors. (PS)



Ollie Anderson answering questions from Andrea Kleehammer. (PS)

Be your hero

Grade five and six students at Toorloo Arm Primary School recently stepped into the shoes of a significant Australian and presented themselves to the wider school community.

They researched a person of interest, wrote a biography about them and then were able to get into character by dressing up as their significant Australian in an evening presentation. Students also had a diorama on display that depicted a significant event in Australia's history.

Principal at Toorloo Arm Primary Kerry said many parents, grandparents, carers and family members were impressed with the students' capacity to speak about the history and recall facts about the Australian Greats.



Emily Jackson as Edward Hargreaves, Arlia Beveridge as Steve Irwin and Gracie Lunny as Ash Barty. (PS)

Esso
ExxonMobil

Esso's oil and gas facilities 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.

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-ins
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
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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.

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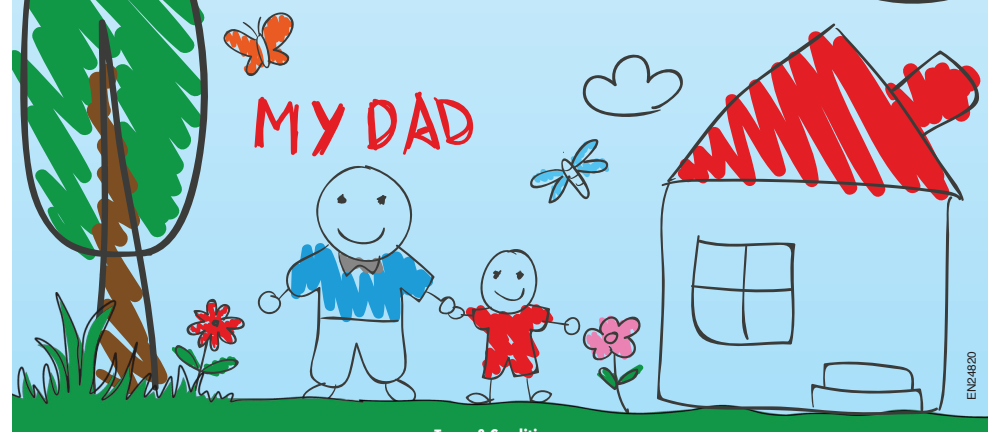
https://www.exxonmobil.com.au/community-engagement/local-outreach/consultation-hub

FATHER'S DAY COMPETITION

Draw a picture of you and your dad or grandad or write a poem and tell us why he is the best for your chance to win him a great prize.

To enter, send your entries alongside with your name, age, phone number, and the name of your father or grandfather to:

FATHER'S DAY COMPETITION
Email: salesadmin@jamesyeates.com.au or drop into our office at 65 Macleod St, Bairnsdale 3875
Entries Close 5pm Thursday, 22nd August 2024



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Terms & Conditions:
The winner will be contacted by phone and published in the Papers on the 28th August 2024. All entries published in our Fathers Day feature for 2024



A number of old Orbost Municipal Band uniforms have been found while renovation works at the Orbost Customer Service Centre/Library were taking place.



Flags were also found with the uniforms - it's believed the items date back to the late 1970s, when it's understood the band wound up.

Band items discovered

While doing some renovations at the Orbost Customer Service Centre/Library, East Gippsland Shire Council staff have found some boxes of old Orbost Municipal Band uniforms and flags which date back to the late 1970s (when it's understood the band wound up).

The Orbost Historical Society has taken a uniform for its collection, however there a quite a few other uniforms (of varying quality) remaining.

The council service centre team is offering the remaining uniforms to anyone who may have had a connection with the band or has an interest in local history.

If you would like a keepsake, see the friendly team at the Orbost Service Centre - first in best dressed.

The uniforms are of varying quality as they have been in storage a long time, but would be a great memory for the right person.

Any items remaining by the end of August will be recycled through council's textile recycling facility.

Esso ExxonMobil

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Newsflow
Your water and recycled water update
East Gippsland Water

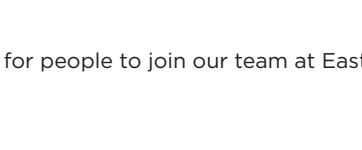
Have you provided us with your mobile number?

Do we have your mobile number on file? If not, then it's easy to do and then we can send you SMS notifications on planned and unplanned outages.

You can conveniently update your details by using our online forms on our website egwater.vic.gov.au and navigating to the Customer Info page or alternatively, you can contact the Customer Support Team on 1800 671 841.

Talking Water

Tune into our monthly podcast broadcasts on REG FM 90.7 & 105.5 FM, 3MGB 96.9 & 101.7 FM, 3HCR 90.9 & 97.3 FM as well as on our website.

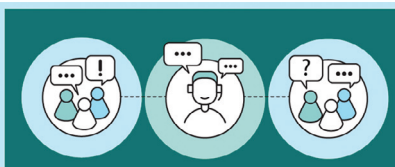


Great career opportunities

We have a number of fantastic positions available for people to join our team at East Gippsland Water.

- Governance Advisor
- Project Management Officer
- Coordinator Environment & Water Quality
- Operations & Maintenance Team Member (Mitchell Depot, Bairnsdale)

If you are looking for your next career move and are interested in any of the positions listed above, or would just like to submit an expression of interest, visit the careers page on our website at egwater.vic.gov.au to find out more and to apply.



Customer Connect

Where: Orbost Office, 6 Clarke Street
When: Thursday, 15 August 2024
Time: 9am to 4pm

Drop in and chat to a Customer Support Team member face-to-face about your bill, flexible payment options, financial hardship or for any general enquiry you may have.

Stream flows, August 2024

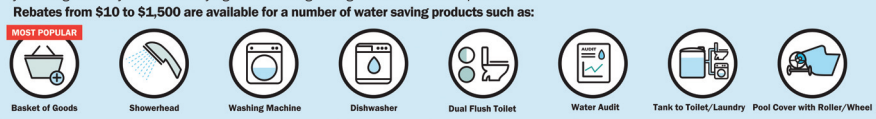
Stream flow information as of 9 August 2023	Current stream flow (million litres/day)	5 year average stream flow (million litres/day)	Rating of current flow	Current flow as a percentage of 5 year average
Bemm River	578.5	470.2	Average	123%
Betka River - Mallacoota	36.8	38.2	Average	96%
Brodribb River – Orbost, Marlo, Newmerella	394.3	346.8	Average	114%
Buchan River - Buchan	290.9	321.3	Average	91%
Butchers Creek - Omeo	9.2	6.5	Average	142%
Cann River	256.5	248.6	Average	103%
Mitchell River	1537.2	2082.0	Average	74%
Tambo River – Swifts Creek	132.3	206.7	Average	64%

** Mitchell River supply system = Bairnsdale, Walpa, Lindenow South, Lindenow, Eagle Point, Newlands Arm, Paynesville, Raymond Island, Sarsfield, Bruthen, Nicholson, Johnsonville, Swan Reach, Metung, Kalimna, Lakes Entrance, Lake Tyers Aboriginal Trust, Lake Tyers Beach, Nowa Nowa and surrounding areas.*

Save Water and Save Money!

East Gippsland Water
Water Efficiency Rebate Program
1 July 2023 to 30 June 2028

Did you know that if you are an East Gippsland Water customer or tenant of a customer, you can get money back from buying and installing a range of water efficient products?
Rebates from $10 to $1,500 are available for a number of water saving products such as:



For the full list or more information visit egwater.vic.gov.au/customer-info/rebates or contact us on 1800 671 841

EN25120

1800 671 841 | www.egwater.vic.gov.au

Coalition MPs press for zonal tax expansion

JACK QUAIL

Liberal and National MPs are pressing Peter Dutton to expand tax breaks for regional and rural Australians in a bid to help ease the cost-of-living squeeze.

The intervention comes after Nationals leader David Littleproud hinted on Sunday that the Coalition was considering changes to existing zonal tax deductions, echoing comments made by the federal Opposition Leader, who said he was "happy to have a look" at tax settings in regional areas.

"We are working through a suite of measures. There is already a zonal tax rebate that is in place," Mr Littleproud told the ABC.

"The cost of living in regional areas is significantly greater because of the cost of transport fuel. So we want to make sure that we get that policy setting right."

First legislated in 1945, the Zone Tax Offset (ZTO) provides taxpayers residing in designated regional and remote areas a deduction of between $57 and $1173 in recognition of the limited services provided by government.

Despite substantial demographic shifts since their inception, the zone boundaries remain largely unchanged, and are currently based on data from the 1980s, meaning taxpayers in major regional centres that are home to considerable public services – including Darwin, Townsville and Cairns – receive deductions.

At the same time, taxpayers in many similarly sized regional cities do not receive any offset.

Nationals frontbencher Barnaby Joyce said the measure should be expanded to assist the "most needy" and cover additional areas. "There's some areas where it's just an absurdity that they pay tax at the same rate as some in the city," he said.

"They pay tax for public services and they don't get any."

Despite Mr Joyce's regional electorate of New England taking in the regional cities of Armidale and Tamworth, taxpayers there are not eligible for the ZTO.

> 'It's the sort of thing they talk about before elections; it's also the sort of thing that doesn't happen after an election'
>
> ANNE TWOMEY
> SYDNEY LAW SCHOOL

Liberal MP and house economics committee deputy chair Garth Hamilton, whose regional electorate of Groom includes Toowoomba and is similarly ineligible for the ZTO, welcomed discussion around expanding tax offsets in the regions.

"There's got to be an incentive for business to come out, for young families to come out to areas like mine," he said.

A review of tax concessions and payments in remote areas undertaken in 2020 by the Productivity Commission was scathing of the ZTO, stating the measure was "outdated", "poorly targeted" and found nearly half of all claimants lived in large coastal regional cities.

"There is no compelling justification for a zone tax offset in contemporary Australia," the report read. "Higher living costs or other aspects of life in remote areas do not warrant compensation through the tax system."

Finding no evidence to suggest the ZTO encouraged people to live and work in designated areas, the Productivity Commission suggested it be abolished.

Despite support within some segments of the Coalition, the constitutionality of the ZTO remains a potential impediment to its expansion. While never challenged in its near-80 year history, legal scholars argue the ZTO's validity remains uncertain as it could potentially breach the Constitution, which states the federal government cannot "discriminate between states or part of states" with respect to taxation.

"Because it's an offset rather than a tax rate ... there's some doubt about it," constitutional law expert and Sydney Law School professor emerita Anne Twomey said. She was doubtful the Coalition would press ahead with reforms to zonal taxation.

"Tony Abbott raised the same thing back in 2013 ... it's the sort of thing they talk about before elections; it's also the sort of thing that doesn't happen after an election."

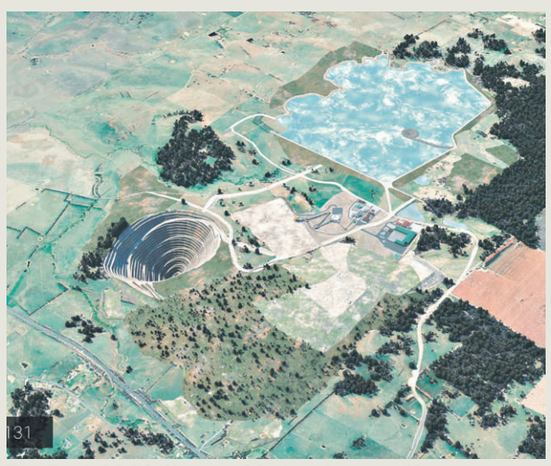
Shafted in culture of anti-mine activism



THE ENVIRONMENT MINISTER

Tanya Plibersek in her ruling on the Regis goldmine near Blayney on Friday

"I have decided to make a partial declaration under section 10 of the ATSIHP Act to protect a significant Aboriginal heritage site ... from being destroyed to build a tailings dam for a goldmine"



The Regis McPhillamy goldmine site near Blayney in central NSW

What the Orange Local Aboriginal Land Council told the NSW Independent Planning Commission in a letter last year

It is a matter of concern to OLALC that a range of claims have been made on this issue, by people and organisations lacking the experience, expertise and authority to hold themselves out as authorities on Aboriginal Cultural Heritage. We question the motives of people and organisations who participate in promoting unsubstantiated claims and seek to hijack Aboriginal Cultural Heritage in order to push their agendas.

The Cultural Heritage Committee formed the view that a number of the key concerns raised and claims made in the EIS submission could not be substantiated.
It is on this basis that OLALC submits that the proposed development would not impact any known sites or artefacts of high significance.



THE MINING CHIEF

Association of Mining and Exploration Companies chief executive Warren Pearce in response to Ms Plibersek's decision

"It's scarcely believable, that the federal minister could uphold this objection, when a comprehensive state inquiry found that there were no unacceptable impacts on cultural heritage"

Continued from Page 1

"If any project, no matter how thoroughly consulted, negotiated, supported and assessed, can be knocked over by the objections of only a few people right at the end of the process, then how can any company or investor have confidence to invest in Australia.

"Section 10s (objections) have an exceptionally low bar to make an objection, and often cause significant delay."

Mr Pearce said the Regis McPhillamy decision would likely encourage more activists seeking to weaponise the act against project developers. "It's scarcely believable, that the federal minister could uphold this objection, when a comprehensive state inquiry found that there were no unacceptable impacts on cultural heritage," he said.

The Regis gold mine had passed all the necessary development approvals under federal and NSW law including the Environment Protection and Biodiversity Act. The company claims it has already invested $340m in the project.

For the NSW government – which approved the tailings dam for the mine, the key issue in dispute – the federal decision represents the potential loss of $200m in royalties.

Ms Plibersek said on Friday her decision to make a declaration under the ATSIHP Act did not kill the project as the company had claimed it had alternative sites.

"I have decided to make a partial declaration under section 10 of the ATSIHP Act to protect a significant Aboriginal heritage site near Blayney, in central west NSW, from being destroyed to build a tailings dam for a gold mine," Ms Plibersek stated in her decision.

"The Wiradjuri/Wiradyuri people, who traditionally lived around the Bathurst area, have significant spiritual and cultural connections to the headwaters of the Belubula River.

"The headwaters are of particular significance to Wiradjuri/Wiradyuri people and are linked to ongoing cultural practices of the area. They have featured in many traditions practised for generations including by Aboriginal people transitioning from youth to young adulthood.

"Some of these traditions have been disclosed to me privately and must remain confidential due to their cultural sensitivity. If this site were to be desecrated, it would be an threat to the continuance of Wiradjuri/Wiradyuri culture.

> 'Unclear, duplicative, and uncertain processes not only hut the mining sector but also create barriers to much-needed investment'
>
> TANIA CONSTABLE MINERALS COUNCIL OF AUSTRALIA

"Because I accept that the headwaters of the Belubula River are of particular significance to the Wiradjuri/Wiradyuri people in accordance with their tradition, I have decided to protect them.

"Crucially, my decision is not to stop the mine."

This is disputed by the company which in June warned Ms Plibersek via the Environment Department that a section 10s application would prevent development of the mine.

In a submission to the NSW Independent Planning Commission last year, the Orange Local Aboriginal Land Council disputed the application by other groups and claimed it didn't object to the mine. The OLALC said it had been misrepresented in the section 10s application and that it had never opposed the mine.

"As stated previously, we are not against approval for the mine, but we're not for it either. I suppose you'd say we are neutral," the group said.

OLALC in its submission said that the development would not impact "any known sites or artefacts of high significance".

It said of the currently identified items of Aboriginal Cultural Heritage that would be impacted, they could be properly managed and protected as long as conditions were placed on the project.

Minerals Council chief executive Tania Constable said the organisation had long warned about the "unclear, duplicative, and uncertain processes not only hurt the mining sector but also create barriers to much needed investment".

"For Australia to remain an attractive investment destination, our regulatory processes must be transparent and based on clear, consistent evidence," Ms Constable said.

"When transparency is compromised through shifting requirements, it not only undermines trust but also slows down vital projects integral to creating investment certainty, supporting regional jobs, businesses and the communities that benefit from minerals development."

Ms Plibersek said both Liberal and Labor governments had previously made decisions under section 10s and rejected the warning of sovereign risk.

"Building a waste dump on that particular site would have destroyed the headwaters of the Belubula River – a place of particular significance for local Aboriginal people going back thousands of years," said a spokesman for Ms Plibersek.

"The company is free to find another site for their waste dump. It's understood there were more than four sites investigated with 30 options in the mix."

Deputy Liberal leader Sussan Ley, when she served as environment minister, issued a section 10 decision involving the same traditional owner group (Wiradyuri traditional owners Central West Aboriginal Corporation) close to the Blayney gold mine site Ms Ley protected the site under section 10 for cultural significance to the Wiradjuri/Wiradyuri people, including "local Aboriginal narratives, songlines, ceremonies and cultural heritage".

Opposition resources spokesman Susan McDonald said Ms Plibersek's decision was a "blow to investor confidence by stealth".

"It makes it impossible for investor boards to make decisions in to invest in Australia," Senator McDonald said.

"The uncertainty is crippling for decision makers."

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China iron ore rout risks budget billions

Continued from Page 1

was "not immune" from volatility in global markets. "This is exactly why we take such a cautious and conservative approach to Treasury's forecasts for resource prices and revenue," Dr Chalmers said. "We're following these developments very closely because of their potential impact on our economy and our budget."

While Treasury is preparing for a worst-case scenario, veteran budget watcher Chris Richardson said he doubted iron ore would hit $US60 a tonne next year.

"Treasury always assumes armageddon and armageddon hasn't happened till now," he said.

"If anything, I continue to think that we will beat the budget trajectory from here."

Mr Richardson estimated that every $US10 reduction in the iron ore price would result in a $10bn reduction in national income, with the federal budget similarly set to lose out on as much as $3bn due to the lower corporate tax take on mining industry profits.



MARTIN OLLMAN/NEWSWIRE
Treasurer Jim Chalmers

The iron ore sell-off has also raised alarm at the Reserve Bank, with governor Michele Bullock on Friday warning that a further downturn in the Chinese economy could drive a further reduction in Australia's GDP growth and the iron ore price.

"Developments in China can have quite a big impact on the way our trade develops, and therefore on our growth," Ms Bullock told the House of Representatives economics committee.

While noting China's GDP was still expected to expand in line with Beijing's 5 per cent target, she cautioned that its debt-ridden property sector was acting as a "very big drag" on overall growth. "China is really important for us ... It's our biggest trading partner, and it's very important in particular for the prices of the commodities that we export, in particular iron ore."

Ms Bullock also pointed the finger at state governments for causing a "large chunk" of the additional public spending that was putting upward pressure on inflation, and declared the infrastructure pipeline was exacerbating the chronic housing shortage.

Facing an election in October, Queensland Premier Steven Miles, who has unleashed a wave of additional spending including $1000 power bill rebates, 50c public transport fares and a 20 per cent vehicle registration discount, rejected Ms Bullock's claims.

"I didn't read that into those comments," he said on Sunday.

"What we are doing here in Queensland is supporting Queenslanders and building the infrastructure our state needs."

Senator Gallagher said she hadn't instructed state Labor governments to limit spending in light of Ms Bullock's comments.

"The Treasurer and I don't really tell other administrations, other governments, how to do their jobs," she said. "But our focus is really on making sure that our budget wasn't inflationary, but that it helped people with cost of living at the same time."

ADDITIONAL REPORTING: LYDIA LYNCH

Free dental care for more than 100,000 victorian kids

The Allan Labor Government's Smile Squad program has now delivered free dental care to more than 100,000 students – helping thousands of parents save time and money and keeping Victorian kids happy and healthy.

Minister for Health Mary-Anne Thomas and Minister for Children and Acting Minister for Education Lizzie Blandthorn visited Amsleigh Park Primary School to celebrate the successful program which is making sure thousands of children get the oral care they need – free of charge.

Delivered by mobile teams of dedicated oral health clinicians who travel across the state in bright orange vans, Smile Squad provides free check-ups, x-rays, teeth cleaning, application of fluoride and dental sealants, fillings, and root canals to school students.

Since the program launched in 2019 Smile Squad has delivered 200,000 free initial and follow up appointments to kids at government schools and provided more than 600,000 dental health packs which include a toothbrush and toothpaste.

A survey of students attending Smile Squad found that 36 per cent of them don't brush their teeth twice a day, and 16 per cent of them had never had their teeth checked by a dental professional before Smile Squad visited their school.

Across Australia, at least a quarter of children have experienced tooth decay and in Victoria dental conditions are the highest cause of preventable hospitalisations for children under 10.

Importantly, this transformational program has benefits that reach beyond Victorian kids. By delivering free dental care to Victorian kids, we are freeing up treatment places for more adults to be seen by our public dental services.

The Smile Squad program was first funded in 2019 with an initial $321.9 million investment by the Labor Government– the most significant investment in public dental health in the state since 2004.

The program received a $16.9 million boost in the Victorian Budget 2023/24 which will support Smile Squad to expand into low-fee non-government schools from 2026.

Victorian parents are encouraged to keep an eye out for information about Smile Squad and sign their kids up when the service next visits their school.

Minister for Health Mary-Anne Thomas said:
"Smile Squad is saving families time and money - ensuring that all Victorian government school students can get the high quality dental care they need, at school."

Reducing fire risk along rural roads in time for summer

The Allan Labor Government is supporting rural and regional councils to reduce roadside weeds and prepare for the upcoming fire season.

This year, 45 councils across Victoria will receive up to $85,000 each through the Labor Government's Roadside Weeds and Pests.

Rural roadsides can provide a breeding ground for harmful weeds and pests and this funding allows councils to implement control measures that prevent their spread.

The funding will assist councils with a range of activities along their rural roadsides, including treating and preventing blackberry, boxthorn and serrated tussock weeds, as well as managing rabbit populations.

Local Government Victoria and Agriculture Victoria work closely with local councils to ensure plans to tackle weeds and pests are tailored to their local area.

Weeds and pests cost the Victorian economy over $900 million each year. Invasive plant and animal species threaten native biodiversity, can have a serious negative impact on agricultural production, and contribute to the spread of fires.

Since 2017, the Labor Government has invested more than $22 million to help councils manage municipal rural roadsides, protecting Victoria's native biodiversity and reducing fire risk.

More information on the Roadside Weeds and Pests Program can be found at localgovernment.vic.gov.au/funding-programs.

Minister for Local Government Melissa Horne said:
"Reducing roadside weeds and pests is vital for protecting lives and properties in the lead up to the fire season, which is why we're helping councils to manage invasive plant and animal species."



Giving sexual harassment victim-survivors a voice

Non-disclosure agreements (NDAs) were meant to protect trade secrets. These days, too often, they're being used to silence victims of sexual harassment.

These victims – overwhelmingly women – are being asked to sign these agreements, as part of their settlement.

What is actually being bought is their silence – legally compelling victims to stay silent, even with their family and friends. Sometimes, even their doctor or psychologist.

By silencing victim-survivors, NDAs are also being misused to hide serial offending, protect perpetrators and employers' reputations.

It's why the Allan Labor Government will begin consultation on nation-leading laws to restrict the use of NDAs in workplace sexual harassment cases.

The engagement process will seek feedback on a number of potential protections, including:

Prohibiting NDAs unless requested by the complainant

Ensuring no attempts have been made to unduly pressure or influence a complainant to enter an NDA

Ensuring an NDA does not adversely affect others

The ability for the complainant to decide to waive their own confidentiality in the future

Review and 'cooling off' periods

Permitted disclosures (including to legal professionals, medical and mental health professionals, prospective employers, union representatives and support people)

Consultation on the legislation begins today and submissions are encouraged from victim-survivors – so we get this right. Victim-survivors can also provide their feedback anonymously via a short and confidential survey.

The community, businesses, unions, workers, and legal groups are also invited to participate with consultation open until 8 September.

At present, there is only one nation where laws of this kind currently exist – the province of Prince Edward Island, in Canada. The proposed legislation will be the first of its kind in Australia, and amongst the first in the world.

Legislating to restrict the use of NDAs in workplace sexual harassment cases was a key recommendation of the Victorian Ministerial Taskforce on Workplace Sexual Harassment.

For more information about the reforms – or to make a submission or complete a survey – visit engage.vic.gov.au/restricting-non-disclosure-agreements.

Premier Jacinta Allan said:
"Non-disclosure agreements are being used to protect perpetrators and silence victims. That's flat-out wrong."
"We've listened directly to victim-survivors who have been silenced, and this nation-leading reform will make sure they are heard."

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Bec Judd helped Bianca Roccisano (left) celebrate her 39th birthday at Cecconi's. Picture: Instagram

Judd shines at big bash

WAG supremo Bec Judd has elevated a birthday party to an A-list event.

Judd – the model, designer and businesswoman on every event planner's wishlist – blessed the 39th birthday of Booby Tape founder Bianca Roccisano with her attendance.

The Italian-themed party was held at Melbourne hotspot Cecconi's on the weekend.

Ms Roccisano marked the event with a barrage of slickly stylised pictures of herself on Instagram.

Models, designers and stylists joined a long thread of congratulations. One fashion figure who couldn't attend the party admitted to feelings of FOMO (fear of missing out).

But Judd's presence got the party started. She added instant glamour, posing on a staircase alongside the birthday girl.

Ms Roccisano also posted a video of her luxe birthday outing, including a shopping trip to Chadstone.

Ms Roccisano co-founded the Booby Tape business with her sister Bridgett, and turned it into a multimillion-dollar enterprise.

Last year, the sisters from Mildura hosted a Halloween party in Hollywood to promote the brand.

The event was attended by LA superstars Justin and Hailey Bieber, Paris Hilton, Megan Fox and Machine Gun Kelly, and Paris Jackson.

Docs want justice

NEW DELHI: Crowds of Indian doctors dressed in white coats came as if ready for work on Saturday but instead stood outside hospitals demanding justice after the rape and murder of a colleague.

"We just want to be safe while we are doing our duty," said Sapna Rani, a 27-year-old woman doctor in the capital New Delhi who took part in a 24-hour nationwide strike by medics.

"The hospital is the last place where we should have to worry about our safety."

The killing of the 31-year-old doctor, whose bloodied body was discovered on August 9 at a state-run hospital in the eastern city of Kolkata, has focused rage at the chronic issue in a country where sexual violence is endemic.

An average of nearly 90 rapes a day were reported in 2022 in India.

Earth moves for Russians

MOSCOW: A magnitude 7.0 earthquake struck off the coast of Russia's far-eastern Kamchatka Peninsula early Sunday local time.

The local emergencies ministry said tremors were felt along the coast including in the region's capital Petropavlovsk-Kamchatsky.

The earthquake struck at a depth of nearly 50km just after 7am local time.

Deals, abuse, theft in west

Footscray in 'sad state', say students

EXCLUSIVE
Rebecca Borg
Suzan Delibasic

Terrified university students are wearing personal alarms and business owners are locking their doors during daylight hours amid escalating crime and anti-social behaviour in Melbourne's west.

Victoria University faces pressure to move its Psychology Clinic in Paisley St, Footscray after students reported confronting incidents including drug-fuelled violence and thefts, despite the presence of security guards in the area.

Traders also say crime has worsened, with some claiming it forced them to shut for good.

When the Herald Sun visited the once-thriving street, a woman, who appeared to be drug-affected, was punching the back of a car and shouting at passers-by including a mother and young child. A man was openly injecting metres from the psychology clinic, while a drug deal took place soon after.

One Victoria University student who does a placement at the clinic said she and her peers wore personal alarms for "protection" when in Paisley St.

"When I get off at Footscray Station I have to be hypervigilant," she said. "I'm not even on my phone.

Another student said she had seen people having drug-induced episodes on the street.

The students were asked to ensure they locked the door behind them when they entered the clinic.

Meanwhile, dramatic footage obtained by the Herald Sun shows a confrontation between an undercover security guard and a man who allegedly stole from a nearby supermarket.

The video shows a struggle between the alleged thief and the security worker as shocked bystanders watch. Police arrested the man within 10 minutes of the report being made.

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Helen, who has owned a clothing store in Paisley St for almost 20 years, said she was assaulted after she confronted a thief who stole a shirt.

"I was very scared ... there has been ongoing drug use," she said. "My shop windows have been smashed twice; crime is very bad in this street."

A fast food outlet owner said his shop was hit twice in the past month, including brazen thieves stealing cash from the register in front of workers.

Victoria University said it was aware of student concerns and had implemented extra security measures.

Victoria Police said it would welcome the opportunity to meet with students and clinic management. "Everybody has the right to feel safe and to this end we conduct regular proactive patrols of the Footscray area as well as operations targeting serious and violent crime," a spokesperson said.

rebecca.borg@news.com.au

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FLGOFF Bryce Zerbes claimed the AIRCDRE Allan Pappin, CVO, AM Leadership Award. WGCDR Couper said leaders stand out from day one and given the 12-week period to excel; students need to prove themselves day in and day out.

The Leadership Award has a significant connection to Gippsland because AIRCDRE Pappin was a Commanding Officer of OTS in the 1970s. He is the current President of the Bairnsdale RSL and often returns to OTS as a guest speaker at dining-in nights.

WGCDR Couper said that on every graduation day, AIRCDRE Pappin sends her well wishes via text.

This level of "enduring community engagement", as WGCDR Couper put it, began in 1943 when flying training was conducted at RAAF Base East Sale. Flying training continued after the end of World War 2.

RAAF Base Sale is associated with a rich training history. The first Initial Officer Course at OTS in East Sale took place in 2008, but before that, training was conducted in the 50s out of the now-closed RAAF Station Rathmines, a WW2 flying boat base in Lake Macquarie, NSW. In 1961, the school relocated to RAAF Base Point Cook before coming to East Sale.

From Initial Military Training graduates just beginning their journeys in the Australian Defence Force to a man who was honoured for 40 years of service, festivities last week exemplified a full circle moment. It's serendipitous because Sergent (SGT) Simon Reddish, who received the Federation Star signifying long service last Thursday, said that as a graduate of four months, he didn't know how long he'd last in the ADF. Four decades later, he's integral to OTS.

"How fortunate are we here at OTS that we have Sergeant Reddish as part of our team with all his experience showing the way forward for our junior leaders," WGCDR Couper said.

"And that's the other significant thing here at OTS: the relationship between (who) we call a senior non-commissioned officer and a junior officer."

WGCDR Couper said people like SGT Reddish help shape and guide junior officers towards success. She noted that SGT Reddish is "incredibly good at being a military skills instructor". His team is responsible for training graduates in Drill and Ceremonial, which they performed at last week's graduation ceremony in impeccable navy and sky-blue uniforms.

Chief of Air Force (AIRMSHL) Chappell, in his address as the Reviewing Officer, discussed the Air Force uniform as an emblem of legacy and honour.

Asked to expand on his meaning, WGCDR Couper gave an example.

"For Anzac Day this year, it was the first time our trainees had actually been in their blue uniform. And I asked them, 'Who's participated in Anzac Day activities previously?' and there were a few. But I said, 'This was the first one in uniform. What did that mean to you?' And there's (an) immense amount of pride in the uniform. You think about those that have gone before you and the challenges that they've incurred, the sacrifices they've made, the achievements that have been made… and you do, you feel part of that family… it's an absolute privilege to wear it," she explained.

As important as the extended family students create throughout their training is the suite of emotions passed between relatives after the ceremonial proceedings was tremendous, as people ran to embrace each other and shed tears of pride.

For Flying Officer (FLGOFF) Casey-Lee Rebellato, who grew up on a cattle station outside of Newcastle, Defence is in her blood.

"My mother was a serving member in the Navy, she was a pianist, a musician. My partner was a marine technician in the Royal Australian Navy," she said.

"It's definitely challenging being away from your family for 12 weeks and being put through initial basic military skills. However, it's been very rewarding at the same time."

Asked what her ambitions are, FLGOFF Rebellato replied: "I'd like to have some form of influence over people and culture at the higher levels, but just getting a taste of it at this rank (FLGOFF) will be really exciting."

"I'll be posting to RAAF Base Pierce in Perth as the personal capability officer of No. 2 Flying Training School."

She said her role as a Personnel Capability Officer will involve similar responsibilities as a human resources manager.

Like the rest of the graduating group, FLGOFF Rebellato is about to embark on another exciting journey.

"I have spent a lot of time speaking with the graduates today… and they actually look back and reflect on what they've achieved, and this is the first step… Now the real excitement begins," WGCDR Couper said.

"For anyone that's considering joining, I would encourage them to go to the ADF Career centre and should they be successful and come through the doors, through the gates to commence training, you have a wealth of support behind you," she added.

"We will challenge you, and you will grow, and you will form some of the best friendships and relationships that you ever have."



FLGOFF Abbey Thomas receiving the Military Skills Award.



PLTOFF Bryce Zerbes was the parade's Colour Bearer, pictured carrying the Governor General's Banner for Officers' Training School. PLTOFF Zerbes was awarded the AIRCDRE Allan Pappin CVO AM Leadership Award signifying excellence in leadership, Defence values and academics.



PLTOFF Ashlee Hooper receiving the Air and Space Power Award.

Photo: Leading Aircraftswoman Annika Smit



Hundreds of guests including family, friends and those associated with RAAF Base East Sale stood to clap for the graduates as they marched by. Photos: Erika Allen (unless otherwise stated)

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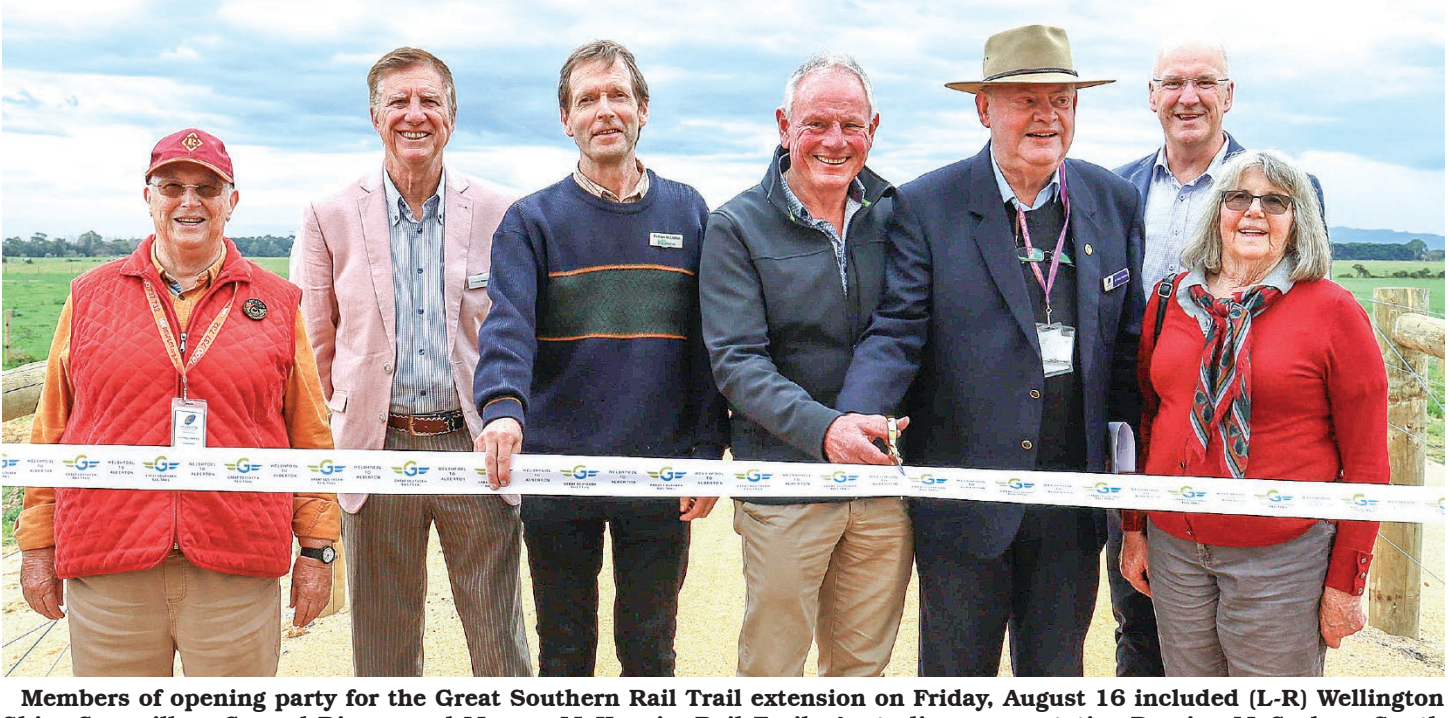

Members of opening party for the Great Southern Rail Trail extension on Friday, August 16 included (L-R) Wellington Shire Councillors Carmel Ripper and Marcus McKenzie, Rail Trails Australia representative Damien McCrohan, South Gippsland Shire Councillor John Schelling, Wellington Shire Councillor Garry Stephens, Gippsland South MP Danny O'Brien and Judy Kennedy a member of the original Tarra Trail committee.

Toot, toot trail to Yarram open again

THE 21-kilometre extension of the Great Southern Rail Trail, from Welshpool and Alberton near Yarram, is now officially open.

The extension, opened last Friday by officials from the Wellington and South Gippsland shires, increases the total length of the trail, from Nyora to Yarram, to an impressive 129 kilometres.

It also clears the way to connecting South Gippsland and Bass Coast to the 1100-kilometre Gippsland Odyssey Trail, one of the longest trail networks in Australia, after the completion of "the missing link" from Woolamai to Nyora, presently in the planning stage.

Among those in attendance were Wellington Shire Councillors Carmel Ripper, Marcus McKenzie, and Gary Stephens, Rail Trails Australia representative Damien McCrohan, South Gippsland Shire Councillor John Schelling, the Member for Gippsland South Danny O'Brien and Judy Kennedy of the original Tarra Trail committee.

There was also a strong crowd of rail trail supporters, many of whom had ridden out from the Goods Shed at the Yarram Tarra Trail Reserve, ahead of the 2pm opening, to Gellion Street, Alberton for the chance to win a Jamis bike.

Integrated Transport Strategy, have your say

BASS Coast Shire residents are encouraged to have their say on the Integrated Transport Strategy (ITS). A strategy that is aimed to meet people's needs and align with Council's strategic ambition, help better manage car use and provide a more user-focused set of alternatives, such as walking, cycling and public transport. In addition, the ITS is also an opportunity to enhance streetscapes and the vibrancy of townships in Bass Coast.

The Bass Coast Shire is known for its stunning coastline, charming townships, and vibrant community. However, as the population continues to grow and the demand for transport services increases, it is important to develop an ITS that will make the region more accessible and sustainable in the future.

One of the key goals of this strategy is to enhance the townships in Bass Coast by improving connectivity between them. This could involve the development of new cycling paths and walking trails, as well as better public transport connections. By providing residents and visitors with more options for getting around, the shire can help to create a more vibrant and connected community.

In addition to improving connectivity, the integrated transport strategy will also aim to better manage car use in the region. By encouraging people to use their cars less and opt for more sustainable modes of transport, the shire can help to reduce traffic congestion and create a more sustainable environment for future generations.

The background report released in July 2024 looked at transport patterns, population data, car parking, the existing transport network, emerging transport technologies and implications for Bass Coast.

This survey is a chance for the community to have their say on what they believe will make Bass Coast a better place. The survey remains open until August 31. Visit engage.basscoast.vic.gov.au/its.

national science week 2024

BASS COAST SCIENCE FAIR

Sustainable Science in our Everyday

What do a hovercraft, a volcano, paper daisies and magnets have in common? You can find them all at the Bass Coast Science Fair being held in the Wonthaggi Town Hall Mon-Wed this week.

We have some wonderful entries in the fair – from kids, teenagers and adults. And if you come along on Wednesday at lunchtime you can even see a couple of demonstrations!

Times:

Monday 19th August – 11am to 1pm set up; 1pm – 3pm is judging. Closes at 4pm

Tuesday 20th August – 11am – 4pm Open.

Wednesday 21st August – 11am to 1pm open; 1pm prize giving and afternoon tea; Take down of entries and closing at 3pm.

Entry $5 for adults which includes 3 raffle tickets.

bass coast community foundation

An Australian Government Initiative

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national science week 2024

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HM11881

Uncertain future for Bush Nursing Centres

Gippsland East Nationals' MP, Tim Bull, has called on the State Government to provide important financial support to rural Bush Nursing Centres (BNCs), which face an uncertain future.

Speaking in Parliament, he said the BNCs in Cann Valley, Gelantipy district, Dargo, Swifts Creek, Ensay and Buchan all play a critical role in their local communities, but most faced significant financial challenges.

"On top of their budgets being reduced by 10 per cent, I am being told by some local BNC representatives, that even more alarming is the government expects them to cover the nursing staff wage increases recently agreed to by government of 28.4 per cent between now and 2027. They simply cannot do this," Mr Bull said.

"There is no question the nurses deserve a pay rise, but it cannot be implemented without financial support provided to the BNCs to meet these increased costs.

"Nurses do an amazing job, and our bush nurses have an extensively dynamic skill set to adapt to the range of care needed in rural settings.

"However, it is completely unfair that our remote care centres have not only had a funding cut, but the Minister remains silent on government support for these wage increases.

"The Allan Labor Government is playing a dangerous game with rural and regional critical health services, and we want to see no change in employment, outreach capacity or service provision.

"The great fear is that without the capacity to pay, nurse hours will be reduced and that is not an outcome that is acceptable.

"It is appalling that I need to stand in Parliament and request that the Allan Labor Government provide some clarity on this.

"The reality is these situations, along with our health system cuts more generally, the state of our county roads and a litany of other issues, is all a result of the catastrophic mismanagement of the state's finances.

"Even Labor's own budget papers say we are headed for a debt of $186 billion by 2027 and interest repayments will hit $26 million per day. They can't manage money and we pay the price," he said.



Buchan (inset) and Cann Valley Bush Nursing Centres are two of the six BNCs in the Gippsland East electorate that face an uncertain time.

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EN24901

THUMBS UP / THUMBS DOWN

THUMBS UP: To the shire for cleaning and clearing the Wuk Wuk and Calulu Bridge entry and exit verges. Also for mulching the Wy Yung Calulu Road verges, it's now much safer and appreciated by all road users.

THUMBS UP: To the Wy Yung Bakery on Monday, August 12, who chose to prioritise their customer base over profits with free bakery items on what was a difficult day for production. Best of luck moving forward.

THUMBS UP: To all the football and netball club volunteers in East Gippsland, with the season drawing to a close some well earned rest is now in sight. Thank you all for your valuable community contribution.

THUMBS DOWN: To the neighbour of Eastwood Early Learning Centre. Your wood smoke is pouring into their yard each morning. How much asthma and illness has your choice of heating caused?

THUMBS UP: To the local council for maintaining the East Bairnsdale playground regularly - it's looking great.

THUMBS DOWN: To the person who set a fish trap on Progress Jetty. At 10am on August 15 I found a swan with rope wrapped around its neck. I released it and handed the trap to a shire officer.

THUMBS DOWN: The toilets in Bairnsdale Main Street are disgusting, filthy, smelly and poorly cleaned. These would have to be the worst toilets I have seen, these need to be brought to attention.

If submitting a Thumbs Up/Down

All items submitted for consideration for publication in Thumbs Up, Thumbs Down, must be signed and include the address and telephone number of the writer. (This information is not for publication but is required under the Newspaper Act.) Items should be limited to 30 words, and writers should note that due to the numbers received, only a selection can be published. No specific business names will be mentioned in Thumbs Up/Thumbs Down. **Write to 'Tom', c/- 'The News'**

Submit your thumbs up or thumbs down thumbs@eastvicmedia.com.au or online at www.bairnsdaleadvertiser.com.au

School maintenance boost

The State Government is ensuring students across East Gippsland will continue to have access to world-class facilities after maintenance works are carried out at local schools.

Member for Eastern Victoria Tom McIntosh last week announced four schools in East Gippsland are included in the Planned Maintenance Program (PMP), with funding for high priority maintenance across Victoria's government school network.

Lakes Entrance Primary School will receive $686,343 in funds for clean down works as well as various repairs.

Bruthen Primary School has been allocated $531,882 for work on its Shelter-in-Place building, with roof works, structural works, and switchboard works set to take place.

Bairnsdale Secondary College will receive $1.6m for ceiling repairs and roof works, repainting works, revarnishing, switchboard works, and repair of walls.

Works on Nicholson Primary's Shelter-in-Place building will also take place, with $210,006 allocated to the school.

This will allow them to undergo fascia replacement, repainting, and structural and roof works.

"Local students deserve the best facilities close to home. By upgrading and maintaining local schools, we are giving young people in East Gippsland the best chance of a quality education," Member for Eastern Victoria Tom McIntosh said.

The PMP provides funding to address high-priority maintenance across Victoria's government school network.

Works are determined by a rolling facilities evaluation process, which provides up-to-date information on the condition of schools to create a faster and more targeted allocation of funding.

The government is building and upgrading the Education State so every student can access a great local school and a quality education no matter where they live.



Member for Eastern Victoria Tom McIntosh (right) with Lakes Entrance Primary School principal Simon Prior, one of the schools funded for clean down works as well as various repairs.

"This program is about ensuring that every Victorian school is kept up-to-date, so that every child can access a high-quality education in a high-quality environment," Minister for Education Ben Carroll said.

"We are constantly evaluating our schools and making sure every single classroom is safe, engaging, and will complement the top-class education we are committed to providing."

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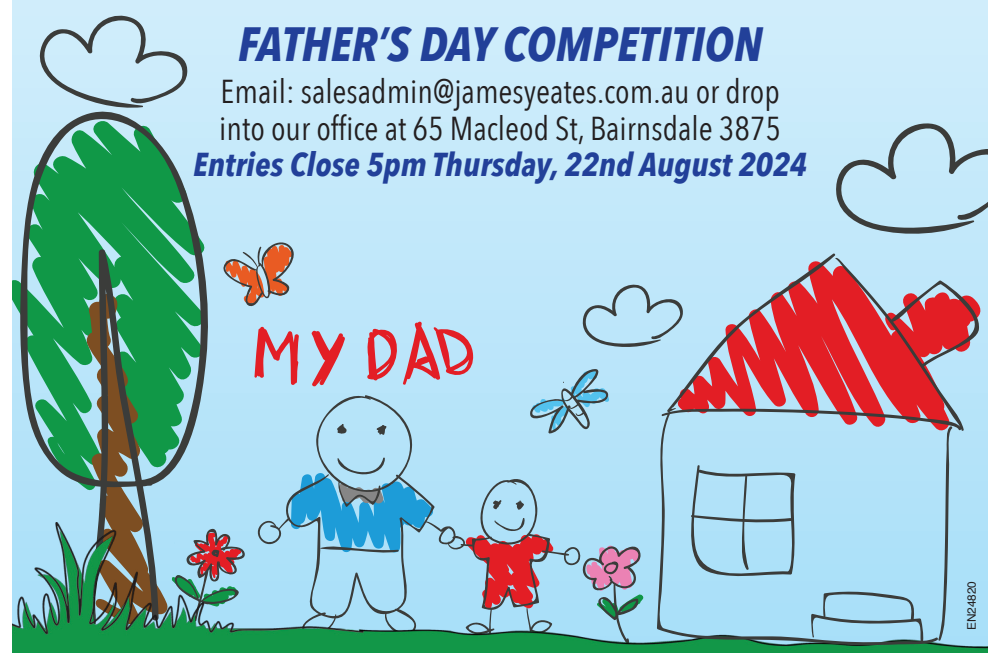
EN24901

FATHER'S DAY COMPETITION

Draw a picture of you and your dad or grandad or write a poem and tell us why he is the best for your chance to win him a great prize.

To enter, send your entries alongside with your name, age, phone number, and the name of your father or grandfather to:

FATHER'S DAY COMPETITION
Email: salesadmin@jamesyeates.com.au or drop into our office at 65 Macleod St, Bairnsdale 3875
Entries Close 5pm Thursday, 22nd August 2024



EN24920

Terms & Conditions:
The winner will be contacted by phone and published in the Papers on the 28th August 2024. All entries published in our Fathers Day feature for 2024

Keeping safe



East Gippsland Climate Action Network recently hosted an afternoon discussion centred around the impacts of climate change. (PS)

Representatives from local agencies and community members came together recently for an afternoon exploring the questions around keeping safe in East Gippsland as impacts of a changing climate are felt.

Hosted by volunteers from East Gippsland Climate Action Network (EGCAN), those present considered exposures, sensitivities and assets in the local setting. Participants shared ideas, experiences and knowledge focussing on those three areas as well as the capacity for adaptation to a heating climate.

The workshop at the Eagle Point Foreshore Hub, was facilitated by Vicki and Alee from Friends of the Earth, and proved to be successful in bringing together concerns and positives from a number of sectors.

"We acknowledge that East Gippsland covers a very large area, but small groups and neighbourhoods having more conversations will increase people's understanding of local risks around climate impacts.

"Ultimately we hope people will become more prepared and connected," Nola Kelly, one of the organisers from EGCAN, said.

Further stages in EGCAN's Climate Ready Communities project are planned, but organisers were heartened by the willingness of attendees to work together on this important topic.

Faster 40 years ago

Nationals Member for Eastern Victoria Region, Melina Bath, has moved a take note motion in state parliament condemning the State Government for its mismanagement of Gippsland rail upgrades.

Ms Bath's motion cited the fact that Gippsland train travel times to Melbourne have worsened under Labor.

"Forty years ago, in 1984, a train trip to Melbourne departing Traralgon was 40 minutes faster than it is today," Ms Bath said.

"The trip to Flinders Street when John Cain was the Victorian Premier took one hour and 40 minutes, however under Premier Allan the duration is now two hours and 33 minutes.

"Passengers have suffered 10 years of service disruptions with no time efficiency gains and despite a multitude of false claims, Gippsland train travel is neither more reliable nor faster under Labor.

"Labor has shunted Gippsland commuters to the end of the queue while city-based infrastructure projects take precedence."

Member for Morwell, Martin Cameron, said V/Line had failed to meet any rail punctuality targets between August 2015 and June 2024 – except in January 2023 when the train service did not operate.

"The poor performance on the Gippsland line and a constantly changing timetable is beyond frustrating for commuters who deserve a reliable service," he said.

"We know Gippsland's never ending train chaos will continue while Labor keeps preferencing its city centric big build, but despite all its the spin it cannot hide the poor performance figures."

Ms Bath said it appears 21st Century technology cannot overcome Labor's ineptitude and mismanagement.

"Labor cannot manage projects, it cannot manage rail upgrades and Gippsland commuters are paying the price."



The Nationals' Melina Bath has taken Labor to task for its mismanagement of the Gippsland rail service, after old timetables show the trip to Melbourne from Traralgon is now 40 minutes longer than it was 40 years ago. PICTURED: Leader of The Nationals Peter Walsh, Nationals Member for Eastern Victoria Region, Melina Bath, and Member for Morwell Martin Cameron. (PS)

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EN24901

Punch-drunk Labor faces rebuild

LIAM MENDES
PAIGE TAYLOR

A shell-shocked Northern Territory Labor Party was on Sunday beginning to consider the reality of a two-term rebuild after losing 10 of its 14 seats at Saturday's election.

One Labor source said CLP senator Jacinta Nampijinpa Price was correct on Saturday when she predicted that Chansey Paech, who had been the deputy chief minister, would want the job of leading the opposition.

However, there was some doubt within Labor about whether he was the right person to take over from chief minister Eva Lawler – who sensationally lost her seat of Drysdale – given he was in a leadership role in the lead up to the party's wipe-out.

"He wasn't in charge, but he was there and sometimes it is the optics," one Labor source said.

"People are still in shock I think."

Other insiders were saying Selena Uibo could be a solid choice because she is "a perfect opposite to Lia" (Finocchiaro). Like the new chief minister, Ms Uibo was born and bred in the Territory.

Ms Finocchiarom, the incoming chief minister and Country Liberal Party leader, is a former lawyer while Ms Uibo is a former schoolteacher.

Ms Finocchiaro's father built a career as a senior public servant. Ms Uibo's mother is Nunggubuyu from Numbulwar and Wanindilyakwa from Groote Eylandt, and her father is a second-generation Australian of Estonian and South African origin, born in Sydney.

Territory Labor crisis meetings are expected to kick off early this week as the party comes to terms with what has happened and as they wait to find out whether they hold any urban seats.

At the close of counting on Saturday, Labor had just four seats, all in the NT bush – Mr Paech in Gwoja, Ms Uibo in Arnhem, Dheran Young in Daly and Manuel Brown in Arafura and .

Nightcliff, previously the safest seat in the Territory and held by former chief minister Natasha Fyles, was on Sunday too close to call.

Other key predicted Labor losses included mining minister Mark Monaghan, former police minister Brent Potter and environment minister Kate Worden.

In the week before election day, Labor noticed CLP had "gone up a gear". Ms Finocchiaro was clear and engaging at her Sky News Australia debate on Wednesday against a much more experienced Ms Lawler. Labor insiders have told The Australian they initially felt the CLP may have been overconfident. This was in part because some commentators were predicting a very close result and even a hung parliament.

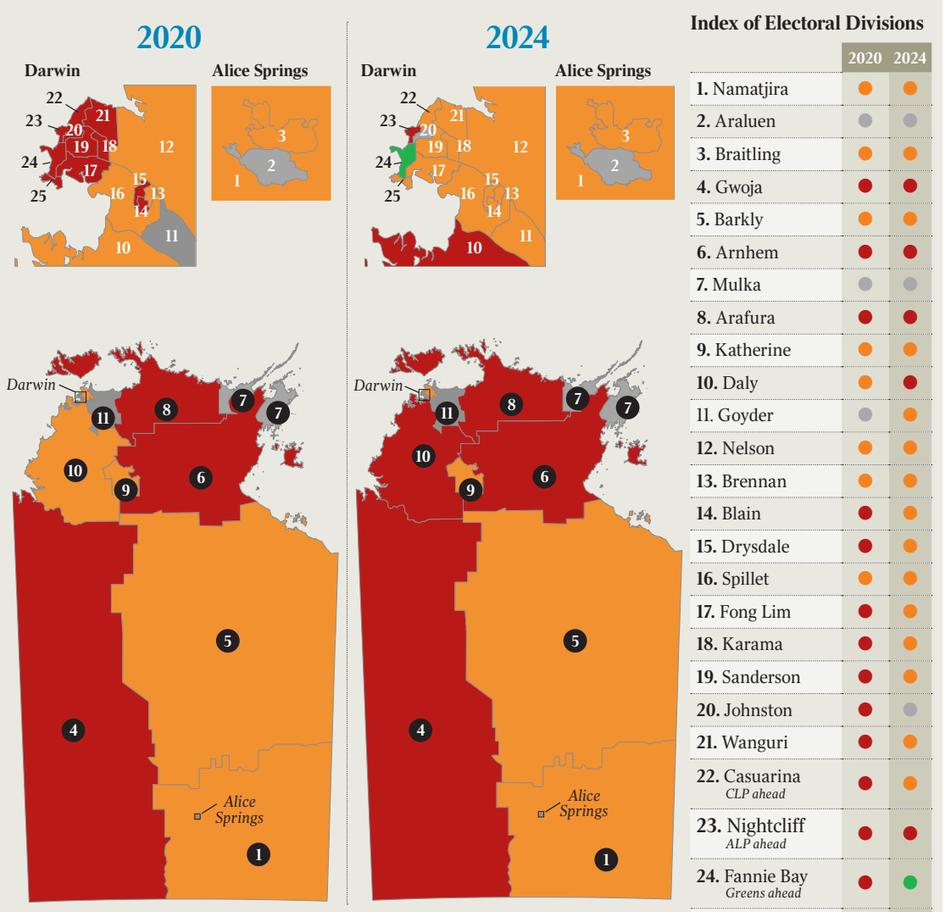
However, towards the end of the week, there was a clear difference in the attitude and demeanour of the leaders. Ms Lawler was not communicating as crisply as usual, while observers said Ms Finocchiaro had significantly more confidence.

Labor sources who spoke to The Australian on Sunday felt the instability in the party was one factor that hurt them. The exit of Ms Fyles from the leader's job over undeclared shares felt like a turning point in hindsight. "The Natasha era was shocking, the Gunner era was pretty bad, we really underestimated how pissed off people are," one said. "Our performance is reflective on the opposition that has been elected. Fyles is the one who has held her seat and she caused a lot of this."

NT ELECTION AT A GLANCE



NT chief minister elect Lia Finocchia
LIAM MENDES



Index of Electoral Divisions

	2020	2024
1. Namatjira	Lib	Lib
2. Araluen	Ind	Ind
3. Braitling	Lib	Lib
4. Gwoja	Lab	Lab
5. Barkly	Lib	Lib
6. Arnhem	Lab	Lab
7. Mulka	Ind	Ind
8. Arafura	Lab	Lab
9. Katherine	Lib	Lib
10. Daly	Lib	Lab
11. Goyder	Ind	Lib
12. Nelson	Lib	Lib
13. Brennan	Lib	Lib
14. Blain	Lab	Lib
15. Drysdale	Lab	Lib
16. Spillet	Lib	Lib
17. Fong Lim	Lab	Lib
18. Karama	Lab	Lib
19. Sanderson	Lab	Lib
20. Johnston	Lab	Ind
21. Wanguri	Lab	Lib
22. Casuarina *CLP ahead*	Lab	Lib
23. Nightcliff *ALP ahead*	Lab	Lab
24. Fannie Bay *Greens ahead*	Lab	Grn
25. Port Darwin	Lab	Lib

Mountain of debt a huge pile to climb



PAIGE TAYLOR
ANALYSIS

Lia Finocchiaro inherits a wicked problem: the Northern Territory government's most high-profile challenge is crime but behind the scenes the deeper crisis is debt.

Her ability to address the crime and social dysfunction in Alice Springs and beyond is severely impaired by the fact the Territory of 233,000 people is a financial basket case. It has gone beyond anything a federal bailout can fix, though it has been a long-establish practice for the federal government to reward failure with more money in the NT.

The Territory has a net debt of $10.82bn. In Tasmania, there is sheer panic over a $3.5bn debt on an island of 541,000 people. Keep in mind, Tasmania does not have the social problems of the NT.

And the work of the Territory government is unique because 30.8 per cent of residents are Indigenous.

Health editor Natasha Robinson showed us in an eye-opening reports this year that central Australia is a global diabetes capital.

NT hospitals are overwhelmed with the grim work of amputations on younger and younger Indigenous people. In Arnhem Land, men die on average aged 54. All manner of chronic and preventable illnesses hit the top end's Indigenous residents at shocking rates.

In responding to violence, alcohol-fuelled chaos and family dysfunction in Alice Springs earlier this year, Anthony Albanese called these "complex problems".

These are also expensive problems.

The evidence is in that what helps keep children on the right path is not a custodial sentence when they are 16.

It starts with pre-natal programs that support pregnant young women to make good choices, it requires early childhood programs, early interventions when families are struggling and it all costs a lot. It does not, however, cost as much as dealing with the results.

As opposition Indigenous affairs minister Jacinta Nampijinpa Price told the Sky News Australia's election panel on Saturday: "We can decrease incarceration by dealing with the problem when they're children."

The Territory has not managed its federal grants well for many years and this is going to be a difficult problem for Finocchiaro.

The Yothu Yindi Foundation claims NT governments are beholden to "an administrative class" of bureaucrats who mostly live in Darwin in the seats that both sides of politics need to get elected.

Five years ago, economist John Langoulant told the Territory government that it was overpaying its 300 highest-ranking bureaucrats by about $80,000 a year each.

They were earning between $217,533 and $233,565 a year each but he found they weren't doing the work to justify those wages. The former West Australian under-treasurer recommended they all get pay cuts. Of course, this did not happen.

At the same time, the NT government spent $300m on a bar and dining precinct on the Darwin waterfront. And while the NT population rose 21 per cent, the size of the Territory's public service increased 41 per cent.

Chief minister Finocchiaro lays down law

Continued from Page 1

she said. "We have just got to stop ignoring that people are doing it tough.

"Yes, the government has done a number of things but we need to have a look at trying to help people to get through this because otherwise we will be punished in the same way."

The CLP is yet to name a candidate to take on Ms Scrymgour in Lingiari, but Coalition sources say the seat is a must-win if the Opposition Leader is to win the election.

The CLP secured a 4.51 per cent two-party-preferred swing to it from the last election, despite large swings away from the Coalition more broadly. It is one of the most marginal electorates in the nation, held by 0.9 per cent.

"It gives us brand presence back in that market," a Coalition source said.

"To win government, Lingiari is one of the first that has to come our way."

NT Labor presided over a debt blowout that is now almost $11bn and a flatlining economy. Treasury recently predicted the NT would begin making surpluses within 18 months as royalties from emerging industries began to flow.

However, it was crime – particularly in Alice Springs – that was a frequent topic of discussion in the campaign. So was family dysfunction and the plight of children living in violent homes or with irresponsible adults.

Curfews brought temporary relief. Federal opposition spokeswoman on Indigenous affairs Jacinta Nampijinpa Price, a Warlpiri-Celtic woman who lives in Alice Springs, said there was not enough early intervention in the lives of Aboriginal children at risk, arguing this was fuelling the youth crime crisis.

The chaos in Alice Springs on Sunday followed a football game where spectators from the communities of Papunya and Hermannsberg turned on each other, yelling and brandishing weapons.

One witness said they were "terrified" when they saw the two groups wielding hatchets, a bright blue baseball bat, massive sticks and a garden maddock. The witness said the there were only unarmed Aboriginal Community Police Officers present.

NT Labor was hit hard from the right and the left on election day. Labor had 14 seats before the election and is now likely to hold just four, with the CLP on track to win 16 seats. The Greens were poised on Sunday to claim their first NT seat, the Darwin suburb of Fannie Bay, the first time Labor will not hold the seat in 30 years.

So just who is the Territory's new leader?

PAIGE TAYLOR

Lia Finocchiaro was 28 and only a year into her parliamentary career when she became collateral damage in a Country Liberal Party coup against its leader Terry Mills. It was 2013 and one of new leader Adam Giles's first acts was to fire Ms Finocchiaro – Mr Mills's ally – from his cabinet. The youngest star of the CLP had been a minister for just seven days.

Mr Mills had known Ms Finocchiaro and her family for many years by then because his son went to school with her at Darwin's Kormilda College.

As Mr Mills and Ms Finocchiaro got into a lift together outside the Speakers' office, he gave some advice.

"I said 'We are going through all sorts of challenges here but please, Lia, play the long game'," Mr Mills said.

"And God bless her, she has played the long game. I am really proud of her."

In Darwin, the Finocchiaros have become a large and important family. Last October, Ms Finocchiaro told how all four of her grandparents migrated from Italy to Australia in the 1950s "in search of opportunity and a better life". The parents of Ms Finocchiaro's father chose Darwin.

"I am so thankful that they made the Territory home," she wrote on Facebook in a post that coincided with Grandparents Day.

"My father was born here, I was born here and my children were born here."

She posted a photo of her paternal grandmother Rita standing with her and her sister when they were little girls.

"(She) gave us amazing love and support, and we are blessed to have my Nonna Rita in our lives at age 97," Ms Finocchiaro wrote.

Among the Finocchiaros of Darwin are successful property developers Ross and Terry, her uncles.

Ms Finocchiaro's father built his career as a public servant in the Northern Territory's planning department.

After high school, Ms Finocchiaro studied law and international studies at the University of Adelaide.

She returned to Darwin and worked as a lawyer at Clayton Utz. In 2012, she was a finalist for Young Australian of the Year because of her charity work for children, the prevention of SIDS and advocacy for fairer pay and representation for women.

Those close to Ms Finocchiaro say she is considered far less conservative than some others in her party but she is also pragmatic and willing to compromise.

They say she supported the Indigenous voice to parliament for some time before announcing she would vote no at the referendum last October, citing the proposal's lack of detail.

Now 39, Ms Finocchiaro is married to Sam Burke and they have two children. Mr Burke's father, Denis Burke, is a former CLP leader and was NT chief minister from 1999 to 2021.

Mr Giles, the former NT chief minister who now runs Hancock Agriculture and S. Kidman & Co, told The Australian Ms Finocchiaro had "Territory tenacity".

"I think she will make an outstanding leader," he said.

"From as far back as 2014-15 I said she would be the next Country Liberals chief minister.

'The opportunities to grow the NT and northern Australia are vast and Lia is the best person to provide the direction to do this, but first crime has to be addressed so people want to live, stay and play in the NT and do it safely," Mr Giles said.

On Sunday, Mr Mills – who has since left politics and returned to Western Australia where he is running his own business – said he hoped the CLP would be disciplined in victory.

He said even though Ms Finocchiaro had led the party to an emphatic victory, there could always be plotters in the background. "I won the popular vote but I couldn't survive the party," Mr Mills.

"I would urge the party to focus on the long game, too."



LIAM MENDES

Lia Finocchiaro with Police Commissioner Michael Murphy and Ken Davies, CEO of the Department of Chief Minister

While NT Labor performed particularly poorly in Darwin on Saturday, the overlapping federal seat of Solomon is held on a margin of 9.4 per cent and is considered difficult for the Coalition to win. Labor strategists played down the crossover of federal issues in the result, arguing that youth crime did not translate to federal elections.

Nationals leader David Littleproud said Anthony Albanese was at the "front and centre" of cost-of-living issues facing the Northern Territory.

"There are federal issues at play up in the Northern Territory, and there will be in Queensland, in my home state here," Mr Littleproud said.

"Obviously, we're not taking anything for granted, but we just simply say to Australians, do they feel safe and do they feel better off after 2½ years of Anthony Albanese?

Deputy Prime Minister Richard Marles said federal Labor would examine lessons from the NT result.

"The issues that were at hand in this election were Territory-based issues, law and order being front and centre," Mr Marles told Sky News.

"That's clearly what people are seeing as being the driving issues in respect of this result."

Inside NT Labor on Sunday, party faithful reflected on the tumult of three leaders in four years.

"The Natasha (Fyles) era was shocking, the (Michael) Gunner era was pretty bad, we really underestimated how pissed off people are," one Labor source said.

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Mary Has Spuds!... and a big heart too!
Mirboo North icon

Thanks to Mary's family, Mary and Jeanice, for raising funds through the sale of t-shirts and merchandise and donating the $1,000 to the Community Recovery Fund at the Community Foundation.



Donations to this fund support grants to community-led recovery projects and programs that support individuals in their recovery.

If your community organisation has an idea for a recovery project or an event that will bring people together, you can apply for a recovery grant to support the costs of bringing that to life.

The process is easy and turnaround is quick. Email us on info@mirboodistrictfoundation.org.au or give Ruth a call on 0418 301 092.

Korumburra Community invited to South Gippsland Garlic Festival Annual General Meeting

The South Gippsland Garlic Festival invites members of the Korumburra community to attend its Annual General Meeting (AGM) on Monday, 2nd September 2024. The meeting will be held at the Korumburra Community Hub, with registrations opening at 6:00 PM and the meeting commencing at 6:30 PM.

This is an important opportunity for local residents and community organisations to engage with the festival's ongoing development and future direction. We are seeking passionate individuals and community organisations with the relevant skills and experience to join our committee. Those interested in contributing to the management and delivery of this popular
event are encouraged to participate.

The South Gippsland Garlic Festival has grown into a cherished community event, celebrating local produce and bringing together people from across the region. This year's AGM will focus on reviewing the past year's achievements, discussing future plans, and recruiting dedicated committee members to support the festival's continued success.

The meeting will commence on Monday September 2nd 2024 at 6.30pm

Time: Registrations from 6:00 PM, Meeting to commence at 6:30 PM

Location: Korumburra Community Hub, 2 Stanley Street, Korumburra

We invite all interested parties to attend and become involved in shaping the future of the South Gippsland Garlic Festival.

Your expertise, enthusiasm, and commitment are vital to ensuring the event remains a highlight of the community calendar.

For more information, please contact:
Joel White - President
South Gippsland Garlic Festival
White100@ozemail.com.au
0402029658

We look forward to welcoming you to the AGM and working together to make the next festival even more successful!

About the South Gippsland Garlic Festival: The South Gippsland Garlic Festival celebrates the rich agricultural heritage of the region, focusing on the versatile and flavourful garlic. The festival showcases local produce, offers a variety of activities, and provides a platform for community engagement and enjoyment.



Took a tumble in Korumburra Streetscapes works

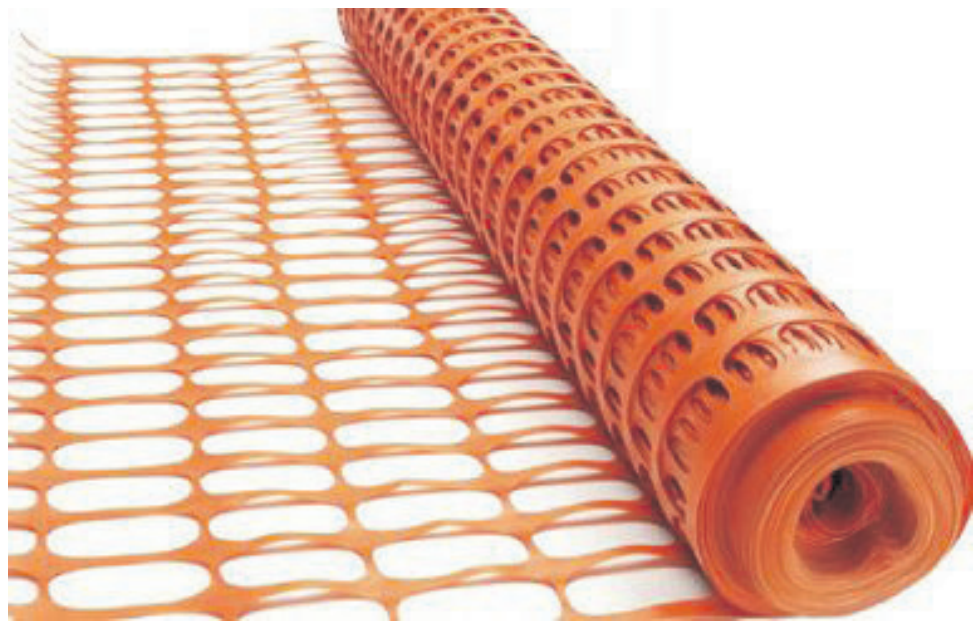
A lady took a tumble last Monday on the corner of Radovick and Victoria Streets where the orange SAFETY mesh was lying in a pile on the footpath.

"I thought my foot had cleared it, but it hadn't and over I went, flat on my face. Luckily not badly hurt, just a cut lip, whip lash and probably some bruising later on.

A work-man come rushing over to see if I was ok, and apart from the shock of going down like a sack of potatoes, I thought I was ok. I should have taken a photo maybe as when I returned an hour later, the orange safety mesh was neatly now vertical and attached to the posts and the entire footpath on that corner was clear. He must have fixed it after I left the scene.

Please be careful with all the works going on in the town; I am not frail or old; I hate to think if I were a frail person what the consequences would have been."

The contractor for these works, Brenton "BJ" Williams, posted on the Korumburra forum that:
"It was vandalised on the weekend it's zip tied up every night someone got to it on the weekend guys fixed it straight away" to which the person who had taken the tumble replied :
"***Hi Brenton, it was nearly 4pm yesterday when I had my fall."***



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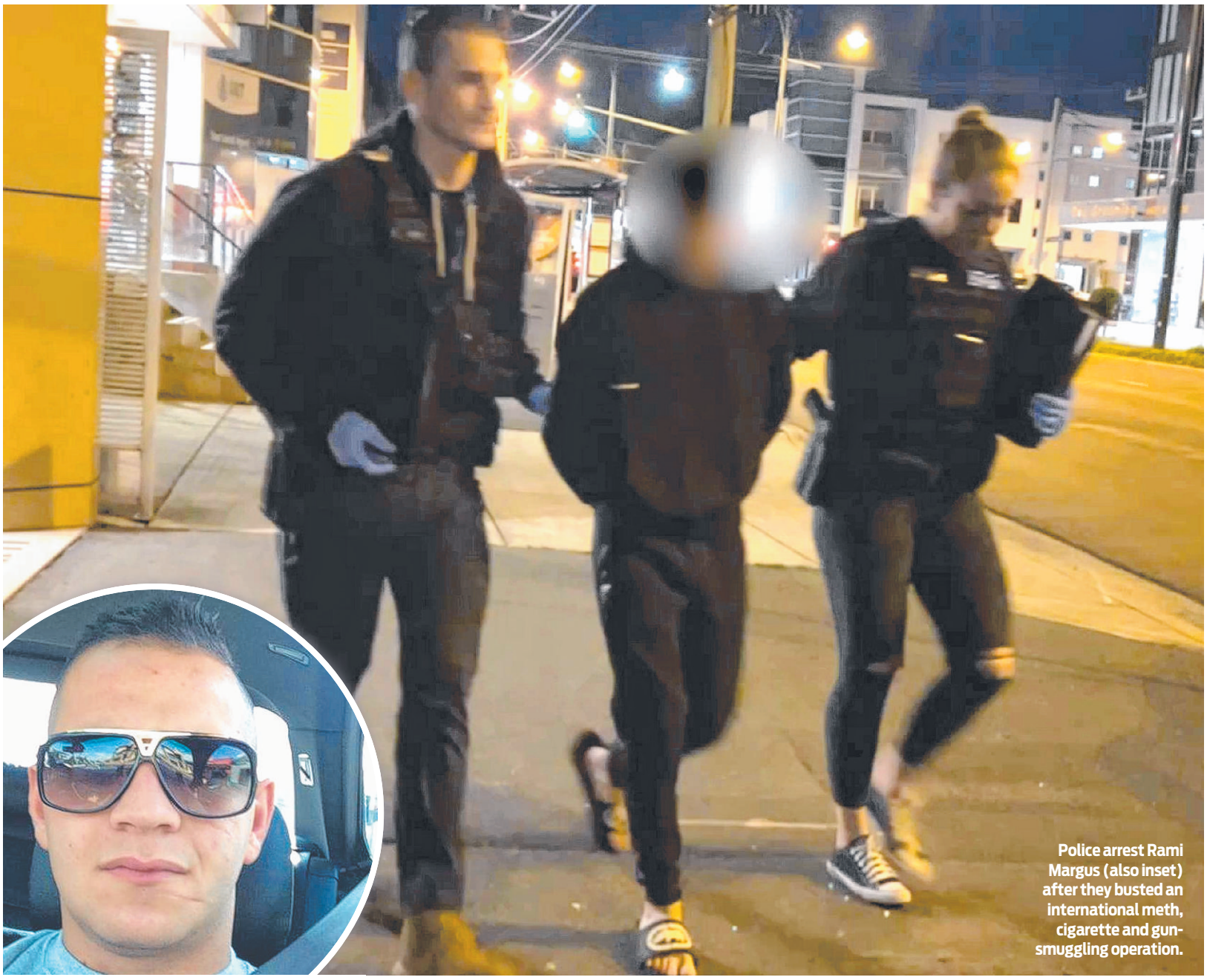

Police arrest Rami Margus (also inset) after they busted an international meth, cigarette and gun-smuggling operation.

Hey boss, I'm not listening

Australians will be able to ignore after-hours work calls and emails with impunity from Monday as "right to disconnect" laws take effect.

The federal laws, which come into effect on August 26, protect workers from being forced to take non-emergency calls and respond to emails outside of business hours.

The controversial reforms were introduced in response to the "digital leash" on employees that has extended the working day far beyond their paid shifts.

As a result employees of large companies can refuse to respond to "unreasonable" after-hours calls from their employer.

Reasonableness will be determined according to the worker's job responsibility level, how disruptive the contact was and whether the employee was compensated.

Where the contact is required by law, not picking up the phone to your boss will be deemed unreasonable.

Firms breaching the rules face fines of up to $19,800.

The new rules will apply from Monday to all businesses with more than 15 employees.

Smaller companies have another 12 months to sort out their protocols.

Charges piling up for Margus

Bust embroils accused crime figure

EXCLUSIVE
Mark Buttler

Underworld figure Rami Margus has been entangled in a police bust of an international meth, cigarette and gun-smuggling operation.

Mr Margus – previously revealed as an associate of exiled crime kingpin Kazem Hamad – has been charged with drug trafficking after an eight-month investigation.

The 32-year-old from Tullamarine is one of 12 people arrested since May in the sprawling inquiry after 11.8kg of meth, 2.8 million illegal cigarettes and 14 guns were seized.

Police allege methamphetamine was being shipped from Spain and cigarettes out of Dubai in international freight.

The drugs and smokes were allegedly then sent to factories in Epping and Craigieburn and a Flemington storage facility.

Australian Border Force officers detected the shipments allegedly linked to the ring at the border in April and reported their find to Victoria Police.

Detectives from the North West Metro regional crime squad had already been investigating the syndicate for firearms and drug trafficking. Those officers then began probing the import activity.

Mr Margus and a 25-year-old Brunswick East woman were among five people arrested in May.

They were charged with drug trafficking at the time but copped a combined 100 extra counts this week.

Mr Margus faces 70 charges, including trying to import a commercial quantity of a border-controlled substance, and trying to import tobacco products with the intention to defraud revenue.

He is also on 26 counts of breaching parole.

Also detained in the same phase of arrests were a Wollert man, 27, a Tullamarine woman, 27, and a Hadfield woman, 23. They will appear in Melbourne Magistrates Court on September 30.

Others have been charged since last month or are set to be charged soon. They are:

A SUNBURY man, 39, who faces 14 counts of being a prohibited person possessing a firearm, possessing a trafficable quantity of firearms and tobacco and electronic cigarette offences;

A BRUNSWICK West woman, 25, charged with knowingly dealing in the proceeds of crime and dealing with property reasonably suspected of being the proceeds of crime.

A WOLLERT woman, 27, to be charged on summons with the destruction of evidence;

AN ESSENDON man, 18, on counts of possessing methylamphetamine, possessing buprenorphine and failing to comply with an order; and

A HADFIELD man, 24, who is expected to be charged with criminal proceeds offences.

Two others, an 18-year-old Airport West man and 58-year-old Brunswick West woman, have been interviewed and released pending further inquiries.

A stolen car, a boat, luxury jewellery and designer clothes have also been seized as part of the investigation.

Detective Inspector Geoff Owen said police were determined to make Victoria a hostile place for organised crime figures involved in drug and gun trafficking.

mark.buttler@news.com.au

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About 40-50 people got together at Wattleglen for Daffodil Day.



Wattleglen residents Gerald Zimmer and Glenice Collins. Photo: Stefan Bradley

Respect taking in daffodils

Stefan Bradley

LOCAL staff, residents, and their loved ones from Wattleglen aged care home in Sale stepped out in style last week - donning yellow in support of a very special cause: Daffodil Day and life-saving cancer research.

The fundraising event, which included a memorable morning tea, continued a busy period of fun-filled activities for residents of the Sale home, which is part of not-for-profit aged care provider Respect.

Across each of Respect's homes, including Wattleglen, social care teams curate a wide range of regular events and activities which inspire participation, promote inclusion, and give residents an opportunity to stay connected with each other, as well as the community, in a fun and positive way.

Donna Quine, a social care co-ordinator at Wattleglen, said residents were excited to fundraise for Daffodil Day and welcomed their friends and family from the wider community into the home to join in with all the colourful festivities.

"Our residents were really excited about our Daffodil Day activities because they love giving back to the local community and making a difference to the lives of others. Nearly everyone knows someone who has suffered with a cancer of some sort, but the day was also a great way for our residents to feel like they were being part of a bigger community initiative," Ms Quine said.

"We even had one resident who couldn't be here on the day but who still donated $200 just because it's a cause they wanted to support.

"A lot of our residents, prior to joining Wattleglen, loved to get involved with and support local campaigns. In the past, they would have cooked for stalls, got involved and helped out where they could, so for them to be able to still contribute to local fundraising through Daffodil Day… they are all feeling very privileged.

"This day is very important to them."

Wattleglen resident Glenice Collins said Daffodil Day brought a happy and yellow side to the grim subject of cancer.

"Daffodil Day also reminds me of my dear mum, because we out for lunch every Daffodil Day," she said.

"My dad died of cancer when he was only 40, and that was during the times of 1950 when (healthcare) was nothing like what we've have now."

Ms Collins spoke about her own history with cancer. At age 52, she was told she would only live another six months because of cancer, but medical breakthroughs has ensured she was able to celebrate her 80th birthday recently.

Ms Quine said preparations for the home's much-anticipated Daffodil Day activities began earlier in the week, with residents participating in special arts and craft sessions to make unique decorations and signage ready to welcome visitors.

"All week residents have also been discussing what they could wear on the day. We had one lady who lives with us who went out and bought crepe paper because the male residents don't tend to get involved in dress-ups as much, so she is going to be making them yellow bow ties so they could join in on the festivities also."

Research has long shown being part of a community can have significant health benefits, particularly for mental and emotional wellbeing. As a community-focused organisation, Respect said it recognised how integral a 'sense of belonging' and social connectiveness was to positive ageing.

"We believe that creating a robust calendar of activities and events go hand in hand with providing our residents with engagement, creative outlets, and opportunities to improve their health and wellbeing," Ms Quine said.

"For some people, it isn't always easy to transition to an aged care home and they can sometimes feel a bit isolated as they get used to such a big change. But our Wattleglen community loves supporting them, and we like to think having such an active and popular social calendar helps them fit in, get active and involved with others, and improve their social wellbeing."



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GP1673124



Protesting students march into the entrance of Westpac in Wonthaggi.

Students slam bank loans to big polluters

STUDENTS from Newhaven and Bass Coast Colleges marched through Wonthaggi to protest over major banks providing loans to the world's biggest polluters.

Protesting outside three major banks the students, supported by local activists, called for the big banks to save the future by not lending to companies responsible for climate change.

The Commonwealth Bank has already moved to address its climate commitments by not lending to fossil fuel companies without credible plans for transition to clean energy.

Nearly ten years ago all four of the big four banks confirmed their commitment to the global climate goals of the Paris Agreement, yet, the Commonwealth Bank is the first and only one of the big four to confirm that it is formally cutting ties with oil and gas companies without credible intentions to protect Australian communities and the economy by pursuing safe energy production.

The protestors called on ANZ, NAB and Westpac to cease lending to Santos which is seen as a major contributor to climate change.

"Every year Aussies suffer the worsening effects of climate-fuelled disasters, like fires, floods and cyclones and it's high time the banks ended funding for fossil fuel expansion," said Newhaven College student Joey.

Taking a half day from school Joey applauded the Commonwealth Bank for not providing loans to fossil fuel companies.

"We want all banks to stop funding fossil fuels," said Joey.

Taking the protest into the entrance of the Wonthaggi branch of the Westpac Bank the students' shouted slogans and waved placards before quietly moving on.



Newly commissioned war murals by the Leongatha RSL pay respect to the returned services community. ob12_3524

New murals to pay respect

LEONGATHA RSL have begun stage one of what will be a three-stage process in adorning the building with painted murals that pay ode to returned services personnel.

Artist Rob Wood has begun the first mural of poppies, soldiers, an armed forces emblem and the words Lest We Forget on the wall to the entrance of the RSL.

It's his first large-scale mural after having done some smaller ones on the ladies toilet walls at the Koonwarra Cricket Club and a water tank in Foster.

It was only in 2021 that Rob began painting again after suffering from a retinal problem that didn't allow his eyes to properly accommodate and made painting frustrating.

In the intervening decades, he taught physical education and coached cricket for Gippsland and all over the state and while he completed drawings for Cricket Victoria's publications, he was unable to paint.

That was until he was asked to decorate cricket bats for an autism fundraiser – of which he ended up painting five, after not feeling happy with the first ones he created – and they sold for over $250 each.

Having only 40 per cent vision in his right eye, Rob discovered his eyes could accommodate enough for painting to become possible.

"I realised that from doing that – because it was such fine work – I realised that I could actually paint what I wanted to paint," explained Rob.

The new General Manager of Leongatha RSL Greg Nugent was informed of Rob's talents and decided to get him on board for the murals.

"It's something that we thought was appropriate being an RSL to pay our respects to the return service community and it's a great spot for a mural," said Greg.

There are plans for a mural to also go on the wall facing the carpark and around the top section of the club.

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HM11881



ExxonMobil

Golden Beach community

Esso activities information session

Topics: Offshore operations, decommissioning, carbon capture and storage

When: Thursday 29th August, 5pm to 6pm

Where: Golden Beach Community Centre
1 Surf Edge Dr, Golden Beach, VIC 3851

Light refreshments will be served.

Mental health unit years overdue, 'unsafe'

EXCLUSIVE

SARAH ELKS
SENIOR REPORTER

Cairns Hospital's new $70m mental health unit is nearly three years overdue and won't have the safety measures that fearful nurses insist are essential for their protection.

In a wide-ranging interview with The Australian, Cairns and Hinterland Hospital and Health Service chief executive Leena Singh also conceded it was "not at all" ideal to treat a 13-year-old autistic girl in the psychiatric intensive care unit (PICU) with two unguarded Lotus Glen prisoners.

Whistleblower nurses revealed they had been repeatedly assaulted and threatened with murder and rape by patients, including prisoners, in the far north Queensland public hospital's mental health ward.

They are pleading for the prisoners – called "classified" mental health patients – to be guarded by corrective services officers, and for at least one permanent hospital-trained security guard to be stationed in the PICU around-the-clock.

Ms Singh told The Australian that many of the nurses' safety concerns would be ameliorated when the hospital's new $70m mental health ward opened doors to patients at the start of next year.

"(It) has a lot more modern spaces that allows people to self-regulate; it's got greater access to outdoor secure areas; people are able to get fresh air (and) sun," Ms Singh said.

"If you feel like you're locked up and you can't go anywhere, your level of tension and aggression increases. By moving to this new place ... that will reduce the level of aggression we're seeing."

Funded by the state government, the new unit was originally due to open in February 2022, but Ms Singh said it had been delayed by cyclones and flooding.

Nurses said their calls for the new building to have fully enclosed nurses' stations, to protect the workers from patients leaping over the counters or throwing projectiles at staff, had been ignored.

Ms Singh said the new build's plans had been drawn up six years ago, before she started in the role, and it was too late, and would be too expensive, to change.

She said the clinicians who designed the building did not feel it was necessary to have high-walled or enclosed nurses' stations.

"(It was designed) trying to create a therapeutic environment, rather than, you know, a Fort Knox-type environment. Fast-forward six years since the planning, there has been some concern around the height of the station."

Ms Singh said there would be a review six months after moving into the new building to make sure it had been appropriately designed and "if not, then we will make the necessary adjustments".

The new facility will have 53 mental health beds, five more than the current psychiatric wards.

In a recent case that shocked nurses, a 13-year-old autistic girl was admitted to the 10-bed PICU with two Lotus Glen prisoners, and was observed repeatedly hugging one of them.

Ms Singh agreed it was "not at all" ideal and said young people were only admitted into the PICU when it was absolutely necessary, and were constantly accompanied by a carer.

"There are times where we do need to, unfortunately, admit a young person into our PICU, and that's because we don't currently have an adolescent mental health ward," she said.

Health Minister Shannon Fentiman announced in May that the government would spend $24m on refurbishing the existing adult mental health ward to deliver an eight-bed youth mental health unit for Cairns, which would accept patients "later in 2025".

Premier Steven Miles, who was in Cairns on Friday, conceded he was concerned that children were being exposed to criminal offenders in the PICU.

However, Mr Miles would not answer a question about whether the Mental Health Act should be changed to allow corrective services officers to guard prisoners when they were in public hospital psychiatric wards.

In other hospital wards, prisoners are constantly escorted by at least one prison guard, and are shackled to their beds.

Do you know more? Confidentially contact elkss@theaustralian.com.au



MACKENZIE SCOTT, LYNDON MECHIELSEN

Opposition Leader David Crisafulli in Kedron, Brisbane, above; Steven Miles, centre, with Cameron Dick and Grace Grace

LNP hits election road as Miles puts in his 50c worth

Queensland's state election has kicked off, with Liberal National Party leader David Crisafulli putting youth crime at the centre of his pitch to voters as he unveiled his new campaign bus and slogan just days after the parliamentary term ended.

With the LNP firmly ahead in every major poll over the past year, Mr Crisafulli declared he was "hungry" to hit the road in the blue bus emblazoned with the slogan "The right plan for Queensland's future" over the six weeks leading up to the October 26 election.

He was flanked by party faithful, holding signs about the LNP's key focuses of crime and housing. "I call it an opposition that's ready to serve and hungry for a better future for this state," Mr Crisafulli said.

"Six weeks to go, six weeks to deliver change for Queensland. This state needs a fresh start. We have the right plan for (the) future, let's go and get it."

Both leaders were on the faux campaign trail on Sunday, holding clashing 10am press conferences on opposite sides of the Brisbane River. The first four-year parliamentary term wrapped up last week, with election writs to be issued in two weeks.

Premier Steven Miles announced he would lock in 50c transport fares indefinitely if he is re-elected.

The $150m cost-of-living relief was introduced as a six-month "use it or lose it" trial but recent Transport and Main Roads data found total trips were higher than pre-pandemic levels, up 19 per cent year on year after the cheap fares were introduced in August.

"I really want the chance to make them permanent," Mr Miles said. "I care about doing what matters for Queensland, whether that's 50c fares, whether that's all of the other cost-of-living initiatives, whether that's delivering the housing and healthcare that our growing state needs."

Mr Crisafulli said he would also continue the initiative and increase the frequency of public transport services outside of inner Brisbane.

The LNP's bus headed north on Sunday with Deputy Opposition Leader Jarrod Bleijie on board, and is expected to travel through regional Queensland over the next two weeks. The bus is expected to target vulnerable seats, including Bundaberg, which is held by Labor's Tom Smith by a margin of 0.01 per cent.

Internal ALP polling shows Townsville's three marginal seats – Townsville (3.1 per cent), Thuringowa (3.2 per cent) and Mundingburra (3.9 per cent) – are likely to fall to the LNP.

Tourism Minister Micheal Healy's seat of Cairns, held by 5.6 per cent, is also in the sights of the opposition.

Mr Miles acknowledged the upcoming election would be hard for Labor. "If you look at the polls, it's a very challenging election for us," he said.

MACKENZIE SCOTT



Fruit and exercise delay dementia

EXCLUSIVE

JAMES DOWLING

World-first research correlating the link between gut and brain health indicates preventing dementia and cognitive issues may be as easy as keeping fruit in your diet and exercising regularly.

The microbiome, a catch-all for the bacteria and genes in the body that determine health and immunity, has seen much research from those charting the gut-brain axis, a nervous system that allows factors like stress, sense and hunger to influence the brain and vice-versa.

Now a Monash University study held in conjunction with researchers in China has found a clear correlation between poor microbiota and cognitive decline. Exercising or eating fruit and probiotic foods was shown to slow cognitive impairment.

Another time-tested dementia treatment is regular social interaction, but research by Dementia Australia has found it to be one of the most fraught elements in the treatment of patients, with community stigma cited by 73 per cent of families and carers surveyed.

Some 63 per cent of those with dementia felt discrimination was common, and 74 per cent said they had lost contact with friends and family because of their diagnosis.

Former executive Scott Cooper believes he is one of the luckier Australians with dementia. His health is in check and his community is behind him after his local Pennant Hills Golf Club was made dementia friendly.

"I think exercising, social interaction and being in a good community are the things that have helped me maintain myself," he said. "It's a progressive disease, and this has helped me along the way. Keeping active doesn't mean you have to go to the gym, it just means you've got to get off your butt. My life is different now. It's not bad, but that's what it is: different.

"I can still have a pretty good life."

Monash professor Lei Zhang said of his research: "Understanding this change in the microbiome will be very important to find key biomarkers for cognitive impairment."

Farmers fight to overturn EU deforestation beef ban

EXCLUSIVE

CHARLIE PEEL
RURAL REPORTER

Australia's cattle industry is pushing back against the EU's moves to lock up Australian farming land and will seek to invalidate environmental activists' claims that threaten to torpedo the nation's $10bn beef exports.

Industry body Cattle Australia will on Monday release definitions around deforestation and agriculture that align with state and federal laws, and the farming methods used on the country's vast grazing properties.

The organisation wants the government to adopt the definitions in its discussions with the EU, which is preparing to introduce a deforestation regulation that will require traders to prove that certain commodities they import – soybeans, cattle, coffee, cocoa, palm oil, rubber and timber – are sustainably sourced.

It would also help the industry push back against claims from environmental non-government organisations of illegal and rampant deforestation in Australia.

NGOs, including Greenpeace, The Australian Conservation Foundation and the Wilderness Society, claim the beef industry is driving a "deforestation crisis" and have been pressuring corporate organisations and the EU to adopt a stricter definition of deforestation that is inconsistent with state and federal laws and could result in cattle farmers, who use traditional vegetation management techniques on their properties, fall afoul of the EU's new regulations.

The issue was raised as a "matter of urgency" in a bipartisan Labor and Coalition motion in the Senate last week.

Agitation from activists had led to Australia being dubbed a deforestation hotspot, including in a social media post by actor Leonardo DiCaprio in February, on par with countries like Brazil, where the clearing of the Amazon Rainforest for cattle farms was a catalyst for the EU deforestation regulation.

Australian farmers say the comparison is unfair because it is inconsistent with what is considered deforestation in internationally recognised frameworks and does not differentiate between legal, permitted vegetation management under local regulations.

While beef exports into the EU are relatively small at $130m, the beef sector is concerned that being cut out of its market would set a precedent for other countries to follow.



Cattle Australia chief executive Chris Parker

It is also feared that organisations such as banks, supermarkets and major players in the supply chain could adopt similar definitions as the supply chain and financial sector comes under pressure to disclose their efforts to be more sustainable.

Cattle Australia chief executive Chris Parker said the definitions and recommendations outlined in its Land Management Commitment Strategy were intended to provide certainty for Australian beef producers, uphold environmental protections and guarantee equitable market opportunities.

"In a modern global context where Australia is a key player in the global beef trade, exporting over $10bn annually, the alignment of Australian definitions with global definitions to ensure equivalency is crucial," Dr Parker said.

"Globally, there is clear recognition of the importance of food production, and Australian definitions enable us to demonstrate the Australian regional context and the land management practices vital to maintaining food production, healthy landscapes and biodiversity.

"The Australian beef industry plays a crucial role in addressing the world's food security and climate challenges by exporting 70 per cent of our product to over 100 countries globally.

"It is vital this role is recognised, and the industry is supported by both the government and the Australian people."

In August, Woolworths committed to a "zero deforestation" policy but expressed support for the creation of a localised definition. Westpac last year became the first major bank in the country to announce a zero-deforestation target, which it said would be consistent with "existing law in most states".

Crucially, both the Woolworths and Westpac definitions would not classify legal clearing of vegetation regrowth, a common practice on Australian farms, as deforestation. Instead, it would apply to illegal clearing of remnant vegetation, which is protected by law in most states. Nor would it apply to land that was used for grazing or agriculture – the definition of agricultural land and forest are sticking points in Canberra's discussions with Brussels.

Under existing international frameworks, including the UN's Food and Agriculture Organisation, deforestation is a change in land use, not in tree cover. It is unclear whether the EU would recognise the vast cattle properties that make up the grass-fed beef industry as agricultural land.

Last week, Labor and the Coalition jointly called for the EU to delay the introduction of the regulation until there was clarity about how it would define deforestation and agricultural land.

Labor senator Raff Ciccone and Nationals senator Matt Canavan introduced a bipartisan motion, declaring the EU's policy was a "matter of urgency".

"The significant impact that the EU deforestation regulation will likely have on Australian beef producers because of the EU's definition of forest and uncertainty about its implementation; and hence the consequent need to delay the implementation of the regulation until these matters can be resolved," the motion said.

Senator Canavan told The Australian it was unusual for both major parties to back such a motion, but it showed the significance of the issue.

"The real concern is whether this forms a precedent," he said.

"There's a strong bipartisanship on this and I applaud the government for doing what it can to support our industry. Life in the Australian bush should not be regulated out of Brussels."

On Friday, Agriculture Minister Julie Collins said the government did not want Australian beef producers caught up in the EU deforestation regulation.

"We have written to the EU with our concerns about how that might be applied," Ms Collins said. "We want to make sure that Australian agriculture products are not impeded."

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Poodle Bar and Bistro's Zoe Rubino and Emilio Scalzo are offering an 'elopement day' called Love On The Run. Picture: Mark Stewart

Eloping gets its fizz back

Grace Baldwin

Couples are increasingly choosing to elope or throw "micro-weddings" rather than big events as cost-of-living pressures drain many nuptial budgets.

As many as 79 per cent of couples have had to adjust their wedding budgets as a result of the cost-of-living crisis, according to the Easy Weddings 2024 Australian Wedding Industry Report – but one in five will still overspend.

With the average wedding costing an eye-watering $35,657 – up from about $32,940 in 2019 – eloping is rapidly gaining popularity for its lower-budget appeal.

Poodle Bar and Bistro owners Emilio Scalzo and Zoe Rubino – also a married couple – noticed the exorbitant costs associated with weddings and wanted to offer a cheaper alternative.

They came up with Love On The Run, a two-hour block for a private ceremony and party with 10 guests.

"With the cost-of-living crisis at the moment, couples have had to push back their engagement from 18 months to 24 months to be able to afford a wedding," Ms Rubino said.

"We noticed at Poodle a lot of couples were interested in small weddings and also elopements , so we came up with the idea for Love On The Run."

Their elopement package includes everything from food to florists to celebrants.

"Everything's included, you don't need to worry about anything, it's just you and your loved ones," Ms Rubino said.

"It's perfect for anyone wanting to get married who is struggling in this cost-of-living crisis.

"We've taken the work and stress out of it. It's great for any couple who wants to celebrate their love who don't necessarily have the means or the time to organise a larger wedding."

Mr Scalzo said the package was put together with "some of Australia's best wedding suppliers".

"It really comes down to making something that costs less than a third of the average wedding in Australia," he said.

"We're not compromising on anything."

Greens' gas ban panned

Blackouts, closures and lost contracts

Clare Armstrong

A "reckless" Greens push to ban new gas would result in blackouts across southeast Australia in as little as two years, leading to manufacturing closures and the loss of long-term export contracts, the nation has been warned.

Halting investment in gas supply would "devastate the economy", leading to southern states running out by 2029, industrial manufacturers closing within a decade and Queensland's long-term liquid natural gas export contracts being broken, according to a new Energy Quest report commissioned by Australian Energy Producers.

The Greens' policy to end all investment in new oil and gas projects would exacerbate forecast shortfalls in the "southern region" of Australia, including NSW, Victoria and South Australia, resulting in "major economic disruption" for households and businesses.

The analysis showed Australia's domestic gas supply would be interrupted "within two years", with no supply available in five years.

"Within a decade most industrial demand would go unmet and most industrial gas users would likely cease operations due to a lack of alternative energy sources, and in the longer term there would be significant disruption and potentially shortfalls for residential and commercial gas users," the report said.

An investment ban would also result in the "rapid decline" of Queensland LNG exports, which would be forced to cease entirely within 12 years.

Australian Energy Producers chief executive Samantha McCulloch said the Greens' "no new gas" policy would mean "lights out for Australia" and be "a handbrake on the transition to net zero".

"The Greens don't have a credible plan for Australia's future," she said. "Their three-word slogan is not an energy policy, but a recipe for destroying Australia's economy and energy security. Australians deserve to know what a vote for the Greens really means for jobs and their energy bills."

Earlier this year, the federal government released its Future Gas Strategy, which said the Australian economy would need gas to 2050 and beyond, with investment in new supply required to meet the demand.

Ms McCulloch said the substantial economic benefits from new gas projects would also be lost if new investment stopped.

"Australia's gas industry is a major economic driver – investing hundreds of billions of dollars in recent decades, creating thousands of jobs, delivering up to $17bn annually to governments and spending $40bn with businesses in Australia each year," she said.

Greens leader Adam Bandt has already signalled that gas would be focus of the party's climate attack against Labor at the next election, which would include a push to restrict gas export contracts and force major companies to divert supply to the domestic market.

clare.armstrong@news.com.au

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VLocity trains on all Bairnsdale services

V/LOCITY trains are now running on all rail services between Bairnsdale and Melbourne.

The remaining two locomotive-hauled classic fleet services on the Bairnsdale line have now been retired, making way for new modern and efficient VLocity trains.

Bairnsdale line services stop at Rosedale, Sale and Stratford stations.

The state government invested $31 million to expand the stabling facility at Bairnsdale to house two three-carriage VLocity trains overnight, which has enabled this change.

A new timetable has also been introduced, with the first and last services now stopping in Trafalgar, Yarragon, Longwarry, Bunyip, Tynong and Nar Nar Goon.

Work is underway on the latest order to build 23 VLocity trains, with the first two new trains already hitting the tracks since August.

With the regional fare cap, passengers can now travel between Bairnsdale and Melbourne for $10.60 - a significant saving for travellers who previously paid up to $39.40 for a one-way full fare journey.

Public and Active Transport Minister Gabrielle Williams said the government was investing in more modern and reliable VLocity trains to improve regional journeys and now passengers along the Bairnsdale Line can enjoy them on every service.

"Communities along this corridor will also benefit from more travel options, with more services stopping at stations including Longwarry, Yarragon and Trafalgar," she said.

Member for Eastern Victoria Tom McIntosh said the government was delivering a better train service for Gippsland, with modern and reliable VLocity trains running on all services, and cheaper fares so that passengers can get to where they needed to go.

The Rail Futures Institute, which advocates for sustainable rail solutions for public transport and freight industries, claimed the government was progressively downgrading the quality of Victorian longer distance train services.

"What are claimed as improvements to these services are in reality reductions in the quality of service being offered," the institute stated in a media release.

"The more recent VLocity trains have hard seats which are most uncomfortable for other than short distance trips."

While Albury line trains are an exception, being especially modified VLocity trains with comfortable seats and other facilities for longer distance travel, the last loco hauled inter city train with first class reclining seats and on-board catering has been withdrawn from the evening service to, and morning service from Bairnsdale.

"Pity the poor passengers arriving into Bairnsdale on V/Line long distance coaches from Canberra and the Sapphire Coast who are transferring to Melbourne bound trains at Bairnsdale. Nothing to eat or drink for another four hours," the institute stated.

"VLocity trains have limited space for luggage, the previous luggage check-in service has been abandoned and bicycles are now only allowed on board at the conductor's discretion. Additionally, instead of taking advantage of higher allowable train speeds for VLocity trains west of Traralgon (160 kilometres per hour instead of 115km/h) which would have shaved around 12 minutes off all trips for travellers beyond Traralgon, six extra stops are being added at smaller intermediate stations so that all Bairnsdale trains will now stop at all stations between Pakenham and Bairnsdale.



A new VLocity train at the Stratford station. VLocity trains will now be running all Bairnsdale line services. **Photo: Contributed**

"Longer distance V/Line Inter City services are thus being progressively downgraded, not improved as the Government claims."

"Longer distance intercity travellers to Warrnambool, Swan Hill, Albury and Bairnsdale have a limited number of daily train services to select from and deserve much better."

Lynn sentencing hears from victim's family

Erika Allen

THE Supreme Court heard the gravity of Carol Clay's death as it began sentencing her killer, Gregory Lynn, last Thursday.

Lynn, 58, returned to the Supreme Court for a pre-sentencing hearing last week after a jury in June determined he murdered 73-year-old Ms Clay at a remote campsite in the Victorian High Country.

The prosecution is seeking the maximum sentence for murder – 25 years in Victoria – for Lynn's actions, which Crown prosecutor Daniel Porceddu described as "cold-blooded and callous".

Before sentencing submissions, the court heard three victim impact statements, including from Ms Clay's daughter Emma Davies, who refused to utter Lynn's name, only referring to 'he'.

"He stole my mother from me," Ms Davies said.

"He stole my children's grandmother. He took her life, he took her dignity, and he took her privacy."

In the years following Ms Clay's death, the court heard how he took away Ms Davies' family's privacy, trust in people, and capacity to live to the fullest and work in her community. She told the court she worked full-time for nine weeks in the last four years and turned down job opportunities close to home to retain a sense of privacy.

Ms Davies detailed how he stole her ability to enjoy mountain biking with her family and that she is afraid of comments people might make at work.

"I'm a private person from a private family but I came to realise I needed to honour my mum," she said.

"I refuse to let her legacy be that of a murder victim."

Ms Davies spoke clearly and strongly, describing her mother as a hands-on grandmother and an active volunteer for many organisations, including the Country Women's Association.

Alison Abbott, Ms Clay's friend of 60 years, said the pair share a "special history", beginning when they met at school. She said attending their 60-year reunion without Ms Clay by her side was tragic.

Ms Abbott said when their favourite ABBA song *Waterloo* played, it brought tears to her eyes.

"This crime has been devastating to me because Carol was an inspiration," Ms Abbott said.

She said no family deserved to endure an ordeal as high profile as the trial, which generated extensive media coverage.

The third person to read a statement via video link, Ms Clay's sister Jillian Walker, spoke of how continued media coverage re-traumatised her family throughout the case. She described Lynn's actions as evil and immoral.

Mr Porceddu told the court on Thursday, Lynn's moving and burning of the remains of Ms Clay and fellow camper Russell Hil were aggravating factors that Justice Michael Croucher must consider in his sentencing.



Carol Clay's family and friends read victim impact statements in the Supreme Court last Thursday, describing her as inspiring, a dedicated grandmother and active volunteer.



Carol Clay's murderer, Gregor Lynn will be sentenced by Justice Michael Croucher on October 18. **Photos: File**

After driving for hours from Bucks Camp in the Wonnangatta Valley, where the deaths occurred in March 2020, Lynn disposed of the bodies of Ms Clay and Mr Hill on the Union Spur Track near Dargo, Mr Porceddu said.

Lynn returned to the site twice – first to confirm Ms Clay's and Mr Hill's bodies were still there and later to incinerate their remains, according to Mr Porceddu in court last week.

In the trial, the jury acquitted Lynn of murdering Mr Hill.

Defence lawyer Dermot Dann KC said in the trial and again last week that Lynn himself believed his treatment of Ms Clay and Mr Hill was despicable. Yet, Lynn maintained his innocence of murder.

Justice Croucher said he intends to sentence Lynn on October 18. He will be remanded in custody until this time.

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Free 3D Hands launches revolutionary 'Kinetic Arm'



Two years in the making the kinetic arm joins the kinetic hand on open-source thanks to Free 3D Hands.

FREE 3D Hands proudly announces the open-source release of the Kinetic Arm, a groundbreaking, body-powered assistive device for people with trans-radial arm differences. The Kinetic Arm is the culmination of over 4000 hours of engineering, design and testing over two and a half years, made possible by the generous support of the global community, philanthropists, and corporate partners. The design files were freely shared with the world last Thursday, September 12 at 10am.

Traditionally, assistive devices like this have cost tens of thousands of dollars, putting them out of reach for 90 per cent of people around the world (according to the World Health Organisation). In 2020, Free 3D Hands openly shared the Kinetic Hand, which is now being made by over 10,000 volunteers and organisations all around the world. Free 3D Hands will now offer the Kinetic Arm free of charge, to anyone, anywhere in the world – they even pay the postage.

The Kinetic Arm, which can be manufactured for less than $20 in materials, is an embodiment of what's possible when love, kindness, and generosity fuel innovation. With incredible support of the community, Free 3D Hands has expanded its team of biomedical and mechatronic engineers, dramatically accelerating the pace of open-source development.

"We are an engine that runs on the love, kindness and generosity of others. Together, this is our gift to the world", said Mat Bowtell, Founder and CEO of Free 3D Hands.

The Kinetic Arm is a body-powered device, operated through elbow movement to open and close the fingers, with a wrist that can rotate into multiple grasp positions. This simple, intuitive design is transformative for people with trans-radial arm differences. The device's low manufacturing cost ensures that people across the globe, especially in underserved communities, can access this life-changing technology. Open-sourcing the design allows anyone with access to a 3D printer to download the design files and make their own devices, creating an exponential global impact.

In addition to offering the Kinetic Arm for free, Free 3D Hands is sharing its intellectual property (IP) under an open-source license, ensuring anyone can manufacture it. The design is accompanied by a 247-page assembly manual and a 43-minute video tutorial to share their manufacturing techniques.

"We hope that by sharing our designs, even commercial developers of assistive technology will learn from our low-cost ideas and be inspired to bring down the cost of commercially available devices," Bowtell explained.

"Ultimately, we want to make assistive technology more affordable and accessible for the millions of people globally who are currently unable to access or afford it.

"Our team are driven by the smiles on the faces of our device recipients. If we were to charge even ten dollars for one of our devices, then to us, it would only be worth ten dollars. But when we provide our devices free of charge, with no expectation of reward, they become priceless," Bowtell continued.

Globally recognised the charity relies entirely on donations to fund the design and development of open-source assistive devices without any Government funding. Free 3D Hands became a DGR-1 registered charity in 2019 and has since provided thousands of free assistive devices to people in over 30 countries.

"We are extremely grateful to everyone who has helped us reach this milestone. The expansion of our engineering team has allowed us to significantly accelerate our open-source development, and the Kinetic Arm is a direct result of this generosity. Our work is powered by love, kindness, generosity and a shared vision of a world where assistive devices are accessible to all," Bowtell said.

Those who wish to support by making a tax-deductible donation to Free 3D Hands can donate at free3dhands.org/donate. All donations to Free 3D Hands go directly towards the research, design and development of open-source assistive devices, which are provided for free to those in need.

Landmark for stroke care in Gippsland



LRH Stroke Coordinator, Janet May, A/Professor Alistair Wright and Avon Nurse Unit Manager Jenna Hooper.

LATROBE Regional Health (LRH) has been recognised for its excellence in delivering care to stroke patients by the Australian Stroke Coalition (ASC) having achieved accreditation as a Primary Stroke Centre.

"This is the first time we've been recognised in this way and reflects the work that the team in Emergency, Intensive Care, the Avon Unit and the Nicholson Unit have been doing to identify, treat and care for patients as they come through LRH," Chief Executive Don McRae said.

LRH treats more than 200 stroke patients each year and Gippsland is overrepresented in figures around cardiovascular disease compared to other areas of the state.

"The assessors looked at the processes we have in place to quickly identify stroke patients who present to our Emergency Department and provide initial treatment such as the prescription of 'clot busting' drugs, known as thrombolysis," LRH Stroke Coordinator, Janet May said.

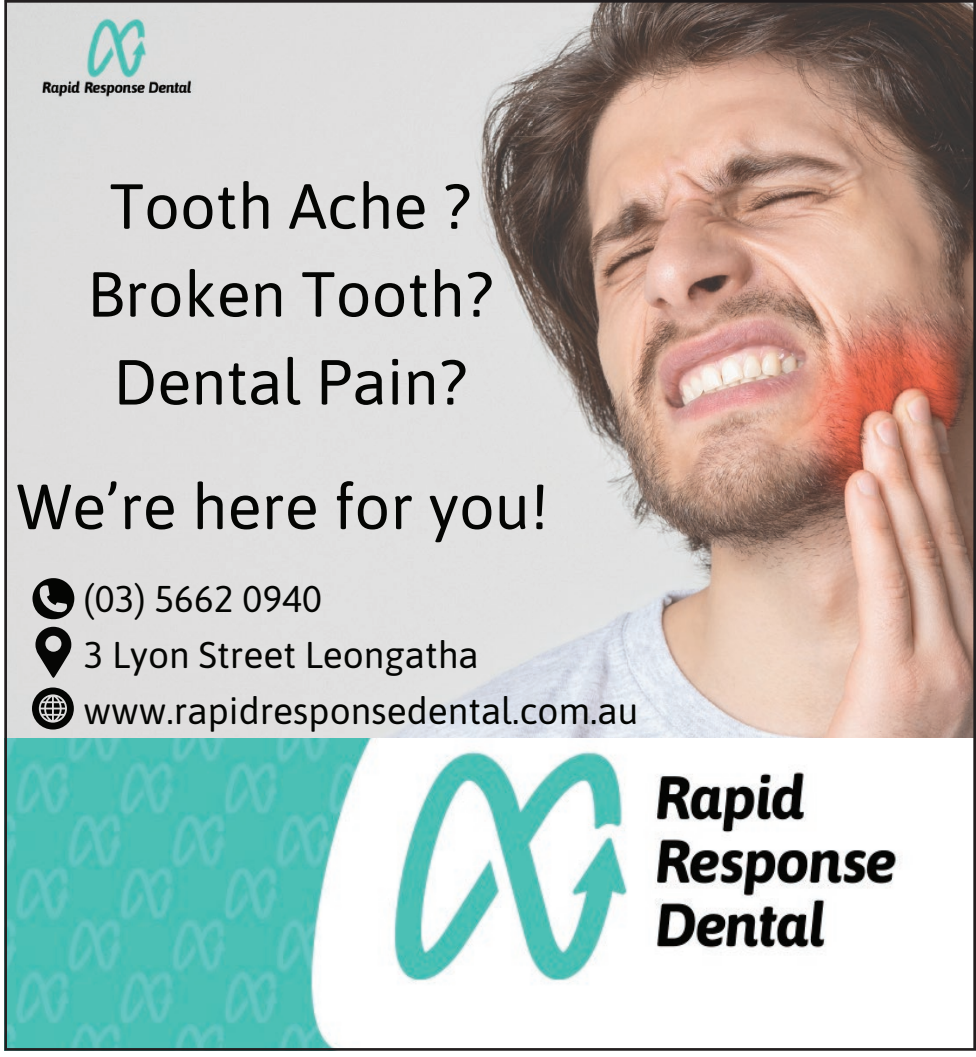
"They also assessed the treatment in our new Intensive Care Unit, longer term care in the Avon Unit, our designated stroke ward, as well as our Allied Health team's work.

"This accreditation signifies that we meet the highest standards of care, ensuring our patients receive timely, effective treatment while providing the best possible support to both patients and their families."

LRH is the only hospital outside the major settings of Melbourne and Geelong to achieve this level of accreditation in Victoria.

The assessors from the ASC acknowledged: "LRH stroke services are well coordinated…and are delivering timely, highly accessible and integrated care to the Gippsland community."

"We've developed an education hub where the team can examine what's happening with current patients, learn from colleagues and develop new skills. This is vitally important to ensure that the team is working with one goal and that everyone's skills are being elevated constantly," Avon Nurse Unit Manager Jenna Hooper said.



ExxonMobil

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  10am – 1pm
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- Gippsland Basin Geophysical and Geotechnical Investigations
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- Turrum Phase 3 Drilling
- South East Australia Carbon Capture & Storage (SEA CCS) Project
  Bream Greenhouse Gas Appraisal Environment Plan (SEA CCS)

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U3A PROM COAST

Our population in the greater Foster area is growing, and there is also significant growth in the number of retirees living in our area. As a service and enjoyment for our retirees, U3A Prom Coast offers a wide range of interesting courses and activities.

These stimulating activities include sports (eg golf, table tennis and Pickleball), Dance (eg Dance for Exercise, Rock and Roll, Circle Dance classes), Tai Chi, Singing for Pleasure, several music groups (such as the Ukulele), French (3 levels), Humorous Literature, History, Science (eg Geology, Oceanography), board games (eg Mah Jong, Scrabble), even Cryptic Crosswords.

Details are on our website www.u3apromcoast.com.au

Membership is just $55 per year and members can participate in as many courses as they wish. People joining late in 2024 still pay the $55 but it covers the remainder of 2024 as well as the whole of 2025.



Our new Sandy Point Community (electric) Bus is now providing safe and comfortable transportation for residents and visitors from Sandy Point, Waratah Bay and surrounding areas.

Planning an event; connecting to the V-line service? Bookings can be made on our website www.sandypointebus.com

This is a volunteer run, not for profit service. The eBus can carry up to 9 passengers, and there is also a wheelchair lifting platform and certified fixing points for safe travel. Donations for a ride help us to sustain the ongoing operational costs.

Think of the environment and travel in "Sandy" the eBus.

South Coast FM
88.1 89.1 89.5

"South Coast FM ... 89.5 and 88.1 on the Prom Coast ... proud to support a new voice for community news on the Prom Coast".

Gippsland New Energy Conference drives job growth and investment

WELLINGTON Shire Council have express their pride in partnering with the 2024 Gippsland New Energy Conference for the consecutive year, reinforcing its position as a key partner and leader in the renewable energy sector.

The two-day event attracted more than 800 attendees from across Australia, with 178 guest speakers and 50 exhibitors, making it the most successful energy conference ever held in Gippsland. This year's conference continued to build on the successes of the 2022 and 2023 events, both of which were hosted in Wellington Shire.

A key moment at this year's conference was the launch of the Gippsland Offshore Wind Alliance by Federal Minister for Climate Change and Energy, the Hon Chris Bowen MP. This alliance is set to generate new job opportunities, encourage regional investment, and support Australia's transition to a net-zero future. Minister Bowen emphasised the importance of investment and certainty in his speech, saying, our policies are designed to create certainty—certainty about our destination and certainty about the roadmap to get there.

The conference also welcomed dignitaries MP Lily D'Ambrosio, Victoria's Minister for Climate Action; MP Harriet Shing, Victoria's Minister for Housing; and Senator for Victoria, Dr Jess Walsh.

On the second day of the event, Wellington Shire Council Mayor, Cr Ian Bye welcomed attendees and guest speakers, expressing pride in council's ongoing leadership in renewable energy while reflecting on Wellington Shire's role driving Gippsland's growth.

"I feel a deep sense of pride—not only in what we've achieved but in our continued commitment to leading the renewable energy journey for Gippsland," Mayor Bye said.

Wellington Shire Council Chief Executive Officer, David Morcom further highlighted council's leadership, particularly with the release of the Renewable Energy Impact and Readiness Study last year. "This study reinforces our commitment, with over $40 billion in planned renewable energy investment flowing right into our region," he said.

Mr Morcom reiterated the importance of partnerships to drive the region's future, noting the joint funding application submitted by Wellington and South Gippsland Shire Councils, in collaboration with the Gunaikurnai Land and Waters Aboriginal Corporation (GLaWAC).

"Our Land and Infrastructure Plan for Yarram, especially with the Federal Government's recent offshore wind licenses, is critical. If we don't get this right, now, the industry may struggle to establish itself in time, and our region could miss out on this significant opportunity," Mr Morcom added.

This year's conference placed a strong focus on First Nations partnerships, with powerful insights shared by speakers on collaborations between First Nations, State government, and industry.

Attendees engaged in lively discussions across breakout rooms, viewed an informative screening of the Planet Wind documentary, and enjoyed a sold-out breakfast hosted by Gippsland Women in New Energy, sponsored by Gippsland Skies.

Wellington Shire Council was well-represented at the conference, with pop-up stands from council's Development division and The Middle of Everywhere showcased at Traralgon's Little Theatre.

A highlight of the 2024 conference was the Gippsland Youth Summit held on the Thursday at Kernot Hall, inviting students from across the region to explore career pathways in the new energy sector.

The free community expo gave Wellington Shire the opportunity to highlight The Middle of Everywhere as an exciting place to live, work, and invest, while students engaged with industry professionals about future careers in offshore wind and emerging energy technologies.

To advertise in The Bridge call Deb Lucas on 0448 871 213

Lifting moral with free movie night

THE Regent Theatre Committee of Management are putting on a free movie night for residents of Manns and McLoughlin's Beach affected by the recent storm surges which flooded home and garages recent.

President Rob Flannagan said that the committee want to do something to help lift the moral of those affected and decided on the free movie night.

"All they have to do is show proof of residence and they will be admitted free to the Thursday night movie night on Thursday September 26," Rob said.

Regent Theatre hold movies each Thursday night (except when booked for a special event). Movies shown include the latest releases and ageless classics.

REGENT THEATRE Movie Night



THURS. 3rd Oct – TICKETS $10
DOORS OPEN 6.30PM – STARTS 7PM
BAR/KIOSK, TEA/COFFEE - NO BYO

REGENT THEATRE Movie Night



THURS. 26th Sept – TICKETS $10
DOORS OPEN 6.30PM – STARTS 7PM
BAR/KIOSK, TEA/COFFEE - NO BYO

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Situations Vacant

Join our team!

St Paul's ANGLICAN GRAMMAR SCHOOL

St Paul's Anglican Grammar School is seeking applications for the following positions:

Classroom Teacher
Traralgon Junior School
Full-time, ongoing, commencing 2025

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Traralgon Junior School
Part-time, fixed term, commencing 2025

See full position descriptions and apply at **stpaulsags.vic.edu.au**

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The Latrobe Valley Express has an exciting opportunity for a person to join our Classified Team, on a part time basis.

You will be able to demonstrate the following:

- A confident phone manner
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- Must have attention to detail and some design experience would be an advantage

Supportive working environment. Be part of our friendly team.

Applications will be treated in the strictest confidence.

Please send your detailed resume to:
classifieds@lvexpress.com.au
by **Friday, 27 September 2024.**

GP1674055

Situations Vacant

DELIVERERS WTD

Would you like to deliver the Latrobe Valley Express newspaper to individual homes on Tuesday and/or Wednesday afternoons in Morwell, Traralgon, Moe, Newborough and Churchill? Please apply to the Circulation Manager 0456 000 541.
Please note: Children must be 11 years or over as we will need to apply for a government Child Employment Permit. Children younger than 11 cannot or will not be accepted. Adult deliverers also welcome.

ADVERTISERS PLEASE NOTE:

Much hardship and difficulty is caused to job seekers by misleading advertising placed in the employment columns. Our **Situations Vacant** columns are reserved for advertisements which carry a specific and genuine offer of employment. Ads for `Business Opportunities' and `Training Courses' and `Employment Services' should be submitted under those headings.

Placing misleading ads is an offence against the Trades Practices Act and state/territory fair trading acts and all advertisements are subject to the publisher's approval. For further advice, contact the Australian Competition and Consumer Commission on 1300 302 502 or your state consumer affairs agency.

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Would you like to deliver the Latrobe Valley Express newspaper to individual homes on Tuesday and /or Wednesday afternoons in Traralgon, Morwell and Moe.

Please apply to:
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Adult deliverers also welcome

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GOOD NEWS Latrobe Valley Express We've got news for you

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Or a combination of other methods

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Graduate & PTT positions also available.

Please refer to our website
www.lavalla.vic.edu.au

for the application form and position

GP1674546

APPLICATIONS CLOSE 12 NOON
FRIDAY 4TH OCTOBER

The Lavalla Catholic College community promotes the safety, well-being and inclusion of all children.

Situations Vacant



Need local staff?
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Latrobe Valley Express **Classifieds**

Call us today on 5135 4455 or email classifieds@lvexpress.com.au

Careers at Latrobe

Latrobe City Council has exciting opportunities for enthusiastic and forward-thinking individuals with a passion for providing excellent services to our community.

- **Senior Theatre Technician** - Temporary Full Time
- **Early Childhood Educator** - Casual Positions
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- **Maternal Child Health Nurse** - Casual Positions
- **School Holiday Program Facilitator** - Temporary Part Time
- **Principal Statutory Planner** - Permanent Full Time
- **Learn to Swim Instructor** - Casual Positions
- **Emergency Management Support Officer** - Temporary Full Time
- **Business Transformation Projects – Solutions Specialist** - Temporary Full Time
- **Planning Compliance Officer** - Temporary Full Time
- **Customer Service Officer/ Lifeguards** - Various Roles
- **Manager Business and Industry Development** - Permanent Full Time

Scan the QR code to learn more or phone 1300 367 700.

For further information including how to apply, position descriptions and application closing dates, please visit our website **www.latrobe.vic.gov.au/careers**

Please note successful applicants will be required to apply for and satisfactorily obtain a National Police Check and Working with Children Check.

GP1674867

LATROBE CITY COUNCIL

Public Notices

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JOIN OUR GROWING SCHOOL



ECG Secondary College needs you!

Do you love helping students like us grow and reach our full potential?

Our school is expanding, with more classes and better services to help us learn. Join ECG team and make a difference in our lives, supporting us through our learning journey.

The roles are:

Learning Support Officer
(Leongatha campus)
Part-time | Closing Friday 20 September

Learning Support Officer
(Warragul campus)
Full-time | Closing Monday 23 September

Generalist Teachers 2025
(EOIs for multiple campuses)

Casual Relief Teachers 2025
(EOIs for multiple campuses)

APPLY NOW www.ecg.vic.edu.au/jobs

ECG is a Child Safe organisation that has zero tolerance for child abuse.

JOIN OUR PROGRESSIVE TEAM



Transform learning with CCG!

CCG is committed to empowering communities through accessible education and leadership. We're seeking passionate and dynamic individuals to join our team in these exciting roles:

Cadet Board Director/s
Warragul | Closing Friday 20 September

Pre-Accredited Trainer
Casual | Warragul | Closing Monday 23 September

Trainer Cert IV in Business (BSB40120)
Full-time/Part-time| Warragul | Closing Monday 7 October

Trainers 2025
EOIs for Business, Music, Hospitality etc | Warragul

APPLY NOW www.ccg.asn.au/jobs

CCG is a Child Safe organisation that has zero tolerance for child abuse.

GP1674861

ECG Secondary College — School No: 2062 — 03 5622 6000 — www.ecg.vic.edu.au — hr@ccg.asn.au

CCG Community College Gippsland — RTO No: 4181 — 03 5622 6000 — www.ccg.asn.au — hr@ccg.asn.au

Around the traps

September 2024

Saturday 21 Sept
A Jazz Soiree
Featuring the fantastic Dave Dower Trio and internationally renowned vocalist Nina Ferro. Commencing at 7.30 pm Brought to you by the *"Grand Hall Grand Piano"* committee. | Tickets $45pp | Visit: visitsouthgippsland.com.au/event

Sunday 22 Sept 5:15pm
Franklin River Platypus Walk
Help Prom Coast Ecolink celebrate World Rivers Day by surveying platypus populations in the Franklin River as part of Australian Conservation Foundation's Platy-Project. | www.promcoastecolink.org

Sunday 22 Sept
Opera in the Country
Featuring Charlotte Goode, this matinee performance will be followed by afternoon tea with the performers.| Brought to you by the *"Grand Hall Grand Piano"* committee | Visit: visitsouthgippsland.com.au/event/

Exhibiting Sept
Stockyard Creek Art Gallery
Larissa Perkin& Kaaren Pedretti | Birds of a feather flock together … | This is a fresh spring exhibition featuring flowers, landscapes, and painted feathers. Thursday – Monday 11am – 3pm

Wednesday, 27 Sept 5:30 PM.
Foster RSL End of month BBQ
The popular end-of-month barbecue tradition continues at the club rooms. All are welcome, for a 5.30 pm start.
Donation of $5 per person for the meal. Drinks will be available at bar prices.

Exhibiting to 30 Sept
Meeniyan Art Gallery
Gallery one. Destination Landscape - Tracy Lewis | Gallery Two. Unclear the Horizon - Helen Nkansah | Gallery Three. For the love of Horses – Monika Barbian
Free entry | Visit meeniyanartgallery.com.au

October 2024

Wednesday 2 Oct, 7.15pm
Fish Creek Landcare AGM
Oberon Room, Fish Creek Hotel | Guest speaker Susie Milton on the "Tree Project"

Saturday 5 Oct
Harry Hook is Real Supported by Talana Daff
Great night of live music, presented by Sandy Point Music.| Sandy Point Community Centre | Show starts 8:00PM, doors open 7:15PM | BYO drinks and nibbles.
Website: sandypointmusic.com

Saturday 5 Oct
Ride The Wild Goat Sculptural Fire Event: Bringing of the Light.
Following the huge success of the MidWinter Bonfire, Ride the Wild Goat are hosting an event on the eve of daylight savings.| Light up time 7pm. | Please bring food and drinks to share. Entry by donation to assist with ongoing costs of maintaining the Ride the Wild Goat Sculpture Park.

Sunday 6 Oct
South Gippsland Landcare Network Mange Treatment Workshop
Due to rising reports of wombats with mange, and the increase in transfer of this disease to koalas. South Gippsland | Landcare Network is holding a Mange treatment information and training session. Venus Bay Community Centre | Visit: Sgln.net.au

Exhibiting Oct
Stockyard Creek Art Gallery
Lucy Hersey - Earth paintings &
Pat Dales - Fibre Group

Saturday 19 Oct 10:00am
Nature Journalling & Slender Tree Fern Walk - Tarwin River Forest
A guided opportunity to observe, record, and experiment artistically in this spectacular rainforest setting with Prom Coast Ecolink. www.promcoastecolink.org.au

Sunday 20 Oct
Flock Stock and Basil Farm
An afternoon to celebrate the new season. Sharing good food and many laughs with an optional farm tour, where guests can learn about the farm, and meet some of the animals. Followed by a leisurely long-table banquet lunch made with farm produce. | $ 125 per person Visit: flockstockandbasil.com

Wednesday 23 Oct
U3A Seniors' Festival concert
Doors open at 10 am in the Foster War Memorial Art Centre | Free Entry

Friday 25 Oct, 6 -8pm.
Fish Creek Community Pot-luck Dinner
Hosted by the Fish Creek Community Development Group at the Fish Creek Hall. Everyone is welcome. Bring some food to share, tea/coffee provided

Saturday, 26 Oct
Meeniyan Marty Gras
Great night's entertainment at the Meeniyan Town Hall. Entertainment by Xena Ghost + Kat Zowthobag. DJ Golden Fleece.| Doors open 7.30pm | Supper by Meeniyan Red Cross | $55 per person.

Thursday 31 Oct
Manna Gum Halloween Art Cube Opening
Opening program of storytelling, Halloween displays, spooky dancing, witches with cauldrons of horrible things to touch.

Thursday 31 Oct
Manna Gum Halloween event
Foster residents and traders, be prepared for families Trick or Treating in the area. Pop a decoration in your front garden or shop window if you would like to partipate!

Regular Events

Mondays
Co Motion
Free style dance jam | MONDAYS 4.30-5.30PM | Fish Creek Memorial Hall Supper Room | $5 Per Session | Door opens for warm-up from 4pm
Find Co Motion Facebook.

Church Services

Anglican Parish of Corner Inlet

Christ Church Foster Sunday Service
Every Sunday 10.00 am
Reverend Fran Grimes
Reverend Neil Thompson

Church of the Transfiguration Hedley
1st and 3rd Sunday of each month
11.00 am | Reverend Fran Grimes
Pastor Geoff Kennedy

Esso's decommissioning of platforms in Bass Strait

An ExxonMobil Brand

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‘Labor MPs are hiding their true colours’

EXCLUSIVE

CHARLIE PEEL

Labor MPs have distanced themselves from Premier Steven Miles and are hiding their party affiliation on campaign material ahead of next month’s Queensland election in what the opposition describes as an attempt to sneak back into office.

With polls pointing to a bruising defeat for the Miles government and dissatisfaction with the Premier’s performance rising, candidates who in 2020 proudly printed the Labor name, logo and trademark red on their corflutes and flyers have gone to lengths to obscure their allegiance from voters.

Candidates who bore the image of Annastacia Palaszczuk next to their own in 2020 have conspicuously left Mr Miles off the campaign material this time.

The Newspoll published by The Australian on Saturday showed the LNP had jumped 10 points clear of Labor – 55 to 45 per cent after preferences – and was on track to win government for the first time since 2015.

If the predicted 8.2 per cent swing against Labor were replicated across the state on October 26, it would deliver the LNP a comfortable majority of 55 seats in the 93-electorate parliament.

The poll also showed 46 per cent of voters believed Liberal National Party leader David Crisafulli would make a better premier than Mr Miles, who had 39 per cent support despite dishing out $3.7bn in cost-of-living giveaways in recent months.





Election signs of Labor MPs Ali King and Peter Russo

The Australian is aware of at least 10 examples of Labor MPs using campaign material that does not appear to show their affiliation.

While some the flyers are decorated in the purple colour scheme used by Queensland’s Together Union, others show MPs against plain backgrounds with their own colour palette carrying their names and electorates but no mention of Labor.

The LNP has accused government MPs of deliberately trying to mislead voters. “Labor MPs are so embarrassed and ashamed of their decade of failures they’re running Miles from their leader and Labor colours,” deputy LNP leader Jarrod Bleijie said.

“They’re so desperate to sneak back into government they’re trying to con Queenslanders by debranding from Labor.”

Asked whether the Premier believed his colleagues were trying to distance themselves from him and the party, a spokeswoman said Mr Miles was not focused on campaign material.

“The LNP might be focused on the colour on a corflute,” she said.

“The Premier and his Labor team are focused on doing what matters for Queenslanders.”

On Saturday, Environment Minister Meaghan Scanlon, one of five ministers who would lose their seats if the swing identified by Newspoll was replicated across the state on election night, said the government’s cost-of-living policies were garnering support from voters.

“Everyone I speak to knows about the cost-of-living relief our Labor government is delivering,” she said. “I don’t think I’ve spoken to a single person who doesn’t know about 50c fares.”

Primary support for the LNP has surged under Mr Crisafulli’s leadership, growing from 35.9 per cent at the 2020 election to 42 per cent, according to Saturday’s Newspoll.

Support for the ALP remains above the 26.7 per cent primary vote mustered by Anna Bligh’s government at the wipe-out 2012 election when Labor was reduced to seven seats.

Helping hand fulfils this rural volunteer



Aussie Helpers chief executive Natasha Kocks has been nominated for a Shine Award

CHARLIE PEEL
RURAL REPORTER

When Tash Kocks received a phone call from her dad seven years ago asking for help running a rural-focused charity he and his wife founded, she initially was reluctant.

“But when your dad asks for help, you can’t say no,” she said.

She agreed to work for Aussie Helpers a few days a week while continuing to run her beauty business. But she quickly came to understand the deep satisfaction that came from helping others.

“I could never really understand why my parents had such a passion for what they did, because they volunteered their time 24/7 just trying to help others,” Ms Kocks said.

“I got to talk to some of the farmers on the phone and connect with them, and then I really started to understand why they did what they did, because you just wanted to do as much as you could to get them out of such a bad situation.

“So 12 months later, I ended up coming on board full time.”

She’s now the chief executive of Aussie Helpers, which was founded by her parents, Brian and Nerida Egan, in 2002 when their own farm was taken by the bank during the millennium drought.

Their devastation prompted them to start a charity organisation to help other farmers facing similar challenges.

“It was them recognising what they’d been through and that other people might be in need,” Ms Kocks said.

“For them there was no help, there was no one they could go to.

“That was a really tough period for them emotionally, and depression came into it, which gave Dad the basis for his idea because he had been through it and could relate.”

Brian Egan, who died in 2020, started off raffling groceries at a local pub to raise money and gradually the charity grew.

Aussie Helpers provides financial and wellbeing support for farmers and people living in rural Australia.

Ms Kocks and her small team travel the eastern states helping wherever they can, from farmers struggling to feed their stock because of droughts to rural communities devastated by floods.

The organisation also provides thousands of breakfasts, donated by Sanitarium, every year in rural schools to make sure no child goes hungry.

“I was terrified at first because I had big shoes to fill, but now I love what I do,” Ms Kocks said.

“I think the biggest thing is the people that we meet and connect with.

“We meet them when they are going through really bad times, but we also get to see people coming out the other side and get to see them shine.”

Ms Kocks, who lives in Gladstone, is also on the board of the Queensland Rural, Remote and Regional Women’s Network, a not-for-profit organisation that supports women in the bush.

“It’s about connecting,” Ms Kocks said.

“A lot of rural women can often feel very isolated so we do a lot of networking and events bringing rural women together.”

For her work to support rural Australians, Ms Kocks has been nominated for a Shine Award.

Now in their eighth year, the awards – run by rural masthead The Weekly Times and supported by Harvey Norman – recognise the achievements and contributions of women across rural and regional Australia.

NOTICE OF INTENTION

Proposed transfer of the life insurance business of TAL Life Insurance Services Limited ABN 31 003 149 157 (TLISL) to TAL Life Limited ABN 70 050 109 450 (TAL Life).

TLISL and TAL Life give notice of their intention to make an application to the Federal Court of Australia (**Federal Court**) for confirmation of a scheme under Part 9 of the *Life Insurance Act 1995* (Cth) to transfer the life insurance business of TLISL to TAL Life (**Scheme**). The proposed effective time of the transfer is 11:59pm AEDT on 31 March 2025 (**Effective Time**).

The application is scheduled to be heard at 9.30am AEDT on 24 February 2025, or on such other time or date as the Federal Court appoints.

The hearing will be heard at the New South Wales Registry of the Federal Court, located at Law Courts Building, Queens Square, Sydney.

Affected policy owners have the right to attend the hearing and can request to be heard by the Federal Court.

If the Scheme is confirmed by the Federal Court, then it is proposed that with effect from the Effective Time, TAL Life will assume all of TLISL’s rights and liabilities in relation to all life insurance policies issued by TLISL. The contractual benefits and rights of TLISL policy owners will remain unchanged, other than:

- a change to the insurer from TLISL to TAL Life; and
- a change to the statutory fund supporting each person’s policy.

If you are affected by the Scheme

Any policy owner who may be affected by the Scheme is entitled to attend the court hearing and request to be heard on the application. If you wish to be heard at the hearing, please contact the lawyers for TLISL and TAL Life, Herbert Smith Freehills (attention: Michael Vrisakis and Tamanna Islam), 161 Castlereagh Street, Sydney, NSW, 2000 (telephone 02 9225 5000) before the hearing date.

If you wish to obtain further information on your rights as a policy owner or if you have any questions about the Scheme, please contact our Contact Centre on 1300 537 699 or email us at transfersupport@tal.com.au.

A copy of the Scheme document, the actuarial report upon which the Scheme is based, and an independent actuarial report on the Scheme can be viewed online at:

- btlifeinsurance.tal.com.au/transfer; and
- tal.com.au/transfer.

A Scheme summary has been or will be sent to affected TLISL policy owners.

Any TLISL policy owner and any TAL Life policy owner may obtain a copy of the Scheme document and the actuarial reports, free of charge by calling 1300 537 699 or by emailing us at transfersupport@tal.com.au.

It is in the interests of policy owners to examine the Scheme document and the actuarial reports so as to assure themselves that the Scheme, if confirmed, will not adversely affect their interests.

If you have any questions

Please contact our Contact Centre on 1300 537 699 or email us at transfersupport@tal.com.au if you have any questions in relation to the proposed transfer under the Scheme, or if you require further information on your rights as a policy owner.

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State's roads to perdition

Government slashes resurfacing budget

EXCLUSIVE
Alex White

Potholes on roads across Victoria are set to get worse, with the debt-riddled Allan government slashing resurfacing and rehabilitation works to a third of what was being fixed three years ago.

Data released in performance reports linked to the May budget reveal the shockingly low amount of rehabilitation work that will be carried out across regional Victoria and metropolitan Melbourne.

It has prompted experts to warn motorists they will see massive deterioration across the road network.

The damning figures show that resurfacing works for the next 12 months had plummeted by more than 65 per cent on regional roads, and 25 per cent in metropolitan Melbourne, in just three years.

This meant that nine million sq m of roads were being treated to fix and protect against rain and potholes in regional Victoria in 2022-23, but that has now dropped by two-thirds to 3.1 million sq m in this year's budget. On Melbourne's suburban roads 729,000sq m of works were done in 2022-23 compared to 542,000sq m budgeted for 2024-25.

Justin Bartlett, managing director of VSA Roads – regional Victoria's largest bitumen provider – said the underspend was resulting in the state's roads deteriorating at an alarming rate.

"It's dramatic," he said. "The whole resurfacing industry in regional Victoria has been decimated.

"There's a life cycle of bitumen and after 10 years it becomes aged and brittle and starts to crack and if you're not resurfacing, water gets in and potholes occur. "The pothole becomes a dig-out, and then it's a full rehabilitation.

"The one thing you don't cut back on is the percentage of roads being resurfaced because otherwise you have an exponential spend down the track."

He warned roads would continue to deteriorate with every rain event because they are "no longer resilient". He also lashed out at the government's new much-hyped 10-year plan.

"It's just nonsense. You take a number and times it over 10 years to make it sound like a big number. They say we are spending $6.6bn, but in reality that's far less than they've spent in the past."

Nationals MP Danny O'Brien blasted the government, saying "Victorian motorists are paying the price" for the government's mismanagement of road maintenance.

"These savage reductions in the resurfacing program in recent years mean we'll likely just see worse roads in future," Mr O'Brien said. "Our cars have to be roadworthy but it seems the government isn't interested in making our roads car-worthy."

A government spokesman blamed floods, not funding, for the significant damage to Victoria's road network.

EDITORIAL, PAGE 22

HEARTFELT MOMENT FOR CATE



Australian actor Cate Blanchett is overwhelmed at receiving the Donostia Lifetime Achievement Award at the 72nd San Sebastian International Film Festival in Spain. The honorary prize also went to Spanish actor Javier Bardem and his fellow countryman and filmmaker Pedro Almodovar.

Flight curfew a risk to 58k jobs

Jade Gailberger

More than 58,000 jobs and $6.5bn worth of activity would be put at risk if a curfew was slapped on Melbourne Airport.

The warning from Australia Pacific Airports comes after federal Transport Minister Catherine King this month approved a long-awaited third runway at the airport.

Greens leader Adam Bandt is among locals calling for a curfew to mitigate the sleepless nights from those in the flight path. But a Senate committee investigating the impact of aircraft noise has heard that restricting travel between 11pm and 6am would also impact trade to Asia.

Sixteen of the 33 flights that operate during those hours are freight, including for time-sensitive products such as seafood.

"We are able to move that freight on a timely basis and that is one of the great benefits of having a curfew-free operation ... those markets are not impacted," APA spokesman Justin Portelli said.

"Each 24 hours that gets delayed has about a 20 per cent value impact on that produce."

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APOLOGY

We're sorry.

You might have noticed that we made a mistake in the Woolworths Catalogue on sale Wednesday 18th September 2024. We featured an incorrect image for the $6 Pokemon Assorted Stellar Crown Blister pack on page 28 sold at our partner, BIG W.

We apologise for any inconvenience caused.

Woolworths

Letter to the Editor
Better Councillors demanded

Its time to evaluate the old crop of Councillors and assess what we need from a new crop. Councils matter. They not only provide the basic infrastructure of roads, footpaths. bridges and parks; but they also provide a range of community services and important advocacy for the area. They also have the power to set rates, which in our case are exceptionally high.

Anecdotal evidence suggests that Councils that exceed people's expectations (certainly not ours) have the characteristics of high levels of cooperation between Councillors, Council staff and the community with open transparent and healthy debate. Unfortunately for the community there's been little, if any, leadership and holding of Council staff to account. Most of the key initiatives of the current Council were determined by the previous one. Three years ago, the scene was meant to be set with a Citizens Assembly developing a vision for the Shire, which Council basically proceeded to ignore significant aspects of it. After three years it remains unclear what the current crop of Councillors has achieved.

Under their watch there's been a further erosion of democracy with the limitations on people being able to come in and ask questions uncensored. The elimination of the public from most non-commercial or staff briefings is a retrograde step. As ratepayer we might be paying full fees for our Councillors, but they are increasingly just a rubber stamp for staff recommendations for decisions of Council. Our Councillors are not informing us of their opinions nor holding staff to account. When you take out the monthly report of Councillors activities many meetings are lasting less than an hour vs 2-3 hours of the previous Council. Contrary to good governance and legal requirements, it appears that decisions have been made behind closed doors in briefing sessions with little if any public debate in the Council proper.

At a time when according to the State Government Whelan Report on Small Rural Council Finance rates should be falling as the asset load per assessment decreases with population 30,000 plus, our rates are one of the most expensive for our category of shires and indeed rising. Councillors have allowed a 100% increasing in capital works to $36m or an increase of 28% percent of our rates. The only ones benefiting are the favoured contractors. Farmers are disproportionately bearing the high cost of this largess though too high rate rises of nearly 10% vs 2.75% generally an unaffordable and unexplainable tax on our economy by our current crop of Councillors.

Without any fanfare it appears the $30m has been added to the forward budget unannounced for work at the municipal precinct without Councillors questioning it. Staff have allowed Coal Creek costs to blow out by nearly 400% to a $1m loss with a recent fake plan strangely with no budget allocation or performance targets endorsed by our Councillors. And appallingly there is little if any marketing.

There are serious allegations of failure to lawfully manage contracting. Two separate independent audits which have been leaked by internal whistle-blowers have allegedly raised serious of concerns requiring urgent remedial action. Council's senior staff have refused to release them, and our lame duck Councillors don't take any action to hold them to account or even demand that they are released after being advised that they exist. We are not sure if any of the over 40 recommendations have been implemented.

We need Councillors who are not passive lame duck ones. Ones who really set the direction. Ones who genuinely value democracy and partnership with the community. They must commit to reintroducing open question time not subject to staff censorship; reopen most briefings to the public and like Mornington Shire broadcast them as well as Council meetings and make decision through proper debate in Council not behind door illegal decision making in briefings. The new Councillors need to demand that Council process fair FOI requests and stop the stonewalling and delaying of them on sensitive matters,

The new Council needs to call for an urgent independent review of decision-making processes in compliance with the Local Government Act and the efficacy and compliance of contracting. It needs to release the two independent audit reports. They need to cut the capital works budget back to the long-term average and pass on zero rate rises for at least three years.

Council needs to stop being afraid of the community and act on the community vison developed through the Citizens Assembly that they actually implement in its new 4-year Council plan. We need Councillors who genuinely listen to and work for the community and not for Council staff. We don't want or need seat warmers, but real Councillors who have opinions and ideas, who listen to and respond on behalf of the community and who are active farsighted and democratic in their approach.

Andrew McEwen
Korumburra



Andrew McEwen says we need real Councillors not rubber stampers

Letter to the editor
Nuclear energy a risk to farming

The Liberal and National Parties recognise the need to cut carbon emissions by 2050 and have a policy which includes generation of electricity through the building of small modular reactors (SMR), a type of nuclear reactor.

Land within an 80km radius of a nuclear reactor is classified as an "ingestion exposure pathway", under international standards. This means that people may be exposed to radiation if they eat, or drink, food produced within the 80km radius after a leak. Internationally, farms within such a radius routinely test produce for radiation. Despite best intentions, leaks occur. Forty of the fifty-seven nuclear power stations in the US have leaked at some stage.

According to the International Atomic Energy Agency, there are NO small modular reactors currently in operation anywhere in the world.

Gippsland farms produce significant quantities of Australia's food. Unfortunately, many of these farms are within 80km of the planned site (Loy Yang) for the untested, small modular reactors.

Do we really want to risk large scale contamination of our dairy, beef, vegetables and water for the sake of nuclear reactors, which may leak and have not been tested anywhere in the world?

People in Gippsland have too much to lose to vote for nuclear power.

Deb O'Connor
Berrys Creek

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Seniors Week

Celebrate Seniors Week at South Gippsland.

South Gippsland Shire Council is thrilled to be supporting a number of events happening around our region.

Seniors Lunch at the Mirboo North Hotel: Saturday 28 October from 12.00pm

Seniors Week Entertainment at the Leongatha Senior Citizens Centre: Friday 11 October from 1.00pm

Seniors U3A Prom Coast Performing Arts Concert Singalong at the Foster War Memorial Arts Centre: Wednesday 23 October from 10.00am

Letter to the editor
Party hacks keep out

The heading of your recent article by Australian National University academics "Beyond roads and rubbish: Australians now expect local councils to act on bigger issues, including climate change" is certainly misleading.

The article gives responses from 1350 survey respondents (in Canberra?) claiming over 90% of respondents agree with "motherhood" sentiments saying local councils should support the needs, values and health of local communities but does not expand on the results of the question whether councils "should focus on providing only basic services (roads, rates and rubbish.) To this question the article claims 70% agree and 30% disagree. Surely this should be the main takeaway from the survey, forget the green, woke and international issues.

I suppose unsurprisingly, for a survey conducted by a university in Canberra, a result of 69% agree with the question " Political parties should play a greater role in local government. We can do without poitical aspirants, party hacks and division along party lines here in South Gippsland.

Steve Finlay
Leongatha



Peninsula Grammar School year nine students recently assisted the revegetation project, continuing the school's 15-year volunteer work at the Heyfield Wetlands. Photo: Mike Kube

Wander through restored wetlands

Erika Allen

THE Heyfield Wetlands will host a bird-spotting and conservation appreciation day on Saturday, October 12, offering nature enthusiasts a chance to explore ecological restoration efforts in the area.

For a $10 fee, participants can join a guided tour led by Callam Reynolds, who consults on environmental projects including wetland restoration.

People can learn how to identify plant species and understand the importance of restoring wetland ecosystems. Funds raised will go towards maintaining the wetlands.

Heyfield Wetlands committee member Mike Kube said 15,000 shrubs, grasses, and aquatic species have been planted over the past 18 months, made possible by a two-year Gippsland Lakes Coordinating Committee community grant.

The $90,000 grant meant the committee could appoint an expert in wetland restoration to manage the revegetation project.

Some plants are still establishing – 240 were planted earlier this month by first-year Monash medical students who were undertaking their community-based placement in Heyfield - but the event will highlight the role these plants play in supporting the ecosystem, such as improving water quality, as visitors explore the lagoons and ponds.

The wetlands have not always been a paradise. Mr Kube said he'd seen photographs from 1999 depicting scarce plant life.

"People used to say when it flooded, it just stank. The water would stay there, and it would become quite unpleasant," he said.

Rain washes water from roads, carrying dirt and pollutants, while heavier downpours bring run-off from nearby farmland to the southwest, bringing compounds like phosphates into the wetlands.

Mr Kube explained the primary goal of revegetating the wetlands was to improve water quality before it flowed into the Thompson River and Gippsland Lakes.

Mr Kube said past revegetation projects have focused on terrestrial species rather than aquatic plants. This time, they have been planting below the water line and around the ponds' fringes that sometimes flood. This is called the ephemeral zone.

Species are planted strategically according to their optimal aquatic environment – what depth they can survive in.

A 1.8-metre wide, 25m-long jute mat made from organic material is laid over the ground, with plants inserted directly into it.

"You lay that right along the high water mark, and then you plant in that jute mat. The whole idea is that the jute mat hopefully suppresses weeds and lets the plants (grow), and the jute mat rots away after a couple of years," Mr Kube said.

He said school groups commonly volunteered time to planting, with one metropolitan school consistently contributing over 15 years.

Peninsula Grammar School students have travelled to the Heyfield Wetlands as part of their outdoor education program, planting over 20,000 trees, shrubs, grasses and aquatic plants throughout the years.

Mr Kube said students recently assisted the current revegetation project, planting up to 750 plants in one and a half hours.

The revegetation project is set to conclude at the end of December, but the nature walk in October is a chance to showcase the work done so far.

Mr Kube said the guided nature walk is the first of many recreational activities developed by the Tourism Innovation Working Group, a new community-led group that has been formed as part of the Future of Heyfield Timber Transition project.

"(The wetland) certainly is a recreation resource. When you're down there working, there's heaps of people that seem to be walking around any time of the day, so from that point of view, it's really good," Mr Kube said.

The nature walk begins at 10am and will wrap up at noon on October 12. Heyfield Lions Club are catering a barbeque lunch.

Anyone interested in the event is advised to make a booking via this website **https://www.trybooking.com/events/landing/1288326**

Eisteddfod win for Sale City Band

SALE City Band tasted success at the Latrobe Valley Eisteddfod in Traralgon on September 8.

Competing in the D grade section, the Sale band won the competition against Aberfeldie, Stonnington (both from Melbourne) and Warragul.

Bands played three contrasting pieces with the adjudicator awarding Sale first place for its performance of *Poppies For Fallen Soldiers*, a hymn style tribute; *Road To Run*, a piece in the style of the classic big band song *Birdland*, featuring solos from within the band; and the concert march *Punchinello*.

The result was greeted with cheers and fist pumps from players who worked hard and played well under first year musical director Tom Cousin.

There will be an opportunity to hear the band perform these pieces at their annual concert at The Wedge on Sunday, October 13, from 2pm.

The concert is a culmination of brass band tradition with a big band sound, local talent and vibrant themes based on the events of 2024. There are featured artists Izzie Wicks and Jonathon Kendall performing vocals and instrumental solos, backed by the full sound of the versatile 25-piece brass band.



Singers Izzie Wicks and Jonathon Kendall with Musical Director Tom Cousin and the cornet section of the Sale City Band rehearsing for their upcoming October concert. Photo: Contributed



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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

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JA22604



Director Yashmita Mahindra is expanding the C-Bay General Store and opening a café due to popular demand within the growing community of Coronet Bay. Z01_3924

New café opening in Coronet Bay this summer

THE C-Bay General Store re-opened its doors under new management in June last year. Since taking over – now operating as a family business, director Yashmita Mahindra and her husband Harmeet Singh Sidhu have prioritised expanding the store's grocery variety and all-day menu, moving beyond its initial limited offerings.

Customers can now enjoy a broader selection of alcohol, groceries, and diverse food options, including country fried chicken, homemade Indian cuisine and beloved pub-style dishes like the classic chicken parmigiana. Operating from breakfast through to dinner, the store caters to both the local community and tourists flocking to the area.

To meet the growing demand for dining options, Yashmita and Harmeet saw the opportunity to make efficient use of their space and open a new on-site café with plans to welcome indoor dining with a new breakfast menu.

"We're planning a place for locals and visitors to enjoy their coffee and a café style meal," Yashmita explained.

The management and staff are excited about the store's potential and look forward to becoming a staple in the community, with plans for the café's official opening this summer.

"We've also expanded our variety in-store with a large range in the grocery and confectionery aisle."

Yashmita has ambitious plans for the future, including the re-opening of the fuel station. In a discussion with the Sentinel-Times Yashmita highlighted the importance of the general stores' central location, which is just 100 metres from the Coronet Bay Foreshore Reserve, the Bronze Yarns Sculpture Walk and Coronet Bay Launching Facility. This prime spot makes it an ideal hub for locals and visitors alike.

Stay tuned for more updates as C-Bay General Store & Café continues to evolve and serve the needs of its patrons. Visit the friendly staff at 100 Cutty Sark Road, Coronet Bay from 8am until 8pm.

Milestone success for mouse matchmakers

PRECIOUS Pookila pups have been spotted in Wilsons Promontory National Park, signalling an early success for a genetic rescue mission.

In September 2023, six female Pookilas were released to the Prom in the hopes that they would couple up with local males. This flagship cohort were bred as part of a conservation breeding program at Melbourne Zoo and Moonlit Sanctuary.



Pookila pups at Wilsons Promontory National Park.

Now, a year later, six pups have been seen frequenting burrows near the release sites.

The small burrowing mouse is native to south-eastern Australia and inhabits open heathland and coastal areas.

Habitat destruction and predation by cats and foxes has caused the species to become extinct in seven of its known 12 Victorian locations. The remaining wild populations are fragmented and susceptible to inbreeding and further decline with the effects of climate change.

Small tissue samples taken from the wild-born pups will help researchers monitor the genetic health of the remaining wild populations, with the hopes of documenting an increase in diversity with each new generation.

This month, a further four female Pookilas have been released to the Prom to continue the mouse matchmaking initiative.

Shy and nocturnal, Pookilas are soil engineers who build complex multi-generational burrow systems, which aerates the soil and contributes to the spread of seeds and fungal spores. They can be distinguished from the house mouse by their bicoloured tail, large eyes, soft, thick fur, and a lack of 'mousey' odour.

The five remaining Victorian sites, believed to contain fewer than 3000 Pookilas, are in Gippsland – including at Wilsons Promontory and Loch Sport. An additional population was established in Royal Botanic Gardens Cranbourne in May.

The Victorian Pookila Conservation Breeding and Reintroduction Program is a joint project between the Department of Energy, Environment and Climate Action, Gippsland Water, Moonlit Sanctuary Wildlife Conservation Park, Parks Victoria, Royal Botanic Gardens Victoria, Zoos Victoria, and partners in Gunaikurnai Land and Waters Aboriginal Corporation and Bunurong Land Council Aboriginal Corporation.

The Victorian Government has committed $690,000 to the protection of Pookila through its Nature Fund, along with Zoos Victoria's Bushfire Emergency Wildlife Fund donations and generous philanthropic contributions in safeguarding our native species. We are proud to contribute to the recovery of this endangered mouse and look forward to continued success as more Pookilas are released into their natural habitat.

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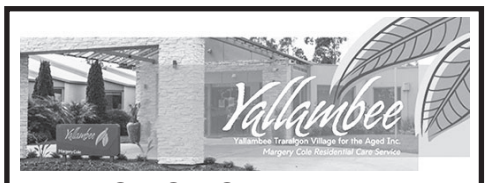

NOTICE OF ANNUAL GENERAL MEETING
Yallambee Traralgon Village for the Aged Inc.
(Margery Cole Residential Care Service Provider)
is to hold its 2024 Annual General Meeting on
Monday, 28th October 2024 at 6pm
at Margery Cole Residential Care Service,
1 Matthews Crescent, Traralgon Vic. 3844
All members of the Incorporated Association are hereby invited to join the meeting

Livestock

MARKET DAYS
- Wednesday prime sales
- Monthly store sales
- Fortnightly lamb sales



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Paramedic Immogen Nolan and MICA parameic Duncan Roney were guiding locals on how to perform CPR effectively. Ns16_4124

Saving one heart at a time

ONE of the most dire medical episodes someone can experience is cardiac arrest but thanks to the efforts of local paramedics an automated external defibrillator (AED) is now located outside the Wooli Express.

Cowes paramedics held a community session to not only inform locals about the AED, but showcase how to use it and how to help save a life during a cardiac emergency by performing CPR.

High praise was also given to the Rotary Club of Wonthaggi, who donated the AED and supported the initiative.

Speaking at the Wooli Tavern on Saturday, October 6, senior MICA team manager, Duncan Roney said an AED was invaluable as the earlier someone can shock the heart the better chances it has of recovering.

Paramedic Immogen Nolan also highlighted that every minute CPR is delayed, the survival rate is decreased by 10 per cent.

"So if 10 minutes goes by without CPR being initiated, you don't have much chance of surviving," she said.

"It's really important we get a bystander performing CPR, particularly in areas that are quiet or very isolated.



MICA paramedic Duncan Roney was presented with a Paul Harris Fellow award from the Rotary Club of Wonthaggi. He is pictured with past District Governor Linda Humphries. Ns19_4124

"We rely on communities to do CPR effectively."

She noted when performing CPR, aim for a five-centimetre depth compression, or a third of the chest, and it should be hard enough to potentially crack ribs.

"You want to be able to get a full recoil as well, when you're pressing down, you want to come up to allow the blood to fill up again and pump it around."

It is also important to check for a pulse or if the patient is breathing.

"We just want bystanders to get onto the chest compressions straight away and make sure you're prioritising CPR over the AED," she said.

"If you're by yourself and someone has gone into cardiac arrest, we'd rather you call for help and start compressions, don't worry about the AED, get someone else onto that."

And much to Duncan's surprise, Wonthaggi Rotary presented him with the prestigious Paul Harris Fellow award in recognition of his contributions to the community for the activities and programs he's led.

Paramedics also urged locals to sign up to become a GoodSAM responder by downloading the app, where you will be alerted if someone is in cardiac arrest nearby.

For more information, visit ambulance.vic.gov.au/call-push-shock.



Paramedic Immogen showcases how to use an AED. Ns18_4124

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Community Consultation-decommissioning of oil & gas infrastructure in Bass Strait

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Clearing Sales

CLEARING SALE
Sunday 20th October, 10am
No 1 Briona Court, Trafalgar

Items include: Nissan forklift 2 ton, 1986 Mercedes Benz car 230E, 6ft shearing machine 3 phase, elec. bench steel cutter, large 3 phase air compressor, Stihl chain saw, Honda motor, drop saw, engine stand, large 3 ph. welder, welding bench, pressure washer (petrol), bench plane 3 ph. Hofmann 2500 kg four lift car hoist, bench saw, wia mig welder 335, oxy set, elec. hacksaw, large lathe, fuel pod approx. 400 lts, Haff guillotine roller (as new), big assortment of tools, car parts, including hand metal bender, drill stand, battery charger, router, spray guns, mechanic's tools, tool boxes, large shifter & pipe wrench, asstd. load chains & dogs, elec. drills, nail gun, ¾ drive socket set, ext. ladder, sandblasting cabinet, sinker moulds, brass air fittings.
Assorted Mini Car Parts & manuals, asstd. Austin parts, old Oldsmobile car, asstd. car manuals & magazines, sundry truck parts car & truck tyres, 4 car tyres 285-60-18 (as new), large asstd. car parts, nuts & bolts.
Assorted furniture - Bechor upright piano, glass top table & chairs, swinging garden chair, asstd. antique type furniture, patio couch, garden tool, s/h bricks & bluestone, milk cans, old fire extinguishers, box floor tiles, 15 boxes 60x60, 3 boxes 30x40, assorted camping & fishing gear.

This has been a big assortment of tools collected and used over a lifetime

Terms: Cash or EFTPOS or Bank Transfer on day of Sale.
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No Parking on Nature Strips - Use Main Road Nearby.
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WG17951

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At the Gippsland Regional Livestock Exchange SALE
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CONTACT
Ben Greenwood 0429 193 136
Gordon Conners 0408 131 720
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GP1672961

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MORWELL, 8 Watt St, Sat., 8am - 3pm. Workshop gear, garden tools, electrical gear, household goods and much much more.

Garage Sales

TRARALGON, 24A Albert St, Sat. 8-12pm. Tomatoes, capsicum, zucchini, sweet corn plants, $3.50 ea. Also fish aquarium liquid fertiliser & bric-a-brac. Plants avail. during weekdays also. All proceeds to Guide Dogs.

TRARALGON
11 Harvard Avenue, Sat. 8am-12noon. Lots of bric-a-brac, landscaping, plants and camping gear.

Meetings



Police Boys Junior Football Club A.G.M.
Thursday 7/11/2024
Commencing 7pm
Traralgon RSL, Grey St
All interested parties are invited and welcome to attend. All positions are declared open, nominations forms for positions are available on the night or from the secretary.
secretary.policeboysjfc@hotmail.com

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Personals

FRIENDSHIP/ COMPANIONSHIP
David is a 79 years young, fit and active, well presented man. David is fortunate enough in having a lifestyle allowing him to enjoy travel, the outdoors, gardening, dining out and enjoying life with that someone special. To speak to David please call 1800 261 848 or 0488 200 554. Genuine callers only.

Public Notices

GUITAR LESSONS
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Lawns Mowed
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Public Notices

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Community Consultation - decommissioning of oil & gas infrastructure in Bass Strait

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Victoria on the international stage for offshore wind energy

The Allan Labor Government is cementing Victoria as an international leader in renewable energy with Melbourne set to host the Global Wind Energy Council's Asia Pacific Wind Energy Summit.

Minister for Tourism Sport and Major Events Steve Dimopoulos and Minister for Energy and Resources Lily D'Ambrosio announced the APAC Wind Energy Summit will be held at the Melbourne Convention and Exhibition Centre in July 2025.

The three day summit brings international industry leaders, policymakers and global investors to Victoria – the home of Australia's first offshore wind generation industry. Following a successful inaugural event in Melbourne in 2023 and a second edition this year in South Korea, the third conference will provide a platform to drive discussion regarding the growth of wind energy across the Asia Pacific.

Businesses will play a strong role in supporting the delivery of the offshore wind industry which will be key to the state's renewable energy transition and meeting the legislated targets of at least 2 gigawatts (GW) of offshore wind energy generation by 2032, 4 GW by 2035 and 9 GW by 2040. The state is also leading the way in accelerating the deployment of offshore wind power – announcing at the 2023 summit that Victoria was the first subnational government in the world to join the Global Offshore Wind Alliance.

Offshore wind is critical to helping Victoria reach net zero emissions by 2045 and is expected to create over 6,000 jobs and generate billions in investment. Victoria will release an Expression of Interest for the state's first offshore wind energy auction by the end of the year, an important next step in building the first offshore wind farm in the country.

The conference will also boost the state's economy, with 1500 delegates staying at local hotels and enjoying the best of Victoria's hospitality sector, delivering an estimated economic contribution of $5.8 million.

Business events like the summit continue to make a significant contribution to the Victoria's economy - in the last financial year, Melbourne Convention Bureau delivered 213 business events and secured 215 future business events which are forecast to deliver $252 million in economic benefit.

Minister for Energy and Resources Lily D'Ambrosio said:
"Victoria has some of the best offshore wind resources in the world and we've done the groundwork to become the home of the country's first offshore wind industry which is attracting significant investment from all over the world."

Minister for Tourism Sport and Major Events Steve Dimopoulos said:
"We are proud to support this summit which plays a strong role in boosting our economy and bringing together people who share our vision for taking strong action against climate change."

ExxonMobil

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New public facilities for Stony Creek Racecourse

Thanks to support from the Allan Labor Government, visitors are set to benefit from new facilities at Stony Creek Racecourse that will enhance race days and local events.

Minister for Racing Anthony Carbines visited the Stony Creek Racing Club to announce funding for a major upgrade to customer facilities and outdoor dining area.

The refurbishment will include upgrades to the public bar, the TAB area which will include a new customer service hub, the race day office as well as a new alfresco deck and shade sail outside.

Construction on the customer service hub and race day office has begun and is expected to be completed this month, while other works are expected to start later this year.

The Labor Government has tipped in $100,000 towards the refurbishment as part of its Regional Customer Facilities Program grant, with the club also providing more than $128,000. This announcement follows the clubs recent unveiling of a new automated irrigation system at the racecourse which the Labor Government contributed $319,000 towards.

Completed in April this year, the new system enables consistent watering across the track while reducing the risk of leaks, overwatering and pooling.

The watering system will be of immense benefit to trainers and jockeys, improving the track condition for the club's five annual race meetings and up to four official trials and jump out meetings.

Since 2014, the Labor Government has provided more than $840,00 to support six racing events and 12 infrastructure projects at the Stony Creek Racecourse.

Minister for Racing Anthony Carbines said:
"These upgrades to Stony Creek Racecourse reflect our commitment to ensuring regional racing clubs get the support they deserve. I look forward to seeing how these new upgrades benefit the club now and into the future"

Member for Eastern Victoria for Tom McIntosh said:
"The thoroughbred racing industry in the Latrobe-Gippsland region generates more than $89 million for the Victorian economy and helps sustain over 700 full-time equivalent jobs in the region."

Stony Creek Racing Club Chief Executive Officer Jason Benbow said:

"We would like to thank the Victorian Government for awarding our club with significant grants to help improve our racecourse and customer facilities."

Worms – what's the spring risk?

The reduced pasture heights for much of Victoria are increasing the susceptibility of sheep (and cattle) to internal parasites.

Grazing below a pasture height of 4cm will increase the ingestion of infective larvae. While most egg contamination occurs in the summer-autumn period, up to 40% can come from eggs deposited during late spring and early summer.

Typically, in spring there is an abundance of quality pasture which allows your sheep to cope with the worms they have.

However, given the challenging season this may not be the case. Farmers who are early weaning due to low feed availability need to prioritise worm control as weaners are the most susceptible livestock class to internal parasites.

Livestock that are in poorer condition and potentially on restricted nutrition can have a reduced resistance and resilience to internal parasites.

It's crucial to assess worm burdens during high-risk conditions, which in the current seasonal conditions could include lighter stock grazing shorter and highly contaminated pastures.

It's also important to have worm-free paddocks set up for weaners. Ideally, paddocks that weaners are put into will have only been grazed by sheep who received an effective summer drench.

The best paddocks to put weaners into may be ones that have been hay paddocks, are new pastures or paddocks that have been grazed by mature cattle.

Sheep that are infected with worms may show signs of scours, weight loss or event death. It is essential to monitor worm burdens using Wormtest 4-6 weeks after the weaning and treat based on results.

Summer drenching is the key to minimising this worm carryover into next year - by making sure there are few worms in your sheep getting a free ride to autumn.

Management of internal parasites is essential for animal production and welfare, especially during high-risk times when stock are in light condition.

Seek advice from your animal health professional such as a veterinarian or consultant to assist with developing a worm management strategy.

For more information about managing in dry seasonal conditions visit agriculture.vic.gov.au or call 136 186.



Mural evidence linked to anti-mine activists

Continued from Page 1

Council – has told The Australian elders from the Orange Local Aboriginal Land Council believed the songlines of the blue-banded bee Dreaming "had never previously existed".

Significant surveys in 2021, including the Philip Clarke Aboriginal Cultural Values Mapping Report, the Lance and Kamminga report and the Sneddon cultural surveys, did not mention the Dreaming.

In her detailed reasons, Ms Plibersek said six members of the OLALC, including five Wiradyuri elders, had disputed the veracity of the blue-banded bee Dreaming in a February submission.

"Information about a public artwork by Wiradjuri artist Baranga Wiradjuri (Birrunga Wiradyuri), named the Blue Banded Bee Creation Story, was also submitted to support the validity of the Dreaming as an Aboriginal tradition," she said in her report. "Whilst not identical, the description of the artist's interpretation of the Dreaming is largely consistent with WTOCWAC's explanation."

Additional details on the Dreaming story were provided to Ms Plibersek by an unnamed Wiradyuri elder whose submission was delayed due to medical issues.



The blue-banded bee mural at Bathurst Post Office

Mr Wiradyuri began painting in the 2010s, later opening his own gallery in Spring Hill, Brisbane.

He was born Robert Henderson and presented his art under that name until at least August 2018, before going by Birrunga Wiradyuri.

Originally from rural NSW, he has lived in Queensland since primary school, primarily around the Sunshine Coast.

Created in collaboration with Indigenous artists Kane Brunjes and Stevie O'Chin, the artwork's portrayal and placement on a songline is detailed on Mr Wiradyuri's gallery website.

"Our sacred mountain is Wahluu (Mount Panorama). There is a sacred songline that runs from Wahluu to Bubay Wahluu (Mount Stewart) and it is this songline that is portrayed in the work," the caption reads.

"We Wiradyuri, with the counsel and guidance of our Elders, performed a healing ceremony that healed this Songline in 2018. In 2022 the production of the work was housed in Bathurst Memorial Entertainment Centre which is on that Songline."

In an interview with Bathurst radio station 2BS from February 2022, Wiradyuri said the work "very much sticks to that story (of the blue-banded bee); it's very close to us Wiradyuri".

WTOCWAC was contacted for comment and Ms Plibersek declined to elaborate on her detailed reasoning.



JOHN GASS

Birrunga Wiradyuri and Kane Brunjes at the Brisbane Portrait Prize Indigenous exhibition at Birrunga Gallery in 2022

Twin breaks silence in brother's murder trial

EMMA KIRK

The twin sister of a man who allegedly killed his mother to gain money from life insurance policies has given evidence in his trial, telling the court of a phone call with her mother's psychologist, who shared concerns about her brother.

Monique Rebelo described the day her mother died as "one of the worst days of my life".

Her brother Andre Zachary Rebelo is on trial for the murder of their mother Colleen who was found dead at her Bicton home in Perth's southwest on May 25, 2020. He has pleaded not guilty.

Last week, the WA Supreme Court was told Mr Rebelo had taken out three life insurance policies against his mother in the week before her death.

Prosecutor Brett Tooker told the court three days after Ms Rebelo died, Mr Rebelo started the claims process to access the insurance premiums.

The jury heard he also submitted forged documents to one of the insurers, including false medical information about his mother, a coroner's report and her last will and testament.

He pleaded guilty to four charges of fraud in relation to the forged documents.

Ms Rebelo's cause of death has never been established.

The court was told while her death was unexpected it was not treated as suspicious by first responders who were called to Ms Rebelo's home when she died.

The jury also heard police reopened the case when one of the insurers reported the matter suspecting an insurance claim against her life was fraudulent.

Mr Rebelo's twin sister Monique Rebelo told the WA Supreme Court that sometime after her mother's death she was contacted by a psychologist she shared with her mum.

Monique said the psychologist, Narina Sidhu, told her she had concerns about Andre and that he had tried to use her name to find out information about her mum's insurance.

NEWSWIRE

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Treasurer falls on his sword ahead of vote

MATTHEW DENHOLM
TASMANIA CORRESPONDENT

Tasmania's Liberal government must find a new treasurer – just as the state budget is debated in parliament – with incumbent Michael Ferguson quitting to avoid a parliamentary political execution on Tuesday.

Premier Jeremy Rockliff on Monday effectively cut his Treasurer and Deputy Premier loose, indicating Mr Ferguson would resign if, as expected, MPs voted no confidence in him on Tuesday.

Mr Ferguson hours later pre-empted that vote by announcing his resignation, accepting responsibility for a bungled wharf development and the late, over-budget delivery of two ferries.

"I recognise there have been some really significant failures and problems with the delivery of, in particular, the infrastructure to support the new ships at Devonport," Mr Ferguson said.

"I own that. I take responsibility for that."

He said there were no new facts to justify his departure from the Treasurer's role, having already quit as infrastructure minister, but that it appeared a majority of MPs would vote no confidence in him.

"We can all count and we need to be able to sustain a vote on the floor of the parliament," he said.

"I can see that and I want to offer to do the right thing, the honourable thing I hope, to save the parliament the waste of time and delays to the budget that would occur were the debate to go ahead tomorrow."

He thanked his wife Julie for her "incredible" support during his 20-year political career, which began with two terms in the House of Representatives from 2004, before switching to state politics in 2010.

Mr Ferguson said he was one of the "very few" ministers to serve as a minister for a decade in Tasmania and thanked his wife and children for "tolerating" the impact of his heavy workload.

"They're going to have to tolerate it for a bit longer, because I'm not going anywhere – I'm going to continue to serve the wonderful people of northern Tasmania in the electorate of Bass," he said.

Mr Rockliff defended his Treasurer as "diligent" but set the scene for his resignation earlier in the day by rejecting a push by some conservatives to ignore the pending no confidence vote.

"We will always accept the will of the parliament and should there be a no confidence passed in Mr Ferguson, then Mr Ferguson will be resigning as minister and going to the backbench," Mr Rockliff said.

The stance was a contrast to the approach advocated by senior minister Eric Abetz, who on Sunday urged Mr Ferguson to refuse to resign in the face of a successful no confidence motion.

"Even if a motion of no-confidence were to be passed in him ... there will be no need for Mr Ferguson to resign and I would encourage him not to resign," Mr Abetz said.

Labor had the required 18 votes for a majority of MPs to express no confidence in Mr Ferguson, 50, plunging the Liberal minority government into turmoil. Opposition Leader Dean Winter said Mr Rockliff's refusal to sack Mr Ferguson was "a failure of leadership" and Labor would "do his job for him" by moving no confidence.

"Minister Ferguson is responsible for the biggest infrastructure stuff-up in Tasmanian history," Mr Winter said. "The new Spirits (ferries) project is five years delayed, $500m over budget – and when the ships eventually arrive, they will have nowhere to berth."

Mr Ferguson had accepted some responsibility for the ferries fiasco but had also blamed state-owned businesses, particularly ferry operator TT-Line.

The Premier, a party moderate, may decide to take responsibility for Treasury himself in any reshuffle or to elevate an existing minister.

Promoting a conservative, such as Mr Abetz, a former senator and Howard era federal minister, or a younger conservative, such as Felix Ellis, could aid party unity. However, Mr Abetz and Mr Rockliff have clashed on several occasions.

Mr Rockliff also reassured Tasmanians of passage of the budget, which controversially increases state debt – non-existent for much of the 2010s – from $3.5bn in 2023-24 to $8.59bn in 2027-28.

Public concern about the debt has further eroded support for the minority Liberal government.

'Pontius Pilate' Rockliff washes his hands of deputy



MATTHEW DENHOLM
COMMENT

There was an air of Pontius Pilate to Jeremy Rockliff on Monday, as he washed his hands of his beleaguered deputy and Treasurer, Michael Ferguson.

Yes, there was praise – "diligent" and "full confidence" – but essentially the Premier was sending to the wolves a colleague of 14 years, while blaming others for his pending execution.

It was a confronting demonstration of the brutality of politics that left Ferguson no choice but to quit, which he did late in the day.

Some in the party may accuse Rockliff of treachery. Indeed, arch conservative Eric Abetz went public on Sunday with advice to Ferguson – a fellow conservative – not to resign, even if a no-confidence motion passed. Rockliff clearly felt this concept had to be slapped down, and quickly.

Abetz, a former Howard era-minister and leading candidate to replace Ferguson as treasurer, was technically correct: such a vote is not legally binding. However, to flout the will of parliament would have been an assault on longstanding convention and the Westminster system itself.

It would have even further destabilised the government, which relies on independents for its very existence. MPs could have rightly refused to deal with Ferguson as a minister lacking the confidence of the Assembly.

Such belligerence could have precipitated a far more serious crisis, potentially even an early election. Rockliff's stance was pragmatic and responsible.

Even so, it is extraordinary: a Treasurer having to exit stage left in the very week parliament is due to pass his third budget.

It remains to be seen if Ferguson, from the backbench, will repay the favour by joining other conservatives in undermining the moderate Premier and his weakened minority government.

"Rocky" could try to reduce that risk by appointing another conservative, such as Abetz or Felix Ellis, to Treasury, but will be tempted to take the key portfolio into his own hands.

The government has lost one of its most experienced operatives but one who has presided over a monumental stuff-up – the ferries fiasco – and set Tasmania on a deep debt trajectory.

Tasmanians can only hope whoever succeeds Ferguson reverses the debt spiral, and has more of a stomach for the kind of structural reform long ignored but so badly needed.



Rockliff



Ferguson

Bat with bite puts end to ore plan

PAUL GARVEY

Australia's largest predatory bat has sunk plans for a new iron ore mine in the Pilbara.

Mining giant Rio Tinto and its partner in the Rhodes Ridge joint venture have informed federal environmental regulators that they will no longer push ahead with a long-awaited proposal to mine the Giles Mini deposit near Newman due to its impact on potential roosting sites for the vulnerable ghost bat.

The variation request lodged by the partners with the Department of Climate Change, Energy, the Environment and Water also noted that scrapping Giles Mini would "reduce resource demands" on traditional owner groups, given it would reduce the number of native title holders involved in the project from two to one.

Giles Mini was part of a broader plan to develop a major new iron mines at the Rhodes Ridge project.

The Rhodes Ridge mine, which sits just to the north of Giles Mini, will still go ahead despite also being home to a sub-population of the ghost bat.

The partners said the decision would give them more time to consider developing mitigating strategies that could allow it to mine the deposit in the future.

"In the first instance, removal of Giles Mini from the proposed action avoids all direct impacts to the southern sub-population through retaining two adits and ten caves, which provide roosting habitat, and retains surrounding foraging habitat," the joint venture partners said.

"Additionally, the removal of the Giles Mini allows the proponent to investigate artificial roost potential to support potential future development in the Giles Mini area.

> 'Removal of Giles Mini from the proposed action avoids all direct impacts to the (bats)'
>
> JOINT VENTURE STATEMENT

"The removal of this deposit allows for further regional-based survey of the population and surrounding area to better understand the significance of the population, potential impacts and develop appropriate mitigation and management measures."

The original application lodged with the federal regulators this year had warned that the mines "may result in a potential significant impact to ghost bat individuals".

The Giles Mini deposit also straddles a native title boundary, with the western portion falling on the lands of the Ngarla-wangga people and the eastern half held by the Nyiyaparli Traditional Owner Group. The Nyiyaparli area also includes Rhodes Ridge.

The Rhodes Ridge and Giles Mini deposits were first identified decades ago and have been subject to fierce and protracted legal disputes between the pioneering Hancock and Wright families.

The fight went all the way to the High Court, with Wright Prospecting ultimately emerging victorious over Gina Rinehart's Hancock Prospecting.

Wright Prospecting and Rio Tinto in 2022 locked in a 50-50 joint venture over the project.

The iron ore at Rhodes Ridge is particularly valuable given its high grade, and Rio Tinto has described it as "one of the biggest and best undeveloped iron ore deposits on the planet".

The ghost bat is described as Australia's only carnivorous bat, and eats larger prey including frogs, birds, lizards and small mammals including other bats.



THE ENVIRONMENT CENTRE NT

The vulnerable ghost bat



Esso's West Tuna platform in Bass Strait.

Kipper gas compression project complete

Esso Australia has successfully delivered the crucial Bass Strait project to extend Australia's crucial natural gas supplies for the domestic market.

The safe completion of the Kipper gas-field compression project will help the Gippsland Basin Joint Venture maintain its ongoing supply of natural gas to Melbourne and beyond.

One million work hours were put into the project ensuring gas will flow from the Gippsland Basin and Longford Plants well into the next decade.

Esso Australia is a subsidiary of ExxonMobil Australia, and operator of the Gippsland Basin Joint Venture a fifty-fifty joint venture between Esso Australia Resources and Woodside Energy.

The Kipper project required the installation of compression facilities on the West Tuna platform in order to maintain production from the Kipper field which has experienced decreasing reservoir pressure as gas reserves are depleted.

"The successful completion of the Kipper Compression Project enables the Gippsland Basin Joint Venture to maintain production of critical natural gas supplies from the Kipper field which is an integral part of our production system," said ExxonMobil Australia Chair, Simon Younger.

"Accessing new gas supplies or maintaining gas production is not simply a matter of flicking a switch.

"Operations teams put in more than one million hours to ensure the project's safe completion and on schedule."

Esso Australia said natural gas remains a crucial part of the energy grid as a vital backup to renewables for industries such as glass, bricks, steel, fertiliser, recycling and critical minerals.

"These industries don't have alternative energy or feedstock sources," added Younger.

"Over the past six decades, Esso and its joint venture partners have made significant investments in Bass Strait to help meet Australia's energy security and this project is another prime example of Esso's efforts to power Australian homes and businesses.

"We have invested hundreds of millions of dollars into the Gippsland Basin, including projects such as the Kipper Compression Project which will help supply as much gas alone as is consumed in all of Victoria in one year.

"These assets have generated significant economic benefit for the nation, the state, and importantly also for the local communities where we live and work."

Students looking after the local environment

MIRBOO North Secondary College has been named as one of the 103 groups to share in more than $409,000 provided through the Victorian Junior Landcare and Biodiversity grants program.

Member for Eastern Victoria Tom McIntosh last week welcomed the news that Mirboo North Secondary College was successful in receiving $5000, the maximum amount available, to enhance and restore the environment that was damaged by storms earlier this year.

"I was on the ground to see the storm damage in Mirboo North in February, and it's wonderful to see students are helping in the work to rebuild the environment," Member for Eastern Victoria Tom McIntosh said.

"As the Secretary of the recently established Parliamentary Friends of Landcare, I'm very excited to see our government supporting Junior Landcarers to do this work."

Grants of up to $5000 were awarded for educational activities that engage children in conservation and projects that improve and expand habitat for native plants, insects and wildlife.



Mirboo North Secondary School has been successful in receiving $5000 to enhance and restore the environment after February's storm.

"We are incredibly thrilled to receive this grant. During the storm in Mirboo North in February, the school lost over 60 mature trees," Mirboo North Secondary College Principal Vaya Dauphin said.

"The opportunity to support our community in the future through supplying trees we have grown ourselves will go a long way towards revegetating our beautiful natural environment."

Since 2018, $3 million has been invested to support more than 47,000 young people undertake on-ground conservation projects and activities.

Since then, these initiatives have achieved incredible results – including 99,000 new indigenous plantings and more than 1000 student excursions to wildlife sanctuaries.

For more information on the Victorian Junior Landcare and Biodiversity Grants program, visit environment.vic.gov.au/grants/victorian-junior-landcare-and-biodiversity-grants.

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JA22658

Excellence award for CGH

CENTRAL Gippsland Health is among seven hospitals in Victoria to have been recognised for their excellence in caring for and treating patients with stroke.

Announced at the Asia-Pacific Stroke Conference in Adelaide, the hospital accepted an Australian Stroke Coalition Quality Stroke Service Excellence Award.

The awards recognised hospitals which achieved best-practice stroke clinical care across several indicators, including treatment with thrombolysis within 60 minutes of hospital arrival, the provision of stroke unit care, and the provision of a discharge care plan.

Royal Melbourne and Box Hill hospital also among the other winners.

Australian Stroke Coalition co-chairman, Professor Tim Kleinig, congratulated the winning hospitals.

"It's inspiring to see these hospitals and their staff dedicated to providing the best possible care and treatment for survivors of stroke to ensure they're in the best position to recover well," he said.

Stroke Foundation chief executive Dr Lisa Murphy said the winning hospitals were leading the way in treatment and care.

"This is an exceptional achievement that should be celebrated and used as the benchmark for others to work towards in future," she said.

"These hospitals demonstrate the impact of multidisciplinary teams working together to improve outcomes for patients with stroke."

In 2023, more than 45,700 Australians had a stroke (including 34,793 for the first time) and there are more than 440,000 people living with the effects of stroke in the community.

Dr Murphy said receiving specialist treatment was critical to stroke recovery and gives survivors the best chance of living well after stroke and returning to doing the things they love.

"We know that patients with stroke who get to hospital quickly and receive timely treatment will have the best chance of survival, recovery and prevention of secondary stroke," she said.

Covering all bases to protect drinking water

GIPPSLAND Water is making steady progress in a significant program of works to protect drinking water supplies across its service area.

The organisation has finished replacing covers and liners at nine water storages, with just five more to go.

Covers and liners are used to maintain treated water quality and prevent foreign matter entering water storages, providing protection for around 25 years.

Managing director Sarah Cumming said work wrapped up at Sale's second storage basin in early October and progress was being made at another water storage in Coongulla.

"These upgrades are just one example of how we are upgrading our infrastructure so we can continue to deliver safe and reliable water for our customers," she said.

"By replacing ageing covers and liners, we're not only ensuring the supply of safe, clean drinking water but also enhancing the resilience of our entire network."

Completed upgrades include two storage basins at the Sale water treatment plant, as well as works at Warragul, Churchill, Morwell, Newborough and Neerim South.

Further cover and liner replacements will be completed at Moe, Seaspray, Heyfield and Tyers water treatment plants in the coming years.

For more information about Gippsland Water's coming works visit **www.gippswater.com.au/current-works**



The upgraded cover on a basin at Sale water treatment plant storage will maintain water quality and prevent foreign matter from entering. **Photo: Contributed**

Save tax, add more to super



Mark DiPietro, senior financial advisor at Shadforth,

If you make super contributions from your after-tax income or bank account savings, you may be able to claim a personal tax deduction and reduce your taxable income, while boosting your super.

The contribution is taxed in your super fund, generally at only 15% (or up to 30% for higher income earners). But this compares favourably to paying tax at your marginal tax rate which could be as high as 47%. Therefore, this strategy could result in a tax saving of up to 32% – and help you retire with more.

You can make a deductible contribution up to age 66 regardless of your working status, and you can claim up to the concessional contribution cap, which is $30,000 in 2024/25.

However, you may be able to contribute more than this if you didn't fully use up your concessional cap since 1 July 2018, by making some additional 'catchup' contributions.

But make sure you don't contribute more than you are allowed, as penalties may apply.

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Community Consultation - decommissioning of oil & gas infrastructure in Bass Strait

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GP1675414

AusNet

Have your say on upgrades to the local electricity network.

AusNet is currently seeking feedback on funding to maintain and upgrade its electricity distribution network over the next five years.



This funding will support:

- a safe, reliable and more resilient network
- keeping up with customers moving to all-electric homes and electric vehicles
- customer service improvements
- more renewables, including large and small renewables like rooftop solar.

To view a copy of the draft proposal and provide your feedback, scan the QR code or visit:
communityhub.ausnetservices.com.au/engage

ausnet.com.au

GP1675376

Fighting cancer at own pace



Cyclist Bernie Wright and walker Sharon Reardon are going the distance to help raise money for cancer research at the Peter Mac. Picture: David Caird

Robyn Riley

A marathon-loving mum and a dad who clocks up the cash riding his bike will join hundreds of Victorians to help fight cancer.

They are taking part in the Peter MacCallum Cancer Foundation's annual major fundraiser, Unite to Fight Cancer.

About 1000 people, sponsored by thousands more, will walk or cycle at their own pace across 10 days from Thursday.

They are united in their efforts to help raise about $550,000 for cancer research.

It will help fund the work of research scientists like Kylie Gorringe. The goal for her laboratory, she says, is to find novel therapies to treat ovarian cancer using patient-derived models.

It is music to Sharon Reardon's ears.

The mum of two started walking to raise money for the event after friends were diagnosed with cancer.

Little did Mrs Reardon know that when she turned 50 last year she would face her own ovarian cancer diagnosis.

"Everyone I know has been touched by cancer in some way," she said. "Whether it's through a loved one, friend, family member or it's much more personal, a cancer diagnosis is devastating."

Mrs Reardon will have a round of chemotherapy at Peter Mac the day she starts her 75km walk.

Bernie Wright, 43, will be on his bike and hoping to clock up about 350km. He started doing the event five years ago, when he didn't have a strong personal connection to the hospital.

He does now. His wife Sarah, 38, was diagnosed with breast cancer last year.

He hopes to raise about $4000, his way of thanking the Peter Mac team.

unitetofightcancer.org

Pharaoh proves a treasure

Samantha Landy

Pharaoh was the NGV's most popular Melbourne Winter Masterpieces exhibition since the onset of the pandemic, attracting more than 336,000 local, interstate and international visitors in less than four months.

The showcase of more than 500 ancient Egyptian artefacts, which spanned 3000 years of history, ranked sixth for attendance in the series' 20-year history.

Van Gogh and the Seasons drew more than 462,000 people in 2017 to be the gallery's most successful Melbourne Winter Masterpieces exhibition. Pharaoh drew the biggest crowds since Terracotta Warriors & Cai Guo-Qiang's 377,105 attendees in 2019.

A fifth of Pharaoh's visitors were from interstate, and accompanying exhibit Ancient Egypt attracted more than 87,000 children.

Minister for Creative Industries Colin Brooks said: "These powerhouse attendance figures demonstrate why the NGV is Australia's most popular gallery."

The NGV's upcoming exhibitions include Cats & Dogs, from November 1, and Yayoi Kusama, from December 15.

Super, I don't need loads

Comfortable retirement well within reach

Anthony Keane

Pre-retirees think they need a nest egg above $850,000 but a study shows they can live comfortably on much less than that.

Research by investment service Generation Life has found nine out of 10 people feel under financial pressure and many believe their financial dreams are out of reach.

The report, Not Tomorrow's Problem, says most pre-retirees – aged 51 to 65 – pay little attention to their superannuation, leading to a lack of knowledge and fear of the unknown.

The average amount they think they need to retire is $856,209, it says, and three-quarters feel unable to achieve a happy retirement.

However, finance specialists say many set their sights unnecessarily high and may end up working years longer than they need to because of incorrect expectations.

The Association of Superannuation Funds of Australia's widely recognised ASFA Retirement Standard says a single person needs $595,000 at age 67 for a comfortable retirement delivering $52,085 a year, while a couple needs a combined $690,000 – or $345,000 each – to provide $73,337 annually.

Generation Life chief executive Grant Hackett said many people saw the ASFA calculations as minimal living standards rather than comfortable.

"Most Australians – we're an aspiring population, that's why we always punch above our weight – want to live above that, but they've probably gone too far," he said.

Mr Hackett said the $850,000-plus figure was "probably driven by the last couple of years when inflation's gone bananas post-Covid".

"A lot of people think they need a much larger amount because of the sustained price increases that we have seen for everyday items," he said.

"It's pretty phenomenal when you think we have got the fourth-biggest pension pool in the world, for a country of 28 million people, yet three-quarters of us going into retirement are really concerned about it and think they're not prepared for it."

MBA Financial Strategists director Darren James said the high $850,000 figure could put people off retirement planning.

"I think that's probably basing it on them not getting any age pension, whereas obviously a lot of people can," he said.

"Some people get scared, throw their hands up in the air and say it's all too hard. We're seeing people able to set up retirement quite well on far less than that."

Mr James said some people mistakenly believed they would need their current pre-tax earnings in retirement, but most retirees paid no tax, had no dependent children and low or no debt.

"The other misconception out there is people think retirement age is 67, the age pension age, when it's not," he said.

People can access their superannuation from age 60.

"To be honest, retirement is when you want it to be, as long as you have financing to do it."

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Education Matters

Lyn Kerrison, Yarram Secondary College Principal

DETERMINED, dogged, fixed, steady. These are great words to describe our theme for this term, persistence.

Each term our School Captains set a direction for the student body to aspire to.

Author and advocate for youth financial literacy, Lucas Remmerswaal, sums up persistence perfectly: "Nothing in the world can take the place of persistence. Wishing will not; Genius will not; education will not; perseverance is like a genie that creates a magical force in your life."

So, what have you done recently that involves determination or persistence? I have challenged our school community to set a goal, a challenging goal for the term. Setting goals are personal things. They could be goals relating to school and studies, or they could be goals relating to a sporting pursuit or a team. Some goals relate to bucket list items and to personal challenges.

Over the September holiday break I set a goal for myself to walk the Great Southern Rail trail from Yarram to Nyora covering over 145km. There were times when the skies opened up, and we walked for hours in the rain, but we kept going. Being persistent opened up the joy of this incredible walk, to the abundance of bird life and art on the trail. Persistence enabled us to set small daily goals and walk to our destination towns; Toora, Fish Creek, Meeniyan, Leongatha, Loch. Persistence meant we celebrated each night for reaching our daily goal. By breaking up a large task into bite size bits it enabled us to achieve a bucket list goal. Daily destinations kept us on the track, persistence got up to the end of the walk.

My recent rail trail experience reinforces the importance of persistence in achieving all you want in life. Persistence can open up rich possibilities and turn opportunities and dreams into reality. It is indeed a magical force.

Persistence is the Aladdin's lamp of our life. By guiding, talking and teaching about how to break up large tasks into achievable pieces, it sets our children up to believe that they can achieve their own life goals. Rather than feeling overwhelmed and daunted by study and life, suddenly it all becomes achievable. I like to think that persistence can be taught and practiced, and I encourage you all to start developing this essential life skill.

As our year 12s head into the last two weeks of formal education, we will celebrate as a community and reflect on all the small daily goals that enable our youth each year to achieve their VCE.



Yarram Secondary College year 12 students have just two weeks of formal education left before they commence their final exams, commencing with English on October 29.

Bake to Celebrate

Red Cross Cake Stall and Raffle
Regent Theatre Foyer
Thursday October 24
9.30 - 12.30
unless sold out prior
Efptos available



baketocelebrate.org.au

110 YEARS

Australian Red Cross

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Community Consultation-decommissioning of oil & gas infrastructure in Bass Strait

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GAS STOVE
Westinghouse upright stove, 600mm, white, with separate grille, v.g.c. $200. Ph 0407 283 970.

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Beautify your garden. Bulk quantity available, $30m3, $50 delivery. 0412 613 443 or 1800 468 733.

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Price: $6 each or 2 for $11 (GST incl).
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Enquiries: 5135 4444

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Clearing Sales

FINAL REMINDER

CLEARING SALE
No. 1 Briona Court, Trafalgar
Acc. Estate of Trevor McGee
THIS SUNDAY 20th October at 10am

Items include - Mercedes Benz car (1986), Nissan forklift, Mini motors & parts, furniture, tools & sundries collected and used over decades.
Full details - last week's paper.

Terms: Cash or EFTPOS or bank transfer on day of sale. Credit card surcharge applies.
Buyers number system to operate. Photo ID required.

- Light refreshments
- No dogs to be brought on the property
- PARKING - Please respect neighbours.

No parking on nature strips - use main road nearby.

Phone: Doug 0418 515 162 or Kevin 0408 515 468

WG18033

Livestock

MARKET DAYS
- Wednesday prime sales
- Monthly store sales
- Fortnightly lamb sales



At the Gippsland Regional Livestock Exchange SALE

Nutrien Ag Solutions
GREENWOOD LIVESTOCK

CONTACT
Ben Greenwood 0429 193 136
Gordon Conners 0408 131 720
Bailey Anderson 0409 614 167

GP1672961

Accommodation

ROOM TO RENT
Moe, fully furnished, own toilet and bathroom, kitchen. Ph 0433 441 645.

Garage Sales

MORWELL, 5A Hourigan Rd. Sat. and Sun. 8am. Sofa bed, fridge, linen, lawn mower, extendable wooden ladder, tomato sauce and sausage making equipment, strawberry plants and bric-a-brac.

MORWELL, 8 Stanton St Sat. 8am. Games, tools, clothes, crockery, electrical, kitchenware and more. All proceeds to Gippsland Toy Run.

NEWB., 6 Matlock St, Sat. 9-1. Golf clubs bag, balls and equip., stereos, old phones, hand/power tools, corner cab. workbench, bbq, h/hold goods, more.

TRARALGON, 24A Albert St, Sat. 8-12pm. Tomatoes, capsicum, zucchini, sweet corn plants, $3.50 ea. Also fish aquarium liquid fertiliser & bric-a-brac. Plants avail. during weekdays also. All proceeds to Guide Dogs.

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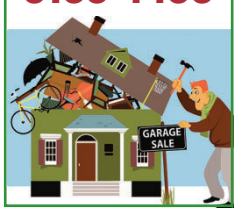

OUR MOTORING PACKAGE CAN WORK FOR YOU



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Meetings

A.G.M.
TTUFNC, 18 November 2024, 5.15pm, Traralgon Bowls Club.

Moe Lions
MOE FOOTBALL NETBALL CLUB
ABN 21 998 796 518
Notice of
Annual General Meeting
at Ted Summerton Reserve, Moe
Monday, 11th Nov. 2024 at 7pm

Newborough Football Netball Club
2024 ANNUAL GENERAL MEETING
Wednesday, 6 November 2024 at 7pm
Venue: Newborough Football Netball Club
On behalf of our club's Committee and Members we'd like to acknowledge the ongoing support of all our wonderful sponsors

Public Notices



Help support our local Tradies while they service, build and repair in our local communities - check out our **Business Guide Pages** and **Home Maintenance Section** in the Classifieds every Wednesday, for your **local Tradies**

Latrobe Valley Express Partnership



HELLO BABY IN THE EXPRESS

The Latrobe Valley Express welcomes photos of your newest arrival.

Parents are welcome to email a copy of your newborn photos for publication to our editorial staff - **news@lvexpress.com.au** with the subject line 'baby photo'.

Please include the following details:
- Baby's first and middle name/s
- Baby's surname
- D.O.B.
- Mum's maiden name
- Mum and Dad's names
- Location of Hospital
- Hometown

Public Notices

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Public Notices

GUITAR LESSONS
Gippsland Guitar School, all ages, 8-80, beginners to advanced, banjo and ukulele lessons also available. 0439 111 610.

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https://foster.vic.au/want-to-know-more-about-the-decommissioning-of-essos-oil-gas-infrastructure-in-bass-strait/

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Noticeboard

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New info sessions: decommissioning oil & gas infrastructure in Bass Strait



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Discussion

Comments are disabled for this post

Council Beat with David Braithwaite

Final council meeting before election

From page 1

The largest infrastructure project ever undertaken in shire history – the $23 million redevelopment of Aqua Energy Leisure Centre in Sale, is on track to be completed mid-next year.

With funding from the state government, council installed LED lighting and redeveloped the social club room at the Stratford Recreation Reserve. Additionally, it upgraded the multi-purpose court at the Nambrok Recreation Reserve.

Council has been upgrading, widening and enhancing the safety of streets and pathways. In Maffra, Nordens Lane was widened to six metres and Carpenter St was upgraded with a new footpath.

In Rosedale, a new pedestrian crossing and footpath was installed on Mackay St, a shared pathway added on Hood St and a new footpath on Duke St constructed.

The reconstruction of Bennison Drive, Wurruk, features curb and channel replacement and new asphalt, while Hodges Rd, Coongulla, and Park St, Cowwarr, were sealed as part of council's street scheme construction program.

Council completed the footpath and bridge over Riley Creek in Dargo. The 32.5m footbridge now links the the town's hotel, general store, hall, recreation reserve, bush nursing centre and town centre.

The long-awaited new toilet block was opened at the Port Albert Water Tower, along with new public toilets in Stratford.

The federal government's grant for the Sale Revitalisation Project has been completed, with the amenity of York St significantly improved with updated accessibility, lighting, and landscaping.

A new roundabout was installed at the intersection of Desailly and Macarthur Sts in Sale.

The expansion of the Great Southern Rail Trail from Alberton to Welshpool was completed after unexpected rainfall derailed the project for months.

Cr Scott Rossetti commended the report to the community.

"It's actually a great way of finding out what council is doing and what they do right through the whole shire," he said.



Seven of the nine councillors attended the final Wellington Shire Council meeting before the election. Photo: Stefan Bradley

Performance report

COUNCIL is on track to meet its targets for the 2024-25 financial year, after adopting its performance report for the three months to September 30.

Council income was $93 million, $16 million more than budgeted, mainly due to the late receipt of government grants. Expenditure was $29 million, in line with the budget, giving council a $64 million surplus.

Council has forecast a $15.6 million surplus for 2024-25.

Five capital works projects reached practical completion, including the Port of Sale mooring access project and improvements at the Gippsland Regional Livestock Exchange. Work is underway on 14 projects, 25 have had contracts awarded but not yet commenced, while 52 projects are in pre-planning stages.

Cr Stephens said most key performance indicators pointed to the budget being "well on track for the 2024-2025 year".

"The only thing that really stood out to me was the number of cyber threats that we've received in the last quarter. Something like 11.6 million, up from 5.1 million," he said.

"I think it just proves we need to be eternally on vigil for any threats to our IT systems. It's obviously becoming a bigger problem as time goes on.

"We recently had a business continuity exercise, which indicated that our systems are very stable and are meeting these threats, but we can't let our guard down because it's an ongoing issue."

Strategic land use

A REPORT on progress of strategic land use planning projects was also handed down.

Technical reports for the development of industrial land around West Sale Airport have been completed and will inform the preparation of the detail development plan for the site, which is anticipated to be prepared by the end of the year.

Work continuing on costings of key infrastructure items to support future growth areas outlined in the Maffra Structure Plan. Costings are expected to be finalised by the end of the year.

A draft contribution plan as part of the Wurruk Development Plan is currently with proponents for finalisation following council feedback.

Council has applied for federal government funding to implement elements of the study which determined the readiness of key towns in the southern part of the shire to service and support renewable energy projects, and economic opportunities associated with them. The application focused on advancing strategic planning to provide additional residential and industrial land in Yarram.

State government funding has already been obtained for an initial drainage assessment of potential growth areas in Yarram.

Volunteers thanked

CR Carmel Ripper acknowledged the efforts of volunteer members of five committees.

In receiving the annual reports for the Briagolong, Maffra, Newry and Gordon Street (Heyfield) recreation reserves as well as the Cameron Sporting Complex, Maffra, Cr Ripper said the volunteers were "absolutely integral".

"They just work for the community, so I would like to congratulate each and every one of these volunteer committees, that without them we would be lost," she said.

"I'd also like to thank their families, who don't have them at home for a certain amount of time. The families are allowing them to volunteer for the greater community."

Cr Maher added that volunteers were "the backbone of our community".

Voting closes next Friday

THE Victorian Electoral Commission is reminding voters in Wellington Shire they have until next Friday to vote in the Wellington Shire Council election.

Electoral Commissioner Sven Bluemmel said completed ballot packs need to be posted before 6pm on Friday, October 25, noting local clearance times may vary.

"You can also drop your ballot pack off at the election office located at Former Fulham TAFE, 19 Lyon Crescent, Fulham, before 6pm on Friday, October 25."

Any voter who still hasn't received their ballot pack should go to **vec.vic.gov.au** to complete an online replacement ballot pack form.

Extended hours for voters to hand deliver their completed ballot pack apply from 9am to 8pm on Thursday, October 24, and 9am to 6pm on Friday, October 25.

Voting is compulsory for voters who were on the state or council roll for this election on August 7. Enrolled voters who don't vote may be fined.



Photo: Jaz Jensen

Steam train rolls through Gippsland

LOCAL train enthusiasts and the general public were treated to the sight of a stream train travelling through the region on Sunday.

Steamrail Victoria ran the steam excursion train on a day return trip between Melbourne and Bairnsdale.

The journey was advertised as the first ever "R class" day trip to Bairnsdale. R class locomotives could previously only travel as far as Sale because of the now replaced bridge over the Avon River at Stratford.

It was also the first time two R class locomotives have been at Bairnsdale, with one having run down the night before with the service vehicles.

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GP1675414

MPs fear backlash on private health reform

EXCLUSIVE

JOHN FERGUSON
ASSOCIATE EDITOR

The 47 federal NSW MPs are being warned of a looming backlash from voters over state government plans to increase costs on private health insurers.

A Private Healthcare Australia analysis of NSW federal seats has broken down the regions with the most number of people to be affected by the planned overhaul of the state's Health Insurance Levy. The NSW government last week introduced draft legislation to increase the levy from $1.77 per week per person with health insurance to $3.27 per week per person.

The Australian has seen Private Healthcare Australia data showing the electorates that will be hardest hit, affecting an estimated four million people.

The state government has blasted the PHA, but the PHA says NSW is the only state that taxes health insurance. If implemented, it would mean NSW voters would pay the highest health insurance costs in the country.

Federal NSW MPs have been warned of a backlash over the increases, which could lift premiums by about 4.5 per cent on average.

The seats analysis shows the increased levy could affect more than 120,000 people in nine seats – not all of whom would be voters – with more than $8m in extra costs.

This includes the key seats of Bennelong and Greenway.

Between 110,000 and 120,000 people in a further 14 seats would be affected, including in the Prime Minister's seat of Grayndler and the teal-held seat of Wentworth.

A further 20 seats with 80,000 to 100,000 affected voters – most in Labor electorates – also would be affected, according to the data.

But the NSW government has blasted the insurers' campaign, arguing they are reneging on their public hospital bills.

The government wants insurers to pay a higher rate when their customers get a private room in public hospitals.

"Premiums didn't go down when the big insurers stopped paying their bills," a government spokesman said.

"For every day private health insurers refuse to pay, public hospitals lose $383,561.

"We urge them to put patients and public hospitals before super profits and executive bonuses.

"Given their record profits, this is nothing but another scare campaign from the big four billion-dollar private insurance conglomerates."

Nick Coatsworth, the Australian Patients Association ambassador, said people taking out insurance wanted to support the concept of choice to back a strong health system.

This took the pressure off public health.

He said it was a negative choice for the NSW government to take this route. "I'm surprised," Dr Coatsworth said.

The PHA estimates the NSW strategy could cause about 75,200 people to drop their insurance. It argues that this would put additional pressure on public hospitals and emergency departments across the state, and increase waiting times for elective surgery. The row comes amid intense pressure on insurers and public and private health systems.

Private hospitals and medical device companies are ramping up pressure for reform to the way health insurance premiums are set – including an independent umpire to oversee the process – amid ongoing warnings the sector continues to face unsustainable challenges.

The Australian reported last week that key stakeholders have written to federal Health Minister Mark Butler calling for reforms to the health insurance premium round process.

The letter calls for an independent body "to oversee insurer behaviours that are threatening the viability of the system and the value of private health insurers for consumers", a cap on capital requirements to compel insurers to free up "excessive reserves" of capital to support the struggling private system, and reform to incorporate the cost of delivering care in premium round processes.

BCA seeks $10bn housing reform fund

NOAH YIM

The Business Council of Australia is calling for major policy interventions by state and federal governments to boost housing supply, including a national reform fund worth at least $10bn to overhaul stamp duty and streamline planning and approval processes.

As battle lines on housing take shape ahead of the federal election, the Coalition is demanding home construction jobs be prioritised on the immigration skills list.

Deputy Liberal leader Sussan Ley said the Albanese government should prioritise professions like bricklayers, painters and roof tilers under the skilled migration program.

"Under the current draft Core Skills Occupations List, developed and signed off by (former immigration minister) Andrew Giles, (former home affairs minister) Clare O'Neil and (former skills minister) Brendan O'Connor, many key construction tradies including bricklayers, painters, roof tilers and stonemasons are not in line to be prioritised," she said. "Instead, wushu martial arts and yoga instructors are.

"That must change. Labor must guarantee today that they will list all construction trades on the Core Skills Occupations List and ensure they are prioritised for visas under the skilled migration program. Industry sources suggest that the brief is sitting on (Home Affairs Minister Tony) Burke's desk for decision."

Mr Burke acknowledged a "skills shortage is one of the many challenges we face after the previous government neglected housing supply for a decade".

"Jobs and Skills Australia was established to help overcome those years of neglect," he said.

"If the Dutton opposition cared at all about housing supply, it should stop voting with the Greens party to prevent new homes being built."

The BCA will ask federal and state governments to enact "serious changes" to meet the Albanese government's target of building 1.2 million more homes in the next five years. Key among the proposals is a national reform fund that would have to be "at least $10bn" to tackle stamp duty reform across the country.

A report to be published on Monday by the business peak body will focus on the need to streamline planning and approval processes through a government-funded national reform fund.

BCA chief executive Bran Black said Australia's housing supply crisis needed "urgent action from all levels of government ... Our prosperity is being held back because many Australians can't buy a home or are paying too much rent; fixing this issue means putting hard but important policy changes on the table.

> 'If the Dutton opposition cared at all about housing supply, it should stop voting with the Greens'
>
> TONY BURKE
> HOME AFFAIRS MINISTER

"We want the federal government to create a national reform fund, like that created in the 1990s, that incentivises states to fix regulation and planning bottlenecks that hold back homes being built.

"Governments at all levels have recognised the importance of supply as the real solution to our housing challenge. We back many of the measures already being rolled out, but the scale of the task ... remains immense."

Murray Watt on Sunday again failed to rule out changes to negative gearing and the capital gains tax discount amid continued speculation about housing tax arrangements.

The Employment and Workplace Relations Minister said negative gearing had been "the established position in Australian politics for some time" and the government had not "received advice to change that".

He and Finance Minister Katy Gallagher also criticised the Coalition's pre-election pledge unveiled at the weekend to use a $5bn infrastructure fund to unlock up to 500,000 new homes as one already being rolled out by the Albanese government.

"(Peter Dutton is) kind of picking up one of our policies, so we've already got one about enabling infrastructure," Senator Gallagher told Sky News.

"We've already got a program that does that. So it looks like it's essentially copying that."

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'Let's get Dutton': ALP ready to play the man



NEWSWIRE/TERTIUS PICKARD

Peter Dutton: 'He's arrogant, aggressive and reckless,' says Labor

Continued from Page 1

"He's a weak leader who's not really in control of events. The last few weeks have shown he's not particularly good under sustained pressure – whether it's his Tourette's remarks or snapping at journalists. And partly it's because he doesn't really have much of an agenda – the government's drifting."

With the prospect of a hung parliament making this election unique, both sides agree cost of living will be the top issue.

Labor's campaign strategy will be in two parts. Firstly, on the government's record and its second-term agenda and, secondly, on Mr Dutton. "We will confidently campaign on our record and our promises for a second term," the Labor source said.

"The cost-of-living pressure facing households would have been worse under the Coalition who opposed all this relief and Australians know that. Now that we are through the worst of the worldwide inflation surge we can build for the future and that's what our ambitious second-term agenda will be all about."

RedBridge strategy and analytics director Kos Samaras, a former deputy campaign director for Labor in Victoria, said the government's plan to go negative on Mr Dutton was "going to be very, very risky because the electorate is waiting to see significant nation-building solutions" to address the economic issues facing the country.

Noting Labor's two-part strategy, Mr Samaras said: "Many will tell you that voters don't like negative campaigns, but, at the end of the day, they do work. They work at times of economic prosperity. If you're an incumbent government and you've been in power during an unprecedented economic event, going negative is full of risk for that reason. People want to see a solution.

"It's a lot easier to make it a referendum on the government because ... elections are referendums on governments. It's a lot easier for Dutton to say 'this is where he's failed ... you, the Australian voter'. If he doesn't play the man but plays the policies, it'll grip like Velcro."

Labor is taking the same view of the electoral map as it did in 2022, which is that no state is more important than the other, though the party concedes it has more to gain in Queensland than anywhere else because of its poor record in the state over the last few electoral cycles.

"It's a challenging map for both sides, who have risks and opportunities everywhere. No one should approach the next election thinking the contest will be decided in one state. We certainly aren't," the Labor source said. While inner-city voters are moving away from the Coalition, the Liberal Party considers them just as crucial as outer-suburban and regional Australians.

The Liberals believe NSW, Victoria and Western Australia will be particularly crucial to a Dutton win given the number of seats in the most populous states and the party's under performance in WA last time.

"We're certainly going to run very strong campaigns in those inner-city seats, particularly those seats we lost to the teals. In the medium term, outer-suburb seats, regional seats, provincial seats are where the political centre of gravity for the Coalition is moving towards but by no means are we giving up on those inner-city seats," the Liberal source said.

The Coalition – whose campaign has turned from defensive in 2022 to offensive – must retain its 55 lower house electorates and pick up 21 seats to win majority government.

It has its sights on the Labor seats of Blair in Queensland, Bennelong, Robertson and Gilmore in NSW, Aston and McEwen in Victoria, Lyons in Tasmania, Boothby in South Australia, Tangney and Bullwinkel in WA and Solomon in the Northern Territory.

While election trends suggests it'll be difficult for the Coalition to win power after one term of the Albanese government, the opposition believes it is highly competitive as it starts to inch ahead in a few polls.

There are extremely tough fights ahead for the Liberal Party – including in the five teal seats it lost at the last election (the sixth, North Sydney, has been abolished after a redistribution).

Also difficult will be retaining Menzies and Deakin in Victoria after they became more marginal following a redistribution and holding onto seats where sitting Liberal MPs are retiring – Braddon in Tasmania and Leichhardt in Queensland.

Labor, on the other hand, has to lose a net total of three of its 78 seats to be plunged into minority.

The party is confident of its chances in several Coalition-held seats: Leichhardt, Bonner and Longman in Queensland, Bass and Braddon in Tasmania, Deakin and Menzies in Victoria and Sturt in South Australia.

It'll also target the one-time Labor stronghold of Fowler, which was won by independent Dai Le against star ALP candidate Kristina Keneally in 2022.

Party sources predicted the Greens' vote would go backwards in Brisbane and Griffith because voters were disappointed in the minor party's "grandstanding tactics".

Labor ditches inflation doctrine

GREG BROWN
CANBERRA BUREAU CHIEF

Workplace Relations Minister Murray Watt says the government is "having to reconsider some of the economic orthodoxy" as it battles cost-of-living pressures, arguing unemployment does not need to rise for inflation to come down.

With many economists arguing the unemployment rate of 4.1 per cent was too low for the Reserve Bank to consider cutting interest rates, Senator Watt said it was fair to describe the labour market as "tight".

But while he expected unemployment to rise further, he denied job losses were necessary to see underlying inflation fall from 3.4 per cent to the RBA's target band of 2-3 per cent.

"Under our government we have been able to more than halve inflation from the rate that we inherited when we came to office, while also delivering record numbers of jobs," he told the ABC's Insiders program.

"So, I think that we're having to reconsider some of the economic orthodoxy, which has traditionally been that you have to choose between lower inflation or unemployment rates.

"We've been able to do both at the same time.

"I'm not going to suggest that unemployment won't rise ... the economy is quite weak in terms of economic growth. But it's a real tribute to Australian employers and workers that we continue creating these numbers of jobs despite all of the barriers."

Some economists warned a rate cut would not come until the second half of next year after official figures released last week showed 64,100 jobs were created in September – more than 2.5 times above market expectations.

Independent economist Saul Eslake predicted the strong jobs growth would ensure an interest-rate cut this year was very unlikely. Mr Eslake said the government should have moved earlier to say inflation could come down without affecting employment, rather than Jim Chalmers accusing the RBA of "smashing the economy".

"I was surprised Chalmers was saying that, first of all because it is not true, the economy has not been smashed," Mr Eslake said. "Secondly because, I would have thought, a good argument for him to make is the Reserve Bank has consciously chosen to tolerate inflation being above its target for longer ... in order to preserve (employment) as much as possible."

Mr Eslake said interest rates had begun dropping in the US, where unemployment is at the same level as Australia.

"In Australia, and in the US, it seems to have been possible to bring inflation down without sacrificing jobs," he said.

AMP Capital chief economist Shane Oliver said unemployment had to increase a "little bit" but not dramatically to help bring inflation down. "We don't need to have a recession, all we need is some of the heat to come out of the jobs market," he said.

Opposition finance spokeswoman Jane Hume said public sector growth outstripping private sector growth was "unsustainable". "When you dig a little deeper you see that the public sector growth is much faster than private sector growth and that's an unsustainable phenomenon," she told Sky News.

"We want to see growth in jobs in the private sector and the only way we're going to be able to do that is to create a sense of opportunity and productivity in the private sector."



This young eastern barred bandicoot, found abandoned in a Cape Woolamai backyard, is fighting fit and has been released back into its colony. Picture: Phillip Island Nature Parks

This bandicoot's not so miserable

What this baby bandicoot lacks in size she sure makes up in heart – ready to enter the wild after narrowly cheating death in August.

The tiny eastern barred bandicoot was found abandoned in a Cape Woolamai backyard by a local resident, before being rescued by rangers from Phillip Island Nature Parks.

Just a few weeks old, the female joey was weak and in desperate need of food and milk, lacking a mother to provide such provisions.

Wildlife rehabilitation rangers housed the bandicoot in a small enclosure with heat and hydration, handfeeding the joey special milk alongside kibble, vegetables and live insects, and teaching it crucial wildlife skills such as digging for food.

Phillip Island Nature Parks ranger Kim Noy said the rescued bandicoot was ready to be released back into the wild after clocking in at 300g during a final health check.

"We want to keep our animals in the wild," she said. "The best outcome is when we can release these animals back into their home to thrive."

Charges laid over '88 rape

Liam Beatty

A man has been charged over an alleged "horrific" historical rape of teenager who was allegedly abducted and sexually assaulted in Melbourne more than three decades ago.

Victorian Police arrested the 57-year-old Queenslander this week following a reopened investigation into the alleged incident in St Kilda in 1988.

The man arrived in Melbourne on Saturday, when he was charged with two counts of aggravated rape, two counts of rape, abduction by force, kidnapping and false imprisonment.

Police allege the woman, then 19, was grabbed while walking home along Carlisle St, St Kilda, on January 23, 1988. She was allegedly driven to Elwood Beach and sexually assaulted.

Despite an investigation, no charges were laid. The case was reopened in 2021 after "more information came to light", police said.

Sexual Crime Squad Detective Acting Senior Sergeant Brett Robinson said police had not given up on the hope of bringing justice for the alleged "horrific" crime.

The man was remanded in custody and will appear in court in January.

Cleaner's top of the mops

But is Dyson's latest gadget worth $1000?

Jared Lynch

It's a $1000 mop, but Dyson insists it's much more than that.

The British consumer electronics giant is best known for reinventing the vacuum, and now it's gone full circle to disrupt the humble mop, with the release of the WashG1.

It promises the WashG1 will vaccuum as well as mop.

Before using the new supercleaner, Dyson told me I'd be surprised at the amount of dirt on my floors, even if they looked clean.

The WashG1 claims to remove wet spills, stains and dry dirt simultaneously, using more than two dozen pulse water jets backed by two counter-directional rollers.

It separates dirty water from clean water in the cleaning head, with the used water immediately being directed into a removable, see-through, tank.

I was impressed at the level of clean after a few weeks of use.

The rollers pull the mop along, making it feel like it also has grunt.

It has a built-in screen that alerts you if the mop needs urgent maintenance, and shows you an animation of how to fix the problem. Need to change the dust tray? It stops working and tells you to do it. Need to clean the rollers? The same thing happens.



The Dyson WashG1 in action.

There is no guesswork or reaching for the manual, it tells you how to do it.

Initially, the battery life seemed a bit short – up to 35 minutes or 290sq m coverage – but I was able to clean my entire top floor on one charge.

The verdict?

Dyson has achieved its aim in making a posh yet useful mop.

Can it be perfected? Sure.

The dust tray could be made bigger, given it can fill up quickly.

It is hard to manoeuvre under tight spaces such as beds and couches.

The rollers could also be smaller so it could fit under couches.

But I suspect this would compromise the performance of the device.

It's easy to use and maintain, provides an effective clean and has a good battery life.

jared.lynch@news.com.au

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- South East Australia Carbon Capture & Storage (SEA CCS) Project

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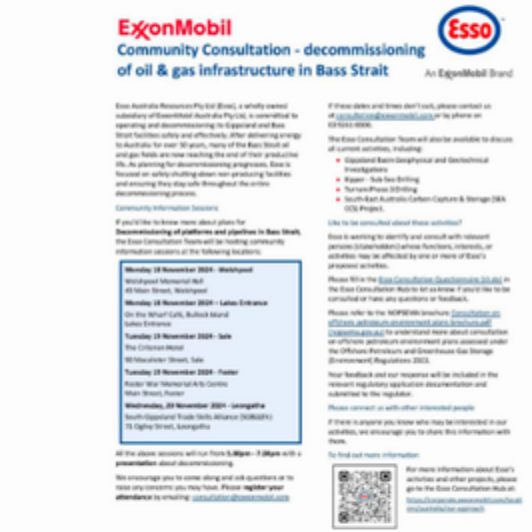
Community consultation dates: decommissioning of oil & gas in Bass Strait



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Monday 18 November 2024 - Welshpool
Welshpool Memorial Hall
45 Main Street, Welshpool

Monday 18 November 2024 - Lakes Entrance
On the Wharf Café, Bullock Island
Lakes Entrance

Tuesday 19 November 2024 - Sale
The Criterion Hotel
90 Macalister Street, Sale

Tuesday 19 November 2024 - Foster
Foster War Memorial Arts Centre
Main Street, Foster

Wednesday, 20 November 2024 - Leongatha
South Gippsland Trade Skills Alliance (SGRGEN)
75 Ogilvy Street, Leongatha

All the above sessions will run from **5.00pm - 7.00pm** with a **presentation** about decommissioning.

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Discussion

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Centre celebrations

Erika Allen

AN ANNIVERSARY 40 years in the making took place in the Gippsland Centre Sale last week.

The $21.6 million Gippsland Centre shopping complex was officially opened on October 29, 1984, by Treasurer of Victoria Robert Jolly with 1000 guests in attendance.

The following day, City of Sale mayor Geoff Rossetti and 1983 Miss Victoria Jeanine Clarke were on hand to welcome shoppers into the complex, featuring four chain stores, including Safeway and Target, and 49 specialty shops.

Over 30 people attended last week's celebration, listening to guest speakers, watching a film about the centre's history, browsing newspapers and photos, and eating cake.

Gippsland Centre Sale's management team compiled a visual retrospective of the centre's construction. The retrospective displays photographs from 1984 as the centre was being built, plus newspaper clippings highlighting its milestones and controversies.

Tied in with the centre's construction was a decade-long battle to have the old Sale railway station relocated from the north side of the Desailly and Cunningham Sts intersection to Pettit St. At last week's celebrations, former Sale City engineer Alan Lewis spoke about these challenges.

Former City of Sale mayor and local historian Peter Synan, who was mayor throughout the centre's construction, was also in attendance.

Incumbent Wellington Shire councillor Scott Rossetti, whose father Geoff was mayor when the centre opened, addressed the small crowd about conversations with his father and his memory of the opening day.

More about the centre's history, page 31.



Peter Synan, former City of Sale Mayor, cuts the 40th birthday cake on Wednesday.



Former Sale City engineer Alan Lewis, with Gippsland Centre Sale administration manager Tamara Williams, centre receptionist Diane van den Broek and incumbent Wellington Shire councillor Scott Rossetti. **Photos: Erika Allen**

Rental reforms unveiled

THE state government has announced reforms to give more rights to renters.

Among the reforms are preventing landlords from evicting a tenant at the end of their fixed-term lease without cause and capping lease break fees to no more than four weeks.

Consumer Affairs Minister Gabrielle Williams announced the government would do six things to make renting fairer:

Stop landlords making dubious bond claims without evidence;

Ban 'no fault' evictions, so renters can't be kicked out of a home for no reason;

Ban the extra fees that get charged;

Ban charging for 'background check' fees for rental applications;

Cap the cost of breaking a lease, and;

If a renter needs an extra key or fob for their apartment, they get one.

These reforms will be introduced to parliament in stages over the next 12 months, with some – including the ban on no reason notices – before the end of the year.

The reforms build on the work the government is already doing to protect renters – including launching Rental Dispute Resolution Victoria, creating a portable bonds scheme, and establishing the renting taskforce to crack down on dodgy landlords and agents.

"Renters' rights are all about respect – that's the principle that we are trying to bring to the rental market through more than 130 reforms, and that's why we are leading the nation on it," Minister Williams said.

"By banning fees and charges on rental payments and applications, and cracking down on unfair bond claims, we're putting more money back in the pockets of renters."

Tenants Victoria welcomed the measures to better protect the rights of renters, who make up almost 30 per cent of Victorians, in their homes. Its chief executive Jennifer Beveridge said "housing is an essential service and a human right".

"Extending the ban on no-reason evictions gives renters more security. It puts them on a more even footing to request repairs, for example, in the knowledge that rental providers cannot ask them to leave without a reason under the law," Ms Beveridge said.

Member for Gippsland South Danny O'Brien said while he supported protecting the rights of renters, there would be little benefit to Gippsland renters when they are not able to find a home to rent in the first place.

"There is a perception the government seems to embrace that landlords are rich and greedy with multiple rental properties in their portfolio, but the reality is that most of the landlords in Gippsland and across the state are mum and dad-type investors who have used their savings or superannuation to invest in and help keep our rental market afloat," Mr O'Brien said.

"According to the Australian Tax Office, the top rental provider occupations are registered nurses, office administrators and primary or secondary school teachers.

"These reforms, in addition to a suite of new land taxes are going to leave landlords questioning their investment and risk them leaving the market in favour of short-term rentals like Airbnb.

"A quick search online will show that many towns in my electorate are already being impacted by this growing trend as property owners understandably seek maximum return on their investment."

Mr O'Brien said that at the time of writing there were more than 20 full-houses listed on AirBnB in Sale alone.

"Under the Allan Labor government there have been no incentives for landlords to offer their homes to long term renters. We need a state government that can find the balance and ensure both renters and landlords are protected."

Data released by the Department of Families, Fairness and Housing earlier this year showed social housing stock across Gippsland decreased from 4874 in 2015, to 4834 as of June 30, 2023.

"These figures are particularly alarming when you consider that the social housing waitlist has also doubled in this time," Mr O'Brien said.

"These reforms will likely drive landlords away from investing in rentals in Victoria and only serve to exacerbate the issue."

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Community Consultation - decommissioning of oil & gas infrastructure in Bass Strait

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NT senator suffers early blow in defamation suit

NORTHERN Territory senator Jacinta Nampijinpa Price has been ordered to pay up by the Federal Court, before a defamation suit against her has properly begun.

The shadow Indigenous Australians minister is being sued by Central Land Council chief executive Lesley Turner over a media release which he claims defamed him.

A Federal Court justice last week ordered Senator Nampijinpa Price pay $1,500 after her legal team failed to file a defence to present at the hearing as required.

According to a statement of claim filed with the court, a media release published by Senator Nampijinpa Price in July wrongly suggested Mr Turner no longer had the support of the majority of Central Land Council members due to alleged "unprofessional behaviour".

The media release implied Mr Turner had "behaved so unprofessionally that it warranted his dismissal" and was "unfit to continue to occupy the role of CEO", according to the document.



Jacinta Nampijinpa Price.

Representing Mr Turner, high-profile defamation lawyer Sue Chrysanthou SC told Wednesday's hearing the defendants were asking for a four-week adjournment in which to lodge their defence.

"We understand that there's a personal matter that's caused the delay," she said.

"We understand that some time might be needed."

Justice Michael Wheelahan said regardless of the reasons, the delay placed Senator Nampijinpa Price in default and ordered she pay the costs for Mr Turner's legal team appearing at the hearing.

"There's an expectation that by the first case management a defence will be filed," Justice Wheelahan told the senator's barrister Barry Dean.

"It appears on the evidence that is before me, your instructing solicitor does not respond to courteous requests for information.

"That's not acceptable in my court. That's not acceptable behaviour by a legal practitioner."

According to the statement of claim, Senator Nampijinpa Price's assertions were published by the *NT News* in an article titled, "No confidence motion against Lesley Turner defeated". The newspaper later publicly apologised to Mr Turner and retracted the article.

In a statement released on his behalf, Mr Turner's lawyers said he is keen for the matter to move forward.

"Mr Turner has brought these proceedings to seek vindication for the unjustified allegations published about him and looks forward to the proceedings moving forward as expeditiously as possible and in accordance with the Court's procedures and expectations."

The court ordered the Country Liberal senator's legal team file their defence by November 20, before the next hearing on December 4.

– AAP



Gathering Space

A creative space open to Aboriginal community

Facilitated by Bundjalung artist Kylie Caldwell
First Sunday of every month, 1–3pm
Free, all materials provided



LISMORE REGIONAL GALLERY

Image: Kylie Caldwell, ceramic bowl. Photo: Carriage Works South East Aboriginal Arts Market
This program is supported by the NSW Government through Create NSW

NSW GOVERNMENT

Community consultation on the draft Water Sharing Plans 2025

The NSW Government has developed the draft Water Sharing Plans for the following catchments:

- Macquarie/Wambuul Bogan Unregulated Rivers Water Sources
- Gwydir Unregulated River Water Sources
- Murrumbidgee Unregulated River Water Sources
- Namoi and Peel Unregulated Rivers Water Sources

The draft plans and supporting documentation are available for viewing on the Department of Climate Change, Energy, the Environment and Water website from Monday 4 November to Friday 13 December 2024.

Online webinars and face to face drop-in sessions will be held in November across the catchments.

Join us to learn more about:

- the draft plan
- how to make a submission.

From 11 November to 6 December 2024 staff from the department will also be available for 30 minute booked phone interviews.

To find out more information and to register for the webinars and drop-in sessions, please visit: water.nsw.gov.au/water-sharing-plans or email water.enquiries@dpie.nsw.gov.au

Submissions close at 11.59 pm on Friday 13 December 2024.

NS0045

Fox baiting program

The Department of Environment, Energy and Climate Action (DEECA) will be undertaking an ongoing baiting program on all public land in the Snowy District, the Colquhoun and Kenny Forests in the Tambo District and in the Red Bluff section of the Lakes Entrance-Lake Tyers Coastal Reserve to control foxes.

Foxoff baits containing the toxin 1080 (sodium fluoroacetate) or Foxecute baits containing the toxin PAPP (Para-aminopropiophenone) will be used for these programs and they will be buried at a depth of 15cm below the ground in pre-constructed and maintained bait stations.

Fox control on all public land (State Forests and National Parks) in the Snowy District is continuous from November 6 until May 6, 2025.

There is no known antidote for 1080 and baits should not be handled by unauthorised people.

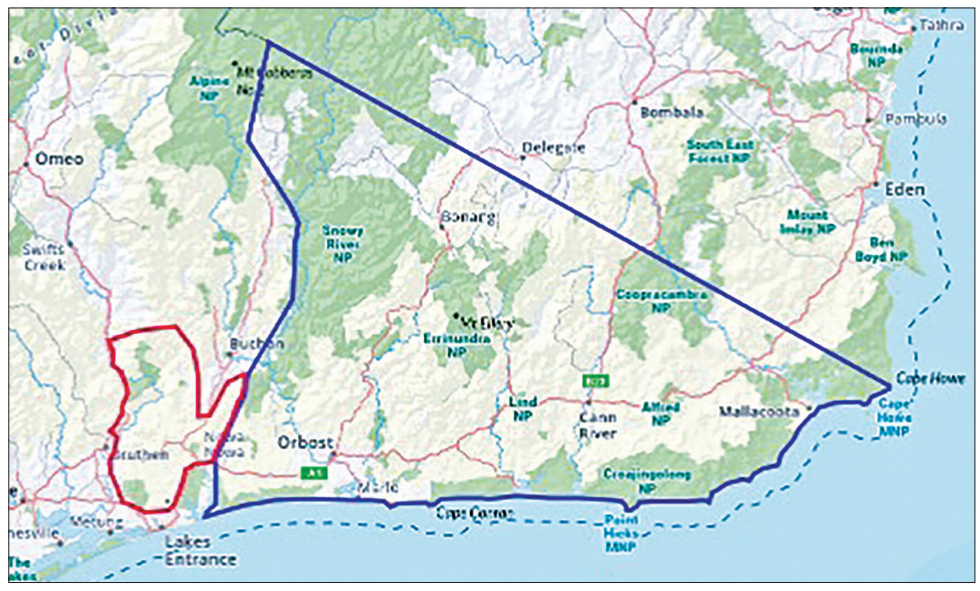
There is an antidote for PAPP but must be administered by a veterinarian within 30 minutes of bait consumption.

Unrestrained pets may be at risk. Please heed all warning signs and keep pets under control to ensure they do not consume baits.

The use of the 1080 and/or PAPP baits will comply with the product label and the Directions for the Use of 1080 and PAPP Pest Animal Bait Products in Victoria.

When used in accordance with these documents, the risk of humans or animals being poisoned by 1080 or PAPP baits can effectively be managed.

Further information concerning this poisoning program can be obtained by contacting DEECA in Orbost via email.



An ongoing fox baiting program carried out by the Department of Environment, Energy and Climate Action kicked off yesterday in all public land in the Snowy District, running until May 6, 2025.

Project welcomes Bobbi McKinnin

The Future of Orbost and District (FoOD) project is pleased to announce that Bobbi McKinnin will be an online guest speaker at the project's Collective Action Through Collective Leadership and Strategic Doing forum on November 13.

Growing up in the picturesque town of Yackandandah, Bobbi discovered her passion for renewable energy and energy efficiency.

Since 2009, she has been a dedicated small business owner and a partner at Solar Integrity, located in Albury Wodonga on the Victorian and New South Wales border.

Solar Integrity specialises in empowering communities, organisations and individuals to achieve energy independence.

The company has received multiple awards for its collaborations with Totally Renewable Yackandandah, highlighting their impactful work in the community.

Additionally, Bobbi is a co-founder of Renewable Albury Wodonga Energy, further highlighting her commitment to sustainable community energy solutions.

As an introduction to the forum, Bobbi will share valuable insights from her community energy projects and discuss broader strategies for fostering resilience within communities.

Liz Mitchell, chair of the FoOD project's governance group, emphasised the importance of learning from other communities.

"We don't need to reinvent the wheel here in Orbost and district," she said.

"This is a great opportunity to tap into the knowledge and experiences of other communities that have embarked on their own transformation journeys.

"Bobbi's insights will provide valuable inspiration for fostering collective action across our community.

"We look forward to community members joining this forum to explore how we can work together towards a more sustainable and prosperous future for Orbost and district."

The forum will be held between 4pm and 6.30pm on November 13.

There is no charge for the forum, however registrations are essential.

Registrations can made via the Future of Orbost and District website.



***Bobbi McKinnin**

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It is with a heavy heart that Beveridge's would like to let our loyal customers know that we have made the tough decision to close our gates for firewood sales, pickups and deliveries as of the **20/12/2024.**

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Just to let you all know this decision was made for us by the Victorian State Government.

Best wishes,
Malcolm & Pam Beveridge

Nominate someone great

2025

EAST GIPPSLAND SHIRE COUNCIL

AUSTRALIA DAY AWARDS

Scan the QR Code

This is your chance to nominate someone who makes an important contribution to our local community or a community group that's held an outstanding event that deserves recognition.

Award categories are:

- **Citizen of the Year**
- **Young Citizen of the Year**
- **Community Event of the Year**

A copy of the nomination form can be found on our website or at any of our Service Centres.

NOMINATIONS CLOSE FRIDAY 6 DECEMBER 2024

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Australia Day
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EAST GIPPSLAND SHIRE COUNCIL

Esso ExxonMobil

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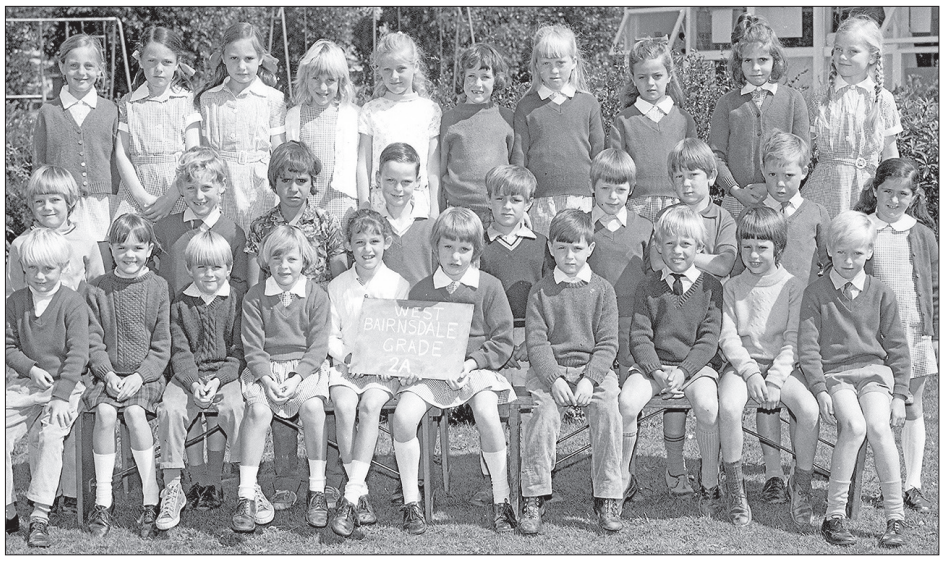
HISTORY'S MYSTERIES



Can you identify the people in this photo (above) from the East Gippsland Historical Society collection?

The photo is of Bairnsdale West Primary School Grade 2A class circa 1972.

If you have any information, please contact the *Advertiser*. A new mystery will appear in next week's edition.

No information was received for last week's photo (below) of a debutante and her partner at the Lakes Entrance Ball held at the Lakes Entrance Mechanics Hall circa 1958.



Shining a light on wellbeing

Members of the Bairnsdale and District Diabetes Support Group will join the global push to put wellbeing at the heart of diabetes care on World Diabetes Day this November 14.

This World Diabetes Day, Diabetes Victoria is shining a light on support programs and resources to help people focus on their wellbeing as a part of their diabetes management.

"Our peer support groups offer a welcoming space to share experiences, gain insights from others and create connections," Giovanna Taverna, Diabetes Victoria peer support lead, said.

"These groups are led by community members or healthcare professionals who are dedicated to creating inclusive environments for connecting with others.

"I encourage people living with diabetes or supporting someone with diabetes to join a peer support group or start your own in your local area. If you would like support to do so, you can head to the Diabetes Victoria website."

Diabetes Victoria also offer camps for children with type 1, advocacy services and prevention programs. The Diabetes Victoria Clinic also offers appointments with a health psychologist who can assist with coping strategies for stress, anxiety, depression, diabetes burnout and diabetes distress.

The Bairnsdale and District Diabetes Support Group was established in 1987 to connect people living with all types of diabetes across Bairnsdale and surrounding district to support their quality of life and wellbeing through mutual support and education.

Bairnsdale and District Diabetes Support Group provides a safe and friendly environment to meet and support other community members living with diabetes. People living with diabetes are incredibly resilient, as diabetes impacts both physical and mental wellbeing.

The group meets every second month of the year at the Bairnsdale RSL.

Please contact the group convenor for further information (details available at the *Advertiser* office).

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Shining a spotlight on violence against women

Contributed by YDHS

YARRAM and District Health Service (YDHS) is proud to be shining a spotlight on violence against women by participating in the 16 Days of Activism Against Gender-Based Violence.

The annual campaign, which runs from 25 November to 10 December, encourages all Victorians to work together to prevent and end gendered violence.

In Australia, more than one in three women has experienced men's violence and on average, a woman is killed by a man she knows every 10 days.

The Wellington Shire ranked within the top five Victorian municipalities for family violence incidents in 2022-23 and this year's local campaign is focussed on raising awareness of the impacts within Yarram and surrounding districts.

According to YDHS Manager Community Health Alison Payne, campaigns like the 16 Days of Activism help in highlighting this important issue and the role we all have to play in ending gendered violence.

"Unfortunately, safety for women is not a given in any community, and neither is respect," Ms Payne said.

"But it doesn't have to be this way; violence against women is preventable and we must work together towards a future where all women are safe, equal and respected".

A key element in addressing this issue is combatting ingrained attitudes and behaviours in men.

"We need to really address the harmful attitudes and behaviours that fuel violence and we all have a role to play in doing that," Ms Payne said.

"That means that if you hear a comment or a see a behaviour from a friend, a colleague or someone you know that's demeaning or sexist, you should call it out".



Yarram and District Health Service will once again participating in the 16 Days of Activism Against Gender-Based Violence.

A series of events are planned across Yarram throughout the 16 Days organised by a Committee comprising representatives from Yarram Neighbourhood House, Yarram Anglican and Uniting Churches, Rotary, Yarram Red Cross, the Yarram Progress Association, Yarram Secondary College and Gippsland Women's Health.

The events include a screening of the film Battle of the Sexes (the Billie Jean King Story), a men's breakfast, a women's morning tea, a photo exhibition and a community walk and barbecue.

The Walk for Respect will begin at 5.15pm on Monday 25 November 2024 at Yarram Secondary College. It will include a tour of the photo exhibition and end at the Yarram Memorial Park at 6pm with a smoking ceremony, a free barbecue and a candlelight vigil to remember those lives lost to family violence.

Ms Payne is encouraging locals to attend the events being hosted over the 16 Days and to engage with the issue of gendered violence.

"Campaigns like this are an important opportunity for us all to reflect on what we can do to contribute towards a world where all women are safe, equal and respected," she said.

Statistic around Family Violence

From June 23 – June 24 Wellington Shire had the 8th highest rates of family violence in the state.

679 Incidents of serious assault due to family violence were reported according to Crime Stats Agency Data Base.

Family and domestic violence

Family and domestic violence can affect anyone in all types of relationships. It can occur in:

past or current intimate relationships, including relationships where you are dating or living together, regardless of gender or sexuality

relationships involving carers of people with a disability or a medical condition, or elders

relationships with relatives and guardians

culturally recognised family groups.

Family and domestic violence isn't always physical. It can happen to anyone, no matter their age, gender or sexual orientation.

It can continue even when you've left a violent relationship.

Family and domestic violence is always the fault of the person causing the abuse. Its never the fault of the person experiencing abusive behaviour.

To access 24/7 counselling and support call 1800RESPECT on 1800 737 732

Landslip works continue

CONSTRUCTION works to repair the Hyland Highway started in July 2024 .

Estimated completion of works was stated as November weather permitting.

The damaged lane remains closed with temporary traffic signals installed to manage flow of traffic and a 40km/h speed limit in place.

Pre-construction and site access works, including geotechnical investigations, design and excavation works, were conducted back in February this year prior to the commencement of the reconstruction works.

The repair works include:

• the construction of a 50-metre long retaining wall to stabilise the road

• installation of ground anchors to increase the load bearing capacity of the retaining wall

• road reconstruction, resurfacing and linemarking, and

• installation of safety barriers.

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Community Consultation - decommissioning of oil & gas infrastructure in Bass Strait

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Tuesday 19 November 2024 - Sale
The Criterion Hotel
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Foster War Memorial Arts Centre
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Public Notices

YALLOURN/NEWBOROUGH RSL SUB BRANCH
MONDAY, 11th NOVEMBER 2024
REMEMBRANCE DAY SERVICE
Meet at the Cenotaph at 10.45am for the Service and Wreathlaying, commencing at 11am.
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Please note: Children must be 11 years or over as we will need to apply for a government Child Employment Permit. Children younger than 11 cannot or will not be accepted.

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GP1632583

GOOD NEWS Latrobe Valley Express We've got news for you

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Police stand firm on brawl

Regan Hodge

Police officers responding to the shooting death of Pal Bidong have been slammed for failing to break up an ugly brawl on the streets of North Melbourne at the weekend.

Up to a dozen youths waged war on each other just metres from police guarding the crime scene where the young rapper known as Peezy was shot and killed.

They were filmed punching and kicking each other while officers stood and watched.

Former homicide detective Charlie Bezzina said the officers should have intervened as it "sends the completely wrong message".

Mr Bezzina, who was a homicide squad investigator for 17 years, said police's top priority should be to prevent crime which they failed to do.

"It's not good optics, absolutely shocking optics for the general public, and sends the completely wrong message," he told 3AW on Tuesday. "They would be saying 'how good is this? The coppers are going to do nothing, we just go on our merry way'.

"They could have managed that, but you've got to go in there and show that we're not going to put up with this.

"It should have been stopped... It's a bad, bad look for Victoria Police."

Commander Mark Galliott defended police actions as their role was to protect the crime scene.

He said several alcohol-fuelled people had attempted to enter and "damage" the crime scene which forced police to form a line. He said those members were given a single direction of not allowing anyone to enter that area as the murder investigation overrules an incident of affray.

He said arrests were made after more police arrived, which is not shown in the footage.

"This is where a murder had just occurred, so the main objective for police attending was to secure that crime scene and preserve the evidence," he said.

Police are still hunting the gunman who fired the shots on Langford St about 3.15am on Saturday following a Halloween rave nearby.



The scene of the deadly shooting in North Melbourne. Picture: 7News

Schoolgirl shaken at vile slurs

One of the Jewish schoolgirls targeted in an anti-Semitic verbal attack by male teenagers has spoken of her fears after the incident.

"You don't expect this on a tram," she told the Herald Sun.

The year 11 girl was one of five female students from Beth Rivka College approached by two boys aged 16 or 17 on a tram on Monday in Caulfield North. The boys, who the girls had never seen before, made eye contact and screamed "Heil Hitler" at them after alighting.

The student said she and the others were left shaken and shocked, and neither the tram driver nor other passengers intervened or tried to comfort them.

The girl said the group is now more cautious and more aware of the growing risks of repeat incidents. Despite their concerns, they are not worried about returning to school.

Police are investigating the incident and have asked any witnesses who saw the attack, which occurred about 12.30pm on the corner of Balaclava and Orrong roads to contact Crime Stoppers on 1800 333 000 or submit a confidential report at www.crimestoppers.com.au.

In a statement, police said they were investigating a report of "racially motivated offensive behaviour".

'We apologise for audio clip'

No intention to mislead public: ABC

Sophie Elsworth
James Madden

The ABC has apologised for "inadvertently" including additional audio of gunshots in a series of stories about an Australian military operation in Afghanistan in 2012.

ABC news director Justin Stevens told a Senate estimates hearing on Tuesday that the issues with the audio "shouldn't have occurred" but he refused to name any employees involved in the stories that ran on the 7.30 program and on the public broadcaster's website.

In September, Channel 7's Spotlight program revealed additional gunshots – purportedly fired by an Australian soldier from a helicopter – had been inserted into stories about the military operation, thus giving a false impression of the circumstances of the skirmish.

ABC managing director David Anderson subsequently launched a review into the matter, to be conducted by the organisation's former editorial chief Alan Sunderland.

In commissioning the review, Mr Anderson said he was, to that point, unaware the ABC's legal department had received a letter raising concerns about the audio editing but it was not passed on to the organisation's news division.

Mr Sunderland's interim report, tabled on Tuesday, found there was "no evidence of any intention to mislead by any ABC employee", and cleared the broadcaster and the journalists involved in the stories of having "deliberately doctored, falsified, manipulated or distorted information, material or evidence in order to mislead audiences".

"I have found no evidence to support the conclusion that any of this was done at the direction of the journalists involved or on the initiative of the video editor in order to doctor or deliberately distort the depiction of the events that occurred," the review states.

"On the contrary, what evidence there is suggests it was not a deliberate editorial decision to include additional gunshot audio in order to mislead or deceive."

In a statement posted on the ABC's website on Tuesday, Mr Stevens said: "The ABC sincerely regrets and apologises for the editing errors in the video clips, including to members of the 2nd Commando Regiment. The video has been removed."

Last year, one of the soldiers involved in the 2012 military operation in Afghanistan, Special Forces commando Heston Russell, successfully sued the ABC for defamation over the stories, which were led by reporter Mark Willacy. Mr Russell was awarded $390,000 in damages, plus legal costs.

During the Senate hearing on Tuesday, Liberal Senator Sarah Henderson asked ABC acting managing director Melanie Kleyn: "On what basis did the ABC not respond (to the letter) and correct these terrible injustices that we now know about? Did ABC lawyers inform anyone else at the ABC? Who was instructing ABC lawyers?"

Ms Kleyn said she "didn't know" if anyone in the organisation's news division had received the letter that had been sent by Mr Russell's lawyers.

The hearing continues.

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V1 - MHSE01Z01MA

Israel awards highest civilian honour to Lowy, Leibler

STEPHEN RICE
NSW EDITOR

Retail magnate Frank Lowy and lawyer Mark Leibler have been awarded Israel's Presidential Medal of Honour, the first Australians ever to be granted the Jewish state's highest civilian honour.

The pair were among eight Jewish and non-Jewish leaders from around the world to receive the award, in recognition of their extraordinary contributions to the state of Israel and the Jewish people.

Announcing the awards, Israel's President Isaac Herzog said he had chosen the recipients for their unwavering commitment to Israel, particularly since the Hamas atrocities of October 7 last year.

"The past year, the most difficult since the founding of the state, tested our resilience as a nation and as the Jewish people," Mr Herzog said. "It showcased the diverse and beautiful face of Israeli society and proved, as we have always known and believed, that all of Israel is responsible for one another, that the Jewish communities worldwide and the state of Israel share a common destiny."

Sir Frank and Mr Leibler had fought against anti-Semitism, defended Israel's name in the media, and had long fought for Israel's place among nations, he said.

"Your work and dedication embody this great bond, and the Jewish people and the state of Israel will remain deeply grateful for all that you have done and continue to do," he said.

Mr Herzog said Sir Frank, a holocaust survivor, philanthropist and founder of the Westfield shopping empire, had supported the Jewish community in Australia and promoted the wellbeing of Israeli society, particularly in the fields of health, education, and social welfare.

"His influence is also evident in fostering Israeli-Australian relations and supporting vital Israeli initiatives, most recently the National Library in Jerusalem," the President said.

Mr Leibler, a prominent lawyer and Jewish community leader, had worked extensively for human rights, Israel, and the Jewish community in the country.

"For decades, he has been a central figure on the Board of Governors of the Jewish Agency for Israel and Keren Hayesod, working to promote the Australia-Israel friendship, combat anti-Semitism and anti-Israel sentiments, defend Israel's reputation, fight against boycotts, and support the Jewish community in Australia," President Herzog said.

The Arnold Bloch Leibler senior partner said he was thrilled to be recognised alongside his friend Sir Frank.

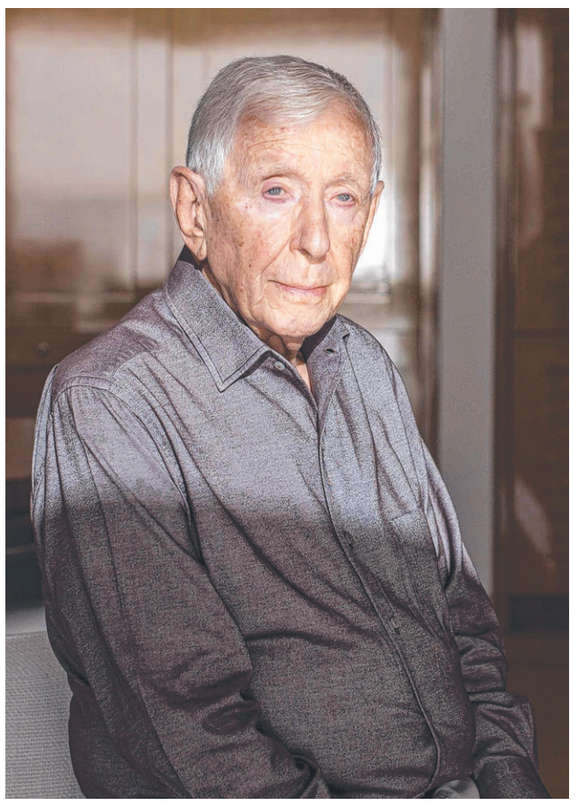
"Sitting around the dinner table on a Tuesday evening, you don't expect to receive a call from the President of Israel," Mr Leibler said. "I am astonished and deeply moved to have received this extraordinary honour, which I'll treasure for the rest of my life.

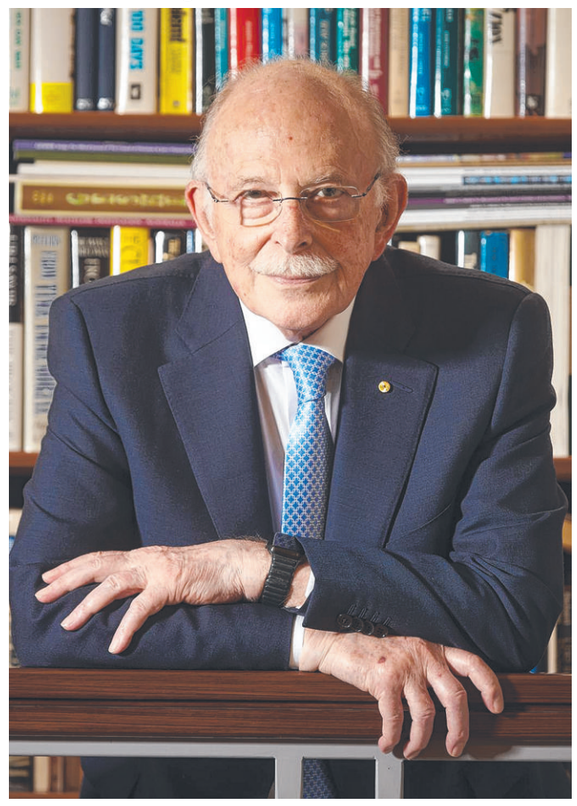
"Israel has always been central to my identity as a proud Australian Jew. Working in support of Israel, the Australian Jewish community, and the relationship between the two nations has been a passion and a privilege."

The medals will be presented to recipients in a ceremony at the President's Residence in Jerusalem next month.

The medal was established in 2012 by former president Shimon Peres and has been awarded to fewer than 50 individuals, the vast majority of them Israelis. Past non-Israeli recipients include US presidents Bill Clinton, Barack Obama and Joe Biden, German chancellor Angela Merkel and film director Steven Spielberg.

WORLD P8
EDITORIAL P10





AVISHAG SHAAR-YASHUV, VALERIU CAMPAN

Frank Lowy, left, and Mark Leibler have been recognised for their contributions to Israel and its Jewish people

Soccer star loses bid to return home to NZ

NATHAN SCHMIDT

A Sydney soccer star embroiled in the A-League corruption scandal has lost his bid to travel freely to his native New Zealand amid fears he may not return.

Clayton Rhys Lewis appeared before Downing Centre Local Court on Tuesday facing charges of corrupting betting results and participating in a criminal group.

The 27-year-old midfielder was the third Macarthur Bulls A-League player charged over the scandal, alongside Ulises Davila and midfielder Kearyn Baccus.

Police allege Lewis was among players who deliberately obtained yellow cards during an A-League match between the Bulls and Sydney FC last December 9.

It is alleged the players deliberately affected the result of the betting market and were paid $10,000 by Davila, who was directed by a South American syndicate.

Appearing before the court, Lewis's lawyer Zemarai Khatiz applied for an amendment to Lewis's bail conditions to allow him to travel to his New Zealand.

Mr Khatiz put forward two possible amendments: in one, conditions prohibiting travel overseas and entering international departure points would be deleted. In the other, Lewis would be able to leave the country but would be allowed to do so only after providing seven days to 72-hours notice to NSW Police.

Mr Khatiz said repeated applications to return to New Zealand from western Sydney where he currently lives would result in costly legal fees.

The court was told the officer in charge of the investigation did not oppose the second option, but it had been objected to by the police prosecutor.

"The prosecution submits the primary variation is quite unusual in the sense that it's simply unknown how and when travel will take place," he said.

Magistrate Susan Horan ultimately denied the application, citing that the conditions did not adequately mitigate risks of failure to appear in court.

NEWSWIRE

Push to give nurses, physios bigger roles

NATASHA ROBINSON
HEALTH EDITOR

Nurse practitioners, pharmacists and allied health professionals should be funded to carry out a greater array of healthcare including maternity care in GP clinics under calls for major reforms to health workers' scope of practice.

A federal government-commissioned independent review has recommended a suite of reforms that if implemented will break down legislative and regulatory barriers to these health workers taking over more frontline care in GP clinics, in line with the government's push to encourage greater multidisciplinary teamwork within primary care amid widespread difficulties by patients to access appointments with doctors and rising rates of chronic disease.

The recommendations were met with jubilation by nurses and allied healthcare groups, but peak doctors' groups are warning of a move towards an "NHS-style system" that may pose risks.

The key recommendation of the review by business consultant and former senior bureaucrat in the department of Prime Minister and Cabinet, Mark Cormack, is the implementation of a new blended payment model to enable patient access to multidisciplinary healthcare delivered by health professionals working to their full scope of practice.

Such a model represents a shift away from outdated fee-for-service funding rules which restrict Medicare payments to patients to subsidising individual consultations with GPs.

"The new payment would be supported by a growth in investment in primary care, shifting the ratio of Australian government payments for primary care ... fee-for-service (towards) blended payments ... over time," the report says.

"This recommendation addresses and supports the growth of new and innovative primary care models, the sustainability of which have ... been limited due to challenges accessing Medicare Benefits Scheme funding."

> 'The government must resist implementing Band-Aid solutions that will make the situation worse'
>
> DANIELLE McMULLEN
> AMA PRESIDENT

A bundled payment for maternity care is also proposed, "thereby providing women and families with a range of affordable, accessible and integrated maternity care options in primary care and hospital settings" amid spiralling out-of-pocket costs in the private sector.

Allied health professionals, midwives, nurse practitioners and remote area nurses would also be able to issue referrals in line with their scope of practice.

The reforms are in harmony with the government's policy agenda to modernise Medicare and gradually overhaul the fee-for-service funding model.

Another major recommendation that will attract the ire of doctors' groups is the conferral of authority over registration and accreditation of health professionals to health ministers, eroding medical colleges' authority over that process.

The Australian Medical Association was scathing of the planned reforms, saying the government "must resist leading Australia down the same failed path followed by the UK, where the primary care system is in tatters". AMA president Danielle McMullen said the suggested reforms would fragment patient care and undermine the key role of GPs in delivering high-quality care for patients.

"The federal government has acknowledged there is a GP workforce shortage, but it must resist implementing Band-Aid solutions that will only make the situation worse, as seen in the UK," Dr McMullen said.

"Turning this shortage around requires comprehensive reform, involving greater investment in support measures for Australia's highly valued GPs."

The AMA said decisions about standards of training and clinical practice must be made by independent, profession-led bodies, not politicians.

The Royal Australian College of GPs also warned the reforms "may make seeing a GP harder for some patients" and result in a costlier health system, more delays to care, and higher out-of-pocket costs for patients.

RACGP president Nicole Higgins said the report's recommendations "will raid Medicare and set us up for a two-tiered health system where those who can afford to see a GP will, and those who can't, don't".

"This isn't gatekeeping, it's coordination of a patient's care by a GP who knows them, their context, and their history ..."

No PBS service, but a $200k fee

JAMES DOWLING

Companies whose medicines have been deferred under an unprecedented decision to hold back on Pharmaceutical Benefits Scheme assessments are still being charged upwards of $200,000 per application, despite no services being provided.

Patient advisory groups left in the dark over 45 medicines left off the agenda of the next Pharmaceutical Benefits Advisory Committee meeting have demanded the Albanese government intervene. Cancer treatments and chronic-disease medications are among the drugs deferred in the surprise decision, with delays of at least four months expected to their potential PBS listing.

In letters seen by The Australian, Health Department staff alerted sponsors of PBS applications to the invoice fee despite their submissions being held back. "Submissions held over from March 2025 will be considered at the PBAC's July 2025 meeting subject to submission volume and capacity for that meeting," an October 22 letter reads. "Invoices will be issued for all notices of intent proposing a submission be considered by PBAC at the March 2025 meeting. This will also include submissions that are required to be considered at a future meeting."

An invoice dated October 23 charged one sponsor a $206,435 fee for a category 2 submission, meaning a drug deemed to have major potential impact.

"The department has received notification that over 50 major submissions are planned to be lodged for consideration at the March meeting," the October 22 letter reads. "This is an unprecedented number and exceeds the current capacity of the contracted Health Technology Assessment workforce for evaluation, as well as what PBAC can consider in one meeting. The department has contacted existing and additional providers of HTA evaluation services but there is not enough capacity available to consider all the submissions at the March meeting. It will therefore be necessary to consider some ... at a later meeting."

Despite Health Minister Mark Butler calling on staff to "urgently engage with (pharmaceutical advocate) Medicines Australia to examine all potential solutions" on Monday, the Health Department previously backed the PBAC decision.

The correspondence provided to PBS application sponsors said "the department considered it important for the independent expert PBAC to determine how to manage its March 2025 agenda". "In selecting submissions for the March 2025 agenda, the PBAC used its clinical judgment and experience," it reads.

Chief Justice told to butt out

EXCLUSIVE

ELLIE DUDLEY
LEGAL AFFAIRS CORRESPONDENT

A Federal Court judge has rebuked the NSW Chief Justice for creating "legal uncertainty" and flexing a "supervisory power" over judges outside his jurisdiction – the latest missile launched in a long-running dispute over the drafting of evidence.

Ian Jackman handed down a judgment last week criticising NSW Chief Justice Andrew Bell for seeking "to impose limitations" on judges outside the state Supreme Court, and for endorsing an "artificial, strained, misleading and fanciful" practice relating to written affidavits.

The comments mark a climax in the long debate, which centres on whether it is appropriate for a witness's memory to be converted into direct speech in a sworn affidavit. In other words, the two judges are split over whether a witness's recollection of a conversation should be written down as a verbatim quote.

This practice, Justice Jackman has argued, gives the "false appearance of verbatim memory". But Chief Justice Bell has said there was "no meaningful difference" between a witness offering their "best recollection" of events while giving verbal evidence, and that recollection being written as direct speech.

The disagreement began last year with a judgment by Justice Jackman – the brother of actor Hugh Jackman – in which he said he wanted to end a "longstanding practice" in NSW where affidavits quoting a witness's memory as direct speech are prefaced with the "confusing formula" of "in words to the following effect".

In a separate judgment in July, he found a witness's evidence was "drafted and approved by her as a matter which is adverse to her credibility" because it quoted her memory as direct speech. He said the practice was "logically, ethically and grammatically wrong".

"I regard it as adverse to a witness's credibility for the witness to convey the false impression in an affidavit of a verbatim recollection of a conversation by using direct speech, when all the witness remembers is the gist of something which was said," Justice Jackman said.

But in an appeal judgment for a succession matter in September, Chief Justice Bell said it was "unorthodox and undesirable" for Justice Jackman to "arrogate" to himself the "ending of a longstanding practice in NSW".

"There is no meaningful difference between a witness being asked in the witness box to give his or her 'best recollection' and that 'best recollection' being set out in direct speech in an affidavit or witness statement, qualified by 'words to the following effect' where the witness cannot recall the actual words used," the Chief Justice said. "Many a witness has suffered by reason of the absence of any genuine recall even of the gist of a conversation, exposed under cross examination. Experienced judges are alive to imperfection of memory and artificially precise recollections."

Responding to these comments last week, Justice Jackman accused Chief Justice Bell of seeking "to impose limitations" of judges outside of his jurisdiction. "Bell CJ's statement, read in context, was directed to judges of the Federal Court, but would apply equally to judges of the High Court," he said.

"I do not express any view as to whether his Honour's statement is appropriate to be applied to judges of the Supreme Court of NSW, that being a matter for the judges of that court to resolve in light of the intrusion on judicial independence which Bell CJ's view represents.

"However, to the extent that Bell CJ's view is intended to apply to judges of other courts, with great respect, his Honour is asserting a supervisory power that his Honour does not have."

He said the Federal Court had a "particular responsibility to foster consistent national practice".

"Its responsibilities thus differ from those of the Supreme Court of NSW," he said. "The Chief Justice of a state Supreme Court cannot insist that judges of the Federal Court exercise those responsibilities in a particular way."

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Community Consultation - decommissioning of oil & gas infrastructure in Bass Strait

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So much value for money at Lake Bunga

Out of sight, but not out of the way, is this spectacular property located at the end of a no-through grove meaning passing cars are almost nonexistent.

This well designed and well-built home is every bit as good as it looks, with its clean, fresh looks and colour scheme both inside and out, making it a breeze to coordinate your décor within the spaciousness of each and every room.

Built in 2019, the vendors engaged Aspire Homes to produce this amazing three bedroom, two bathroom, two living area home with double garage providing internal access directly into the home.

It's quality all the way where the wide and welcoming entry sets the scene of what lays ahead. A roomy main bedroom that easily accommodates a king-size bed has a walk-in-robe and huge en suite also.

A well-appointed kitchen is complimented with a large walk-in pantry and food prep area (every home should have one). The spacious main living area has an abundance of natural light and leads directly onto a large alfresco area that can accommodate everyone.

Perhaps the biggest surprise is the stand-alone DPU (dependent persons unit). This building isn't just a converted room – it's a purpose-built unit designed for dependent persons – or perhaps large and extended families, hobbies or craft area – the possibilities go on and on.

An 8kw solar system (22 panels) plus solar hot water to each building all adds up to good economic sense. A separate, stand-alone garage/workshop will provide all the storage and work area you'll ever need.

36 Campbell Grove, Lake Bunga

$899,000 5 3 4

Agent: East Gippsland Real Estate Lakes Entrance





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Turkish White Bean Salad (Piyaz)

Andrew McEwen

This is a simple and easy accompaniment to a range of meat and other dishes. It is quick to make the Turkish white bean salad. It has a light and bright lemon vinaigrette - it's very tasty.!

Ingredients
1 red onion, halved and thinly sliced
2 garlic cloves, minced
5 tablespoons red wine vinegar
1 large lemon, juiced
Salt and black pepper
2 cans of cannellini beans, drained and rinsed
2 teaspoons sumac
¼ cup extra virgin olive oil
3 Roma tomatoes, cut into wedges
½ cup packed chopped fresh parsley

Method
In a large bowl, add the onions, garlic, vinegar, and lemon juice and let stand for 10 minutes,
Add the beans, tomato wedges, and parsley.
Add the sumac, salt, and black pepper.
Drizzle with the olive oil and toss to combine.
Taste and adjust seasoning

Time 15 mins **Cost $12**
Serves 6 **Cost per serve $2**



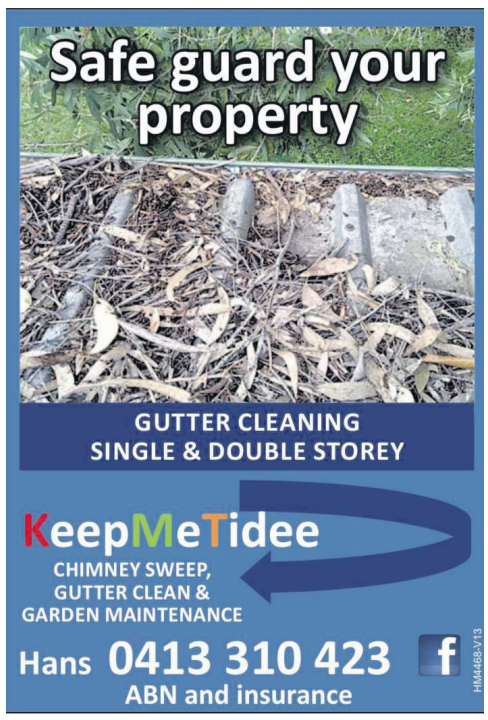
Tarwin Valley Ward 3rd spot forecast to be Brad Snell

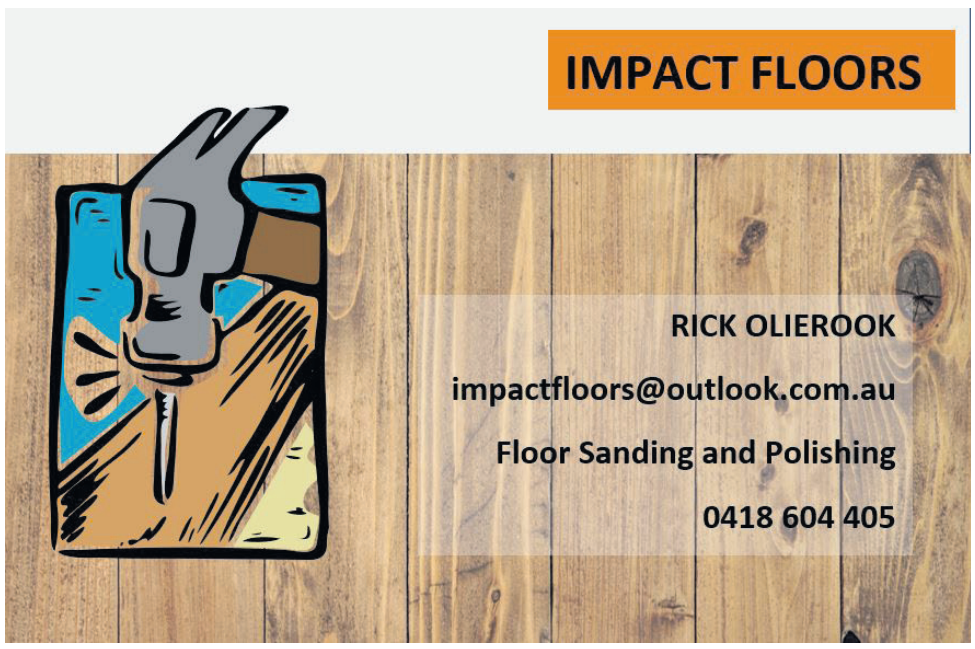
First round voting had Schelling and Williams way ahead of the pack with around 65% of all votes cast to those two candidates.

This gave around 600 preference votes to be passed on and most of those went to Brad Snell but interestingly, a large share also went to Rosemary Cousins who was above Brad on the ballot paper after an enormous number of 'donkey' votes with 1-7 from top to bottom - going to Cousins initially.... but starting behind Cousins, Snell overtook her as he scored preferences originally from Schelling and Williams as Kathleen Murray and Aaron-Taylor dropped out of the race.

With 3 remaining, Hill was leading by around 100 votes, with Snell 2nd and Cousins having fallen to 3rd around 100 votes behind Snell, she was next to exit the race. The 'donkeys' then flowed through to Snell as he was listed above Hill on the paper and a win of around 100 votes was expected from scrutineer observations.







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Labor accused of 'hiding' huge Games blowout

MACKENZIE SCOTT

A blowout in costs in delivering the 2032 Brisbane Olympic and Paralympic Games could climb to $681m, with a major infrastructure project expected to run over budget by half a billion dollars.

The revelation came as Queensland Premier David Crisafulli promoted former senator Amanda Stoker to his "next-gen" assistant ministry alongside six other newly elected MPs.

Necessary upgrades to link Brisbane's Roma St train station to the federal government's $2.5bn Brisbane Live arena project are expected to run over by up to $500m.

Deputy Premier and State Development and Infrastructure Minister Jarrod Bleijie labelled the blowout "extraordinary", and said the department had been advised the cost analysis of Brisbane Live shows likely blowouts in the federal government's outlay.

"This is an extraordinary amount of blowouts the Labor Party have hid from the people of Queensland," Mr Bleijie said.

"(Opposition Leader) Steven Miles needs to apologise for hiding these cost blowouts ... no one knew about it. The Labor Party knew about it, and they hid it from the people of Queensland."

Last week, the new Liberal National government announced three minor venues for the Games – Chandler Indoor Sports Centre, Sunshine Coast Indoor Sports Centre and Sunshine Coast Stadium – had already blown out by $181m before a builder was appointed.



Crisafulli

The LNP government has committed to a review of Olympic Games venues in its first 100 days, which Mr Crisafulli was confident will deliver what Queenslanders want.

"We're going to make sure that the state has world-class Games, and that involves world-class venues," Mr Crisafulli said. "They'll get that, and they will also get generational infrastructure."

The Premier announced his assistant ministry on Sunday, but failed to deliver on his promise of having a dedicated local government minister or assistant minister.

Longserving member for Condamine Pat Weir was nominated as parliamentary Speaker.

"The assistant ministry today we are announcing is young and hungry to serve," Mr Crisafulli said.

"I've seen the roles of assistant ministry cheapened in recent years and it is our intention that this assistant ministry will go to work.

"That means dealing with stakeholders, that means policy formulation, that means working hand in glove with the ministry and the parliament to drive policy change."

Ms Stoker, elected to the bayside seat of Oodgeroo, took on the assistant finance, trade, employment and training portfolio. She said she would work "bloody hard" for Queenslanders.

"I'm looking forward to drawing on my federal experience to help build a stronger economy, to make Queensland the best place to work," she said.

"I'm absolutely determined to build the prosperity of Queenslanders and help them build their aspirations for their best possible lives."

Redlands MP Rebecca Young will oversee the promised Better Regulation assistant portfolio alongside planning, housing and supporting Mr Bleijie.

Former Gold Coast councillor and Burleigh MP Hermann Vorster has been appointed Assistant Minister for Multicultural Affairs and International Student Attraction.

Pro-life MP Donna Kirkland, who endured a trainwreck press conference on abortion during the campaign, will be the Assistant Minister for Mental Health, Drug and Alcohol Treatment, Families and Seniors and Central Queensland.

DIGITAL
Go online for the full Crisafulli assistant ministry
THEAUSTRALIAN.COM.AU OR THE APP

Slow, steady decline a worry for ALP

NEWSPOLL
EXCLUSIVE TO THE AUSTRALIAN

PRIMARY VOTE

%	Election May 2022	June 24-28	July 15-19	Aug 5-9	Aug 26-30	Sept 16-20	Oct 7-11	Nov 4-8
Labor	32.6	32	33	32	32	31	31	33
Coalition	35.7	36	38	39	38	38	38	40
Greens	12.2	13	13	12	12	13	12	11
One Nation	5	7	6	6	7	6	7	5
Others	14.5	12	10	11	11	12	12	11

7 per cent 'uncommitted' excluded

Question: If a federal election for the House of Representatives was held today, which one of the following would you vote for? If 'uncommitted', to which one of these do you have a leaning?

TWO PARTY PREFERRED

%	Election May 2022	June 24-28	July 15-19	Aug 5-9	Aug 26-30	Sept 16-20	Oct 7-11	Nov 4-8
Labor	52.1	51	51	50	50	50	49	49
Coalition	47.9	49	49	50	50	50	51	51

Preference flows based on recent federal and state elections

ALBANESE'S PERFORMANCE

%	June 24-28	July 15-19	Aug 5-9	Aug 26-30	Sept 16-20	Oct 7-11	Nov 4-8
Satisfied	42	44	43	41	43	40	40
Dissatisfied	53	51	51	54	51	54	55
Uncommitted	5	5	6	5	6	6	5

Question: Are you satisfied or dissatisfied with the way Anthony Albanese is doing his job as Prime Minister?

DUTTON'S PERFORMANCE

%	June 24-28	July 15-19	Aug 5-9	Aug 26-30	Sept 16-20	Oct 7-11	Nov 4-8
Satisfied	38	41	40	39	37	38	40
Dissatisfied	54	49	50	52	52	52	51
Uncommitted	8	10	10	9	11	10	9

Question: Are you satisfied or dissatisfied with the way Peter Dutton is doing his job as Leader of the Opposition?

BETTER PRIME MINISTER

%	June 24-28	July 15-19	Aug 5-9	Aug 26-30	Sept 16-20	Oct 7-11	Nov 4-8
Albanese	46	46	46	45	46	45	45
Dutton	38	39	39	37	37	37	41
Uncommitted	16	15	15	18	17	18	14

Question: Who do you think would make the better prime minister?

This survey was conducted by Pyxis Polling & Insights between November 4 and November 8 with 1261 voters throughout Australia interviewed online. The theoretical margin of error is ± 3.4. It is compliant with the Australian Polling Council Code and a methodology statement will be available within two days at https://www.pyxispolling.com/apc/. Copyright at all times remains with The Australian.



Prime Minister Anthony Albanese



Opposition Leader Peter Dutton



SIMON BENSON
ANALYSIS

PM's new personal low, Dutton on rise

Continued from Page 1

two leaders since the last election.

Mr Albanese's met approval ratings have dipped to a new low since becoming Prime Minister.

While his approval ratings remained unchanged at 40 per cent, those dissatisfied with the Prime Minister rose one point to 55 per cent. This gives the Labor leader a net approval rating of minus-15 – his worst result.

Mr Dutton's approval rating rose two points to 40 per cent to equal that of Mr Albanese.

Disapproval of Mr Dutton's performance, however, is lower than that of his rival at 51 per cent, giving the Opposition Leader a more favourable net approval rating of minus-9.

This is the first time in Newspoll that Mr Dutton has been in a superior position on this overall measure.

The latest Newspoll survey was conducted between Monday and Friday, and polled 1261 voters nationally. The previous Newspoll was conducted over the period of October 7-11.

Two significant shifts have occurred in Newspoll that should be of deepening concern for Labor.

The Coalition's primary vote of 40 per cent is the first time since June 2021 that it has had a four in front of what is the critical number.

It has now broken through a psychological barrier that has eluded the conservative parties since Scott Morrison's decline.

Peter Dutton can claim this as a personal victory, as the question of his whether he is electable appears also to have been answered.

With only four points between the two leaders on the question of preferred prime minister, this puts Dutton in a highly competitive position should Labor seek to make leadership the defining question of the election campaign.

If you consider the fact that on this question there is a built-in premium for the incumbent, on the question of Dutton being electable the answer has to be: you bet.

There is a caveat, however, which favours Labor.

Labor's primary vote has also lifted – two points to 33 per cent. The Coalition's gain comes with a corresponding failure to suppress this.

And Labor has won an election from this position before – moreover most recently.

So, if you're Anthony Albanese, and you're looking at these numbers in the context of a political debate that has focused on his snout in the trough, you'd be saying 'thank God, it could have been worse'.

Whatever the merits of his HECS debt policy, it has worked politically, by clawing back young voters from the Greens into Labor's column.

And this goes to the heart of what the opinion polls are saying.

There is a continuing transference of votes between the right and left at the margins.

The Greens go down, Labor goes up. One Nation goes down, the Coalition goes up.

Those who decide the election in the middle appear to be unmoved. And largely because neither party is talking to their primary concerns.

Yet, on balance, this is a bad poll for Labor.

And it would surely put paid to the most recent rumours in Canberra that Albanese is gearing up to call a snap election in the new year.

How could it entertain going to an election on these numbers unless it knows something magical that the rest of us don't on how it claws back three points on a two party preferred basis to sneak over the line?

On these numbers, applying the uniform method, Labor loses seven seats, and possibly eight, which reduces it to minority government.

In a tight election, it always comes down to the seat-by-seat contest.

But a three-point swing against Labor, as this poll suggests, is starting to get closer to the 6 per cent swing that the Coalition would need to change the outcome.

And it is the macro story of Newspoll that is the most instructive for both major parties. There is a trend that is hard to ignore.

In both the June and July Newspolls, Labor was ahead in two party preferred terms 51/49.

In August and September, this narrowed to 50/50, in three subsequent polls.

The swing in favour of the Coalition began in October and now appears to be continuing. The last two polls have had the Coalition in front 51/49.

The margin of error notwithstanding, the movement toward the Coalition is evident, even if it remains within a band that on balance has the two parties virtually neck and neck.

What is significant is that the erosion of Labor's support has been slow but it has been steady.

Newspoll has not seen wild fluctuations that you often get in polls.

Instead, it has been tracking a constant yet subtle drift away from Labor over the past six months.

If this trajectory were to continue at its current pace, by the time of the election the Coalition could well be in a position to be highly competitive.

On the issue of Dutton as leader, this now comes into play as a negative for Labor if its strategy is to go hard negative.

If Trump's resurrection proved anything, this might well be the great folly.

Family funeral for 'champion' son, 11

Loved ones gathered on Sunday for the private funeral of schoolboy Jack Davey, who was killed when a car crashed through the fence of his primary school in Melbourne's east.

Emergency services were called to Auburn South Primary School in Hawthorn East on October 29 after reports of the crash.

Jack was reportedly sitting at a table in the schoolyard with other students when a car crashed into the fence. The 11-year-old was rushed to hospital with critical injuries, however he later died.

Three girls – two 11-year-olds and one 10-year-old – as well as a 10-year-old boy were also taken to hospital with serious injuries.

Jack's father, Michael Davey, previously told 7 News his son would remain "very much alive in our hearts".

"We find comfort in reading the many messages and memories of Jack and how his life and energy was a positive influence on so many in the community at just 11 years old," Mr Davey said.

"Personally, he is our champion. He is our beloved son and brother who remains very much alive in our hearts ..."

The 40-year-old female driver of the SUV was arrested and interviewed by police and was released pending further inquiries.

NCA NEWSWIRE

Subsidy delays hit drug sponsors

EXCLUSIVE

JAMES DOWLING

Labor has failed to plan for the consequences of delaying drug subsidies and left hundreds of patients waiting on treatments, the pharmaceutical industry's top body warns.

Medicines Australia, which negotiates on behalf of drug companies, had a key role in dealing with the government's independent drug subsidy assessor after an unprecedented announcement it would limit and defer submissions.

Announced in late October, the delays threatened to keep up to 45 new drugs inaccessible to all but a small portion of patients.

Advocate groups claim the drug delays have left cancer treatments and chronic-disease medication in funding limbo.

In a timeline of the departmental response to the Pharmaceutical Benefits Advisory Committee capacity crisis released on Thursday, Health Minister Mark Butler was said to have asked his department to "advise Medicines Australia about the evaluation capacity shortfall" on October 9, the same date he was officially informed of the excess of submissions that left PBAC seeking to offset its workload.

Two days later the Health Department reports it contacted its independent evaluators to determine how many submissions they could take on.

Despite the October 9 mandate, MA is resolute it was not engaged by the Health Department until weeks later.

Chief executive Liz de Somer said MA was not made aware until October 22, when drug subsidy sponsors were also alerted that their submissions faced an indefinite delay.

"It became evident in estimates ... that the ministers' office first asked the department to consult with Medicines Australia on this issue on 9 October. It's very disappointing this didn't happen," Ms de Somer said.

"Had we been properly consulted at this time, our recommendation to hold an additional PBAC meeting could have been in place as an acceptable interim solution and mitigated the grief that has followed for patients and sponsors. Instead, the minister has had to step in.

"This situation is a failure in contingency planning. Sponsors pay significant cost recovery fees for submissions to be considered. If there are more submissions than one meeting can handle, additional days should be added to existing meetings. Additional meetings should be a secondary contingency."

Mr Butler was contacted for comment.

The PBAC meets three times a year, in March, July and November.

Finance Minister Katy Gallagher said on Thursday the PBAC would continue to grapple with "finite resources and time" despite recent intervention.

"I think you also need to accept the reality of the fact that there is only so much that one PBAC meeting can do," Senator Gallagher said.

MA has repeatedly argued that, given drug subsidy applicants pay fees that cover the cost of evaluation for each medicine they submit, the current resourcing struggle is a product of failing scalability, rather than funding woes.

"MA has not discussed evaluator funding with the department. However, the evaluator costs are fully recovered through fees," Ms de Somer said. "The department is responsible for managing evaluators, and should have a scalable, sustainable workforce in place."

Of the 45 submissions delayed, 24 were deemed "major" medicines. Many sponsors have since removed their submissions, reducing the overall workload from 77 drugs to 63 across the March and May meetings.

A March PBAC meeting had 65 drugs upon its agenda, while a March 2022 meeting considered 69 in a single sitting.

The Albanese government has tried to speed up its HTA system, setting up a working group to enact 50 reforms tipped to reduce wait times by 16 months.

Health officials say there is no intention to defer future submissions, despite introducing a "maximum total number" of drugs considered at meetings.

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Venus Bay Caravan Park leaseholder Tony Holgate. B27_4624

Venus Bay Caravan Park facing Christmas shutdown

'SHUT it down' the EPA has told Venus Bay Caravan Park unless they can make their septic system fully compliant by Christmas.

"We just don't have the money," said park operator Tony Holgate.

With the peak summer season just over a month away, Tony says his park is fully booked from Christmas Eve with only a few sites left for Easter. The Venus Bay Caravan Park has a total of 124 sites including annual sites, cabins, powered sites and unpowered sites accommodating up to 500 holidaymakers over January.

The EPA was first notified of a problem with the park's septic system two years ago.

"A complaint was made to the EPA after a blockage during the busy January period," said Tony.

"The blockage was fixed within an hour, but the EPA had already been notified."

The EPA found the caravan park had 'slipped through the gap' and its septic system was non-compliant.

'We were not aware there was a caravan park at Venus Bay with a septic system' claimed the EPA.

The caravan park was told it needed to comply with current standards.

"They tested the water table," said Tony.

The water table beneath the caravan park and the water table beneath the whole of Venus Bay were found to be contaminated by non-compliant septic systems. The cost of making the caravan park septic system compliant has been estimated to be at least $600,000.

"It is not something a lessee could afford," said Tony.

Holgate is in dispute with the property owner and EPA over who should pay for the compliance works producing a sheaf of paperwork centimetres thick.

"The EPA wants the issue resolved between the lessee and landlord," said Tony.

"Who's going to pay? The EPA argues that it is a new system, not an upgrade. There is no evidence it ever complied with Council regulations. The current system has been in place since the late seventies."

The EPA is yet to give Tony Holgate a timetable for the remedial works.

"It is very frustrating," said Tony.

"They want the caravan park to truck out the waste every day. That's fifty-thousand litres, costing $50,000 a day."

"Otherwise, we will have to shut down and the deadline is December. We can't possibly comply by December."

Tony Holgate says he will keep plugging away, but the park is fully booked.

According to Tony, the EPA told him if he couldn't get a truck to cart away the waste, he would have to shut down the park without notice. The nearest caravan parks are at Sandy Point and Inverloch, and they would also be fully booked according to Tony.

"The effect on the town would be devastating.

"Council has a plan for Venus Bay, but it would cost $2 million," said Tony.

"They don't have the budget, so the plan is on hold."

Located in the heart of Venus Bay, the caravan park is just 600 metres from the surf beach and survives on bore water over summer.

"It's a good little park," said Tony. "We have a pool, tennis court and games room."

Tony Holgate has managed the park for thirteen years spending $400,000 over that time on maintenance and improvements.

"People come back year after year. Parents with children stay at the park for the Nippers program at the lifesaving club."

Tony says he needs more time to settle the issue with the landlord.

"The time to resolve this is June next year. The work needs to be done during winter."

The EPA confirmed Venus Bay Caravan Park has been issued with an EPA Improvement Notice requiring it to apply for the appropriate permission for the wastewater management system on its premises by December 20, 2024. Failure to comply with an Improvement Notice may lead to a fine' according to the EPA.

For anyone operating or installing a wastewater management system the EPA recommends going to epa.vic.gov.au/about-epa/publications/onsite-wastewater-management-guidance.

Free camping leaves caravan parks in cold

A STATE Government plan to make camping free in National Parks including Wilson's Promontory has angered caravan park owners.

Regional small business owners claim they have been abandoned by the Premier who has refused to acknowledge the impact free camping in national parks will have on camping and caravan park operators.

Raising her concerns in State Parliament, Nationals' MP Melina Bath said caravan parks located near national parks will undoubtedly lose vital income.

"Listening to caravan park owners and managers from Orbost to Foster and Waratah Bay, I know Labor's decision is already causing distress for businesses who rely on tourism to survive. Campers in our caravan parks are a vital part of our regional economy helping to sustain jobs and generate much-needed income.

"Potential tourists have already asked licensees if they can match the State Government's free camping offer.

"They simply can't compete and pay wages and operating costs," said Ms Bath.

"These small businesses have been hit hard, suffering years of COVID lockdowns, higher taxes and sky-rocketing electricity bills.

"In her response to my request for support for regional businesses, the Premier arrogantly but unsurprisingly dismissed their plight."

Speaking in Parliament, Ms Bath highlighted the Victorian Caravan Park Association's fairer alternative of introducing a voucher program that could be used at all campgrounds, which was rejected by the Government.

"National park camping fees were already low so there was no need for the Allan Government to make them free," said Ms Bath.

"The $25.7 million derived statewide from camping fees in National Parks subsidises the cost of repairs to infrastructure.

"Our public spaces are suffering, so removing this revenue stream is negligent," claimed Ms Bath.

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Seaspray Primary to remain closed

Stefan Bradley

SEASPRAY Primary School will not open for for the second-year running in 2025 after a high profile push to find enough enrolments was not successful.

In response to having just three enrolments for 2024, the school entered 'non-operational' status last year.

At the time, senior education improvement leader in the Wellington Shire, Craig Felstead stressed that the school's 'non-operational' status was temporary, and the school was not "closed".

A meeting on October 11 led to the community inviting families to enrol their kids in the school, with paperwork available for interested parents at the Seaspray General Store.

All those expressing interest were contacted, but ultimately there were not enough students for the Department of Education (DoE) to re-open the school, and thus a second community meeting scheduled for October 28, was abandoned.

"We are currently confirming possible enrolments at Seaspray Primary School. At this stage there does not appear to be sufficient interest to reopen the school for 2025," a DoE spokesperson told the *Gippsland Times* at the end of October.

The DoE mentioned the October 11 meeting which they described as a commitment to meet with families with school-aged children in relation to the status of the school. Seaspray Primary School remains non-operational pending a decision on its future.

Karen Smyth technically remains the principal of the school, although she is currently working elsewhere. She confirmed the follow-up meeting didn't go ahead due to a lack of interest, and previous students are at other schools in Sale and Longford.

"Each of the prospective enrolments was contacted. (There) wasn't enough interest to warrant the meeting," she said.

The DoE also did not provide a specific or range of numbers required for the school to open in the future.

The DoE did not address if the school faced potential permanent closure if it doesn't re-open in the next few years.

However, former Seaspray Primary School principal Heather Harrington noted that Neerim District Rural Primary School will exit non-operational status when it re-opens next year. The school had been non-operational since the end of 2019 due to having no enrolments. In 2025, 17 potential enrolments are on the table for Neerim.

Seaspray Primary School may just be going through a lull at the moment.

"It's just a natural change of demographics which happens everywhere all the time. It's a bit low at the moment. It's a different generation of people coming into the town," Ms Harrington said.

"Like a lot of rural areas, demographics change over time. It ebbs and flows. Both Seaspray and the school are hidden gems. But it's close to Sale, so it is not remote.



After entering non-operational status in 2024, there are not enough enrolments to re-open Seaspray Primary School in 2025. **Photo: File**

"The community is still hopeful the school will open in the future. It's such a vital part of the community and they haven't given up hope."

Changes to pool opening hours

GUARANTEED opening hours for all outdoor pools will be among changes being introduced by Wellington Shire Council this summer.

The changes also include a longer summer season at the Yarram pool and the launch of Free Swim Fridays at all sites.

Following community consultation where council heard feedback from over 500 local people, these improvements aim to provide more opportunities for everyone to enjoy the water and make the most of the summer season in Wellington.

The biggest change is guaranteed opening hours at all outdoor pools, which will be open every day, regardless of temperature. The update means the pools no longer rely on the old 25-degree temperature rule, a change based directly on community feedback.

With the exception of Yarram, outdoor pools will open daily and stay open longer on days when the temperature reaches 24deg.

The Yarram pool will have a different schedule, staying open later on specific days but closing on Tuesdays, Thursdays, and Sundays outside of school holidays when fewer people use the pool. During school holidays, the Yarram pool will open every day and offer Free Swim Fridays, just like other pools.

For the first time, the Yarram pool will extend its season to 19 weeks, from Monday, November 25, to Sunday, April 6 — four weeks longer than usual. Guaranteed opening hours and Free Swim Fridays will be offered all season.

Rosedale's season will run for 10 and a half weeks, from Friday, December 13, to Friday, February 28, with daily guaranteed hours, Free Swim Fridays, and extended hours on days over 24deg.

The Sale (Aqua Energy), Maffra, Heyfield, and Stratford outdoor pools will have a 15-week season from Friday, December 13 to Sunday, March 30, with daily guaranteed hours, Free Swim Fridays, and extended hours on days over 24deg.

Lap swimming will remain available at Sale and Maffra outdoor pools during designated hours.

Council chief executive David Morcom said knowing it needed to make changes this season, council listened to the community and made meaningful adjustments to suit.

"By engaging with the community early on, we gave ourselves time to consult, prepare, and update our services," he said.

"Our communities biggest requests were to remove the unpopular temperature trigger, and to offer guaranteed opening hours. We are happy that we can offer that across every pool this season.

"Last summer, over 27,000 people enjoyed Wellington's outdoor pools, and with 20 new lifeguards now on board, this year is shaping up to be even bigger.

"Our regional pools are the perfect place to cool off and have fun, and we can't wait to welcome residents and visitors back this summer."

All outdoor pools will be closed on Christmas Day.

For operating hours, visit **www.wellington.vic.gov.au/pools** or phone Wellington Shire Council's leisure services team on 5142 3700.



Stratford will be among four outdoor pools which will have a 15-week summer swim season, beginning December 13. **Photo: Contributed**

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Community Consultation - decommissioning of oil & gas infrastructure in Bass Strait

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A large crowd attended the 2024 Remembrance Day service at the Cenotaph.

A time of reflection

Lakes Entrance RSL Sub-branch's Remembrance Day service was well supported on Monday morning.

A crowd of more than 100 locals attended the cenotaph to hear the address from RSL vice president Peter Tunnage, while Lieutenant Commander Mike Wisniewski, of the Royal Australian Navy was the guest speaker.

Members of the HMS Ganges Naval group were on hand while wreaths were laid be returned service personnel, the Australian and New Zealand flags were raised before the performing of the *Last Post.*

More in next week's Lakes Post.



HMS Ganges Naval group with local Naval representatives Mick Collins and Peter Tunnage.



Lakes Entrance Primary School grade five student Maggie Peters laid a poppy with principal Simon Prior.

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EN27143



Bairnsdale Bearings will swing open its doors on Thursday, November 21, for its Milwaukee Powered-Up event.

Powered-Up event

Bairnsdale Bearings will hold a Milwaukee Powered-Up event on Thursday, November 21.

The one-day event will see discounted prices on Milwaukee products, merchandise giveaways, tool test drives and bonus products.

There will also be a "Tools or Travel" summer giveaway, where customers can spend $300 on Milwaukee products or purchase specially marked Milwaukee products to go into the draw to win one of three prizes.

The Powered-Up event will be held at the Bairnsdale Bearings site at 1 Rovan Place, Bairnsdale, and will run from 8am to 5pm.



Retiring East Gippsland Marketing executive officer, Liz Whitehill, chairman of the past five years, Pat Carson, incoming chairman Andrea Brown, and newly appointed executive officer Merrin Curnow. (PS)

Fresh faces at EGMI

Last week saw a changing of the guard at East Gippsland Marketing (EGMI) with Pat Carson stepping down as chairman after five years in the position, but he will remain on the board as an ordinary member.

According to his peers at EGMI, Pat has served the organisation well and in a quiet, firm and professional manner. Stepping into the chair at EGMI is tourism industry professional Andrea Brown. Andrea been deputy chair for the past two years.

Her practical business experience in the high end of tourism will shine a new light on leadership at EGMI.

New board members include Belinda Stewart, Darren Beggs and Jaco Van Deventer and retiring board members include Tim Biles, Paul Scrambler, Vanessa Medling and EGMI veteran Courtney Campbell.

The current EGMI executive officer was pleased to announce the appointment of Merrin Curnow as the new executive officer.

Merrin has recently moved to the region from Brisbane and has a wealth of experience in marketing in the financial sector, not-for-profit, manufacturing, community and health sector.

Merrin is pleased with her new appointment and keen to unwind her experience and skills to support the development of the region.

Merrin said she is looking forward to meeting the people involved in EGMI in the coming weeks and the broader community to see what they have to offer.

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EN27143

Students learn about printing

Orbost Community College's school magazine group was treated to a tour of James Yeates Printing and Communications in Bairnsdale recently, where the *Snowy River Mail*, *Bairnsdale Advertiser* and *Lakes Post* are printed.

They went to see the printing process and explore different apprenticeship careers and options for work experience.

They met community news reporter Rylee Pardew who went to Orbost Secondary College.

The students said they enjoyed seeing the different machines, the process of printing newspapers and how they are then collated to be delivered around the region.

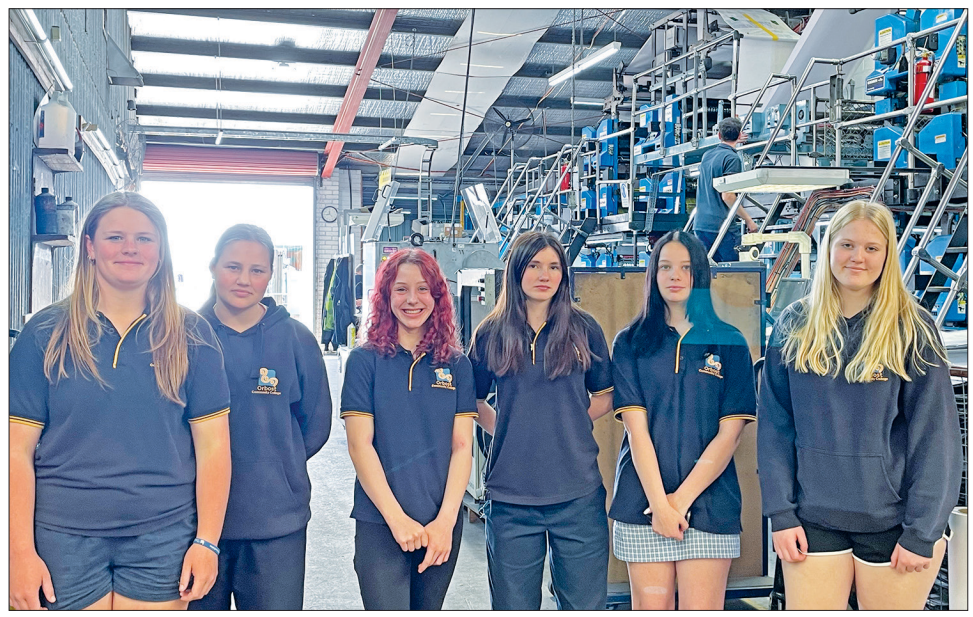
"I enjoyed seeing the different machines and how huge they seemed in person," Rose McDowall said.

"I liked seeing the workers put the aluminium printing plates in the printer," Laura Light said.

"I liked watching the printing machines," Alyssa McDonald said.

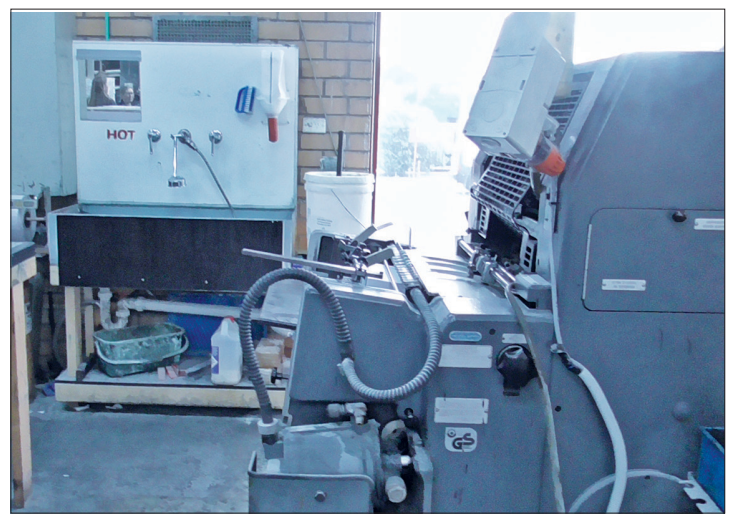
"I liked watching the newspapers get printed," Allaura Grenfell said.

"I enjoyed watching the newspapers get put together," Charlie McKerlie said.



Orbost Community College students were recently given a tour of James Yeates Printing and Communications in Bairnsdale as part of their school magazine project. The students were able to see first-hand how local newspapers are printed and collated before being distributed around the region. (PS)





THUMBS UP / THUMBS DOWN

THUMBS UP: Thanks to Chris and Gab from Sailors Grave Brewing for putting together a tradies thank you afternoon at the newly completed Dunetown. Your generosity is much appreciated

THUMBS DOWN: To all the nimbies in this area against renewables, particularly the proposed Solar Farm, no backyard has a future without them.

THUMBS UP: To Bairnsdale Production Line Theatre for their recent presentation of Arthur Miller's *Death of a Salesman.* It was a brilliant production performed by very talented actors. Well done to everyone involved.

THUMBS DOWN: To those responsible for the Brookfield Lakes playground development. almost a year now with temporary fencing around the barbecue and the water fountain is still not working properly. Plenty of water is getting wasted as kids have to drink from the tap that fills the pet water bowl.

THUMBS UP: To the local residents beautifying Palm Ave in Paynesville. Thank you. But -
THUMBS DOWN to the responsible authority for leaving it up to residents to maintain roadside and park edges.

If submitting a Thumbs Up/Down

All items submitted for consideration for publication in Thumbs Up, Thumbs Down, must be signed and include the address and telephone number of the writer. (This information is not for publication but is required under the Newspaper Act.) Items should be limited to 30 words, and writers should note that due to the numbers received, only a selection can be published. No specific business names will be mentioned in Thumbs Up/Thumbs Down. **Write to 'Tom', c/- 'The News'**

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Workers at four major woolworths distribution centres took a stop work

Workers at four major woolworths distribution centres had a stop work last week on November 12th.

More than 1500 warehouse workers stopped work for 1-hour tomorrow across different shifts at three distribution centres in Victoria and one in NSW.

Workers are taking protected industrial action after negotiations for a new workplace agreement have ground to a halt in the face of the ongoing cost of living crisis, which is pushing workers to their limits.

Workers want everyone brought up to at least $38 per hour in the first year, with percentage wage increases in following years and a national agreement so that workers are paid the same pay for the same work.

Workers are calling to permanently scrap Woolworths' "Framework", which the union says is a high-risk management approach pushing workers to work faster, which could undermine safety in a very dangerous industry.

UWU National Secretary Tim Kennedy said:

"Workers all over Australia are struggling to survive in the face of more than a decade of wage stagnation compounded by ever rising prices. Wages are lower today than they were a decade ago.

"Meanwhile, big corporations like Woolworths have accrued ever increasing profits in this period contributing to growing wealth inequality in Australia. Workers at Woolworths need a proportionate wage increase to deal with the cost pressures they face.

"Woolworths workers want to be paid equally across the country. They want to be paid the same rate for doing the same work under a national agreement.

"It is crucial that Woolworths 'Framework' is shut down once and for all. This management approach has the potential to increase risk in an already very dangerous industry pushing people to work faster for fear of losing their jobs.

"Workers have voted in very large numbers to take indefinite strike action and will be deciding this week what their next steps will be in the lead up to Christmas if Woolworths does not come to the table with an improved offer."



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AFL greats Josh Kennedy and Campbell Brown will play in a kabaddi tournament next month. Picture: Wayne Taylor

Catch this if you can

Peter Rolfe

An Indian sport never before played professionally on Australian soil is coming to Melbourne.

The first ever Pro Kabaddi League exhibition match will be played at John Cain Arena in December, in a series expected to attract fans from outside Victoria as well as Melbourne's vast ex-pat Indian community.

Pro Kabaddi Melbourne Raid will be held on December 28, after day three of the Boxing Day cricket Test between Australia and India at the MCG.

Fans are expected to attend the MCG blockbuster then watch a sport second only to cricket in popularity in India.

A curtain-raiser will pit a team of Australian athletes, including former AFL premiership stars Josh Kennedy and Campbell Brown, against an Indian team of Pro Kabaddi players.

The main event will be a Pro Kabaddi All Stars game between two PKL teams.

Premier Jacinta Allan will announce the series on Monday, along with Indian Consul General Dr Sushil Kumar.

"India's number one and number two sports will be side by side in the sporting capital of the world," Ms Allan said.

Tickets will go on sale from 10am Monday, starting from $10 for children and $55 for adults.

New Brazil green goal

SAO PAULO: Brazil plans to cut greenhouse gas emissions more dramatically than had been planned, the government of Luiz Inacio Lula da Silva has announced.

Instead of the earlier target of reducing emissions by 59 per cent from 2005 levels by 2035, it will aim for a 67 per cent cut.

The shift is intended to align Brazil's emissions goal with the terms of the 2016 Paris Accord.

Signatories to the accord have until February to announce their goals, but Brazil will present its target at the COP29 climate conference in Azerbaijan beginning Monday.

Workers lost to landslide

YAOUNDÉ: Workers have recovered 12 bodies following landslides that engulfed a road in the west of Cameroon, a regional official said Saturday, adding there was no hope of finding survivors.

State television CRTV reported the comments by the governor of Ouest region, Augustine Awa Fonka.

Only 12 bodies had been recovered from the site, he said. Dozens more people were still missing. Two landslides hit the Dschang cliff road on Tuesday – the second as emergency workers were trying to clear the road.

Debt axe plan aids wealthy

Students in city seats biggest winners

Jade Gailberger

Young voters in inner-city Greens and Labor seats would be the biggest beneficiaries of the Albanese government's pledge to wipe 20 per cent from student loans.

But the Greens have upped the ante, pledging to axe all student debt under an eye-watering $74bn promise to make it easier for people to save money, buy their first homes and start families.

Analysis of taxation office data shows the federal electorates of Melbourne, Wills, Brisbane, Griffith and Cooper have the most voters – more than 30,000 each – that will benefit from Labor's election policy.

Anthony Albanese's own electorate of Grayndler also makes the top 10, alongside the affluent suburb of Kooyong in Melbourne.

Experts say the cost-of-living measure will help young voters in the wealthiest, most educated electorates who have the greatest access to social and economic capital including financial support from family.

People in the seat of Melbourne have racked up average debts almost $8000 higher than the national average of $27,641, which means they'll get a $7000 cut, compared to the average $5520 saving.

Opposition Leader Peter Dutton rejected Labor's plan to slash $16bn from the HECS, TAFE and apprenticeship loans of three million Australians from June 1, 2025, arguing it was inflationary.

RedBridge pollster Kos Samaras said the policy was indicative of Labor always trying to fix problems that were "closer to their social class", rather than the voters it should be worried about.

"The younger voters that should keep this Labor government awake at night are those that are living in Camden, Ipswich, Rockhampton, Nelson – outer suburbs, regions," he said.

"They are the ones who are more likely to be extremely volatile, who expressed to us huge levels of dissatisfaction towards party politics full stop, and obviously these young people do not have a university degree.

"That grievance is fuelled by a sense of being economically abandoned, politically abandoned ... and I think all this will do is reinforce that prejudice."

But Education Minister Jason Clare said three million people across the cities, suburbs and regions would benefit.

He said the percentage of the cost of degrees that students paid had risen from 24 per cent when HECS was created to almost 45 per cent under the Morrison government.

"This is an important measure that will provide a bit of relief to a lot of young Australians starting out who might be trying to start a family or get into the housing market," Mr Clare said.

Meanwhile, the Greens plan to wipe all student debt is expected to cost $74bn over the decade, which it says it would pay for by taxing the big corporations that have profited from price gouging during the cost-of-living crisis.

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Community Consultation - decommissioning of oil & gas infrastructure in Bass Strait

Esso Australia Resources 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 and gas 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 Sessions

If you'd like to know more about plans for **Decommissioning of platforms and pipelines in Bass Strait,** the Esso Consultation Team will be hosting community information sessions at the following locations:

Monday 18 November 2024 - Welshpool
Welshpool Memorial Hall
49 Main Street, Welshpool

Monday 18 November 2024 – Lakes Entrance
On the Wharf Café, Bullock Island
Lakes Entrance

Tuesday 19 November 2024 - Sale
The Criterion Hotel
90 Macalister Street, Sale

Tuesday 19 November 2024 - Foster
Foster War Memorial Arts Centre
Main Street, Foster

Wednesday, 20 November 2024 - Leongatha
South Gippsland Trade Skills Alliance (SGBLLEN)
71 Ogilvy Street, Leongatha

All the above sessions will run from **5.00pm - 7.00pm** with a **presentation** about decommissioning.

We encourage you to come along and ask questions or to raise any concerns you may have. Please **register your attendance** by emailing: 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:

- Gippsland Basin Geophysical and Geotechnical Investigations
- Kipper - Sub-Sea Drilling
- Turrum Phase 3 Drilling
- South-East Australia Carbon Capture & Storage (SEA CCS) Project.

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: Environmental Performance Outcome, Environmental Performance Standards, controls and measurement criteria

Table H-1 Environmental performance – Activities

Aspect	Impact	EPO #	EPO	Control	EPS #	EPS	Measurement criteria
Physical presence – Seabed disturbance	Change in habitat, smothering and change in water quality.	1	Avoid physical damage to sensitive habitats (i.e. benthic features such as reefs).	**CMP1:** External pile cutting methods will only be used for pile cuts targeted below seabed if internal pile cutting not viable or uncertainty remains with regard to ability to remove internal blockages	1	Seabed disturbance to be minimised by only using external pile cutting techniques where internal pile cutting not viable.	Records confirm that internal pile obstruction clearing and/or pile cutting attempted and not deemed viable.
Physical interaction – Other marine users	Change to the function, interests or activities of other users.	2	Marine users are informed prior to commencement of drilling activities such that they can plan their activities and avoid unexpected interference.	**CMP2:** Petroleum Safety Zone	2	PSZs established in accordance with OPGGS Act.	PSZs are gazetted and published on the NOPSEMA website.
				CMP3: Navigation aids	3	Navigation aids will be installed on all Campaign #1 CGS/SPJs once topsides are removed if no vessel will remain in PSZ. At the completion of Campaign #1, only the navigation aids installed on the BMB CGS will remain.	Records confirm that navigation aids are in place prior to vessel departure for any jackets remaining above MSL.
				CM36: Pre-start notifications	4	AMSA Joint Rescue Coordination Centre 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 Joint Rescue Coordination Centre before operations. commenced. Issued AUSCOAST warning dated

Aspect	Impact	EPO #	EPO	Control	EPS #	EPS	Measurement criteria
							prior to, or on the date operations commenced.
					5	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.
					6	Commercial Fisheries are notified of activities via the ongoing quarterly engagement forum.	Minutes of engagement forums confirm upcoming activities discussed.
					7	Distribution of SMS updates to the eastern fishing fleet advising of vessel movements or activities being performed outside the PSZ, etc. Messages may be sent as often as daily during an activity, if appropriate.	Records of communications.
					8	Wind Energy proponents with licence areas within the OA are to be notified of activities via email on a quarterly basis during field activities.	Records of email correspondence.
Planned discharge – Sewage and food waste	Change in water quality and fauna behaviour.	3	Sewage discharges comply with (MARPOL) Annex IV requirements.	**CM9:** Class certification	9	Vessels are compliant with MARPOL Annex IV as appropriate to vessel class.	Vessels have class certification verified and issued by ICAS member.

Aspect	Impact	EPO #	EPO	Control	EPS #	EPS	Measurement criteria
		4	Food waste discharges comply with MARPOL Annex V requirements.	**CM9:** Class certification	10	Vessels are compliant with MARPOL Annex V requirements as appropriate to vessel class.	Vessels have class certification verified and issued by IACS member.
Planned Discharge – Cooling water and reverses osmosis	Change in water quality.	5	All operational discharges approved according to chemical discharge assessment process.	**CM3:** Chemical discharge assessment process	11	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.
Planned discharge – Treated bilge water/deck drainage	Change in water quality.	6	MARPOL Annex IV requirements outline vessel requirements regarding cooling water and reverse osmosis discharges.	**CM9:** Class certification	12	Vessels are compliant with MARPOL Annex IV as appropriate to vessel class.	Vessels have class certification verified and issued by IACS member.
			Bilge discharges from vessels comply with MARPOL Annex I requirements.	**CM9:** Class certification	13	Vessels are compliant with MARPOL Annex I as appropriate to vessel class.	Bilge discharges from vessels comply with MARPOL Annex I requirements.

Aspect	Impact	EPO #	EPO	Control	EPS #	EPS	Measurement criteria
Planned discharge – Grout	Change in water quality.	7	All grout and additives approved according to chemical discharge assessment process.	**CM3:** Chemical discharge assessment process	14	All grout and additives planned for discharge are evaluated as acceptable in accordance with the chemical discharge assessment process.	Chemical assessment records confirm evaluation of each component making up grout mixture as acceptable prior to use/discharge and appropriate approvals documented. Environmental performance tracking shows grout and any additives used.
				CMP25: Grout selection	15	Minamata Convention will be considered in grout selection. Grout will be selected to ensure a mercury concentration of <1mg/kg (1ppm) as outlined in the API standards.	Records of grout used and confirmation of mercury content compliance.
		8	No discharge of dry unmixed bulk powders used in grouting.	**CMP5:** Grouting procedures	16	Vessel contractor will develop and implement a grouting procedure for grouting operations. The procedure will include (but is not limited to), the following considerations to minimise the risk of accidental release: • grouting operations to be conducted by trained personnel only • consideration on pre-start checks of equipment and lines, and	Grouting procedures developed and implemented. Training records. Environmental performance tracking verifies no discharge of unmixed grout.

Aspect	Impact	EPO #	EPO	Control	EPS #	EPS	Measurement criteria
						maintenance/certifications of equipment where required. • There will be no planned discharge of unmixed grout. Unmixed grout will be returned to shore for reuse or appropriate disposal as needed.	
Planned discharges – Umbilical and pipeline fluids	Change in water quality. Injury/mortality of fauna.	9	All operational discharges approved according to chemical discharge assessment process.	**CM3:** Chemical discharge assessment process	17	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.
Planned discharges – Internal fluids from jacket structures	Change in water quality. Injury/mortality of fauna.	10	Minimise potential discharge of contaminated fluids present in ODSPs, CDSPs and JLSTs.	**CMP26:** Cleaning of ODSPs, CDSPs and JLST	18	Cleaning of ODSPs, CDSPs and JLSTs as part of preparation decommissioning activities will ensure potential volumes of fluids within these structures are minimised to as low as possible.	Facility preparations records of works performed.
Planned discharges – Solids	Change in water quality. Change in habitat.	11	All operational discharges approved according to chemical	**CM3:** Chemical discharge assessment process	19	All planned chemical discharges are evaluated as acceptable in accordance with	Chemical assessment records confirm evaluation of chemical discharges as acceptable prior to use/discharge and

Aspect	Impact	EPO #	EPO	Control	EPS #	EPS	Measurement criteria
	Injury/mortality of fauna.		discharge assessment process.			the chemical discharge assessment process.	appropriate approvals documented. Environmental performance tracking shows components of all new chemical planned operational discharges.
Planned discharge – Marine growth during lifting, transfer and transit	Change in water quality. Change in habitat.	12	Appropriate disposal of captured marine growth to shore to minimise impacts to the environment.	**CMP6:** Disposal of collected marine growth	20	Bulk marine growth waste that collects on vessel decks shall be collected where practical and safe to do so and loaded into appropriate bins and prepared for disposal onshore to an appropriate facility.	Inspection verifies that waste is segregated, stored and handled in accordance with the Waste Management Plan.
			Avoidance of key areas of suitable near shore habitat for marine growth establishment.	**CMP28:** Avoidance of key near shore reefs	21	Establish the boundary of the OA to avoid the main nearshore reef areas.	OA boundary coordinates.
Sound emissions	Injury to fauna and change in fauna behaviour.	13	There is no injury (TTS and PTS) or unavoidable displacement from foraging, aggregation, calving/breeding or migrating grounds in cetacean BIAs from sound emissions.	**CMP4:** Helicopter Pilot	22	Interaction between helicopters and cetaceans within the OAs will be consistent with Part 8 Division 8.1 of the EPBC Regulations. Helicopters will not fly lower than 1650ft (503m) when within 500m horizontal distance of a cetacean except when landing or taking off and will not approach a cetacean from head on.	Training records demonstrates that pilots are aware of flight requirements when in the vicinity of a cetacean.

Aspect	Impact	EPO #	EPO	Control	EPS #	EPS	Measurement criteria
				CM8: Vessel Master	23	Vessel Masters will implement cetacean interaction management actions consistent with the *Australian National Guidelines for Whale and Dolphin Watching 2017* (Commonwealth of Australia, 2017a) (which enact) Part 8 Division 8.1 of the EPBC Regulations, including: • caution zones - vessels will not knowingly travel faster than 6kn within 300m of an adult whale or 150m of an adult 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 where safe to do so.	Daily operations reports note when cetaceans were sighted in the caution zone and interaction management actions implemented.
				CMP8: Fauna observations	24	Bridge crew are trained and competent in whale observations and species identification as part of their normal requirements and ability to comply with Part 8 Division 8.1 of the Environment Protection and Biodiversity Conservation Regulations 2000 (EPBC	Watchkeeper training records. Vessel Crews Marine Fauna Observer training records. Vessel Crews Campaign #1 EP training records. Marine Fauna Log.

Aspect	Impact	EPO #	EPO	Control	EPS #	EPS	Measurement criteria
						Regulations), which is implemented via the *Australian National Guidelines for Whale and Dolphin Watching 2017* (Commonwealth of Australia, 2017a). • Trained bridge crew undertake continuous observations. • All Watchkeepers are trained in marine fauna recognition and vessel management practices. • Vessel operator is required to maintain compliance with the EPBC Act and other relevant conservation management plans. As such, vessels crews complete Marine Fauna Observer training to ensure that obligations with respect to marine mammals are observed while they are in charge of the vessel. • The vessels have multiple pairs of binoculars available to Watchkeepers. • Marine megafauna identification charts are posted onboard.	

Aspect	Impact	EPO #	EPO	Control	EPS #	EPS	Measurement criteria
						• Vessel crews undergo an EP-specific environment awareness induction, focusing on requirements for whale observation, species identification, reporting requirements and adaptive management plan measures.	
					25	Vessel Masters and all bridge crew undertake an awareness induction for managing sound impacts to megafauna. This includes awareness in: • 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 Campaign #1 activity, including the location of the mammal identification chats on board on display on the vessel • instructions on distance estimation, including the specification that marine binoculars with reticles are used	Induction records.

Aspect	Impact	EPO #	EPO	Control	EPS #	EPS	Measurement criteria
						• instructions on how to detect marine megafauna based on observations on the water surface and surrounds • instructions on data to be recorded for marine megafauna sightings, including time of observation, type and number of species observed and estimated location coordinated • location of binoculars available to Watchkeepers. When there is uncertainty on species type, the precautionary principle applies - see **CMP11:** Vessel operations - Adaptive management.	
					26	Crew members on active duty will report observations of megafauna to bridge watch officers, Esso Vessel Lead and/or Technical Foreman as soon as it is safe to do so.	Daily reports confirm recordings of cetacean sightings.
				CMP9: Marine Mammal Observers	27	MMOs with recognised training and experience in whale observation, distance estimation and reporting in	Training records confirm MMOs have the required training and experience per EPBC Act Policy Statement

Aspect	Impact	EPO #	EPO	Control	EPS #	EPS	Measurement criteria
						accordance with Part A.2 and B.1 of the EPBC Act Policy Statement 2.11) (DEWHA, 2008) will be onboard the HLV for the duration of the activity.	2.1 1 (DEWHA, 2008) and are trained in the adaptive management plan (CMP33).
					28	Where feasible, at least one MMO will be on shift on the HLV during daylight hours to implement the EPBC Act Policy Statement 2.1 (DEWHA, 2008), with an additional MMO available to take over the previous shift or assist the MMO on shift as required. Observations can be hampered by glare, rough seas, mist/fog and low light. Observations will be suspended during night hours and when conditions make observations impracticable.	Records, including shift schedules and MMOs daily reports.
				CMP10: Pre-activity aerial survey	29	Aerial survey to be conducted *subject to safety, light and weather considerations* within the behavioural observation zone for the location where removal operations will take place, prior to	Records, including: • record of flights completed for pre-activity surveys • MMO reports from each aerial survey completed.

Aspect	Impact	EPO #	EPO	Control	EPS #	EPS	Measurement criteria
						commencement of vessel safety critical operations. Pre-activity aerial surveys shall be supported by MMOs.	
				CMP11: Vessel operations - Adaptive management	30	The following adaptive whale management procedure (for PBW and SRW) will be implemented for the activity. Pre-activity Campaign #1 vessel-based survey while enroute to the location where removal operations will take place, prior to commencement of vessel safety critical operations. Pre-activity aerial survey (subject to safety, light and weather considerations) within the behavioural observation zone for the location where removal operations will take place, prior to commencement of vessel safety critical operations. When whale sighting has been confirmed, supply vessel will not commence operations next to HLV until whale has been confirmed outside of the behavioural zone or no new sightings for 30 minutes.	Daily reports confirm recordings of cetacean sightings and all actions undertaken.

Aspect	Impact	EPO #	EPO	Control	EPS #	EPS	Measurement criteria
						When whale sighting has been confirmed and supply vessel operations next to the HLV are already underway, the supply vessel will either stop operations if safe to do so and move away from the behavioural zone, or if not safe to stop operations, reduce thrusters to as low as possible and adjust heading.	
Light emissions	Change in fauna behaviour. Injury/mortality of fauna.		Prevent and mitigate impacts from artificial light emissions from vessel operations.	**CMP12:** Lighting will be limited to that required for safe navigation and work requirements	31	Lighting will be limited to that required for safe navigation and work requirements, with unnecessary lighting minimised.	Inspection confirms light spill to sea is minimised, except where required for safe work/navigation.
				CMP13: Blinds or curtains installed in accommodation windows	32	Vessel will have blinds or curtains installed in accommodation cabins where light may be emitted to the exterior of the vessel.	Inspection confirms blinds or curtains installed.
				CMP14: Light shielding and orienting	33	Where feasible, and considering safety requirements for crew operations, deck lights will be shielded to reduce the brightness and spill of light to the environment. Where feasible, and considering safety	• Inspection confirms light spill to sea is minimised, except where required for safe work/navigation. • Records of lights shielded for vessel operations.

Aspect	Impact	EPO #	EPO	Control	EPS #	EPS	Measurement criteria
						requirements for crew operations, deck lights are oriented in an angle, facing downwards, to illuminate the targeted work location only, to reduce the spill of light to the environment.	• Records of lights orientation. • Inspection confirms shielding and light orientation measures are in place where feasible to implement.
				CMP15: Dark zone between nocturnal nesting and roosting habitats and sources of artificial light	34	Individual or a combination of measures will be adopted to maintain a dark zone (buffer between light source (from vessels) and sensitive nesting and roosting habitats for seabirds and shorebirds, including: • vessel to maintain a minimum distance from shore. Distance will be determined based on available information on the reach of the artificial light produced by the vessel • vessel to position or direct lighting in a manner that light spill is minimised, and the reach of artificial light is reduced • vessel to reduce the number of lights required for night works to the minimum required for safe operations.	• Records of inspection confirms light spill to sea is minimised, except where required for safe work/navigation. • Records of lights orientation. • Records of vessel location during operations near shore.

Aspect	Impact	EPO #	EPO	Control	EPS #	EPS	Measurement criteria
				CMP16: Training	35	Vessel Masters and all bridge crew undertake an awareness induction for managing light impacts to marine fauna, including awareness training on the EP for Campaign#1 activities and the Seabird Management Plan (CMP42).	Training records.
			Prevent and mitigate impacts specific to seabirds from light emissions.	**CMP17:** Seabird Management Plan	36	Develop and implement a Seabird Management Plan for Campaign #1 activities. The purpose of the plan is to prevent seabird landings on vessels as a first objective but also include actions to manage seabirds appropriately should there be a landing event on the vessel, and reporting requirements to be followed.	• Evidence of development and implementation of a Seabird Management Plan. • Records of measures or actions completed to prevent seabird landings on the vessels. • Records of seabird landing events (if any) and measures/actions undertaken to manage the event(s). • Records of reporting of seabird landing events (if any).
		14	Eliminate artificial light emissions from operations to during crew change of personnel to and from the vessels.	**CMP18:** Vessel crew transfer to/from the vessels only during daylight hours	37	Crew change operations will be conducted during daylight hours only.	Records of operations to crew change personnel to/from vessels.

Aspect	Impact	EPO #	EPO	Control	EPS #	EPS	Measurement criteria
Emissions to air	Change in air quality. Contribution to GHG effect.	15	Fuel combustion equipment complies with the requirements of MARPOL Annex VI.	**CM9:** Class certification	38	Vessels are compliant with MARPOL Annex VI as appropriate to vessel class.	Vessels have class certification verified and issued by IACS member.
			Plant and equipment are maintained in good working order to minimise noxious emissions to air.	**CM18:** Preventative Maintenance System (Vessel)	39	Vessels have systems in place which allows ship owners or operators to carry out maintenance in intervals according to manufacturers and class/classification society requirements.	Plant and equipment maintenance schedule/program. Records of plant/equipment maintenance conducted, including certification records and/or calibration records where applicable.
Aspects of unplanned events							
Physical interaction – Other users of the sea	Remaining presence of obstacles (presence of infrastructure) within the PSZ.	16	Minimise hazards to operations of other users of the sea.	**CMP2:** Petroleum Safety Zone		PSZs established in accordance with OPGGS Act.	PSZs are gazetted and published on the NOPSEMA website.
				CMP3: Navigation aids	40	Permanent navigation aids will be installed on BMB concrete structure post topside removal to provide ongoing visual identification of that structure.	Records confirm that navigation aid is in place prior to vessel departure following topside removal.
				CMP19: Navigation charts	41	Provide post completion records to the AHO to allow update of navigation charts to reflect the navigation status of	Records of communication.

Aspect	Impact	EPO #	EPO	Control	EPS #	EPS	Measurement criteria
						facilities post completion of Campaign #1.	
Physical interaction – Marine fauna	Injury/mortality to fauna.	17	No injury or death of megafauna resulting from vessel strike.	**CM8:** Vessel Master	42	Vessel Master is aware of and implements interaction management actions consistent with Part 8 Division 8.1 of the EPBC Regulations, including: • vessels will not knowingly travel faster than 6kn 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.
Physical interaction – Translocation of native species	Change in ecosystem dynamics.	18	Avoidance of key areas of suitable near shore habitat for native species establishment.	**CMP28:** Avoidance of key near shore reefs	43	Establish the boundary of the OA to avoid the main nearshore reef areas.	OA boundary coordinates.
			Appropriate disposal of captured marine growth to shore to minimise impacts to the environment.	**CMP6:** Disposal of collected marine growth	44	Bulk marine growth waste that collects on vessel decks shall be collected where practical and safe to do so and loaded into appropriate bins and prepared for disposal	Inspection verifies that waste is segregated, stored and handled in accordance with the Waste Management Plan.

Aspect	Impact	EPO #	EPO	Control	EPS #	EPS	Measurement criteria
						onshore to an appropriate facility.	
Physical interaction - Introduction of IMS	Change in ecosystem dynamics.	19	No introduction, establishment, or translocation of IMS.	**CM23:** Ballast Water Management Plan	45	Ballast Water Management Plan approved in accordance with the BWM Convention and guidance (Resolution MEPC.127(53), 2005) (Resolution MEPC.306(73), 2018).	Records show an approved Ballast Water Management Plan which complies with the BWM Convention requirements, including implementation of D-2 standard, in accordance with the agreed timeline per the class or flag state of the respective vessel.
				CM24: Ballast Water Management Certificate	46	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.
				CMP20: Ballast water record system	47	Ballast water record system is maintained in accordance with Regulation B-2 of the Annex to the BWM Convention including: • start and finish coordinates • actual pumping times	Ballast water records.

Aspect	Impact	EPO #	EPO	Control	EPS #	EPS	Measurement criteria
						• residual volume remaining in the tank at the end of the empty cycle prior to refill (empty refill method only).	
				CM25: Biosecurity clearance when entering Australian territory	48	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	49	Vessel Master to adhere to *Australian ballast water requirements* (DAWR, 2020) and BWM Convention.	Ballast water records show location of ballast water uptake and discharge.
				CM26: Invasive Marine Species Risk Assessment Procedure	50	Biofouling risk assessment conducted in accordance with the Esso *IMS Risk Assessment Procedure* (AUGO-EV-PCE-014) shows low risk.	Biofouling risk assessment record confirms vessel poses low risk of introducing IMS.
				CMP21: Immersible retrievable equipment cleaning	51	All immersible retrievable equipment has been cleaned and/or inspected in accordance with *National Biofouling Guidelines for the Petroleum Production and Exploration Industry* (DAWE, 2022) prior to	Records document cleaning and/or inspection of immersible retrievable equipment.

Aspect	Impact	EPO #	EPO	Control	EPS #	EPS	Measurement criteria
						commencement of activities at each location.	
Accidental release – Dropped objects	Change in habitat. Change in water quality.	20	No dropped objects which result in disturbance of benthic habitat.	**CM18:** Preventative Maintenance System (Vessel)	52	Visual inspection of lifting gear is undertaken regularly in line with the PMS by a qualified competent person (e.g. maritime officer). Lifting gear is tested regularly in line with the PMS.	Inspection of PMS records and lifting register verifies that inspections and testing have been conducted to schedule.
				CM19: Cargo Securing Manual	53	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.
				CMP22: Crane handling and transfer procedures	54	The crane handling and transfer procedure is in place and implemented by crane operators (and others, such as dogmen).	Inspection of PMS records and lifting register verifies that inspections and testing have been conducted to schedule.
Accidental release – Waste	Injury/mortality to fauna and change in habitat.	21	No unplanned overboard release of waste.	**CM9:** Class certification	55	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:	Vessels have class certification verified and issued by IACS member.

Aspect	Impact	EPO #	EPO	Control	EPS #	EPS	Measurement criteria
						• 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.	
				CMP23: Waste Management Plan	56	Vessels have a Waste Management Plan which identifies the procedures for collecting, storing and disposing of waste.	Inspection verifies that waste is segregated, stored and handled in accordance with the Waste Management Plan.
Accidental Release – Loss of containment: Hazardous or non-	Change in water quality. Change in habitat.	22	No unplanned release of hazardous or non-hazardous substances to the	**CM14:** Procedures for bulk transfer of fluids from support vessels	57	Bulk transfer of fluids from support vessels undertaken in accordance with relevant procedures.	Permit to Work records for liquid bulk transfers.

Aspect	Impact	EPO #	EPO	Control	EPS #	EPS	Measurement criteria
hazardous substances	Injury/mortality to fauna. Change to the function, interest or activities of other users.		marine environment.	**CM9:** Class certification	58	Vessel compliant with MARPOL Annex 1, as appropriate to class.	Vessels have class certification verified and issued by IACS member.
				CM18: Preventative Maintenance System (Vessel)	59	Vessels have systems in place which allows ship owners or operators to carry out maintenance in intervals according to manufacturers and class/classification society requirements.	Plant and equipment maintenance schedule/program. Records of plant/equipment maintenance conducted, including certification records and/or calibration records where applicable.
				CM21: Remotely Operated Vehicle pre-post dive checks	60	A ROV pre- and post-dive inspection visually check for leaks.	Records of ROV pre- and post-dive inspection checklist.
				CM22: Remotely Operated Vehicle International Marine Contractors Association audit	61	ROV installation inspected against IMCA guidelines.	Audit report developed and corrective action(s) managed in accordance with IMCA category rating.

Aspect	Impact	EPO #	EPO	Control	EPS #	EPS	Measurement criteria
				CMP27: Bunding	62	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.
					63	Chemicals and oils stored on deck are stored within bunded areas.	Inspection records demonstrate that chemicals and oils stored on deck are stored within bunded areas.
				CM20: Shipboard Marine Pollution Emergency Plan	64	MARPOL Annex I specifically require that a SMPEP (or equivalent, according to class) is in place.	Vessel has a SMPEP (or equivalent) in place. Records or other documented evidence of implementation and maintenance of SMPEP or equivalent, including training/drills where required.
				CMP5: Grouting procedures	65	Vessel contractor will develop and implement a grouting procedure for grouting operations. The procedure will include (but is not limited to), the following considerations to minimise the risk of accidental release: • grouting operations to be conducted by trained personnel only	Grouting procedures developed and implemented. Training records. Equipment inspection records. Environmental performance tracking verifies no discharge of unmixed grout.

Aspect	Impact	EPO #	EPO	Control	EPS #	EPS	Measurement criteria
						• consideration on pre-start checks of equipment and lines, and maintenance/certifications of equipment where required • there will be no planned discharge of unmixed grout. Unmixed grout will be returned to shore for reuse or appropriate disposal as needed.	
				CMP24: Vessel contractor Environment Management Plan	66	Vessel contractor will develop and implement a vessel specific EMP. EMP must align with requirements and measures established in the Campaign#1 EP.	EMP developed and implemented. Audit records of EMP implementation and alignment with Campaign#1 EP.
Accidental release – Loss of containment refined oils: (MGO)	Injury/mortality to fauna. Change in water quality. Change in habitat. Change to the function, interests or activities of other users.	23	No unplanned release of MGO to the marine environment from vessel collision.	**CM9:** Class certification	67	Vessels are compliant with MARPOL Annex I, including having an International Oil Pollution Prevention Certificate as appropriate to vessel class.	Inspection records verifying certificate is in place where required.
				CM27: Vessel approach procedure	68	Vessels to coordinate movements to avoid a collision.	Radio operations communications log verifies coordination with approaching vessels have been issued when necessary.

Aspect	Impact	EPO #	EPO	Control	EPS #	EPS	Measurement criteria
				CM28: Activity specific operating guidelines/Critical Activity Mode Procedures	69	ASOG developed to IMCA standards.	Implementation procedures signed by Vessel Master and available.
				CM29: Vessel dynamic positioning system	70	All vessels engaged in DP operations have class-recognised DP2 or DP3 systems. The HLV specifically, will have a class-DP3 system.	Records of IACS member DP notation and failure mode and effect analysis.
						DP operators hold DP certification.	DP operators' DP certificates available.
				CM20: Shipboard Marine Pollution Emergency Plan	71	MARPOL Annex I specifically require that a SMPEP (or equivalent, according to class) is in place.	Vessels have class certification verified and issued by IACS member. Records or other documented evidence of implementation and maintenance of SOPEP, including training/drills where required.
				CM34: NOPSEMA accepted Safety Case	72	The NOPSEMA accepted vessel Safety Case demonstrates how the risks to the integrity of the HLV and CSVs will be reduced to ALARP, including validation of activity specific safety critical equipment.	Records confirm a NOPSEMA-accepted HLV and CSV Safety Case was in place before operations commenced (where required). Records demonstrate that operations have taken place in accordance with

Aspect	Impact	EPO #	EPO	Control	EPS #	EPS	Measurement criteria
							processes described in the Safety Case.
			Minimise the impact on the environment in the event of an MGO spill.	**CM20:** Shipboard Marine Pollution Emergency Plan	73	MARPOL Annex I specifically require that a SMPEP (or equivalent, according to class) is in place.	Vessels have class certification verified and issued by IACS member. Records or other documented evidence of implementation and maintenance of SOPEP, including training/drills where required.
				CM12: Oil Pollution Emergency Plan	74	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 the ERP and the OPEP. Records confirm that emergency response activities have been implemented in accordance with the OPEP. Records or other documented evidence of implementation and maintenance of OPEP, including training/drills where required.

Aspect	Impact	EPO #	EPO	Control	EPS #	EPS	Measurement criteria
				CM35: Operational and Scientific Monitoring Plan	75	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.
				CM51: Utilisation of idle fishing vessels	76	Opportunities to utilise idle fishing vessels for oil spill response and monitoring activities will be taken where there is agreement of the vessel owner and where a risk assessment shows that there are no additional risks to vessels and crew.	Records reflect communications with fishing industry looking for opportunities to utilise idle fishing vessels.
				CM52: Communication with fisheries	77	Should a spill occur, then updates on oil spill response and monitoring will be provided to fishery representative bodies (through SETFIA to enable accurate information on spill status, impacts and effects on seafood safety to be provided to fishing industry members and the public. Daily updates provided in the first week until	Relevant persons consultation records show communication with SETFIA per the performance standard.

Aspect	Impact	EPO #	EPO	Control	EPS #	EPS	Measurement criteria
						the modelling is completed and then as needed, until emergency event is controlled and managed (and beyond if there is ongoing concern).	

Table H-2 Environmental performance – Emergency response capability

EPO	Control	EPS #	EPS	Measurement criteria
IMT is available to respond as required to coordinate spill response operations in a timely manner to minimise impact to the environment.	IMT (per Esso/Allseas emergency preparedness and response bridging document).	78	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 one hour of IMT activation.	Training records.
		79	Support is available for a Tier III response in: • <12 hours from notification for remote support • <72 hours for in country support.	Capability is demonstrated and documented during test/drill, or through list of assigned personnel for emergency response and relevant training records.
		80	Emergency response capability is maintained for the duration of the activities.	IMT call out tests conducted and recorded per test schedule.
Source control equipment is available when required to prevent further uncontrolled release of hydrocarbons into the marine environment.	Equipment required for internal and/or external emergency transfer of fuel is available in the vessel(s).	81	Suitable equipment for transfer of fuel and their location within the vessel(s) is identified and confirmed prior commencement of decommissioning activities.	Resource availability is demonstrated and documented.

EPO	Control	EPS #	EPS	Measurement criteria
	Support vessel identification process.	82	Suitable support vessels and their location during the activity will be identified prior to decommissioning activities.	Completed register in the Tier II/III ERP.
Equipment and third-party services are available to complete oil spill surveillance and monitoring when required to gather information on the extent, severity and persistence of the oil and potential sensitivities at risk.	Helicopter fleet.	83	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).	Agreement document.
	Arrangement with third-party for provision of fixed wing aircraft.	84	Third-party fixed wing aircraft will be available <24 hours from request of service.	Agreement document.
	Support vessel.	85	Support vessel is available to complete surveillance and monitoring in <24 hours from request of service.	Agreement document.
	Agreement with third-party suppliers for provision of additional vessels.	86	Agreement states additional vessels will be available when requested.	Agreement document.
	Agreement with AMOSC for trajectory modelling.	87	Trajectory modelling is through AMOSC within <4 hours of service request.	Agreement document.
	Tracking buoys.	88	Tracking buoy is available to complete surveillance and monitoring within 12 hours of spill occurring subject to safe conditions.	Agreement document when equipment provided by third-party, equipment information sheet with location and scheduled maintenance reports where required when equipment is sourced in-house.

EPO	Control	EPS #	EPS	Measurement criteria
	Contract with satellite imagery provider.	89	Agreement with satellite imagery provides 24/7 emergency response support.	Agreement document.
	Initial response sampling kits.	90	Initial response sampling kit with required equipment is available when required. Samples obtained <24 hours of spill occurring subject to safe conditions.	Inspection records.
	Agreement with service provider for monitoring and sampling.	91	Monitoring and sampling service provider has capability to implement the 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.	Agreement with third-party OSMP-implementation consultant.	92	Contract will be in place to enable access to personnel and resources required for implementation of the OSMP.	Agreement in place for OSMP-implementation consultant. Capability testing conducted and recorded.
	Review of agreement with third-party suppliers for provision of vessels.	93	Contracts in place to enable access to vessels needed for shoreline protection.	Agreement in place for vessels which meets standard. Capability testing conducted and recorded.
	Response equipment.	94	Equipment is maintained in accordance with maintenance strategy. Equipment is available for deployment within 24 hours.	Monthly reports (maintenance, inspection, and/or testing) with actions signed off by the appropriate level of operations management.

EPO	Control	EPS #	EPS	Measurement criteria
	Agreement in place with AMOSC.	95	Contracts, agreements and memberships with AMOSC in place to provide oil spill response equipment and personnel.	Contracts, agreements or memberships that demonstrate access to spill response equipment and personnel.
	Annual assurance assessment of AMOSC capabilities.	96	Response capabilities maintained per AMOSC Service Level Statement.	Annual assurance assessment report.
	Personnel hiring agreements.	97	Agreements in place with labour hiring companies.	Agreement documents.
	Agreement with waste management contractor.	98	Contract in place for onshore waste management.	Agreement contract.
	Agreement with contractor for heavy plant equipment.	99	Agreement in place with contractor for heavy plant equipment. Equipment is available for deployment within 48 hours.	Agreement documents. Capability is demonstrated during test/drill and is documented in test/drill report.
Equipment and personnel to support oiled wildlife response are available when requested to monitor, evaluate and reduce environmental impact on fauna.	Agreement in place with AMOSC.	100	Contracts, agreements and memberships with AMOSC in place to provide oiled wildlife response equipment and personnel.	Contracts, agreements or memberships that demonstrate access to oiled wildlife response equipment and personnel.
	Annual assurance assessment of AMOSC capabilities.	101	Response capabilities maintained per AMOSC Service Level Statement.	Annual assurance assessment report.
	Agreement in place with Oil Spill Response Limited.	102	Contracts, agreements and memberships with Oil Spill Response Limited in place to provide	Contracts, agreements or memberships that demonstrate access to oiled

EPO	Control	EPS #	EPS	Measurement criteria
			oiled wildlife response equipment for mobilisation to Melbourne within 72 hours.	wildlife response equipment and personnel.
	Esso/Allseas emergency preparedness and response (bridging document).	103	Team personnel are available for remote support within 12 hours and in country support within 72 hours.	Capability is demonstrated and documented during test/drill or through list of assigned personnel for emergency response and relevant training records.
	Agreement with waste management contractor.	104	Contract in place for onshore waste management. Equipment is available for deployment within 48 hours.	Contract agreement.
Equipment and personnel to manage waste are available when requested to reduce secondary contamination impacts on shoreline environmental sensitivities.	Review of agreement with third-party suppliers for provision of vessels.	105	Contracts in place to enable access to vessels needed for waste management.	Current agreement in place for vessels which meets standard. Capability testing conducted and recorded.
	Agreement in place with AMOSC.	106	Contracts, agreements and memberships with AMOSC in place to provide oil spill response equipment and personnel, and waste management resources.	Contracts, agreements or memberships that demonstrate access to spill response equipment and personnel.
	Assurance assessment of AMOSC capabilities.	107	Response capabilities maintained per AMOSC Service Level Statement.	Annual assurance assessment report.
	Agreement with waste management contractor.	108	Contract in place for onshore waste management.	Agreement contract.
	Personnel hiring agreements.	109	Agreements in place with labour hiring companies.	Agreement documents.

EPO	Control	EPS #	EPS	Measurement criteria
	Agreement with contractor for heavy plant equipment.	110	Agreement in place with contractor for heavy plant equipment. Equipment is available for deployment within 48 hours.	Agreement documents.

Appendix I: RPS Oil Spill Modelling

Appendix I-1: Bass Strait Decommissioning Campaign 1 Oil Spill Modelling (HLV) (RPS, 2024a)

BASS STRAIT DECOMMISSIONING CAMPAIGN 1 VAR 1

Oil Spill Modelling



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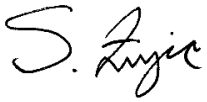
Dr Sasha Zigic  17 July 2024

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TERMS AND ABBREVIATIONS

AMP	Australian Marine Park
AMSA	Australian Maritime Safety Authority
ANZECC	Australian and New Zealand Environment and Conservation Council
API	American Petroleum Institute gravity. A measure of how heavy or light a petroleum liquid is compared to water.
ARMCANZ	Agriculture and Resource Management Council of Australia and New Zealand
ASTM	American Society for Testing and Materials
BIA	Biologically Important Area
Bonn Agreement	An agreement for cooperation in dealing with pollution of the North Sea by oil and other harmful substances, 1983, includes: Governments of the Kingdom of Belgium, the Kingdom of Denmark, the French Republic, the Federal Republic of Germany, the Republic of Ireland, the Kingdom of the Netherlands, the Kingdom of Norway, the Kingdom of Sweden, the United Kingdom of Great Britain and Northern Ireland and the European Union.
BP	Boiling point. The temperature at which the vapor pressure of the liquid is equal to the pressure exerted on it by the surrounding atmosphere
BTEX	Benzene, Toluene, Ethylbenzene, and Xylenes
CFSR	Climate Forecast System Reanalysis
Decay	The process where oil components are changed either chemically or biologically (biodegradation) to another compound. It includes breakdown to simpler organic carbon compounds by bacteria and other organisms, photo-oxidation by solar energy, and other chemical reactions.
Deterministic oil spill modelling	Oil spill modelling involving a computer simulation of a single hypothetical oil spill event subject to a single sequence of wind, current and other sea conditions over time. Single oil spill modelling, also referred to as “deterministic modelling” provides a simulation of one possible outcome of a given spill scenario, subject to the metocean conditions that are imposed. Single oil spill modelling is commonly used to consider the fate and effects of ‘worst-case’ oil spill scenarios that are carefully selected in consideration of the nature and scale of the offshore petroleum activity and the local environment (NOPSEMA, 2017). Because the outcomes of a single oil spill simulation can only represent the outcome of that scenario under one sequence of metocean conditions, worst-case conditions are often identified from stochastic modelling. It is impossible to calculate the likelihood of any outcome from a single oil spill simulation. Single oil spill modelling is generally used for response planning, preparedness planning and for supporting oil spill response operations in the event of an actual spill
Dynamic viscosity	The dynamic viscosity of a fluid expresses its resistance to shearing flows, where adjacent layers move parallel to each other with different speeds.
Floating oil exposure	Contact by floating oil on the sea surface at concentrations equal to or exceeding defined threshold concentrations. The consequence will vary depending on the threshold and the receptors
GODAE	Global Ocean Data Assimilation Experiment
HYCOM	Hybrid Coordinate Ocean Model. A data-assimilative, three-dimensional ocean model
HYDROMAP	Advanced ocean/coastal tidal model used to predict tidal water levels, current speed and current direction.
IMCRA	Integrated marine and coastal regionalisation areas
IOA	Index of Agreement
ITOPF	International Tanker Owners Pollution Federation Limited
KEF	Key Ecological Feature
LGA	Local Government Areas
MAE	Mean Absolute Error
MAHs	Monoaromatic Hydrocarbons
MNP	Marine National Park

MP	Marine Park
NASA	National Aeronautics and Space Administration (USA)
NCEP	National Centres for Environmental Prediction (USA)
NOAA	National Oceanic and Atmospheric Administration (USA)
NOPSEMA	National Offshore Petroleum Safety and Environmental Management Authority
NP	National Park
NR	Nature Reserve
PAH	Polynuclear Aromatic Hydrocarbons
Pour Point	The pour point of a liquid is the temperature below which the liquid loses its flow characteristics
ppb	Parts per billion (concentration)
psu	Practical salinity units
Ramsar site	A site listed under the Ramsar Convention on wetlands which is an international intergovernmental treaty that provides the framework for the conservation and wise use of wetlands and their resources.
RSB	Reefs, Shoals and Banks
Shoreline accumulation	Arrival of oil at or near shorelines at on-water concentrations equal to or exceeding defined threshold concentrations. Shoreline contact is judged for floating oil arriving within a 2 km buffer zone from any shoreline as a conservative measure
SIMAP	Spill Impact Model Application Package. SIMAP is designed to simulate the fate and effects of spilled hydrocarbons for surface or subsea releases
SRTM	Shuttle Radar Topography Mission
State Waters	Low water mark seaward for three nautical miles
Stochastic oil spill modelling	Stochastic oil spill modelling is created by overlaying and statistically analysing the outcomes of many single oil-spill simulations of a defined spill scenario, where each simulation was subject to a different sequence of metocean conditions, selected objectively (typically by random selection) from a long sequence of historic conditions for the study area. Analysis of this larger set of simulations provides a more accurate indication of the area of hydrocarbon exposure and indicates which locations are more likely to be exposed (as well as other statistics). Stochastic oil spill modelling avoids biases that affect single oil spill modelling (due to the reliance on only one possible sequence of conditions). However, when interpreting stochastic modelling, which is based on a wide range of potential conditions that might happen to occur, it is essential to understand that calculations will encompass a much larger area than could be exposed in any single spill event, where a more limited set of conditions will occur. Consequently, it is misleading to imply that the region derived from stochastic modelling indicate the outcomes expected from a single spill event (NOPSEMA, 2017) Stochastic modelling is generally used for risk assessment and preparedness planning by indicating locations that could be exposed and may require response or subsequent impact assessment
Sub-LGA	Sub-Local Government Areas
TOPEX/Poseidon	A joint satellite mission between NASA and CNES to map ocean surface topography using an array of satellites equipped with detailed altimeters
US EPA	United States Environmental Protection Agency
World Ocean Atlas	A collection of physicochemical parameters (e.g. temperature, salinity, oxygen, phosphate, silicate, and nitrate) based on profile data from the World Ocean Database (NCEI, 2021) established by NOAA's National Centers for Environmental Information (NCEI)
WGS 1984	World Geodetic System 1984 (WGS84); reference coordinate system

EXECUTIVE SUMMARY

Background

Esso Australia Pty Ltd (Esso) is planning and preparing to decommission some of the non-producing platforms located in the Gippsland Basin, as part of the first Bass Strait decommissioning campaign (Campaign 1).

To support offshore environmental impact and risk assessments, Esso engaged RPS to perform a comprehensive oil spill modelling study. This study evaluated a hypothetical vessel collision scenario at 5 different locations as follows:

- **Scenario 1**: A 1,165 m^3 surface release of MGO over 12 hours following a vessel collision at Dolphin (DPA).
- **Scenario 2**: A 1,165 m^3 surface release of MGO over 12 hours following a vessel collision at Whiting (WTA).
- **Scenario 3**: A 1,165 m^3 surface release of MGO over 12 hours following a vessel collision at Fortescue (FTA).
- **Scenario 4**: A 1,165 m^3 surface release of MGO over 12 hours following a vessel collision at Kingfish A (KFA).
- **Scenario 5**: A 1,165 m^3 surface release of MGO over 12 hours following a vessel collision at Flounder (FLA).

The modelling assessment was undertaken on an annual basis.

The purpose of the modelling is to provide an understanding of a conservative 'outer envelope' of the potential area of exposure in the unlikely event of hydrocarbon spill. The modelling does not take into consideration any of the spill prevention, mitigation and response capabilities that would be implemented in response to the spill. Therefore, the modelling results represent the maximum extent of hydrocarbon exposure.

The spill modelling was performed using an advanced three-dimensional trajectory and fates model; Spill Impact Model Application Program (SIMAP). The SIMAP model calculates the transport, spreading, entrainment and evaporation of spilled hydrocarbons over time, based on the prevailing wind and current conditions and the physical and chemical properties.

Methodology

The modelling study was carried out in several stages. Firstly, a 10-year wind and current dataset (2010–2019) was generated and the currents included the combined influence of three-dimensional large-scale ocean currents and tidal currents. Secondly, the currents, winds and detailed hydrocarbon characteristics were used as inputs in the three-dimensional oil spill model (SIMAP) to simulate the drift, spread, weathering and fate of the spilled oil.

As spills can occur during any set of wind and current conditions, modelling was conducted using a stochastic (random or non-deterministic) approach, which involved running 100 randomly selected single trajectory simulations, with each simulation having the same spill information (location, spill volume, duration and composition of hydrocarbons) but varying start times. This ensured that each spill simulation was subject to a unique set of wind and current conditions.

The SIMAP system, the methods and analysis presented herein use modelling algorithms which have been anonymously peer reviewed and published in international journals. Further, RPS warrants that this work meets and exceeds the ASTM Standard F2067-22 "*Standard Practice for Development and Use of Oil-Spill Trajectory Models*".

Marine Gas Oil Properties

MGO has an API of 37.6, density of 829.1 kg/m^3 (at 25ºC), with low viscosity (4 cP at 25ºC) classifying it as a Group II (light-persistent) oil according to ITOPF (2020) and US EPA/USCG classifications. The oil comprises a significant portion of volatiles and semi- to low volatiles (~95% total) with 5% residual components. This means most of the hydrocarbons will evaporate when on the water surface, with the persistent components to remain on the water surface over a longer period.

Results

Scenario 1: A 1,165 m³ surface release of MGO over 12 hours at Dolphin

- The maximum distances and corresponding directions from the release location to the low (1–10 g/m^2), moderate (10–50 g/m^2) and high (>50 g/m^2) exposure zones were 200.0 km (east-northeast), 31.4 km (northeast) and 20.2 km (southwest), respectively. With the exception of the receptors the release location is within, the Upwelling East of Eden (KEF) recorded the highest probability of exposure at 8% to concentrations exceeding 1 g/m^2. Floating oil at the 1 g/m^2 threshold was predicted to reach Victoria State Waters the quickest at 1.42 days (34.08 hours) following the spill commencement.
- The probability of accumulation to any shoreline at, or above, the low (10 g/m^2) threshold was 76% throughout the year. The minimum time before oil accumulation at, or above, the low threshold was 1.83 days. The maximum total volume ashore for a single spill trajectory was 83.3 m^3, and the maximum length of shoreline with accumulation above the low, moderate and high thresholds were 99 km, 13 km and 3 km, respectively. The highest probability of shoreline oil accumulation at the 10 g/m^2 threshold was forecast for East Gippsland (LGA) (58%).
- Excluding the receptors that the release location is within, the probability of dissolved hydrocarbon exposure at concentrations equal to, or greater than, 10 ppb (low threshold) is greatest at Upwelling East of Eden (KEF) (7%). The maximum dissolved hydrocarbon concentration at any given receptor(s), including the receptors the release location lies within was shown to be 162.6 ppb, followed by the Upwelling East of Eden (KEF) at 75.1 ppb.
- Except for the receptors the release location is within, the highest probability of low (10 ppb) entrained hydrocarbon exposure was 72% recorded for the Upwelling East of Eden (KEF). The quickest time for exposure at the same threshold was 0.88 days (21.12 hours) for the same receptor. The highest entrained hydrocarbon concentration was predicted to be 10,680.6 ppb, including the receptors the release location lies within, followed by 776.7 ppb at Upwelling East of Eden (KEF).

Scenario 2: A 1,165 m³ surface release of MGO over 12 hours at Whiting

- The maximum distances and corresponding directions from the release location to the low (1–10 g/m^2), moderate (10–50 g/m^2) and high (>50 g/m^2) exposure zones were 240.0 km (east-northeast), 31.5 km (northeast) and 19.1 km (northeast), respectively. With the exception of the receptors the release location is within, the Upwelling East of Eden (KEF) recorded the highest probability of exposure at 36% to concentrations exceeding 1 g/m^2.
- The probability of accumulation to any shoreline at, or above, the low (10 g/m^2) threshold was 56% throughout the year. The minimum time before oil accumulation at, or above, the low threshold was 3.21 days. The maximum total volume ashore for a single spill trajectory was 54.8 m^3, and the maximum length of shoreline with accumulation above the low and moderate thresholds were 54 km, and 11 km, respectively. No shoreline contact was predicted above the high threshold.
- The shoreline segment of East Gippsland (LGA) revealed the highest probability of accumulation above the low (41%) and moderate (20%) thresholds.
- Excluding the receptors that the release location is within, the probability of dissolved hydrocarbon exposure at concentrations equal to, or greater than, 10 ppb (low threshold) is greatest at the Upwelling East of Eden (KEF) (17%). The maximum dissolved hydrocarbon concentration at any

given receptor(s) was shown to be 151.5 ppb, including the receptors the release location lies within, followed by the Upwelling East of Eden (KEF) at 145.8 ppb.

- Except for the receptors the release location is within, the highest probability of low (10 ppb) entrained hydrocarbon exposure was 78% recorded for the Upwelling East of Eden (KEF). The quickest time for exposure at the same threshold was 0.17 days (4.08 hours) at White Shark - Breeding (BIA). The highest entrained hydrocarbon concentration was predicted to be 14,461.7 ppb, including the receptors the release location lies within, followed by 3,167.8 ppb at the White Shark – Breeding (BIA).

Scenario 3: A 1,165 m³ surface release of MGO over 12 hours at Fortescue

- The maximum distances and corresponding directions from the release location to the low (1–10 g/m^2), moderate (10–50 g/m^2) and high (>50 g/m^2) exposure zones were 107.6 km (east-northeast), 46.0 km (southwest) and approximately 16.4 km (south), respectively. With the exception of the receptors the release location is within, the Upwelling East of Eden (KEF) recorded the highest probability of exposure at 21% to concentrations exceeding 1 g/m^2.
- The probability of accumulation to any shoreline at, or above, the low (10 g/m^2) threshold was 23% throughout the year. The minimum time before oil accumulation at, or above, the low threshold was 5.33 days. The maximum total volume ashore for a single spill trajectory was 13.2 m^3, and the maximum length of shoreline with accumulation above the low and moderate thresholds was 31 km and 2 km, respectively. No shoreline contact was recorded for the high threshold. The highest probability of shoreline oil accumulation at the 10 g/m^2 threshold was forecast for Bega Valley (Sub-LGA) (13%).
- Excluding the receptors that the release location is within, the probability of dissolved hydrocarbon exposure at concentrations equal to, or greater than, 10 ppb (low threshold) is greatest at Upwelling East of Eden (KEF) (19%). The maximum dissolved hydrocarbon concentration at any given receptor(s) was shown to be 182.3 ppb, including the receptors the release location lies within, followed by the Upwelling East of Eden (KEF) at 115.5 ppb.
- Except for the receptors the release location is within, the highest probability of low (10 ppb) entrained hydrocarbon exposure was 71% recorded for the Upwelling East of Eden (KEF). The quickest time for exposure at the same threshold was 0.13 days (3.12 hours) for the same receptor. The highest entrained hydrocarbon concentration was predicted to be 16,850.7 ppb, including the receptors the release location lies within, followed by 3,516 ppb at Upwelling East of Eden (KEF).

Scenario 4: A 1,165 m³ surface release of MGO over 12 hours at Kingfish A

- The maximum distances and corresponding directions from the release location to the low (1–10 g/m^2), moderate (10–50 g/m^2) and high (>50 g/m^2) exposure zones were 70.9 km (northeast), 48.9 km (southwest) and 16.6 km (southwest), respectively. With the exception of the receptors the release location is within, the White-faced Storm-petrel - Foraging (BIA) recorded the highest probability of exposure at 6% to concentrations exceeding 1 g/m^2.
- The probability of accumulation to any shoreline at, or above, the low (10 g/m^2) threshold was 18% throughout the year. The minimum time before oil accumulation at, or above, the low threshold was 6.04 days. The maximum total volume ashore for a single spill trajectory was 21 m^3, and the maximum length of shoreline with accumulation above the low and moderate and high thresholds were 45 km and 5, respectively. No shoreline contact was predicted at the high threshold. The highest probability of shoreline oil accumulation at the 10 g/m^2 threshold was forecast for Montague Island (LGA) (7%).
- Excluding the receptors that the release location is within, the probability of dissolved hydrocarbon exposure at concentrations equal to, or greater than, 10 ppb (low threshold) is greatest at Upwelling East of Eden (KEF) (8%). The maximum dissolved hydrocarbon concentration at any given

receptor(s) was shown to be 145 ppb, including the receptors the release location lies within, followed by the White-faced Storm-petrel – Foraging (BIA) at 83.8 ppb.

- Except for the receptors the release location is within, the highest probability of low (10 ppb) entrained hydrocarbon exposure was 56% recorded for the White-faced Storm-petrel – Foraging (BIA). The quickest time for exposure at the same threshold was 0.29 days (6.96 hours) for the White-faced Storm-petrel – Foraging (BIA). The highest entrained hydrocarbon concentration was predicted to be 11,353 ppb, including the receptors the release location lies within, followed by 1,427 ppb at White-faced Storm-petrel – Foraging (BIA).

Scenario 5: A 1,165 m³ surface release of MGO over 12 hours at Flounder

- The maximum distances and corresponding directions from the release location to the low (1–10 g/m^2), moderate (10–50 g/m^2) and high (>50 g/m^2) exposure zones were 179.5 km (east-northeast), 39.2 km (south-southwest) and 18.5 km (south-southwest), respectively. With the exception of the receptors the release location is within, Antipodean Albatross – Foraging (BIA) recorded the highest probability of exposure at 18% to concentrations exceeding 1 g/m^2.
- The probability of accumulation to any shoreline at, or above, the low (10 g/m2) threshold was 17% throughout the year. The minimum time before oil accumulation at, or above, the low threshold was 5.08 days. The maximum total volume ashore for a single spill trajectory was 25.9 m3, and the maximum length of shoreline with accumulation above the low and moderate thresholds were 41 km and 9 km, respectively. No shoreline contact was predicted at the high threshold. The highest probability of shoreline oil accumulation at the 10 g/m^2 threshold was forecast for Bega Valley (LGA and sub-LGA) (8%).
- Excluding the receptors that the release location is within, the probability of dissolved hydrocarbon exposure at concentrations equal to, or greater than, 10 ppb (low threshold) is greatest at the Antipodean Albatross - Foraging (BIA) (13%). The maximum dissolved hydrocarbon concentration at any given receptor(s) was shown to be 197.3 ppb, including the receptors the release location lies within, followed by the Antipodean Albatross - Foraging (BIA) at 129.8 ppb.
- Except for the receptors the release location is within, the highest probability of low (10 ppb) entrained hydrocarbon exposure was 59% recorded for the Antipodean Albatross – Foraging (BIA). The quickest time for exposure at the same threshold was 0.17 days (4.08 hours) for the Antipodean Albatross – Foraging (BIA). The highest entrained hydrocarbon concentration was predicted to be 18,716.1 ppb, including the receptors the release location lies within, followed by 2,987.4 ppb at Antipodean Albatross – Foraging (BIA).

1 INTRODUCTION

1.1 Background

Esso Australia Pty Ltd (Esso) is planning and preparing to decommission some of the non-producing platforms located in the Gippsland Basin, as part of the first Bass Strait decommissioning campaign (Campaign 1).

To support offshore environmental impact and risk assessments, Esso engaged RPS to perform a comprehensive oil spill modelling study. This study evaluated a hypothetical vessel collision scenario at 5 different locations as follows:

- **Scenario 1**: A 1,165 m^3 surface release of MGO over 12 hours following a vessel collision at Dolphin (DPA).
- **Scenario 2**: A 1,165 m^3 surface release of MGO over 12 hours following a vessel collision at Whiting (WTA).
- **Scenario 3**: A 1,165 m^3 surface release of MGO over 12 hours following a vessel collision at Fortescue (FTA).
- **Scenario 4**: A 1,165 m^3 surface release of MGO over 12 hours following a vessel collision at Kingfish A (KFA).
- **Scenario 5**: A 1,165 m^3 surface release of MGO over 12 hours following a vessel collision at Flounder (FLA).

The coordinates for the release locations used for the above mentioned scenarios are presented in Table 1.1 and are illustrated in Figure 1.1.

The modelling assessment was undertaken on an annual basis.

The purpose of the modelling is to provide an understanding of a conservative 'outer envelope' of the potential area of exposure in the unlikely event of hydrocarbon spill. The modelling does not take into consideration any of the spill prevention, mitigation and response capabilities that would be implemented in response to the spill. Therefore, the modelling results represent the maximum extent of hydrocarbon exposure.

The spill modelling was performed using an advanced three-dimensional trajectory and fates model; Spill Impact Model Application Program (SIMAP). The SIMAP model calculates the transport, spreading, entrainment and evaporation of spilled hydrocarbons over time, based on the prevailing wind and current conditions as well as the physical and chemical properties.

Note that the oil spill model, the method and analysis presented herein use modelling algorithms which have been anonymously peer reviewed and published in international journals. Furthermore, RPS warrants that this work meets and exceeds the American Society for Testing and Materials (ASTM) Standard F2067-22 "*Standard Practice for Development and Use of Oil-Spill Trajectory Models*".

Table 1.1 Coordinates and water depth of the release locations.

Location	Latitude	Longitude	Water Depth (m)
Dolphin (DPA)	38° 29' 14.3" S	147° 22' 39" E	38
Whiting (WTA)	38° 14' 24" S	147° 52' 25" E	46
Fortescue (FTA)	38° 24' 26" S	148° 16' 41" E	69
Kingfish A (KFA)	38° 35' 47" S	148° 08' 41" E	77
Flounder (FLA)	38° 18' 40" S	148° 26' 22" E	93

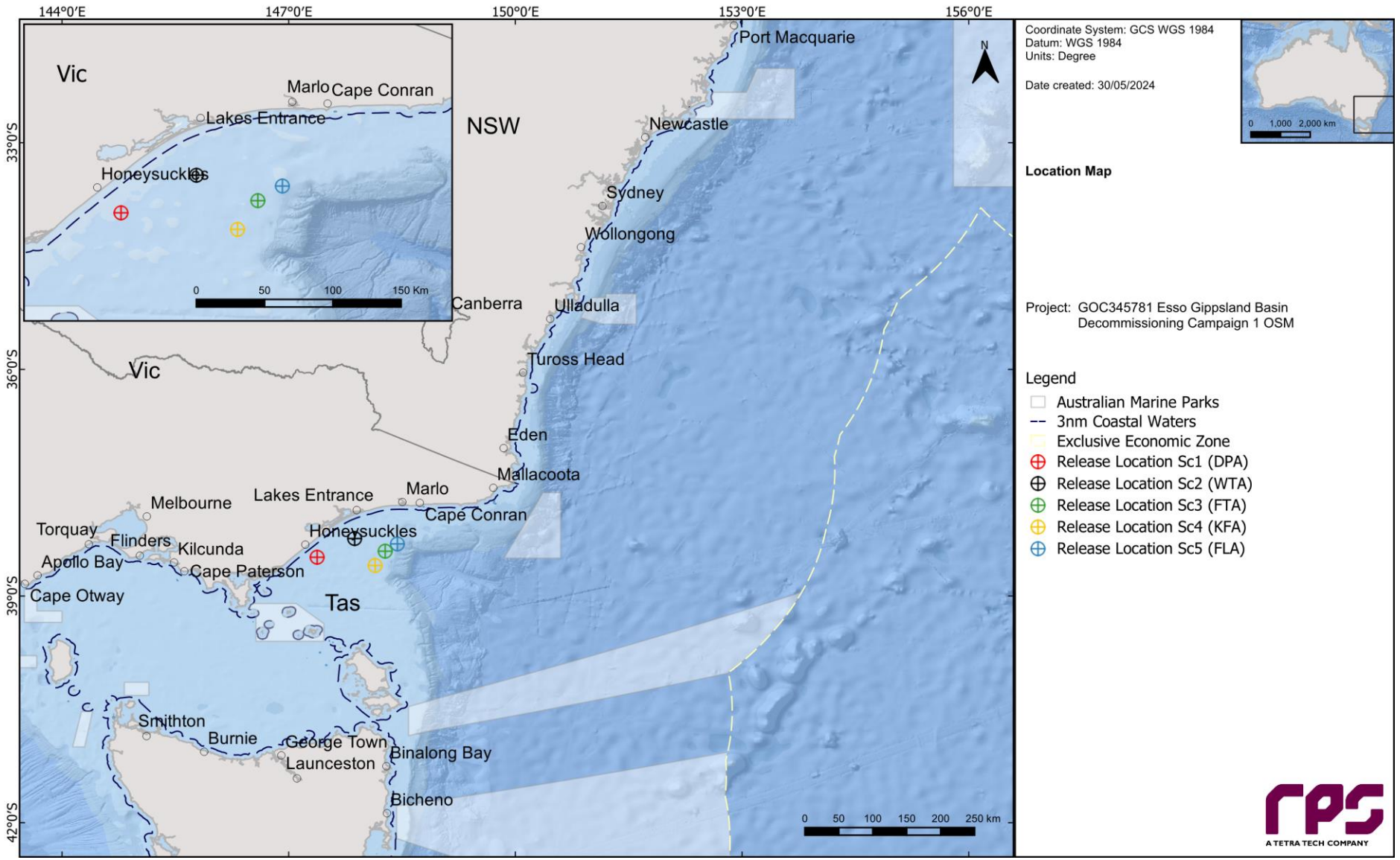

Figure 1.1 Map of the release locations.

1.2 What is Oil Spill Modelling?

Oil spill modelling is a valuable tool widely used for risk assessment, emergency response and contingency planning where it can be particularly helpful to proponents and decision makers. By modelling a series of the most likely oil spill scenarios, decisions concerning suitable response measures and strategic locations for deploying equipment and materials can be made, and the locations at most risk can be identified. The two types of oil spill modelling often used are stochastic (Section 1.2.1) and deterministic (Section 1.2.2) modelling.

1.2.1 Stochastic Modelling (Multiple Spill Simulations)

Stochastic oil spill modelling is created by overlaying a great number (often hundreds) of individual, computer-simulated hypothetical spills (NOPSEMA, 2018; Figure 1.2).

Stochastic modelling is a common means of assessing the potential risks from oil spills related to new projects and facilities. Stochastic modelling typically utilises hydrodynamic data for the location in combination with historic wind data. Typically, 100 iterations of the model will be run utilising the data that is most relevant to the season or timing of the project.

The outcomes are often presented as a probability of exposure and is primarily used for risk assessment purposes in view to understand the range of environments that may be affected or impacted by a spill. Elements of the stochastic modelling can also be used in oil spill preparedness and planning.

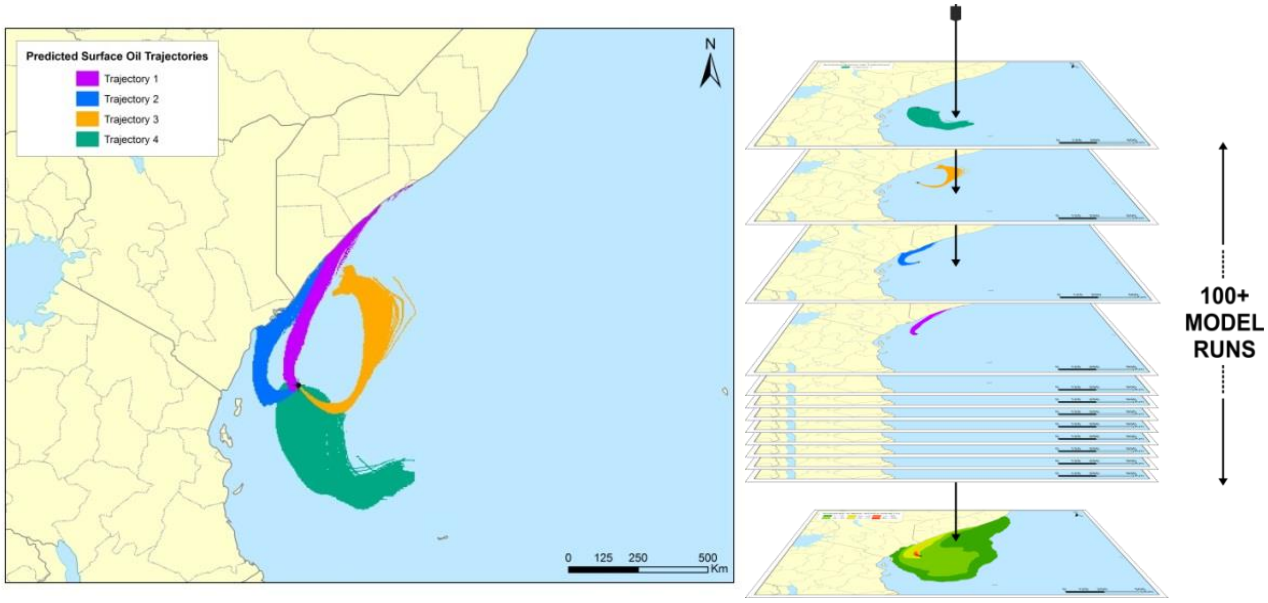

Figure 1.2 Examples of four individual spill trajectories (four replicate simulations) predicted by SIMAP for a spill scenario. The frequency of contact with given locations is used to calculate the probability of impacts during a spill. Essentially, all model runs are overlain (shown as the stacked runs on the right) and the number of times that trajectories contact a given location at a concentration is used to calculate the probability.

1.2.2 Deterministic Modelling (Single Spill Simulation)

Deterministic modelling is the predictive modelling of a single incident subject to a single sample of wind and weather conditions over time (NOPSEMA, 2018; Figure 1.3).

Deterministic modelling is often paired with stochastic modelling to place the large stochastic footprint into perspective. This deterministic analysis is generally a single run selected from the stochastic analysis and serves as the basis for developing the plans and equipment needs for a realistic spill response. Deterministic spills can be selected on several basis such as minimum time to shoreline, largest swept area, maximum volume ashore, longest length of shoreline contacted by oil or largest area of entrained or dissolved hydrocarbons.

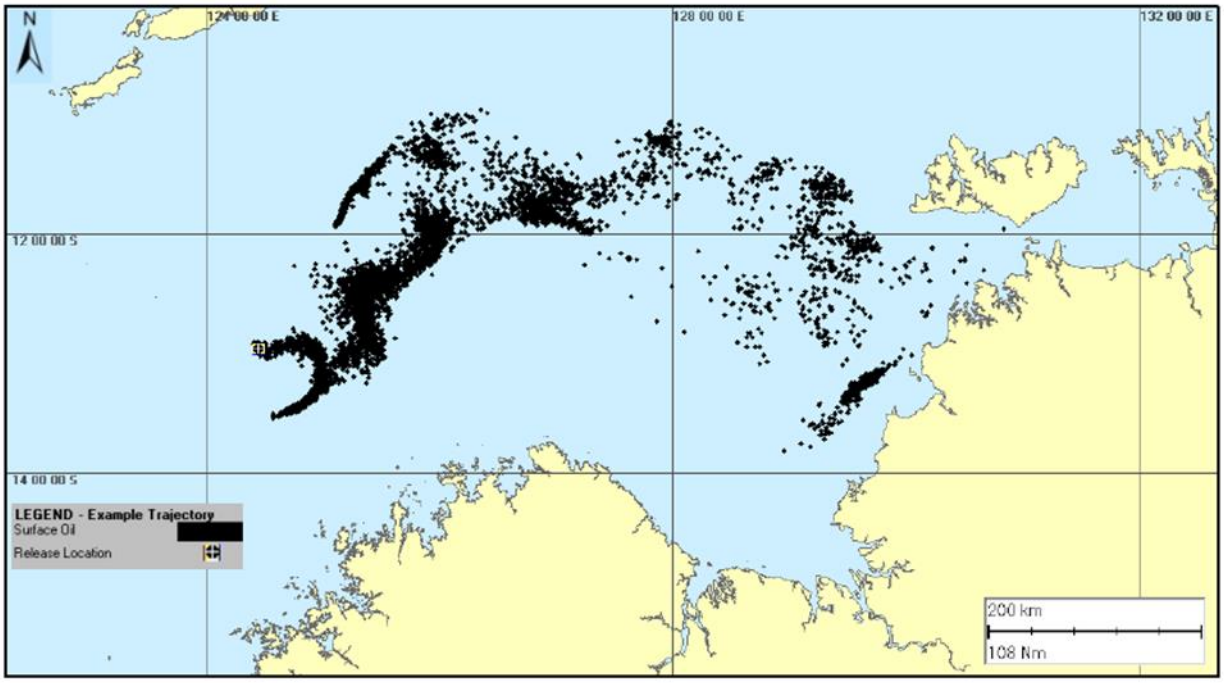

Figure 1.3 Example of an individual spill trajectory predicted by SIMAP for a spill scenario. Note, this image represents surface oil as spillets and do not take any thresholds into consideration.

2 SCOPE OF WORK

The scope of work included the following components:

- Generate 10 years of winds and three-dimensional currents from 2010 to 2019 (inclusive). The currents included the combined influence of tidal and ocean currents;
- Include the wind and current data and characteristics of the oil type as input into the three-dimensional oil spill model (SIMAP), to model the movement, spreading, weathering and shoreline contact by hydrocarbons over time;
- Use SIMAP's stochastic model (also known as a probability model) to calculate exposure to surrounding waters and shorelines. This involved running 100 randomly selected single trajectory simulations per scenario, with each simulation having the same spill information (spill volume, duration and composition of hydrocarbons) but varying start times. This ensured that each spill simulation was subject to a unique set of wind and current conditions;
- Results were assessed to determine the exposure to surrounding waters and contact to shorelines based upon the thresholds outlined in the NOPSEMA Oil Spill Modelling Bulletin (NOPSEMA, 2019)[1]; and
- The stochastic modelling results were reviewed, and the "worst case" deterministic runs were identified and presented based on the following criteria (if applicable):
    a. Largest swept area for surface oil above 10 g/m^2;
    b. Largest volume of oil ashore;
    c. Longest length of shoreline with oil accumulation above 100 g/m^2;
    d. Largest area of entrained hydrocarbon exposure above 100 ppb; and
    e. Largest area of dissolved hydrocarbon exposure above 50 ppb.

3 REGIONAL CURRENTS

Bass Strait is a body of water separating Tasmania from the southern Australian mainland, specifically the state of Victoria. The strait is a relatively shallow area of the continental shelf, connecting the southeast Indian Ocean with the Tasman Sea. Currents within the straight are primarily driven by tides, winds, incident continental shelf waves and density driven flows; high winds and strong tidal currents are frequent within the area (Jones, 1980).

The varied geography and bathymetry of the region, in addition to the forcing of the south-eastern Indian Ocean and local meteorology lead to complex shelf and slope circulation patterns (Middleton & Bye, 2007). Figure 3.1 displays seasonal current trends within the Bass Strait. During winter there is a strong eastward water flow due to the strengthening of the South Australian Current (fed by the Leeuwin Current in the Northwest Shelf), which bifurcates with one extension moving though the Bass Strait, and another forming the Zeehan Current off western Tasmania (Sandery & Kämpf, 2007). During summer, water flow reverses off Tasmania, King Island and the Otway Basin travelling westward, as the coastal current develops due to south-easterly winds.

To accurately describe the variability in currents between the inshore and offshore region, a hybrid regional dataset was developed by combining ocean predictions obtained from HYCOM (Hybrid Coordinate Ocean Model) with surface tidal currents developed by RPS. The following sections provide a summary of the hybrid regional dataset.

[1] Results for entrained hydrocarbon exposure at, or above, 1,000 ppb, in alignment with French-McCay (2023), are provided in Appendix A.

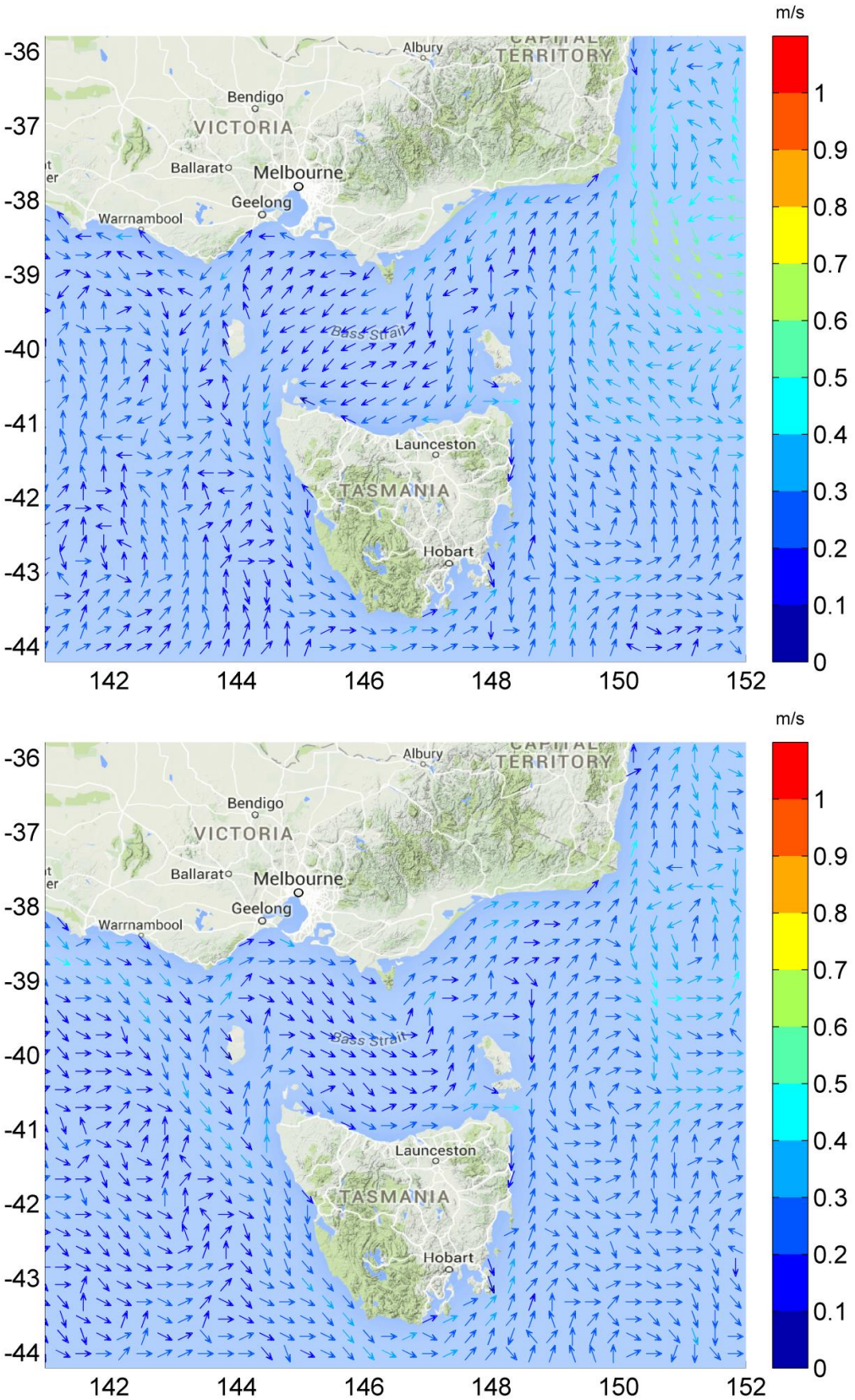

Figure 3.1 HYCOM averaged seasonal surface drift currents during summer (upper image) and winter (lower image).

3.1 Tidal currents

The effects of tides were generated using RPS's advanced ocean/coastal model, HYDROMAP. The HYDROMAP model has been thoroughly tested and verified through field measurements throughout the world for over 35 years (Isaji and Spaulding, 1984; Isaji et al., 2001; Zigic et al., 2003; Makarynskyy et al., 2010), whilst being used for a wide variety of disciplines within marine environments (e.g. Zigic et al., 2003, 2009; Talouli et al., 2009; Zigic et al., 2009; King et al., 2010; Makarynskyy et al., 2010, 2015). In fact, HYDROMAP tidal current data have been used as input for the OILMAP hydrocarbon spill modelling system, which forms part of the Incident Management System (IMS) operated by Maritime New Zealand (MNZ), Australian Maritime Safety Authority (AMSA) and the United Kingdom Maritime and Coastguard Agency, as well as several major oil and gas companies.

HYDROMAP employs a sophisticated sub-gridding strategy, which supports up to six levels of spatial resolution, halving the grid cell size as each level of resolution is employed. The sub-gridding allows for higher resolution of currents within areas of greater bathymetric and coastline complexity, and/or of particular interest to a study.

The numerical solution methodology follows that of Davies (1977a and 1977b) with further developments for model efficiency by Owen (1980) and Gordon (1982). A more detailed presentation of the model can be found in Isaji and Spaulding (1984) and Isaji et al. (2001).

3.1.1 Grid Setup

The tidal model domain is sub-gridded to a resolution of 500 m for shallow and coastal regions, starting from an offshore (or deep water) resolution of 8 km. The finer grids are progressively allocated in a step-wise fashion to more accurately resolve flows along the coastline, around islands and over regions with more complex bathymetry. Figure 3.2 shows the tidal model grid covering the study domain.

A combination of datasets was used and merged to describe the shape of the seabed within the grid domain (Figure 3.3). These included spot depths and contours which were digitised from nautical charts released by the hydrographic offices as well as Geoscience Australia database and depths extracted from the Shuttle Radar Topography Mission (SRTM30_PLUS) Plus dataset (see Becker et al., 2009).

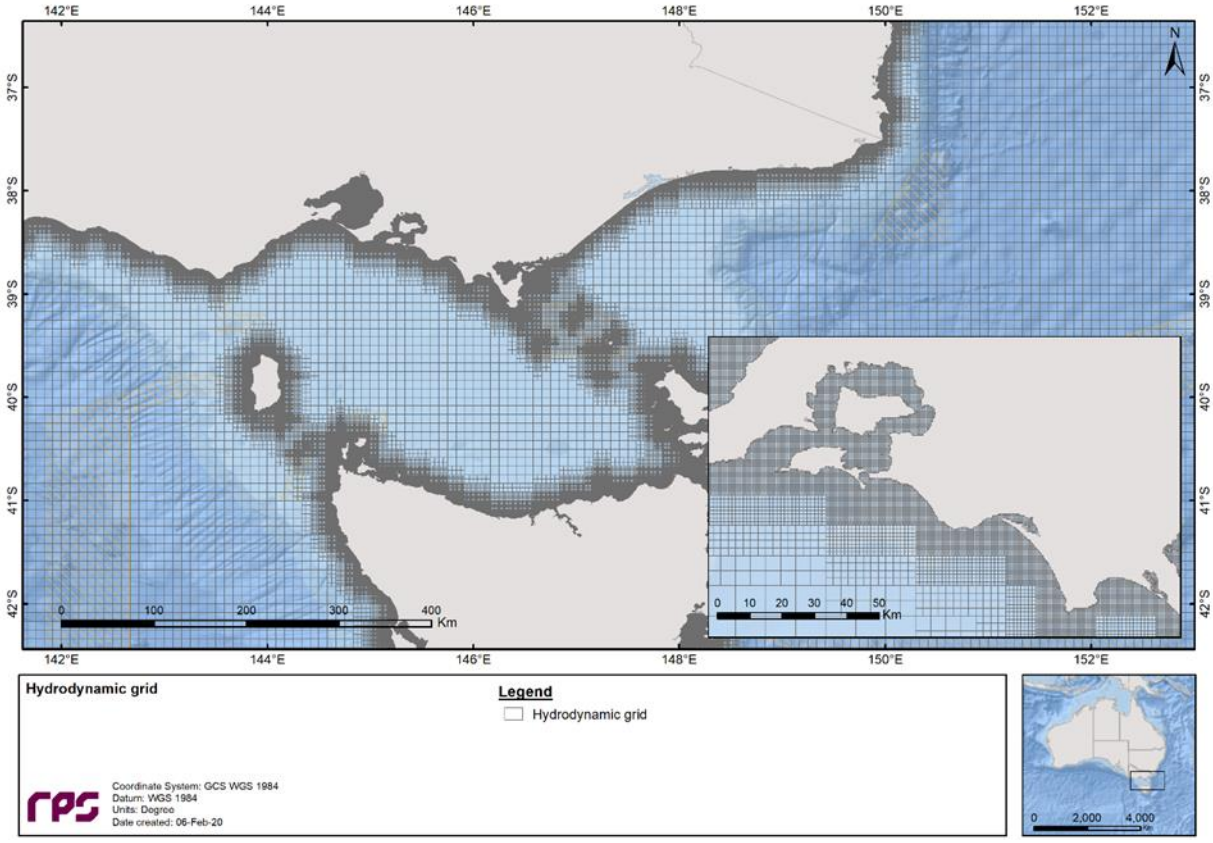

Figure 3.2 Sample of the model grid used to generate the tidal currents for the study region. Higher resolution areas are shown by the denser mesh.

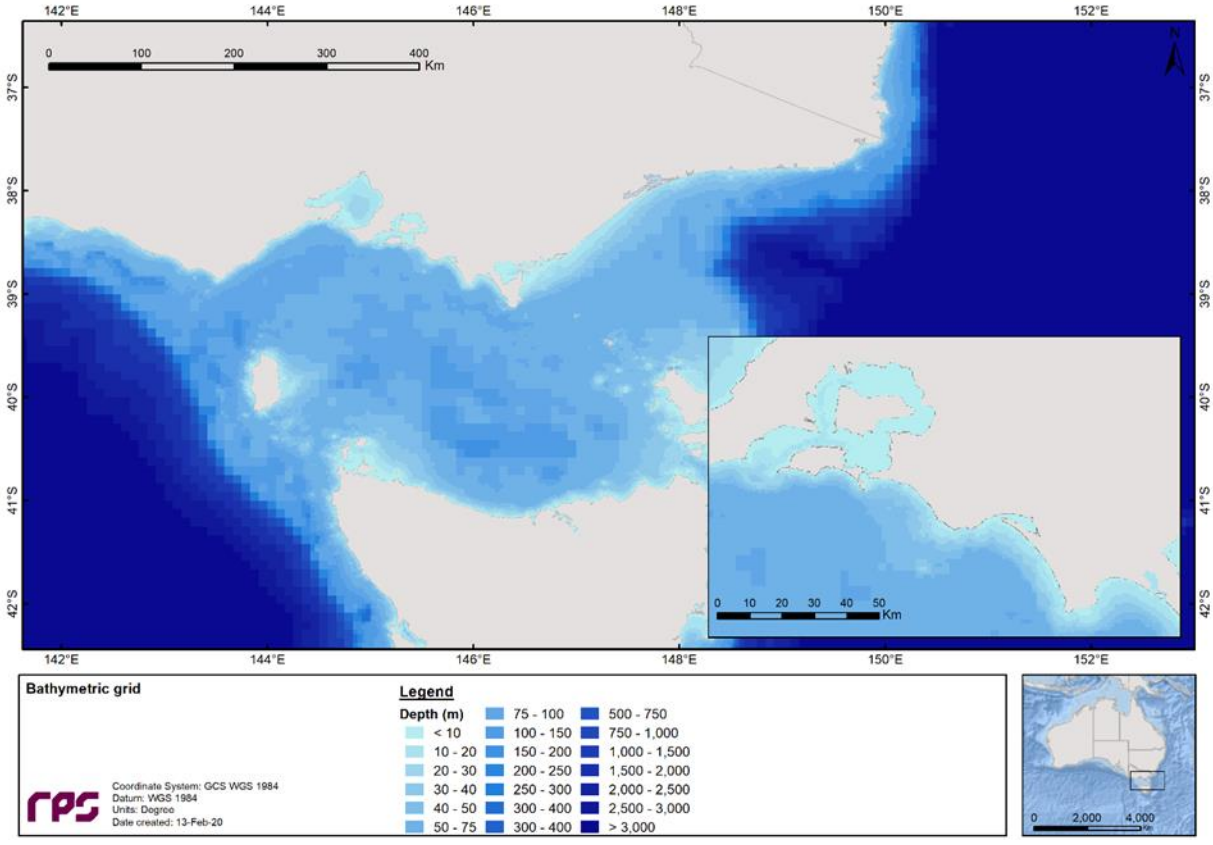

Figure 3.3 Bathymetry defined throughout the tidal model domain.

3.1.2 Tidal Conditions

The ocean boundary data for the regional model was obtained from satellite measured altimetry data (TOPEX/Poseidon 8.0) which provided estimates of the eight dominant tidal constituents at a horizontal scale of approximately 0.25 degrees. The eight major tidal constituents used were K_2, S_2, M_2, N_2, K_1, P_1, O_1 and Q_1. Using the tidal data, time series surface heights were calculated along the open boundaries for the simulation period.

The TOPEX/Poseidon satellite data has a resolution of 0.25 degrees globally, with higher resolution in coastal regions, and is produced and quality controlled by NASA (National Aeronautics and Space Administration). The data capturing satellites, equipped with two altimeters capable of taking sea level measurements accurate to less than ± 5 cm, measured oceanic surface elevations (and the resultant tides) for the period 1992–2005. In total, these satellites carried out 62,000 orbits of the planet. The Topex/Poseidon tidal data have been widely used amongst the oceanographic community, being referenced in more than 2,100 research publications (e.g. Andersen, 1995; Ludicone et al., 1998; Matsumoto et al., 2000; Kostianoy et al., 2003; Yaremchuk & Tangdong, 2004; Qiu & Chen 2010; Amores et al., 2019; Sagnieres et al., 2020; Veng et al., 2021; Zeitlhöfler et al., 2023). The Topex/Poseidon tidal data is considered suitably accurate for this study.

3.1.3 Surface Elevation Validation

To ensure that tidal predictions were accurate, predicted surface elevations were compared to data observed at a location situated within the study area (Figure 3.4).

To provide a statistical measure of the model performance, the Index of Agreement (IOA – Willmott, 1981) and the Mean Absolute Error (MAE – Willmott, 1982; Willmott & Matsuura, 2005) were used.

The MAE (Eq.1) is simply the average of the absolute values of the difference between the model-predicted (P) and observed (O) variables. It is a more natural measure of the average error (Willmott & Matsuura, 2005) and more readily understood. The MAE is determined by:

$$MAE = N^{-1} \sum_{i=1}^{N} |P_i - O_i| \qquad \text{Eq.1}$$

Where: N = Number of observations

P_i = Model predicted surface elevation

O_i = Observed surface elevation

The Index of Agreement (IOA; Eq. 2), in contrast, gives a non-dimensional measure of model accuracy or performance. A perfect agreement between the model predicted and observed surface elevations exists if the index gives an agreement value of 1, and complete disagreement between model and observed surface elevations will produce an index measure of 0 (Wilmott, 1981). Willmott et al. (1985) also suggests that values larger than 0.5 may represent good model performance. The IOA is determined by:

$$IOA = 1 - \frac{\sum |X_{model} - X_{obs}|^2}{\sum (|X_{model} - \overline{X_{obs}}| + |X_{obs} - \overline{X_{obs}}|)^2} \qquad \text{Eq.2}$$

Where: X_{model} = Model predicted surface elevation

X_{obs} = Observed surface elevation

Clearly, a greater IOA and lower MAE represent a better model performance.

Figure 3.5 and Figure 3.6 illustrate a comparison of the predicted and observed surface elevations in February 2014. As shown on the graph, the model accurately reproduced the phase and amplitudes throughout the spring and neap tidal cycles.

Table 3.1 shows the IOA and MAE values for the selected tide station locations indicating that the model is performing well.

Table 3.1 Statistical comparison between the observed and HYDROMAP predicted surface elevations.

Tide Station	IOA	MAE (m)
Gabo Island	0.98	0.08
Port MacDonnell	0.98	0.05
Port Welshpool	0.92	0.30
Portland	0.97	0.07
Stack Island	0.96	0.22

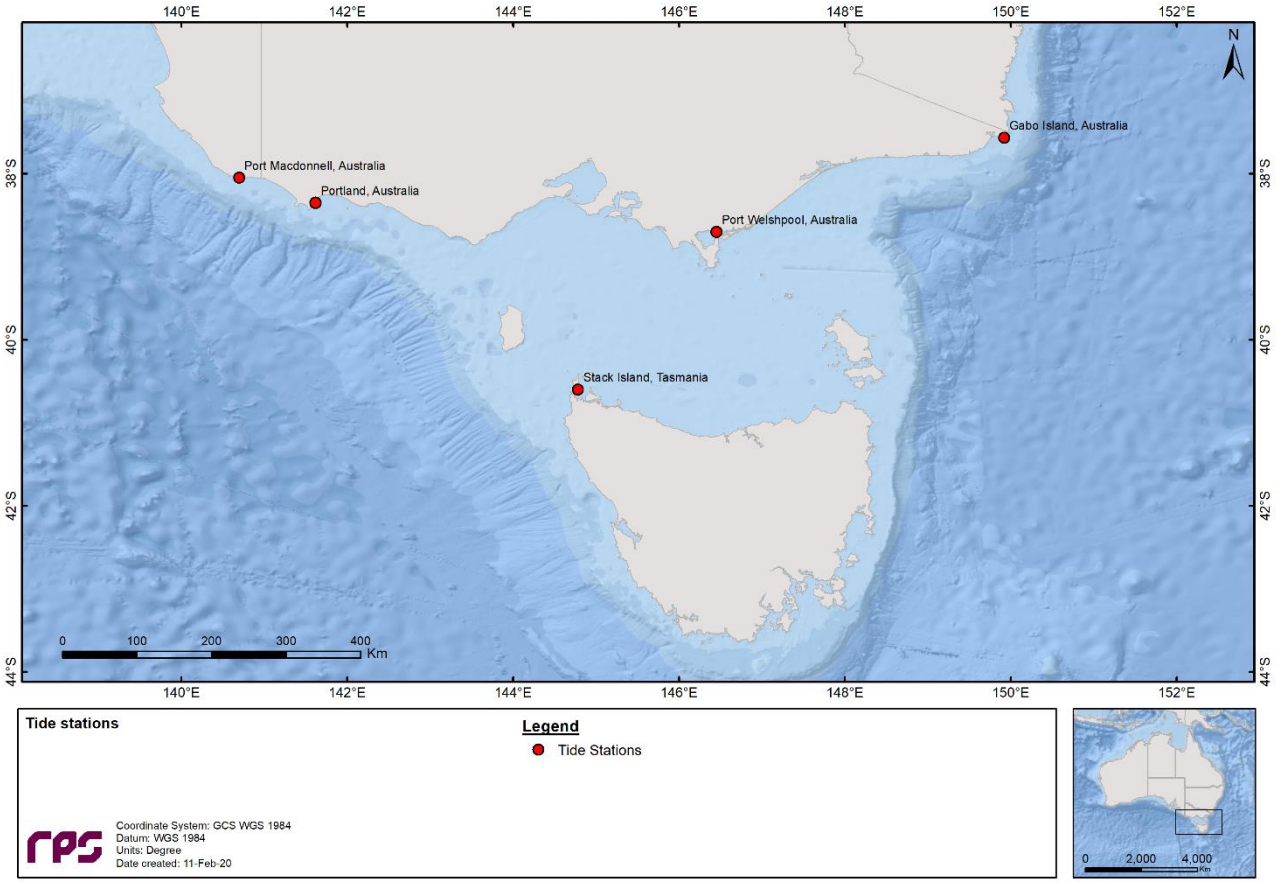

Figure 3.4 Location of the tide stations used in the surface elevation validation.

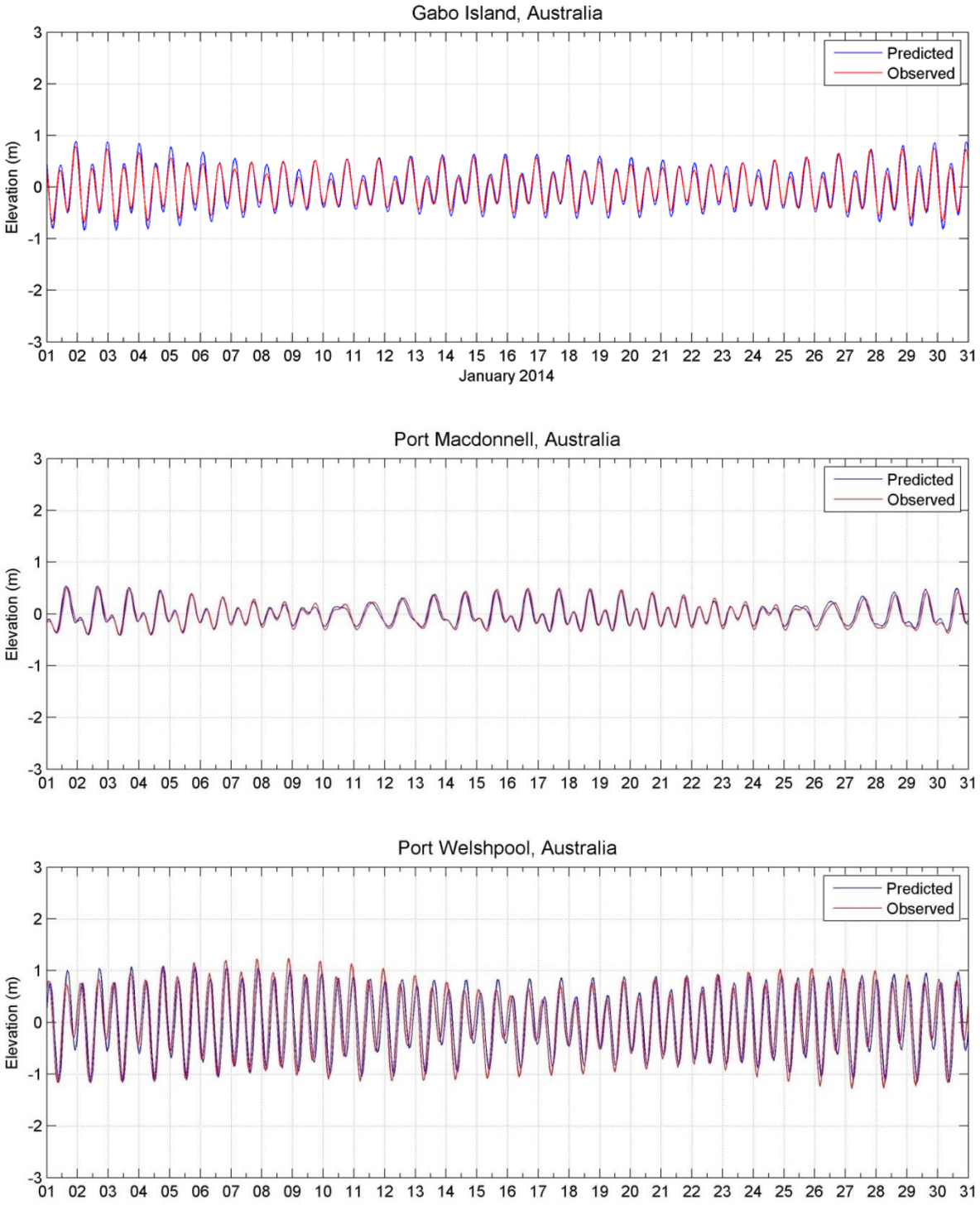

Figure 3.5 Comparison between HYDROMAP predicted (blue line) and observed (red line) surface elevation at tidal stations Gabo Island (upper image), Port MacDonnell (middle image) and Port Welshpool (lower image).

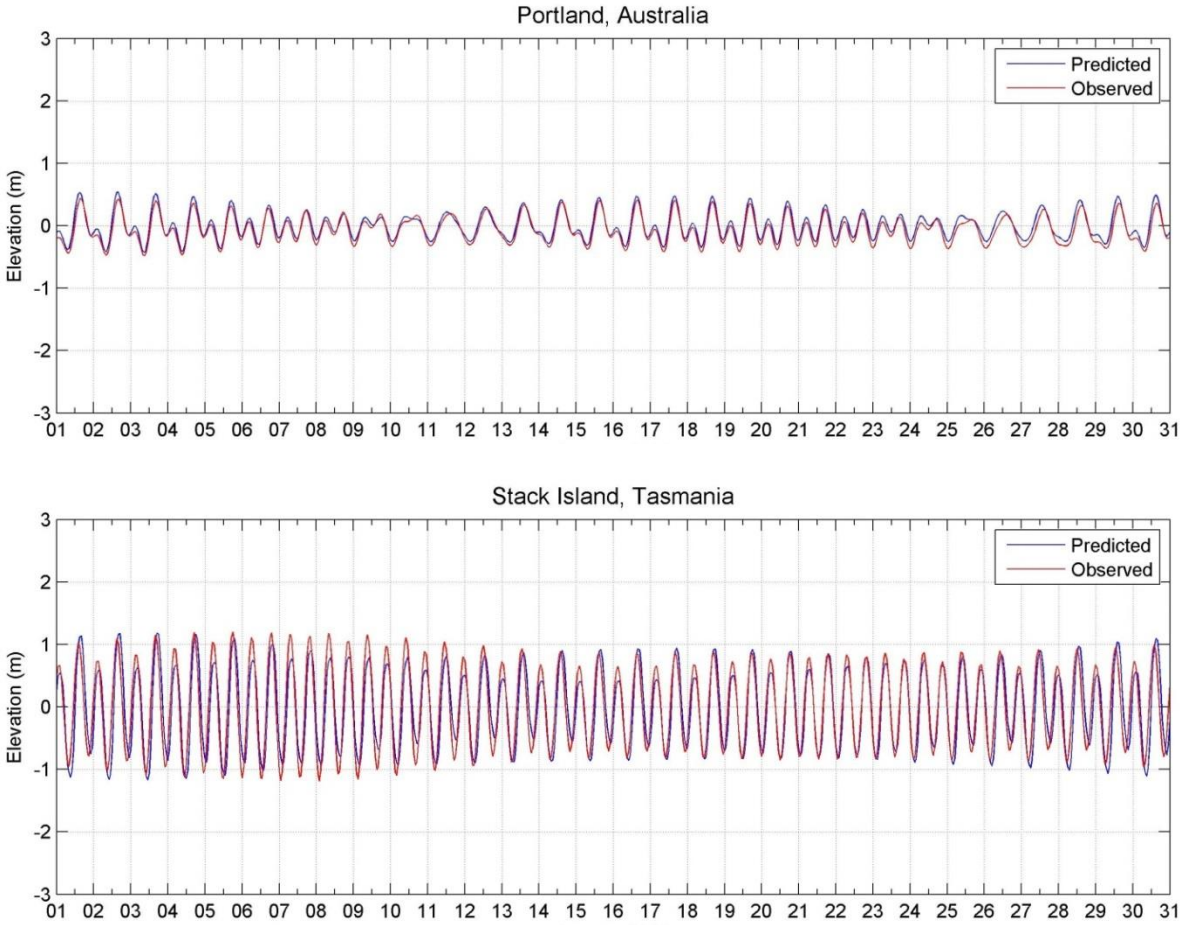

Figure 3.6 Comparison between HYDROMAP predicted (blue line) and observed (red line) surface elevation at tidal stations Portland (upper image) and Stack Island (lower image).

3.2 Ocean Currents

Data describing the flow of ocean currents for the years 2010 to 2019 (inclusive) were obtained from HYCOM (Hybrid Coordinate Ocean Model, Chassignet et al., 2007), which is operated by the HYCOM Consortium, sponsored by the Global Ocean Data Assimilation Experiment (GODAE). HYCOM is a data-assimilative, three-dimensional ocean model that is run as a hindcast (for a past period), assimilating time-varying observations of sea surface height, sea surface temperature and in-situ temperature and salinity measurements (Chassignet et al., 2009). The HYCOM predictions for drift currents are produced at a horizontal spatial resolution of approximately 8.25 km (1/12th of a degree) over the region, at a frequency of every 3 hours. HYCOM uses isopycnal layers in the open, stratified ocean, but uses the layered continuity equation to make a dynamically smooth transition to a terrain-following coordinate in shallow coastal regions, and to z-level coordinates in the mixed layer and/or unstratified seas.

3.3 Surface Currents

The sections below present the monthly and total surface current data extracted from the closest node to each release location (or Scenario) used in this study.

Note the convention for defining current direction is the direction the current flows towards, which is used to reference current direction throughout this report. Each branch of the rose represents the currents flowing towards that direction, with north to the top of the diagram. The branches are divided into segments of different colour, which represent the current speed ranges for each direction. The length of each coloured segment is relative to the proportion of currents flowing within the corresponding speed and direction.

3.3.1 Dolphin

Table 3.2 presents the average and maximum surface current speeds nearby the Dolphin release location by combining the ocean and tidal currents.

The predicted current speed and direction at the Dolphin release location is strongly dominated by the tides. The average surface current speed was shown to be consistent throughout the year at approximately 0.42 m/s, while the monthly maximum current speeds varied between 1.57 m/s (October) and 1.97 m/s (July). The dominant surface current direction followed that of the flooding and ebbing tides, northeast and southwest, respectively.

Figure 3.7 and Figure 3.8 show the monthly and total surface current rose distributions for the selected location.

Table 3.2 Predicted monthly average and maximum surface current speeds nearby Dolphin. The data was derived by combining the HYCOM ocean data and HYDROMAP tidal data from 2010–2019 (inclusive).

Month	Average current speed (m/s)	Maximum current speed (m/s)	General direction(s) (Towards)
January	0.42	1.69	Tidally dominated from a predominant southwest and northeast direction
February	0.41	1.50	
March	0.41	1.67	
April	**0.40**	1.63	
May	0.42	1.85	
June	0.41	1.75	
July	0.43	**1.97**	
August	0.42	1.79	
September	**0.44**	1.81	
October	0.42	**1.57**	
November	0.43	1.74	
December	0.42	1.82	
Minimum	**0.40**	**1.57**	
Maximum	**0.44**	**1.97**	

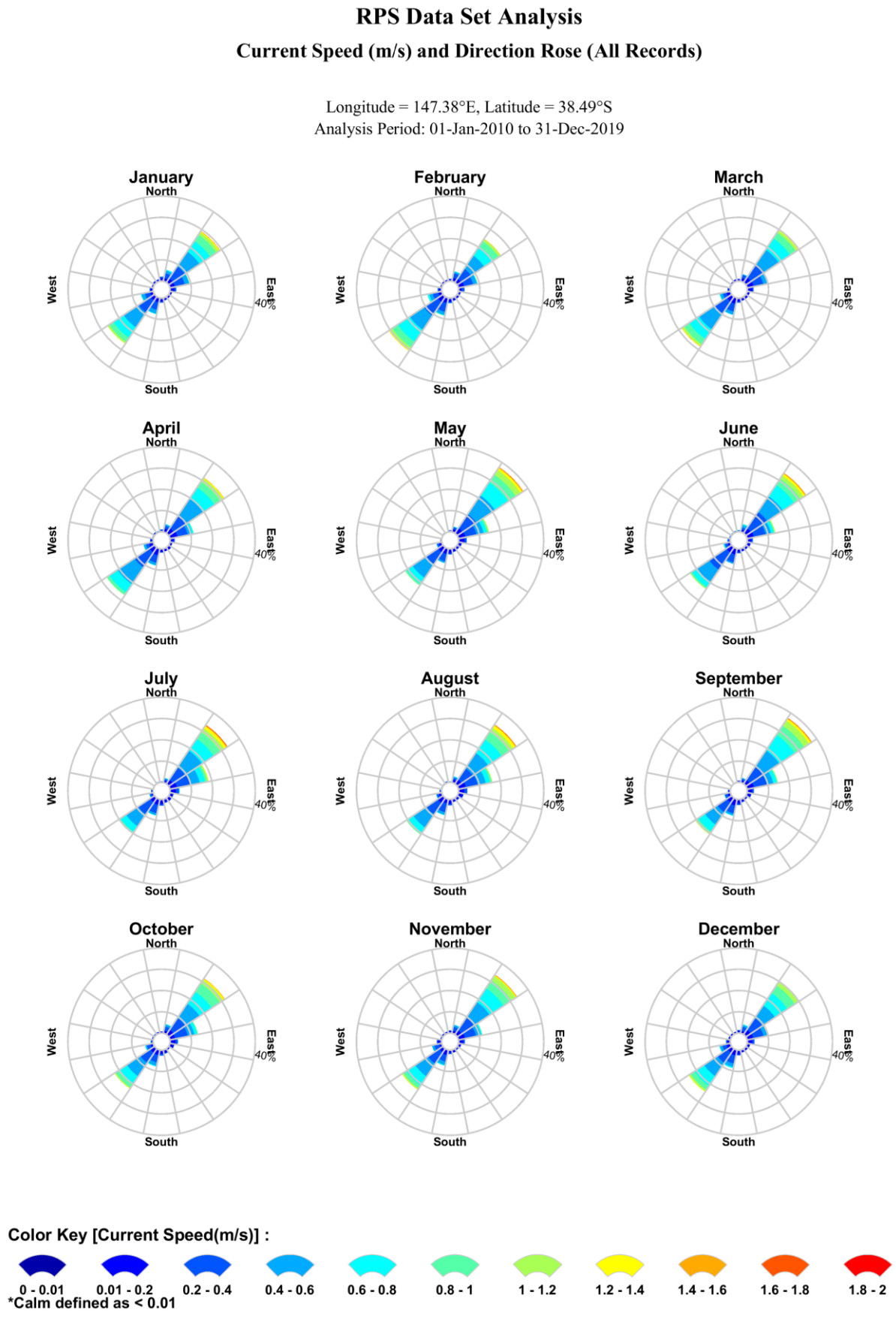

Figure 3.7 Monthly surface current rose plots nearby Dolphin derived by combining the HYDROMAP tidal currents and HYCOM ocean currents for 2010–2019 (inclusive).

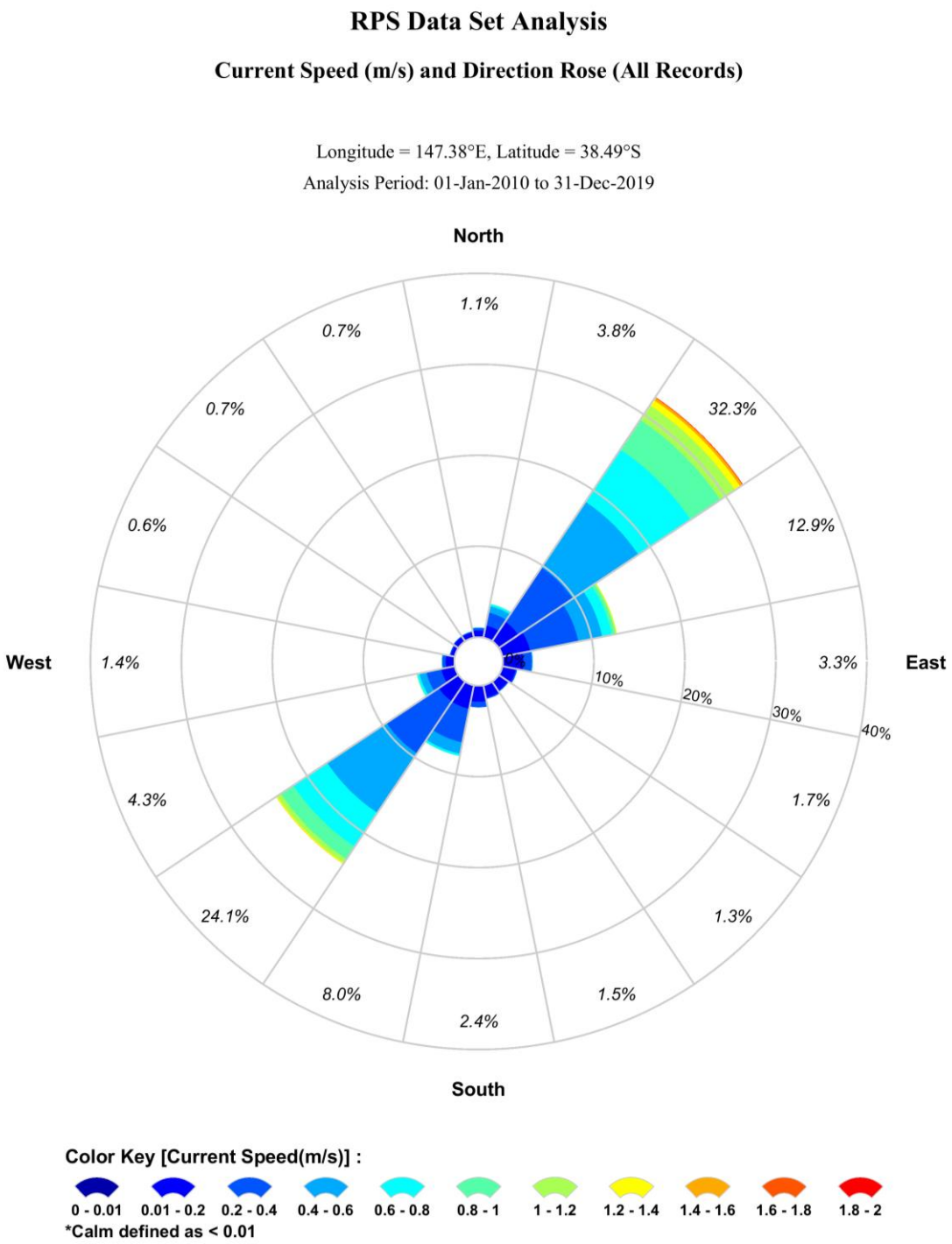

Figure 3.8 Total surface current rose plot nearby Dolphin platform derived by combining the HYDROMAP tidal currents and HYCOM ocean currents for 2010–2019 (inclusive).

3.3.2 Whiting

Table 3.3 presents the average and maximum surface current speeds nearby the Whiting release location by combining the ocean and tidal currents.

Predicted surface current speeds near the Whiting release location varied throughout the year with monthly maximum speeds ranging between approximately 1.16 m/s (February) and 1.77 m/s (July). The dominant surface current direction was mostly aligned with the southwest-northeast axis during the whole year, with a dominant northeast direction in winter.

Figure 3.9 and Figure 3.10 show the monthly and total surface current rose distributions for the selected location.

Table 3.3 Predicted monthly average and maximum surface current speeds nearby Whiting. The data was derived by combining the HYCOM ocean data and HYDROMAP tidal data from 2010–2019 (inclusive).

Month	Average current speed (m/s)	Maximum current speed (m/s)	General direction(s) (Towards)
January	0.31	1.32	Southwest and northeast
February	0.31	**1.16**	Southwest and northeast
March	0.31	1.37	Southwest and northeast
April	**0.28**	1.18	Northeast
May	0.33	1.64	Northeast
June	0.30	1.46	Northeast
July	**0.34**	**1.77**	Northeast
August	0.33	1.46	Northeast
September	**0.34**	1.63	Northeast
October	0.32	1.33	Northeast
November	0.32	1.38	Northeast
December	0.31	1.55	Southwest and northeast
Minimum	**0.28**	**1.16**	-
Maximum	**0.34**	**1.77**	

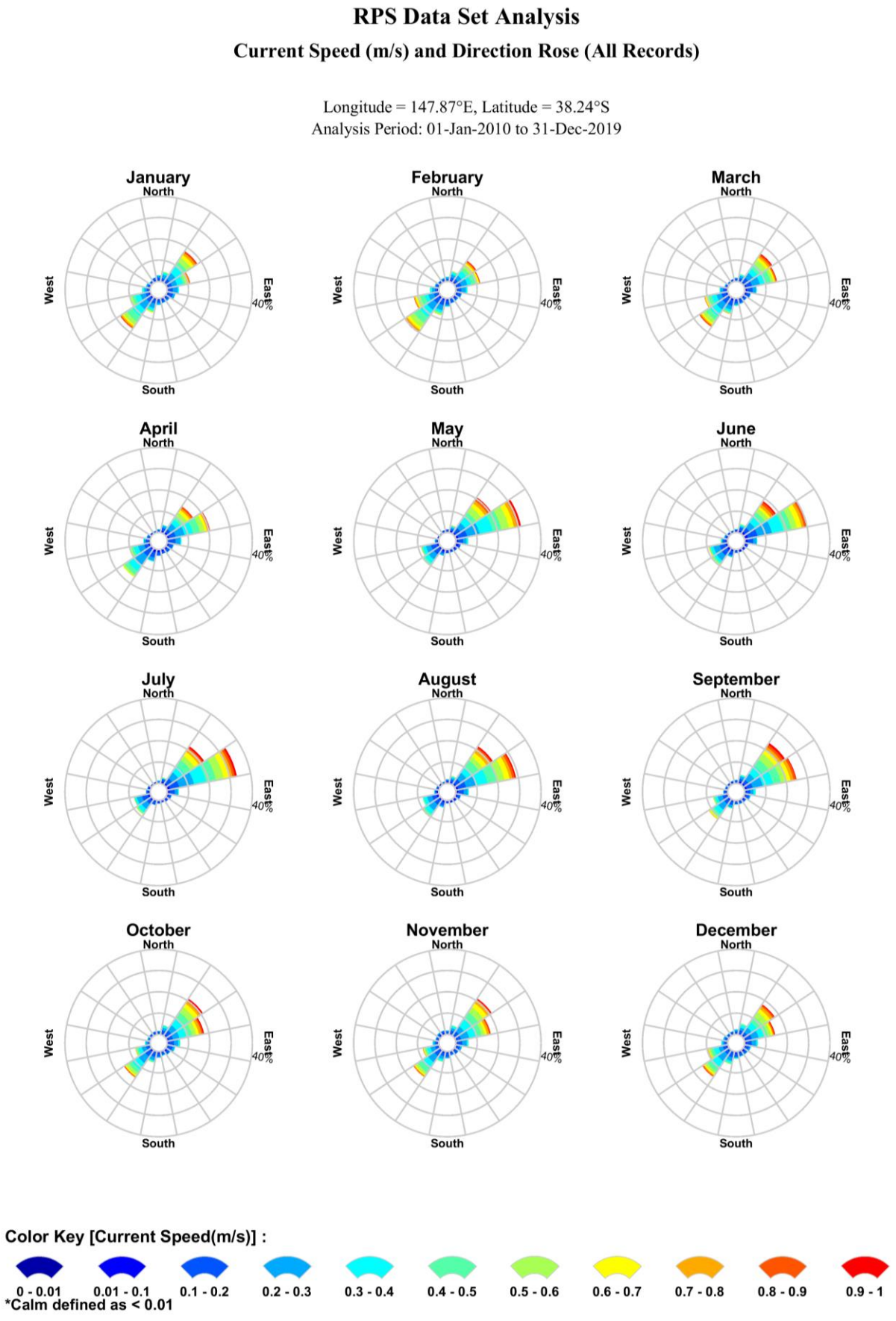

Figure 3.9 Monthly surface current rose plots nearby Whiting derived by combining the HYDROMAP tidal currents and HYCOM ocean currents for 2010–2019 (inclusive).

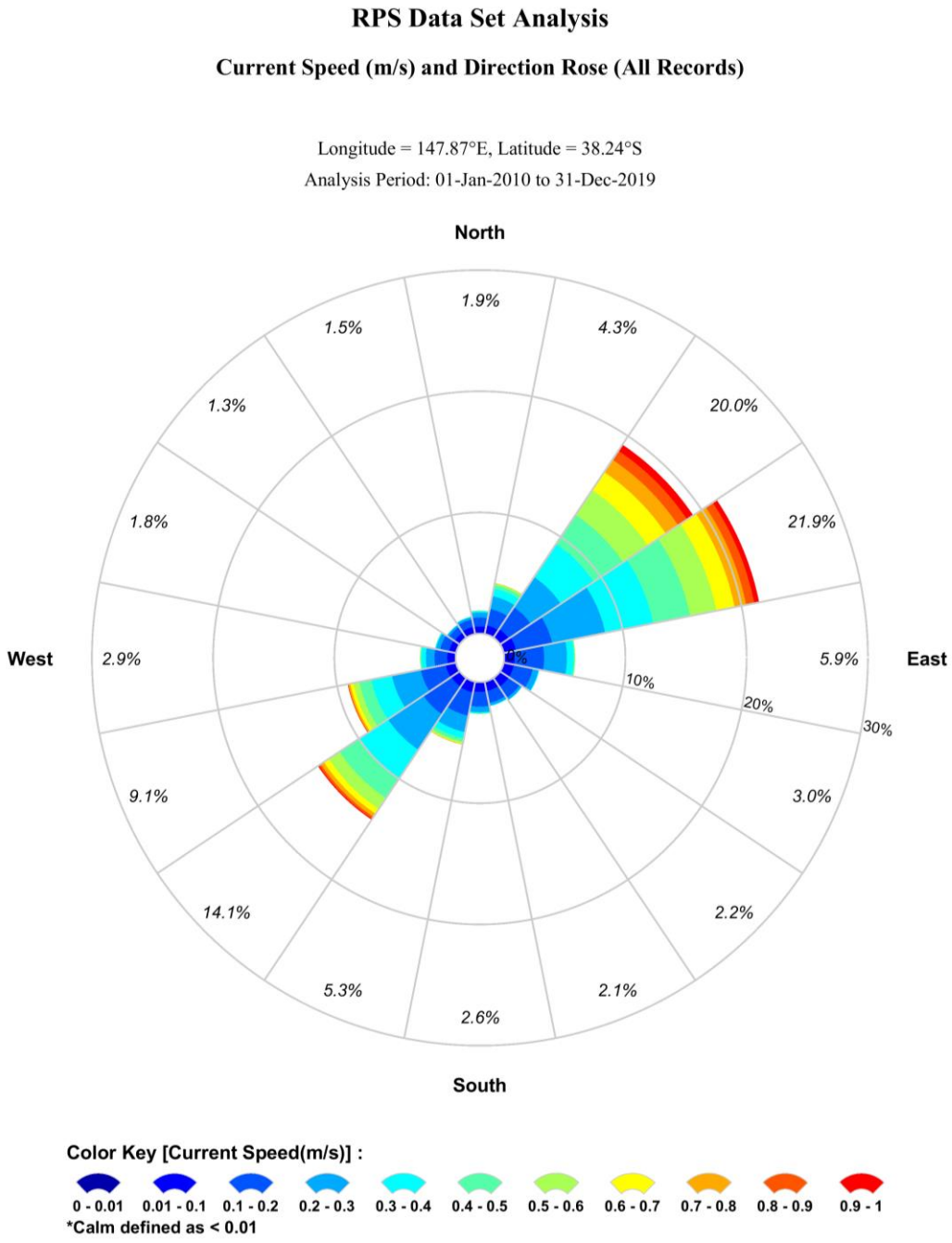

Figure 3.10 Total surface current rose plot nearby Whiting platform derived by combining the HYDROMAP tidal currents and HYCOM ocean currents for 2010–2019 (inclusive).

3.3.3 Fortescue

Table 3.4 presents the average and maximum surface current speeds nearby the Fortescue release location by combining the ocean and tidal currents.

Predicted surface current speeds near the Fortescue release location varied throughout the year with monthly maximum speeds ranging between approximately 1.31 m/s (February) and 2.00 m/s (July). The dominant surface current direction was predominantly aligned with the southwest-northeast axis during the whole year, with a dominant northeast direction in winter and southwest direction in summer.

Figure 3.11 and Figure 3.12 show the monthly and total surface current rose distributions for the selected location.

Table 3.4 Predicted monthly average and maximum surface current speeds nearby Fortescue. The data was derived by combining the HYCOM ocean data and HYDROMAP tidal data from 2010–2019 (inclusive).

Month	Average current speed (m/s)	Maximum current speed (m/s)	General direction(s) (Towards)
January	0.32	1.35	Southwest
February	0.35	**1.31**	Southwest
March	0.34	1.38	Southwest
April	**0.29**	1.42	Varied
May	0.36	1.69	Northeast
June	0.35	1.48	Northeast
July	**0.42**	**2.00**	Northeast
August	0.40	1.58	Northeast
September	0.38	1.83	Northeast
October	0.35	1.34	Northeast
November	0.34	1.40	Northeast
December	0.34	1.44	Varied
Minimum	**0.29**	**1.31**	-
Maximum	**0.42**	**2.00**	

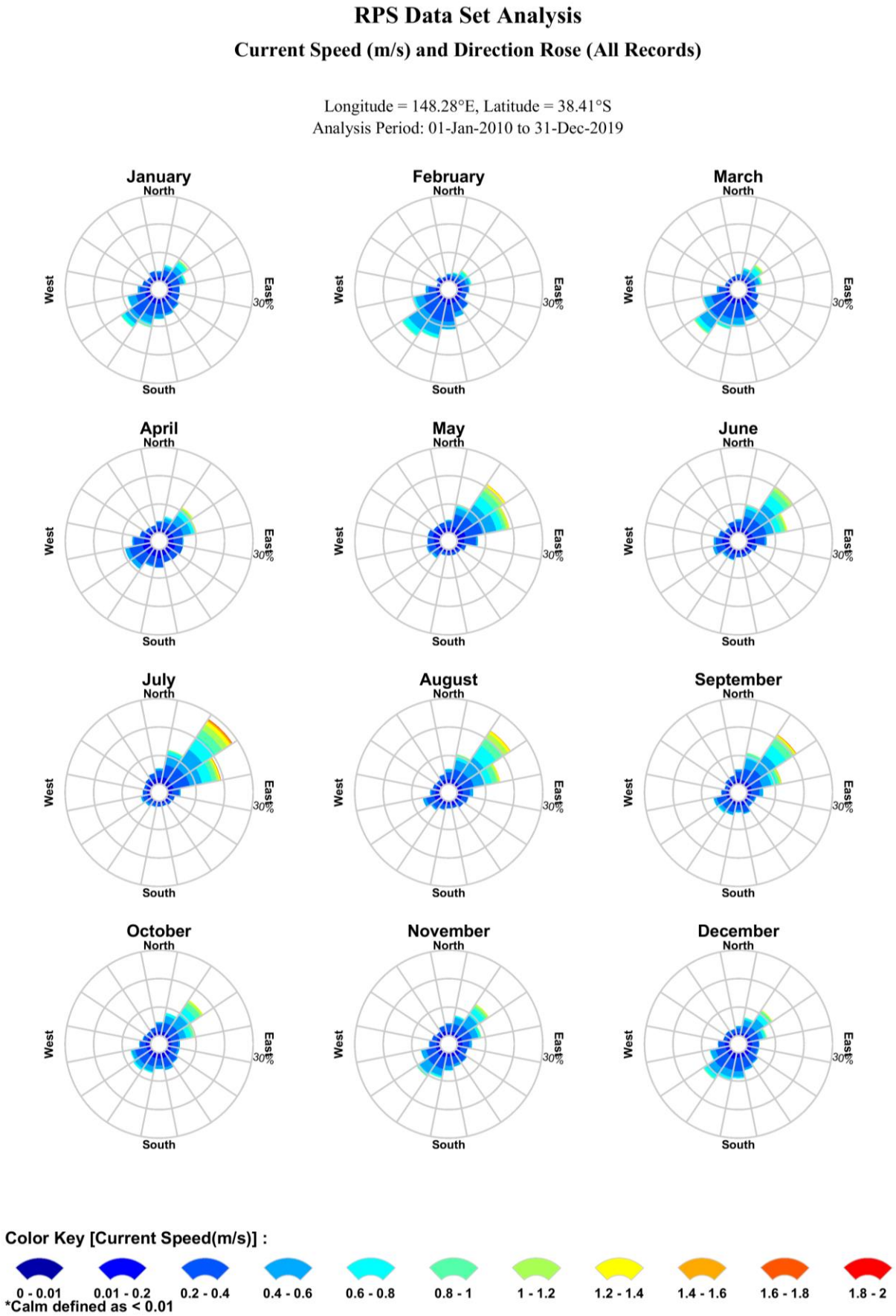

Figure 3.11 Monthly surface current rose plots nearby Fortescue derived by combining the HYDROMAP tidal currents and HYCOM ocean currents for 2010–2019 (inclusive).

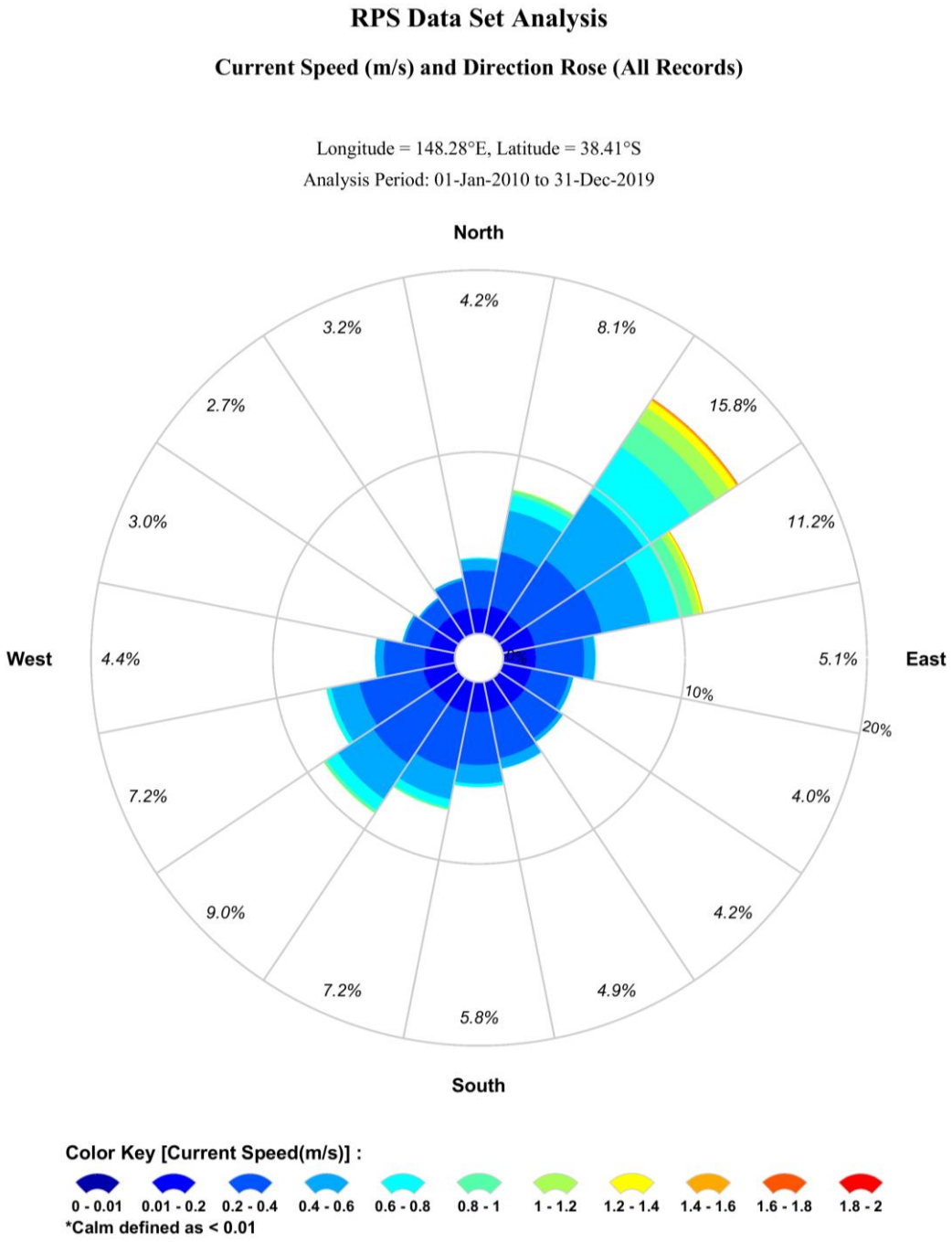

Figure 3.12 Total surface current rose plot nearby Fortescue platform derived by combining the HYDROMAP tidal currents and HYCOM ocean currents for 2010–2019 (inclusive).

3.3.4 Kingfish A

Table 3.5 presents the average and maximum surface current speeds nearby the Kingfish A release location by combining the ocean and tidal currents.

Predicted surface current speeds near the Kingfish A release location varied throughout the year with monthly maximum speeds ranging between approximately 1.34 m/s (November) and 2.02 m/s (July). The dominant surface current direction was predominantly aligned with the east-west axis during the whole year, with a dominant east-northeast direction in winter and west-southwest direction in summer.

Figure 3.13 and Figure 3.14 show the monthly and total surface current rose distributions for the selected location.

Table 3.5 Predicted monthly average and maximum surface current speeds nearby Kingfish A. The data was derived by combining the HYCOM ocean data and HYDROMAP tidal data from 2010–2019 (inclusive).

Month	Average current speed (m/s)	Maximum current speed (m/s)	General direction(s) (Towards)
January	0.36	1.44	West-southwest and East-northeast
February	0.37	1.40	West-southwest
March	0.36	1.41	West-southwest
April	**0.33**	1.44	West-southwest and East-northeast
May	0.37	1.59	East-northeast and West
June	0.37	1.60	East-northeast and West
July	**0.41**	**2.02**	East-northeast
August	0.40	1.65	East-northeast
September	0.39	1.75	East-northeast
October	0.37	1.35	East-northeast
November	0.37	**1.34**	East-northeast and West-southwest
December	0.36	1.38	East-northeast and West-southwest
Minimum	**0.33**	**1.34**	-
Maximum	**0.41**	**2.02**	

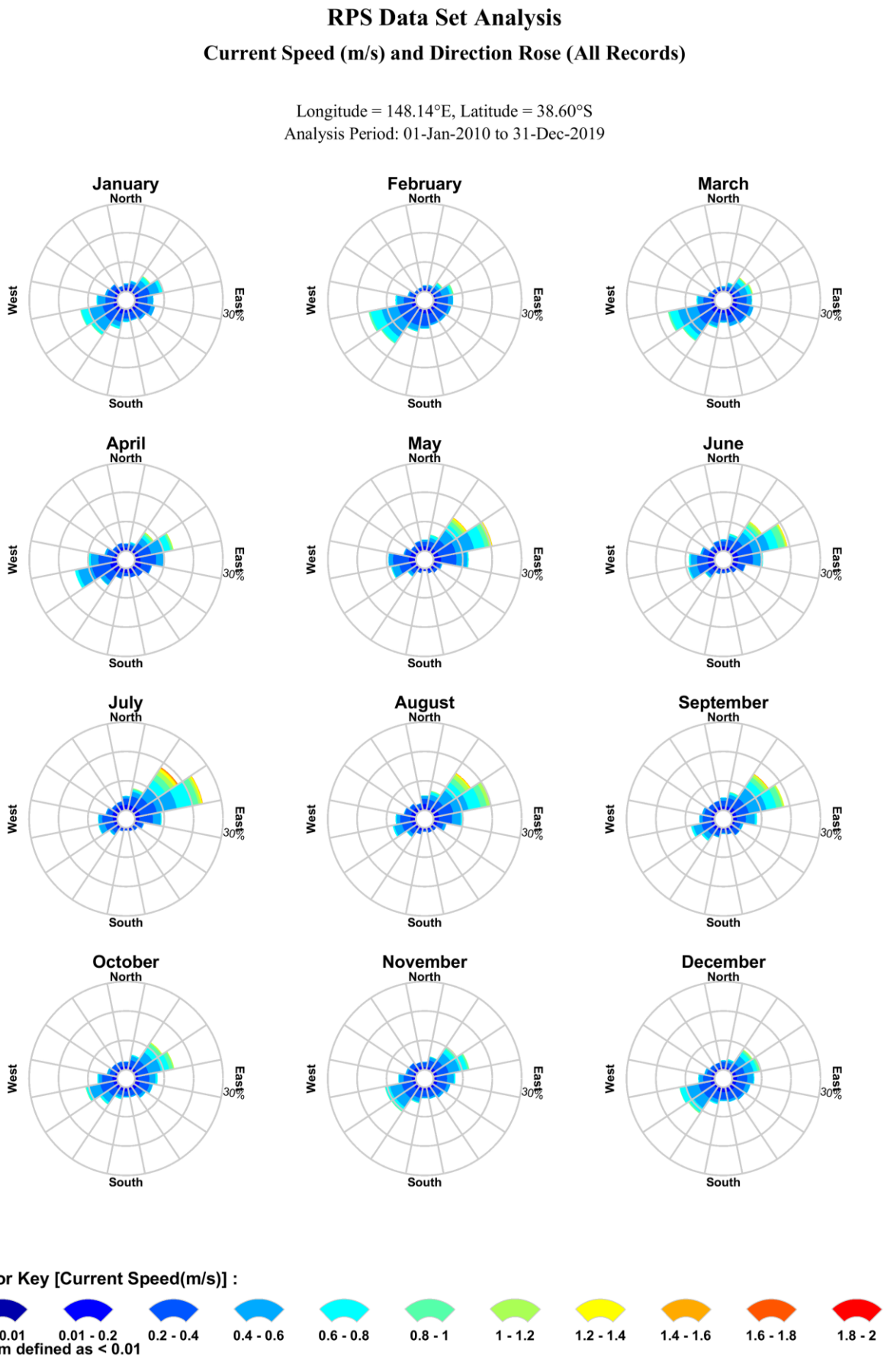

Figure 3.13 Monthly surface current rose plots nearby Kingfish A derived by combining the HYDROMAP tidal currents and HYCOM ocean currents for 2010–2019 (inclusive).

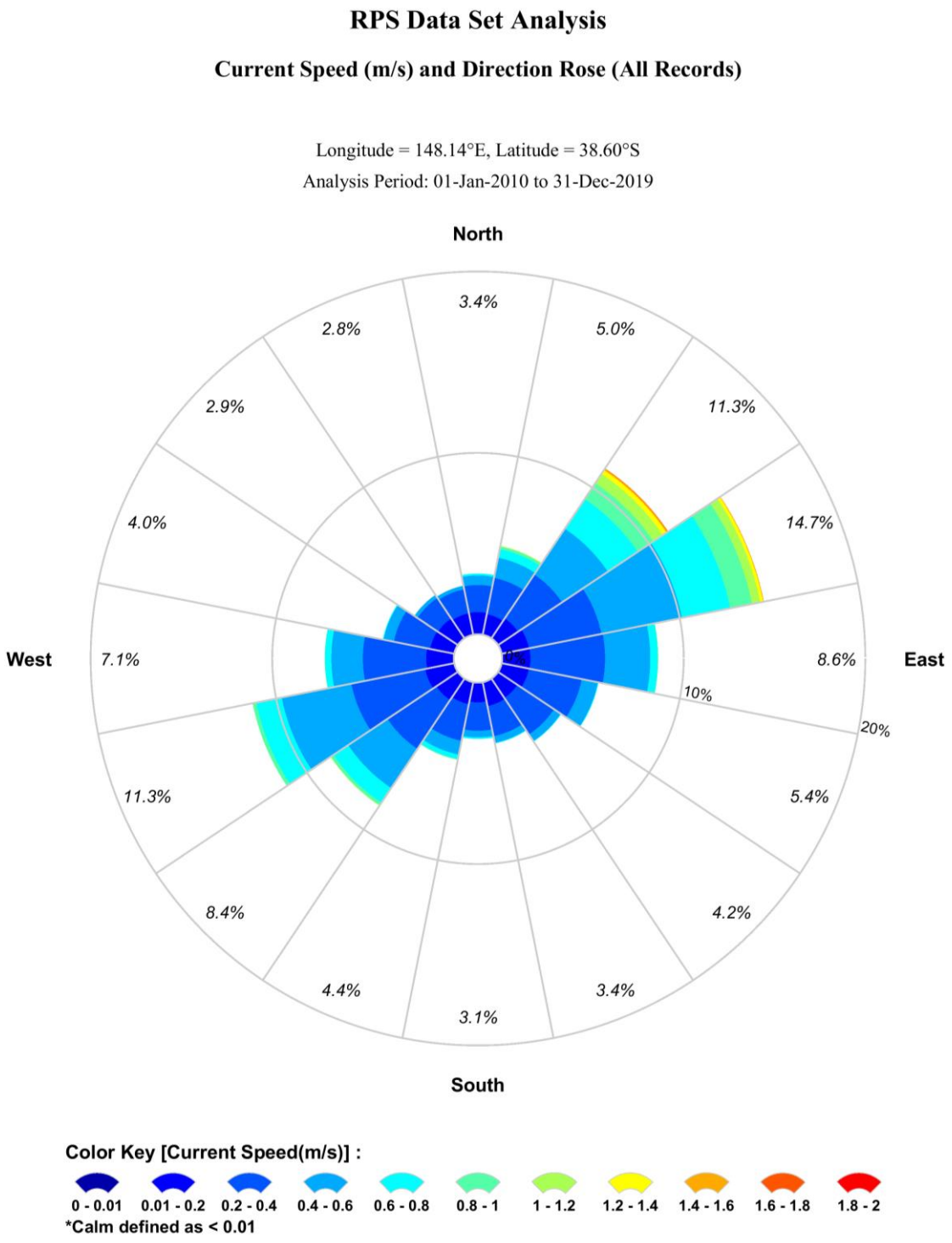

Figure 3.14 Total surface current rose plot nearby Kingfish A platform derived by combining the HYDROMAP tidal currents and HYCOM ocean currents for 2010–2019 (inclusive).

3.3.5 Flounder

Table 3.6 presents the average and maximum surface current speeds nearby the Flounder release location by combining the ocean and tidal currents.

Predicted surface current speeds near the Flounder release location varied throughout the year with monthly maximum speeds ranging between 1.06 m/s (February) and 1.94 m/s (July). The dominant surface current direction was mostly aligned with the southwest-northeast axis during the whole year, with a dominant northeast direction in winter and southwest direction in summer.

Figure 3.15 and Figure 3.16 show the monthly and total surface current rose distributions for the selected location.

Table 3.6 Predicted monthly average and maximum surface current speeds nearby Flounder. The data was derived by combining the HYCOM ocean data and HYDROMAP tidal data from 2010–2019 (inclusive).

Month	Average current speed (m/s)	Maximum current speed (m/s)	General direction(s) (Towards)
January	0.27	1.24	Southwest and northeast
February	0.28	**1.06**	Southwest and northeast
March	0.28	1.30	Southwest and northeast
April	**0.24**	1.30	Northeast
May	0.31	1.62	Northeast
June	0.30	1.45	Northeast
July	**0.36**	**1.94**	Northeast
August	0.35	1.54	Northeast
September	0.34	1.81	Northeast
October	0.31	1.27	Northeast and south
November	0.30	1.37	Northeast and southwest
December	0.30	1.36	Northeast and southwest
Minimum	**0.24**	**1.06**	-
Maximum	**0.36**	**1.94**	

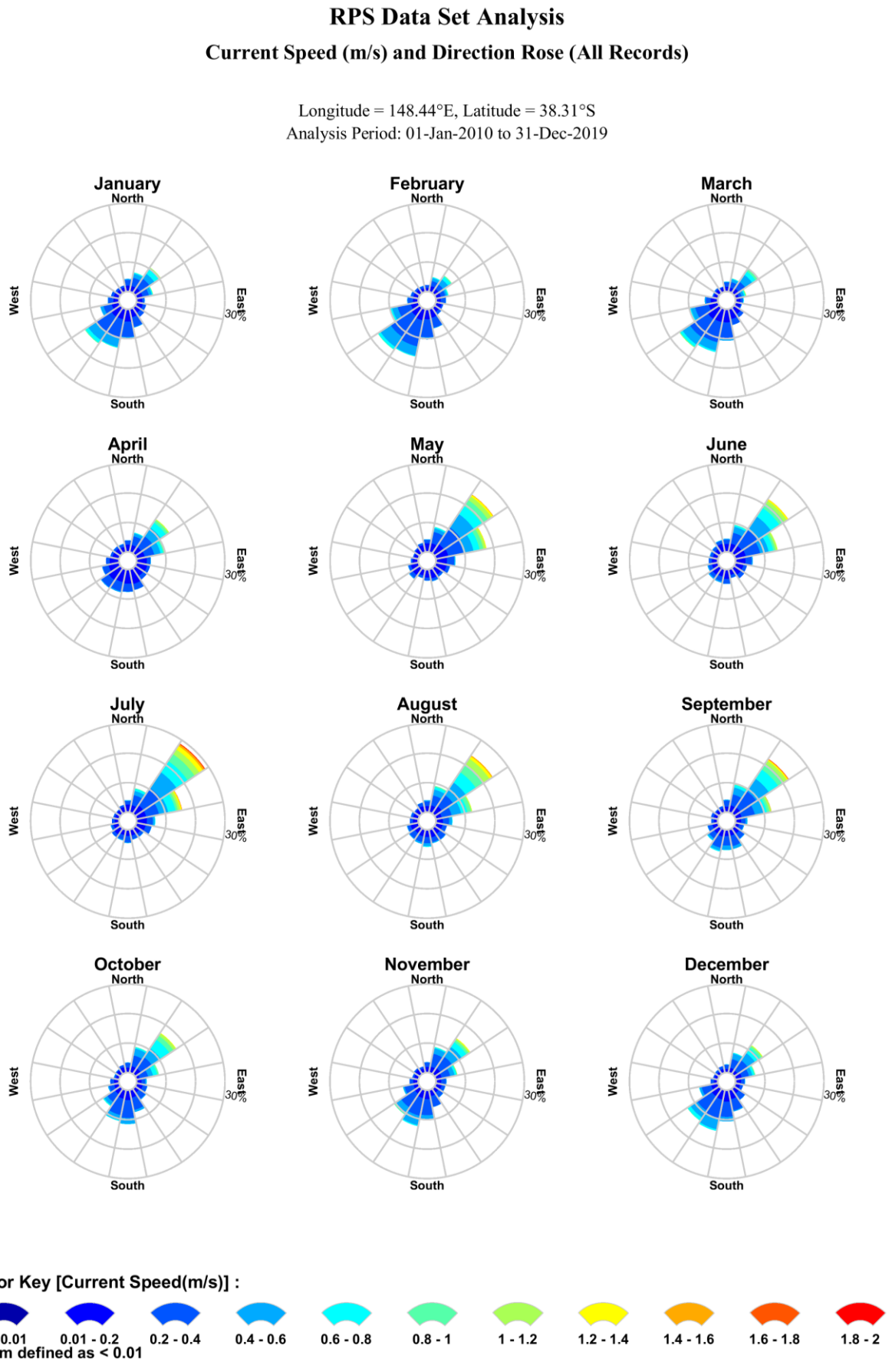

Figure 3.15 Monthly surface current rose plots nearby Flounder derived by combining the HYDROMAP tidal currents and HYCOM ocean currents for 2010–2019 (inclusive).

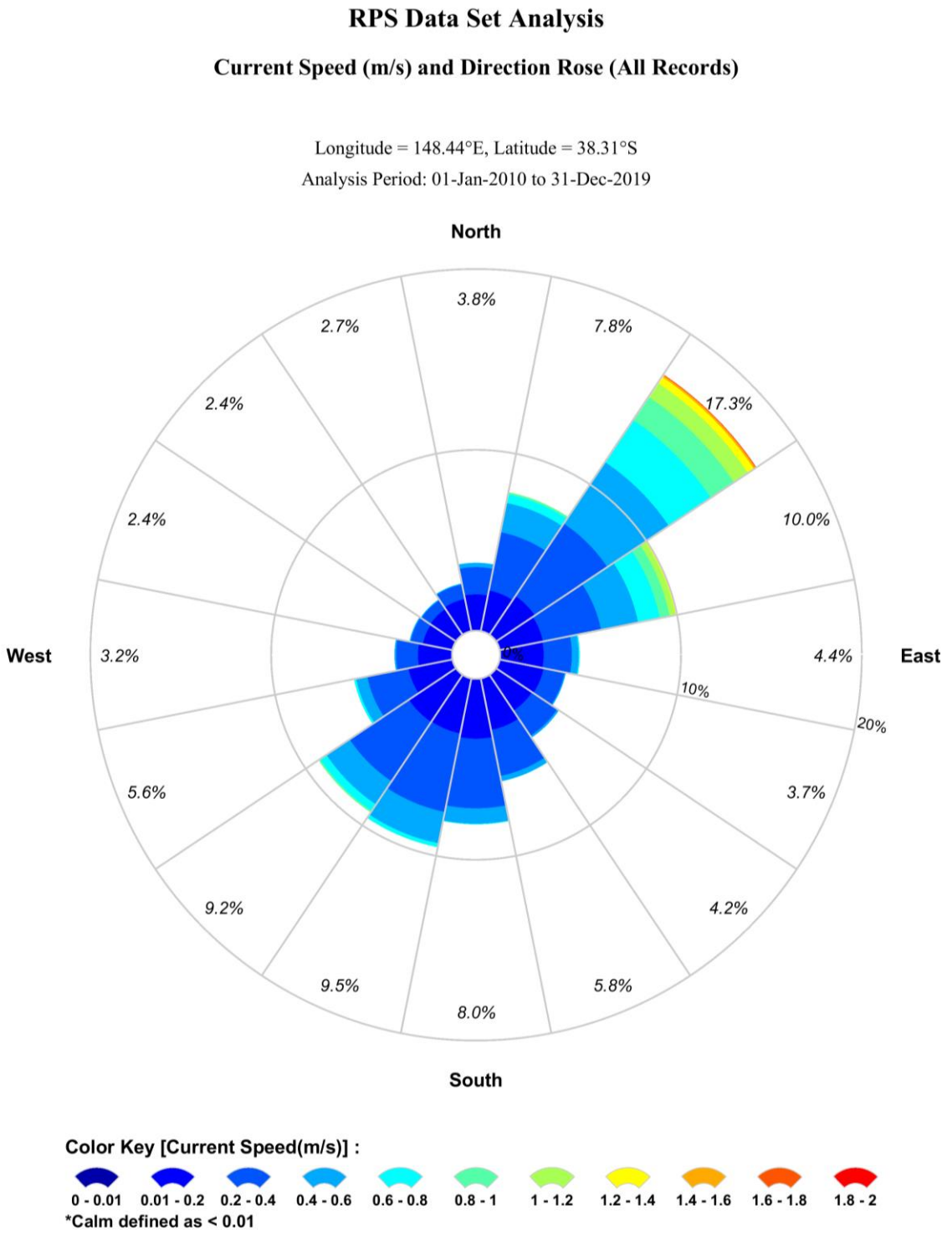

Figure 3.16 Total surface current rose plot nearby Flounder platform derived by combining the HYDROMAP tidal currents and HYCOM ocean currents for 2010–2019 (inclusive).

4 WIND DATA

High resolution wind data for the years 2010 to 2019 (inclusive) were sourced from the National Centre for Environmental Prediction (NCEP) Climate Forecast System Reanalysis dataset (CFSR; see Saha et al., 2010). The CFSR wind model is a fully coupled, data-assimilative hindcast model representing the interaction between the earth's oceans, land, and atmosphere. The gridded wind data output is available at ¼ of a degree resolution (~33 km) and 1-hourly time intervals. Figure 4.1 shows the spatial resolution of the wind field used as input into the oil spill model.

Due to the uniformity of the wind field over long distances without coastal interference, a detailed wind analysis is provided for the offshore and nearshore regions. The offshore region encompasses WTA, FTA, KFA and FLA, while the nearshore region is a representation of DPA.

Note that the atmospheric convention for defining wind direction, that is, the direction the wind blows from, is used to reference wind direction throughout this report. Each branch of the rose represents wind coming from that direction, with north to the top of the diagram. Sixteen directions are used. The branches are divided into segments of different colour, which represent wind speed ranges from that direction. The length of each segment within a branch is proportional to the frequency of winds blowing within the corresponding range of speeds from that direction.

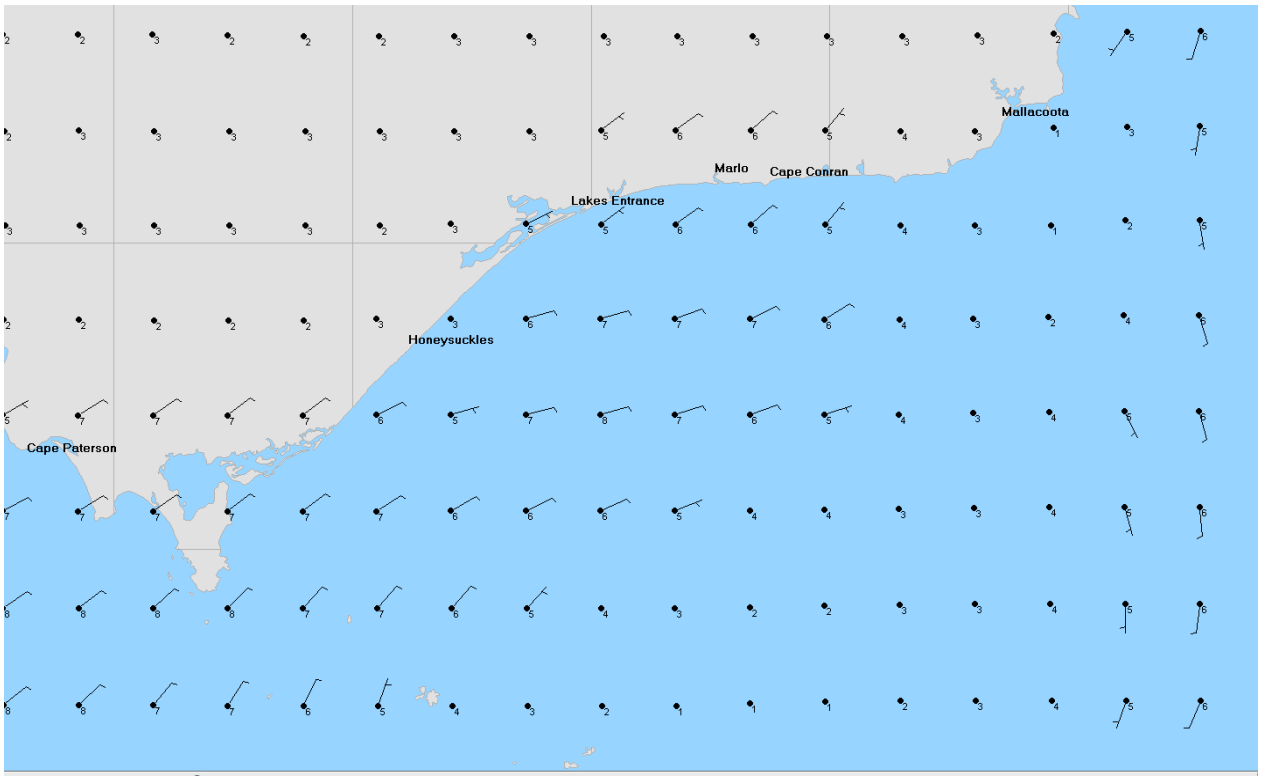

Figure 4.1 Spatial resolution of the CFSR modelled wind data used as input into the oil spill model.

4.1 Offshore Locations

Note, the offshore locations refer to the WTA, FTA, KFA and FLA release locations.

Table 4.1 presents the monthly average and maximum winds derived from a CFSR wind node nearby the offshore release locations. The wind data demonstrated average monthly wind speeds ranging from 14.0 knots (April) to 17.4 knots (July). The dominant wind direction varied throughout the year, though westerly and south-westerly winds tend to be the dominant direction at the offshore locations.

Figure 4.2 and Figure 4.3 show the monthly and total wind rose distributions derived from the CFSR data for the selected node nearby the offshore release locations.

Table 4.1 Predicted average and maximum winds representative for the selected node nearby the offshore release locations (WTA, FTA, KFA and FLA). Data derived from CFSR hindcast model from 2010–2019 (inclusive).

Month	Average wind speed (knots)	Maximum wind speed (knots)	General direction(s) (From)
January	15.2	45.5	West-southwest and east-northeast
February	15.1	44.6	West-southwest and east-northeast
March	14.8	46.6	West-southwest and east-northeast
April	**14.0**	40.7	West-southwest
May	16.7	44.6	West-southwest
June	16.3	48.9	West
July	**17.4**	47.1	West
August	16.8	46.1	West
September	17.0	48.2	West-southwest
October	15.9	**40.4**	West-southwest
November	15.7	**49.5**	West-southwest
December	15.4	43.5	West-southwest
Minimum	**14.0**	**40.4**	
Maximum	**17.4**	**49.5**	

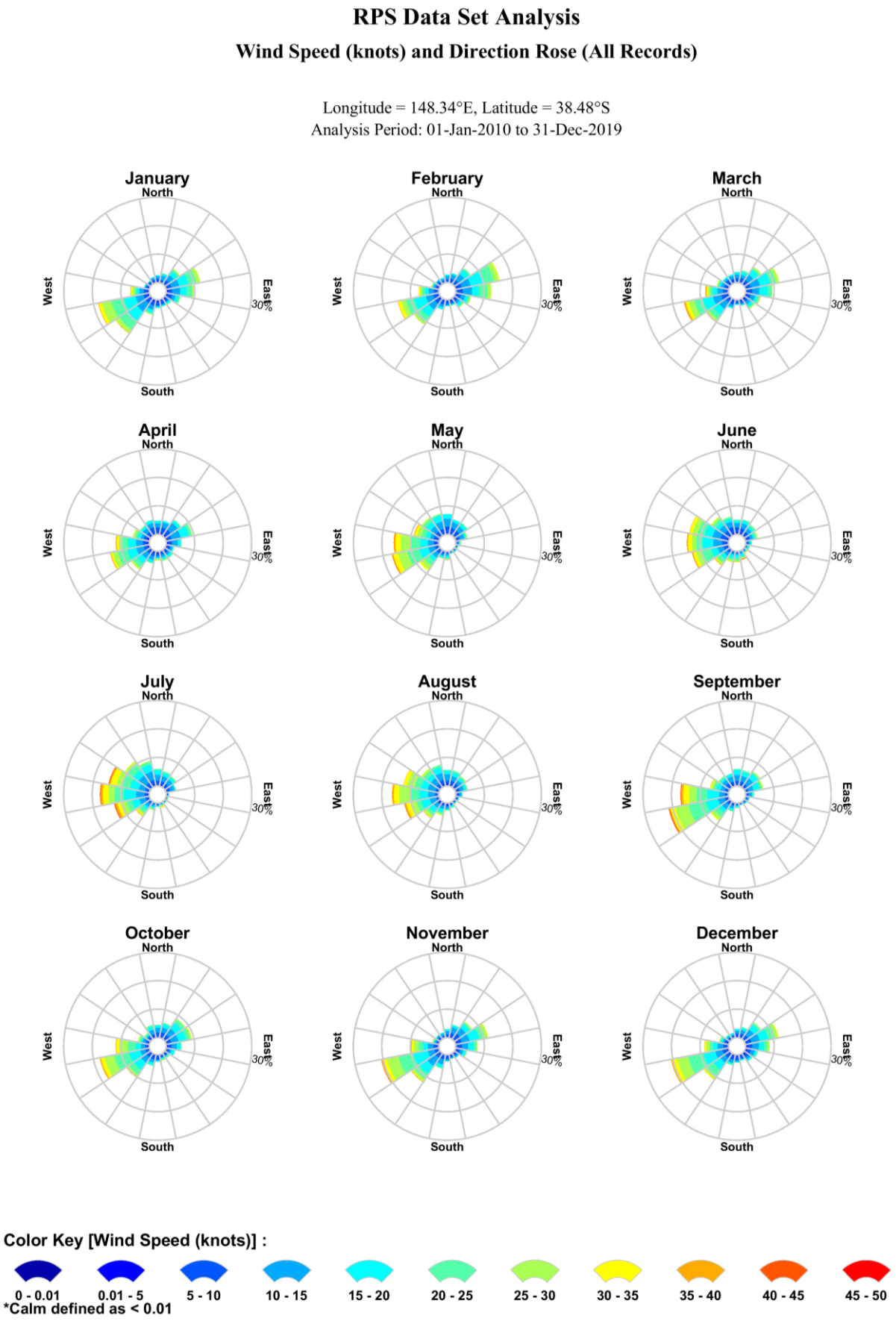

Figure 4.2 Modelled monthly wind rose distributions from 2010–2019 (inclusive) for the node nearby the offshore release locations (WTA, FTA, KFA and FLA).

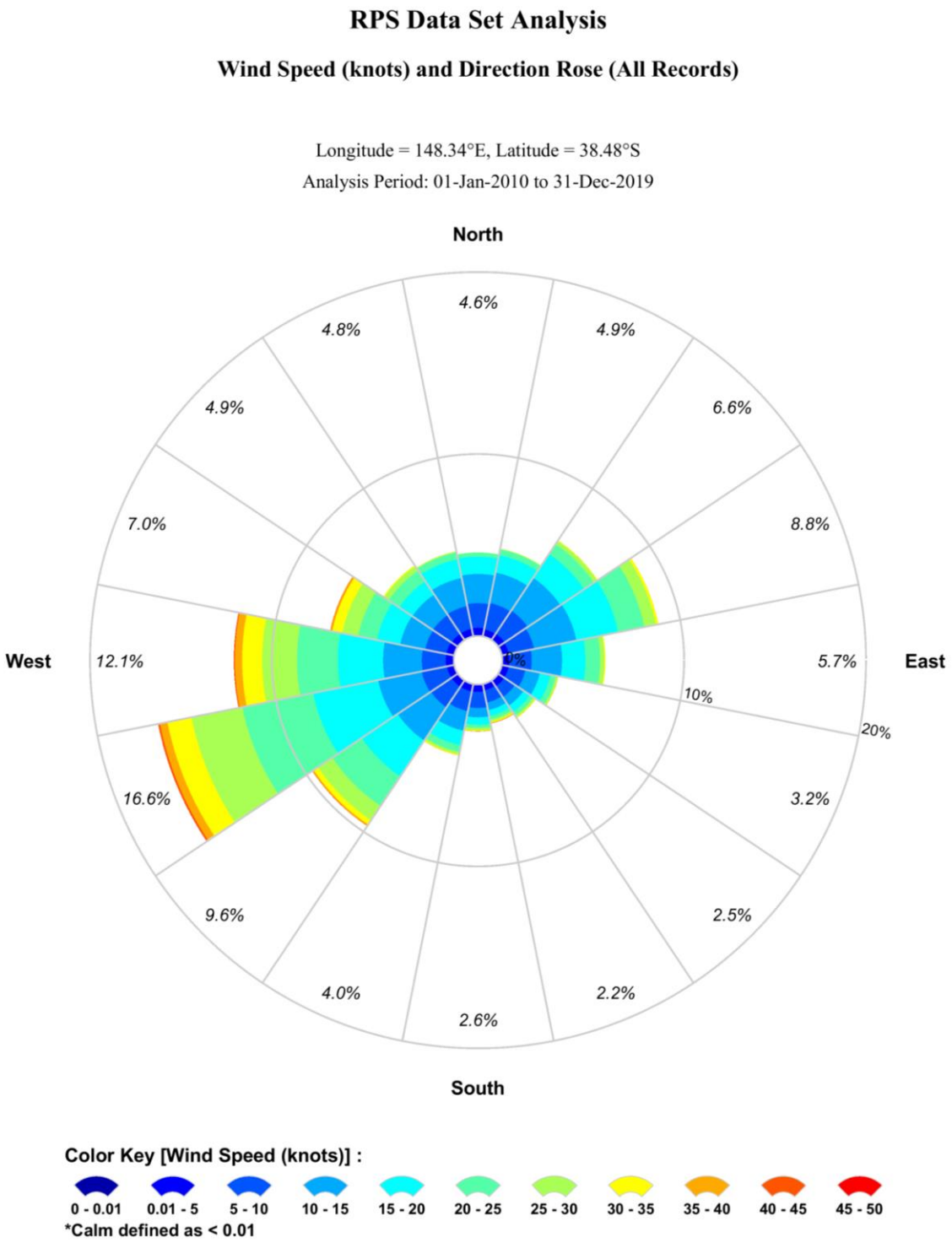

Figure 4.3 Modelled total wind rose distributions from 2010–2019 (inclusive) for the node nearby the offshore release locations (WTA, FTA, KFA and FLA).

4.2 Nearshore Location

Note, the nearshore location refers to the DPA release location.

Table 4.2 presents the monthly average and maximum winds derived from the CFSR wind node nearby the nearshore release location. The wind data demonstrated average monthly wind speeds ranging from 9.5 knots (April) to 11.8 knots (July). The dominant wind direction varied throughout the year, though westerly and south-westerly winds tend to be the dominant direction nearby the nearshore release location.

Figure 4.4 and Figure 4.5 show the monthly and total wind rose distributions derived from the CFSR data for the selected node nearby the nearshore release location.

Table 4.2 Predicted average and maximum winds representative for the selected node nearby the nearshore release location (DPA). Data derived from CFSR hindcast model from 2010–2019 (inclusive).

Month	Average wind speed (knots)	Maximum wind speed (knots)	General direction(s) (From)
January	10.5	29.0	West-southwest and east-northeast
February	10.6	33.7	West-southwest and east-northeast
March	10.2	34.3	West-southwest and east-northeast
April	**9.5**	33.0	West-southwest and east-northeast
May	11.2	34.2	West
June	10.8	36.6	West-northwest
July	**11.8**	**33.6**	West-northwest
August	11.5	32.3	West-northwest
September	11.4	34.2	West-southwest
October	10.9	**28.5**	West-southwest
November	10.8	33.9	West-southwest and east
December	10.7	31.9	West-southwest and east
Minimum	**9.5**	**28.5**	
Maximum	**11.8**	**36.6**	

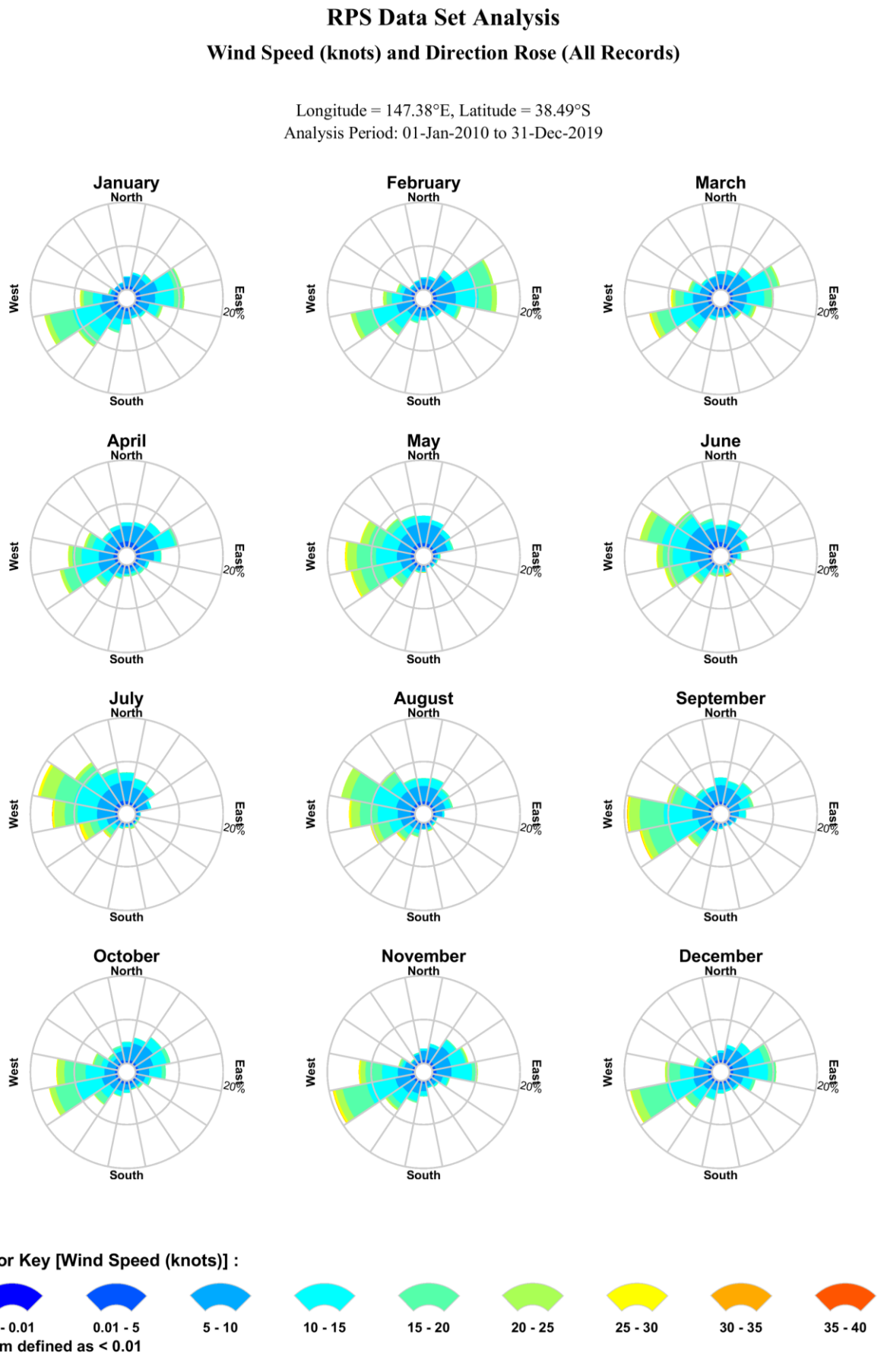

Figure 4.4 Modelled monthly wind rose distributions from 2010–2019 (inclusive) for the node nearby the nearshore release location (DPA).

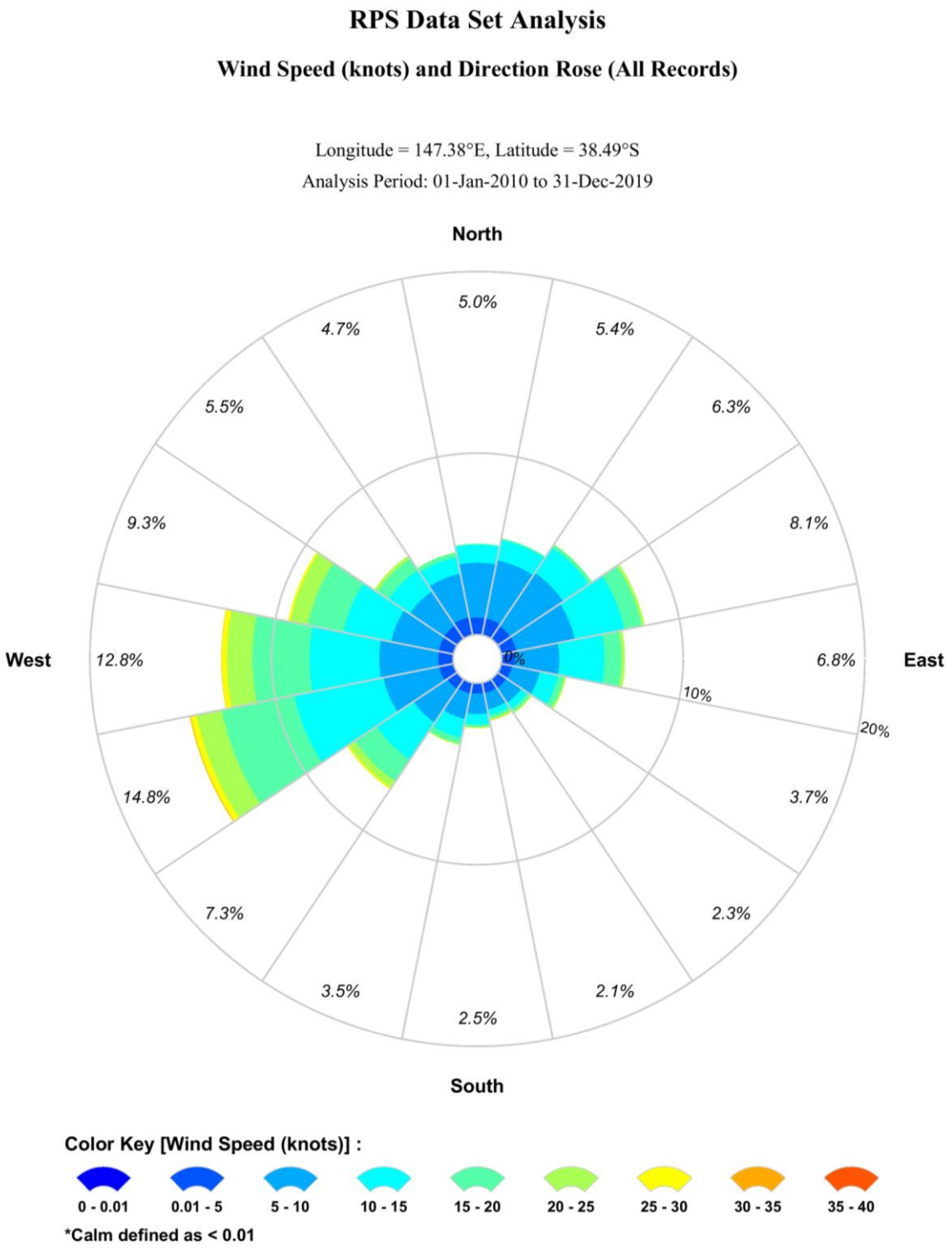

Figure 4.5 Modelled total wind rose distributions from 2010–2019 (inclusive) for the node nearby the nearshore release location (DPA).

5 WATER TEMPERATURE AND SALINITY

The monthly sea temperature and salinity profiles of the water column within the study were obtained from the World Ocean Atlas 2018 database produced by the National Oceanographic Data Centre (National Oceanic and Atmospheric Administration) and its co-located World Data Center for Oceanography (see Levitus et al., 2013). These parameters were used as factors to inform the weathering, movement, and evaporative loss of hydrocarbon spills in the surface and sub-surface layers.

Table 5.1 presents the water temperature and salinity of the surface layer at the representative offshore location. The monthly average sea surface temperatures ranged between 13.0°C (September) and 20.9°C (March). The monthly average surface salinity values remained consistent between 35.4 psu and 35.5 psu.

Figure 5.1 illustrates the vertical profile of sea temperature and salinity nearby the offshore release locations.

Table 5.1 Monthly average sea surface temperature and salinity in the offshore region (WTA, FTA, KFA and FLA).

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperature (ºC)	19.2	20.8	20.9	18.8	16.7	15.2	14.2	13.6	13.0	13.8	16.0	16.8
Salinity (psu)	35.5	35.5	35.5	35.5	35.5	35.5	35.5	35.4	35.4	35.4	35.4	35.4

Additionally, Table 5.2 presents the water temperature and salinity of the surface layer at the representative nearshore location. The monthly average sea surface temperatures ranged between 12.4°C (September) and 19.9°C (February). The monthly average surface salinity values remained relatively consistent ranging between 35.4 psu and 35.6 psu.

Figure 5.2 illustrates the vertical profile of sea temperature and salinity nearby the nearshore location.

Table 5.2 Monthly average sea surface temperature and salinity in the nearshore region (DPA).

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperature (ºC)	19.6	19.9	19.7	18.3	16.0	14.6	13.2	12.5	12.4	13.4	15.6	17.2
Salinity (psu)	35.5	35.5	35.5	35.5	35.6	35.6	35.5	35.4	35.4	35.4	35.4	35.4

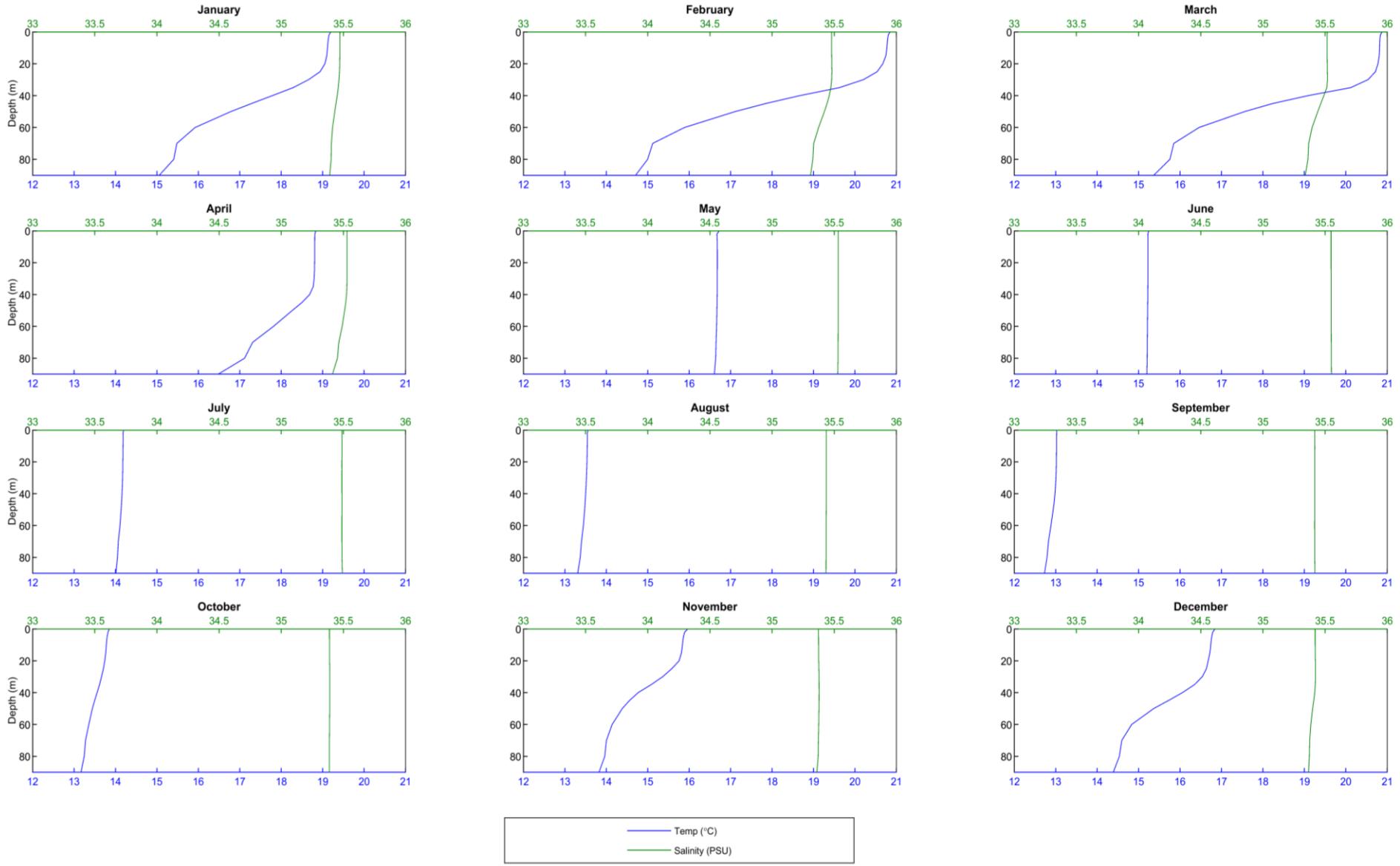

Figure 5.1 Temperature and salinity profiles at the representative offshore location (WTA, FTA, KFA and FLA).

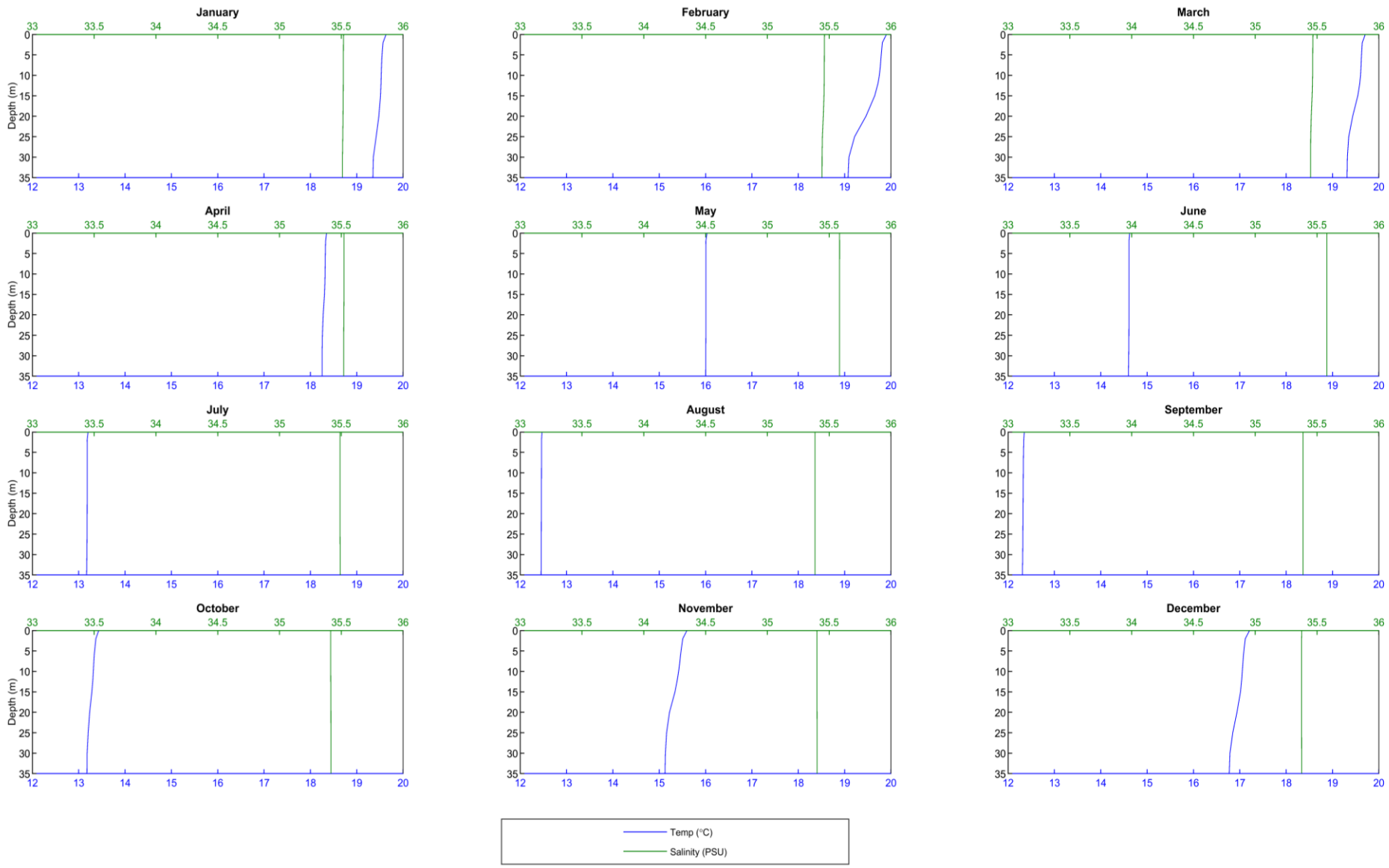

Figure 5.2 Temperature and salinity profiles at the representative nearshore location (DPA).

6 OIL SPILL MODEL – SIMAP

Modelling of the fate of oil was performed using the Spill Impact Mapping Analysis Program (SIMAP). SIMAP is designed to simulate the fate and effects of spilled hydrocarbons for both the surface and surface releases (Spaulding et al., 1994; French et al., 1999; French-McCay, 2003, 2004; French-McCay et al., 2004; 2021; 2022a; 2022b).

SIMAP has been used to predict the weathering and fate of oil spills during and after major incidents including: Montara (Australia) well blowout August 2009 in the Timor Sea (Asia-Pacific ASA, 2010); Macondo (USA) well blowout April 2010 in the Gulf of Mexico; Bohai Bay (China) oil spill August 2011; and the pipeline oil spill July 2013 in the Gulf of Thailand.

The SIMAP model calculates the transport, spreading, entrainment, evaporation and decay of surface hydrocarbon slicks as well as the entrained and dissolved oil components in the water column, either from surface slicks or from oil discharged subsea. The movement and weathering of the spilled oil is calculated for specific oil types. Input specifications for oil mixtures include the density, viscosity, pour point, distillation curve (volume lost versus temperature) and the aromatic/aliphatic component ratios within given boiling point (BP) ranges.

SIMAP is a three-dimensional model that allows for various response actions to be modelled including oil removal from skimming, burning, or collection booms, and surface and surface dispersant application.

The SIMAP oil spill model includes advanced weathering algorithms, specifically focussed on unique oils that tend to form emulsions and/or tar balls. The weathering algorithms are based on 5 years of extensive research conducted in response to the Deepwater Horizon oil spill in the Gulf of Mexico (French-McCay et al., 2015).

Biodegradation is included in the oil spill model. In the model, SIMAP, degradation is calculated for the surface slick, deposited oil on the shore, the entrained oil and dissolved constituents in the water column, and oil in the sediments. For surface oil, water column oil and sedimented oil a first order degradation rate is specified. Biodegradation rates are relatively high for hydrocarbons in dissolved state or in dispersed small droplets.

6.1 Stochastic Modelling

For the stochastic modelling presented herein, 100 oil spills were modelled for each scenario using the same spill information (release location, spill volume, duration and oil type) but with varied start dates. During each simulation, the model records whether any grid cells are exposed to any oil concentrations, the concentrations involved and the elapsed time before exposure. The results of all 100 oil spill simulations were analysed to determine the following statistics for every grid cell:

- Exposure load (concentrations and volumes);
- Minimum time before exposure;
- Maximum residence time of exposure;
- Probability of contact above defined concentrations;
- Volume of oil that may accumulate on shorelines from any single simulation;
- Concentration that might occur on sections of individual shorelines;
- Exposure to dissolved hydrocarbons in the water column; and
- Exposure to entrained hydrocarbons in the water column.

6.2 Floating, Shoreline and In-Water Thresholds

The thresholds and their relationship to exposure for the sea surface, shoreline and water column (entrained and dissolved hydrocarbons) are presented in Sections 6.2.1 to 6.2.3. Supporting justifications of the

adopted thresholds applied during the study and additional context relating to the area of potential exposure are also provided. It is important to note that the thresholds herein are based on (NOPSEMA, 2019)[2].

6.2.1 Floating Oil Exposure Thresholds

The modelling results can be presented to any levels; therefore, thresholds have been specified (based on scientific literature) to record floating oil exposure to the sea-surface at meaningful levels only, described in the following paragraphs.

The low threshold to assess the potential for floating oil exposure, was 1 g/m^2, which equates approximately to an average thickness of 1 µm, referred to as visible oil. Oil of this thickness is described as rainbow sheen in appearance, according to the Bonn Agreement Oil Appearance Code (Bonn Agreement, 2009; AMSA, 2014) (see Table 6.1). Figure 6.1 shows photographs highlighting the difference in appearance between a silvery sheen, rainbow sheen and metallic sheen. This threshold is considered below levels which would cause environmental harm and it is more indicative of the areas perceived to be affected due to its visibility on the sea surface and potential to trigger temporary closures of areas (i.e. fishing grounds) as a precautionary measure. Table 6.1 provides a description of the appearance in relation to exposure zone thresholds used to classify the zones of floating oil exposure.

Ecological impact has been estimated to occur at 10 g/m^2 (a film thickness of approximately 10 µm or 0.01 mm) according to French et al. (1996) and French-McCay (2009) as this level of fresh oiling has been observed to mortally impact some birds through adhesion of oil to their feathers, exposing them to secondary effects such as hypothermia. The appearance of oil at this average thickness has been described as a metallic sheen (Bonn Agreement, 2009).

Scholten et al. (1996) and Koops et al. (2004) indicated that at oil concentrations on the sea surface of 25 g/m^2 (or greater), would be harmful for all birds that have landed in an oil film due to potential contamination of their feathers, with secondary effects such as loss of temperature regulation and ingestion of oil through preening. The appearance of oil at this thickness is also described as metallic sheen (Bonn Agreement, 2009). For this study the high exposure threshold was set to 50 g/m^2 and above based on NOPSEMA (2019). This threshold can also be used to inform response planning.

Table 6.2 defines the thresholds used to classify the zones of floating oil exposure reported herein.

Table 6.1 The Bonn Agreement Oil Appearance Code.

Code	Description Appearance	Layer Thickness Interval (g/m^2 or µm)	Litres per km^2
1	Sheen (silvery/grey)	0.04 – 0.30	40 – 300
2	Rainbow	0.30 – 5.0	300 – 5,000
3	Metallic	5.0 – 50	5,000 – 50,000
4	Discontinuous True Oil Colour	50 – 200	50,000 – 200,000
5	Continuous True Oil Colour	≥ 200	≥ 200,000

[2] Results for entrained hydrocarbon exposure at, or above, 1,000 ppb, in alignment with French-McCay (2023), are provided in Appendix A.

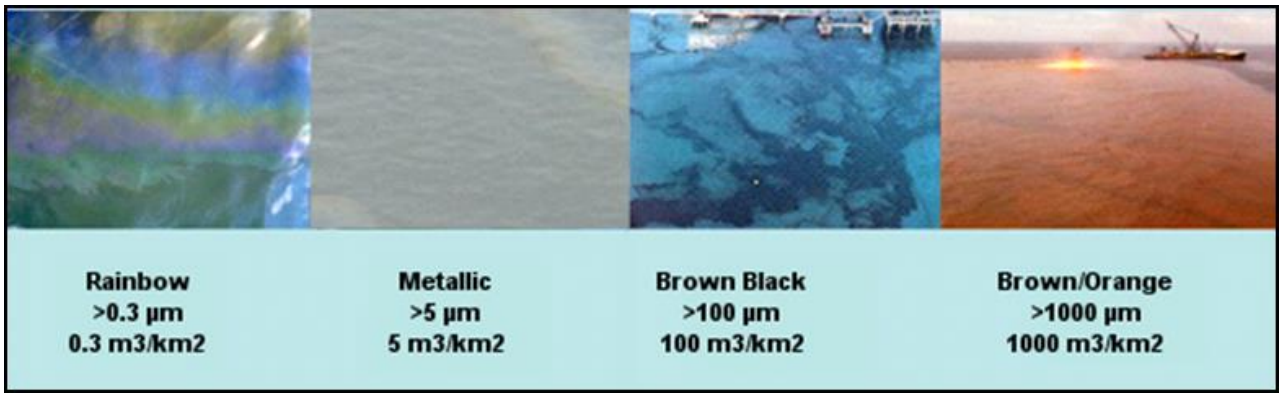

Figure 6.1 Photographs showing the difference between oil colour and thickness on the sea surface (source: adapted from Oil Spill Solutions, 2015).

Table 6.2 Floating oil exposure thresholds used in this report (in alignment with NOPSEMA (2019)).

Threshold level	Floating oil (g/m^2)	Description
Low	1	Approximates range of socioeconomic effects and establishes planning area for scientific monitoring
Moderate	10	Approximates lower limit for harmful exposures to birds and marine mammals
High	50	Approximates surface oil slick and informs response planning

6.2.2 Shoreline Accumulation Thresholds

There are many different types of shorelines, ranging from cliffs, rocky beaches, sandy beaches, mud flats and mangroves, and each of these influences the volume of oil that can remain stranded ashore and its thickness before the shoreline saturation point occurs. For instance, a sandy beach may allow oil to percolate through the sand, thus increasing its ability to hold more oil ashore over tidal cycles and various wave actions than an equivalent area of water; hence oil can increase in thickness onshore over time. A sandy beach shoreline was assumed as the default shoreline type for the modelling herein, as it allows for the highest carrying capacity of oil (of the available open/exposed shoreline types). Hence the results contained herein would be indicative of a worst-case scenario, where the highest volume of oil may be stranded on the shoreline (when compared to other shoreline types, such as exposed rocky shores).

In previous risk assessment studies, French-McCay et al. (2005a; 2005b) used a threshold of 10 g/m^2 to assess the potential for shoreline accumulation. This is a conservative threshold used to define regions of socio-economic impact, such as triggering temporary closures of adjoining fisheries or the need for shore clean-up on beaches or man-made features/amenities (breakwaters, jetties, marinas, etc.). It would equate to approximately 2 teaspoons of hydrocarbon per square meter of shoreline accumulation. The appearance is described as a stain/film. On that basis, the 10 g/m^2 shoreline accumulation threshold has been selected to define the zone of potential “low shoreline accumulation”.

French et al. (1996) and French-McCay (2009) define a shoreline oil accumulation threshold of 100 g/m^2, or above, would potentially harm shorebirds and wildlife (furbearing aquatic mammals and marine reptiles on or along the shore) based on studies for sub-lethal and lethal impacts. This threshold has been used in previous environmental risk assessment studies (see French-McCay, 2003; French-McCay et al., 2004, French-McCay et al., 2011; 2012; NOAA, 2013). Additionally, a shoreline concentration of 100 g/m^2, or above, is the minimum limit that the oil can be effectively cleaned according to the AMSA (2023) guideline. This threshold equates to approximately ½ a cup of oil per square meter of shoreline accumulation. The appearance is described as a thin oil coat. Therefore, 100 g/m^2 has been selected to define the zone of potential “moderate shoreline accumulation”.

Observations by Lin & Mendelssohn (1996) demonstrated that loadings of more than 1,000 g/m^2 of hydrocarbon during the growing season would be required to impact marsh plants significantly. Similar thresholds have been found in studies assessing hydrocarbon impacts on mangroves (Grant et al., 1993; Suprayogi & Murray, 1999). Hence, 1,000 g/m^2 has been selected to define the zone of potential “high

shoreline accumulation". It equates to approximately 1 litre of hydrocarbon per square meter of shoreline accumulation. The appearance is described as a hydrocarbon cover.

It is worth noting that the shoreline accumulation thresholds derived from extensive literature review (outlined in Table 6.3) agree with the commonly used threshold values for oil spill modelling specified in NOPSEMA (2019).

Table 6.3 Thresholds used to assess shoreline accumulation.

Threshold level	Shoreline loading (g/m^2)	Description
Low (socioeconomic/sublethal)	10	Predicts potential for some socio-economic impact
Moderate	100	Loading predicts area likely to require clean-up effort
High	> 1,000	Loading predicts area likely to require intensive clean-up effort

6.2.3 In-water Exposure Thresholds

Oil is a mixture of thousands of hydrocarbons of varying physical, chemical, and toxicological characteristics, and therefore, demonstrate varying fates and impacts on organisms. As such, for in-water exposure, the SIMAP model provides separate outputs for dissolved and entrained hydrocarbons from oil droplets. The consequences of exposure to dissolved and entrained components will differ because they have different modes and magnitudes of effect.

Entrained hydrocarbon concentrations were calculated based on oil droplets that are suspended in the water column, though not dissolved. The composition of this oil would vary with the state of weathering (oil age) and may contain soluble hydrocarbons when the oil is fresh. Calculations for dissolved hydrocarbons specifically calculates oil components which are dissolved in water, which are known to be the primary source of toxicity exerted by oil.

6.2.3.1 Dissolved Hydrocarbons

Laboratory studies have shown that dissolved hydrocarbons exert most of the toxic effects of oil on aquatic biota (Carls et al., 2008; Nordtug et al., 2011; Redman, 2015). The mode of action is a narcotic effect, which is positively related to the concentration of soluble hydrocarbons in the body tissues of organisms (French-McCay, 2002). Dissolved hydrocarbons are taken up by organisms directly from the water column by absorption through external surfaces and gills, as well as through the digestive tract. Thus, soluble hydrocarbons are termed "bioavailable".

Hydrocarbon compounds vary in water-solubility and the toxicity exerted by individual compounds is inversely related to solubility, however bioavailability will be modified by the volatility of individual compounds (Nirmalakhandan & Speece, 1988; Blum & Speece, 1990; McCarty, 1986; McCarty et al., 1992a, 1992b; Mackay et al., 1992; McCarty & Mackay, 1993; Verhaar et al., 1992, 1999; Swartz et al., 1995; French-McCay, 2002; McGrath and Di Toro, 2009). Of the soluble compounds, the greatest contributor to toxicity for water-column and benthic organisms are the lower-molecular-weight aromatic compounds, which are both volatile and soluble in water. Although they are not the most water-soluble hydrocarbons within most oil types, the polynuclear aromatic hydrocarbons (PAHs) containing 2-3 aromatic ring structures typically exert the largest narcotic effects because they are semi-soluble and not highly volatile, so they persist in the environment long enough for significant accumulation to occur (Anderson et al., 1974, 1987; Neff & Anderson, 1981; Malins & Hodgins, 1981; McAuliffe, 1987; NRC, 2003). The monoaromatic hydrocarbons (MAHs), including the BTEX compounds (benzene, toluene, ethylbenzene, and xylenes), and the soluble alkanes (straight chain hydrocarbons) also contribute to toxicity, but these compounds are highly volatile, so that their contribution will be low when oil is exposed to evaporation and higher when oil is discharged at depth where volatilisation does not occur (French-McCay, 2002).

French-McCay (2002) reviewed available toxicity data, where marine biota was exposed to dissolved hydrocarbons prepared from oil mixtures, finding that 95% of species and life stages exhibited 50% population mortality (LC_{50}) between 6 and 400 ppb total PAH concentration after 96 hrs exposure, with an average of 50 ppb. Hence, concentrations lower than 6 ppb total PAH value should be protective of 97.5% of species and life stages even with exposure periods of days (at least 96 hours). Early life-history stages of fish appear to be more sensitive than older fish stages and invertebrates.

Exceedances of 10, 50 or 400 ppb over a 1 hour timestep (see Table 6.4) was applied to indicate increasing potential for sub-lethal to lethal toxic effects (or low to high), based on NOPSEMA (2019).

6.2.3.2 Entrained Hydrocarbons

Entrained hydrocarbons consist of oil droplets that are suspended in the water column and insoluble. As such, insoluble compounds in oil cannot be absorbed from the water column by aquatic organisms, hence are not bioavailable through absorption of compounds from the water. Exposure to these compounds would require routes of uptake other than absorption of soluble compounds. The route of exposure of organisms to whole oil alone include direct contact with tissues of organisms and uptake of oil by direct consumption, with potential for biomagnification through the food chain (NRC, 2005).

The 10 ppb threshold represents the very lowest concentration and corresponds generally with the lowest trigger levels for chronic exposure for entrained hydrocarbons in the ANZECC & ARMCANZ (2000) water quality guidelines. Due to the requirement for relatively long exposure times (>24 hours) for these concentrations to be significant, they are likely to be more meaningful for juvenile fish, larvae and planktonic organisms that might be entrained (or otherwise moving) within the entrained plumes, or when entrained hydrocarbons adhere to organisms or trapped against a shoreline for periods of several days or more.

This exposure zone is not considered to be of significant biological impact and is therefore outside the adverse exposure zone. This exposure zone represents the area contacted by the spill. This area does not define the area of influence as it is considered that the environment will not be affected by the entrained hydrocarbon at this level.

Thresholds of 10 ppb and 100 ppb were applied over a 1-hour time exposure (Table 6.4), to cover the range of thresholds outlined in ANZECC & ARMCANZ (2000) water quality guidelines, the incremental change for greater potential effect and is per NOPSEMA (2019).

A complicating factor that should be considered when assessing the consequence of dissolved and entrained oil distributions is that there will be some areas where both physically entrained oil droplets and dissolved hydrocarbons co-exist. Higher concentrations of each will tend to occur close to the source where sea conditions can force mixing of relatively unweathered oil into the water column, resulting in more rapid dissolution of soluble compounds.

Table 6.4 Dissolved and entrained hydrocarbon exposure values assessed over a 1-hour time step, as per NOPSEMA (2019).

Oil Phase	Exposure level	In-water threshold (ppb)	Description
Dissolved hydrocarbons	Low	10	Establishes planning area for scientific monitoring based on potential for exceedance of water quality triggers
	Moderate	50	Approximates potential toxic effects, particularly sublethal effects to sensitive species
	High	400	Approximates toxic effects including lethal effects to sensitive species
Entrained hydrocarbons*	Low	10	Establishes planning area for scientific monitoring based on potential for exceedance of water quality triggers
	High	100	As appropriate given oil characteristics for informing risk evaluation
	n/a	1,000	Additional threshold presented in Appendix

*Additional threshold of 1,000 ppb presented in Appendix but not part of NOPSEMA (2019).

7 HYDROCARBON PROPERTIES

7.1 Physical Properties

Marine gas oil (MGO) was used for the scenario modelled in this assessment. Table 7.1 and Table 7.2 present the physical properties and boiling point ranges of the MGO used in this study.

MGO has an API of 37.6, density of 829.1 kg/m^3 (at 25ºC), with low viscosity (4 cP at 25ºC) classifying it as a Group II (light-persistent) oil according to ITOPF (2020) and US EPA/USCG classifications. The oil comprises a significant portion of volatiles and semi- to low volatiles (~95 % total) with 5.0% residual components. This means most of the hydrocarbons will evaporate when on the water surface, with the persistent components to remain on the water surface over a longer period.

The boiling points (BP) are dictated by the length of the carbon chains, with the longer and more complex compounds having a higher boiling point, and therefore lower volatility and evaporation rate. Typical evaporation times once the hydrocarbons reach the surface and are exposed to the atmosphere are:

- Up to 12 hours for the C_4 to C_{10} compounds (BP <180°C);
- Up to 24 hours for the C_{11} to C_{15} compounds (BP 180-265°C);
- Several days for the C_{16} to C_{20} compounds (BP 265-380°C); and
- Not applicable for the residual compounds (BP >380°C), which will resist evaporation, persist in the marine environment for longer periods, and be subject to relatively slow degradation.

Table 7.1 Physical properties.

Characteristic	MGO
Density (kg/m^3)	829.1
API	37.6
Dynamic viscosity (cP)	4 (at 25°C)
Pour point (°C)	-14.0
Wax Content (%)	1
Hydrocarbon property category	Group II
Hydrocarbon property classification	Light-persistent

Table 7.2 Boiling point ranges.

Oil Type	Component	Volatile (%)	Semi-volatile (%)	Low-volatility (%)	Residual (%)
	Boiling point (°C)	<180 C_4 to C_{10}	180-265 C_{11} to C_{15}	265-380 C_{16} to C_{20}	>380 >C_{20}
MGO	% of total	6.0	34.6	54.4	5.0

7.2 Weathering Properties

A series of model weathering tests were conducted to illustrate the potential behaviour of the hydrocarbons when exposed to idealised and representative environmental conditions:

- A 50 m^3 surface release over 1-hour under calm wind conditions (constant 5 knots), assuming low seasonal water temperature (15 °C) and ambient tidal and drift currents; and
- A 50 m^3 surface release over 1-hour under variable wind conditions (1-23 knots, drawn from representative data files), assuming low seasonal water temperature (15°C) and ambient tidal and drift currents.

Note, a surface release is used in the weathering test to solely focus on the weathering and fates of the hydrocarbons when exposed to atmospheric conditions.

The first case is indicative of conditions that would not generate entrainment, while the second case represents conditions that would likely cause entrainment. Both scenarios provide examples of potential behaviour during a spill once the oil is on the sea surface.

The mass balance for the oil under the constant 5 knot wind case (Figure 7.1) shows that 39.3% is expected to evaporate within 24 hours. Under calm conditions, the majority of the remaining oil on the water surface will weather at a slower rate due to being comprised of the less volatile, longer-chain compounds. Evaporation shall cease when only the residual compounds remain, and they will be subject to more gradual decay through biological and photochemical processes.

Under the variable-wind case (Figure 7.2), where the winds are of greater strength on average, entrainment of hydrocarbons into the water column is shown to increase. Approximately 24 hours after the spill, 78.1% of the mass is shown to have entrained and a further 17.4% has evaporated, leaving only a small proportion floating on the water surface (<1%).

The increased level of entrainment in the variable-wind case result in a higher percentage decaying at an approximate rate of ~2.7% per day with 19.1% after 7 days, compared to 0.2% per day and a total of 1.4% after 7 days for the constant-wind case. Given the proportion of entrained oil and the tendency for it to remain mixed in the water column, the remaining hydrocarbons will decay over time scales of several weeks.

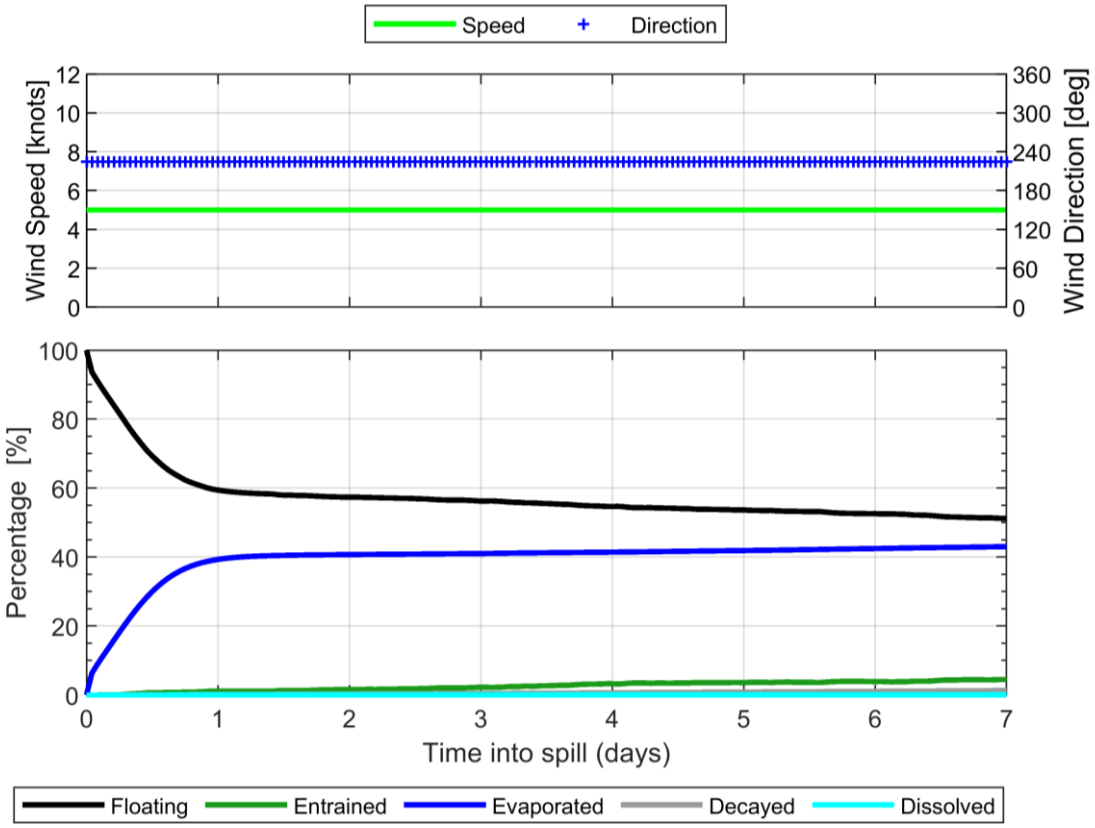

Figure 7.1 Proportional mass balance plot representing the weathering of MGO spilled onto the water surface over 1-hour and subject to a constant 5 knots wind speed at 15°C water temperature.

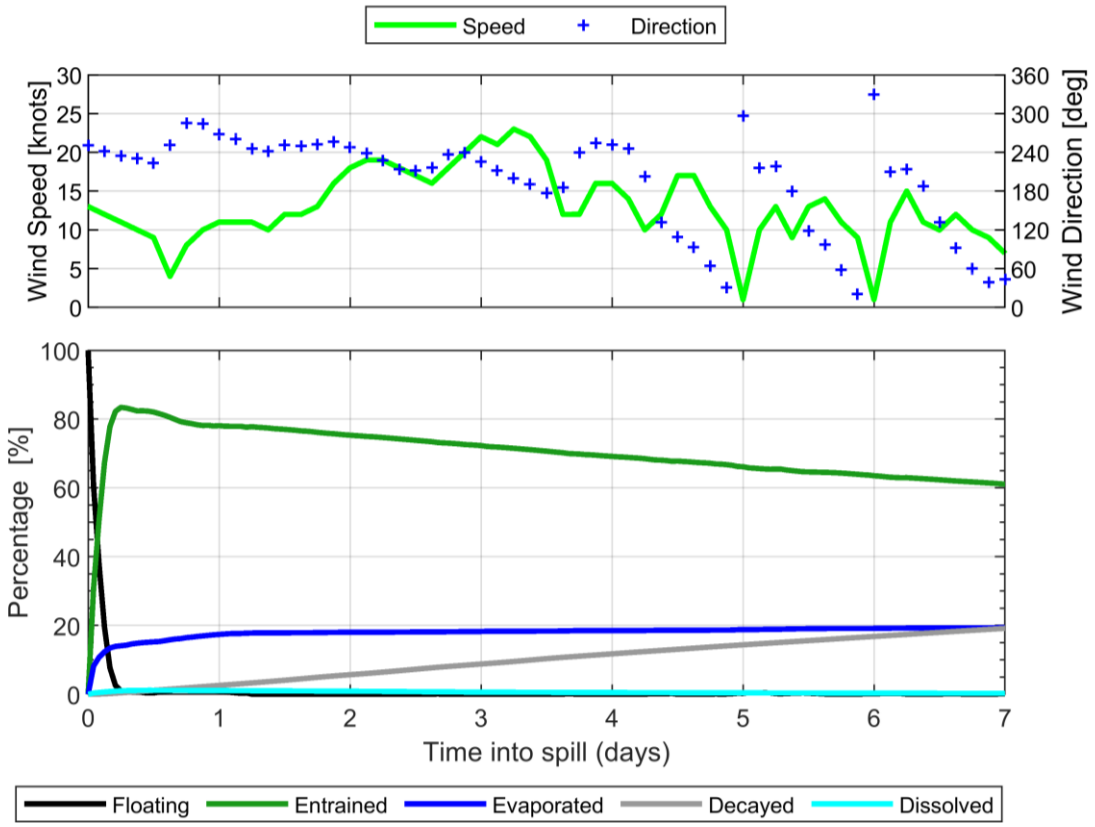

Figure 7.2 Proportional mass balance plot representing the weathering of MGO spilled onto the water over 1-hour and subject to variable wind speeds (1-23 knots) at 15°C water temperature.

8 MODEL SETTINGS

Table 8.1 provides a summary of the oil spill model settings.

Table 8.1 Summary of the oil spill model settings and thresholds used in this assessment.

Parameter	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5
Description	Vessel collision - release from rupture of single largest vessel fuel tank				
Location	Dolphin (DPA)	Whiting (WTA)	Fortescue (FTA)	Kingfish A (KFA)	Flounder (FLA)
Number of randomly selected spill start times	100				
Model period	Annual				
Hydrocarbon type	Marine Gas Oil (MGO)				
Spill volume	1,165 m^3				
Release type (surface, depth (m))	Surface				
Release duration	12 hours				
Simulation length	30 days				
Surface oil concentration thresholds (g/m^2) ^	1 (low); 10 (moderate); 50 (high)				
Shoreline oil accumulation thresholds (g/m^2) ^	10 (low); 100 (moderate); 1,000 (high)				
Dissolved hydrocarbon concentrations (ppb) ^	10 (low); 50 (moderate); 400 (high)				
Entrained hydrocarbon concentrations (ppb) ^*	10 (low); 100 (high)				

^Thresholds based on NOPSEMA (2019);
*additional 1,000 ppb entrained hydrocarbon threshold assessed and presented in Appendix

9 PRESENTATION AND INTERPRETATION OF MODEL RESULTS

The results from the modelling study are presented in a number of tables and figures, which aim to provide an understanding of potential sea-surface and water column exposure and shoreline accumulation.

9.1 Annual Analysis

The statistics are based on the following principles:

- The ***greatest distance travelled by a spill trajectory*** – is determined by a) recording the maximum and b) second greatest distance travelled (or 99th percentile) by a single trajectory, within a scenario, from the release location to the identified exposure thresholds;
- The ***probability of oil exposure to a receptor*** – is determined by recording the number of spill trajectories to reach a specified sea surface or subsea threshold within a receptor polygon, divided by the total number of spill trajectories within that scenario;
- The ***minimum time before oil exposure to a receptor*** – is determined by ranking the elapsed time before sea surface exposure, at a specified threshold, to grid cells within a receptor polygon and recording the minimum value;
- The ***maximum residence time for oil exposure within a receptor*** – is determined by recording the longest continuous length of time a grid cell is exposed to either floating, entrained or dissolved hydrocarbon above each threshold, within a receptor.
- The ***probability of oil accumulation at a receptor*** – is determined by recording the number of spill trajectories to reach a specified shoreline accumulation threshold within a receptor polygon, divided by the total number of spill trajectories within that scenario;
- The ***maximum potential oil loading within a receptor*** – is determined by identifying the maximum loading to any grid cell within a receptor polygon, for a scenario;
- The ***dissolved and entrained hydrocarbon exposure*** – is determined by recording the maximum instantaneous concentrations at each grid cell.
- ***Maximum total volume*** ashore (found in shoreline statistics table) – Is the total volume of oil stranded on the shorelines throughout the duration of the simulation. This volume does not take into account any weathering of the stranded oil.
- ***Maximum instantaneous peak volume ashore*** (found in the deterministic analysis section and derived from the histogram) - Is the peak volume of oil accumulated on shorelines at a single point in time. This peak value does not include oil that came ashore earlier in the simulation and was subsequently lost through evaporation or other weathering processes.

9.2 Deterministic Trajectories

The stochastic modelling results were assessed for each scenario, and the deterministic runs were identified and are presented in the result section based on the following criteria.

a. Largest swept area for surface oil above 10 g/m^2;

b. Largest instantaneous peak volume of oil ashore;

c. Longest length of shoreline with oil accumulation above 100 g/m^2;

d. Largest area of entrained hydrocarbon exposure above 100 ppb; and

e. Largest area of dissolved hydrocarbon exposure above 50 ppb.

9.3 Receptors Assessed

A range of environmental receptors and shorelines were assessed for floating oil exposure, shoreline accumulation and water column exposure as part of the study (see Figure 9.1 to Figure 9.11). Receptor categories (see Table 9.1) include sections of shorelines which are defined by local government areas (LGAs), sub-LGAs and offshore islands. All other sensitive receptors other than submerged reefs, shoals and banks (RSB) were sourced from Australian Government Department of Climate Change, Energy, the Environment and Water (https://www.dcceew.gov.au/).

Note that the receptor dataset used in this assessment is reviewed on an annual basis to ensure that it is always considered up to date.

Risks of exposure were separately calculated for each sensitive receptor area and have been tabulated.

Table 9.2 summarises the receptors that the release locations reside within.

Table 9.1 Summary of receptors used to assess floating oil, shoreline and in-water exposure to hydrocarbons.

Receptor Category	Acronym	Hydrocarbon Exposure Assessment			Figure reference
		Water Column	Floating oil	Shoreline	
Australian Marine Park	AMP	✓	✓	×	Figure 9.1
Integrated Marine and Coastal Regionalisation Areas	IMCRA	✓	✓	×	Figure 9.2
Marine National Park	MNP	✓	✓	×	Figure 9.3
Marine Park	MP	✓	✓	×	Figure 9.4
Nature Reserve	NR	✓	✓	×	Figure 9.5
Ramsar	Ramsar	✓	✓	✓	Figure 9.6
Reefs, Shoals and Banks	RSB	✓	✓	×	Figure 9.7
Key Ecological Feature	KEF	✓	✓	×	Figure 9.8
State Waters	State Waters	✓	✓	×	n/a
Local and Sub-Local Government Area	LGA and Sub-LGA	✓ (Reported as: Nearshore Waters)	✓ (Reported as: Nearshore Waters)	✓ (Reported as: Shore)	Figure 9.9 to Figure 9.11

Table 9.2 Summary of the receptors that each release location resides.

Acronym	Receptor Name	Sc 1 DPA	Sc 2 WTA	Sc 3 FTA	Sc 4 KFA	Sc 5 FLA
BIA	Black-browed Albatross - Foraging	✓	✓	✓	✓	✓
	Bullers Albatross - Foraging	✓	✓	✓	✓	✓
	Campbell Albatross - Foraging	✓	✓	✓	✓	✓
	Common Diving-petrel - Foraging	✓	✓	✓	✓	✓
	Indian Yellow-nosed Albatross - Foraging	✓	✓	✓	✓	✓
	Pygmy Blue Whale - Distribution	✓	✓	✓	✓	✓
	Pygmy Blue Whale - Foraging	✓	✓	✓	✓	✓
	Short-tailed Shearwater - Foraging	✓	×	×	✓	×
	Shy Albatross - Foraging	✓	✓	✓	✓	✓
	Southern Right Whale - Known Core Range	✓	✓	✓	✓	✓
	Wandering Albatross - Foraging	✓	✓	✓	✓	✓
	White Shark - Breeding	✓	×	×	×	×
	White Shark - Distribution	✓	✓	✓	✓	✓
	White Shark - Foraging	×	×	×	×	×
IMCRA	Twofold Shelf	✓	✓	✓	✓	✓
KEF	Upwelling East of Eden	×	✓	×	×	✓

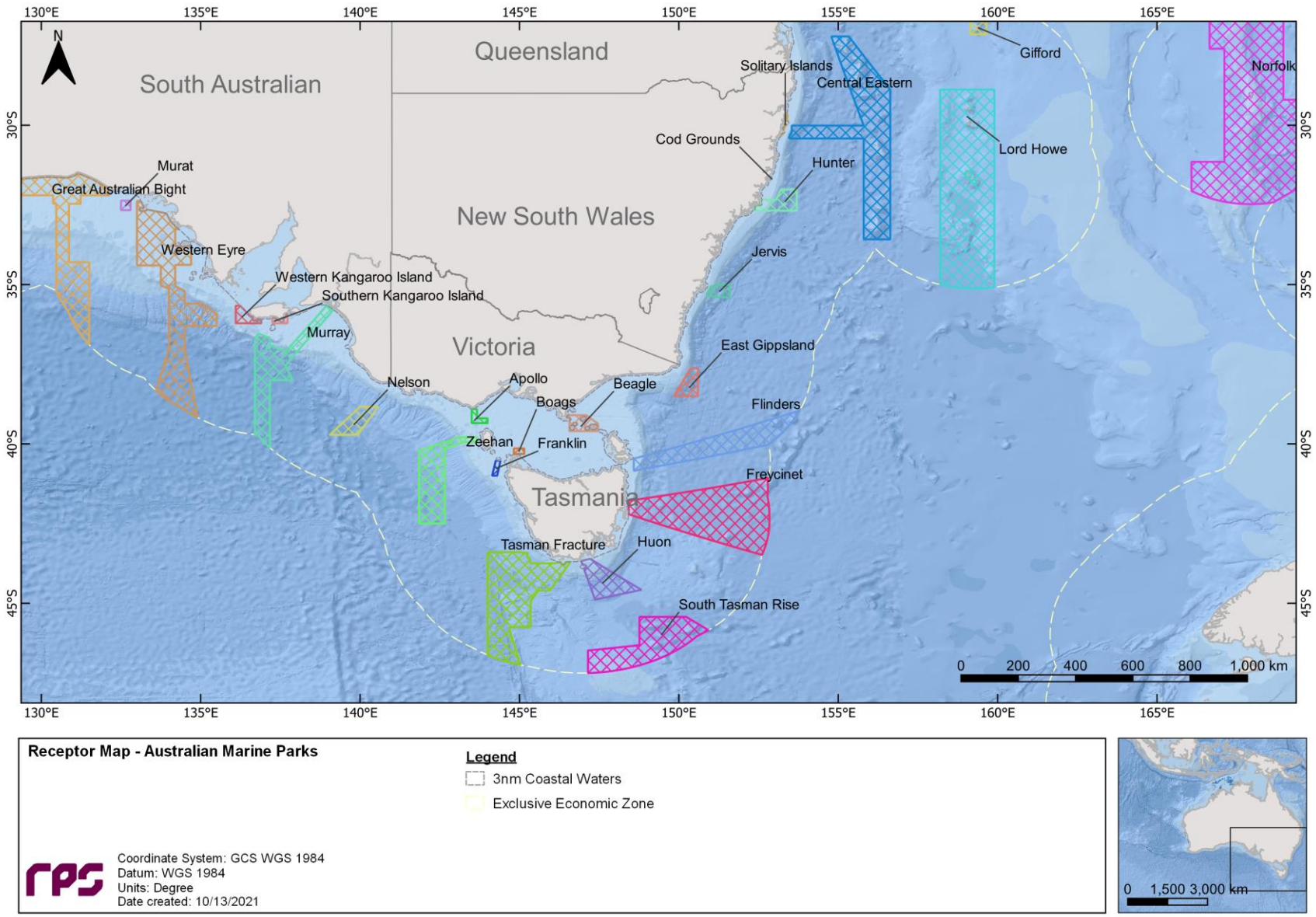

Figure 9.1 Receptor map for Australian Marine Parks (AMP).

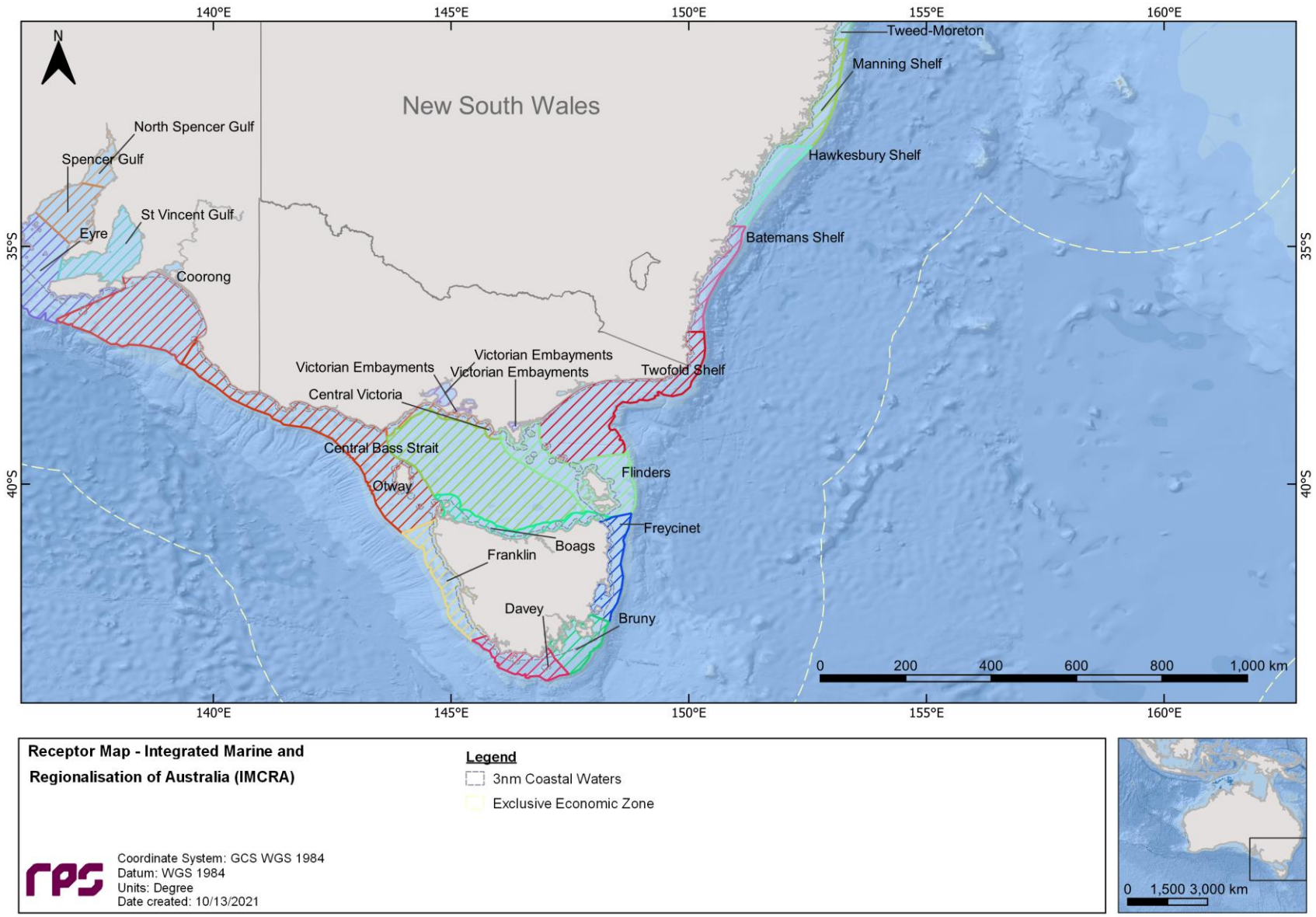

Figure 9.2 Receptor map for integrated marine and coastal regionalisation (IMCRA) areas.

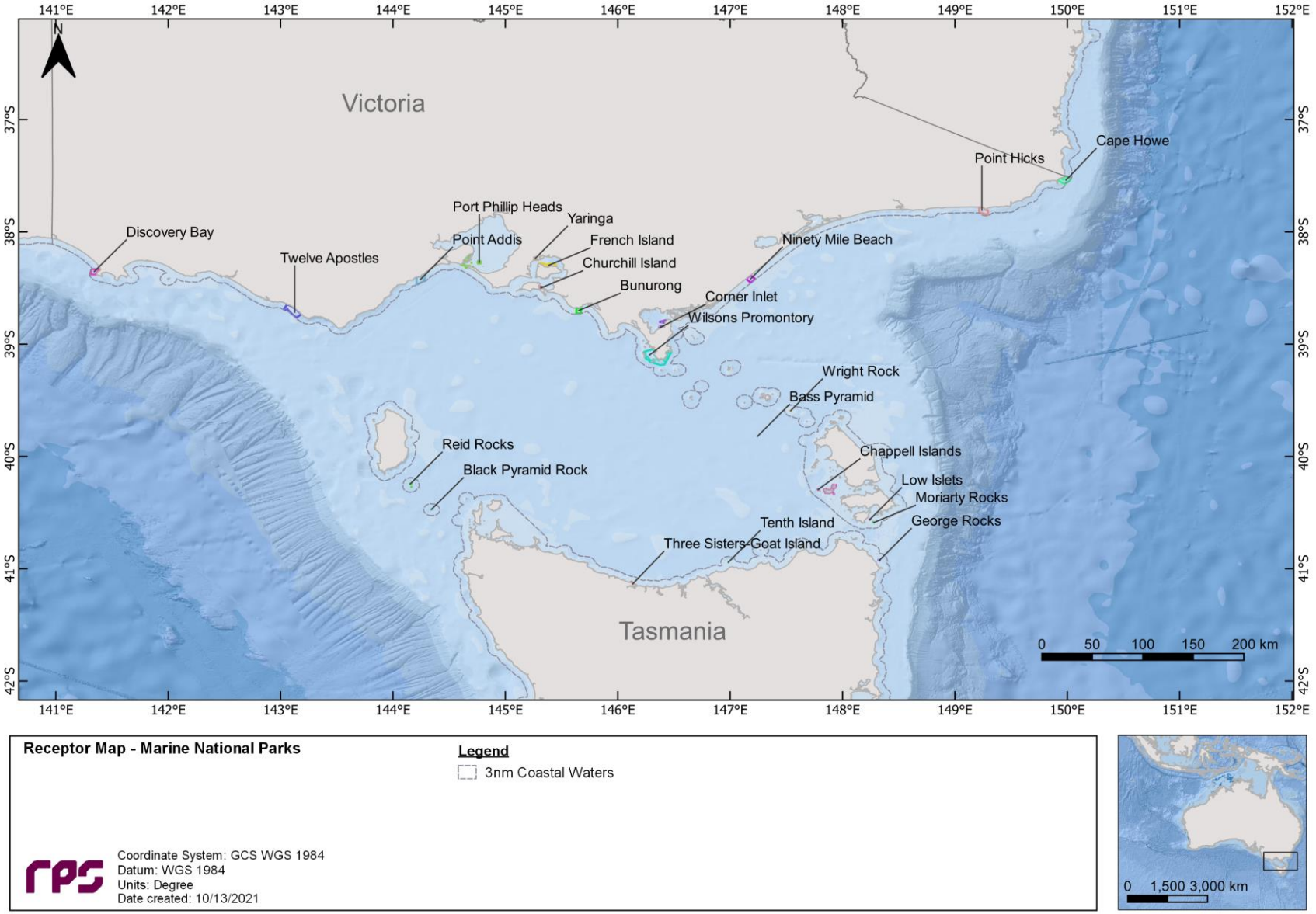

Figure 9.3 Receptor map for Marine National Parks (MNP).

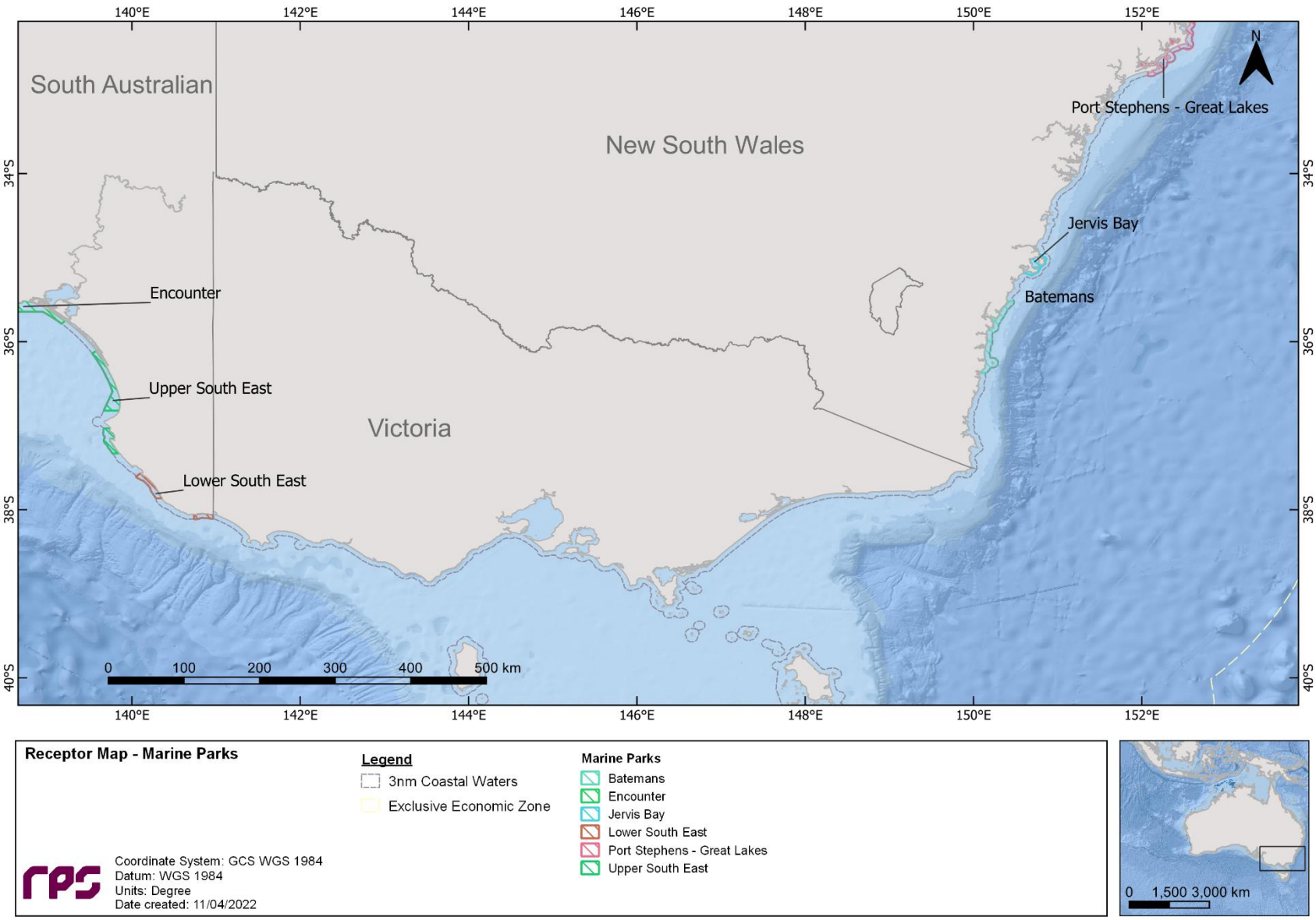

Figure 9.4 Receptor map for Marine Parks (MP).

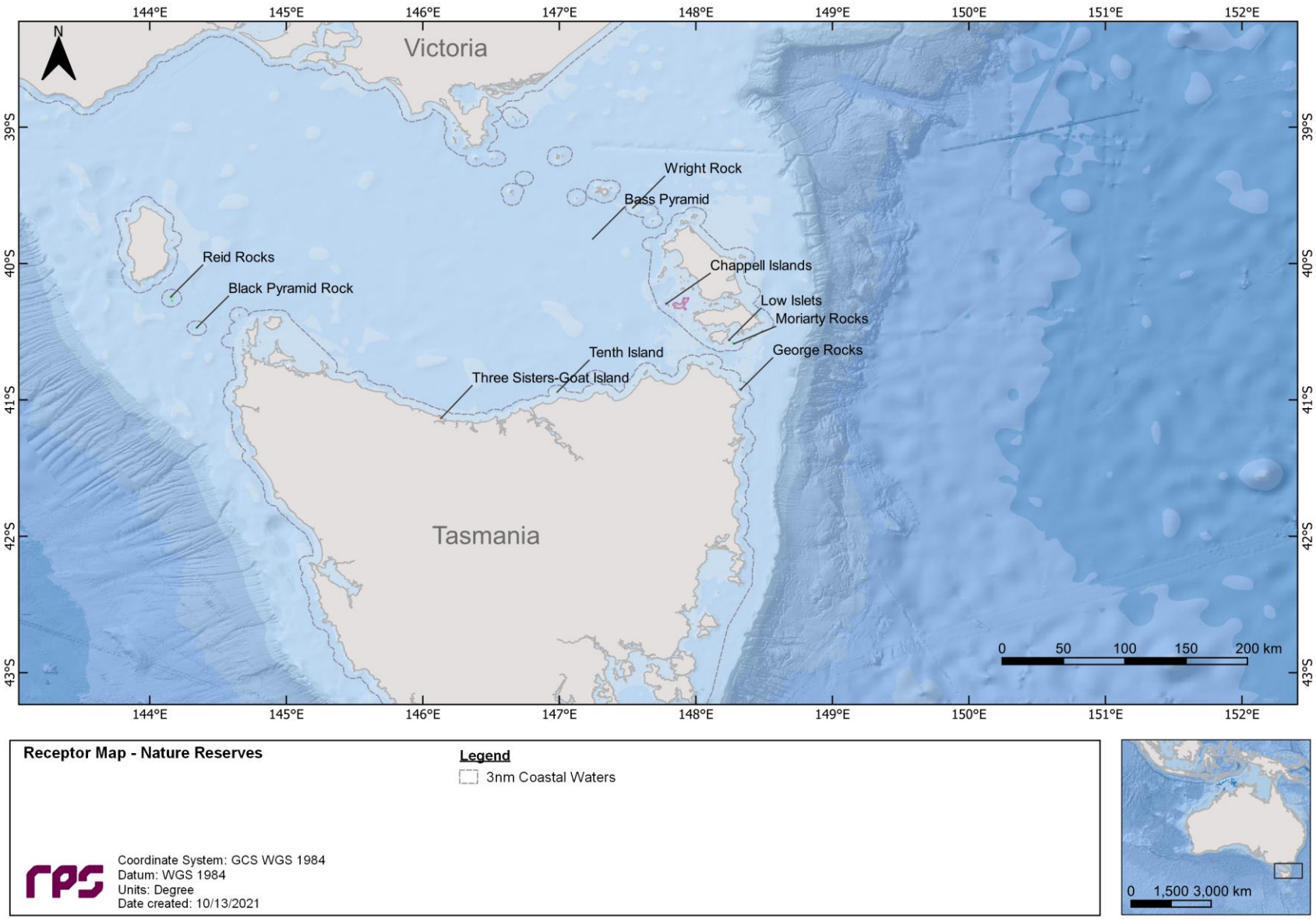

Figure 9.5 Receptor map for Nature Reserves (NR).

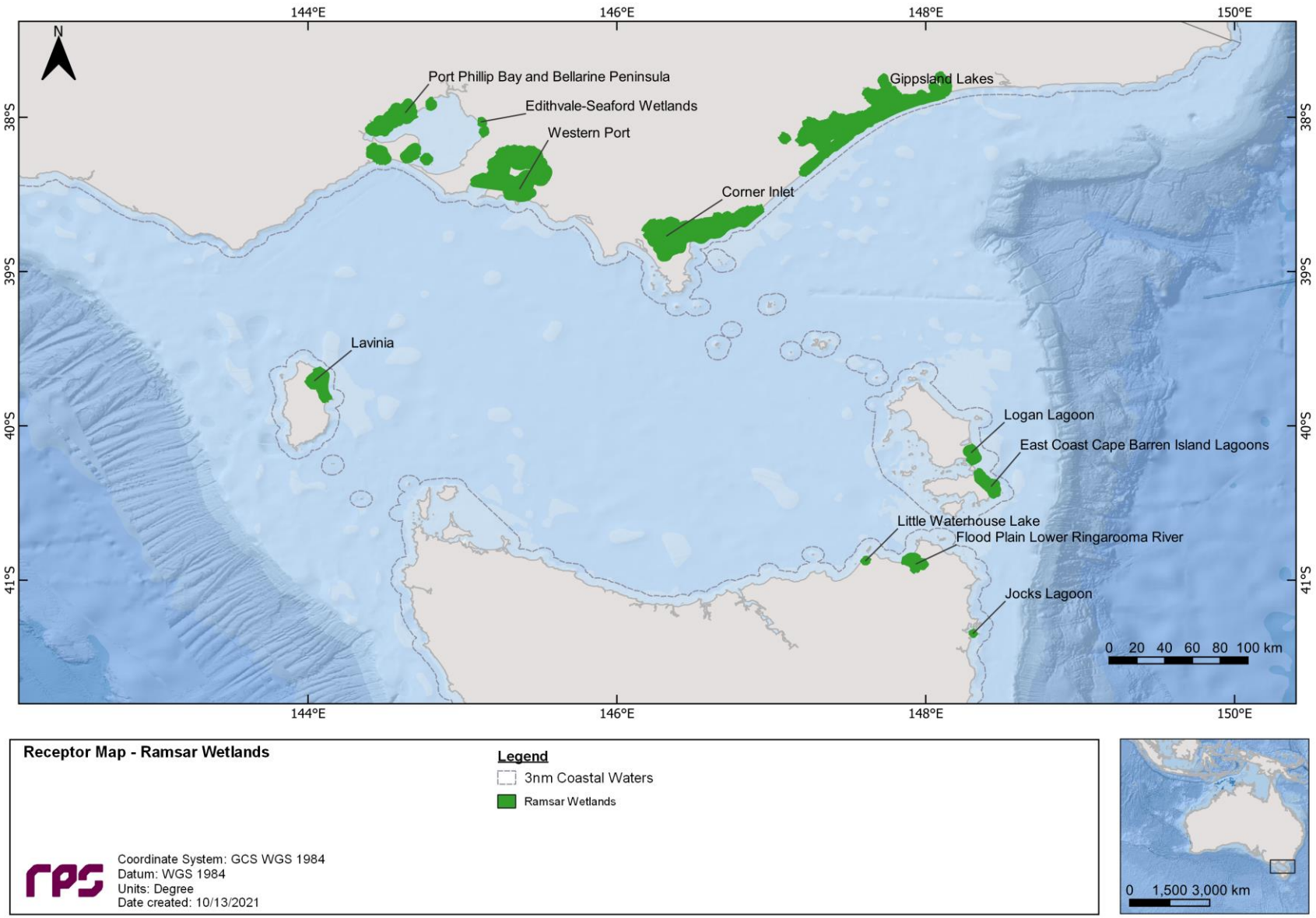

Figure 9.6 Receptor map for Ramsar Sites (Ramsar).

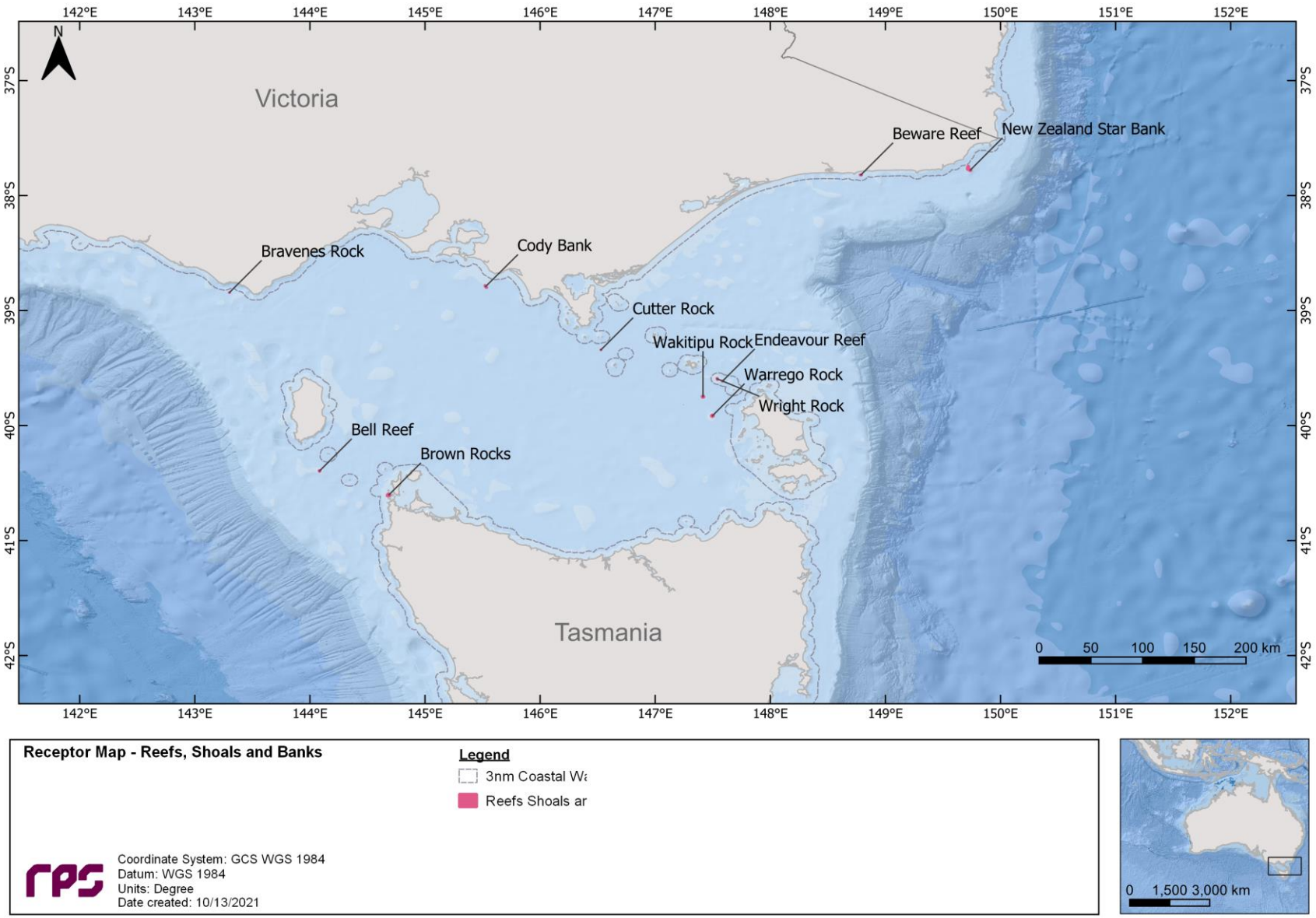

Figure 9.7 Receptor map for Reefs, Shoals and Banks (RSB).

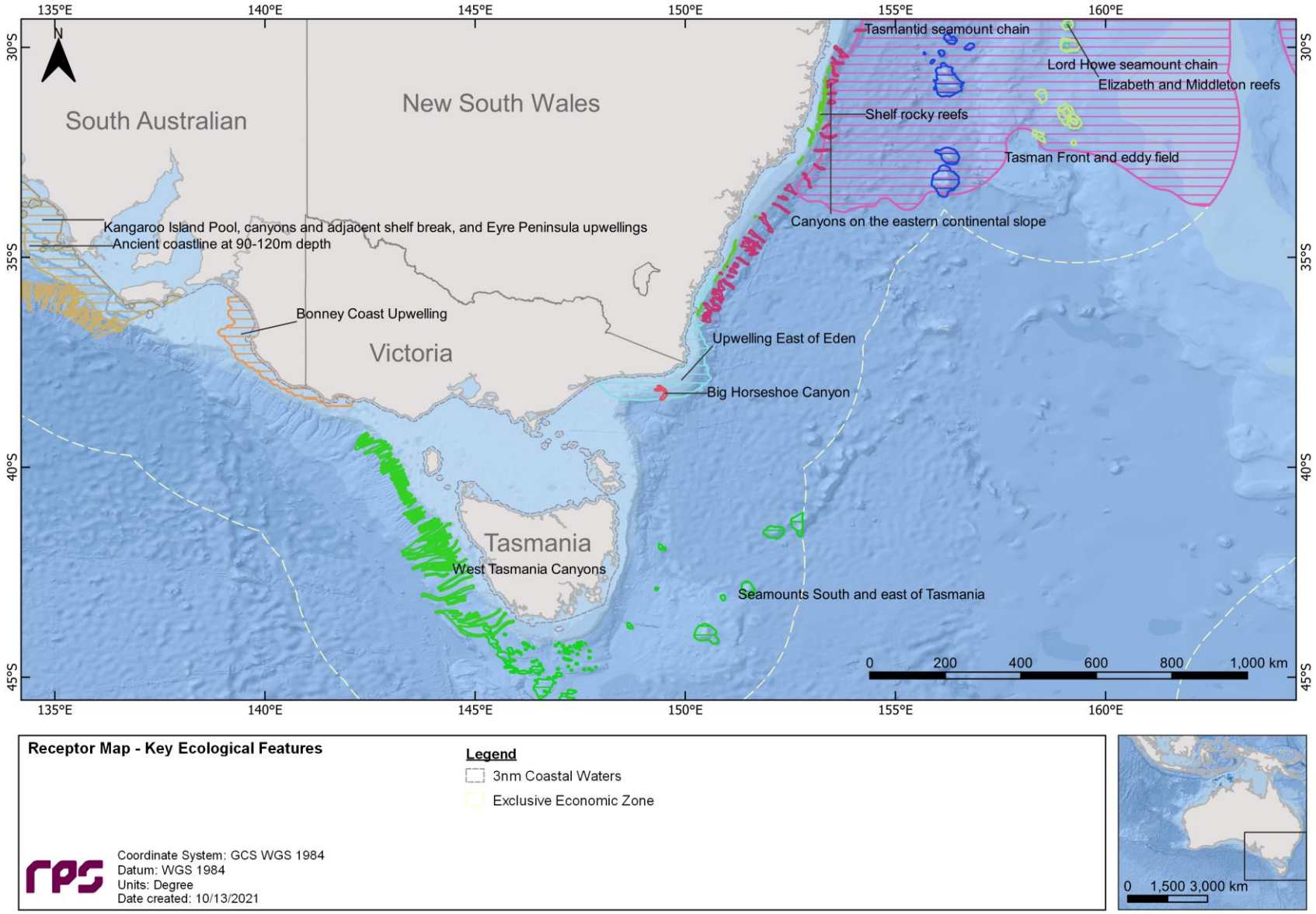

Figure 9.8 Receptor map for Key Ecological Features (KEF).

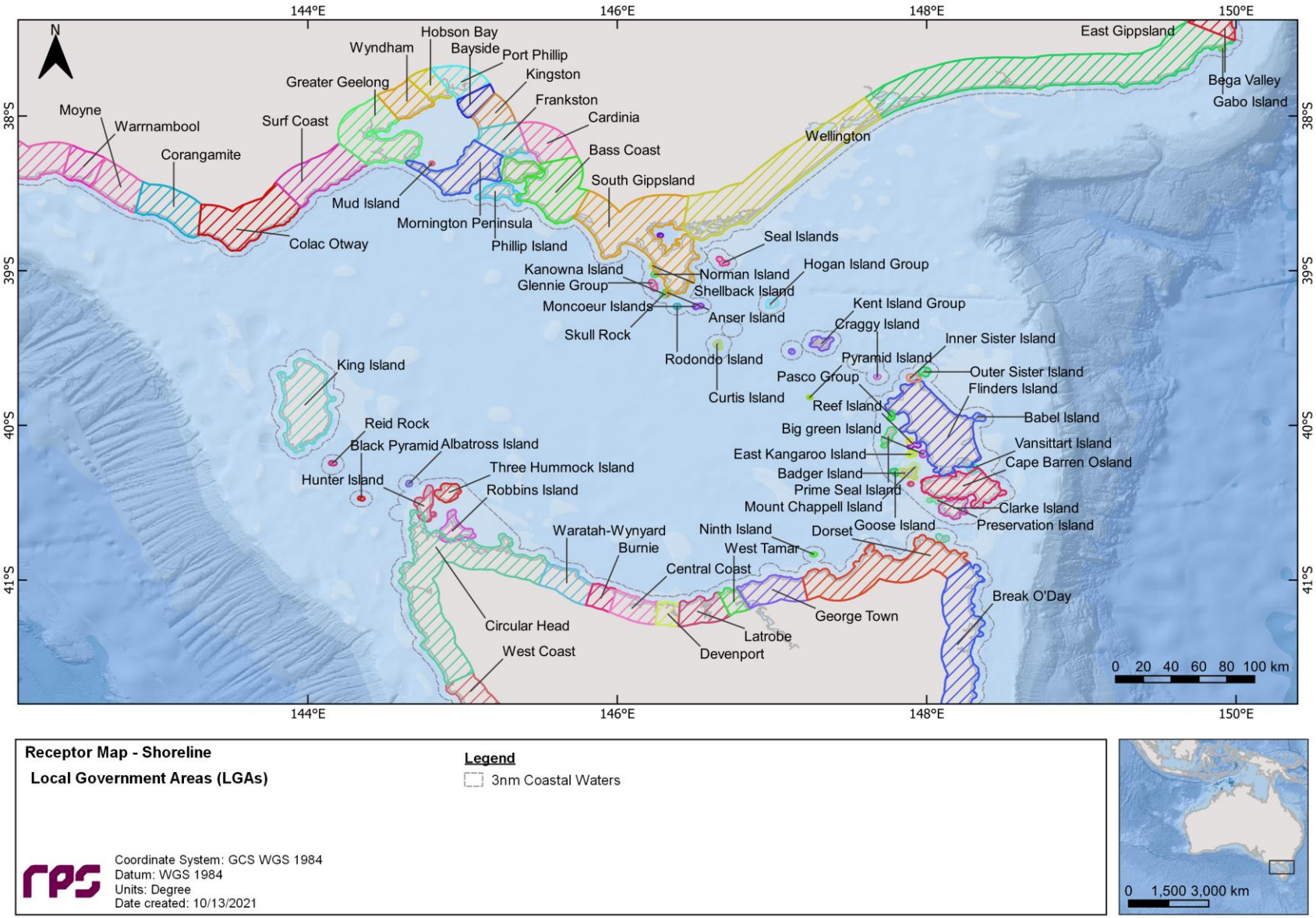

Figure 9.9 Receptor map for shorelines (1 of 3).

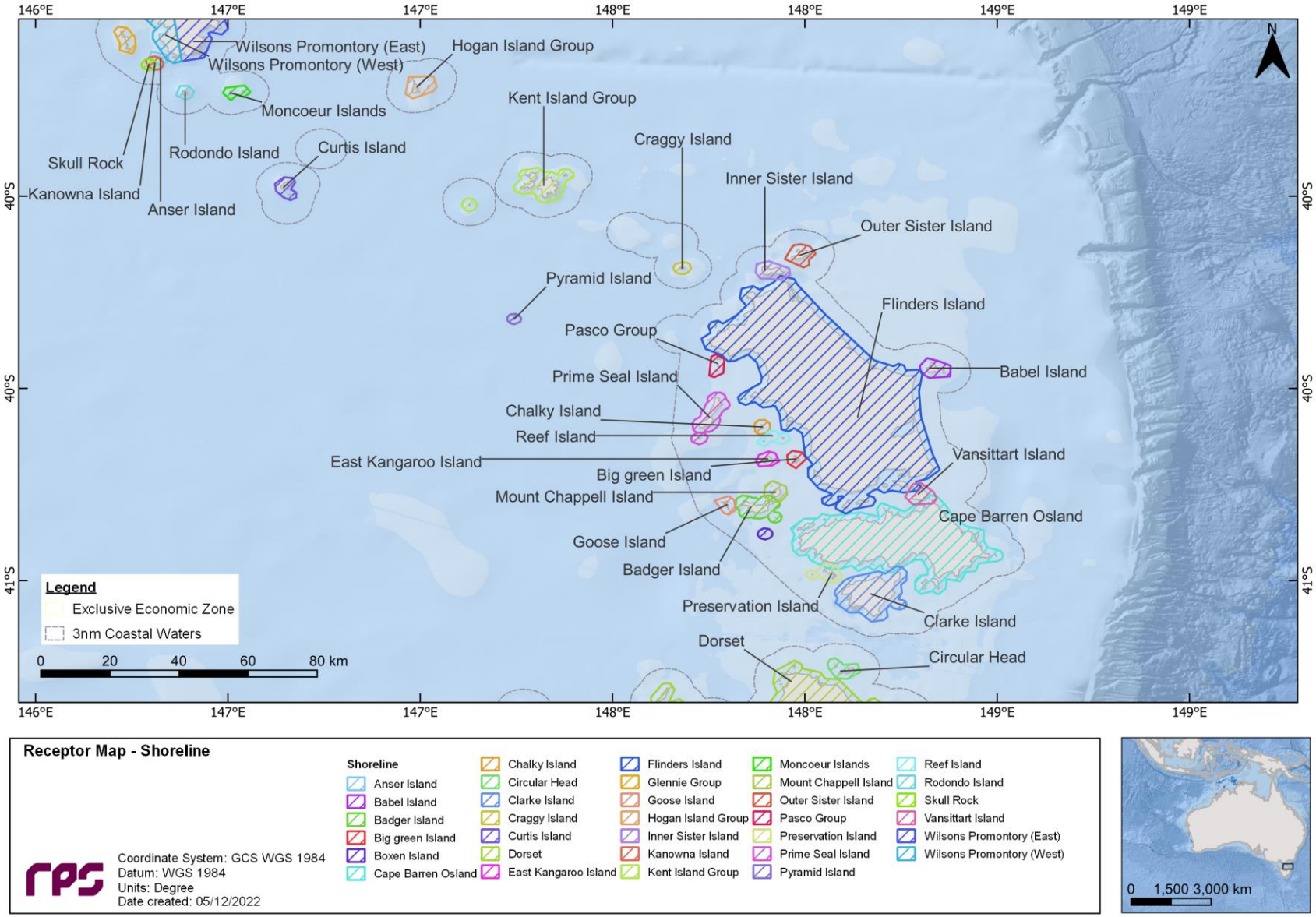

Figure 9.10 Receptor map for shorelines (2 of 3).

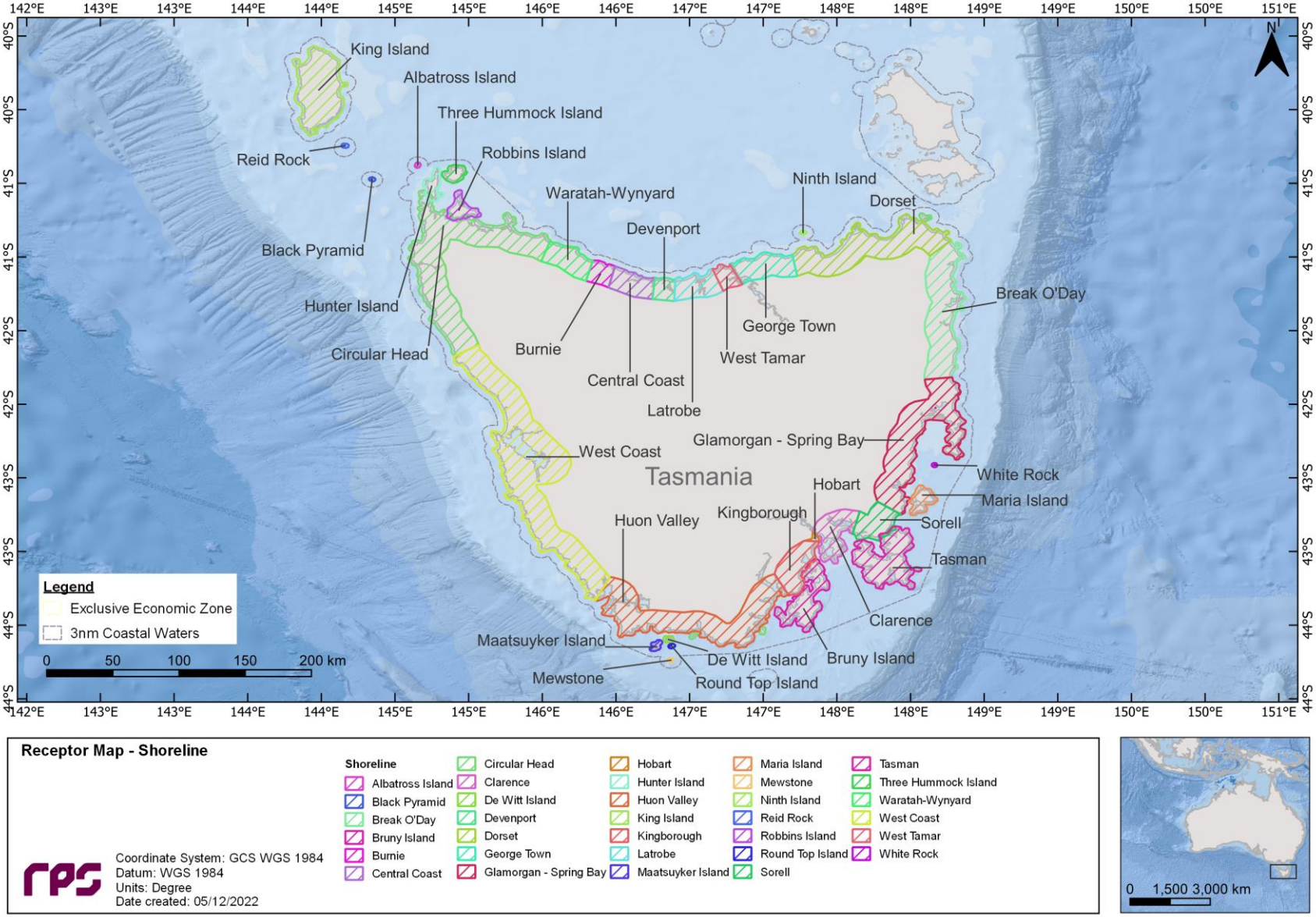

Figure 9.11 Receptor map for shorelines (3 of 3).

10 RESULTS – SCENARIO 1 – A 1,165 M^3 SURFACE RELEASE OF MGO AT DOLPHIN

This scenario examined a 1,165 m^3 surface release of MGO over 12 hours at Dolphin. A total of 100 spill simulations were run and each simulation was tracked for 30 days. The results are presented on an annual basis.

Sections 10.1 and 10.2 present the annual stochastic analysis and deterministic analysis results, respectively.

10.1 Stochastic Analysis

10.1.1 Floating Oil Exposure

Table 10.1 summarises the maximum distance travelled by floating oil on the sea surface at each threshold. The maximum distances and corresponding directions from the release location to the low (1–10 g/m^2), moderate (10–50 g/m^2) and high (>50 g/m^2) exposure zones were 200 km (east-northeast), 31.4 km (northeast) and 20.2 km (southwest), respectively.

Table 10.2 summarises the potential floating oil exposure, minimum time and maximum residence time of floating oil exposure to individual receptors.

With the exception of the receptors the release location is within (see

Table 9.2), the Upwelling East of Eden KEF recorded the highest probability of exposure at 8% to concentrations exceeding 1 g/m^2. Floating oil at the 1 g/m^2 threshold was predicted to reach Victoria State Waters the quickest at 1.42 days (34.08 hours) following the spill commencement.

Figure 10.1 presents the zones of potential floating oil exposure for all thresholds, while Figure 10.2 to Figure 10.4 present the maximum residence time of floating oil exposure for all thresholds assessed under annual conditions.

Table 10.1 Maximum distance and direction from the release location to the edge of floating oil exposure. Results are based on a 1,165 m^3 surface release of MGO over 12 hours at Dolphin. The results reflect annual conditions.

Distance and direction travelled	Zones of potential floating oil exposure		
	Annual		
	Low	Moderate	High
Maximum distance (km) from release location	200.0	31.4	20.2
Maximum distance (km) from release location (99th percentile)	85.2	30.1	19.3
Direction	ENE	NE	SW

Table 10.2 Summary of the potential floating oil exposure to individual receptors. Results are based on a 1,165 m³ surface release of MGO over 12 hours at Dolphin. The results reflect annual conditions.

	Receptor	Annual								
		Probability of floating oil exposure (%)			Minimum time before floating oil exposure (days)			Maximum residence time of floating oil exposure (days)		
		Low	Moderate	High	Low	Moderate	High	Low	Moderate	High
BIA	Black-browed Albatross – Foraging*	100	100	87	0.04	0.04	0.04	2.46	1.67	0.5
	Bullers Albatross – Foraging*	100	100	87	0.04	0.04	0.04	2.46	1.67	0.5
	Campbell Albatross – Foraging*	100	100	87	0.04	0.04	0.04	2.46	1.67	0.5
	Common Diving-petrel – Foraging*	100	100	87	0.04	0.04	0.04	2.46	1.67	0.5
	Indian Yellow-nosed Albatross – Foraging*	100	100	87	0.04	0.04	0.04	2.46	1.67	0.5
	Pygmy Blue Whale – Distribution*	100	100	87	0.04	0.04	0.04	2.46	1.67	0.5
	Pygmy Blue Whale – Foraging*	100	100	87	0.04	0.04	0.04	2.46	1.67	0.5
	Short-tailed Shearwater – Foraging*	100	100	87	0.04	0.04	0.04	2.46	1.67	0.5
	Shy Albatross – Foraging*	100	100	87	0.04	0.04	0.04	2.46	1.67	0.5
	Southern Right Whale - Known Core Range*	100	100	87	0.04	0.04	0.04	2.46	1.67	0.5
	Wandering Albatross – Foraging*	100	100	87	0.04	0.04	0.04	2.46	1.67	0.5
	White Shark – Breeding*	100	100	87	0.04	0.04	0.04	2.46	1.67	0.5
	White Shark – Distribution*	100	100	87	0.04	0.04	0.04	2.46	1.67	0.5
	White Shark - Foraging	3	-	-	4.88	-	-	0.58	-	-
	White-faced Storm-petrel - Foraging	3	-	-	4.88	-	-	0.58	-	-
IBRA	East Gippsland Lowlands	3	-	-	4.88	-	-	0.58	-	-
	Gippsland Plain	2	-	-	1.88	-	-	0.29	-	-
IMCRA	Twofold Shelf*	100	100	87	0.04	0.04	0.04	2.46	1.67	0.5
KEF	Upwelling East of Eden	8	-	-	1.79	-	-	0.58	-	-
MNP	Ninety Mile Beach	1	-	-	2.04	-	-	0.13	-	-
	Point Hicks	2	-	-	6.71	-	-	0.58	-	-
Nearshore Waters (LGA)	East Gippsland	3	-	-	4.88	-	-	0.58	-	-
	Wellington	2	-	-	1.92	-	-	0.29	-	-
	Croajingolong - West	1	-	-	4.88	-	-	< 0.04	-	-

	Receptor	Annual								
		Probability of floating oil exposure (%)			Minimum time before floating oil exposure (days)			Maximum residence time of floating oil exposure (days)		
		Low	Moderate	High	Low	Moderate	High	Low	Moderate	High
Nearshore Waters (Sub-LGA)	Golden Beach	1	-	-	1.92	-	-	0.29	-	-
	Ocean Grange	1	-	-	2.17	-	-	0.08	-	-
	Point Hicks	2	-	-	6.71	-	-	0.58	-	-
	Seaspray	1	-	-	2.58	-	-	0.04	-	-
State Waters	Victoria State Waters	6	-	-	1.42	-	-	0.58	-	-

*The release location resides within the receptor boundaries.

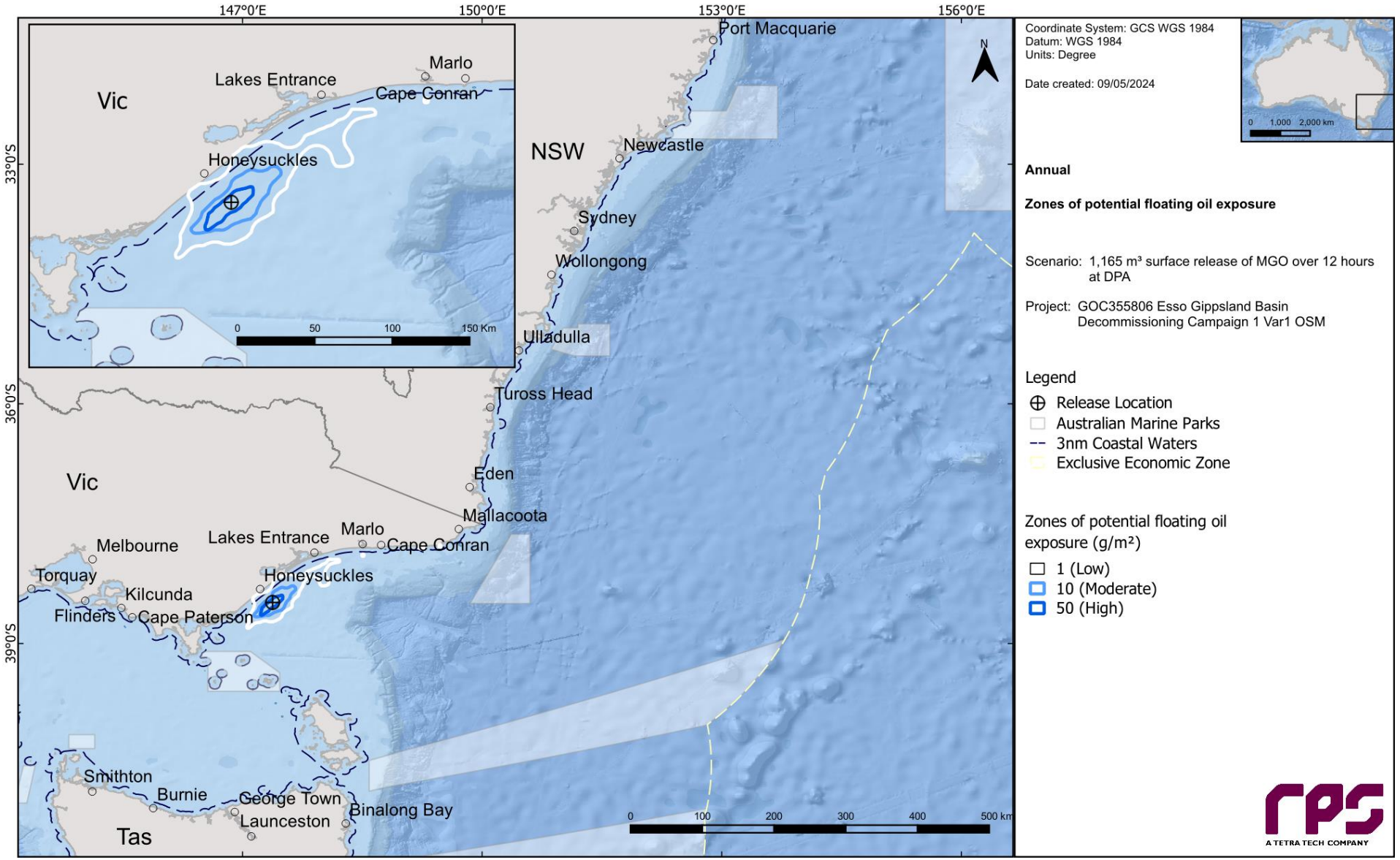

Figure 10.1 Zones of potential floating oil exposure in the event of a 1,165 m³ surface release of MGO over 12 hours at Dolphin. The results reflect annual conditions.

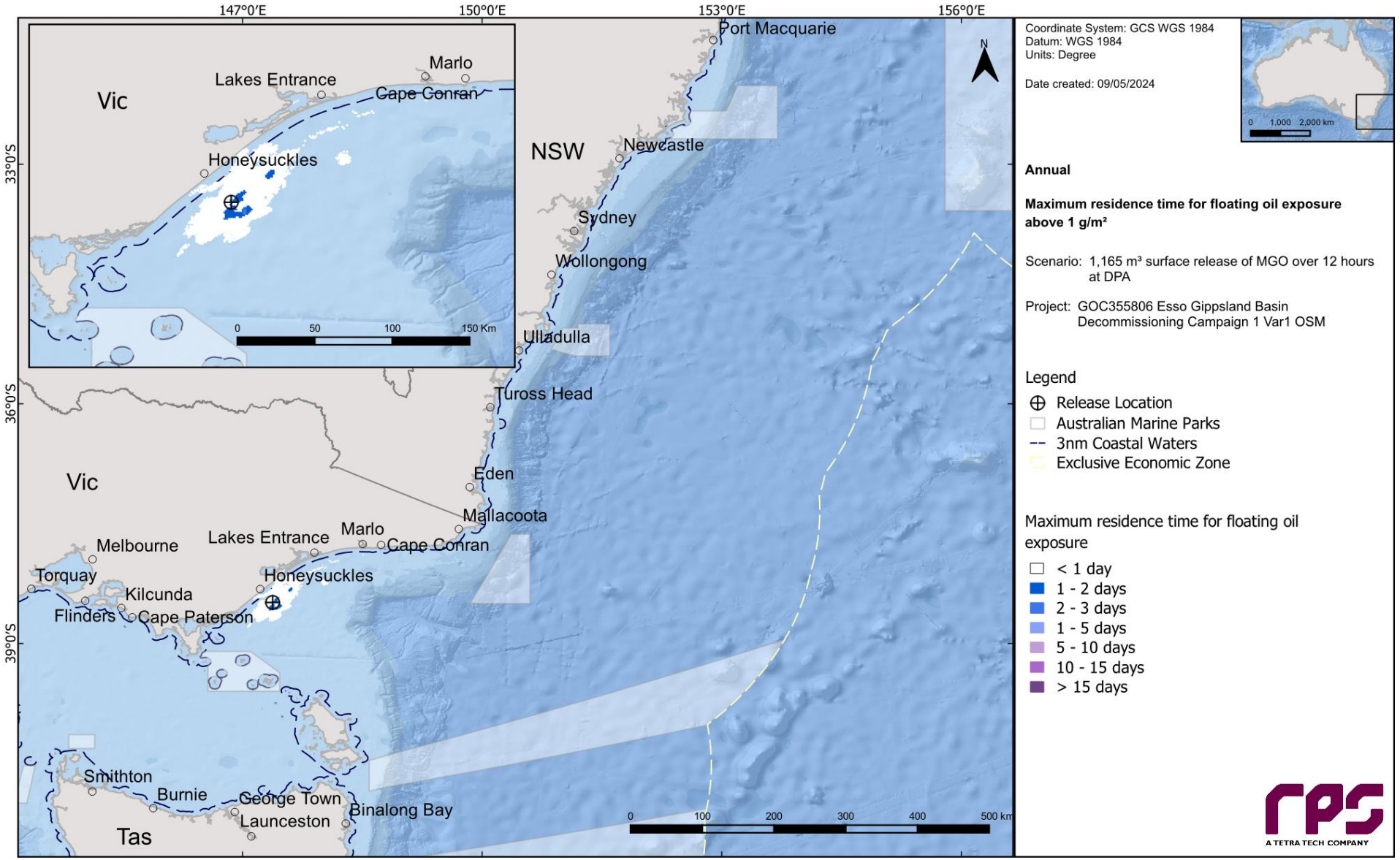

Figure 10.2 Maximum residence time of floating oil exposure above 1 g/m^2, in the event of a 1,165 m^3 surface release of MGO over 12 hours at Dolphin. The results reflect annual conditions.

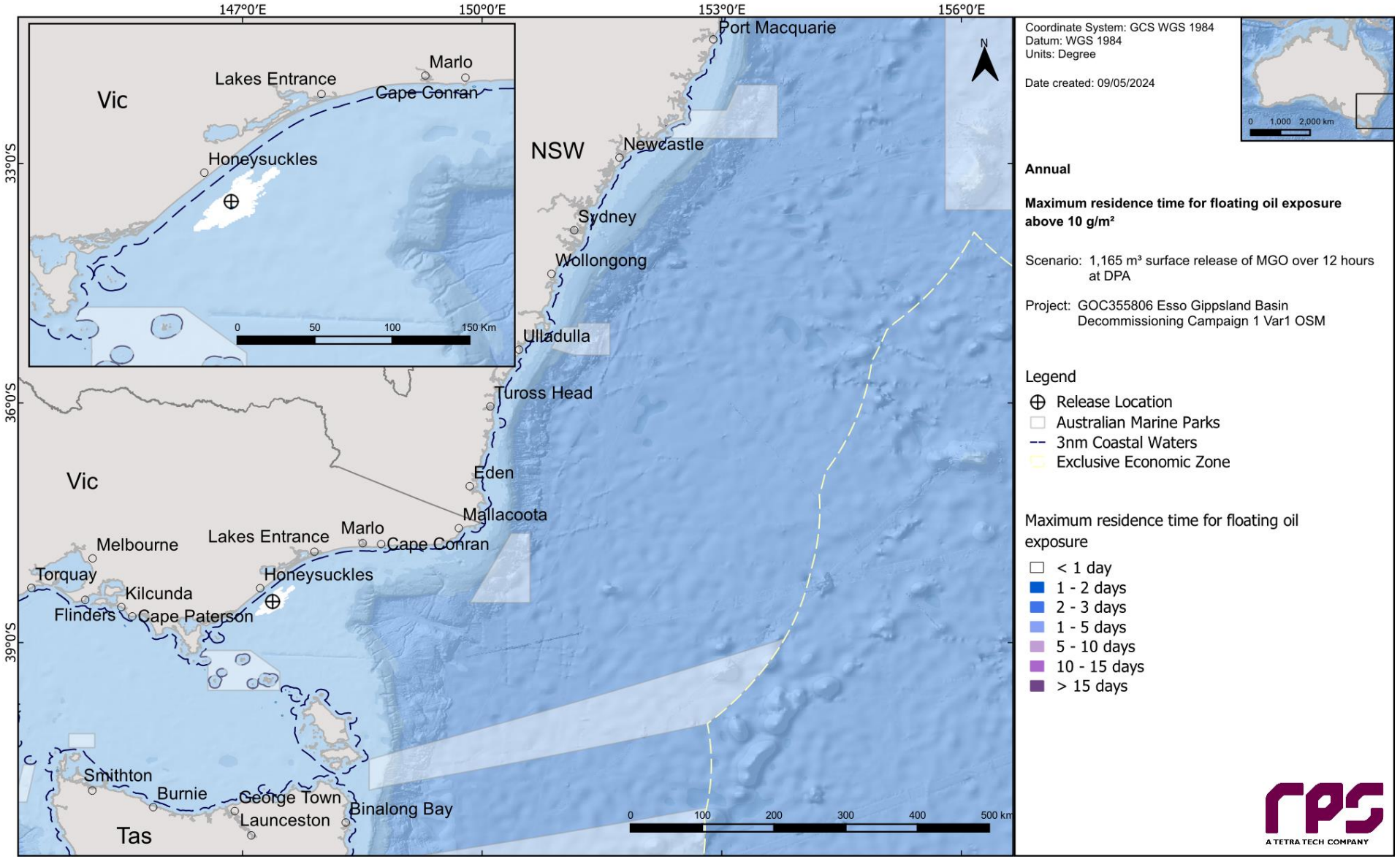

Figure 10.3 Maximum residence time of floating oil exposure above 10 g/m^2, in the event of a 1,165 m^3 surface release of MGO over 12 hours at Dolphin. The results reflect annual conditions.

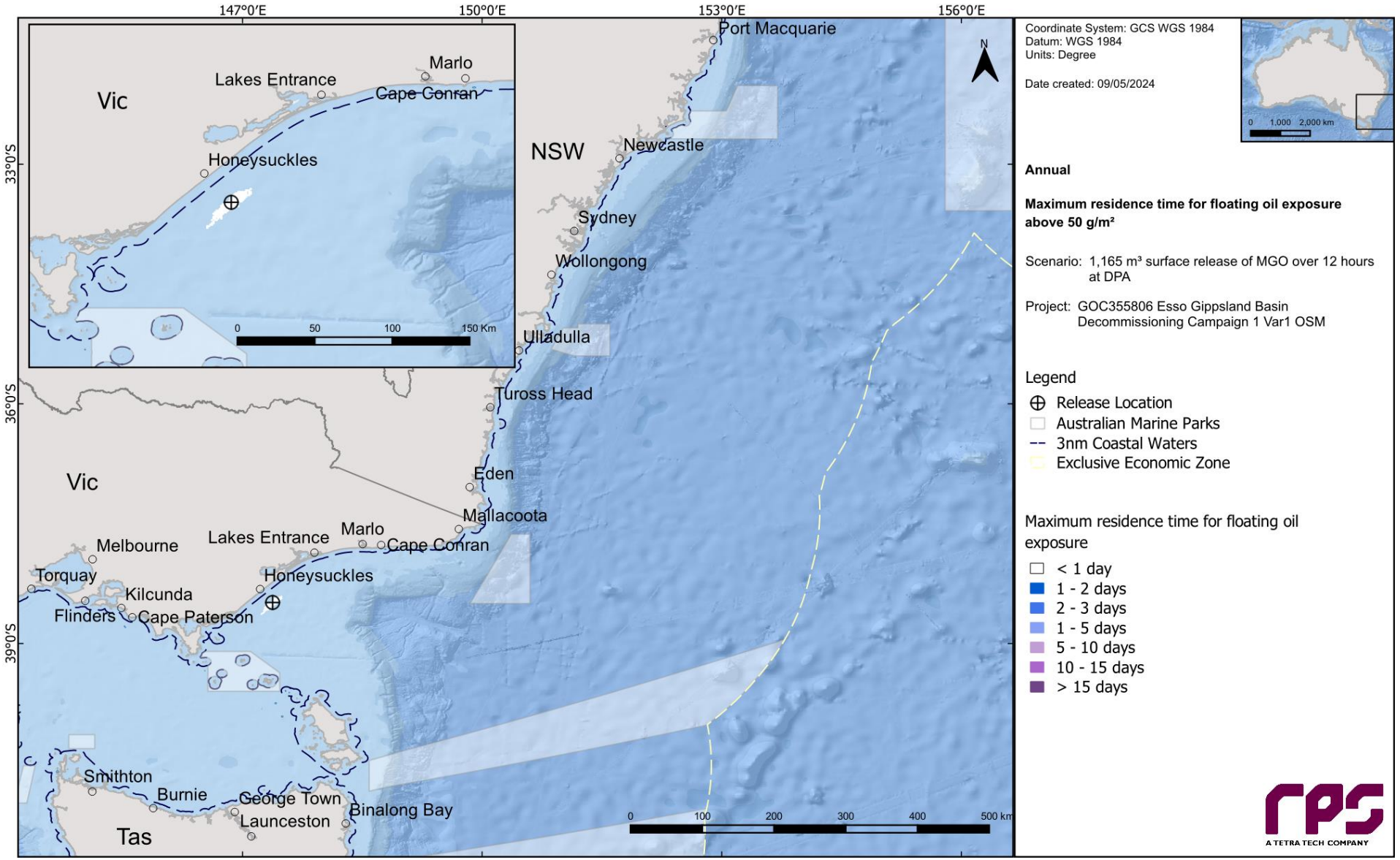

Figure 10.4 Maximum residence time of floating oil exposure above 50 g/m^2, in the event of a 1,165 m^3 surface release of MGO over 12 hours at Dolphin. The results reflect annual conditions.

10.1.2 Shoreline Accumulation

Table 10.3 presents a summary of the potential shoreline accumulation. The probability of accumulation to any shoreline at, or above, the low (10 g/m^2) threshold was 76% throughout the year. The minimum time before oil accumulation at, or above, the low threshold was 1.83 days. The maximum total volume ashore for a single spill trajectory was 83.3 m^3, and the maximum length of shoreline with accumulation above the low, moderate and high thresholds were 99 km, 13 km and 3 km, respectively.

Table 10.4 summarises the shoreline accumulation statistics for individual receptors.

The highest probability of shoreline oil accumulation at the 10 g/m^2 threshold was forecast for East Gippsland (LGA) (58%). The maximum volume of oil ashore was 74.3 m^3 for East Gippsland. Wellington (LGA) and Golden Beach (sub-LGA) shorelines were forecast to record the quickest time before oil accumulation at the 10 g/m^2 threshold at 1.83 days (43.92 hours).

The maximum potential shoreline loadings above each shoreline thresholds are presented in Figure 10.5.

Table 10.3 Summary of oil accumulation across all shorelines. Results are based on a 1,165 m^3 surface release of MGO over 12 hours at Dolphin. The results reflect annual conditions.

Shoreline Statistics	Annual
Probability of accumulation on any shoreline (%)	76
Absolute minimum time for visible oil to shore (days)	1.83
Maximum total volume of hydrocarbons ashore (m^3) ^	83.3
Average total volume of hydrocarbons ashore (m^3) ^	13.5
Maximum length of the shoreline at **10 g/m^2** (km)	99
Average shoreline length (km) at **10 g/m^2** (km)	19.6
Maximum length of the shoreline at **100 g/m^2** (km)	13
Average shoreline length (km) at **100 g/m^2** (km)	4.1
Maximum length of the shoreline at **1,000 g/m^2** (km)	3
Average shoreline length (km) at **1,000 g/m^2** (km)	2

^Total volume of oil stranded on shorelines over the entire simulation, not accounting for natural removal processes such as evaporation and decay.

Table 10.4 Summary of oil accumulation on individual shoreline receptors. Results are based on a 1,165 m³ surface release of MGO over 12 hours at Dolphin. The results reflect annual conditions.

Shoreline Receptor		Maximum probability of shoreline loading (%)			Minimum time before shoreline accumulation (days)			Load on shoreline (g/m²)		Volume on shoreline (m³)		Mean length of shoreline accumulation (km)			Maximum length of shoreline accumulation (km)		
		Low	Mod	High	Low	Mod	High	Mean	Peak	Mean	Peak	Low	Mod	High	Low	Mod	High
Shoreline (LGA)	Bega Valley	15	4	-	5.29	7.38	-	6	310	1.6	14.6	7	2	-	18.2	3.6	-
	Curtis Island	3	-	-	16.17	-	-	5	22	0.4	1	2.1	-	-	2.7	-	-
	East Gippsland	58	33	3	3.17	3.88	6.63	14	2,669	11.9	74.3	15.3	3.1	1.8	84.5	6.4	2.7
	Eurobodalla	2	-	-	13.5	-	-	3	28	0.6	2.3	5.5	-	-	6.4	-	-
	Gabo Island	18	2	-	6.71	9.5	-	12	364	0.6	9	2	2.7	-	4.5	2.7	-
	Hogan Island Group	4	-	-	7.25	-	-	4	41	0.5	2.3	5.2	-	-	6.4	-	-
	Kent Island Group	2	-	-	15.5	-	-	3	60	0.7	3.9	5	-	-	8.2	-	-
	Moncoeur Islands	1	-	-	21.38	-	-	4	12	< 0.1	0.3	0.9	-	-	0.9	-	-
	Montague Island	8	1	-	5.67	6.17	-	22	747	1.5	19	2.8	2.7	-	4.5	2.7	-
	Pyramid Island	1	-	-	18.46	-	-	16	16	0.2	0.2	0.9	-	-	0.9	-	-
	Seal Islands	5	1	-	4.25	7.75	-	17	193	1.2	8.5	2.9	2.7	-	5.5	2.7	-
	South Gippsland	2	-	-	10.88	-	-	7	91	3.4	13	15	-	-	22.7	-	-
	Wellington	13	5	-	1.83	2	-	8	700	5.5	69.8	15	5.3	-	40	10.9	-
Shoreline (Sub-LGA)	Bega Valley	15	4	-	5.29	7.38	-	6	310	1.6	14.6	7	2	-	18.2	3.6	-
	Cape Conran	14	1	-	7.88	9.13	-	4	148	0.6	5.1	2.5	1.8	-	5.5	1.8	-
	Cape Howe / Mallacoota	17	1	-	5.33	11.54	-	5	102	0.6	8.5	2.7	0.9	-	10.9	0.9	-
	Clonmel Island	1	1	-	13.25	16.67	-	5	108	1.7	9.2	17.3	0.9	-	17.3	0.9	-
	Corringle	9	-	-	7.71	-	-	3	62	0.7	4.3	4.8	-	-	14.5	-	-
	Croajingolong - East	1	-	-	9.04	-	-	2	43	0.2	2.5	5.5	-	-	5.5	-	-
	Croajingolong - West	34	10	1	3.38	3.92	16.63	11	1,020	1.8	16.4	3.4	1.4	0.9	13.6	3.6	0.9
	Eurobodalla	2	-	-	13.5	-	-	3	28	0.6	2.3	5.5	-	-	6.4	-	-
	Golden Beach	8	3	-	1.83	2	-	14	700	3.6	48.6	6.5	5.8	-	15.4	10	-
	Lake Tyers Beach	12	-	-	8.08	-	-	4	35	0.8	3.2	3.9	-	-	11.8	-	-
	Lakes Entrance	7	-	-	9.67	-	-	4	90	0.7	8.2	4.3	-	-	17.3	-	-
	Lakes Entrance - West	2	-	-	8.33	-	-	3	26	0.3	2	4.1	-	-	5.5	-	-
	Marlo	23	13	-	6.17	7.92	-	8	471	2.3	16.2	7.8	1.1	-	22.7	1.8	-
	McLoughlins Beach	1	-	-	16.04	-	-	4	39	0.4	2.6	8.2	-	-	8.2	-	-
	Ocean Grange	6	3	-	1.92	2.21	-	9	447	1.5	15.1	7	2.1	-	11.8	3.6	-
	Point Hicks	51	32	3	3.17	3.88	6.63	41	2,669	8	57.2	5.1	2.2	1.5	15.4	3.6	1.8
	Port Welshpool	1	-	-	24.83	-	-	5	40	0.3	0.8	0.9	-	-	0.9	-	-
	Seaspray	7	1	-	2.42	2.71	-	7	250	1.4	8.9	7.5	1.8	-	10.9	1.8	-
	Snake Island	3	-	-	12.92	-	-	4	42	0.9	4	3.6	-	-	9.1	-	-
	Sydenham Inlet	13	-	-	7.75	-	-	4	73	1.2	10.7	9.1	-	-	23.6	-	-
	Wilsons Promontory - East	2	-	-	10.88	-	-	12	91	4.1	9.1	10	-	-	12.7	-	-
	Wilsons Promontory - Northeast	1	-	-	15.5	-	-	6	53	0.9	3	9.1	-	-	9.1	-	-
	Woodside Beach	5	-	-	2.58	-	-	5	92	0.6	3.5	2	-	-	5.5	-	-

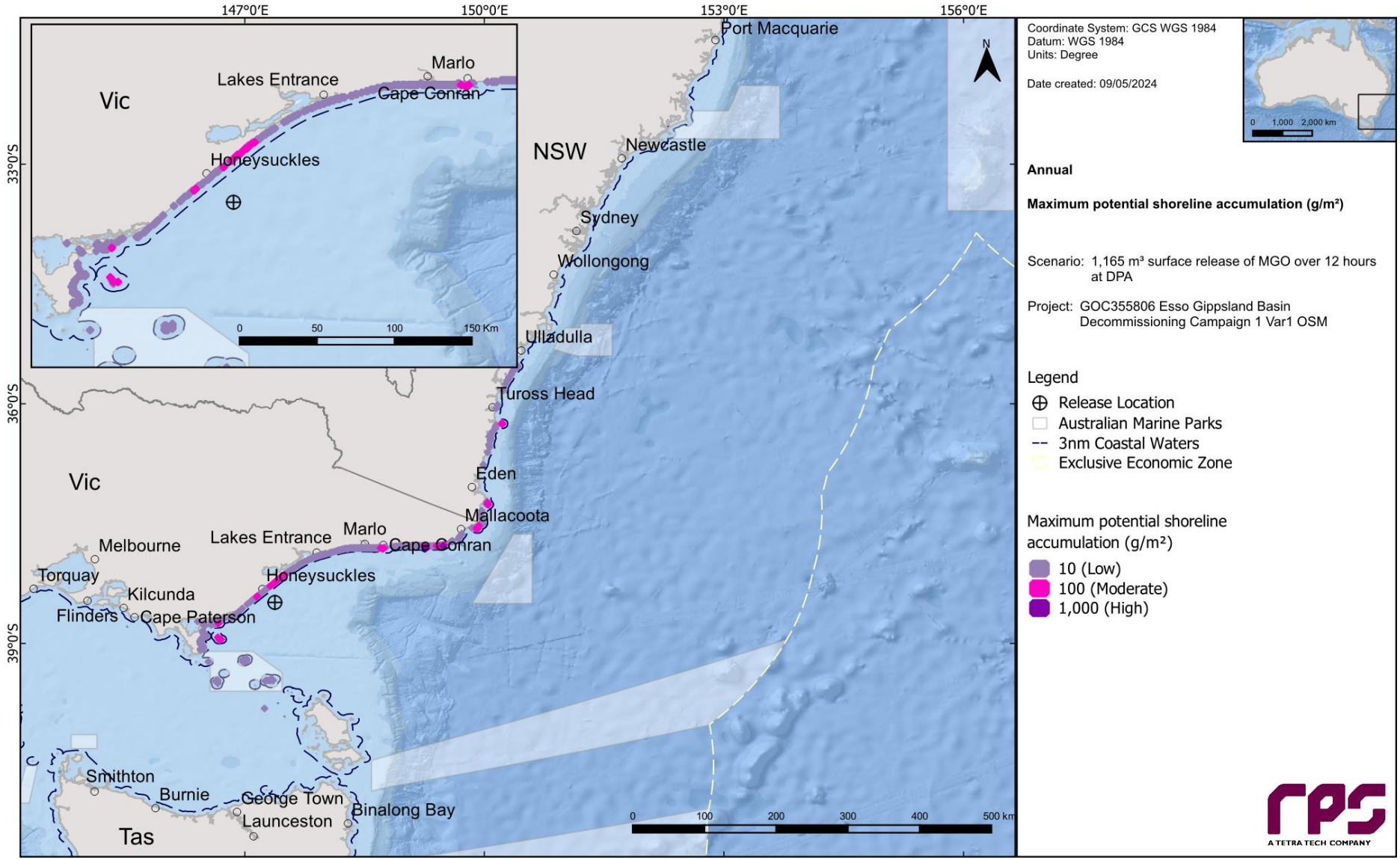

Figure 10.5 Maximum potential shoreline loading in the event of a 1,165 m³ surface release of MGO over 12 hours at Dolphin. The results reflect annual conditions.

10.1.3 In-water exposure

10.1.3.1 Dissolved Hydrocarbons

Table 10.5 summarises the potential in-water exposure to individual receptors from dissolved hydrocarbons in the 0-10 m layer as well as the minimum time before exposure, for all thresholds assessed.

Excluding the receptors that the release location is within (see

Table 9.2), the probability of exposure at concentrations equal to, or greater than, 10 ppb is greatest at Upwelling East of Eden (KEF) (7%). The maximum dissolved hydrocarbon concentration at any given receptor(s), including the receptors the release location lies within was shown to be 162.6 ppb, followed by the Upwelling East of Eden (KEF) at 75.1 ppb.

Figure 10.6 presents the zones of potential dissolved hydrocarbon exposure for 0-10 m depth layer.

Figure 10.7 to Figure 10.8 present the maximum residence time of dissolved hydrocarbon exposure for the low and moderate thresholds, respectively.

Table 10.5 Probability of dissolved hydrocarbons exposure to marine based receptors in the 0–10 m depth. Results are based on a 1,165 m³ surface release of MGO over 12 hours at Dolphin. The results reflect annual conditions.

Receptor		Annual									
		Maximum dissolved hydrocarbon exposure (ppb)	Probability of dissolved hydrocarbon exposure (%)			Minimum time before dissolved hydrocarbon exposure (days)			Maximum residence time for dissolved hydrocarbon exposure (days)		
			Low	Moderate	High	Low	Moderate	High	Low	Moderate	High
BIA	Antipodean Albatross - Foraging	47.6	4	-	-	1.96	2.88	-	0.17	0.04	-
	Black Petrel - Foraging	11	1	-	-	8	-	-	0.04	-	-
	Black-browed Albatross – Foraging*	162.6	47	11	-	0.04	0.08	-	0.67	0.21	-
	Bullers Albatross – Foraging*	162.6	47	11	-	0.04	0.08	-	0.67	0.21	-
	Campbell Albatross – Foraging*	162.6	47	11	-	0.04	0.08	-	0.67	0.21	-
	Common Diving-petrel – Foraging*	162.6	47	11	-	0.04	0.08	-	0.67	0.21	-
	Flesh-footed Shearwater - Foraging	11	1	-	-	8.00	-	-	0.04	-	-
	Great-winged Petrel - Foraging	11	1	-	-	12.92	-	-	<0.04	-	-
	Grey Nurse Shark - Foraging	25.8	1	-	-	5.25	-	-	0.08	-	-
	Humpback Whale - Foraging	25.8	2	-	-	4.92	-	-	0.13	-	-
	Indian Yellow-nosed Albatross - Foraging	162.6	47	11	-	0.04	0.08	-	0.67	0.21	-
	Indo-Pacific/Spotted Bottlenose Dolphin - Breeding	22.4	1	-	-	4.88	-	-	0.08	-	-
	Little Penguin - Foraging	47.3	1	-	-	4.5	-	-	0.17	-	-
	Northern Giant Petrel - Foraging	11	1	-	-	12.92	-	-	<0.04	-	-
	Pygmy Blue Whale – Distribution*	162.6	47	11	-	0.04	0.08	-	0.67	0.21	-
	Pygmy Blue Whale – Foraging*	162.6	47	11	-	0.04	0.08	-	0.67	0.21	-
	Short-tailed Shearwater – Foraging*	162.6	47	11	-	0.04	0.08	-	0.67	0.21	-
	Shy Albatross – Foraging*	162.6	47	11	-	0.04	0.08	-	0.67	0.21	-
	Sooty Shearwater - Foraging	25.8	1	-	-	5.67	-	-	<0.04	-	-
	Southern Giant Petrel - Foraging	11	1	-	-	12.92	-	-	<0.04	-	-
	Southern Right Whale - Known Core Range	162.6	47	11	-	0.04	0.08	-	0.67	0.21	-
	Wandering Albatross – Foraging*	162.6	47	11	-	0.04	0.08	-	0.67	0.21	-
	Wedge-tailed Shearwater - Foraging	47.3	2	-	-	4.5	-	-	0.17	-	-

Receptor		Maximum dissolved hydrocarbon exposure (ppb)	Annual Probability of dissolved hydrocarbon exposure (%)			Annual Minimum time before dissolved hydrocarbon exposure (days)			Annual Maximum residence time for dissolved hydrocarbon exposure (days)		
			Low	Moderate	High	Low	Moderate	High	Low	Moderate	High
	White Shark – Breeding*	162.6	47	11	-	0.04	0.08	-	0.67	0.21	-
	White Shark – Distribution*	162.6	47	11	-	0.04	0.08	-	0.67	0.21	-
	White Shark - Foraging	51.3	4	1	-	2.58	3.71	-	0.21	0.04	-
	White-capped Albatross - Foraging	11	1	-	-	12.92	-	-	<0.04	-	-
	White-faced Storm-petrel - Breeding	11	1	-	-	7	-	-	0.08	-	-
	White-faced Storm-petrel - Foraging	63.2	4	1	-	1.83	1.96	-	0.21	0.04	-
	Wilsons Storm Petrel - Migration	11	1	-	-	12.92	-	-	<0.04	-	-
IBRA	East Gippsland Lowlands	37.3	3	-	-	2.71	-	-	0.13	-	-
IMCRA	Flinders	50.3	2	1	-	2.5	3.75	-	0.21	0.04	-
	Twofold Shelf*	162.6	47	11	-	0.04	0.08	-	0.67	0.21	-
KEF	Canyons on the Eastern Continental Slope	11	1	-	-	12.92	-	-	<0.04	-	-
	Upwelling East of Eden	75.1	7	1	-	1	1.04	-	0.25	0.04	-
MNP	Cape Howe	47.3	1	-	-	4.75	-	-	<0.04	-	-
	Point Hicks	39.7	2	-	-	2.63	-	-	0.13	-	-
Nearshore Waters (LGA)	Bega Valley	20.9	1	-	-	4.92	-	-	0.04	-	-
	East Gippsland	27.7	3	-	-	2.71	-	-	0.13	-	-
	Gabo Island	37.3	1	-	-	4.75	-	-	<0.04	-	-
Nearshore Waters (Sub-LGA)	Bega Valley	20.9	1	-	-	4.92	-	-	0.04	-	-
	Cape Howe / Mallacoota	15.2	1	-	-	4.83	-	-	0.08	-	-
	Croajingolong - West	27.7	2	-	-	2.92	-	-	0.08	-	-
	Marlo	10.7	1	-	-	5.42	-	-	0.04	-	-
	Point Hicks	13.2	2	-	-	2.71	-	-	0.08	-	-
	Sydenham Inlet	11.1	1	-	-	4.13	-	-	0.04	-	-
State Waters	New South Wales	22.4	1	-	-	4.88	-	-	0.08	-	-
	Victoria State Waters	51.3	4	1	-	2.08	3.71	-	0.21	0.04	-

*The release location resides within the receptor boundaries.

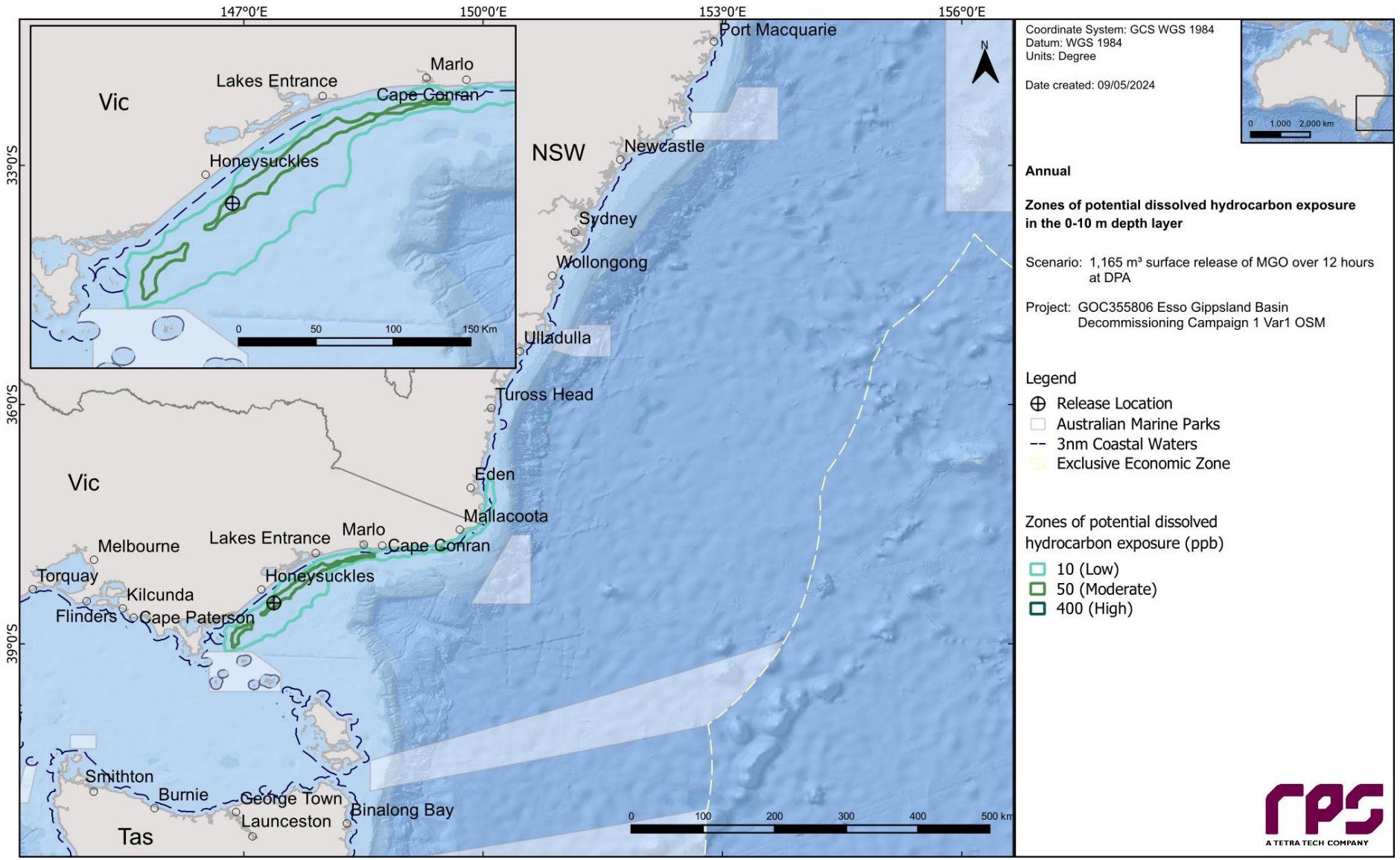

Figure 10.6 Zones of potential dissolved hydrocarbon exposure at 0-10 m below the sea in the event of a 1,165 m³ surface release of MGO over 12 hours at Dolphin. The results reflect annual conditions.

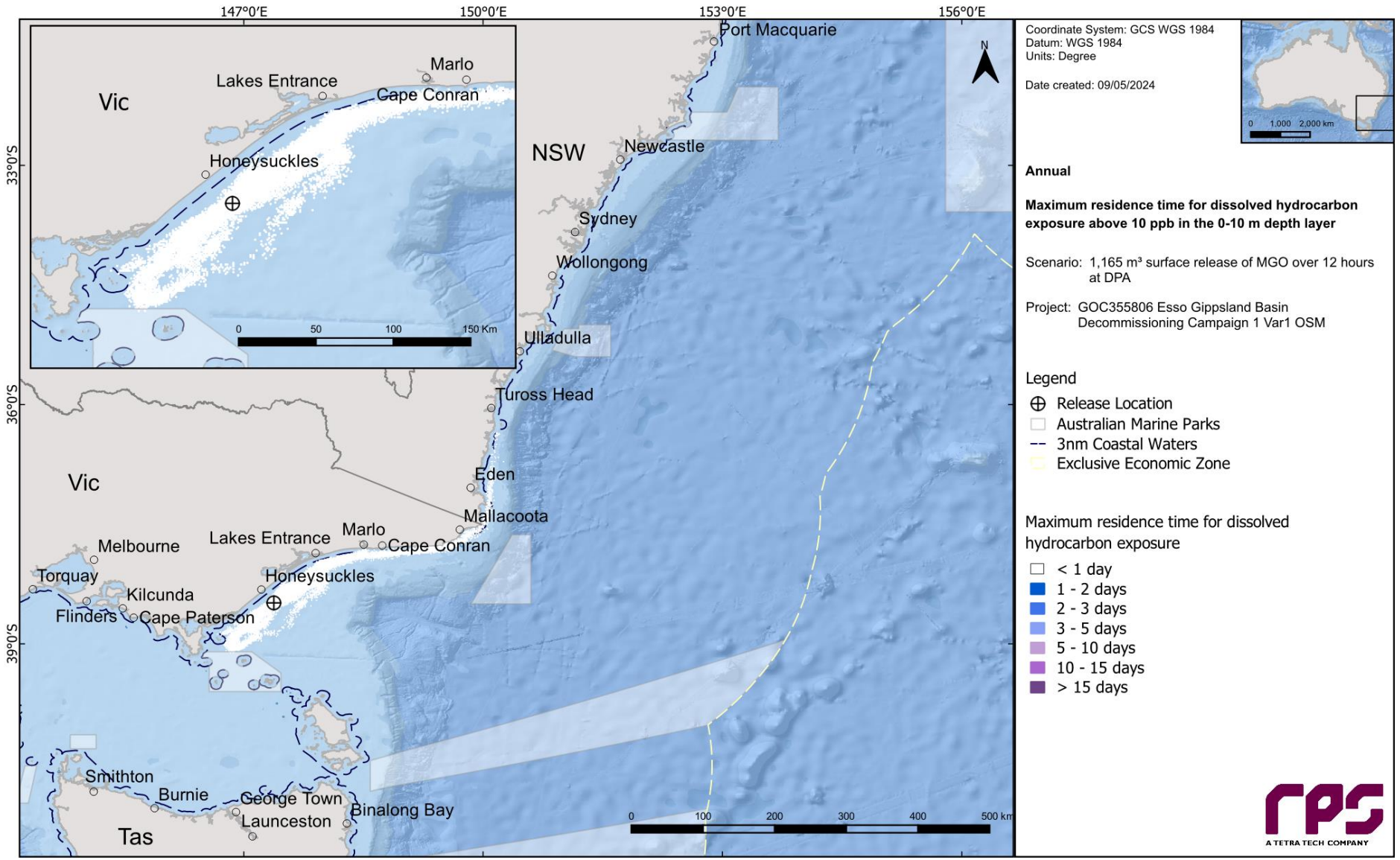

Figure 10.7 Maximum residence time for dissolved hydrocarbon exposure above 10 ppb, at 0-10 m below the sea surface in the event of 1,165 m³ surface release of MGO over 12 hours at Dolphin. The results reflect annual conditions.

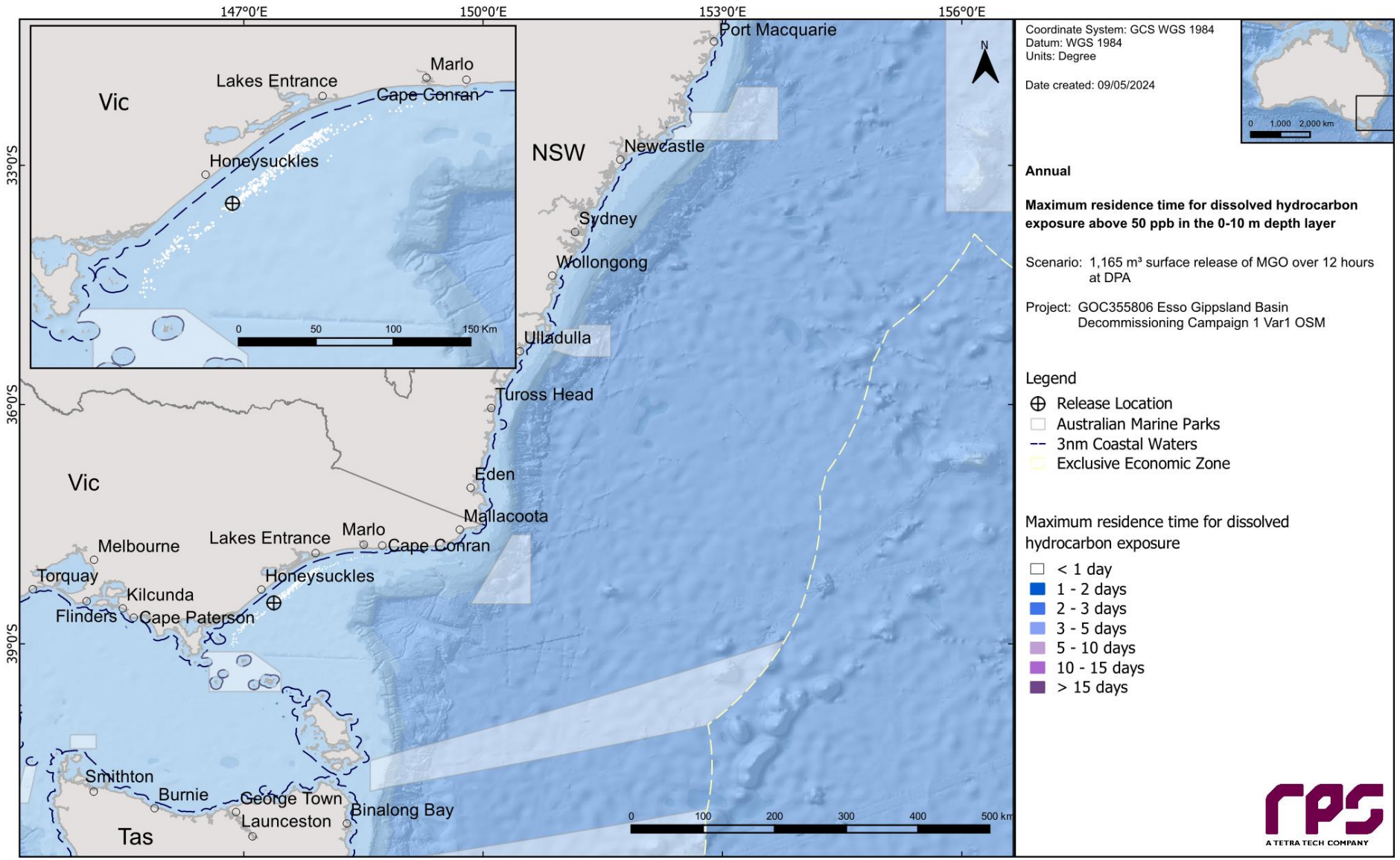

Figure 10.8 Maximum residence time for dissolved hydrocarbon exposure above 50 ppb, at 0-10 m below the sea surface in the event of 1,165 m³ surface release of MGO over 12 hours at Dolphin. The results reflect annual conditions.

10.1.3.2 Entrained Hydrocarbons

Table 10.6 summarises the potential in-water exposure to individual receptors from entrained hydrocarbons in the 0-10 m depth layer, as well as the minimum time before exposure for all thresholds assessed.

Except for the receptors the release location is within (see

Table 9.2), the highest probability of low entrained hydrocarbon exposure was 72% recorded for the Upwelling East of Eden (KEF). The quickest time for exposure at the same threshold was 0.88 days (21.12 hours) for the same receptor. The highest entrained hydrocarbon concentration was predicted to be 10,680.6 ppb, including the receptors the release location lies within, followed by 776.7 ppb at Upwelling East of Eden (KEF).

Figure 10.9 presents the zones of potential entrained hydrocarbon exposure for the 0-10 m depth layer.

Figure 10.10 and Figure 10.11 present the maximum residence time of entrained hydrocarbon exposure for 10 ppb and 100 ppb.

Table 10.6 Probability of entrained hydrocarbons exposure to marine based receptors in the 0–10 m depth layer. Results are based on a 1,165 m³ surface release of MGO over 12 hours at Dolphin. The results reflect annual conditions.

Receptors		Annual						
		Maximum entrained hydrocarbon exposure (ppb)	Probability of entrained hydrocarbon exposure (%)		Minimum time before entrained hydrocarbon exposure (days)		Maximum residence time for entrained hydrocarbon exposure (days)	
			Low	High	Low	High	Low	High
AMP	Beagle	109.1	13	1	4.08	5.83	6.54	0.21
	East Gippsland	22.1	4	-	8.46	-	2.33	-
BIA	Antipodean Albatross - Foraging	195.9	59	4	1.58	1.75	12.08	0.75
	Black Petrel - Foraging	49.3	9	-	4.88	-	3.42	-
	Black-browed Albatross – Foraging*	10,680.6	100	90	0.04	0.04	17.46	3.79
	Bullers Albatross – Foraging*	10,680.6	100	90	0.04	0.04	17.46	3.79
	Campbell Albatross – Foraging*	10,680.6	100	90	0.04	0.04	17.46	3.79
	Common Diving-petrel – Foraging*	10,680.6	100	90	0.04	0.04	17.46	3.79
	Crested Tern - Breeding	55.9	4	-	5.38	-	4.58	-
	Crested Tern - Foraging	49.3	9	-	4.96	-	3.71	-
	Flesh-footed Shearwater - Foraging	49.3	9	-	4.88	-	3.42	-
	Great-winged Petrel - Foraging	21.4	5	-	10.25	-	0.96	-
	Grey Nurse Shark - Foraging	81.9	23	-	4.04	-	4.58	-
	Grey Nurse Shark - Migration	88	21	-	4.04	-	3.42	-
	Humpback Whale - Foraging	110.2	28	1	3.88	5.33	5.08	0.08
	Indian Yellow-nosed Albatross – Foraging*	10,680.6	100	90	0.04	0.04	17.46	3.79
	Indo-Pacific/Spotted Bottlenose Dolphin - Breeding	96.1	25	-	3.88	-	5.08	-
	Little Penguin - Breeding	55.9	5	-	5.25	-	4.58	-
	Little Penguin - Foraging	111.3	34	1	3.46	3.96	5.96	0.29
	Northern Giant Petrel - Foraging	21.4	5	-	10.25	-	0.96	-
	Pygmy Blue Whale – Distribution*	10,680.6	100	90	0.04	0.04	17.46	3.79
	Pygmy Blue Whale – Foraging*	10,680.6	100	90	0.04	0.04	17.46	3.79
	Pygmy Blue Whale - Known Foraging Area	11	1	-	17.5	-	0.08	-
	Short-tailed Shearwater – Foraging*	10,680.6	100	90	0.04	0.04	17.46	3.58
	Shy Albatross – Foraging*	10,680.6	100	90	0.04	0.04	17.46	3.79

Receptors		Annual						
		Maximum entrained hydrocarbon exposure (ppb)	Probability of entrained hydrocarbon exposure (%)		Minimum time before entrained hydrocarbon exposure (days)		Maximum residence time for entrained hydrocarbon exposure (days)	
			Low	High	Low	High	Low	High
	Sooty Shearwater - Foraging	85.5	18	-	4.17	-	4.58	-
	Southern Giant Petrel - Foraging	21.4	5	-	10.25	-	0.96	-
	Southern Right Whale - Known Core Range*	10,680.6	100	90	0.04	0.04	17.46	3.79
	Wandering Albatross – Foraging*	10,680.6	100	90	0.04	0.04	17.46	3.79
	Wedge-tailed Shearwater - Foraging	111.3	34	1	3.46	3.92	5.96	0.29
	White Shark – Breeding*	10,680.6	100	90	0.04	0.04	17.46	3.79
	White Shark – Distribution*	10,680.6	100	90	0.04	0.04	17.46	3.79
	White Shark - Foraging	207.7	58	4	2.29	2.46	16.33	2.33
	White-capped Albatross - Foraging	21.4	5	-	10.25	-	0.96	-
	White-faced Storm-petrel - Breeding	62.4	11	-	4.54	-	4.58	-
	White-faced Storm-petrel - Foraging	207.7	59	4	1.50	1.63	16.33	2.33
	Wilsons Storm Petrel - Migration	21.4	5	-	10.25	-	0.96	-
IBRA	Bateman	55.9	3	-	5.5	-	4.58	-
	East Gippsland Lowlands	203.3	53	4	2.42	2.63	14.83	2.04
	Flinders	49.2	11	-	6.13	-	4.54	-
	Gippsland Plain	110.6	6	1	2.04	2.33	10.38	0.13
	South East Coastal Ranges	13.8	1	-	5.79	-	0.25	-
	Wilsons Promontory	150.4	8	2	3.08	3.58	14.71	0.33
IMCRA	Batemans Shelf	61.3	11	-	4.54	-	4.58	-
	Central Bass Strait	27.5	2	-	10.54	-	2.58	-
	Central Victoria	14.6	1	-	12.42	-	0.67	-
	Flinders	307.4	16	3	2.00	2.04	14.71	0.63
	Twofold Shelf*	10,680.6	100	90	0.04	0.04	17.46	3.79
	Victorian Embayments	24.5	1	-	8.92	-	4.83	-
KEF	Big Horseshoe Canyon	19.7	1	-	14.46	-	0.58	-
	Canyons on the Eastern Continental Slope	20	2	-	10.63	-	0.96	-
	Shelf rocky reefs	33.4	7	-	7.21	-	0.79	-

Receptors		Annual						
		Maximum entrained hydrocarbon exposure (ppb)	Probability of entrained hydrocarbon exposure (%)		Minimum time before entrained hydrocarbon exposure (days)		Maximum residence time for entrained hydrocarbon exposure (days)	
			Low	High	Low	High	Low	High
	Upwelling East of Eden	776.7	72	27	0.88	0.92	16.33	2.54
MNP	Cape Howe	101.4	28	1	3.75	4.46	4.92	0.04
	Ninety Mile Beach	57	8	-	1.17	-	8.13	-
	Point Hicks	177.8	56	4	2.38	2.5	15.88	2.33
	Wilsons Promontory	29.2	3	-	9.58	-	3.13	-
MP	Batemans	55.9	4	-	5.25	-	4.58	-
MS	Beware Reef	71.5	27	-	3.17	-	5.5	-
NP	Kent Group	24	2	-	13.58	-	4.54	-
NPS4	Nooramunga Marine and Coastal Park	24.5	1	-	8.92	-	4.83	-
RAMSAR	Corner Inlet	24.5	1	-	8.92	-	4.83	-
RSB	Beware Reef	75.8	27	-	2.75	-	6.08	-
	Cutter Rock	22	5	-	11.5	-	2.96	-
	New Zealand Star Bank	131.7	39	3	3.04	3.29	6.29	0.46
Nearshore Waters (LGA)	Anser Island	12.9	1	-	10.33	-	0.08	-
	Bega Valley	50.8	20	-	4.17	-	4.13	-
	Curtis Island	29.3	5	-	9.58	-	2.25	-
	East Gippsland	203.3	53	4	2.42	2.63	14.83	2.04
	Eurobodalla	19.5	1	-	5.67	-	1.5	-
	Gabo Island	54.3	23	-	4.04	-	4.71	-
	Hogan Island Group	49.2	11	-	6.13	-	2.83	-
	Kanowna Island	17	1	-	10.25	-	0.46	-
	Kent Island Group	24	2	-	14.13	-	4.54	-
	Moncoeur Islands	40	6	-	6.96	-	1.58	-
	Montague Island	55.9	3	-	5.50	-	4.58	-
	Rodondo Island	39.1	2	-	9.79	-	1.75	-
	Seal Islands	150.4	8	2	3.08	3.58	14.71	0.33
	Skull Rock	16.9	1	-	10.33	-	0.33	-

Receptors		Annual						
		Maximum entrained hydrocarbon exposure (ppb)	Probability of entrained hydrocarbon exposure (%)		Minimum time before entrained hydrocarbon exposure (days)		Maximum residence time for entrained hydrocarbon exposure (days)	
			Low	High	Low	High	Low	High
	South Gippsland	29.5	2	-	9.00	-	10.08	-
	Wellington	96.8	6	-	2.04	-	9.21	-
State Waters	New South Wales	90.1	25	-	3.88	-	5.08	-
	Tasmania State Waters	83.3	12	-	5.50	-	5.17	-
	Victoria State Waters	264.6	57	4	1.13	1.54	16.96	2.33
Nearshore Waters (Sub-LGA)	Bega Valley	50.8	20	-	4.17	-	4.13	-
	Cape Conran	78.9	24	-	3.13	-	5.79	-
	Cape Howe / Mallacoota	50.1	20	-	4.13	-	4.96	-
	Clonmel Island	26.4	3	-	3.75	-	5.25	-
	Corringle	43.7	13	-	4.46	-	3.71	-
	Croajingolong - East	34.6	8	-	3.67	-	4.33	-
	Croajingolong - West	192.2	37	1	2.63	2.88	14.38	1.83
	Eurobodalla	19.5	1	-	5.67	-	1.5	-
	Golden Beach	96.8	4	-	2.04	-	9.21	-
	Lake Tyers Beach	13.9	3	-	5.33	-	0.46	-
	Lakes Entrance	18.2	1	-	5.00	-	0.58	-
	Lakes Entrance - West	15.6	3	-	6.46	-	1.21	-
	Marlo	72.3	26	-	3.13	-	6.25	-
	McLoughlins Beach	23.8	4	-	2.42	-	3.00	-
	Ocean Grange	77.4	4	-	2.08	-	9.71	-
	Point Hicks	176.2	53	4	2.42	2.63	14.83	2.04
	Seaspray	45.7	6	-	3.13	-	8.04	-
	Snake Island	20.3	1	-	12.25	-	4.38	-
	Sydenham Inlet	78.5	30	-	2.67	-	10.96	-
	Wilsons Promontory - East	29.5	2	-	9.00	-	10.08	-
	Wilsons Promontory - Northeast	28.9	2	-	9.00	-	7.67	-
	Wilsons Promontory - West	12.5	1	-	10.29	-	0.17	-

Receptors	Annual						
	Maximum entrained hydrocarbon exposure (ppb)	Probability of entrained hydrocarbon exposure (%)		Minimum time before entrained hydrocarbon exposure (days)		Maximum residence time for entrained hydrocarbon exposure (days)	
		Low	High	Low	High	Low	High
Woodside Beach	41.2	5	-	2.08	-	9.67	-

*The release location resides within the receptor boundaries.

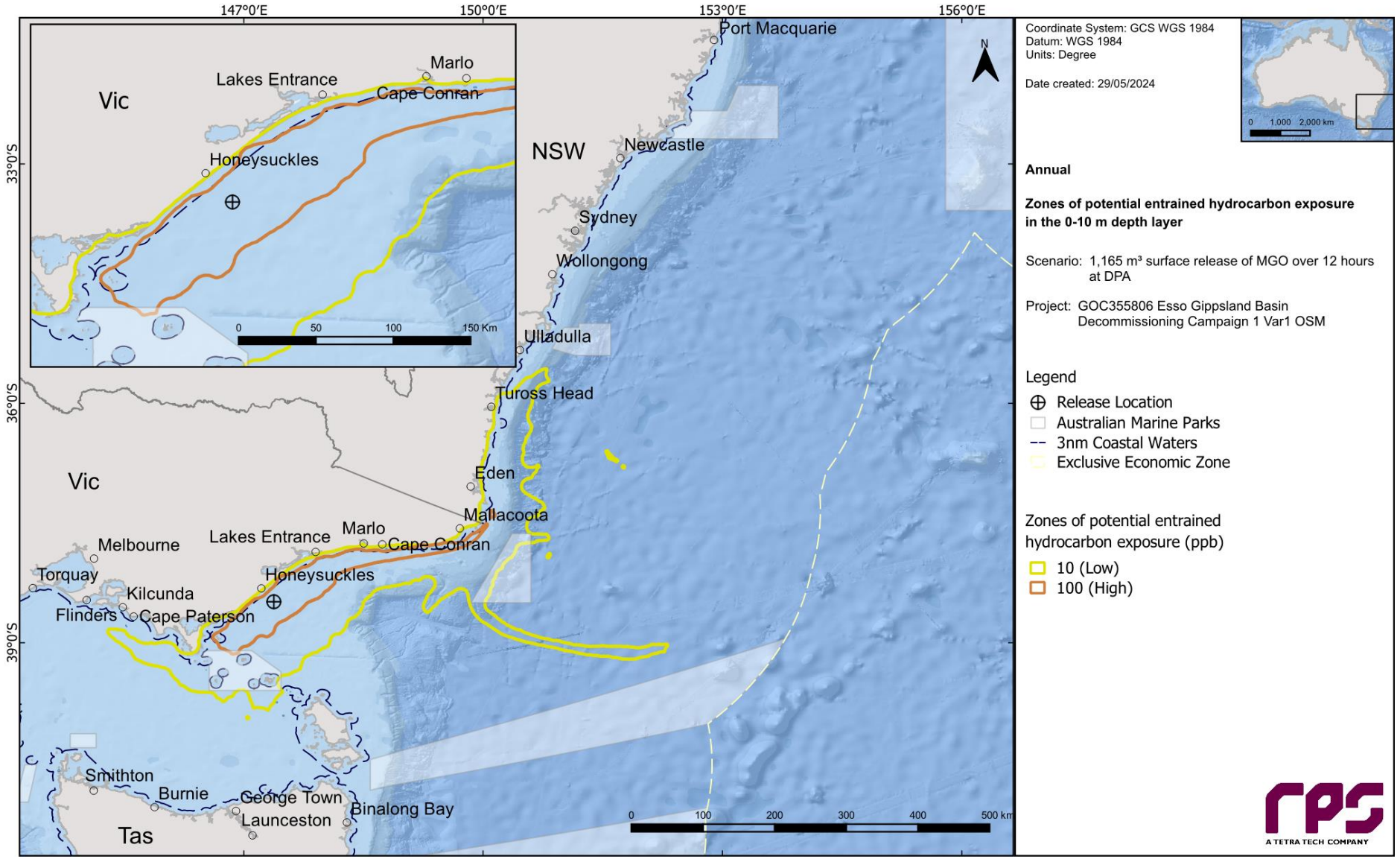

Figure 10.9 Zones of potential entrained hydrocarbon exposure at 0-10 m below the sea surface in the event of a 1,165 m³ surface release of MGO over 12 hours at Dolphin. The results reflect annual conditions.

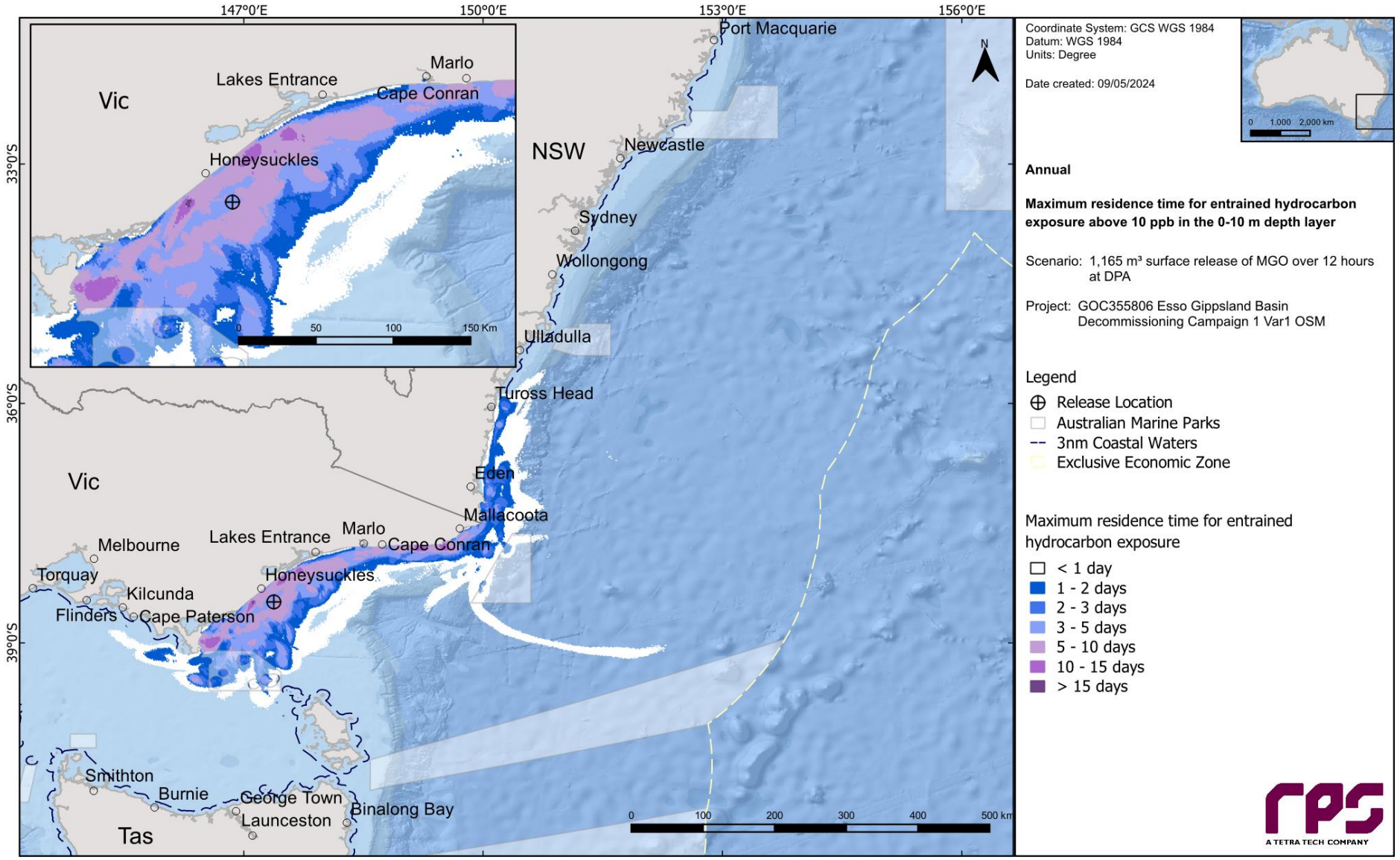

Figure 10.10 Maximum residence time for entrained hydrocarbon exposure above 10 ppb, at 0-10 m below the sea surface in the event of a 1,165 m³ surface release of MGO over 12 hours at Dolphin. The results reflect annual conditions.

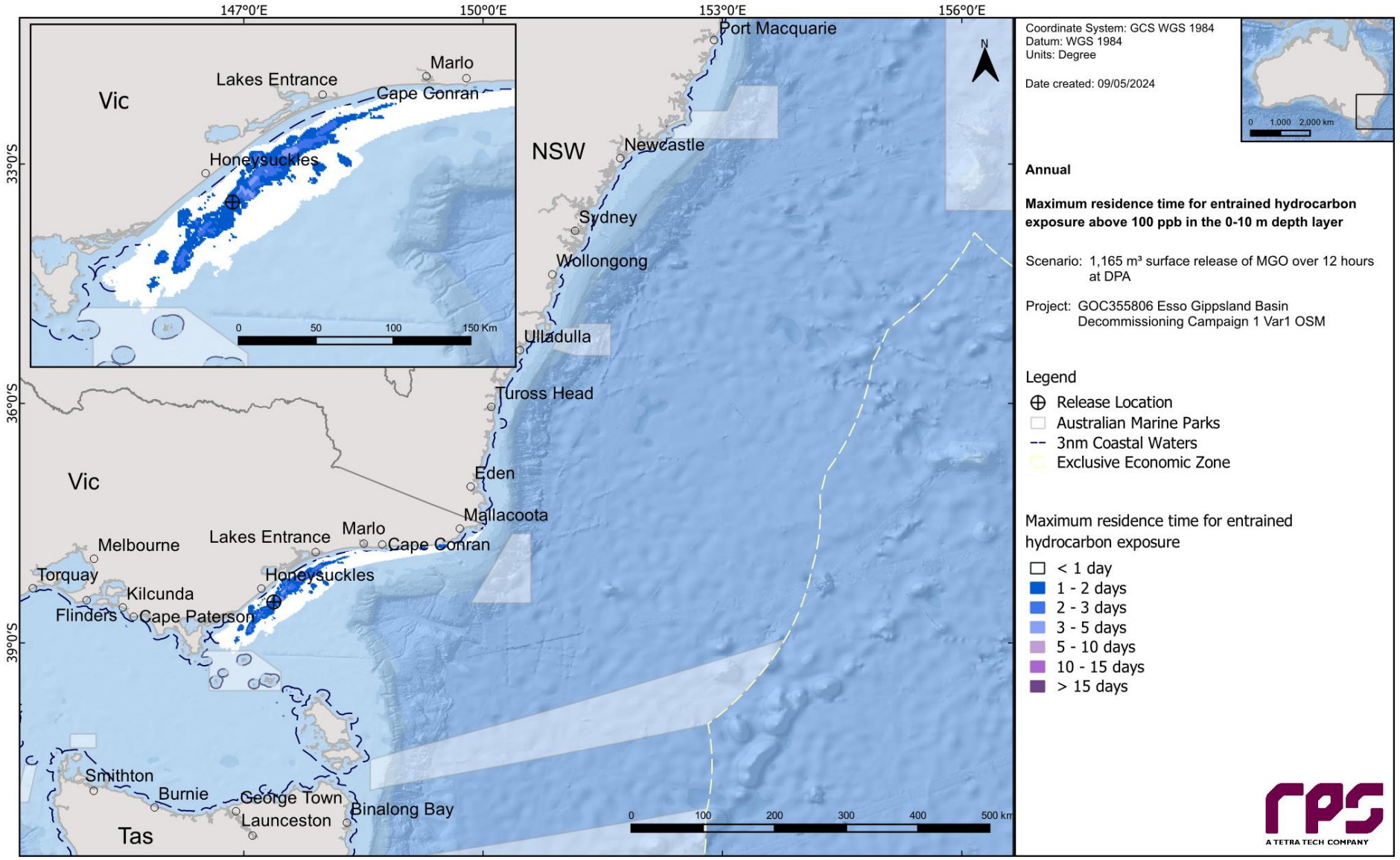

Figure 10.11 Maximum residence time for entrained hydrocarbon exposure above 100 ppb, at 0-10 m below the sea surface in the event of a 1,165 m³ surface release of MGO over 12 hours at Dolphin. The results reflect annual conditions.

10.2 Deterministic Analysis

The stochastic modelling results were assessed, and the “worst case” deterministic runs were identified and are presented below for the following criteria:

a. Largest swept area for surface oil above 10 g/m^2; (Section 10.2.1)
b. Largest (total) volume of oil ashore (Section 10.2.2)
c. Longest length of shoreline with oil accumulation above 100 g/m^2 (Section 10.2.3)
d. Largest area of entrained hydrocarbon exposure above 100 ppb (Section 10.2.4)
e. Largest area of dissolved hydrocarbon exposure above 50 ppb (Section 10.2.5)

Table 10.7 presents a summary of sea surface and in-water exposure and shoreline accumulation at the assessed thresholds for the identified deterministic simulations.

Table 10.7 Summary of the worst-case deterministic analysis based on the scenario presented in the stochastic analysis section.

Variable	Threshold	Deterministic Analysis Criteria				
		Largest swept area of floating oil >10 g/m²	Largest volume of oil ashore	Longest length of shoreline with accumulation >100 g/m²	Largest area of entrained hydrocarbon exposure >100 ppb	Largest area of dissolved hydrocarbon exposure >50 ppb
Run Number		88	43	95	39	51
Total area of floating Oil exposure (km²)	1 g/m²	289	288	261	48	26
	10 g/m²	**196**	149	5	18	2
	50 g/m²	16	11	0	2	-
Total length of shoreline accumulation (km)	10 g/m²	-	19	44	16	8
	100 g/m²	-	6	**12**	1	4
	1,000 g/m²	-	3	-	-	-
Minimum time before accumulation on any shoreline (hours)	10 g/m²	-	161	44	124	199
	100 g/m²	-	175	48	226	392
	1,000 g/m²	-	239	-	-	-
Peak volume of oil ashore (m³)		-	**71 (Total volume 83.3 m³)^**	59	7	11
Total area of entrained hydrocarbon exposure (km²)	10 ppb	4,804	5,936	2,090	10,143	5,569
	100 ppb	456	1,091	520	**2,559**	775
	1,000 ppb	-	6	134	139	96
Total area of dissolved hydrocarbon exposure (km²)	10 ppb	-	-	170	62	569
	50 ppb	-	-	6	-	**72**
	400 ppb	-	-	-	-	-
Start Date		19th August 2014 1am	7th May 2012 2am	15th June 2013 10pm	23rd July 2015 11pm	30th May 2019 2am

^Total volume of oil stranded on shorelines over the entire simulation, not accounting for natural removal processes such as evaporation and decay.

10.2.1 Deterministic Case: Largest swept area of floating oil above 10 g/m^2

The deterministic trajectory that resulted in the largest swept area of floating oil above 10 g/m^2 was identified as run number 88, which started on the 19th of August 2014.

Figure 10.12 illustrates the floating oil exposure and shoreline accumulation over the 30-day simulation.

Figure 10.13 displays the time series of the area of sea surface exposure above the low (1 g/m^2), moderate (10 g/m^2) and high (50 g/m^2) thresholds over the 30-day simulation.

Figure 10.14 presents the fates and weathering graph for the corresponding single spill trajectory and Table 10.8 summarises the mass balance peaks and at the end of the simulation.

Table 10.8 Summary of the mass balance for the trajectory with the largest swept area of floating oil above 10 g/m^2.

Exposure Metrics	Peak Volume	Day of occurrence	Volume at day 30
Surface (m^3)	737	0.5	0
Entrained (m^3)	675	2.5	241
Dissolved (m^3)	1	4.6	0
Evaporation (m^3)	532	30.0	532
Decay (m^3)	420	30.0	420
Ashore (m^3)	0	0.0	0

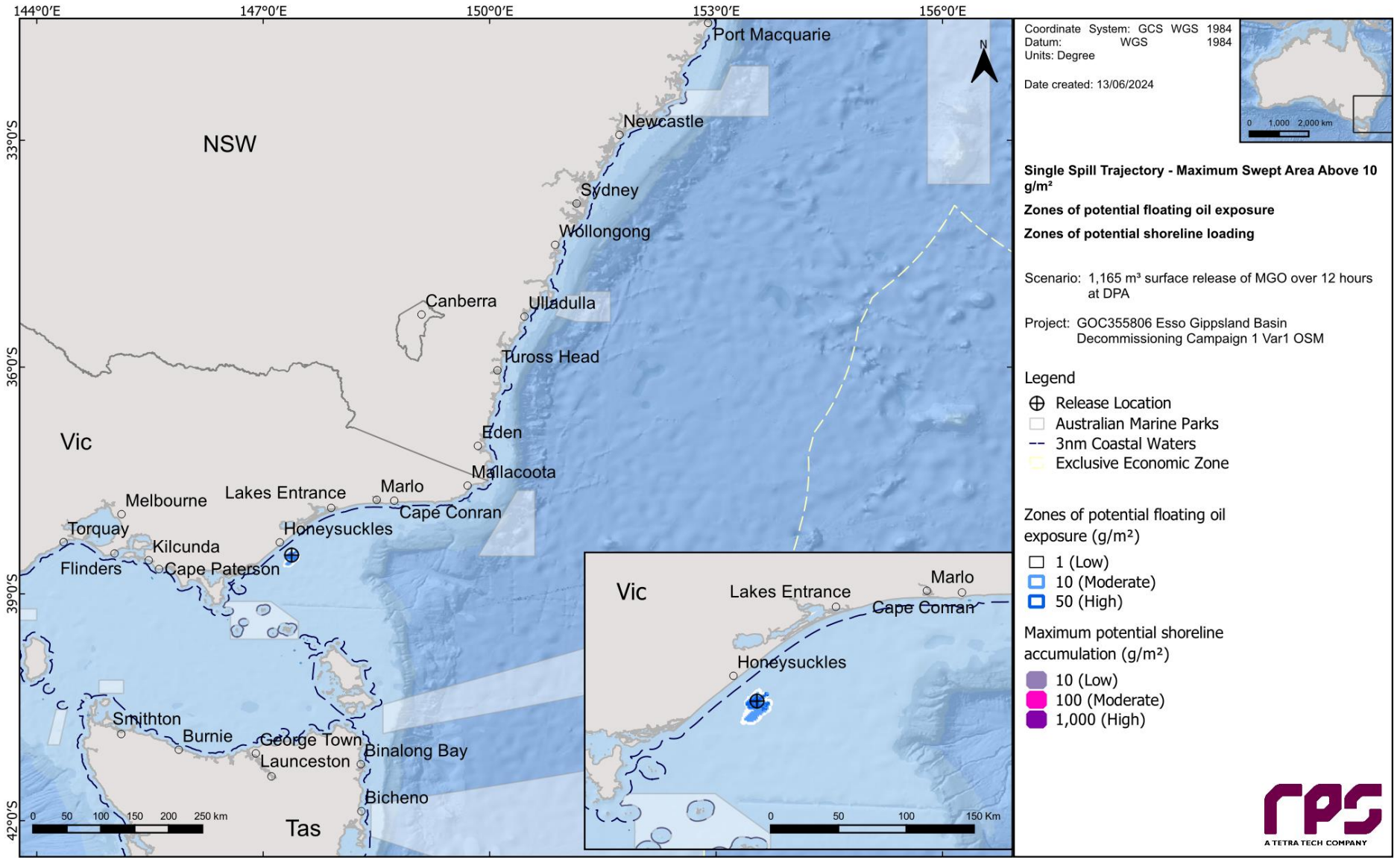

Figure 10.12 Zones of potential floating oil exposure and shoreline accumulation, for the trajectory with the largest swept area of floating oil above 10 g/m².

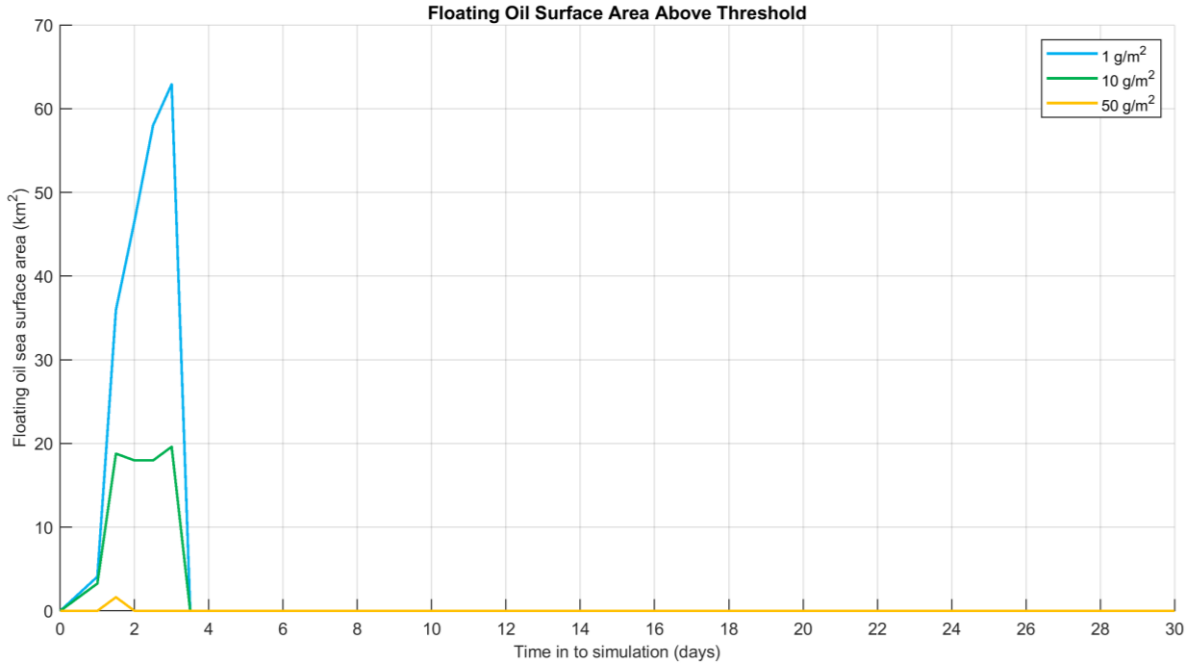

Figure 10.13 Time series of floating oil exposure above each threshold for the trajectory with the largest swept area of floating oil above 10 g/m².

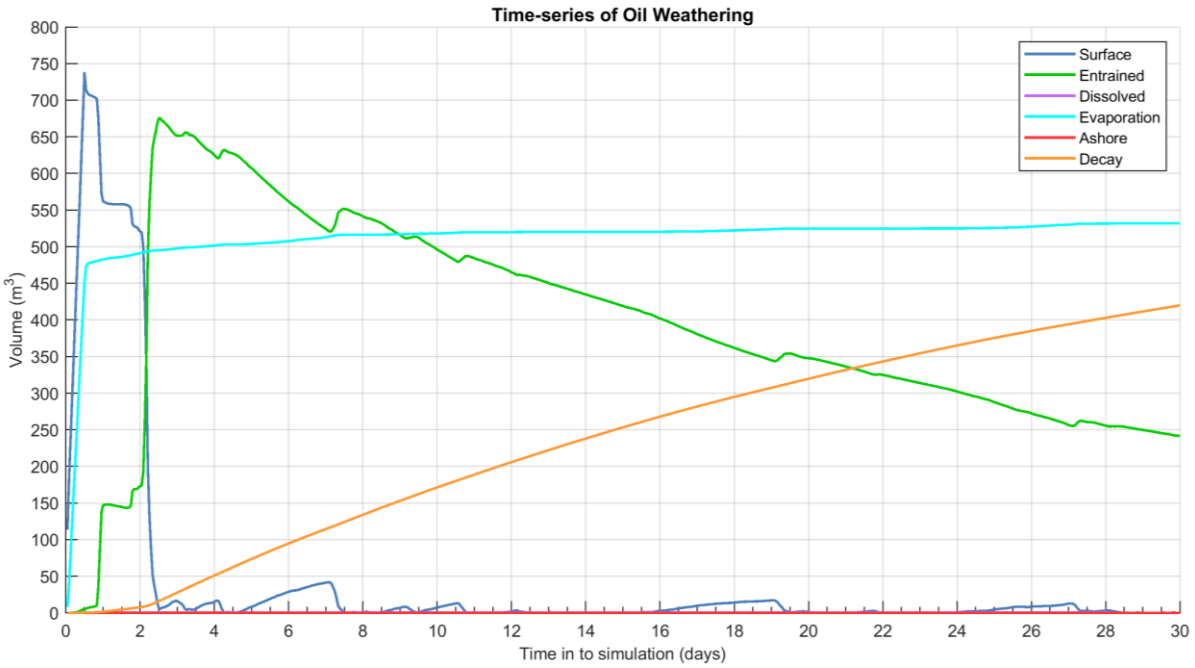

Figure 10.14 Predicted weathering and fates graph for the trajectory with the largest swept area of floating oil above 10 g/m².

10.2.2 Deterministic Case: Largest volume of oil ashore

The deterministic trajectory that resulted in the largest volume of oil ashore was identified as run number 43, which started on the 7th of May 2012.

Figure 10.15 illustrates the floating oil exposure and shoreline accumulation over the 30-day simulation.

Figure 10.16 displays the time series of the volume of shoreline oil accumulation above the low (1 g/m^2), moderate (10 g/m^2) and high (50 g/m^2) thresholds over the 30-day simulation.

Figure 10.17 presents the fates and weathering graph for the corresponding single spill trajectory and Table 10.9 summarises the mass balance peaks and at the end of the simulation.

Table 10.9 Summary of the mass balance for the trajectory with the largest volume of oil ashore.

Exposure Metrics	Peak Volume	Day of occurrence	Volume at day 30
Surface (m^3)	668	0.5	0
Entrained (m^3)	662	1.8	160
Dissolved (m^3)	1	4.3	0
Evaporation (m^3)	608	30.0	608
Decay (m^3)	355	30.0	355
Ashore (m^3)	72	26.9	71

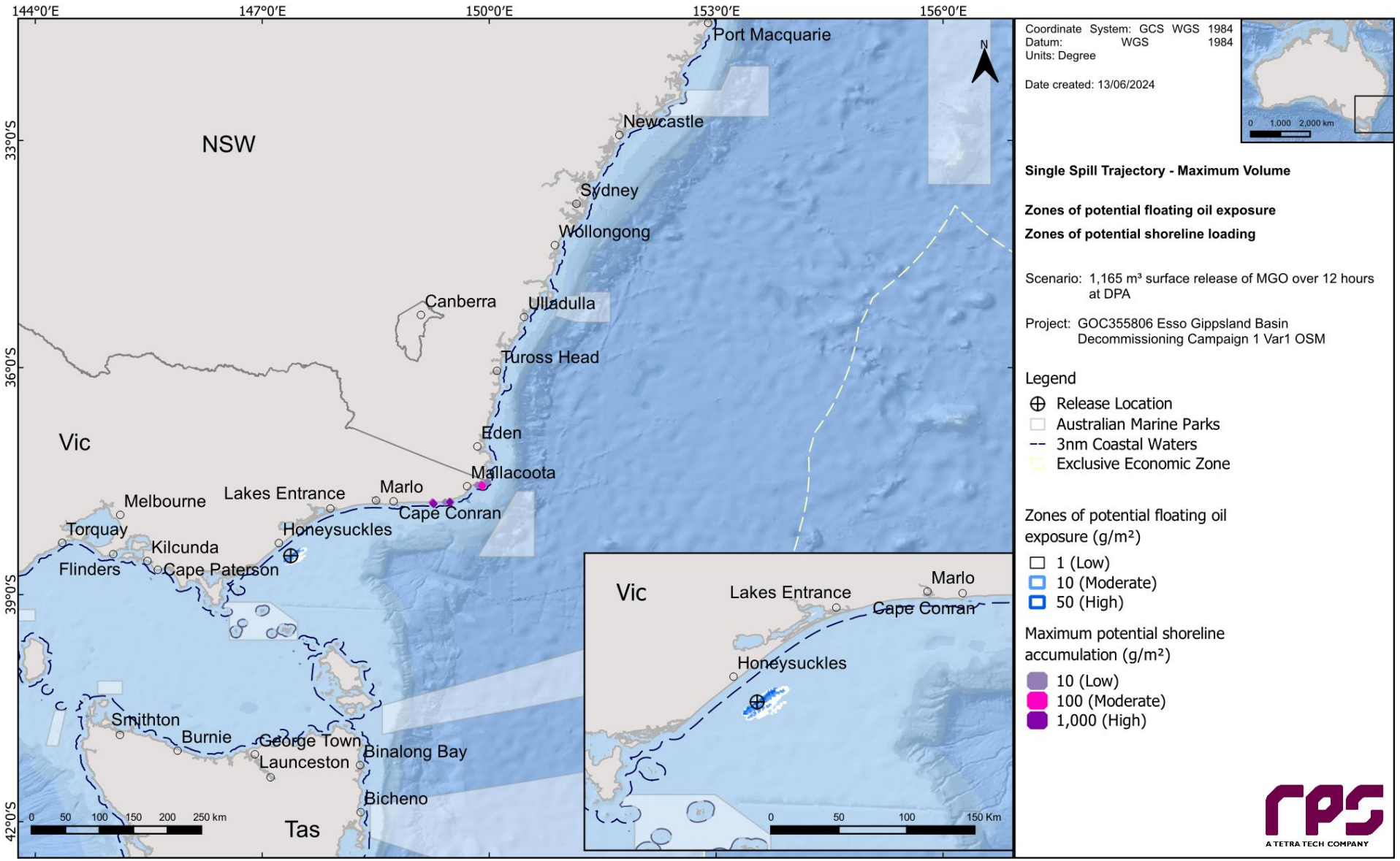

Figure 10.15 Zones of potential floating oil exposure and shoreline accumulation, for the trajectory with the largest volume of oil ashore.

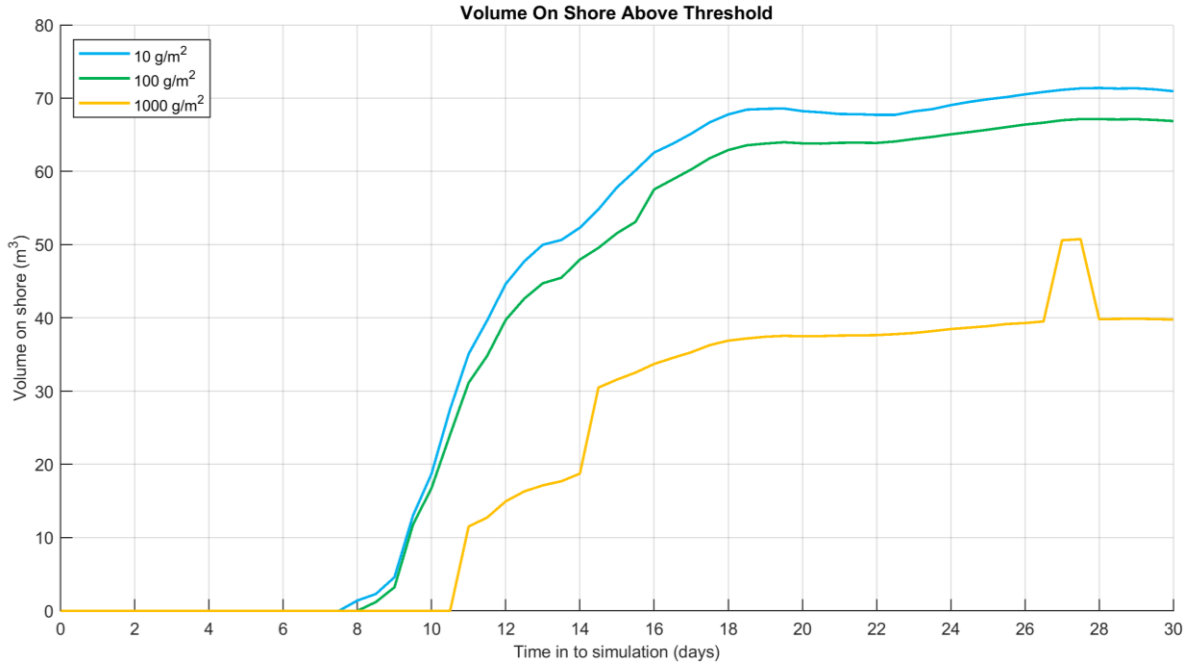

Figure 10.16 Time series of the volume of oil ashore above each threshold for the trajectory with the largest volume of oil ashore.

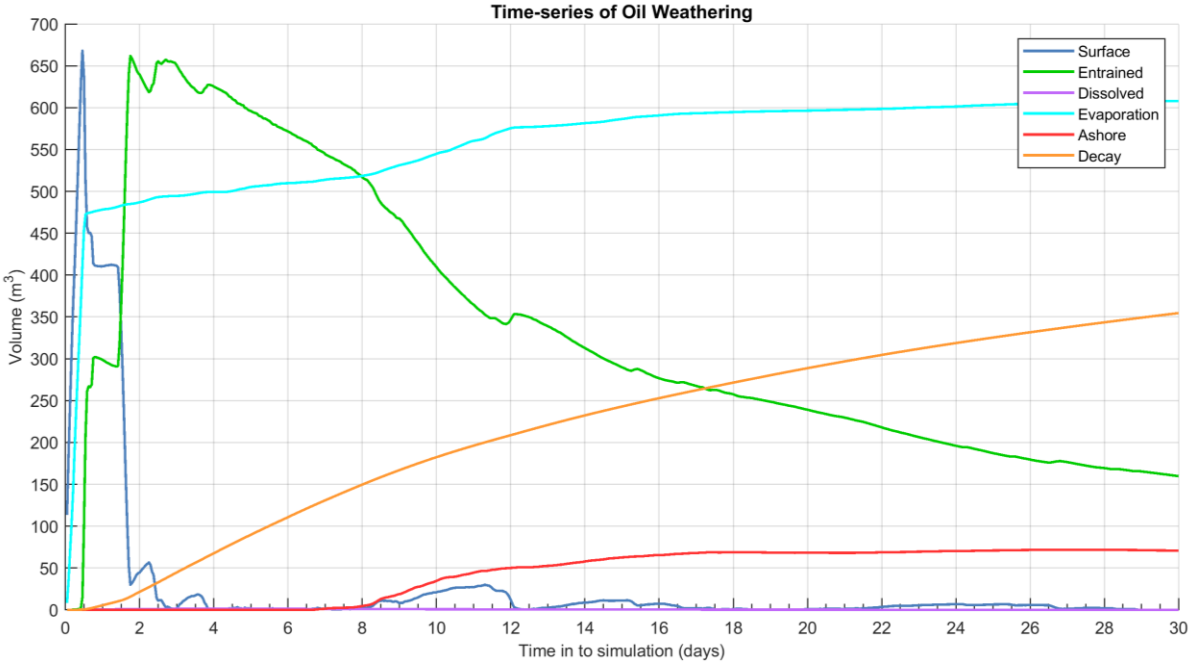

Figure 10.17 Predicted weathering and fates graph for the trajectory with the largest volume of oil ashore.

10.2.3 Deterministic Case: Longest length of shoreline with accumulation above 100 g/m^2

The deterministic trajectory that resulted in the longest length of shoreline with accumulation above 100 g/m^2 was identified as run number 95, which started on the 15th of June 2013.

Figure 10.18 illustrates the floating oil exposure and shoreline accumulation over the 30-day simulation.

Figure 10.19 displays the time series of the length of shoreline oil accumulation above the low (1 g/m^2), moderate (10 g/m^2) and high (50 g/m^2) thresholds over the 30-day simulation.

Figure 10.20 presents the fates and weathering graph for the corresponding single spill trajectory and Table 10.10 summarises the mass balance peaks and at the end of the simulation.

Table 10.10 Summary of the mass balance for the trajectory with the longest length of shoreline with accumulation above 100 g/m^2.

Exposure Metrics	Peak Volume	Day of occurrence	Volume at day 30
Surface (m^3)	127	0.1	7
Entrained (m^3)	898	0.5	161
Dissolved (m^3)	7	1.0	0
Evaporation (m^3)	538	30.0	538
Decay (m^3)	428	30.0	428
Ashore (m^3)	62	12.7	59

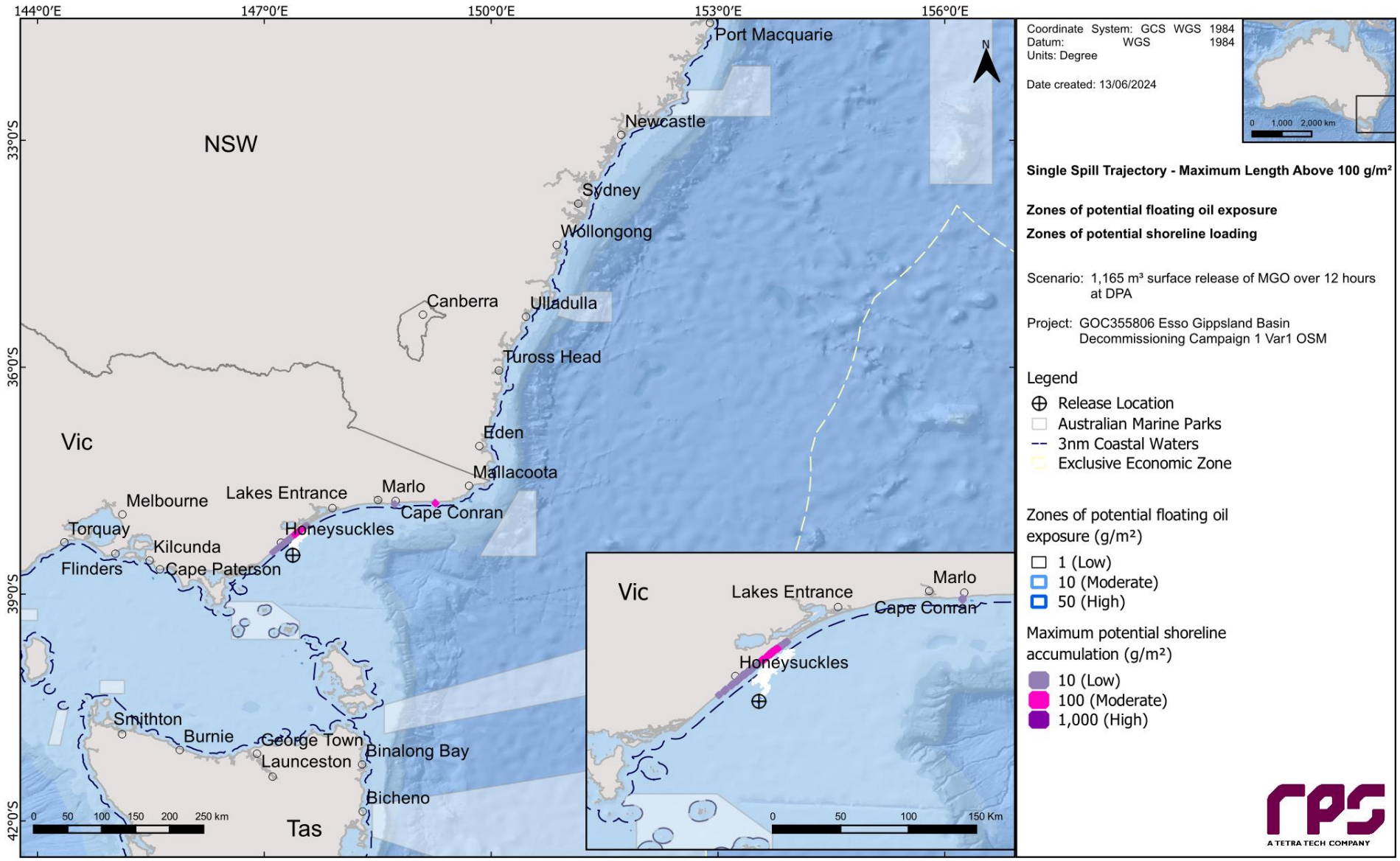

Figure 10.18 Zones of potential floating oil exposure and shoreline accumulation, for the trajectory with the longest length of shoreline accumulation above 100 g/m².

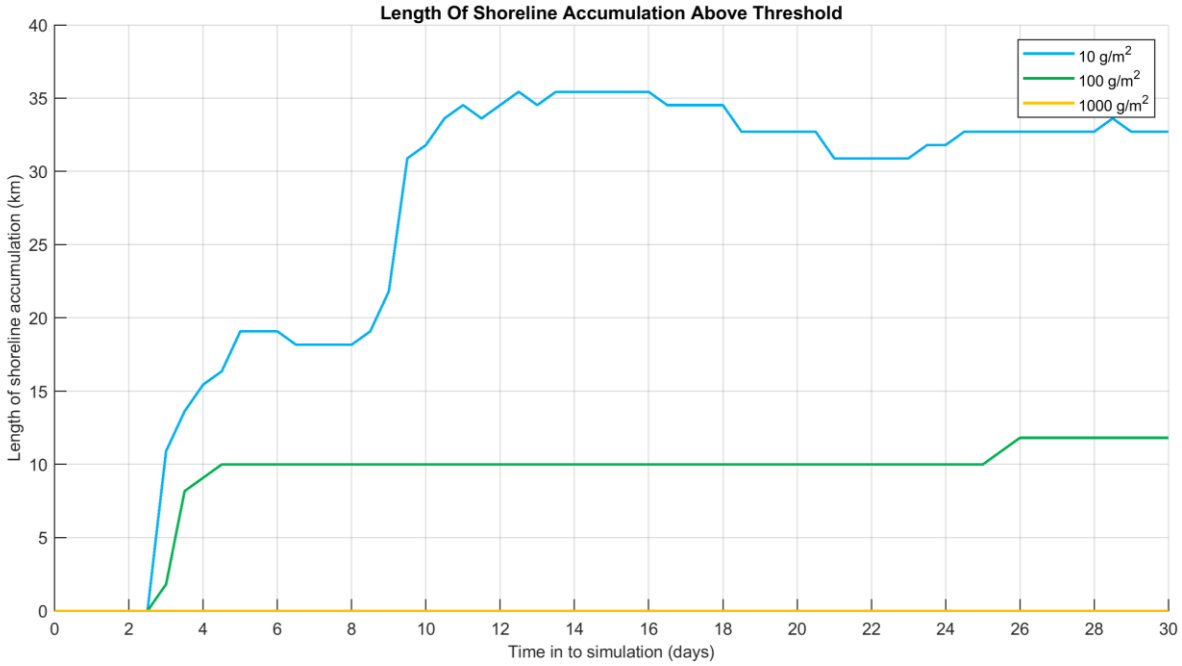

Figure 10.19 Time series of the length of shoreline oil accumulation above each threshold for the trajectory with the longest length of shoreline accumulation above 100 g/m².

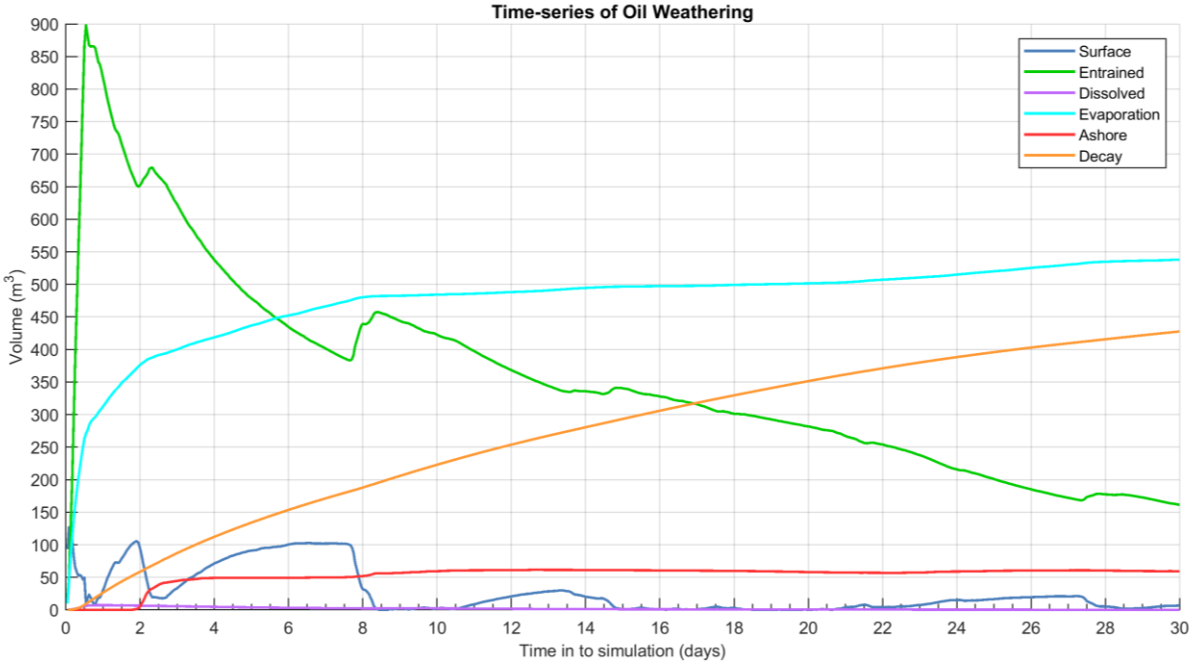

Figure 10.20 Predicted weathering and fates graph for the trajectory with the longest length of shoreline accumulation above 100 g/m².

10.2.4 Deterministic Case: Largest area of entrained hydrocarbon exposure above 100 ppb

The deterministic trajectory that resulted in the largest area of entrained hydrocarbon exposure above 100 ppb was identified as run number 39, which started on the 23rd of July 2015.

Figure 10.21 illustrates the zones of potential entrained hydrocarbon exposure over the 30-day simulation.

Figure 10.22 displays the time series of the area of entrained hydrocarbon exposure at the low (10 ppb) and high (100 ppb) thresholds over the 30-day simulation.

Figure 10.23 presents the fates and weathering graph for the corresponding single spill trajectory and Table 10.11 summarises the mass balance peaks and at the end of the simulation.

Table 10.11 Summary of the mass balance for the trajectory with the largest area of entrained hydrocarbon exposure above 100 ppb.

Exposure Metrics	Peak Volume	Day of occurrence	Volume at day 30
Surface (m^3)	230	0.2	3
Entrained (m^3)	762	0.8	158
Dissolved (m^3)	4	2.2	0
Evaporation (m^3)	653	30.0	653
Decay (m^3)	372	30.0	372
Ashore (m^3)	9	19.0	7

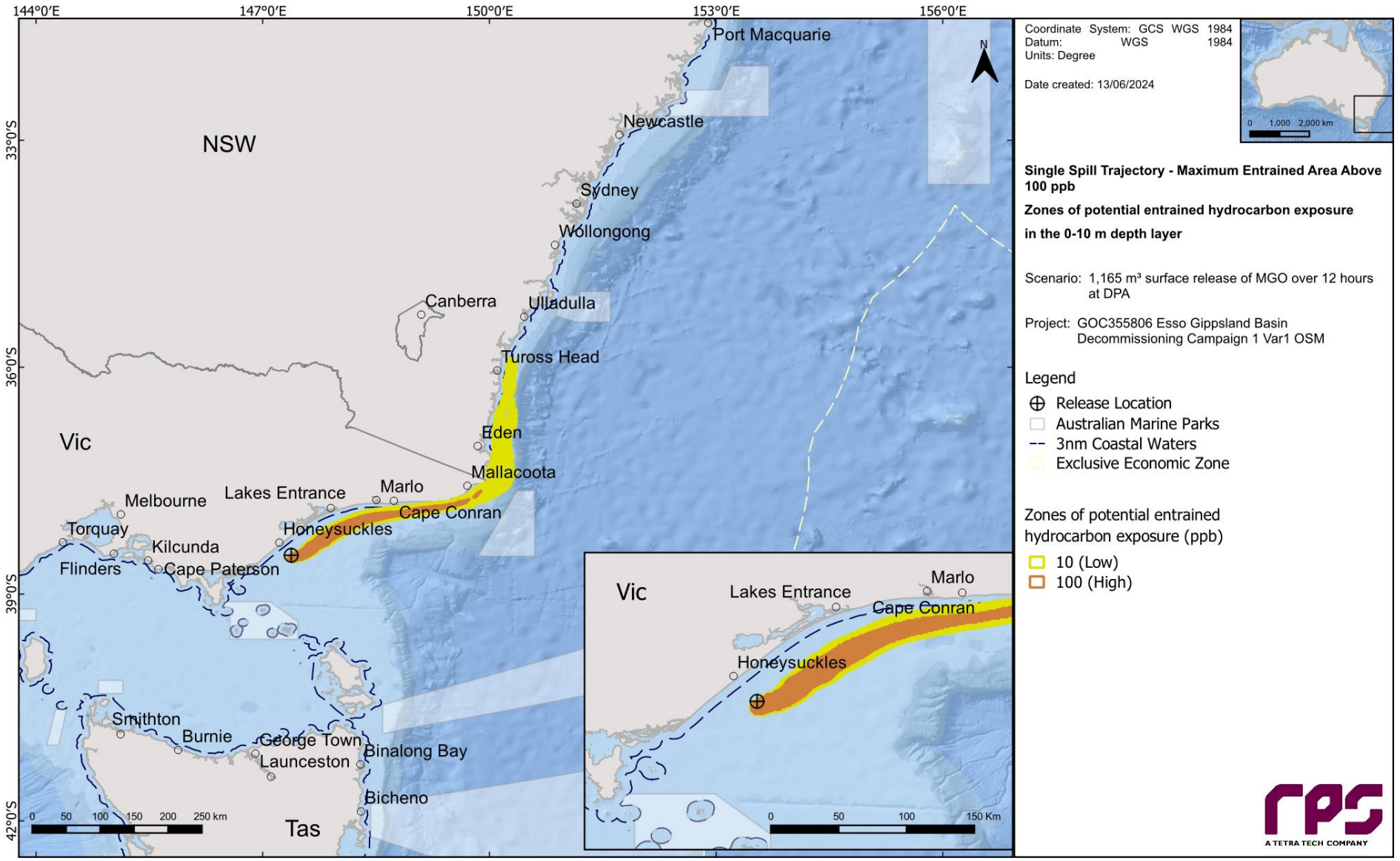

Figure 10.21 Zones of potential entrained hydrocarbon exposure, for the trajectory with the largest area of entrained hydrocarbon exposure above 100 ppb.

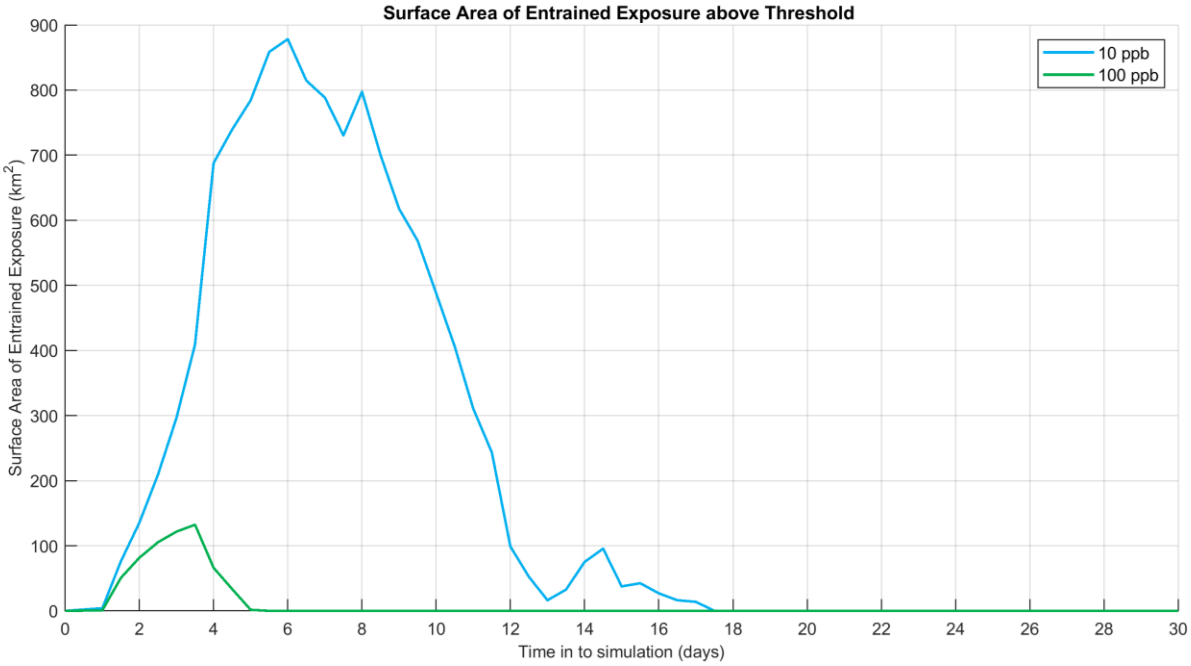

Figure 10.22 Time series of the entrained hydrocarbon exposure area above each threshold for the trajectory with the largest area of entrained hydrocarbon exposure above 100 ppb.

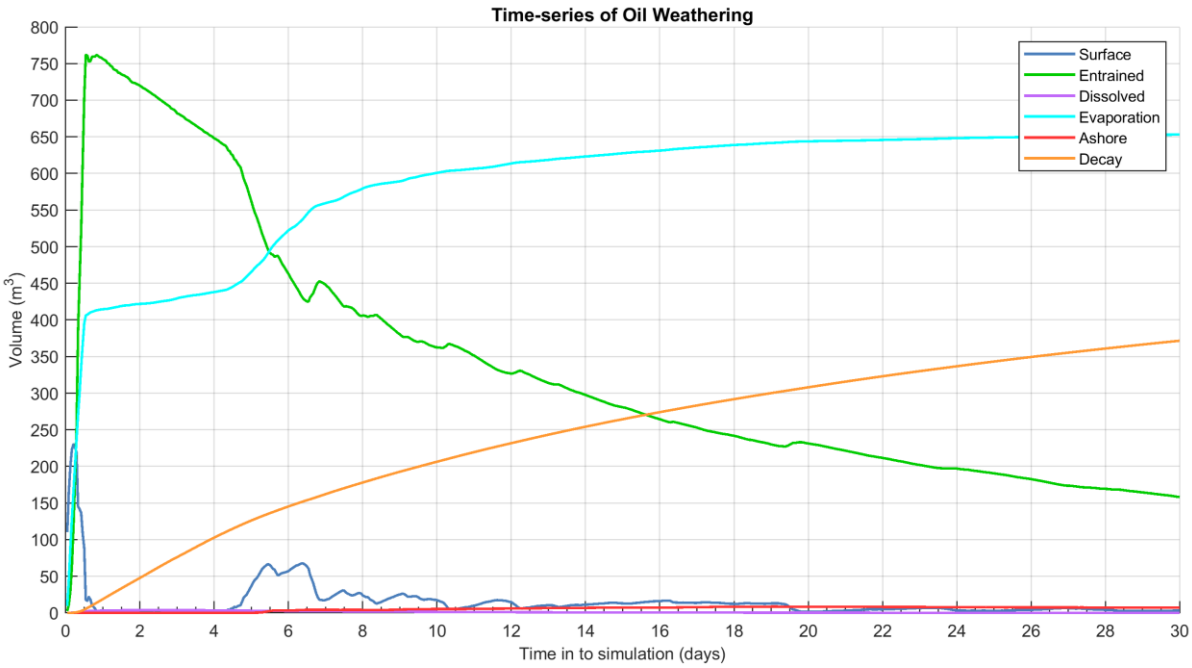

Figure 10.23 Predicted weathering and fates graph for the trajectory with the largest area of entrained hydrocarbon exposure above 100 ppb.

10.2.5 Deterministic Case: Largest area of dissolved hydrocarbon exposure above 50 ppb

The deterministic trajectory that resulted in the largest area of dissolved hydrocarbon exposure above 50 ppb was identified as run number 51, which started on the 30th of May 2019.

Figure 10.24 illustrates the zones of potential dissolved hydrocarbon exposure over the 30-day simulation.

Figure 10.25 displays the time series of the area of dissolved hydrocarbon exposure at the low (10 ppb), moderate (50 ppb) and high (400 ppb) thresholds over the 30-day simulation.

Figure 10.26 presents the fates and weathering graph for the corresponding single spill trajectory and Table 10.12 summarises the mass balance peaks and at the end of the simulation.

Table 10.12 Summary of the mass balance for the trajectory with the largest area of dissolved hydrocarbon exposure above 50 ppb.

Exposure Metrics	Peak Volume	Day of occurrence	Volume at day 30
Surface (m^3)	105	3.9	0
Entrained (m^3)	1,015	0.5	168
Dissolved (m^3)	13	0.8	0
Evaporation (m^3)	549	30.0	549
Decay (m^3)	465	30.0	465
Ashore (m^3)	11	24.3	11

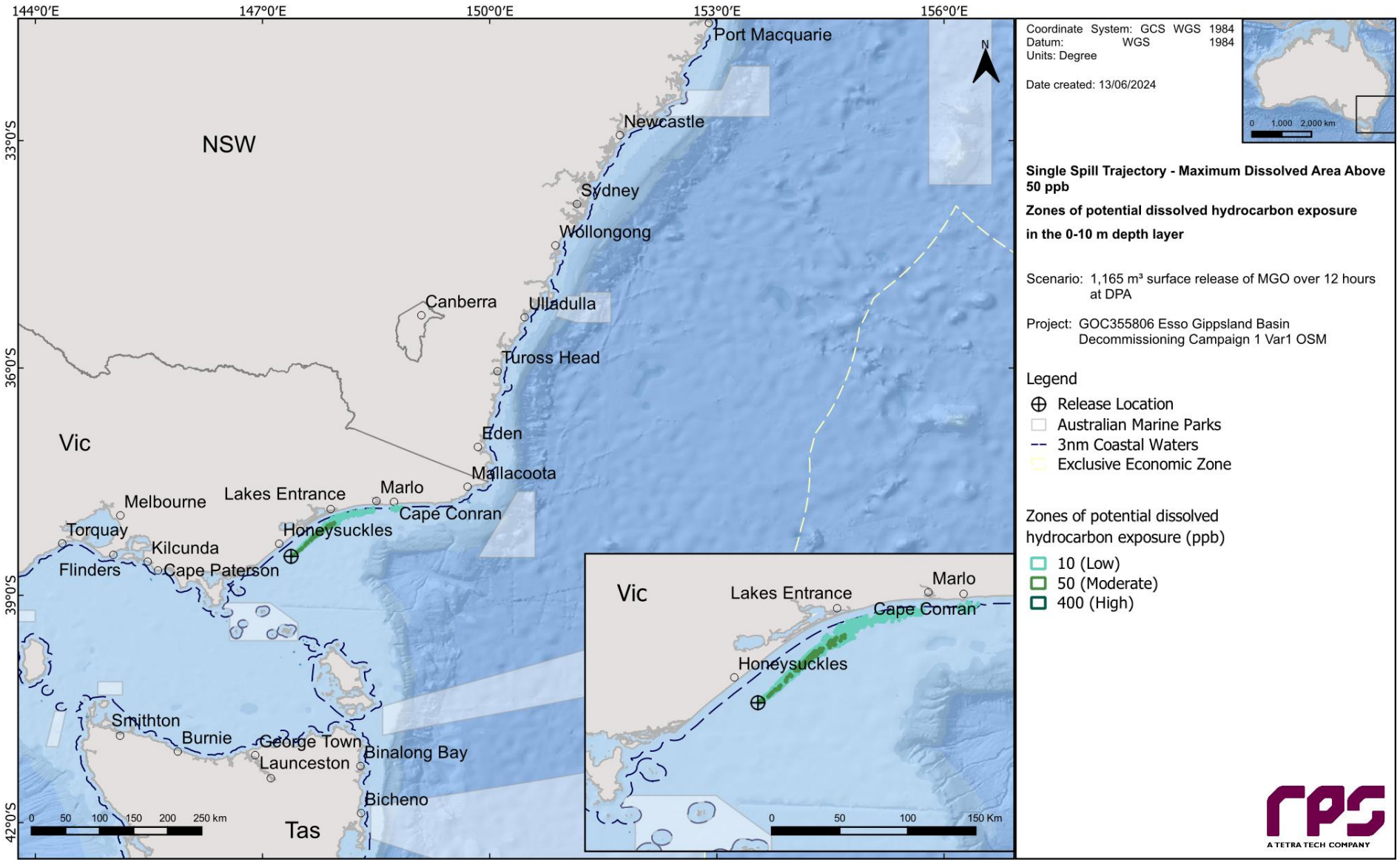

Figure 10.24 Zones of potential dissolved hydrocarbon exposure, for the trajectory with the largest area of dissolved hydrocarbon exposure above 50 ppb.

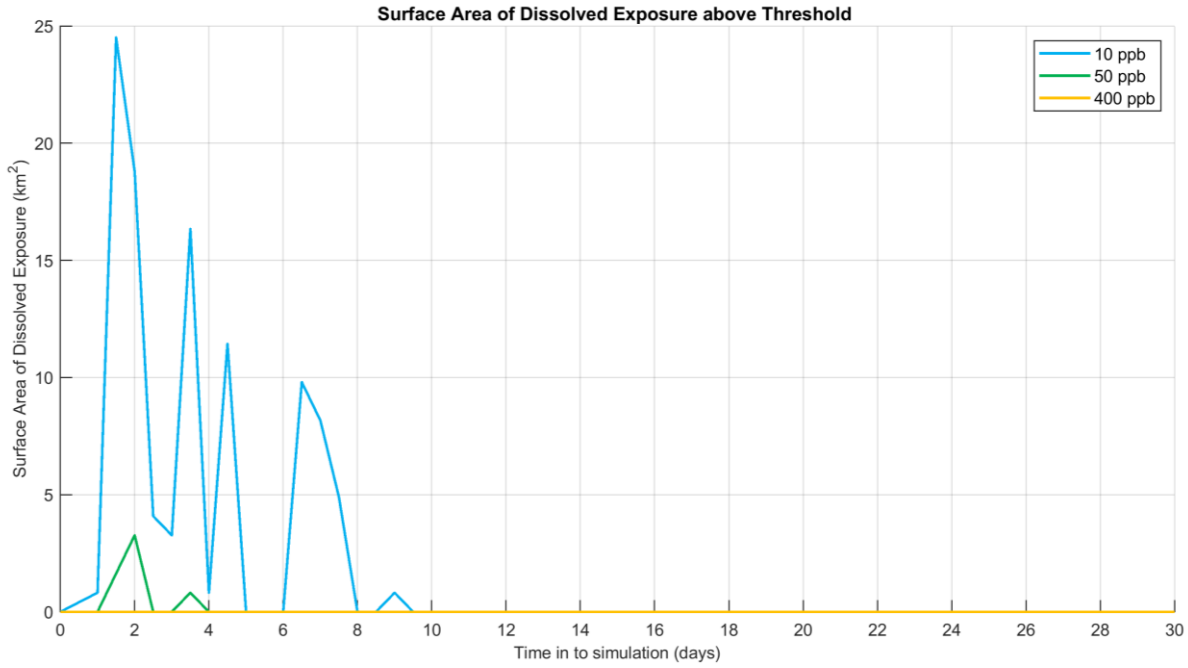

Figure 10.25 Time series of the dissolved hydrocarbon exposure area above each threshold for the trajectory with the largest area of dissolved hydrocarbon exposure above 50 ppb.

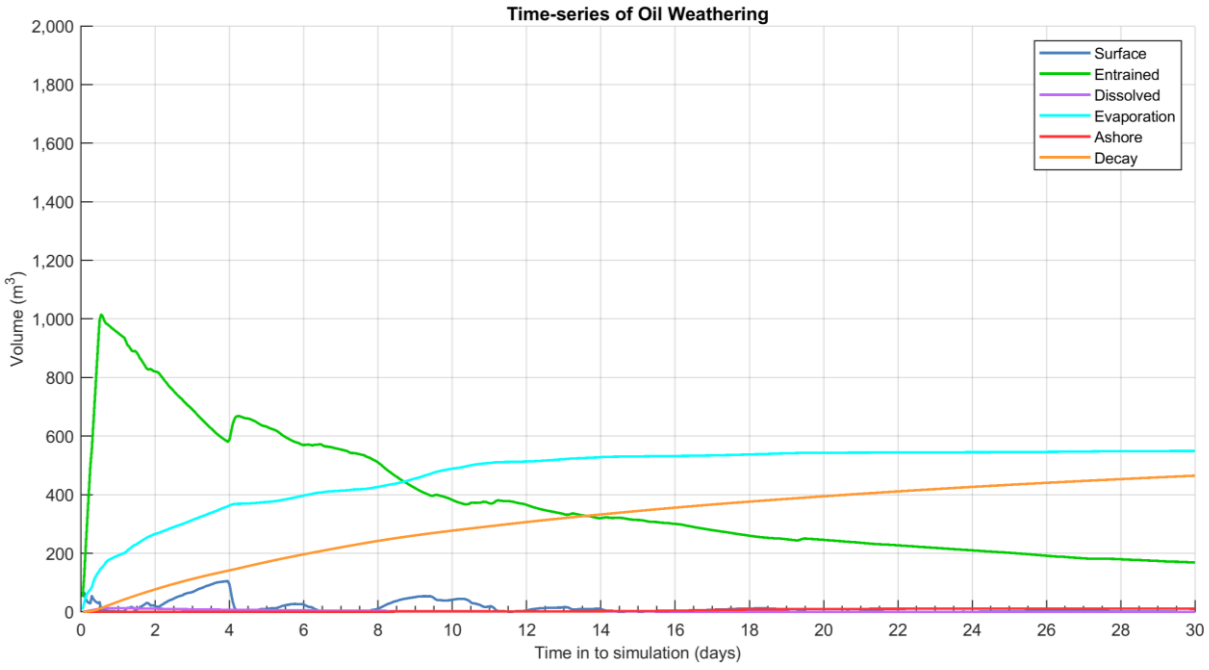

Figure 10.26 Predicted weathering and fates graph for the trajectory with the largest area of dissolved hydrocarbon exposure above 50 ppb.

11 RESULTS – SCENARIO 2 – A 1,165 M^3 SURFACE RELEASE OF MGO AT WHITING

This scenario examined a 1,165 m^3 surface release of MGO over 12 hours at Whiting. A total of 100 spill simulations were run and each simulation was tracked for 30 days. The results are presented on an annual basis.

Sections 11.1 and 11.2 present the annual stochastic analysis and deterministic analysis results, respectively.

11.1 Stochastic Analysis

11.1.1 Floating Oil Exposure

Table 11.1 summarises the maximum distance travelled by floating oil on the sea surface at each threshold. The maximum distances and corresponding directions from the release location to the low (1–10 g/m^2), moderate (10–50 g/m^2) and high (>50 g/m^2) exposure zones were 240.0 km (east-northeast), 31.5 km (northeast) and 19.1 km (northeast), respectively.

Table 11.2 summarises the potential floating oil exposure, minimum time and maximum residence time of floating oil exposure to individual receptors.

With the exception of the receptors the release location is within (see

Table 9.2), the Upwelling East of Eden KEF recorded the highest probability of exposure at 36% to concentrations exceeding 1 g/m^2. Floating oil at the 1 g/m^2 threshold was predicted to reach the same receptor the quickest at 0.54 day following the spill commencement.

Figure 11.1 presents the zones of potential floating oil exposure for all thresholds, while Figure 11.2 to Figure 11.4 present the maximum residence time of floating oil exposure for all thresholds assessed under annual conditions.

Table 11.1 Maximum distance and direction from the release location to the edge of floating oil exposure. Results are based on a 1,165 m^3 surface release of MGO over 12 hours at Whiting. The results reflect annual conditions.

Distance and direction travelled	Zones of potential floating oil exposure		
	Annual		
	Low	Moderate	High
Maximum distance (km) from release location	240.0	31.5	19.1
Maximum distance (km) from release location (99th percentile)	139.2	27.7	18.2
Direction	ENE	NE	NE

Table 11.2 Summary of the potential floating oil exposure to individual receptors. Results are based on a 1,165 m³ surface release of MGO over 12 hours at Whiting. The results reflect annual conditions.

	Receptor	Annual								
		Probability of floating oil exposure (%)			Minimum time before floating oil exposure (days)			Maximum residence time of floating oil exposure (days)		
		Low	Moderate	High	Low	Moderate	High	Low	Moderate	High
BIA	Antipodean Albatross - Foraging	8	-	-	2.17	-	-	0.21	-	-
	Black-browed Albatross – Foraging*	100	100	75	0.04	0.04	0.04	1.58	0.75	0.5
	Bullers Albatross – Foraging*	100	100	75	0.04	0.04	0.04	1.58	0.75	0.5
	Campbell Albatross – Foraging*	100	100	75	0.04	0.04	0.04	1.58	0.75	0.5
	Common Diving-petrel – Foraging*	100	100	75	0.04	0.04	0.04	1.58	0.75	0.5
	Grey Nurse Shark - Migration	1	-	-	4.79	-	-	0.04	-	-
	Humpback Whale - Foraging	1	-	-	4.71	-	-	0.04	-	-
	Indian Yellow-nosed Albatross – Foraging*	100	100	75	0.04	0.04	0.04	1.58	0.75	0.5
	Pygmy Blue Whale – Distribution*	100	100	75	0.04	0.04	0.04	1.58	0.75	0.5
	Pygmy Blue Whale – Foraging*	100	100	75	0.04	0.04	0.04	1.58	0.75	0.5
	Short-tailed Shearwater - Foraging	11	4	-	0.96	1	-	0.92	0.33	-
	Shy Albatross – Foraging*	100	100	75	0.04	0.04	0.04	1.58	0.75	0.5
	Sooty Shearwater - Foraging	1	-	-	4.71	-	-	0.04	-	-
	Southern Right Whale - Known Core Range*	100	100	75	0.04	0.04	0.04	1.58	0.75	0.5
	Wandering Albatross – Foraging*	100	100	75	0.04	0.04	0.04	1.58	0.75	0.5
	Wedge-tailed Shearwater - Foraging	1	-	-	4.71	-	-	0.04	-	-
	White Shark - Breeding	26	10	2	0.17	0.25	0.42	0.96	0.29	0.08
	White Shark – Distribution*	100	100	75	0.04	0.04	0.04	1.58	0.75	0.5
	White Shark - Foraging	5	-	-	2.17	-	-	0.21	-	-
	White-faced Storm-petrel - Foraging	9	-	-	2.17	-	-	0.21	-	-
IMCRA	Twofold Shelf*	100	100	75	0.04	0.04	0.04	1.58	0.75	0.5
KEF	Upwelling East of Eden	36	2	-	0.54	0.96	-	1.38	0.29	-
MNP	Point Hicks	1	-	-	9.08	-	-	< 0.04	-	-
State Waters	Victoria State Waters	1	-	-	9.08	-	-	< 0.04	-	-

*The release location resides within the receptor boundaries.

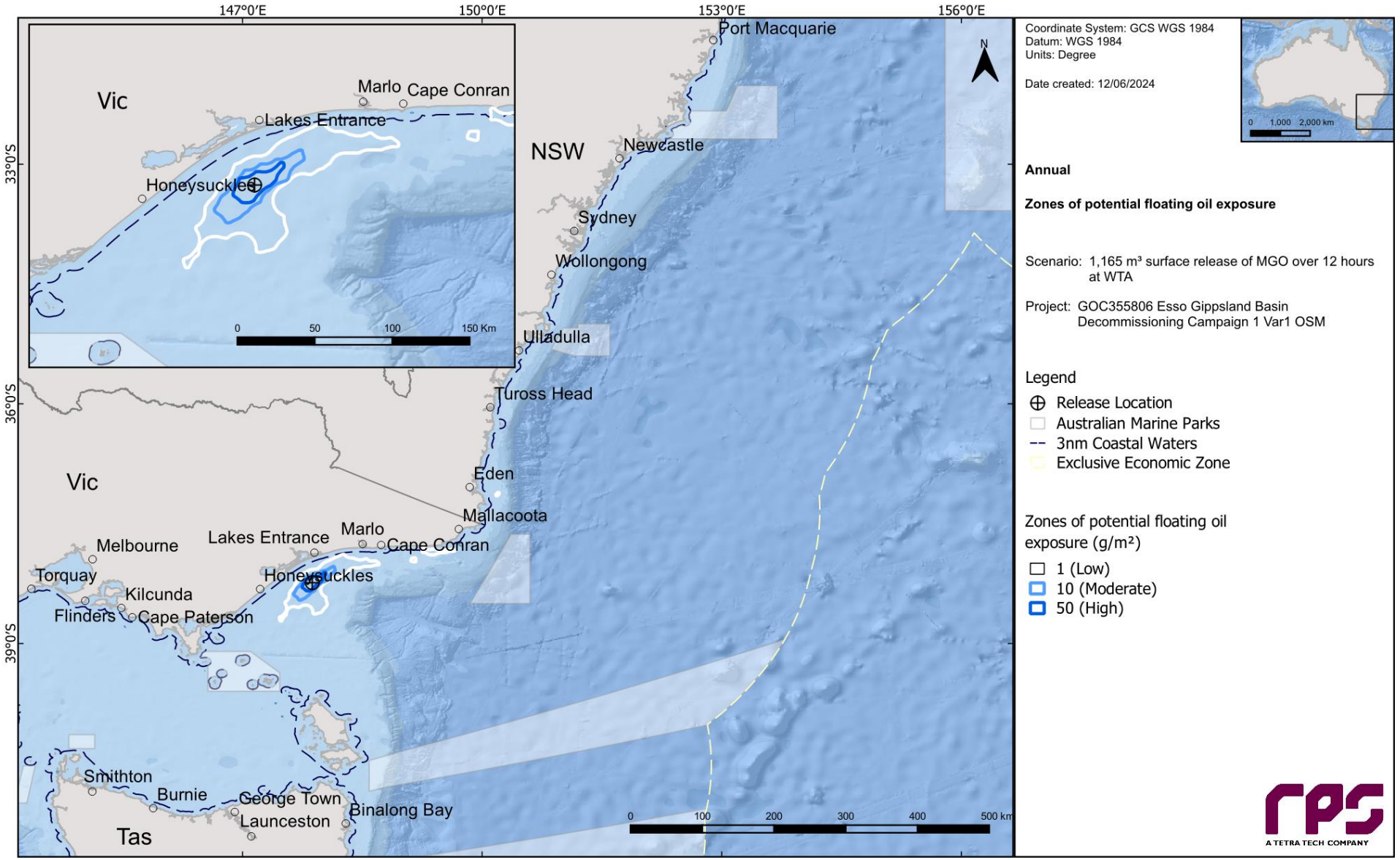

Figure 11.1 Zones of potential floating oil exposure in the event of a 1,165 m³ surface release of MGO over 12 hours at Whiting. The results reflect annual conditions.

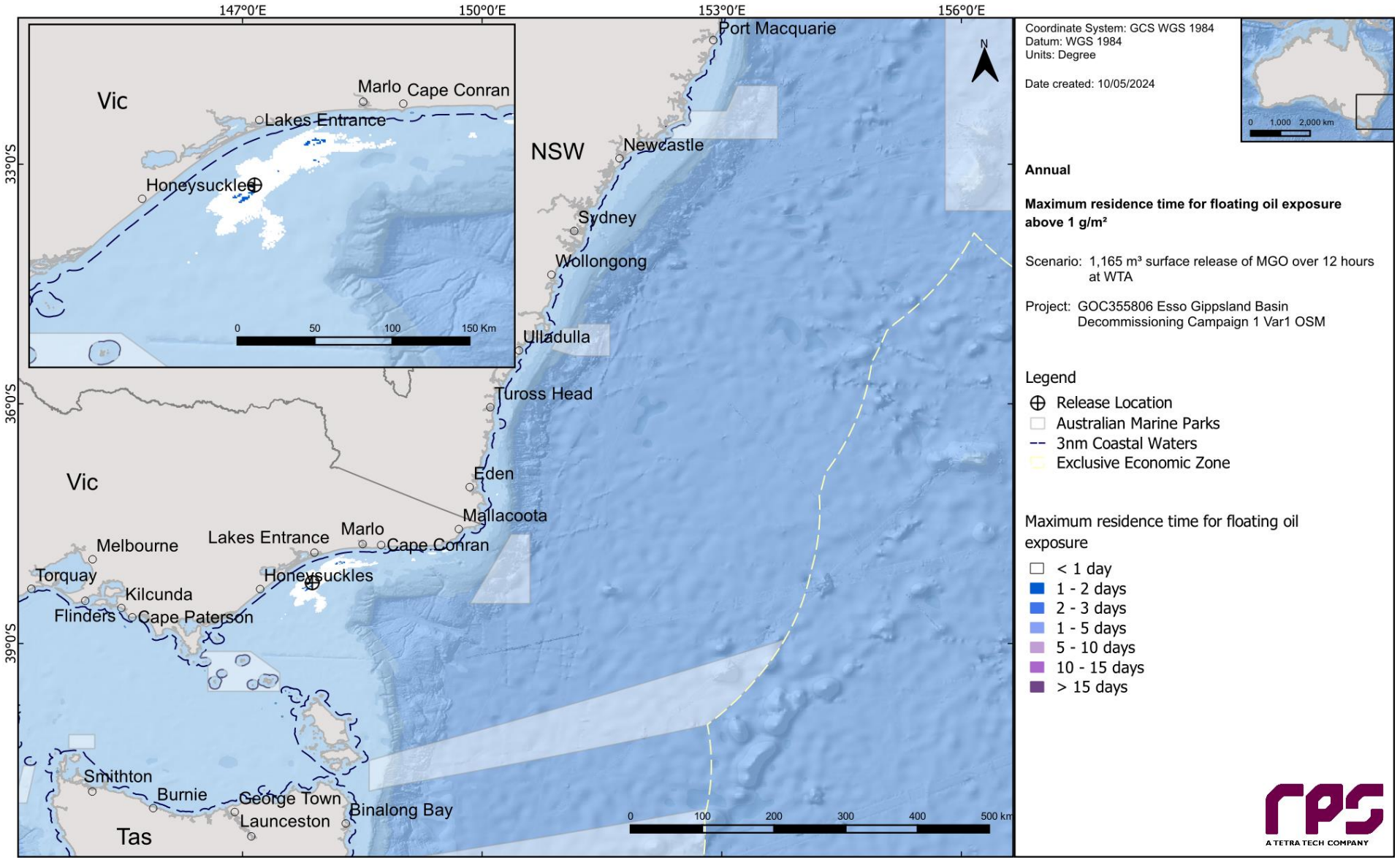

Figure 11.2 Maximum residence time of floating oil exposure above 1 g/m^2, in the event of a 1,165 m^3 surface release of MGO over 12 hours at Whiting. The results reflect annual conditions.

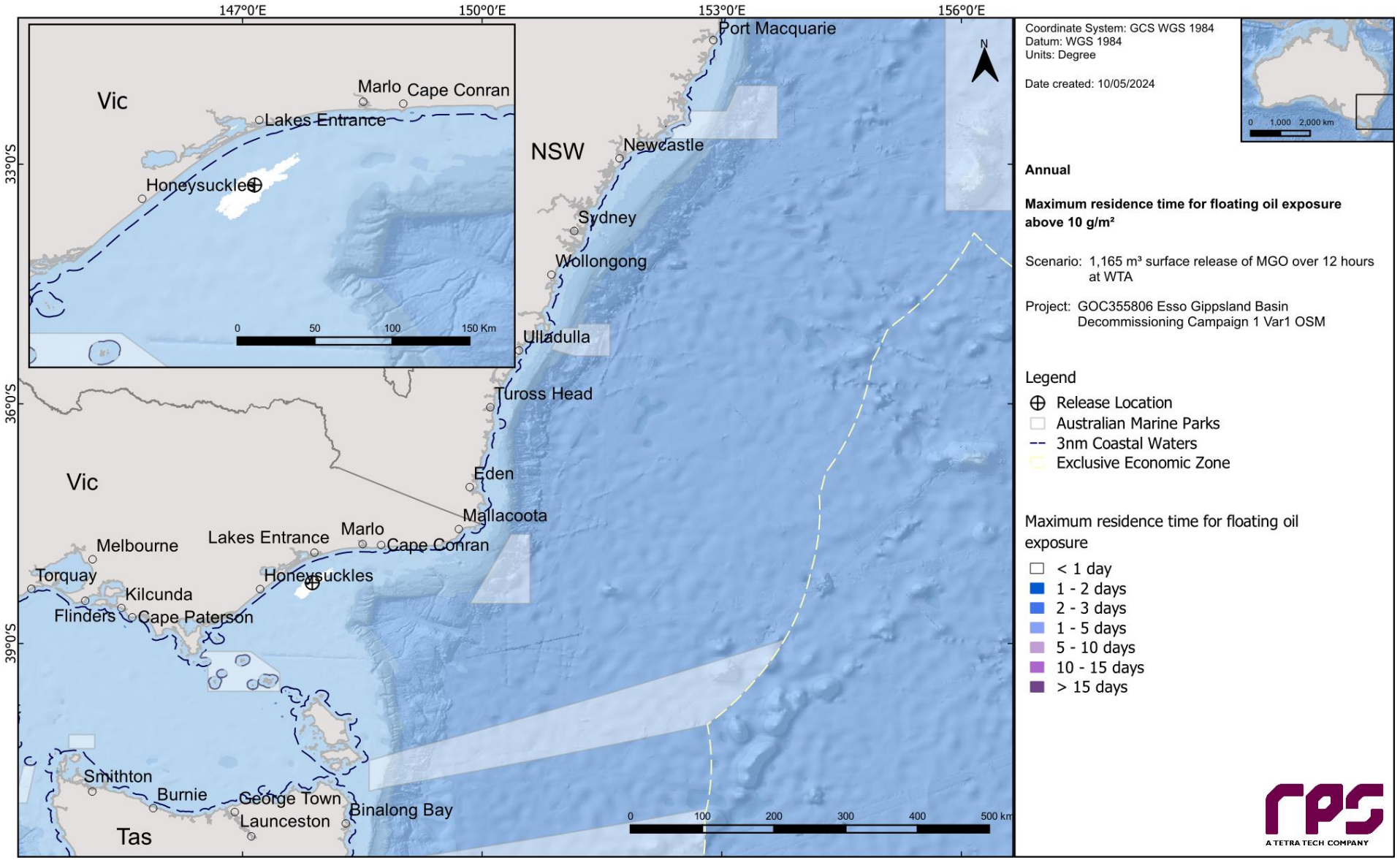

Figure 11.3 Maximum residence time of floating oil exposure above 10 g/m^2, in the event of a 1,165 m^3 surface release of MGO over 12 hours at Whiting. The results reflect annual conditions.

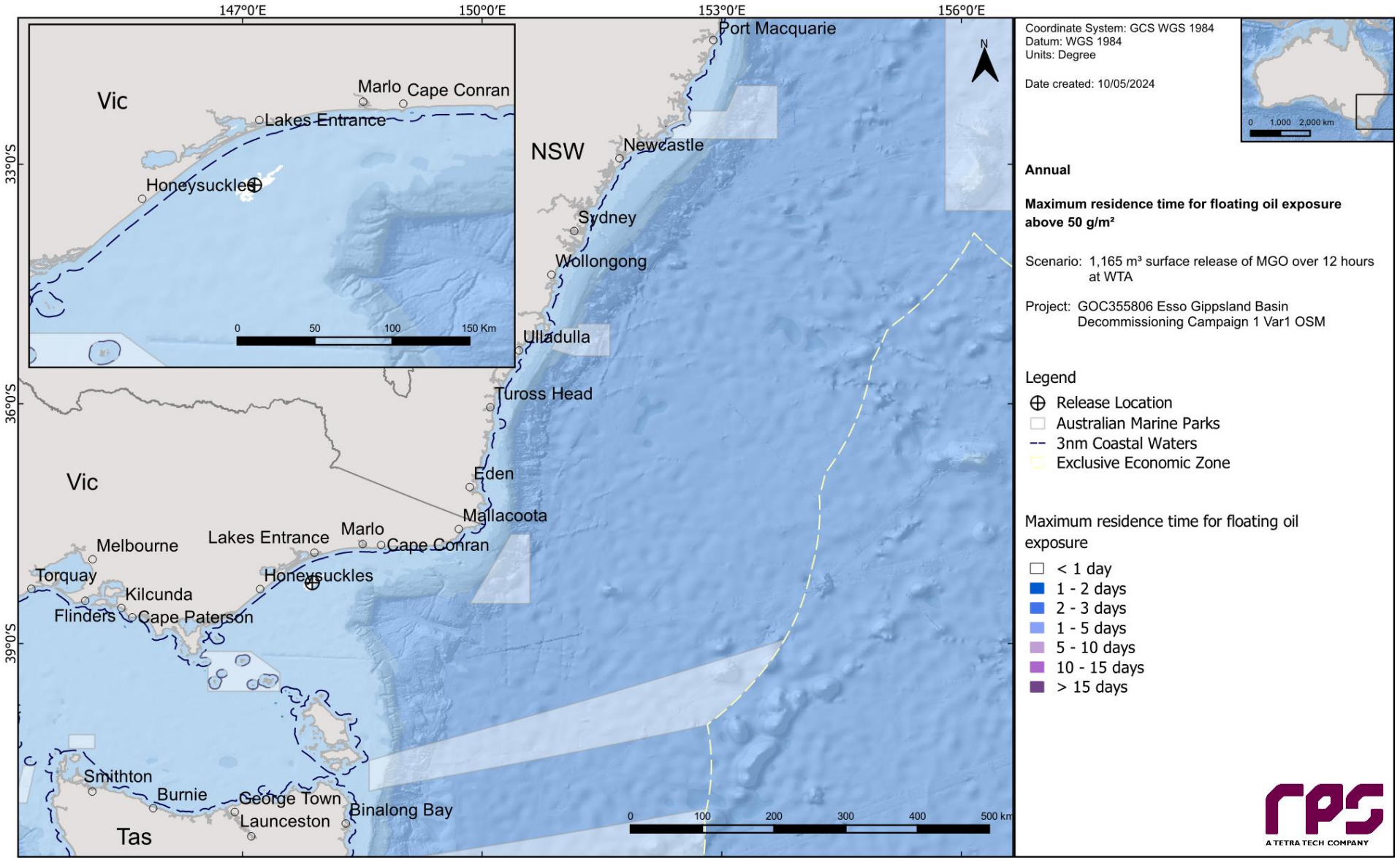

Figure 11.4 Maximum residence time of floating oil exposure above 50 g/m^2, in the event of a 1,165 m^3 surface release of MGO over 12 hours at Whiting. The results reflect annual conditions.

11.1.2 Shoreline Accumulation

Table 11.3 presents a summary of the potential shoreline accumulation. The probability of accumulation to any shoreline at, or above, the low (10 g/m^2) threshold was 56% throughout the year. The minimum time before oil accumulation at, or above, the low threshold was 3.21 days. The maximum total volume ashore for a single spill trajectory was 54.8 m^3, and the maximum length of shoreline with accumulation above the low and moderate thresholds were 54 km and 11 km, respectively. No shoreline contact was predicted above the high threshold.

Table 11.4 summarises the shoreline accumulation statistics for individual receptors.

The shoreline segment of East Gippsland (LGA) revealed the highest probability of accumulation above the low (41%) and moderate (20%) thresholds.

The maximum potential shoreline loadings above each shoreline thresholds are presented in Figure 11.5.

Table 11.3 Summary of oil accumulation across all shorelines. Results are based on a 1,165 m³ surface release of MGO over 12 hours at Whiting. The results reflect annual conditions.

Shoreline Statistics	Annual
Probability of accumulation on any shoreline (%)	56
Absolute minimum time for visible oil to shore (days)	3.21
Maximum total volume of hydrocarbons ashore (m^3) ^	54.8
Average total volume of hydrocarbons ashore (m^3) ^	7.2
Maximum length of the shoreline at **10 g/m^2** (km)	54
Average shoreline length (km) at **10 g/m^2** (km)	15.1
Maximum length of the shoreline at **100 g/m^2** (km)	11
Average shoreline length (km) at **100 g/m^2** (km)	4
Maximum length of the shoreline at **1,000 g/m^2** (km)	-
Average shoreline length (km) at **1,000 g/m^2** (km)	-

^Total volume of oil stranded on shorelines over the entire simulation, not accounting for natural removal processes such as evaporation and decay.

Table 11.4 Summary of oil accumulation on individual shoreline receptors. Results are based on a 1,165 m³ surface release of MGO over 12 hours at Whiting. The results reflect annual conditions.

Shoreline Receptor		Maximum probability of shoreline loading (%)			Minimum time before shoreline accumulation (days)			Load on shoreline (g/m²)		Volume on shoreline (m³)		Mean length of shoreline accumulation (km)			Maximum length of shoreline accumulation (km)		
		Low	Mod	High	Low	Mod	High	Mean	Peak	Mean	Peak	Low	Mod	High	Low	Mod	High
Shoreline (LGA)	Bega Valley	16	4	-	4.75	5.25	-	8	493	2.7	27.4	7.2	3.9	-	20.9	6.4	-
	East Gippsland	41	20	-	3.21	3.96	-	11	686	6.4	36.5	12.7	3	-	49.1	10	-
	Eurobodalla	2	-	-	19.17	-	-	2	26	0.4	2.7	6.8	-	-	8.2	-	-
	Gabo Island	18	1	-	4.29	8.33	-	12	468	0.7	11.1	2.1	2.7	-	4.5	2.7	-
	Hogan Island Group	8	-	-	7.83	-	-	7	40	0.9	2.6	4.3	-	-	9.1	-	-
	Kent Island Group	2	-	-	17.29	-	-	3	47	0.6	3.6	5.9	-	-	10	-	-
	Montague Island	6	1	-	6.88	24.25	-	7	104	0.4	2.7	2.4	1.8	-	3.6	1.8	-
	Seal Islands	2	-	-	13.33	-	-	8	41	0.5	1.3	3.2	-	-	5.5	-	-
	South Gippsland	1	-	-	18.33	-	-	4	24	0.5	0.8	1.8	-	-	1.8	-	-
	Wellington	4	-	-	9.29	-	-	3	34	0.8	2.7	2.5	-	-	5.5	-	-
Shoreline (Sub-LGA)	Bega Valley	16	4	-	4.75	5.25	-	8	493	2.7	27.4	7.2	3.9	-	20.9	6.4	-
	Cape Conran	7	-	-	3.92	-	-	3	73	0.5	4.7	3.1	-	-	13.6	-	-
	Cape Howe / Mallacoota	17	4	-	4.17	5.08	-	9	224	1	9.9	3	1.6	-	7.3	2.7	-
	Corner Inlet	1	-	-	18.33	-	-	7	12	0.1	0.2	0.9	-	-	0.9	-	-
	Corringle	4	1	-	3.29	5.38	-	6	152	1.5	13.1	10.4	0.9	-	20	0.9	-
	Croajingolong - East	2	-	-	14.46	-	-	2	23	0.2	2.4	4.5	-	-	8.2	-	-
	Croajingolong - West	23	3	-	4	4.54	-	8	686	1.3	18.5	3.6	1.8	-	11.8	3.6	-
	Eurobodalla	2	-	-	19.17	-	-	2	26	0.4	2.7	6.8	-	-	8.2	-	-
	Golden Beach	1	-	-	11.75	-	-	2	18	0.2	0.9	2.7	-	-	2.7	-	-
	Lake Tyers Beach	4	2	-	3.21	3.96	-	8	250	2.7	22.3	11.6	4.5	-	20.9	6.4	-
	Lakes Entrance	3	1	-	4.92	16.04	-	5	121	1.1	10.2	8.2	3.6	-	16.4	3.6	-
	Lakes Entrance - West	1	-	-	8.04	-	-	2	13	0.2	1.1	3.6	-	-	3.6	-	-
	Marlo	11	4	-	5	8.75	-	6	320	1.5	10.9	5.8	1.1	-	17.3	1.8	-
	Point Hicks	30	15	-	3.42	4.54	-	19	657	3.2	23.2	4.2	2.1	-	15.4	2.7	-
	Port Welshpool	1	-	-	21.42	-	-	4	24	0.3	0.6	0.9	-	-	0.9	-	-
	Seaspray	1	-	-	11.79	-	-	3	19	0.3	0.9	2.7	-	-	2.7	-	-
	Snake Island	2	-	-	15.71	-	-	5	34	0.8	1.4	1.8	-	-	2.7	-	-
	Sydenham Inlet	6	-	-	6.71	-	-	3	34	0.8	5.6	8.3	-	-	17.3	-	-

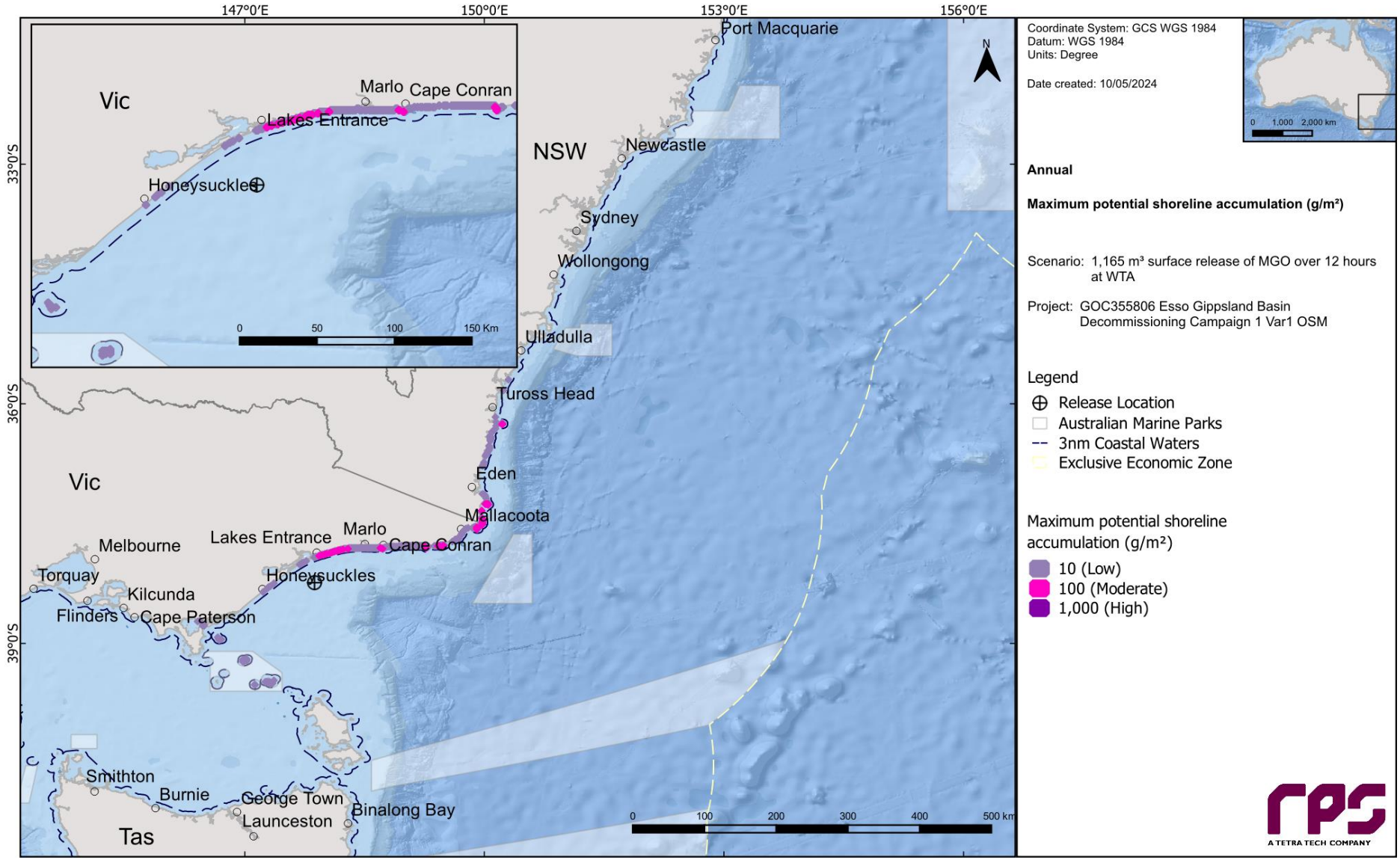

Figure 11.5 Maximum potential shoreline loading in the event of a 1,165 m³ surface release of MGO over 12 hours at Whiting. The results reflect annual conditions.

11.1.3 In-water exposure

11.1.3.1 Dissolved Hydrocarbons

Table 11.5 summarises the potential in-water exposure to individual receptors from dissolved hydrocarbons in the 0-10 m layer as well as the minimum time before exposure, for all thresholds assessed.

Excluding the receptors that the release location is within, the probability of exposure at concentrations equal to, or greater than, 10 ppb is greatest at the Upwelling East of Eden (KEF) (17%). The maximum dissolved hydrocarbon concentration at any given receptor(s) was shown to be 151.5 ppb, including the receptors the release location lies within, followed by the Upwelling East of Eden (KEF) at 145.8 ppb.

Figure 11.6 present the zones of potential dissolved hydrocarbon exposure for 0-10 m depth layer.

Figure 11.7 and Figure 11.8 presents the maximum residence time of dissolved hydrocarbon exposure for the low and moderate thresholds, respectively.

Table 11.5 Probability of dissolved hydrocarbons exposure to marine based receptors in the 0–10 m depth. Results are based on a 1,165 m³ surface release of MGO over 12 hours at Whiting. The results reflect annual conditions.

Receptor		Annual									
		Maximum dissolved hydrocarbon exposure (ppb)	Probability of dissolved hydrocarbon exposure (%)			Minimum time before dissolved hydrocarbon exposure (days)			Maximum residence time for dissolved hydrocarbon exposure (days)		
			Low	Moderate	High	Low	Moderate	High	Low	Moderate	High
BIA	Antipodean Albatross - Foraging	59.1	8	1	-	1.00	1.33	-	0.25	0.04	-
	Black Petrel - Foraging	10.9	1	-	-	10.42	-	-	0.04	-	-
	Black-browed Albatross – Foraging*	151.5	55	15	-	0.04	0.08	-	0.63	0.21	-
	Bullers Albatross – Foraging*	151.5	55	15	-	0.04	0.08	-	0.63	0.21	-
	Campbell Albatross – Foraging*	151.5	55	15	-	0.04	0.08	-	0.63	0.21	-
	Common Diving-petrel – Foraging*	151.5	55	15	-	0.04	0.08	-	0.63	0.21	-
	Crested Tern – Foraging	10.9	1	-	-	11.08	-	-	0.04	-	-
	Flesh-footed Shearwater - Foraging	10.9	1	-	-	10.42	-	-	0.04	-	-
	Grey Nurse Shark – Foraging	30.2	3	-	-	3.54	-	-	0.17	-	-
	Grey Nurse Shark – Migration	46.4	1	-	-	3.92	-	-	0.17	-	-
	Humpback Whale – Foraging	46.4	3	-	-	2.96	3.54	-	0.25	-	-
	Indian Yellow-nosed Albatross – Foraging*	151.5	55	15	-	0.04	0.08	-	0.63	0.21	-
	Indo-Pacific/Spotted Bottlenose Dolphin – Breeding	41.2	2	-	-	2.92	-	-	0.17	-	-
	Little Penguin – Foraging	63.1	5	1	-	2.33	2.71	-	0.21	0.04	-
	Pygmy Blue Whale – Distribution*	151.5	55	15	-	0.04	0.08	-	0.63	0.21	-
	Pygmy Blue Whale – Foraging*	151.5	55	15	-	0.04	0.08	-	0.63	0.21	-
	Short-tailed Shearwater – Foraging	106.8	4	1	-	0.54	0.71	-	0.38	0.17	-
	Shy Albatross – Foraging*	151.5	55	15	-	0.04	0.08	-	0.63	0.21	-
	Sooty Shearwater - Foraging	46.4	1	-	-	3.88	-	-	0.17	-	-
	Southern Right Whale - Known Core Range*	151.5	55	15	-	0.04	0.08	-	0.63	0.21	-
	Wandering Albatross – Foraging*	151.5	55	15	-	0.04	0.08	-	0.63	0.21	-
	Wedge-tailed Shearwater - Foraging	63.1	5	1	-	2.33	2.71	-	0.25	0.04	-
	White Shark – Breeding	106.8	3	1	-	0.29	0.63	-	0.38	0.17	-

Receptor		Annual								
		Maximum dissolved hydrocarbon exposure (ppb)	Probability of dissolved hydrocarbon exposure (%)			Minimum time before dissolved hydrocarbon exposure (days)			Maximum residence time for dissolved hydrocarbon exposure (days)		
			Low	Moderate	High	Low	Moderate	High	Low	Moderate	High
	White Shark – Distribution*	151.5	55	15	-	0.04	0.08	-	0.63	0.21	-
	White Shark – Foraging	48.2	6	-	-	1.54	1.79	-	0.21	0.04	-
	White-faced Storm-petrel – Breeding	19.6	1	-	-	5.92	-	-	0.08	-	-
	White-faced Storm-petrel – Foraging	63.1	8	1	-	0.96	1.33	-	0.25	0.04	-
IBRA	East Gippsland Lowlands	29.7	2	-	-	3.38	-	-	0.17	-	-
IMCRA	Batemans Shelf	14.4	1	-	-	5.92	-	-	0.04	-	-
	Twofold Shelf*	151.5	55	15	-	0.04	0.08	-	0.63	0.21	-
KEF	Upwelling East of Eden	145.8	17	2	-	0.21	0.5	-	0.42	0.08	-
MNP	Cape Howe	44.7	2	-	-	2.71	-	-	0.21	-	-
	Point Hicks	28	4	-	-	1.75	-	-	0.13	-	-
RSB	New Zealand Star Bank	36.5	2	-	-	2.21	-	-	0.17	-	-
Nearshore Waters (LGA)	Bega Valley	29.7	1	-	-	3.79	-	-	0.17	-	-
	East Gippsland	19.7	2	-	-	3.67	-	-	0.08	-	-
	Gabo Island	24.6	2	-	-	3.38	-	-	0.08	-	-
Nearshore Waters (Sub-LGA)	Bega Valley	29.7	1	-	-	3.79	-	-	0.17	-	-
	Cape Howe / Mallacoota	19.7	1	-	-	3.67	-	-	0.08	-	-
	Point Hicks	15.5	2	-	-	4.46	-	-	0.04	-	-
State Waters	New South Wales	41.2	2	-	-	2.92	-	-	0.08	-	-
	Victoria State Waters	63.1	5	1	-	1.71	3.38	-	0.21	-	-

*The release location resides within the receptor boundaries.

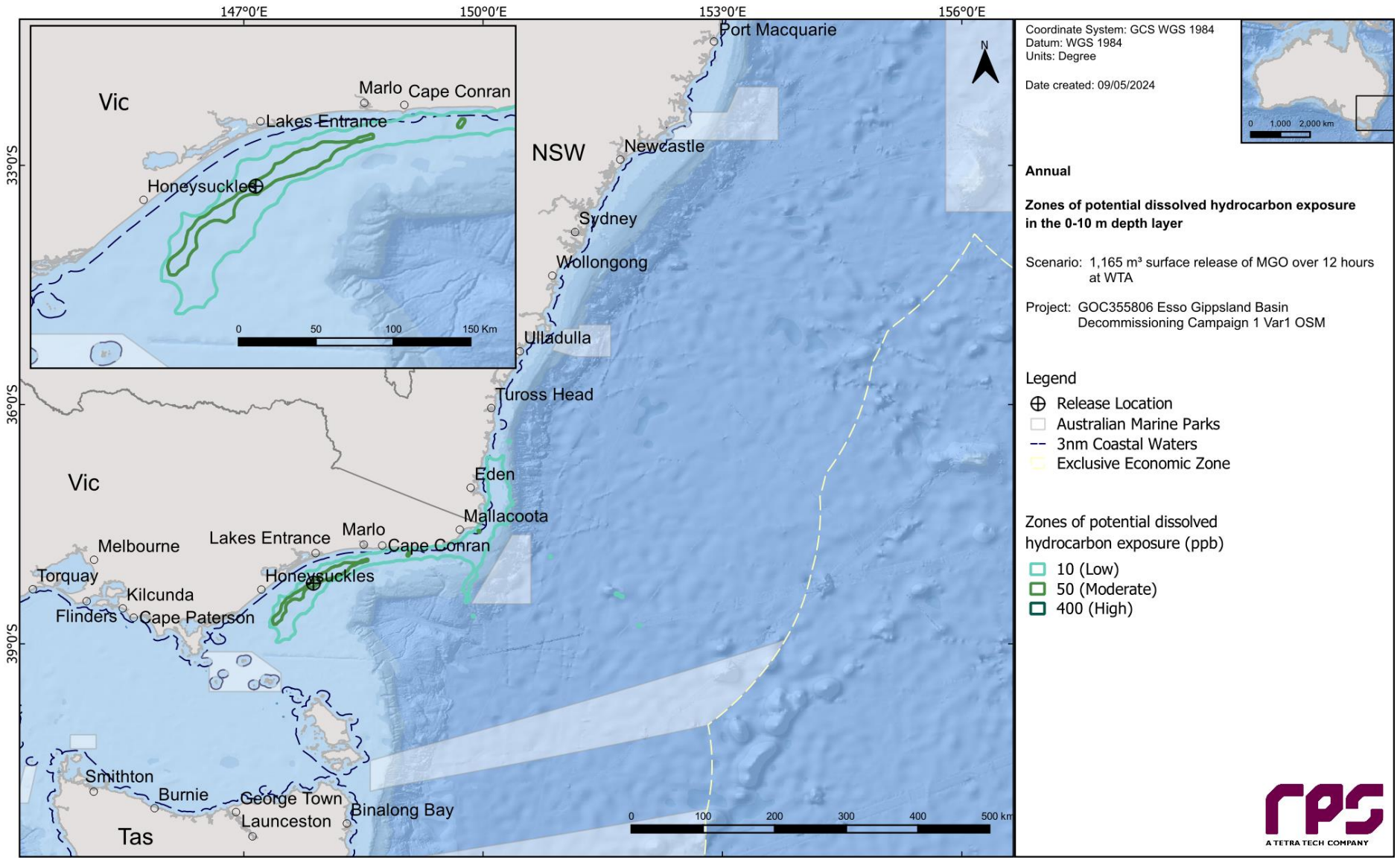

Figure 11.6 Zones of potential dissolved hydrocarbon exposure at 0-10 m below the sea in the event of a 1,165 m³ surface release of MGO over 12 hours at Whiting. The results reflect annual conditions.

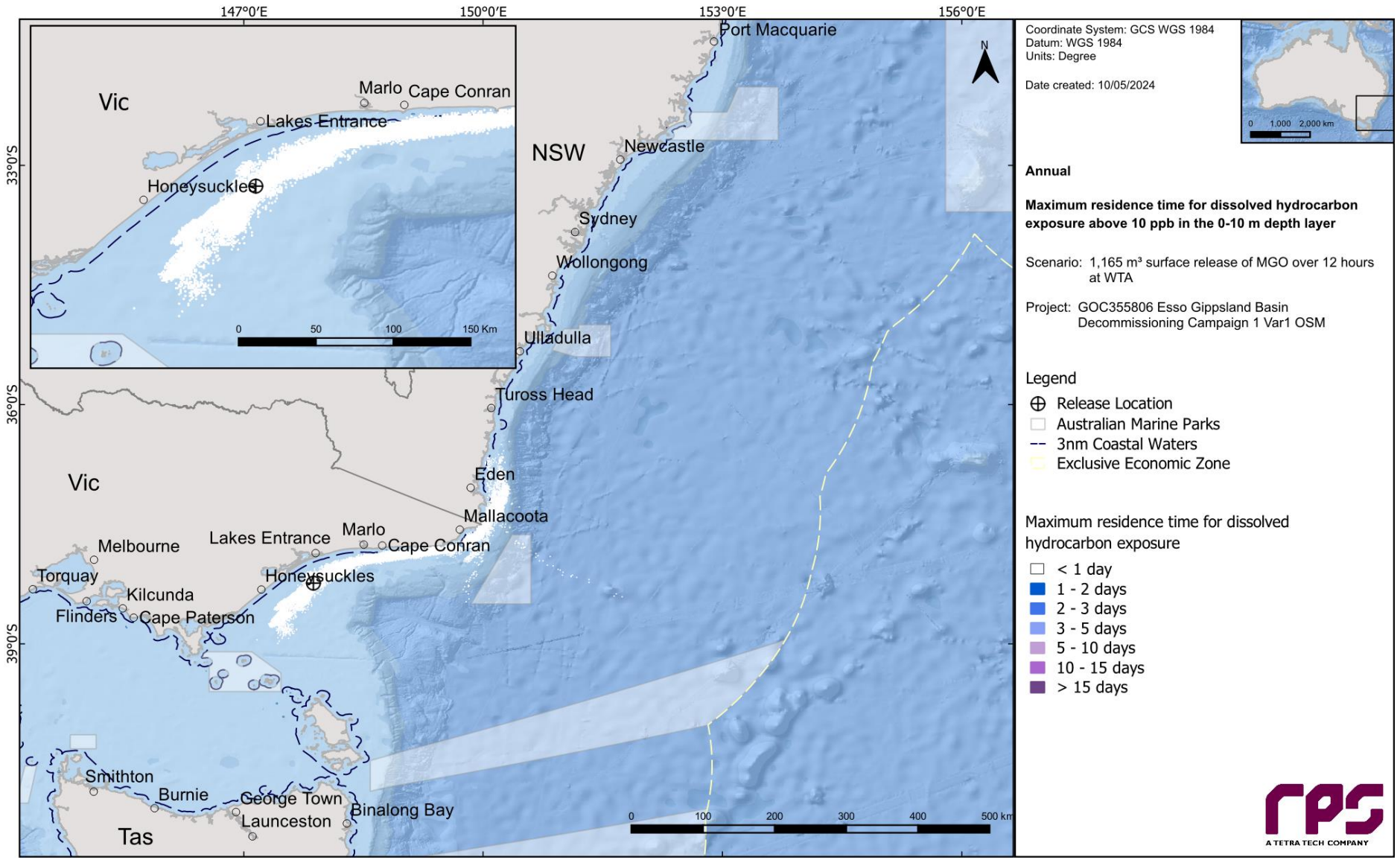

Figure 11.7 Maximum residence time for dissolved hydrocarbon exposure above 10 ppb, at 0-10 m below the sea surface in the event of 1,165 m³ surface release of MGO over 12 hours at Whiting. The results reflect annual conditions.

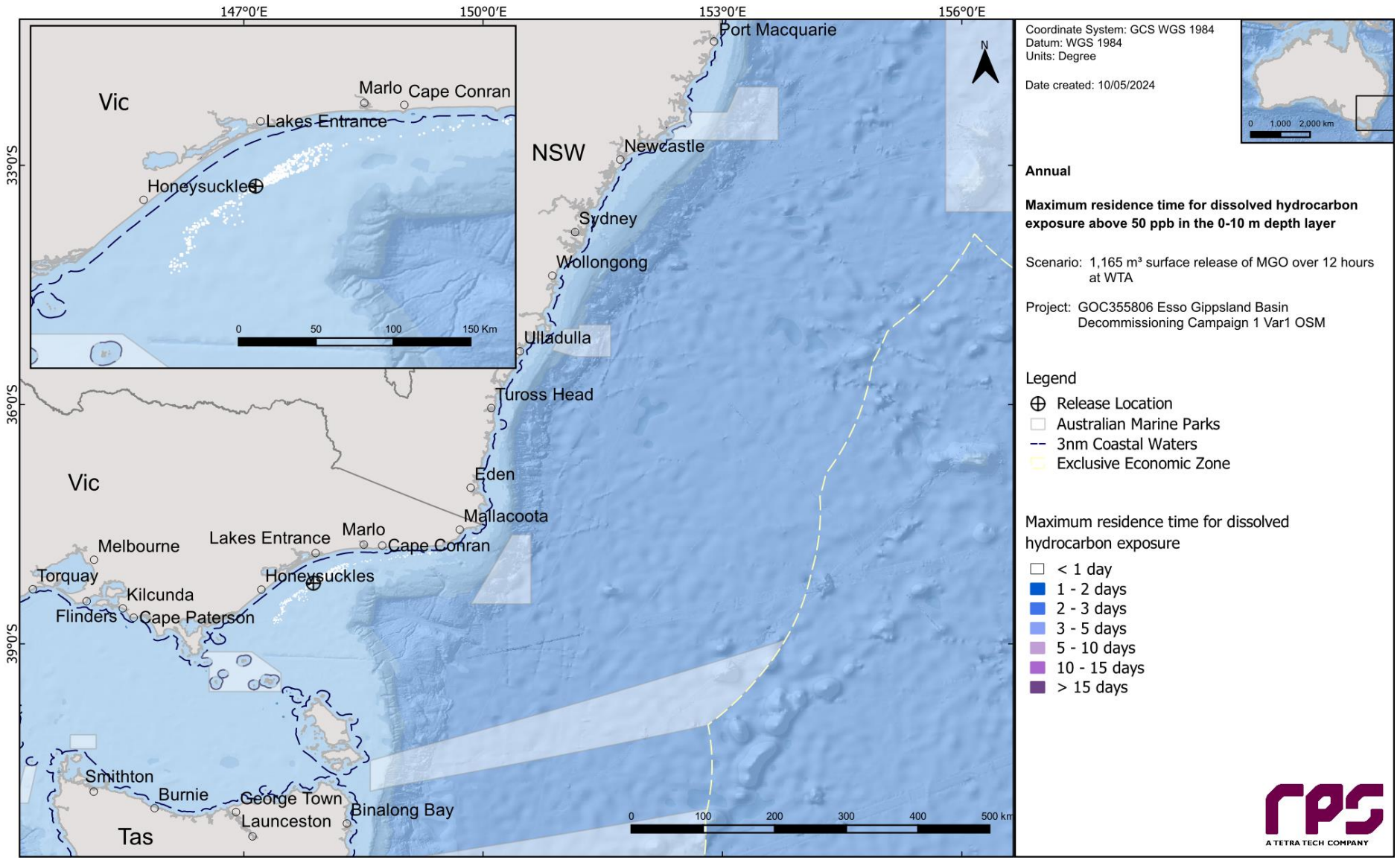

Figure 11.8 Maximum residence time for dissolved hydrocarbon exposure above 50 ppb, at 0-10 m below the sea surface in the event of 1,165 m³ surface release of MGO over 12 hours at Whiting. The results reflect annual conditions.

11.1.3.2 Entrained Hydrocarbons

Table 11.6 summarises the potential in-water exposure to individual receptors from entrained hydrocarbons in the 0-10 m depth layer, as well as the minimum time before exposure for all thresholds assessed.

Except for the receptors the release location is within, the highest probability of low entrained hydrocarbon exposure was 78% recorded for the Upwelling East of Eden (KEF).

The quickest time for exposure at the same threshold was 0.17 days (4.08 hours) at White Shark - Breeding (BIA). The highest entrained hydrocarbon concentration was predicted to be 14,462 ppb, including the receptors the release location lies within, followed by 3,168 ppb at the White Shark – Breeding BIA.

Figure 11.9 presents the zones of potential entrained hydrocarbon exposure for the 0-10 m depth layer.

Figure 11.10 and Figure 11.11 present the maximum residence time of entrained hydrocarbon exposure for 10 ppb and 100 ppb.

Table 11.6 Probability of entrained hydrocarbons exposure to marine based receptors in the 0–10 m depth layer. Results are based on a 1,165 m³ surface release of MGO over 12 hours at Whiting. The results reflect annual conditions.

Receptor		Annual						
		Maximum entrained hydrocarbon exposure (ppb)	Probability of entrained hydrocarbon exposure (%)		Minimum time before entrained hydrocarbon exposure (days)		Maximum residence time for entrained hydrocarbon exposure (days)	
			Low	High	Low	High	Low	High
AMP	Beagle	88.5	12	-	5.75	-	7.5	-
	East Gippsland	47.8	7	-	6.08	-	2.33	-
BIA	Antipodean Albatross - Foraging	478.9	69	22	0.79	0.88	15.25	2.88
	Black Petrel - Foraging	61.8	11	-	5.75	-	3.75	-
	Black-browed Albatross – Foraging*	14,461.7	100	89	0.04	0.04	15.25	4.13
	Bullers Albatross – Foraging*	14,461.7	100	89	0.04	0.04	11	4.13
	Campbell Albatross – Foraging*	14,461.7	100	89	0.04	0.04	15.25	4.13
	Common Diving-petrel – Foraging*	14,461.7	100	89	0.04	0.04	11	4.13
	Crested Tern - Breeding	49.9	6	-	6.54	-	1.92	-
	Crested Tern - Foraging	60.5	9	-	5.88	-	3.75	-
	Flesh-footed Shearwater – Foraging	61.8	11	-	5.75	-	3.75	-
	Great-winged Petrel – Foraging	44	7	-	7.79	-	2.46	-
	Grey Nurse Shark – Foraging	213.1	30	4	2.67	3.04	8	0.63
	Grey Nurse Shark – Migration	216.3	32	4	2.63	3.04	4.96	1.04
	Humpback Whale – Foraging	247.2	39	5	2.33	2.54	8	1.04
	Indian Yellow-nosed Albatross – Foraging*	14,461.7	100	89	0.04	0.04	15.25	4.13
	Indo-Pacific/Spotted Bottlenose Dolphin – Breeding	190.1	37	7	2.33	2.46	8	1.21
	Little Penguin – Breeding	57.8	7	-	6.33	-	2.42	-
	Little Penguin – Foraging	235.4	43	9	2.08	2.21	8.13	2.25
	Northern Giant Petrel – Foraging	44	7	-	7.79	-	2.46	-
	Pygmy Blue Whale – Distribution*	14,461.7	100	89	0.04	0.04	15.63	4.13
	Pygmy Blue Whale – Foraging*	14,461.7	100	89	0.04	0.04	15.63	4.13
	Short-tailed Shearwater – Foraging	1,667.3	40	22	0.42	0.46	11	4.13
	Shy Albatross – Foraging*	14,461.7	100	89	0.04	0.04	15.63	4.13
	Sooty Shearwater – Foraging	184.2	24	4	2.88	3.46	4.96	1.04

Receptor		Annual						
		Maximum entrained hydrocarbon exposure (ppb)	Probability of entrained hydrocarbon exposure (%)		Minimum time before entrained hydrocarbon exposure (days)		Maximum residence time for entrained hydrocarbon exposure (days)	
			Low	High	Low	High	Low	High
	Southern Giant Petrel – Foraging	44	7	-	7.79	-	2.46	-
	Southern Right Whale - Known Core Range*	14,461.7	100	89	0.04	0.04	15.63	4.13
	Wandering Albatross – Foraging*	14,461.7	100	89	0.04	0.04	15.25	4.13
	Wedge-tailed Shearwater – Foraging	286.8	44	9	2.04	2.17	8.13	2.08
	White Shark – Breeding	3,167.8	52	27	0.17	0.17	7.83	2.5
	White Shark – Distribution*	14,461.7	100	89	0.04	0.04	15.63	4.13
	White Shark – Foraging	357.5	67	18	1.33	1.42	15.63	2.88
	White-capped Albatross – Foraging	44	7	-	7.79	-	2.46	-
	White-faced Storm-petrel – Breeding	82.4	14	-	5.04	-	4.96	-
	White-faced Storm-petrel – Foraging	540.5	69	24	0.71	0.75	15.63	2.88
	Wilsons Storm Petrel – Migration	44	7	-	7.79	-	2.46	-
IBRA	Bateman	39.4	4	-	6.63	-	1.58	-
	East Gippsland Lowlands	213.7	49	3	1.88	2.75	11.71	1.96
	Flinders	82.6	12	-	6.17	-	5.21	-
	Gippsland Plain	16.4	1	-	4.67	-	1.17	-
	South East Coastal Ranges	26.8	2	-	6.00	-	1.92	-
	Wilsons Promontory	40.8	2	-	6.58	-	1.46	-
IMCRA	Batemans Shelf	76.8	14	-	5.08	-	4.96	-
	Central Bass Strait	21.3	1	-	13.21	-	0.38	-
	Flinders	87	11	-	5.50	-	7.88	-
	Twofold Shelf*	14,461.7	100	89	0.04	0.04	15.63	4.13
KEF	Big Horseshoe Canyon	27.8	4	-	12.83	-	3.42	-
	Canyons on the Eastern Continental Slope	35.7	4	-	8.08	-	2.21	-
	Shelf rocky reefs	58.1	7	-	7.71	-	2.04	-
	Upwelling East of Eden	2,903.3	78	54	0.21	0.21	15.63	3.29
MNP	Cape Howe	191.5	38	7	2.29	2.5	7.04	1.42
	Point Hicks	323.2	61	11	1.58	1.75	9.33	0.79

Receptor		Annual						
		Maximum entrained hydrocarbon exposure (ppb)	Probability of entrained hydrocarbon exposure (%)		Minimum time before entrained hydrocarbon exposure (days)		Maximum residence time for entrained hydrocarbon exposure (days)	
			Low	High	Low	High	Low	High
MP	Batemans	51.4	6	-	6.29	-	2.71	-
MS	Beware Reef	44.3	17	-	3.92	-	5	-
NP	Kent Group	29.9	4	-	10.63	-	7.83	-
RSB	Beware Reef	47.8	20	-	3.92	-	5	-
	Cutter Rock	25	2	-	7.33	-	1.71	-
	New Zealand Star Bank	276.2	56	11	1.79	1.92	9.92	0.75
Nearshore Waters (LGA)	Bega Valley	85.8	20	-	2.71	-	7.79	-
	Curtis Island	19.8	3	-	7.92	-	1.75	-
	East Gippsland	213.7	49	3	1.88	2.75	11.71	1.96
	Eurobodalla	22.4	1	-	6.63	-	1.5	-
	Gabo Island	91.3	22	-	2.96	-	7.67	-
	Hogan Island Group	82.6	12	-	6.17	-	4.83	-
	Kent Island Group	47	5	-	10.00	-	5.21	-
	Moncoeur Islands	40.8	2	-	7.13	-	1.33	-
	Montague Island	39.4	4	-	6.71	-	1.58	-
	Pyramid Island	14.3	1	-	23.13	-	1.13	-
	Rodondo Island	13.3	2	-	12.58	-	0.13	-
	Seal Islands	27.9	2	-	6.58	-	1.46	-
State Waters	New South Wales	145.3	33	7	2.38	2.67	8	0.92
	Tasmania State Waters	87	12	-	5.92	-	7.88	-
	Victoria State Waters	356.8	64	16	1.00	1.67	15.63	2.46
Nearshore Waters (Sub-LGA)	Bega Valley	85.8	20	-	2.71	-	7.79	-
	Cape Conran	39.3	15	-	3.96	-	5.08	-
	Cape Howe / Mallacoota	79.4	20	-	3.04	-	6.79	-
	Corringle	20.4	4	-	4.92	-	2	-
	Croajingolong - East	86.4	8	-	4.21	-	11.71	-
	Croajingolong - West	196.1	46	3	2.42	2.83	11.54	1.96

Receptor		Annual						
		Maximum entrained hydrocarbon exposure (ppb)	Probability of entrained hydrocarbon exposure (%)		Minimum time before entrained hydrocarbon exposure (days)		Maximum residence time for entrained hydrocarbon exposure (days)	
			Low	High	Low	High	Low	High
	Eurobodalla	22.4	1	-	6.63	-	1.5	-
	Lake Tyers Beach	29.2	2	-	2.92	-	1.92	-
	Lakes Entrance	14.9	1	-	5.00	-	0.92	-
	Marlo	40.2	13	-	3.96	-	5.08	-
	Point Hicks	184.4	48	2	1.88	3.29	8.58	0.38
	Sydenham Inlet	57	22	-	3.13	-	8.75	-

*The release location resides within the receptor boundaries.

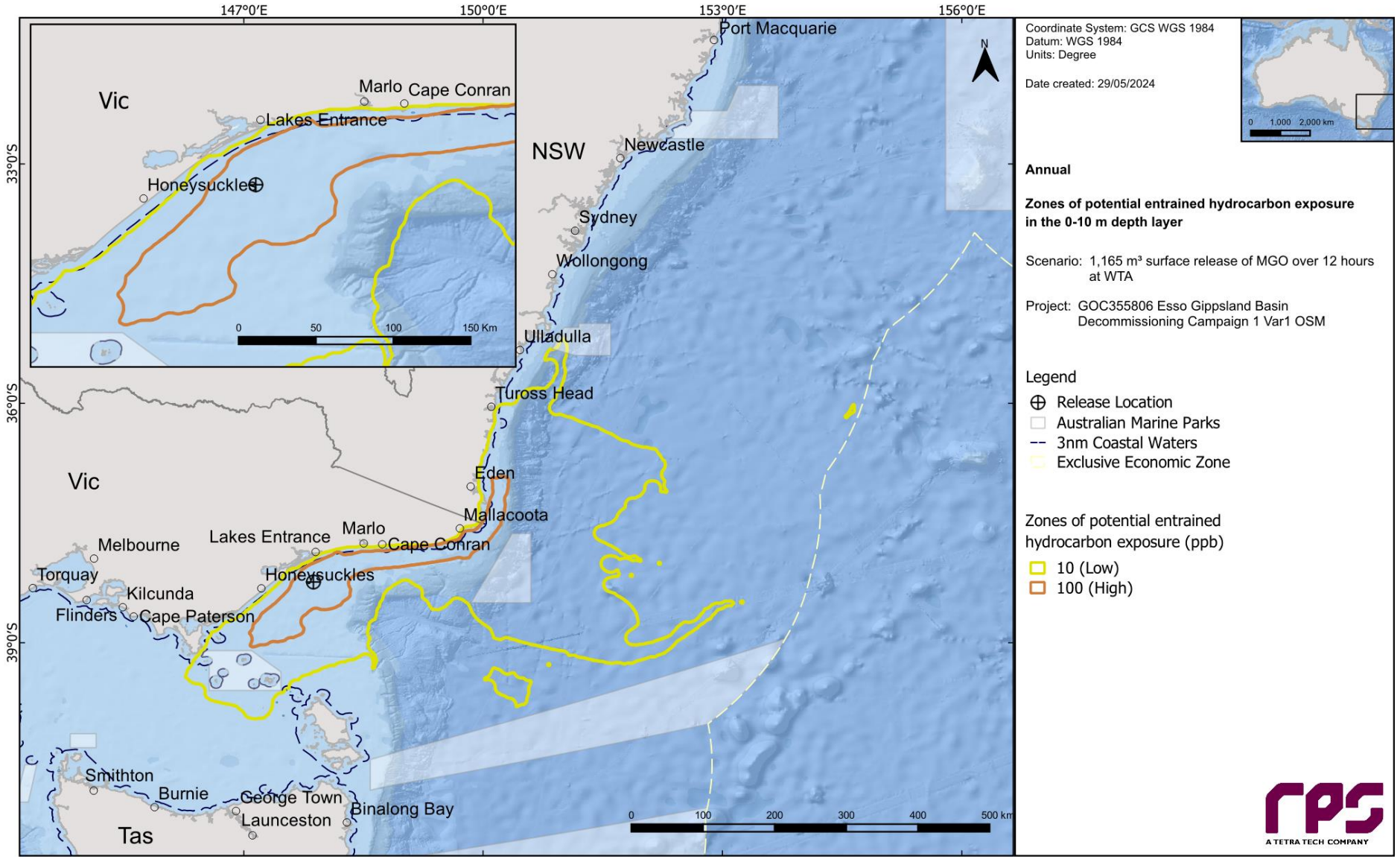

Figure 11.9 Zones of potential entrained hydrocarbon exposure at 0-10 m below the sea surface in the event of a 1,165 m³ surface release of MGO over 12 hours at Whiting. The results reflect annual conditions.

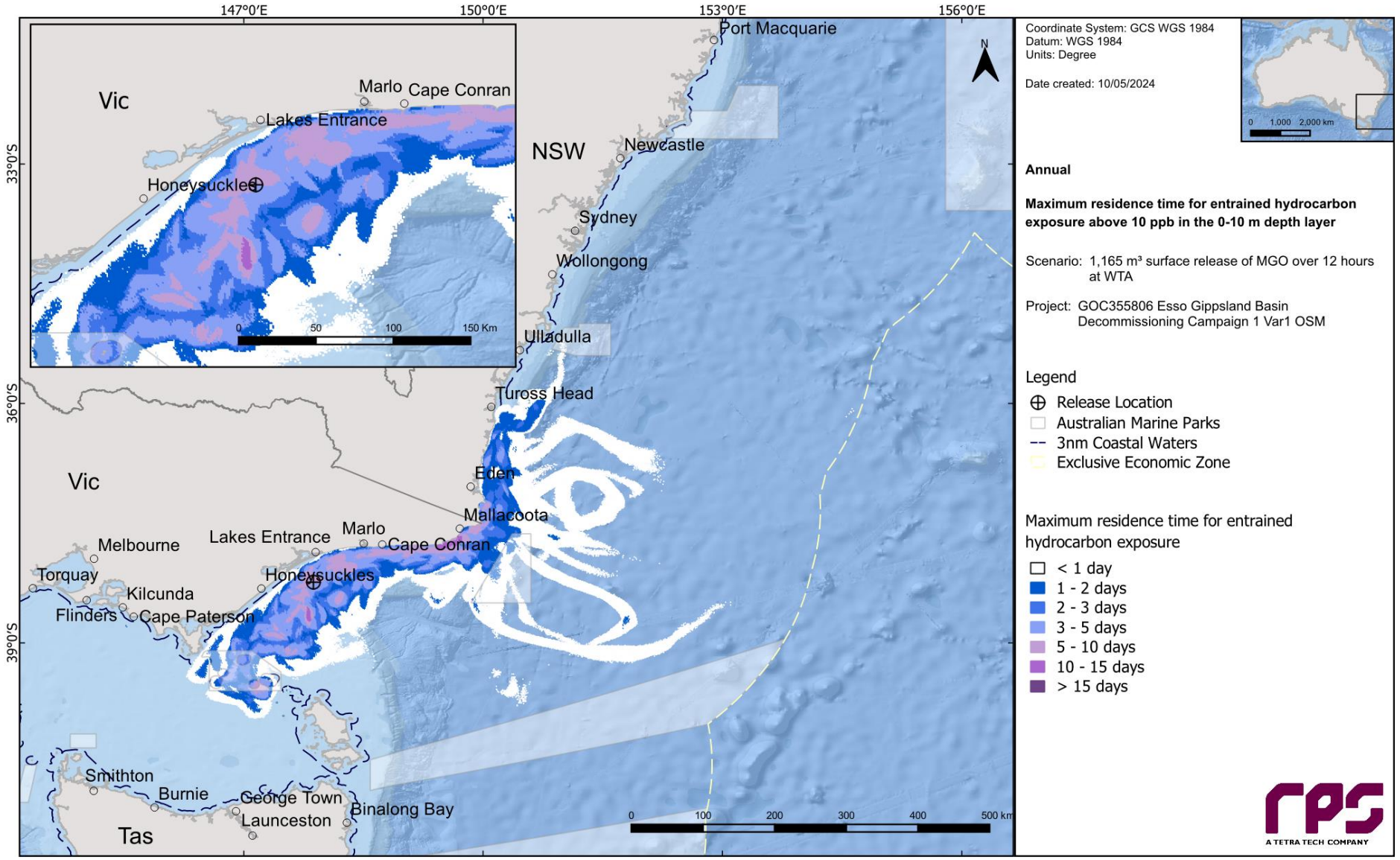

Figure 11.10 Maximum residence time for entrained hydrocarbon exposure above 10 ppb, at 0-10 m below the sea surface in the event of a 1,165 m³ surface release of MGO over 12 hours at Whiting. The results reflect annual conditions.

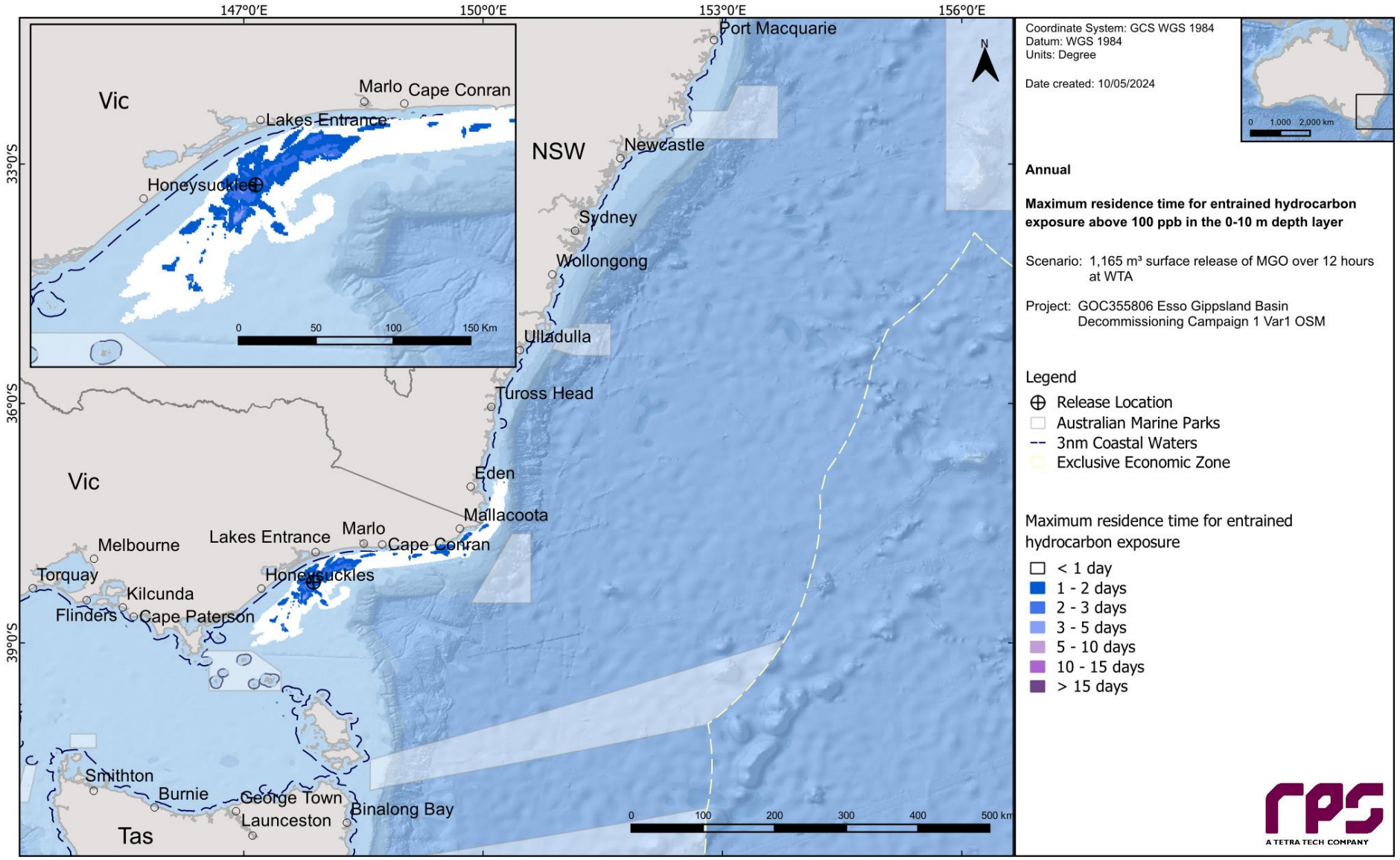

Figure 11.11 Maximum residence time for entrained hydrocarbon exposure above 100 ppb, at 0-10 m below the sea surface in the event of a 1,165 m³ surface release of MGO over 12 hours at Whiting. The results reflect annual conditions.

11.2 Deterministic Analysis

The stochastic modelling results were assessed, and the “worst case” deterministic runs were identified and are presented below for the following criteria:

a. Largest swept area for surface oil above 10 g/m^2; (Section 11.2.1)
b. Largest (total) volume of oil ashore (Section 11.2.2)
c. Longest length of shoreline with oil accumulation above 100 g/m^2 (Section 11.2.2)
d. Largest area of entrained hydrocarbon exposure above 100 ppb (Section 11.2.3)
e. Largest area of dissolved hydrocarbon exposure above 50 ppb (Section 11.2.4)

Table 11.7 presents a summary of sea surface and in-water exposure and shoreline accumulation at the assessed thresholds for the identified deterministic simulations.

Table 11.7 Summary of the worst-case deterministic analysis based on the scenario presented in the stochastic analysis section.

Variable	Threshold	Deterministic Analysis Criteria			
		Largest swept area of floating oil >10 g/m²	Largest volume of oil ashore and longest length of shoreline with accumulation >100 g/m²	Largest area of entrained hydrocarbon exposure >100 ppb	Largest area of dissolved hydrocarbon exposure >50 ppb
Run Number		45	2	87	94
Total area of floating Oil exposure (km²)	1 g/m²	269	253	88	22
	10 g/m²	**178**	37	57	5
	50 g/m²	15	-	10	1
Total length of shoreline accumulation (km)	10 g/m²	-	32	4	-
	100 g/m²	-	**10**	-	-
	1,000 g/m²	-	-	-	-
Minimum time before accumulation on any shoreline (hours)	10 g/m²	-	83	204	-
	100 g/m²	-	109	-	-
	1,000 g/m²	-	-	-	**-**
Peak volume of oil ashore (m³)		-	**40 (Total volume 54.8 m³)^**	-	-
Total area of entrained hydrocarbon exposure (km²)	10 ppb	10,170	5,339	14,621	6,160
	100 ppb	660	1,502	**3,606**	672
	1,000 ppb	-	25	25	21
Total area of dissolved hydrocarbon exposure (km²)	10 ppb	-	16	-	223
	50 ppb	-	-	-	**35**
	400 ppb	-	-	-	-
Start Date		12th April 2012 9pm	7th September 2011 1am	1st September 2017 5pm	12th April 2011 12pm

^Total volume of oil stranded on shorelines over the entire simulation, not accounting for natural removal processes such as evaporation and decay.

11.2.1 Deterministic Case: Largest swept area of floating oil above 10 g/m^2

The deterministic trajectory that resulted in the largest swept area of floating oil above 10 g/m^2 was identified as run number 45, which started on the 12th of April 2012.

Figure 11.12 illustrates the floating oil exposure and shoreline accumulation over the 30-day simulation.

Figure 11.13 displays the time series of the area of sea surface exposure above the low (1 g/m^2), moderate (10 g/m^2) and high (50 g/m^2) thresholds over the 30-day simulation.

Figure 11.14 presents the fates and weathering graph for the corresponding single spill trajectory and Table 11.8 summarises the mass balance peaks and at the end of the simulation.

Table 11.8 Summary of the mass balance for the trajectory with the largest swept area of floating oil above 10 g/m^2.

Exposure Metrics	Peak Volume	Day of occurrence	Volume at day 30
Surface (m^3)	739	0.5	0
Entrained (m^3)	688	2.0	213
Dissolved (m^3)	1	6.5	0
Evaporation (m^3)	572	30.0	572
Decay (m^3)	408	30.0	408
Ashore (m^3)	0	21.7	0

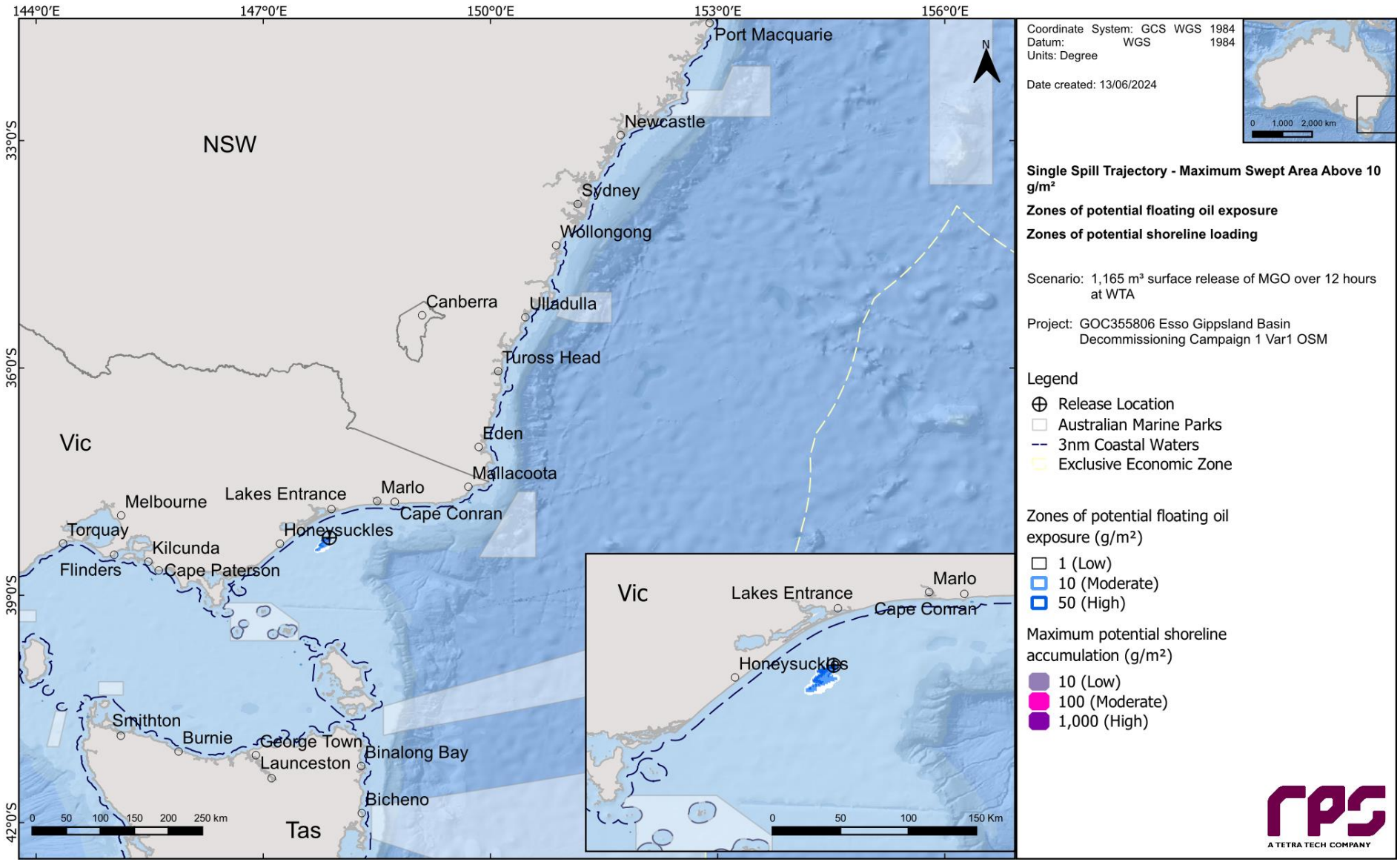

Figure 11.12 Zones of potential floating oil exposure and shoreline accumulation, for the trajectory with the largest swept area of floating oil above 10 g/m².

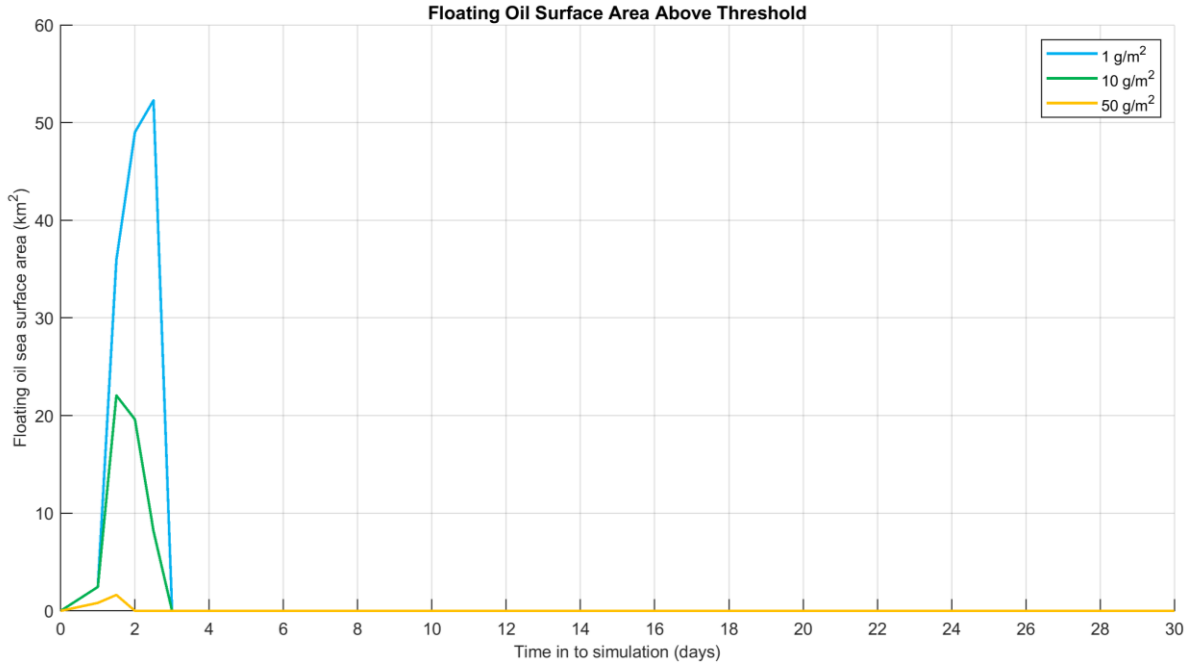

Figure 11.13 Time series of floating oil exposure above each threshold for the trajectory with the largest swept area of floating oil above 10 g/m^2.

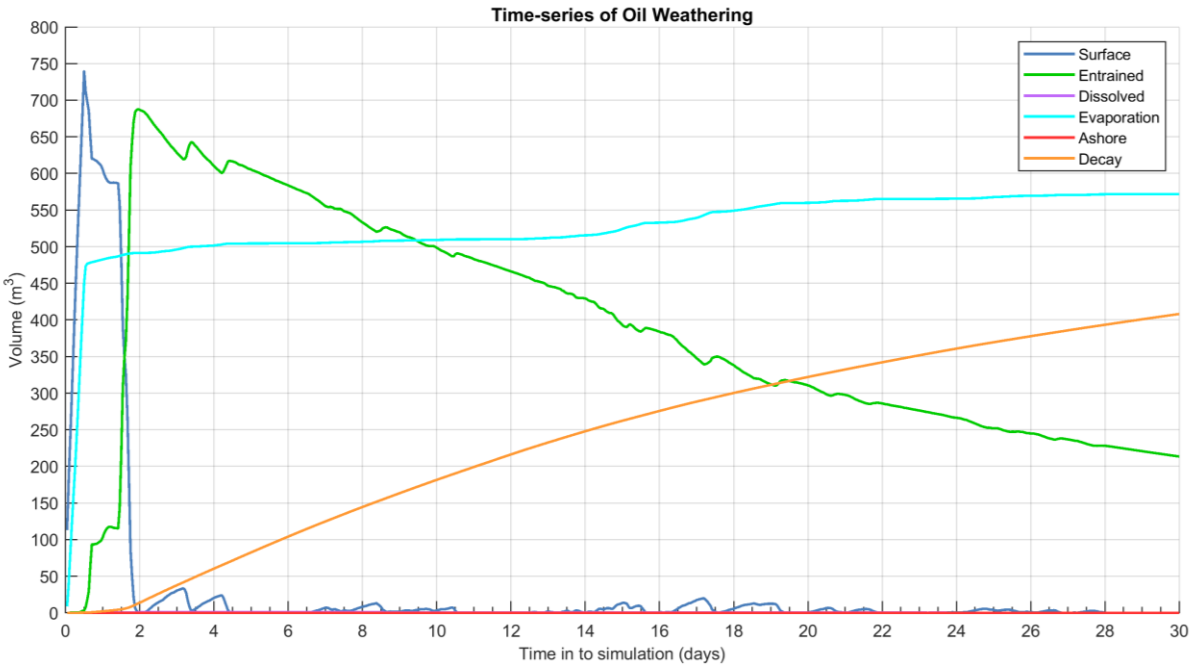

Figure 11.14 Predicted weathering and fates graph for the trajectory with the largest swept area of floating oil above 10 g/m^2.

11.2.2 Deterministic Case: Largest volume of oil ashore and longest length of shoreline contacted by oil above 100 g/m^2

The deterministic trajectory that resulted in the largest volume of oil ashore also resulted in the longest length of shoreline contacted by oil above 100 g/m^2. This simulation was identified as run number 2, which started on the 7th of September 2011.

Figure 11.15 illustrates the floating oil exposure and shoreline accumulation over the 30-day simulation.

Figure 11.16 and Figure 11.17 display the time series of the volume of shoreline oil and the length of shoreline oil accumulation above the low (1 g/m^2), moderate (10 g/m^2) and high (50 g/m^2) thresholds over the 30-day simulation respectively.

Figure 11.18 presents the fates and weathering graph for the corresponding single spill trajectory and Table 11.9 summarises the mass balance peaks and at the end of the simulation.

Table 11.9 Summary of the mass balance for the trajectory with the largest volume of oil ashore and the longest length of shoreline contacted by oil above 100 g/m^2.

Exposure Metrics	Peak Volume	Day of occurrence	Volume at day 30
Surface (m^3)	344	0.5	1
Entrained (m^3)	662	2.0	182
Dissolved (m^3)	3	3.0	0
Evaporation (m^3)	573	30.0	573
Decay (m^3)	397	30.0	397
Ashore (m^3)	45	19.5	40

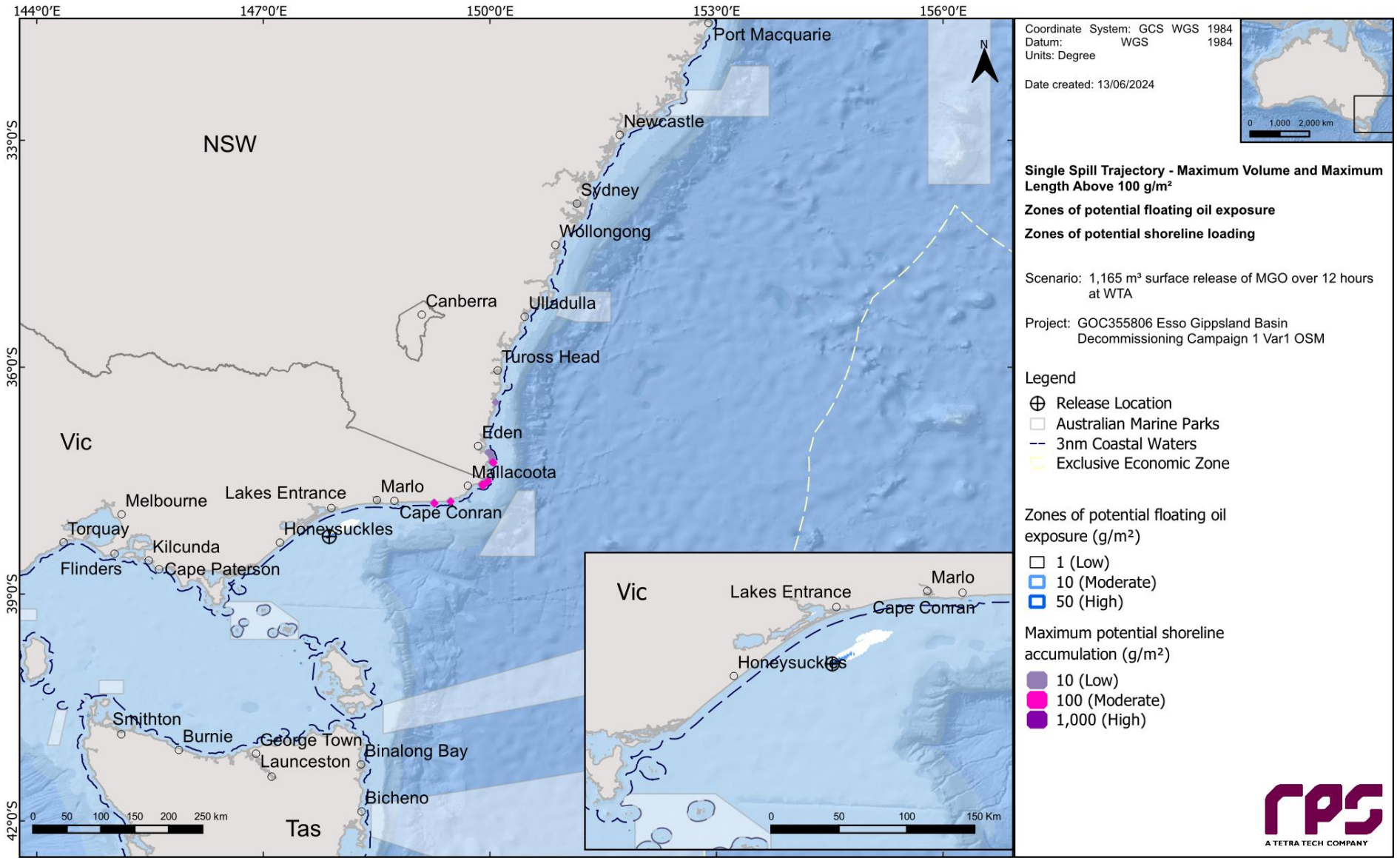

Figure 11.15 Zones of potential floating oil exposure and shoreline accumulation, for the trajectory with the largest volume of oil ashore and the longest length of shoreline contacted by oil above 100 g/m².

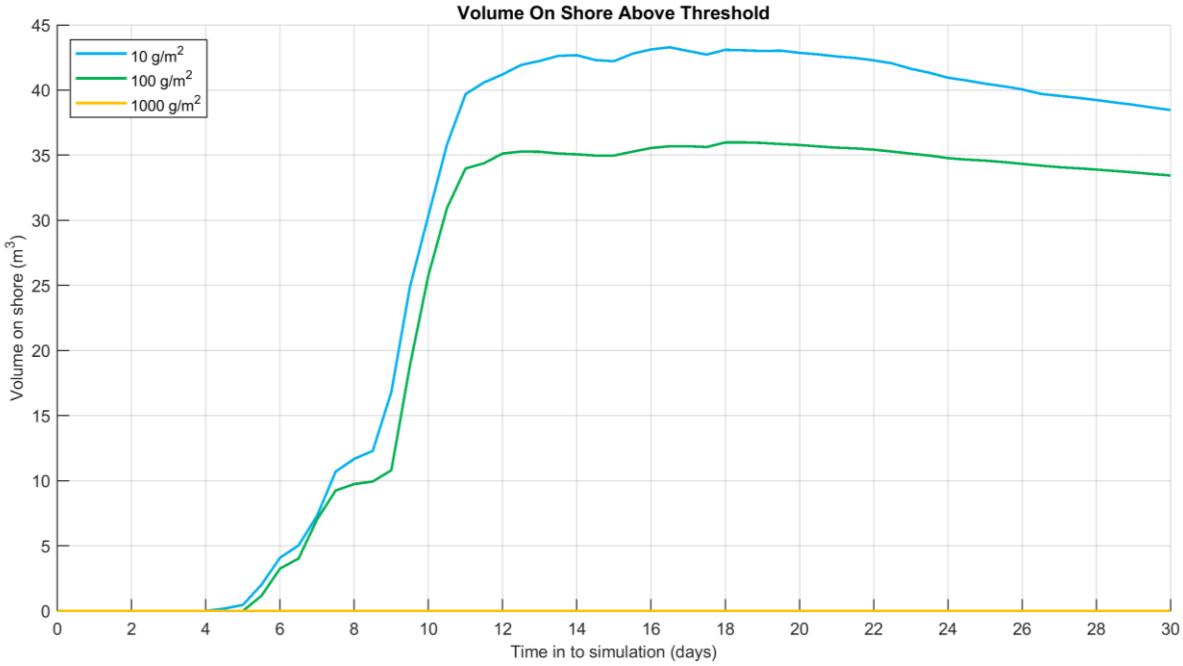

Figure 11.16 Time series of the volume of oil ashore above each threshold for the trajectory with the largest volume of oil ashore and the longest length of shoreline contacted by oil above 100 g/m^2.

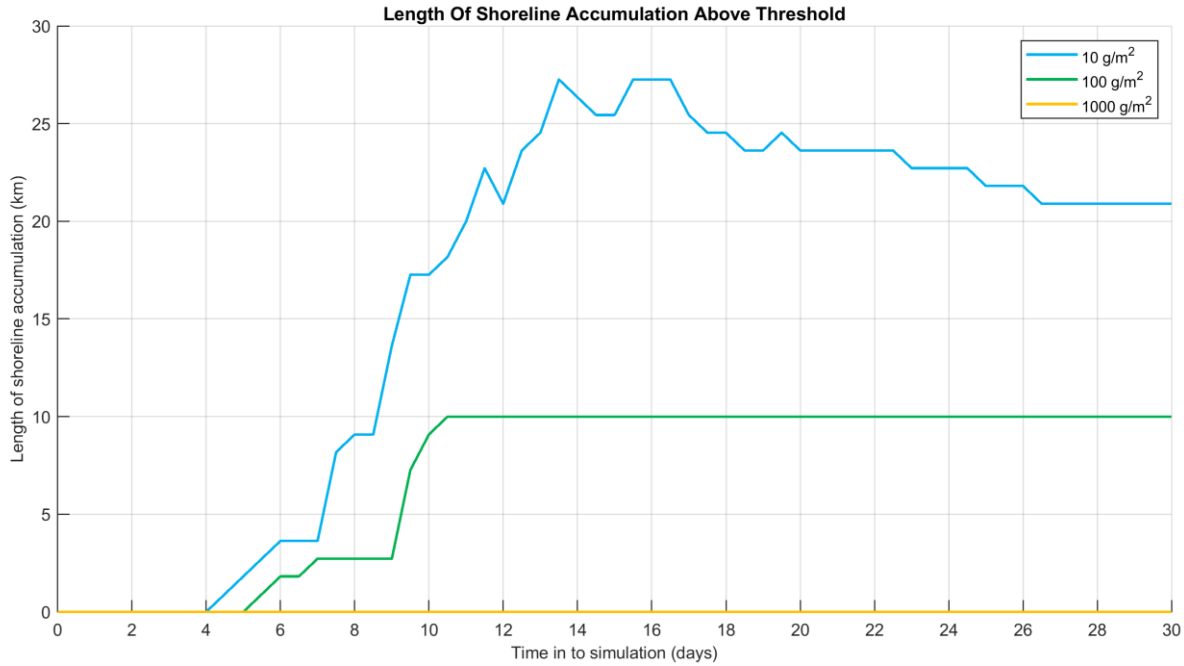

Figure 11.17 Time series of the length of shoreline oil accumulation above each threshold for the trajectory with the largest volume of oil ashore and the longest length of shoreline contacted by oil above 100 g/m^2.

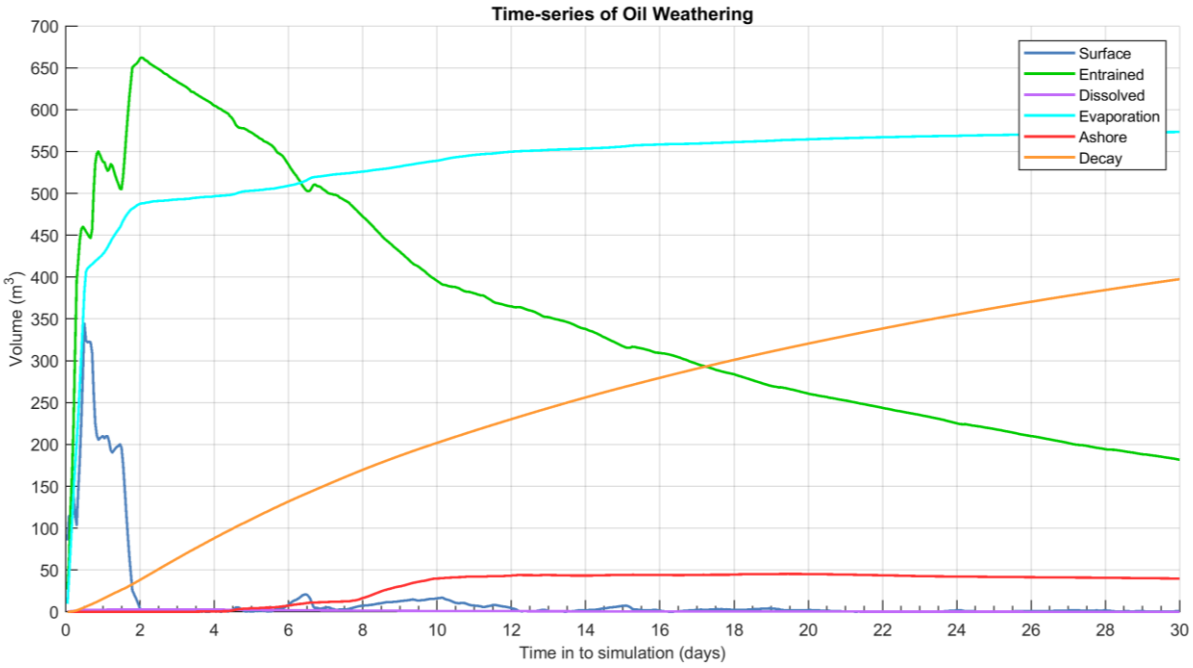

Figure 11.18 Predicted weathering and fates graph for the trajectory with the largest volume of oil ashore and the longest length of shoreline contacted by oil above 100 g/m^2.

11.2.3 Deterministic Case: Largest area of entrained hydrocarbon exposure above 100 ppb

The deterministic trajectory that resulted in the largest area of entrained hydrocarbon exposure above 100 ppb was identified as run number 87, which started on the 1st of September 2017.

Figure 11.19 illustrates the zones of potential entrained hydrocarbon exposure over the 30-day simulation.

Figure 11.20 displays the time series of the area of entrained hydrocarbon exposure at the low (10 ppb) and high (100 ppb) thresholds over the 30-day simulation.

Figure 11.21 presents the fates and weathering graph for the corresponding single spill trajectory and Table 11.10 summarises the mass balance peaks and at the end of the simulation.

Table 11.10 Summary of the mass balance for the trajectory with the largest area of entrained hydrocarbon exposure above 100 ppb.

Exposure Metrics	Peak Volume	Day of occurrence	Volume at day 30
Surface (m^3)	682	0.5	1
Entrained (m^3)	701	1.1	201
Dissolved (m^3)	1	3.1	0
Evaporation (m^3)	605	30.0	605
Decay (m^3)	387	30.0	387
Ashore (m^3)	1	12.0	0

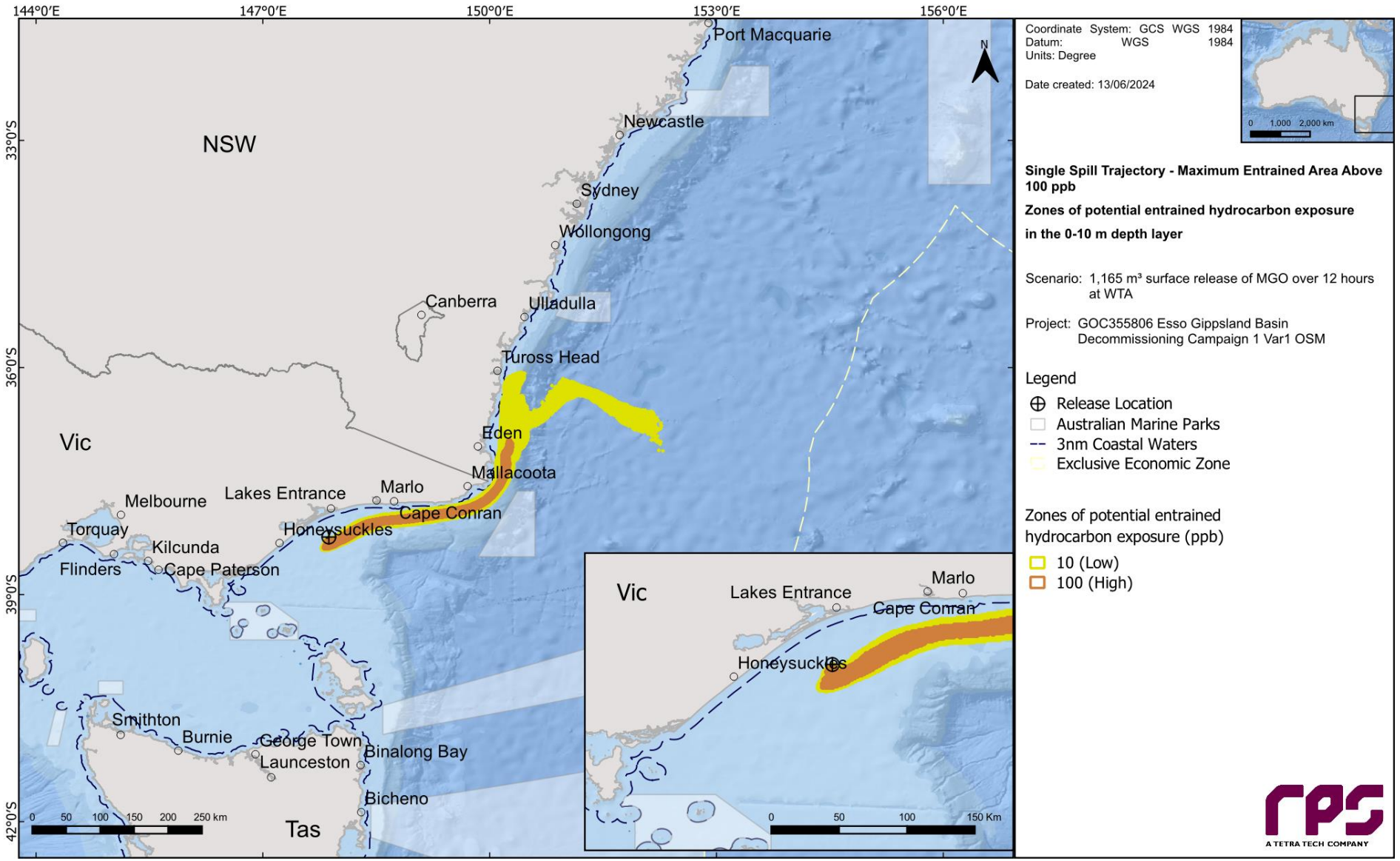

Figure 11.19 Zones of potential entrained hydrocarbon exposure, for the trajectory with the largest area of entrained hydrocarbon exposure above 100 ppb.

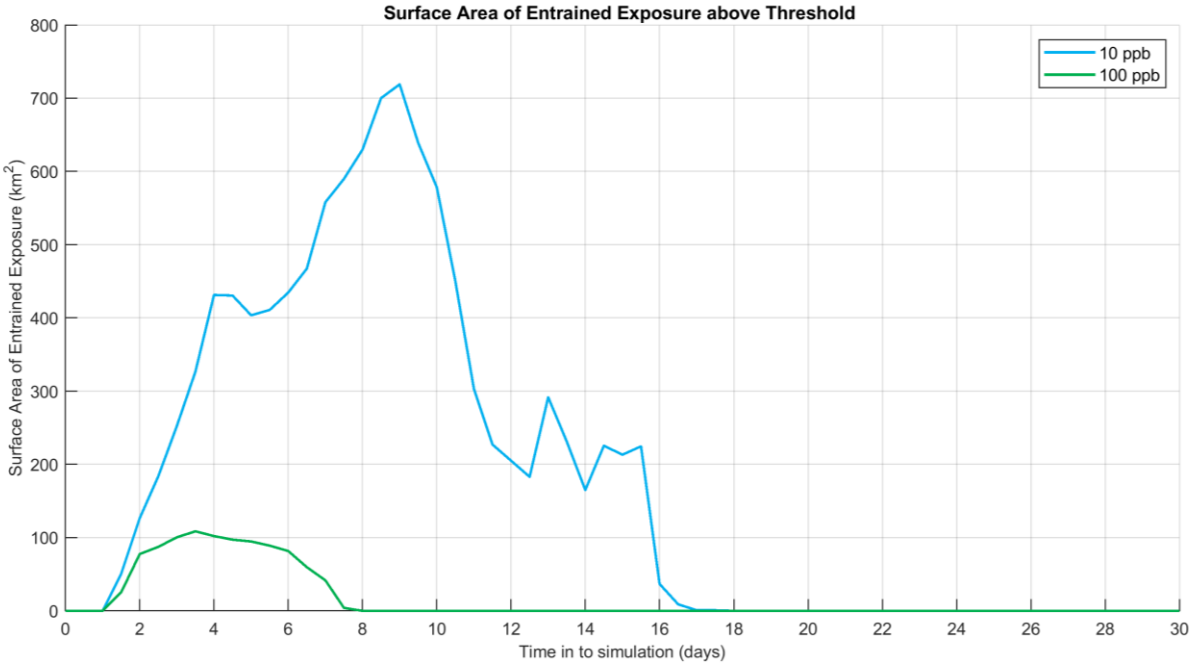

Figure 11.20 Time series of the entrained hydrocarbon exposure area above each threshold for the trajectory with the largest area of entrained hydrocarbon exposure above 100 ppb.

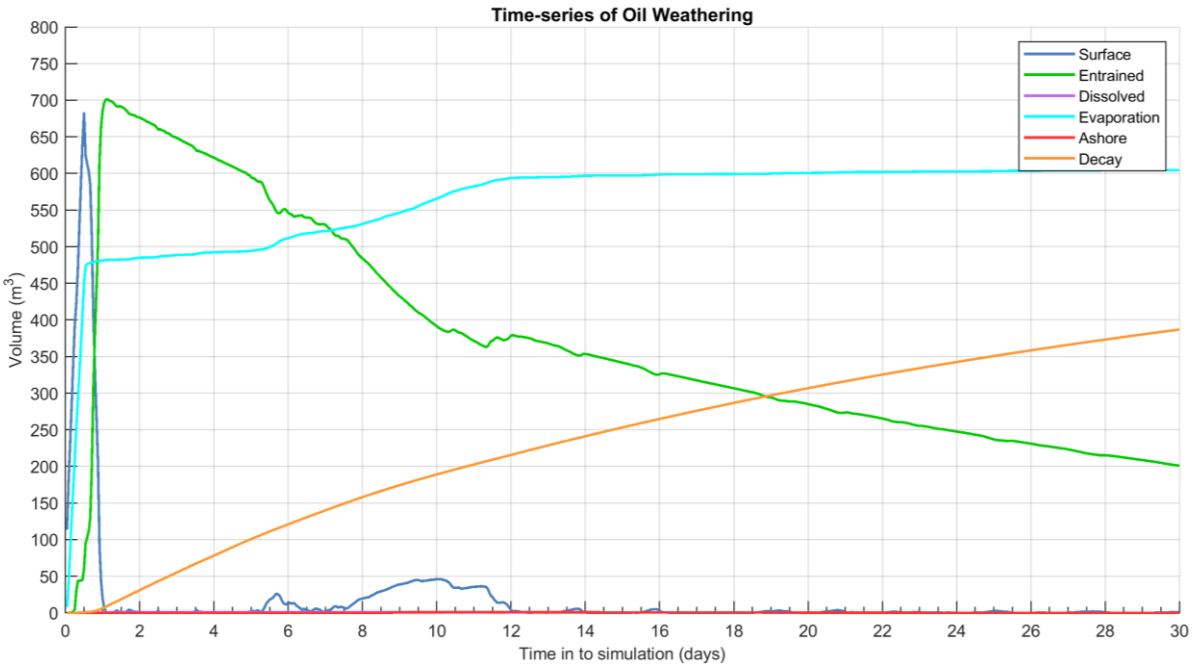

Figure 11.21 Predicted weathering and fates graph for the trajectory with the largest area of entrained hydrocarbon exposure above 100 ppb.

11.2.4 Deterministic Case: Largest area of dissolved hydrocarbon exposure above 50 ppb

The deterministic trajectory that resulted in the largest area of dissolved hydrocarbon exposure above 50 ppb was identified as run number 94, which started on the 12th of April 2011.

Figure 11.22 illustrates the zones of potential dissolved hydrocarbon exposure over the 30-day simulation.

Figure 11.23 displays the time series of the area of dissolved hydrocarbon exposure at the low (10 ppb), moderate (50 ppb) and high (400 ppb) thresholds over the 30-day simulation.

Figure 11.24 presents the fates and weathering graph for the corresponding single spill trajectory and Table 11.11 summarises the mass balance peaks and at the end of the simulation.

Table 11.11 Summary of the mass balance for the trajectory with the largest area of dissolved hydrocarbon exposure above 50 ppb.

Exposure Metrics	Peak Volume	Day of occurrence	Volume at day 30
Surface (m^3)	197	0.2	0
Entrained (m^3)	941	0.5	164
Dissolved (m^3)	9	0.8	0
Evaporation (m^3)	650	30.0	650
Decay (m^3)	379	30.0	379
Ashore (m^3)	0	12.8	0

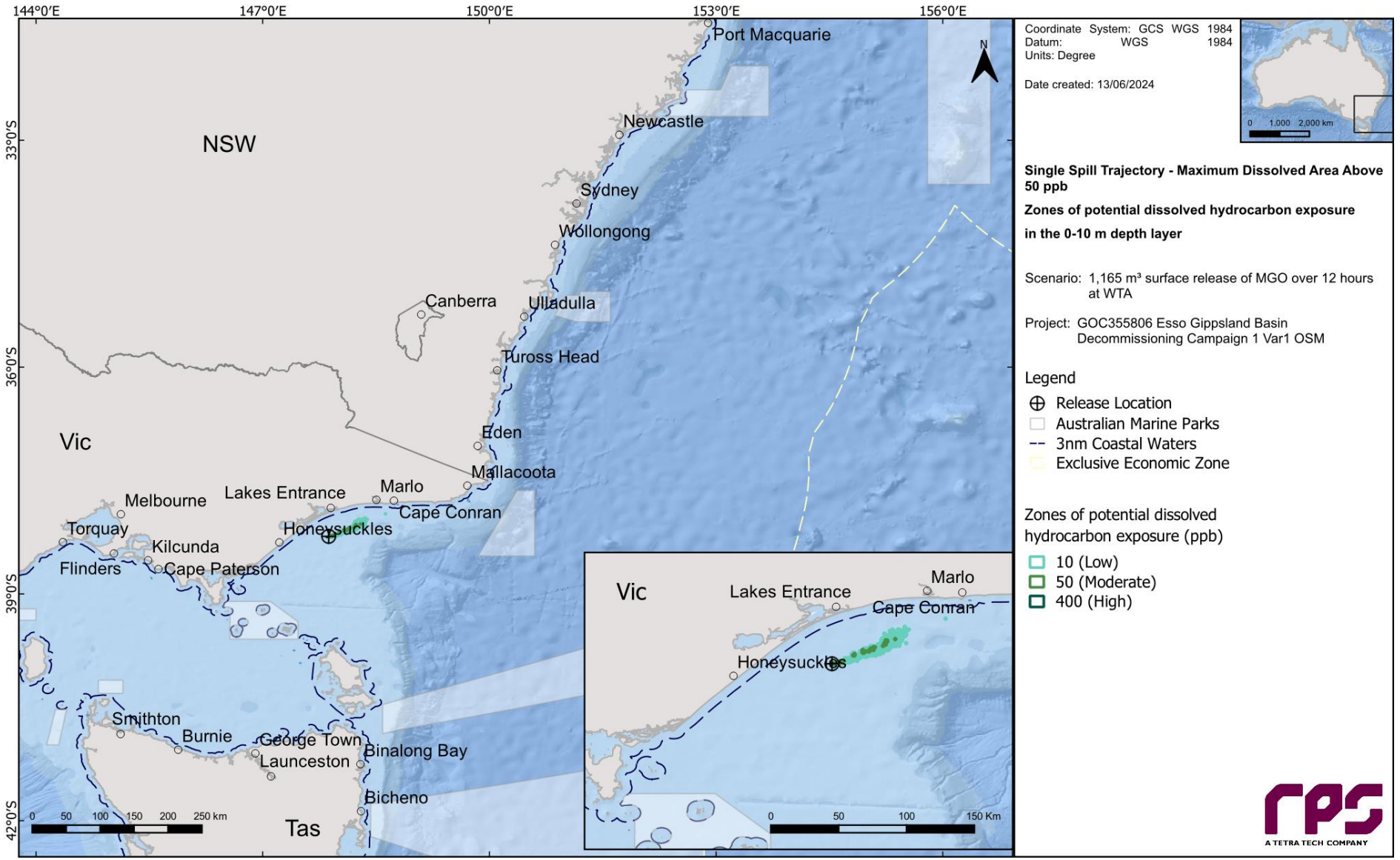

Figure 11.22 Zones of potential dissolved hydrocarbon exposure, for the trajectory with the largest area of dissolved hydrocarbon exposure above 50 ppb.

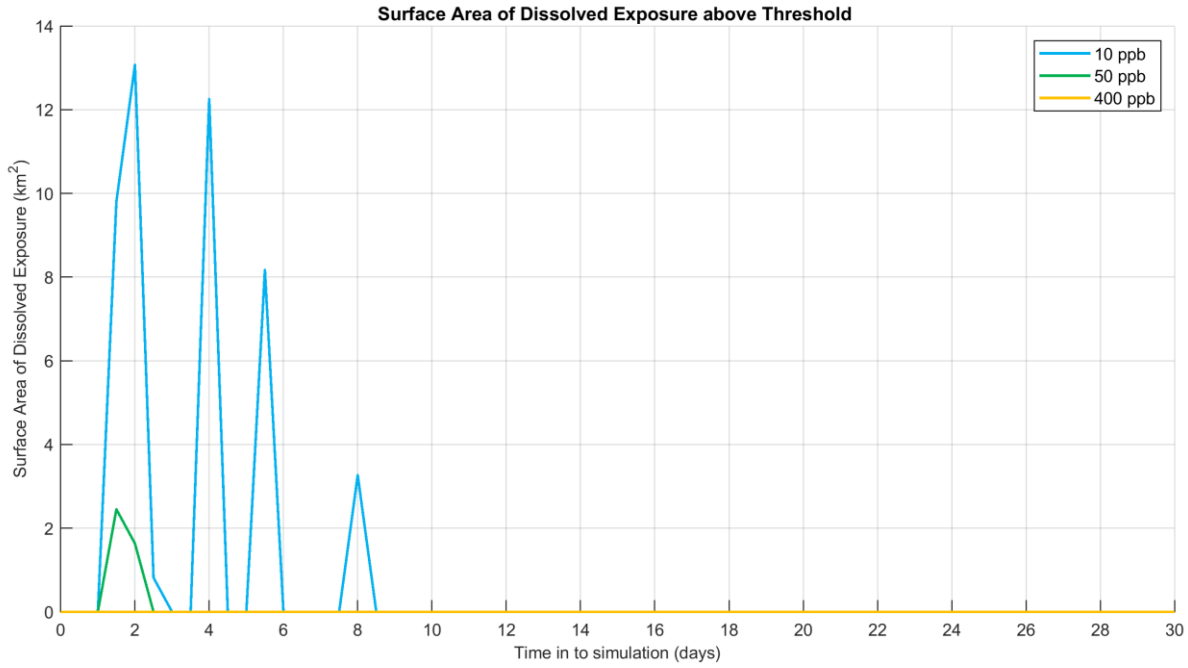

Figure 11.23 Time series of the dissolved hydrocarbon exposure area above each threshold for the trajectory with the largest area of dissolved hydrocarbon exposure above 50 ppb.

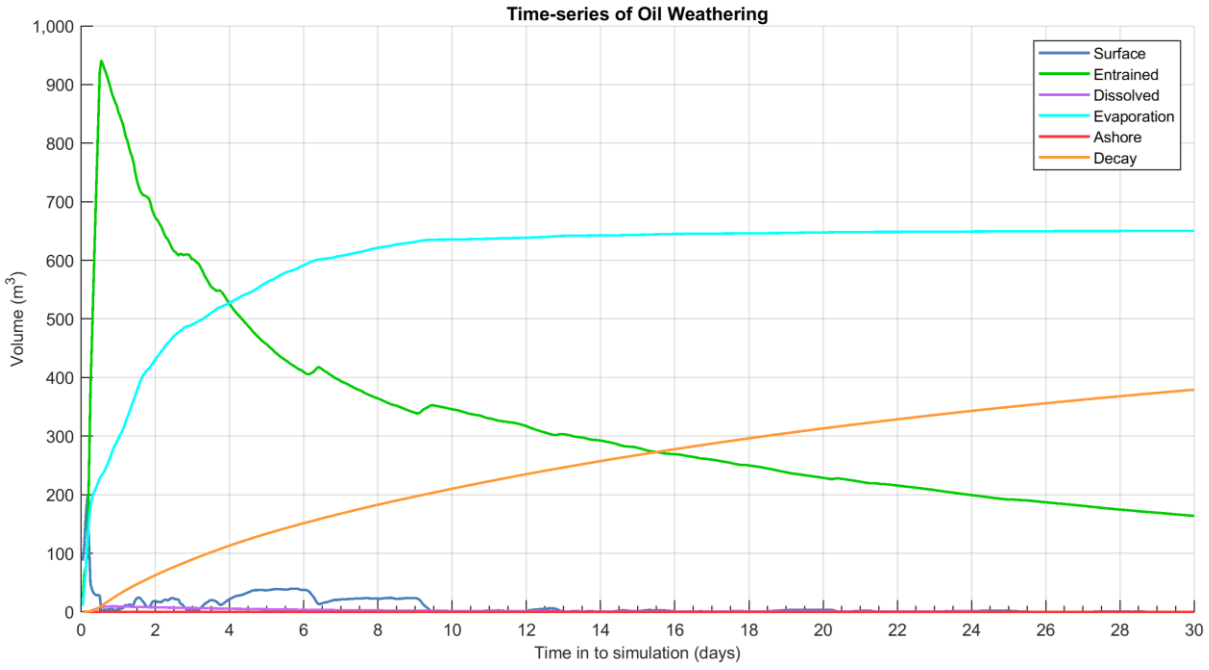

Figure 11.24 Predicted weathering and fates graph for the trajectory with the largest area of dissolved hydrocarbon exposure above 50 ppb.

12 RESULTS – SCENARIO 3 – A 1,165 M^3 SURFACE RELEASE OF MGO AT FORTESCUE

This scenario examined a 1,165 m^3 surface release of MGO over 12 hours at Fortescue. A total of 100 spill simulations were run and each simulation was tracked for 30 days. The results are presented on an annual basis.

Sections 12.1 and 12.2 present the annual stochastic analysis and deterministic analysis results, respectively.

12.1 Stochastic Analysis

12.1.1 Floating Oil Exposure

Table 12.1 summarises the maximum distance travelled by floating oil on the sea surface at each threshold. The maximum distances and corresponding directions from the release location to the low (1–10 g/m^2), moderate (10–50 g/m^2) and high (>50 g/m^2) exposure zones were 107.6 km (east-northeast), 46.0 km (southwest) and approximately 16.4 km (south), respectively.

Table 12.2 summarises the potential floating oil exposure, minimum time and maximum residence time of floating oil exposure to individual receptors.

With the exception of the receptors the release location is within (see

Table 9.2), the Upwelling East of Eden (KEF) recorded the highest probability of exposure at 21% to concentrations exceeding 1 g/m^2. Floating oil at the 1 g/m^2 threshold was predicted to reach the same receptor the quickest at 0.17 days (4.08 hours) following the spill commencement.

Figure 12.1 presents the zones of potential floating oil exposure for all thresholds, while Figure 12.2 to Figure 12.4 present the maximum residence time of floating oil exposure for all thresholds assessed under annual conditions.

Table 12.1 Maximum distance and direction from the release location to the edge of floating oil exposure. Results are based on a 1,165 m^3 surface release of MGO over 12 hours at Fortescue. The results reflect annual conditions.

Distance and direction travelled	Zones of potential floating oil exposure		
	Annual		
	Low	Moderate	High
Maximum distance (km) from release location	107.6	46.0	16.4
Maximum distance (km) from release location (99th percentile)	55.9	41.2	16.3
Direction	ENE	SW	S

Table 12.2 Summary of the potential floating oil exposure to individual receptors. Results are based on a 1,165 m³ surface release of MGO over 12 hours at Fortescue. The results reflect annual conditions.

	Receptor	Annual								
		Probability of floating oil exposure (%)			Minimum time before floating oil exposure (days)			Maximum residence time of floating oil exposure (days)		
		Low	Moderate	High	Low	Moderate	High	Low	Moderate	High
BIA	Antipodean Albatross - Foraging	1	-	-	2.88	-	-	0.08	-	-
	Black-browed Albatross – Foraging*	100	100	69	0.04	0.04	0.04	0.92	0.71	0.5
	Bullers Albatross – Foraging*	100	100	69	0.04	0.04	0.04	0.92	0.71	0.5
	Campbell Albatross – Foraging*	100	100	69	0.04	0.04	0.04	0.92	0.71	0.5
	Common Diving-petrel – Foraging*	100	100	69	0.04	0.04	0.04	0.92	0.71	0.5
	Indian Yellow-nosed Albatross – Foraging*	100	100	69	0.04	0.04	0.04	0.92	0.71	0.5
	Pygmy Blue Whale – Distribution*	100	100	69	0.04	0.04	0.04	0.92	0.71	0.5
	Pygmy Blue Whale – Foraging*	100	100	69	0.04	0.04	0.04	0.92	0.71	0.5
	Short-tailed Shearwater - Foraging	9	4	-	0.67	0.71	-	0.58	0.25	-
	Shy Albatross – Foraging*	100	100	69	0.04	0.04	0.04	0.92	0.71	0.5
	Southern Right Whale - Known Core Range*	100	100	69	0.04	0.04	0.04	0.92	0.71	0.5
	Wandering Albatross – Foraging*	100	100	69	0.04	0.04	0.04	0.92	0.71	0.5
	White Shark – Distribution*	100	100	69	0.04	0.04	0.04	0.92	0.71	0.5
	White Shark - Foraging	1	-	-	2.88	-	-	0.08	-	-
	White-faced Storm-petrel - Foraging	3	1	-	1.46	1.71	-	0.17	0.04	-
IMCRA	Twofold Shelf*	100	100	69	0.04	0.04	0.04	0.92	0.71	0.5
KEF	Upwelling East of Eden	21	1	-	0.17	0.58	-	0.42	0.08	-

*The release location resides within the receptor boundaries.

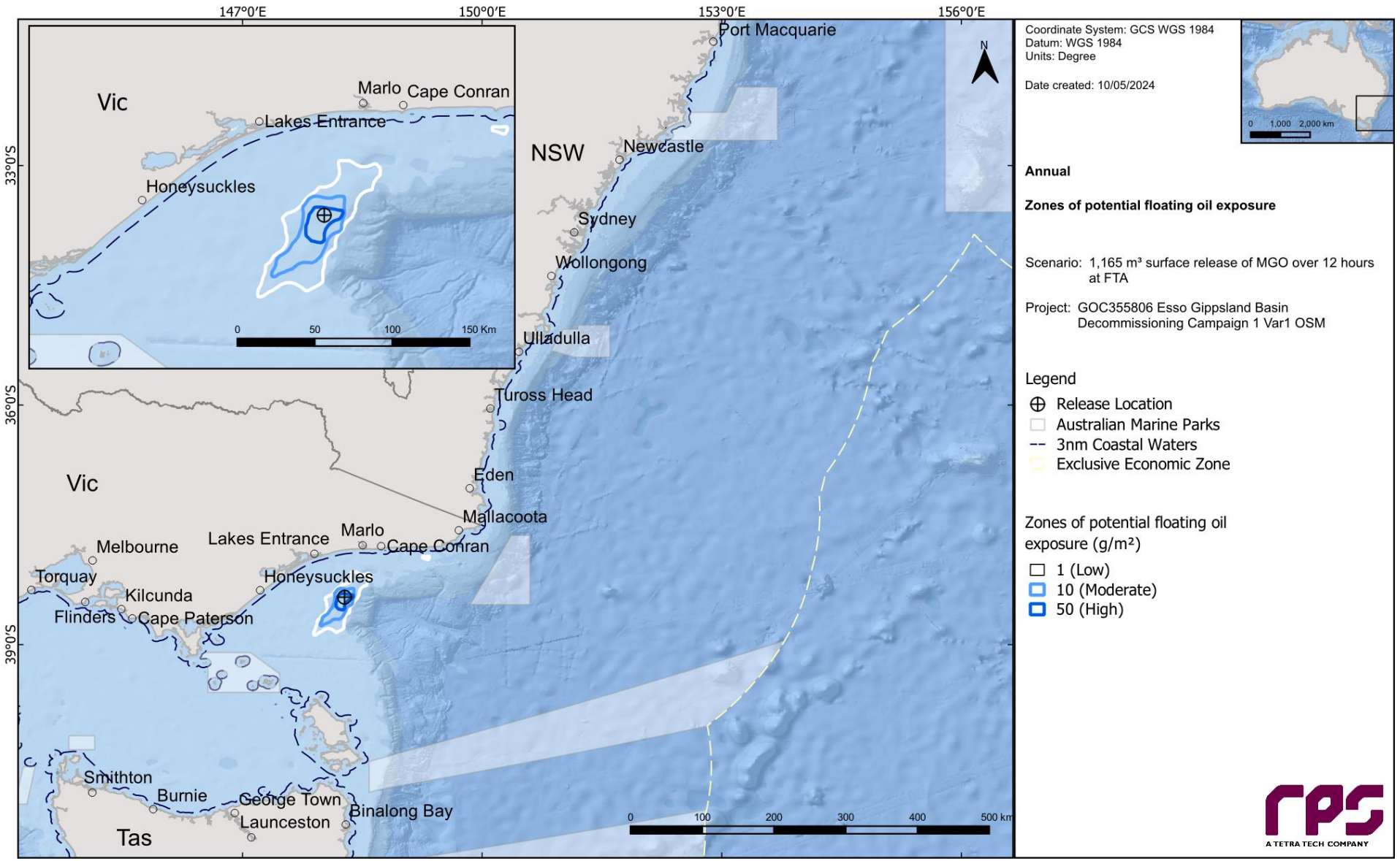

Figure 12.1 Zones of potential floating oil exposure in the event of a 1,165 m³ surface release of MGO over 12 hours at Fortescue. The results reflect annual conditions.

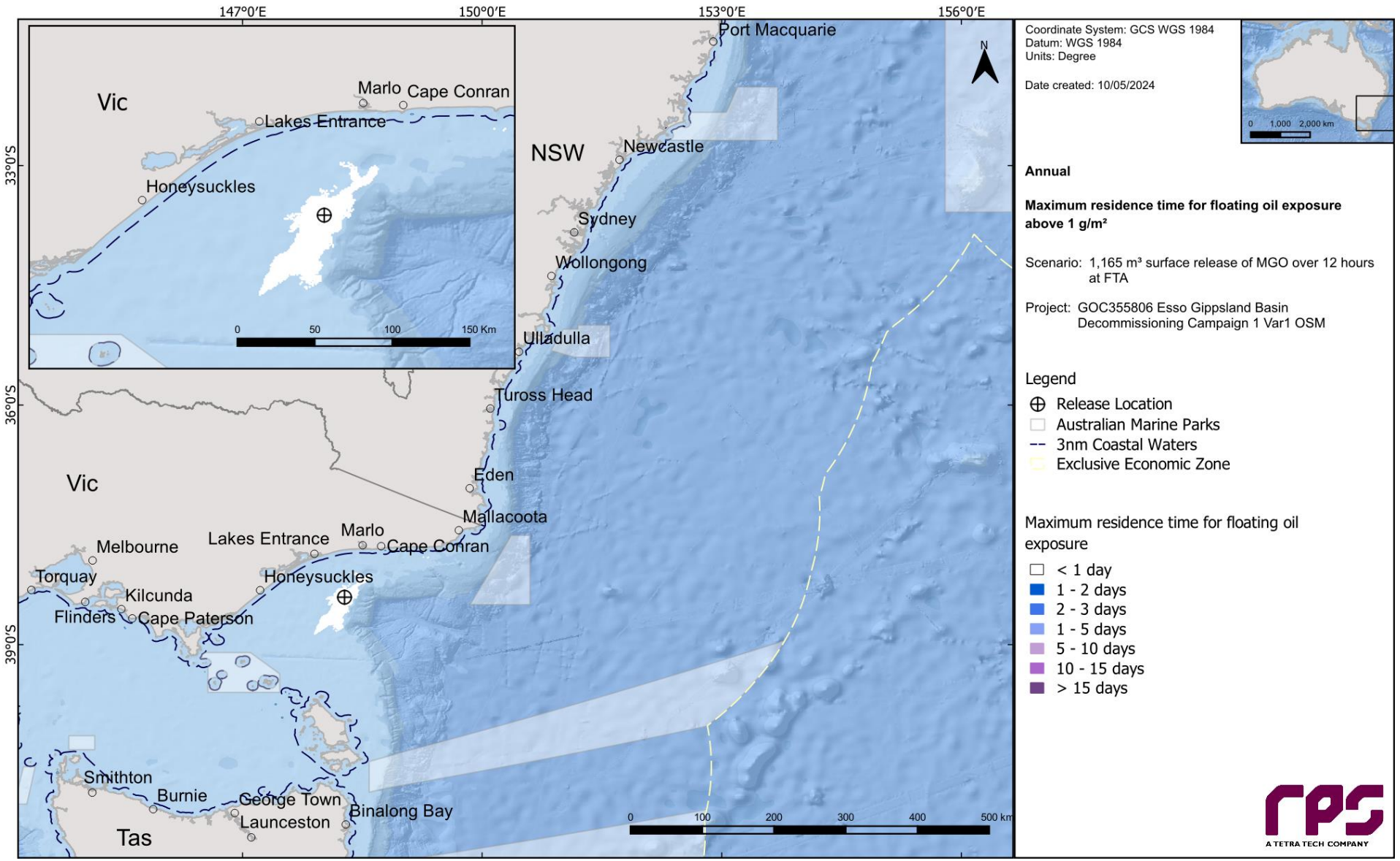

Figure 12.2 Maximum residence time of floating oil exposure above 1 g/m^2, in the event of a 1,165 m^3 surface release of MGO over 12 hours at Fortescue. The results reflect annual conditions.

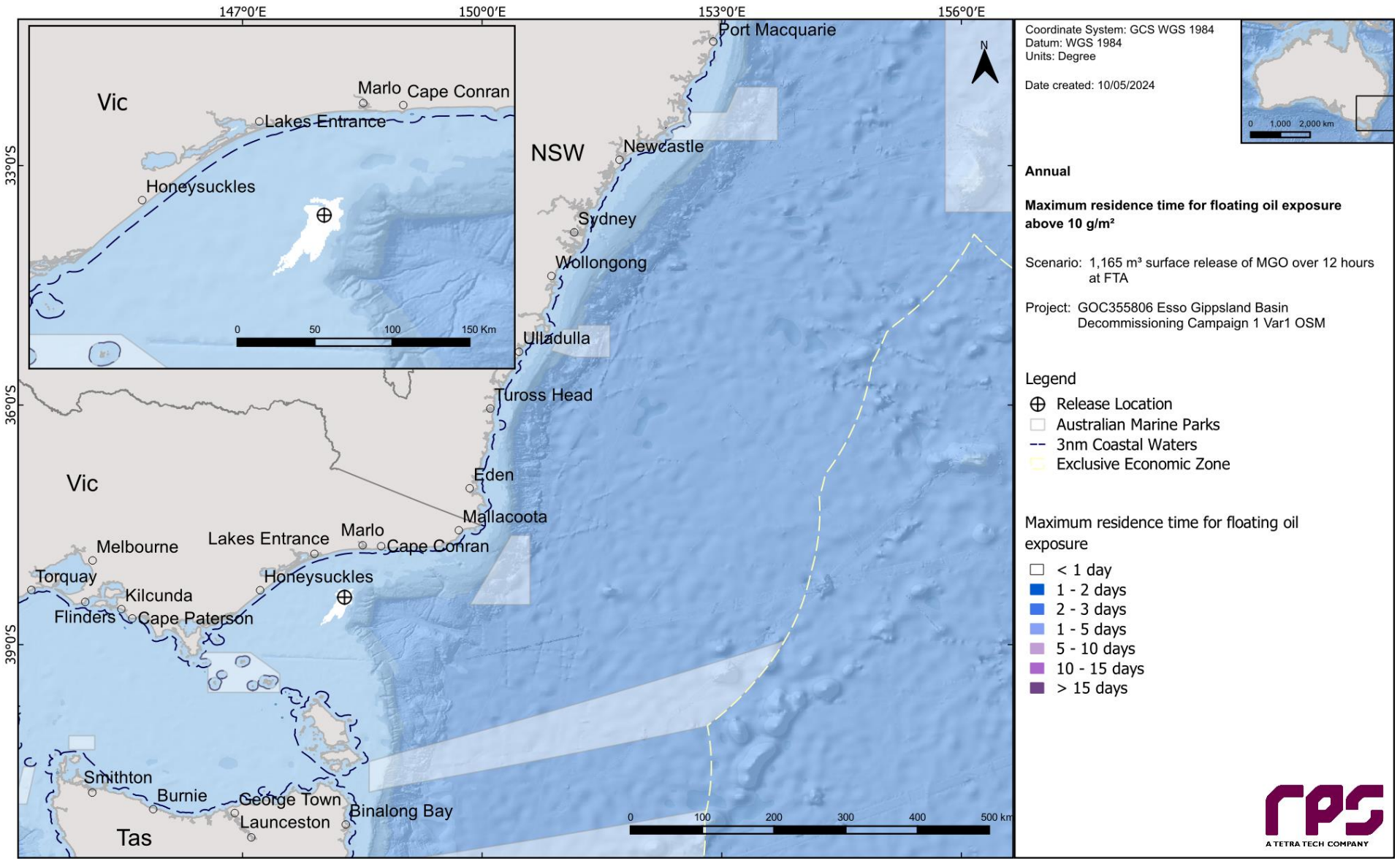

Figure 12.3 Maximum residence time of floating oil exposure above 10 g/m², in the event of a 1,165 m³ surface release of MGO over 12 hours at Fortescue. The results reflect annual conditions.

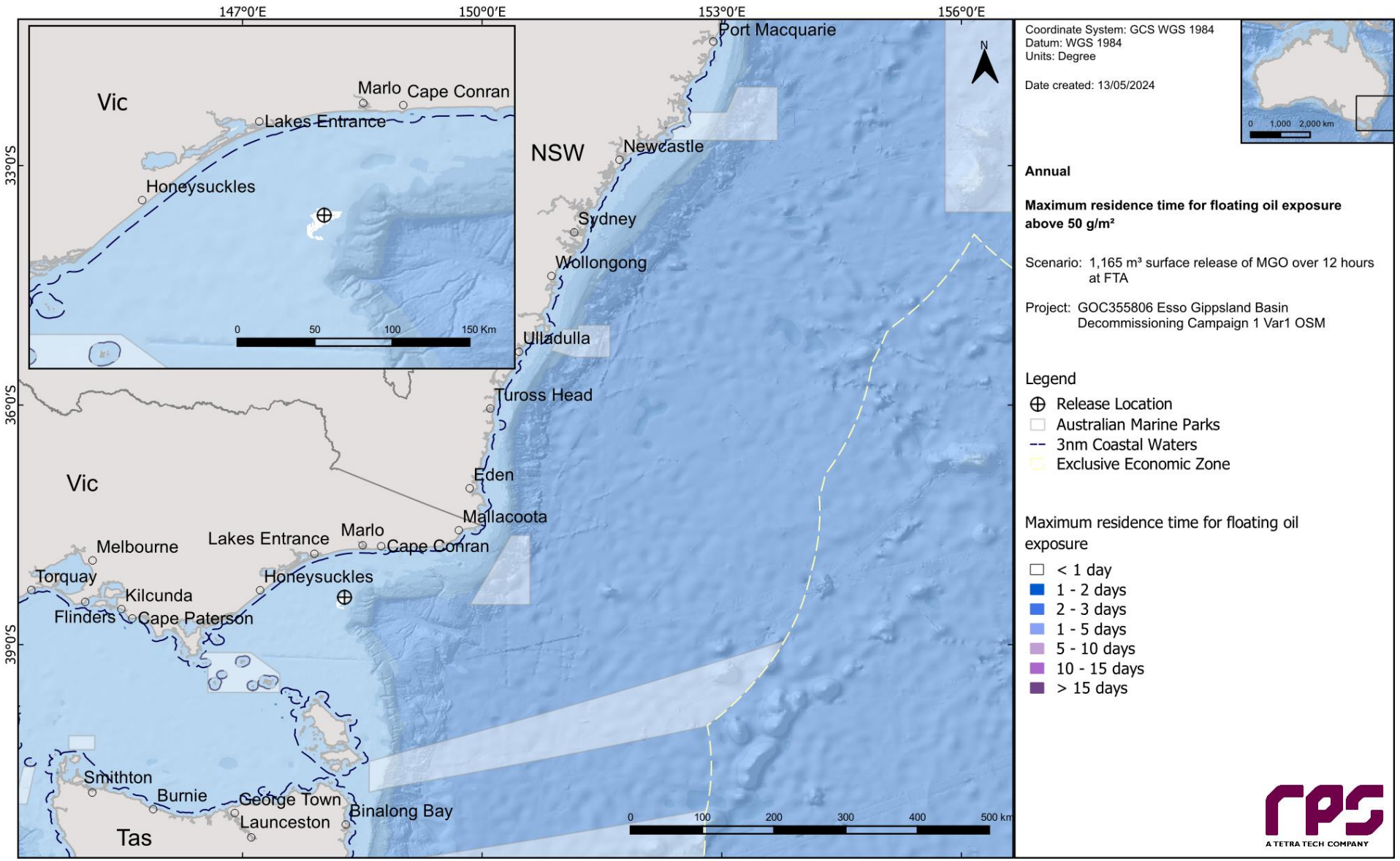

Figure 12.4 Maximum residence time of floating oil exposure above 50 g/m^2, in the event of a 1,165 m^3 surface release of MGO over 12 hours at Fortescue. The results reflect annual conditions.

12.1.2 Shoreline Accumulation

Table 12.3 presents a summary of the potential shoreline accumulation. The probability of accumulation to any shoreline at, or above, the low (10 g/m^2) threshold was 23% throughout the year. The minimum time before oil accumulation at, or above, the low threshold was 5.33 days. The maximum total volume ashore for a single spill trajectory was 13.2 m^3, and the maximum length of shoreline with accumulation above the low and moderate thresholds was 31 km and 2 km, respectively. No shoreline contact was recorded for the high threshold.

Table 12.4 summarises the shoreline accumulation statistics for individual receptors.

The highest probability of shoreline oil accumulation at the 10 g/m^2 threshold was forecast for Bega Valley (Sub-LGA) (13%). The maximum volume of oil ashore was 12.6 m^3 for the same receptor. Montague Island (LGA) was forecast to record the quickest time before oil accumulation at the 10 g/m^2 threshold at 5.33 days (127.92 hours).

The maximum potential shoreline loadings above each shoreline thresholds are presented in Figure 12.5.

Table 12.3 Summary of oil accumulation across all shorelines. Results are based on a 1,165 m^3 surface release of MGO over 12 hours at Fortescue. The results reflect annual conditions.

Shoreline Statistics	Annual
Probability of accumulation on any shoreline (%)	23
Absolute minimum time for visible oil to shore (days)	5.33
Maximum total volume of hydrocarbons ashore (m^3) ^	13.2
Average total volume of hydrocarbons ashore (m^3) ^	1.4
Maximum length of the shoreline at **10 g/m^2** (km)	31
Average shoreline length (km) at **10 g/m^2** (km)	8
Maximum length of the shoreline at **100 g/m^2** (km)	2
Average shoreline length (km) at **100 g/m^2** (km)	1.5
Maximum length of the shoreline at **1,000 g/m^2** (km)	-
Average shoreline length (km) at **1,000 g/m^2** (km)	-

^Total volume of oil stranded on shorelines over the entire simulation, not accounting for natural removal processes such as evaporation and decay.

Table 12.4 Summary of oil accumulation on individual shoreline receptors. Results are based on a 1,165 m³ surface release of MGO over 12 hours at Fortescue. The results reflect annual conditions.

Shoreline Receptor		Maximum probability of shoreline loading (%)			Minimum time before shoreline accumulation (days)			Load on shoreline (g/m²)		Volume on shoreline (m³)		Mean length of shoreline accumulation (km)			Maximum length of shoreline accumulation (km)		
		Low	Mod	High	Low	Mod	High	Mean	Peak	Mean	Peak	Low	Mod	High	Low	Mod	High
Shoreline (LGA)	Eurobodalla	1	-	-	13.08	-	-	2	40	0.3	2.9	6.4	-	-	6.4	-	-
	Gabo Island	4	-	-	9.13	-	-	4	54	0.2	1.7	2.5	-	-	3.6	-	-
	Hogan Island Group	1	-	-	7.17	-	-	2	11	0.1	0.3	0.9	-	-	0.9	-	-
	Inner Sister Island	1	-	-	19.13	-	-	2	16	0.2	0.8	3.6	-	-	3.6	-	-
	Kent Island Group	4	-	-	8.71	-	-	3	35	0.5	2.1	1.8	-	-	4.5	-	-
	Montague Island	8	1	-	5.33	11.42	-	12	384	0.8	9	2.4	1.8	-	3.6	1.8	-
	Outer Sister Island	1	-	-	18.58	-	-	2	21	0.2	0.8	1.8	-	-	1.8	-	-
Shoreline (Sub-LGA)	Bega Valley	13	3	-	6.58	9.42	-	4	241	1.5	12.6	5.9	1.2	-	27.3	1.8	-
	Cape Howe / Mallacoota	7	-	-	8.13	-	-	3	70	0.4	2.3	2.5	-	-	4.5	-	-
	Eurobodalla	1	-	-	13.08	-	-	2	40	0.3	2.9	6.4	-	-	6.4	-	-
	Point Hicks	1	-	-	14.46	-	-	2	35	< 0.1	0.6	0.9	-	-	0.9	-	-

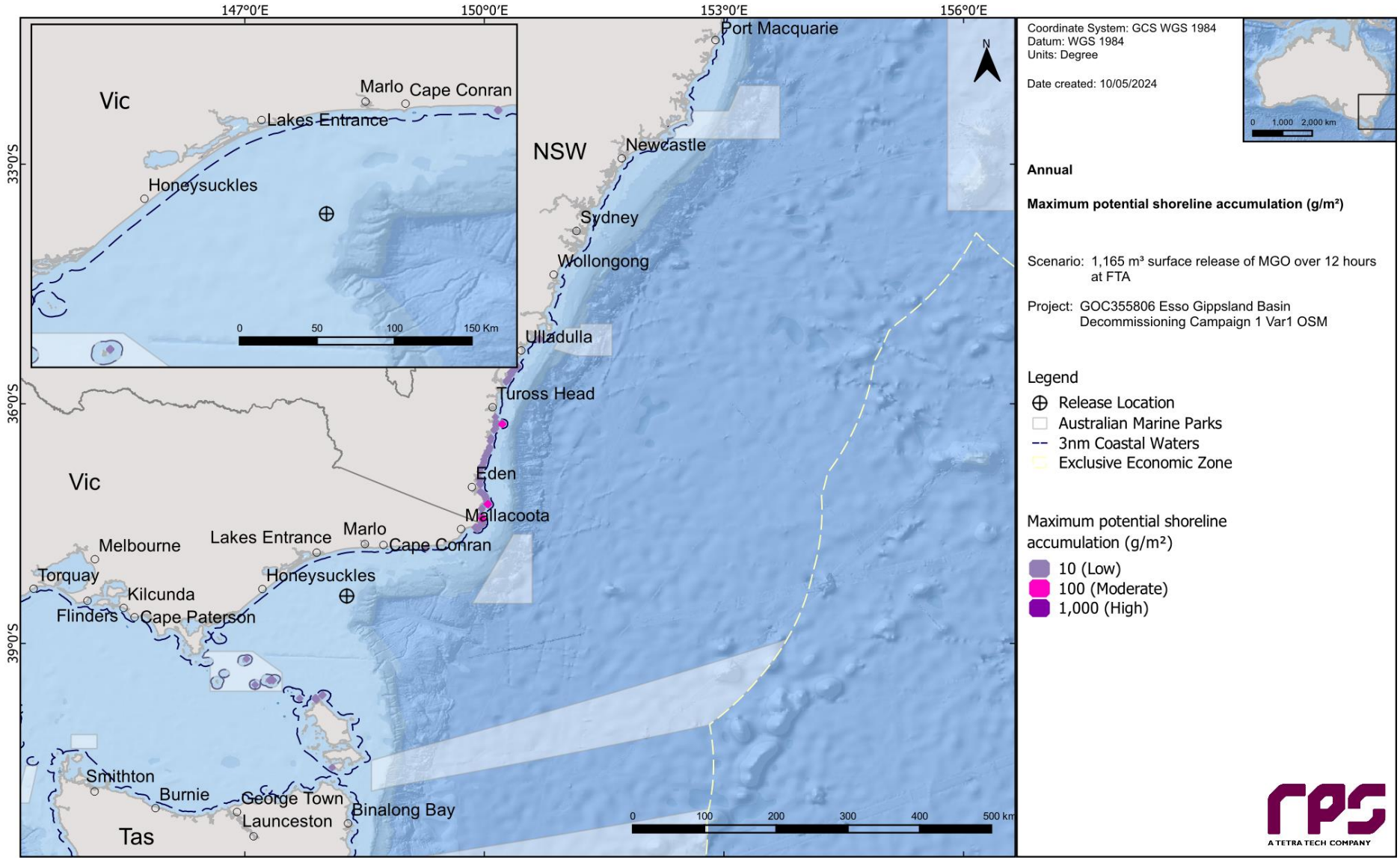

Figure 12.5 Maximum potential shoreline loading in the event of a 1,165 m³ surface release of MGO over 12 hours at Fortescue. The results reflect annual conditions.

12.1.3 In-water exposure

12.1.3.1 Dissolved Hydrocarbons

Table 12.5 summarises the potential in-water exposure to individual receptors from dissolved hydrocarbons in the 0-10 m layer as well as the minimum time before exposure, for all thresholds assessed.

Excluding the receptors that the release location is within (see

Table 9.2), the probability of exposure at concentrations equal to, or greater than, 10 ppb is greatest at Upwelling East of Eden (KEF) (19%). The maximum dissolved hydrocarbon concentration at any given receptor(s) was shown to be 182.3 ppb, including the receptors the release location lies within, followed by the Upwelling East of Eden (KEF) at 115.5 ppb.

Figure 12.6 present the zones of potential dissolved hydrocarbon exposure for 0-10 m depth layer.

Figure 12.7 and Figure 12.8 presents the maximum residence time of dissolved hydrocarbon exposure for the low and moderate thresholds, respectively.

Table 12.5 Probability of dissolved hydrocarbons exposure to marine based receptors in the 0–10 m depth. Results are based on a 1,165 m³ surface release of MGO over 12 hours at Fortescue. The results reflect annual conditions.

Receptor		Annual									
		Maximum dissolved hydrocarbon exposure (ppb)	Probability of dissolved hydrocarbon exposure (%)			Minimum time before dissolved hydrocarbon exposure (days)			Maximum residence time for dissolved hydrocarbon exposure (days)		
			Low	Moderate	High	Low	Moderate	High	Low	Moderate	High
BIA	Antipodean Albatross - Foraging	109.2	9	1	-	0.5	0.75	-	0.42	0.08	-
	Black Petrel - Foraging	20.1	1	-	-	5	-	-	0.04	-	-
	Black-browed Albatross – Foraging*	182.3	52	23	-	0.04	0.04	-	1.13	0.38	-
	Bullers Albatross – Foraging*	182.3	52	23	-	0.04	0.04	-	1.13	0.38	-
	Campbell Albatross – Foraging*	182.3	52	23	-	0.04	0.04	-	1.13	0.38	-
	Common Diving-petrel – Foraging*	182.3	52	23	-	0.04	0.04	-	1.13	0.38	-
	Crested Tern – Foraging	20.1	1	-	-	5.17	-	-	0.04	-	-
	Flesh-footed Shearwater - Foraging	20.1	1	-	-	5	-	-	0.04	-	-
	Grey Nurse Shark – Foraging	28.5	2	-	-	3.54	-	-	0.21	-	-
	Grey Nurse Shark – Migration	38.7	1	-	-	3.13	-	-	0.13	-	-
	Humpback Whale – Foraging	38.7	3	-	-	2.88	-	-	0.25	-	-
	Indian Yellow-nosed Albatross – Foraging*	182.3	52	23	-	0.04	0.04	-	1.13	0.38	-
	Indo-Pacific/Spotted Bottlenose Dolphin – Breeding	28.5	2	-	-	3.13	-	-	0.21	-	-
	Little Penguin – Foraging	56	2	1	-	2.96	2.96	-	0.21	0.04	-
	Pygmy Blue Whale – Distribution*	182.3	52	23	-	0.04	0.04	-	1.13	0.38	-
	Pygmy Blue Whale – Foraging*	182.3	52	23	-	0.04	0.04	-	1.13	0.38	-
	Short-tailed Shearwater - Foraging	86.6	10	1	-	0.54	0.88	-	0.38	0.04	-
	Shy Albatross – Foraging*	182.3	52	23	-	0.04	0.04	-	1.13	0.38	-
	Sooty Shearwater – Foraging	27.4	1	-	-	3.38	-	-	0.13	-	-
	Southern Right Whale - Known Core Range*	182.3	52	23	-	0.04	0.04	-	1.13	0.38	-
	Wandering Albatross – Foraging*	182.3	52	23	-	0.04	0.04	-	1.13	0.38	-
	Wedge-tailed Shearwater - Foraging	56	3	1	-	2.42	2.75	-	0.25	0.04	-
	White Shark – Distribution*	182.3	52	23	-	0.04	0.04	-	1.13	0.38	-

Receptor		Annual								
		Maximum dissolved hydrocarbon exposure (ppb)	Probability of dissolved hydrocarbon exposure (%)			Minimum time before dissolved hydrocarbon exposure (days)			Maximum residence time for dissolved hydrocarbon exposure (days)		
			Low	Moderate	High	Low	Moderate	High	Low	Moderate	High
	White Shark – Foraging	93.2	6	1	-	1.54	2.04	-	0.17	0.04	-
	White-faced Storm-petrel - Breeding	20.1	1	-	-	4.08	-	-	0.13	-	-
	White-faced Storm-petrel - Foraging	93.2	8	1	-	0.75	0.96	-	0.42	0.08	-
IBRA	East Gippsland Lowlands	11.3	1	-	-	3.92	-	-	0.04	-	-
IMCRA	Batemans Shelf	20.1	1	-	-	4.13	-	-	0.13	-	-
	Twofold Shelf*	182.3	52	23	-	0.04	0.04	-	1.13	0.38	-
KEF	Upwelling East of Eden	115.5	19	2	-	0.17	0.38	-	0.54	0.13	-
MNP	Cape Howe	18.2	1	-	-	3.08	-	-	0.04	-	-
RSB	New Zealand Star Bank	10.1	1	-	-	2.67	-	-	0.13	-	-
Nearshore Waters (LGA)	Bega Valley	11.3	1	-	-	3.92	-	-	0.04	-	-
State Waters	New South Wales	28.5	2	-	-	3.63	-	-	0.21	-	-
	Victoria State Waters	28.2	2	-	-	3.08	-	-	0.13	-	-

*The release location resides within the receptor boundaries.

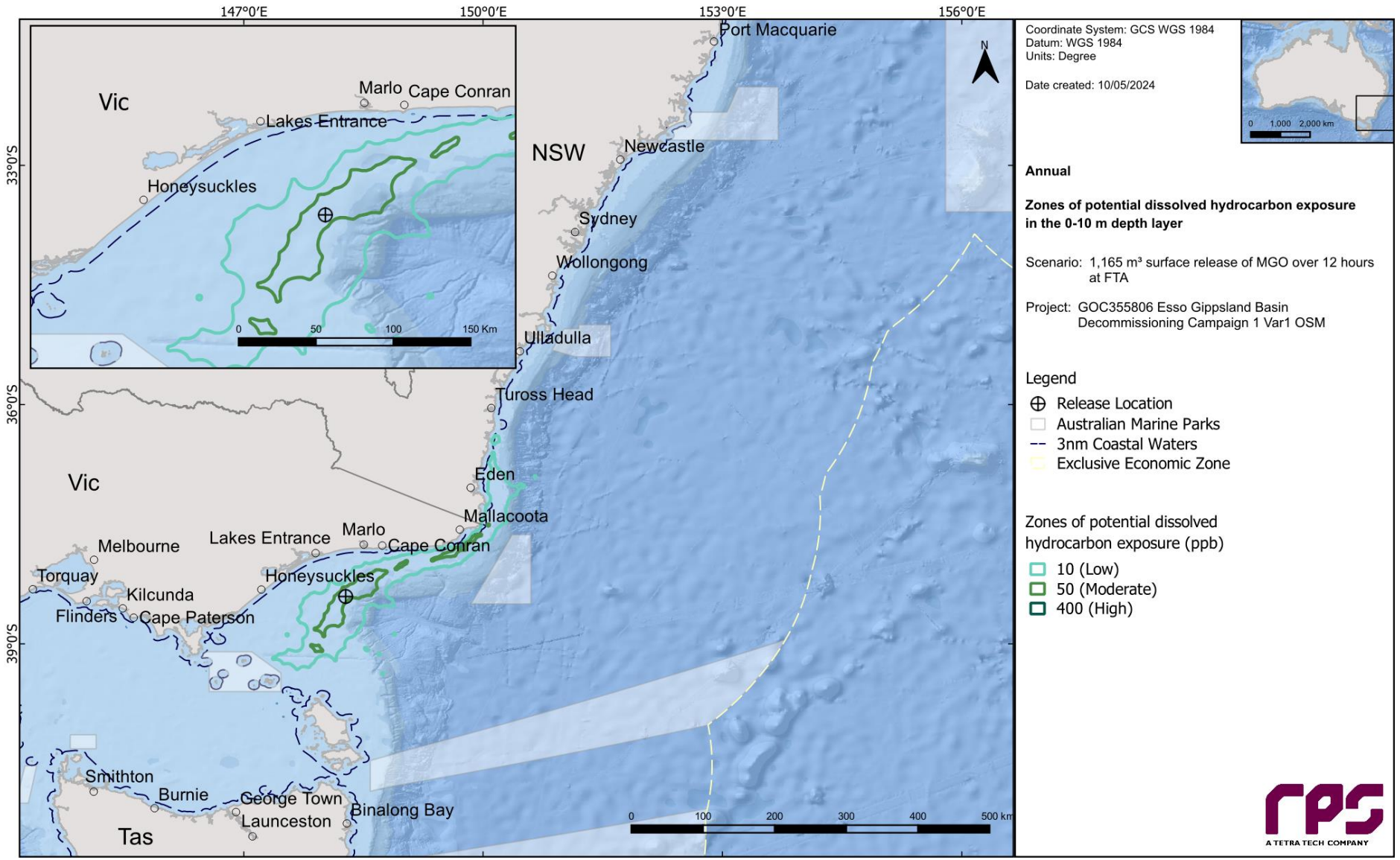

Figure 12.6 Zones of potential dissolved hydrocarbon exposure at 0-10 m below the sea in the event of a 1,165 m³ surface release of MGO over 12 hours at Fortescue. The results reflect annual conditions.

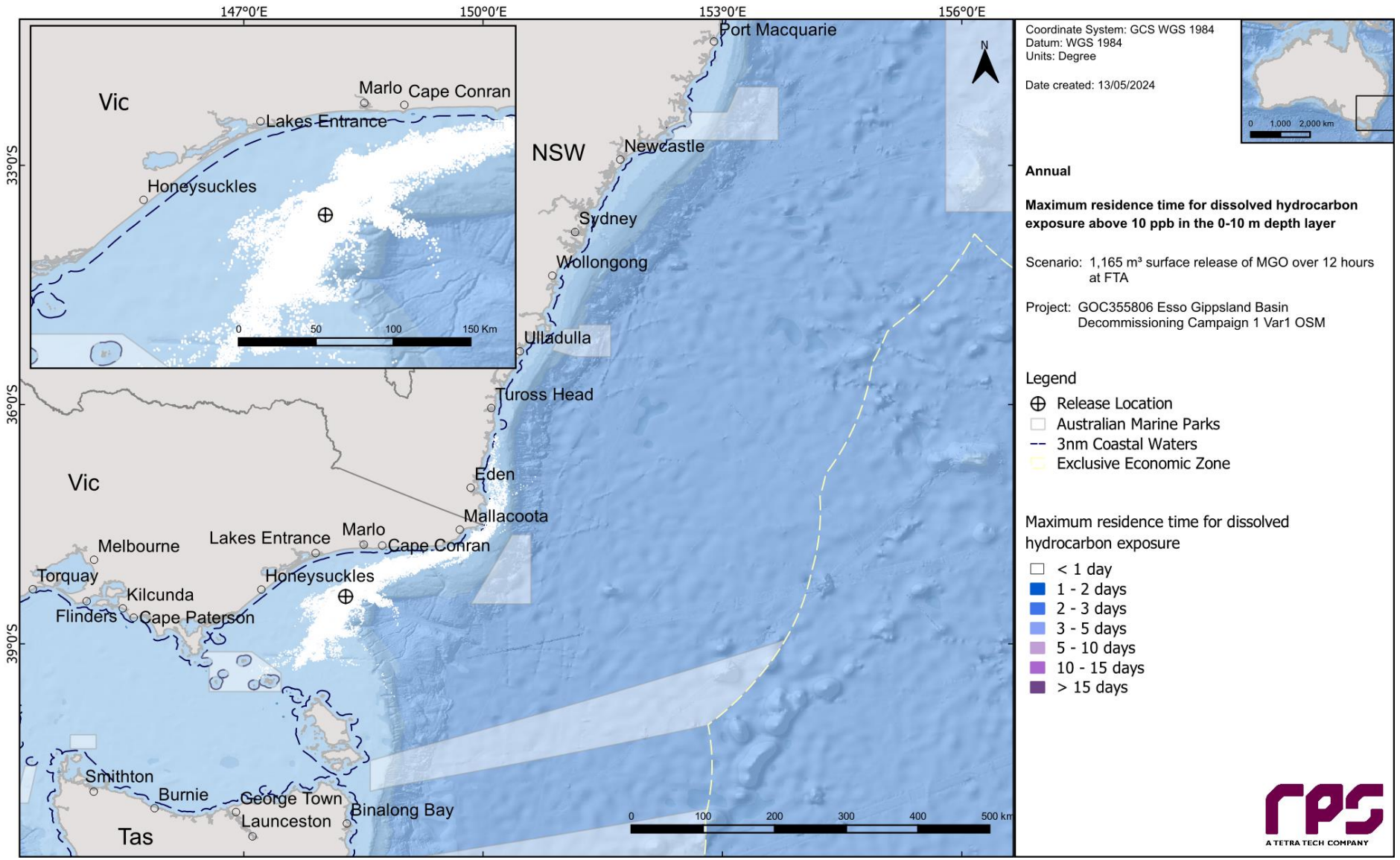

Figure 12.7 Maximum residence time for dissolved hydrocarbon exposure above 10 ppb, at 0-10 m below the sea surface in the event of 1,165 m³ surface release of MGO over 12 hours at Fortescue. The results reflect annual conditions.

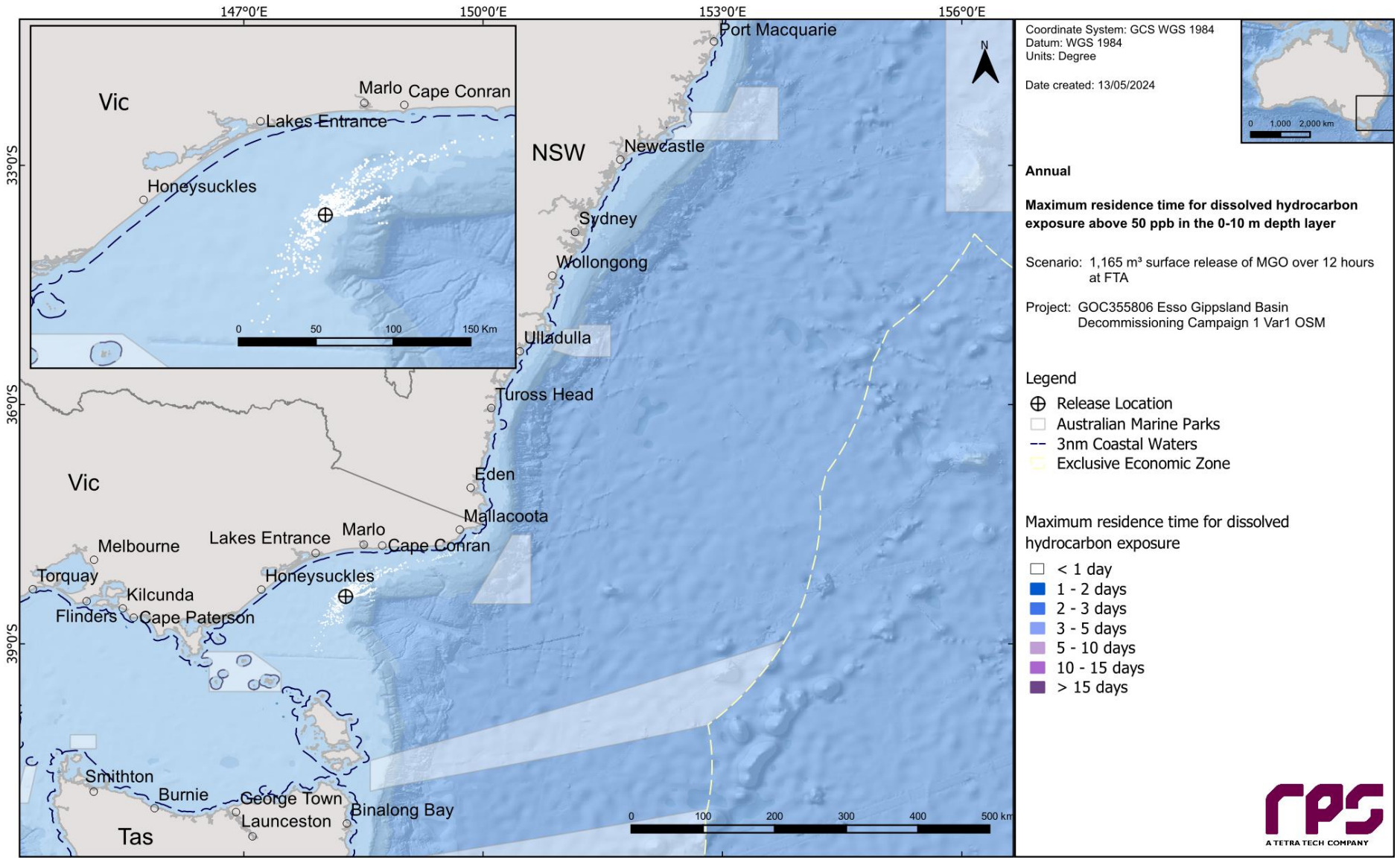

Figure 12.8 Maximum residence time for dissolved hydrocarbon exposure above 50 ppb, at 0-10 m below the sea surface in the event of 1,165 m³ surface release of MGO over 12 hours at Fortescue. The results reflect annual conditions.

12.1.3.2 Entrained Hydrocarbons

Table 12.6 summarises the potential in-water exposure to individual receptors from entrained hydrocarbons in the 0-10 m depth layer, as well as the minimum time before exposure for all thresholds assessed.

Except for the receptors the release location is within (see

Table 9.2), the highest probability of low entrained hydrocarbon exposure was 71% recorded for the Upwelling East of Eden (KEF). The quickest time for exposure at the same threshold was 0.13 days (3.12 hours) for the same receptor. The highest entrained hydrocarbon concentration was predicted to be 16,850.7 ppb, including the receptors the release location lies within, followed by 3,516 ppb at Upwelling East of Eden (KEF).

Figure 12.9 presents the zones of potential entrained hydrocarbon exposure for the 0-10 m depth layer.

Figure 12.10 and Figure 12.11 present the maximum residence time of entrained hydrocarbon exposure for 10 ppb and 100 ppb.

Table 12.6 Probability of entrained hydrocarbons exposure to marine based receptors in the 0–10 m depth layer. Results are based on a 1,165 m³ surface release of MGO over 12 hours at Fortescue. The results reflect annual conditions.

Receptor		Annual						
		Maximum entrained hydrocarbon exposure (ppb)	Probability of entrained hydrocarbon exposure (%)		Minimum time before entrained hydrocarbon exposure (days)		Maximum residence time for entrained hydrocarbon exposure (days)	
			Low	High	Low	High	Low	High
AMP	Beagle	38.7	5	-	6.04	-	2.75	-
	East Gippsland	20.2	5	-	5.92	-	1.25	-
	Flinders	18.7	2	-	9.04	-	0.67	-
BIA	Antipodean Albatross - Foraging	1,535.6	52	24	0.42	0.46	8.5	2.21
	Black Petrel - Foraging	44.7	7	-	4.50	-	3.13	-
	Black-browed Albatross – Foraging*	16,850.7	98	87	0.04	0.04	11.75	3.96
	Bullers Albatross – Foraging*	16,850.7	98	87	0.04	0.04	11.75	3.96
	Campbell Albatross – Foraging*	16,850.7	98	87	0.04	0.04	11.75	3.96
	Common Diving-petrel – Foraging*	16,850.7	98	87	0.04	0.04	11.75	3.96
	Crested Tern - Breeding	39.6	7	-	5.25	-	4.13	-
	Crested Tern - Foraging	39.4	7	-	4.67	-	3.13	-
	Flesh-footed Shearwater - Foraging	44.7	7	-	4.50	-	3.13	-
	Great-winged Petrel - Foraging	33.8	2	-	8.58	-	2.33	-
	Grey Nurse Shark - Foraging	96.5	17	-	3.13	-	4.13	-
	Grey Nurse Shark - Migration	151.4	20	1	3.00	3.13	3.46	0.25
	Humpback Whale - Foraging	200.5	22	1	2.67	2.79	4.83	0.29
	Indian Yellow-nosed Albatross – Foraging*	16,850.7	98	87	0.04	0.04	11.75	3.96
	Indo-Pacific/Spotted Bottlenose Dolphin - Breeding	100.1	15	1	2.88	3.38	4.13	0.04
	Little Penguin - Breeding	39.6	7	-	5.08	-	4.13	-
	Little Penguin - Foraging	171.8	20	2	2.58	2.75	5.21	0.88
	Northern Giant Petrel - Foraging	33.8	2	-	8.58	-	2.33	-
	Pygmy Blue Whale – Distribution*	16,850.7	98	87	0.04	0.04	11.75	3.96
	Pygmy Blue Whale – Foraging*	16,850.7	98	87	0.04	0.04	11.75	3.96
	Short-tailed Shearwater - Foraging	1,306.1	56	36	0.42	0.46	11.75	2.67
	Shy Albatross – Foraging*	16,850.7	98	87	0.04	0.04	11.75	3.96

Receptor		Annual						
		Maximum entrained hydrocarbon exposure (ppb)	Probability of entrained hydrocarbon exposure (%)		Minimum time before entrained hydrocarbon exposure (days)		Maximum residence time for entrained hydrocarbon exposure (days)	
			Low	High	Low	High	Low	High
	Sooty Shearwater - Foraging	107.6	17	1	3.21	3.46	4.13	0.04
	Southern Giant Petrel - Foraging	33.8	2	-	8.58	-	2.33	-
	Southern Right Whale - Known Core Range*	16,850.7	98	87	0.04	0.04	11.75	3.96
	Wandering Albatross – Foraging*	16,850.7	98	87	0.04	0.04	11.75	3.96
	Wedge-tailed Shearwater - Foraging	215.5	28	2	2.17	2.29	5.42	0.88
	White Shark - Breeding	63.7	2	-	2.17	-	1.5	-
	White Shark – Distribution*	16,850.7	98	87	0.04	0.04	11.75	3.96
	White Shark - Foraging	366.5	40	6	1.42	1.46	7.67	1.46
	White-capped Albatross - Foraging	33.8	2	-	8.58	-	2.33	-
	White-faced Storm-petrel - Breeding	56.1	10	-	3.71	-	4.13	-
	White-faced Storm-petrel - Foraging	735.2	51	19	0.63	0.67	8.5	2.08
	Wilsons Storm Petrel - Migration	33.8	2	-	8.58	-	2.33	-
IBRA	Bateman	39.6	6	-	5.33	-	4.13	-
	East Gippsland Lowlands	49.7	10	-	3.17	-	4.33	-
	Flinders	38.2	5	-	7.54	-	3.92	-
	South East Coastal Ranges	14.2	2	-	9.33	-	0.33	-
IMCRA	Batemans Shelf	56.1	9	-	3.75	-	4.13	-
	Central Bass Strait	30.1	2	-	10.29	-	3.46	-
	Flinders	93.6	10	-	3.96	-	4.13	-
	Twofold Shelf*	16,850.7	98	87	0.04	0.04	11.75	3.96
KEF	Big Horseshoe Canyon	52.1	12	-	3.33	-	2.58	-
	Canyons on the Eastern Continental Slope	23.6	2	-	9.92	-	1.63	-
	Shelf rocky reefs	35.9	3	-	8.38	-	2.88	-
	Upwelling East of Eden	3,516	71	47	0.13	0.13	8.5	3.96
MNP	Cape Howe	95.3	16	-	2.79	-	5.21	-
	Point Hicks	106.7	11	1	3.13	3.46	5.71	0.17
MP	Batemans	39.6	7	-	5.00	-	4.13	-

Receptor		Annual						
		Maximum entrained hydrocarbon exposure (ppb)	Probability of entrained hydrocarbon exposure (%)		Minimum time before entrained hydrocarbon exposure (days)		Maximum residence time for entrained hydrocarbon exposure (days)	
			Low	High	Low	High	Low	High
NP	Kent Group	31	5	-	7.38	-	3.92	-
RSB	Endeavour Reef	16.4	3	-	11.67	-	0.92	-
	New Zealand Star Bank	169.6	25	2	2.21	2.46	4.83	0.63
	Wakitipu Rock	13.7	3	-	12.58	-	0.21	-
	Warrego Rock	15	2	-	13.25	-	0.38	-
	Wright Rock	18	2	-	11.5	-	0.58	-
Nearshore Waters (LGA)	Bega Valley	55.5	10	-	3.17	-	4.00	-
	Craggy Island	13.9	2	-	14.88	-	0.29	-
	East Gippsland	47.9	9	-	3.29	-	4.00	-
	Eurobodalla	21	4	-	5.5	-	1.33	-
	Gabo Island	49.7	8	-	3.17	-	4.33	-
	Kent Island Group	38.2	5	-	7.54	-	3.92	-
	Montague Island	39.6	6	-	5.33	-	4.13	-
	Pyramid Island	16.6	3	-	10.38	-	1.13	-
State Waters	New South Wales	93.8	13	-	2.92	-	4.13	-
	Tasmania State Waters	40.2	5	-	6.75	-	3.92	-
	Victoria State Waters	139.5	18	1	2.71	3.04	7.33	0.42
Nearshore Waters (Sub-LGA)	Bega Valley	55.5	10	-	3.17	-	4.00	-
	Cape Howe / Mallacoota	47.9	9	-	3.29	-	4.00	-
	Croajingolong - East	13.3	1	-	9.63	-	0.25	-
	Croajingolong - West	23.4	3	-	6.00	-	1.88	-
	Eurobodalla	21	4	-	5.50	-	1.33	-
	Point Hicks	15.3	3	-	6.08	-	0.38	-

*The release location resides within the receptor boundaries.

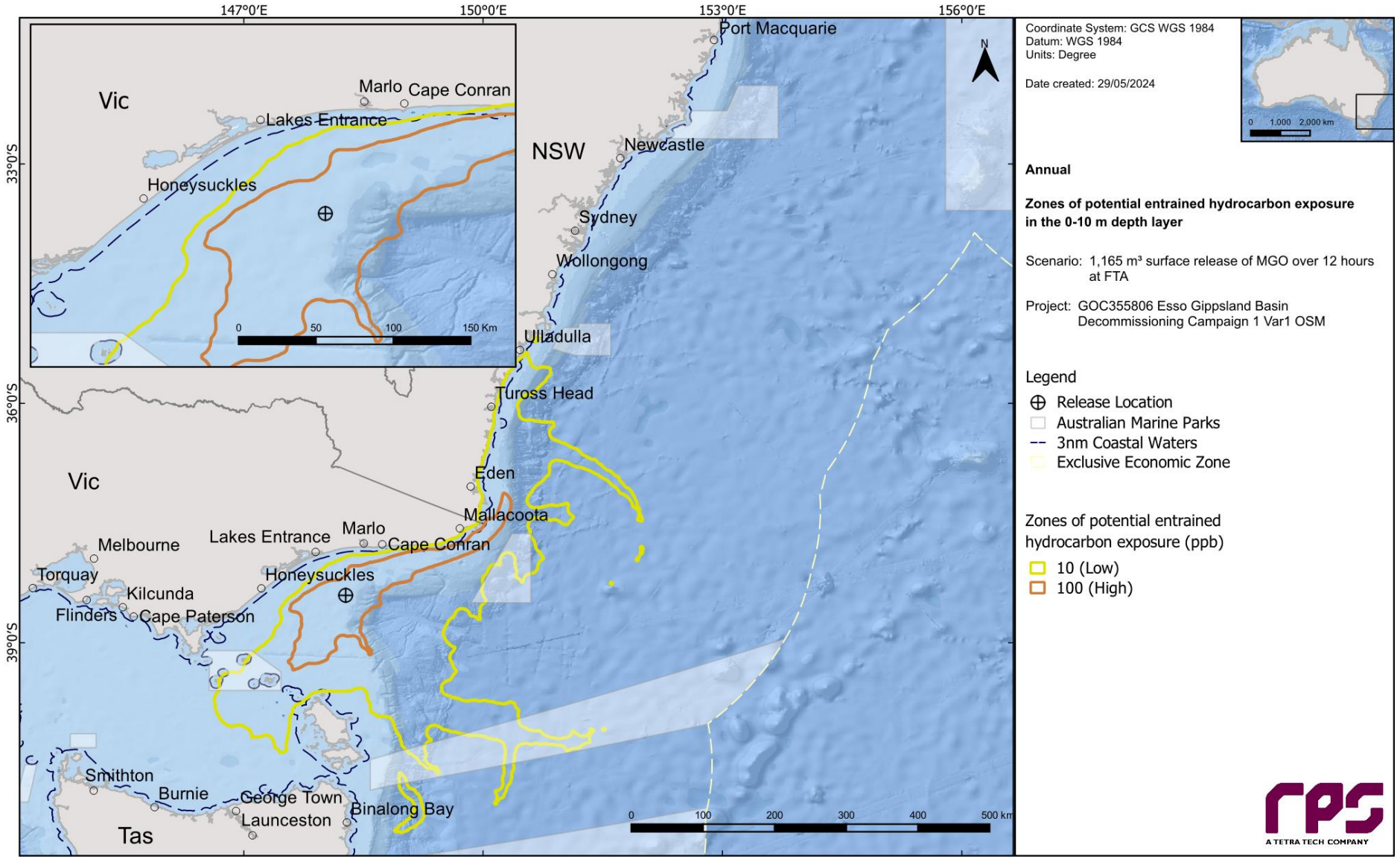

Figure 12.9 Zones of potential entrained hydrocarbon exposure at 0-10 m below the sea surface in the event of a 1,165 m³ surface release of MGO over 12 hours at Fortescue. The results reflect annual conditions.

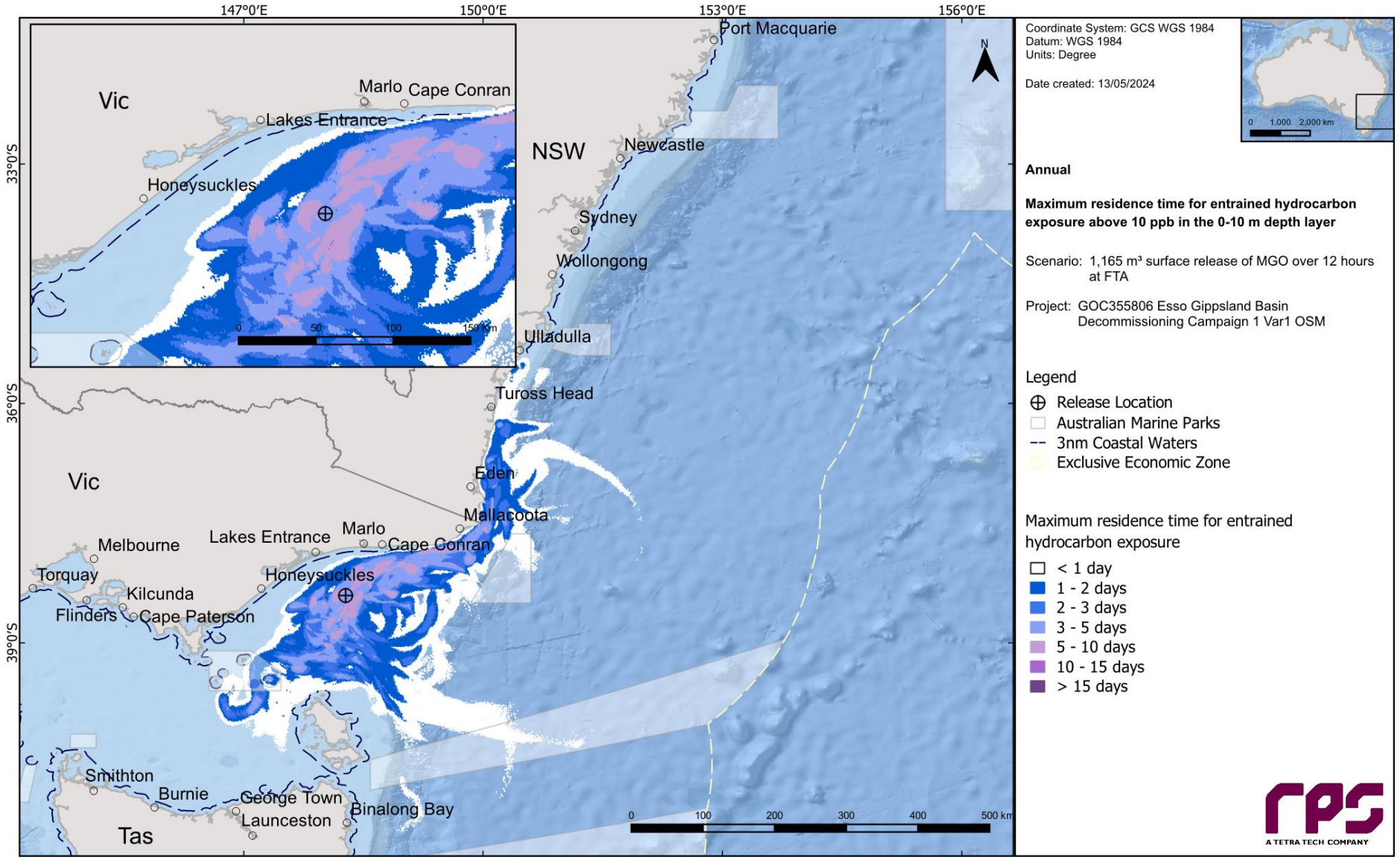

Figure 12.10 Maximum residence time for entrained hydrocarbon exposure above 10 ppb, at 0-10 m below the sea surface in the event of a 1,165 m³ surface release of MGO over 12 hours at Fortescue. The results reflect annual conditions.

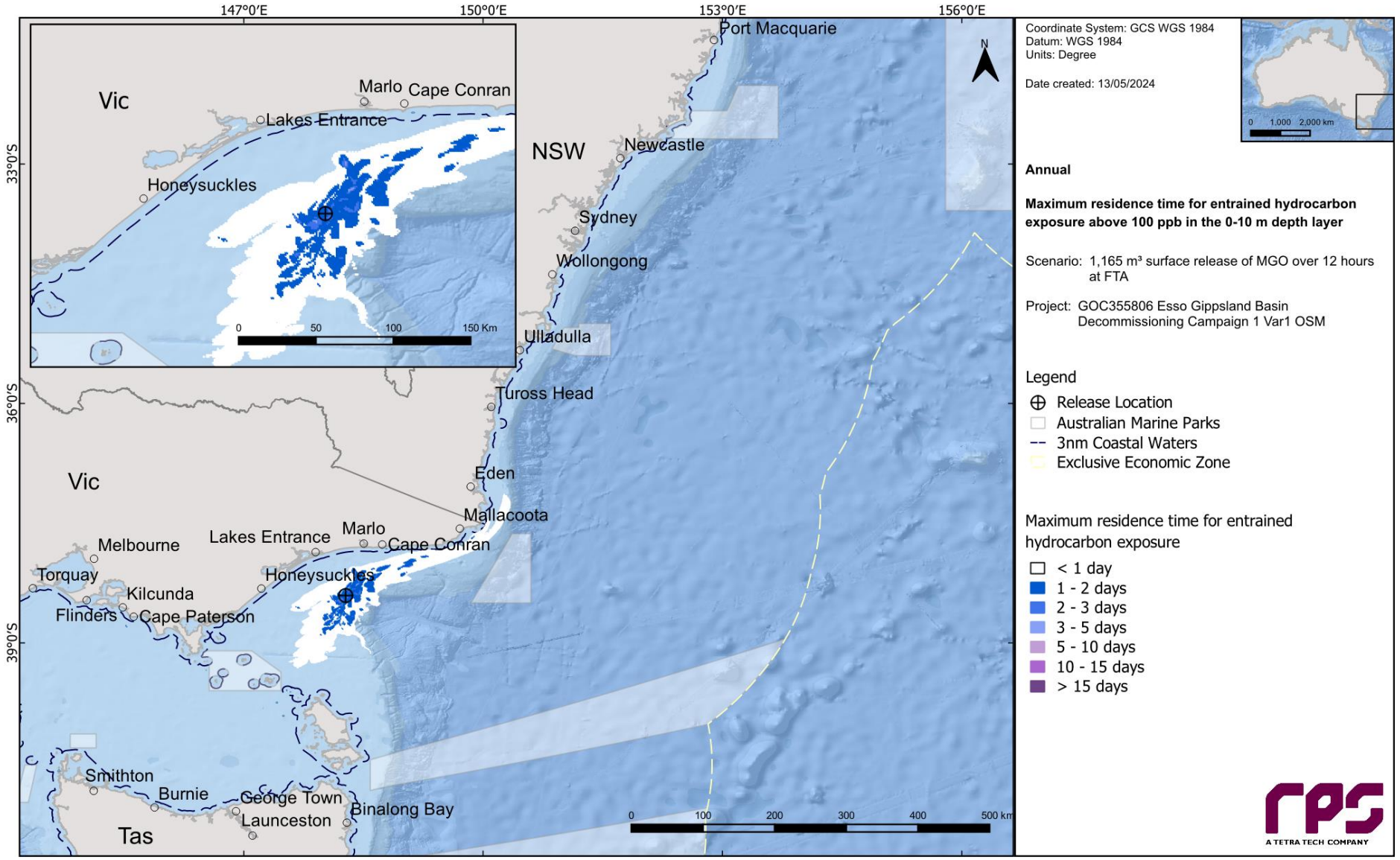

Figure 12.11 Maximum residence time for entrained hydrocarbon exposure above 100 ppb, at 0-10 m below the sea surface in the event of a 1,165 m³ surface release of MGO over 12 hours at Fortescue. The results reflect annual conditions.

12.2 Deterministic Analysis

The stochastic modelling results were assessed, and the “worst case” deterministic runs were identified and are presented below for the following criteria:

a. Largest swept area for surface oil above 10 g/m^2; (Section 12.2.1)
b. Largest (total) volume of oil ashore (Section 12.2.2)
c. Longest length of shoreline with oil accumulation above 100 g/m^2 (Section 12.2.2)
d. Largest area of entrained hydrocarbon exposure above 100 ppb (Section 12.2.3)
e. Largest area of dissolved hydrocarbon exposure above 50 ppb (Section 12.2.4)

Table 12.7 presents a summary of sea surface and in-water exposure and shoreline accumulation at the assessed thresholds for the identified deterministic simulations.

Table 12.7 Summary of the worst-case deterministic analysis based on the scenario presented in the stochastic analysis section.

Variable	Threshold	Deterministic Analysis Criteria			
		Largest swept area of floating oil >10 g/m^2	Largest volume of oil ashore and longest length of shoreline with accumulation >100 g/m^2	Largest area of entrained hydrocarbon exposure >100 ppb	Largest area of dissolved hydrocarbon exposure >50 ppb
Run Number		92	33	69	51
Total area of floating Oil exposure (km^2)	1 g/m^2	449	8	5	7
	10 g/m^2	**208**	2	1	3
	50 g/m^2	2	-	-	-
Total length of shoreline accumulation (km)	10 g/m^2	5	15	2	-
	100 g/m^2	-	**2**	-	-
	1,000 g/m^2	-	-	-	-
Minimum time before accumulation on any shoreline (hours)	10 g/m^2	318	263	128	-
	100 g/m^2	-	274	-	-
	1,000 g/m^2	-	-	-	**-**
Peak volume of oil ashore (m^3)		1	**10 (Total volume 13.2 m^3)^**	-	-
Total area of entrained hydrocarbon exposure (km^2)	10 ppb	7,387	9,033	7,353	3,842
	100 ppb	1,173	748	**2,509**	716
	1,000 ppb	-	113	113	73
Total area of dissolved hydrocarbon exposure (km^2)	10 ppb	-	382	363	407
	50 ppb	-	4	0	**67**
	400 ppb	-	-	-	-
Start Date		16th February 2010 12pm	28th July 2012 11am	9th May 2015 6pm	23rd September 2017 7pm

^Total volume of oil stranded on shorelines over the entire simulation, not accounting for natural removal processes such as evaporation and decay.

12.2.1 Deterministic Case: Largest swept area of floating oil above 10 g/m^2

The deterministic trajectory that resulted in the largest swept area of floating oil above 10 g/m^2 was identified as run number 92, which started on the 16th of February 2010.

Figure 12.12 illustrates the floating oil exposure and shoreline accumulation over the 30-day simulation.

Figure 12.13 displays the time series of the area of sea surface exposure above the low (1 g/m^2), moderate (10 g/m^2) and high (50 g/m^2) thresholds over the 30-day simulation.

Figure 12.14 presents the fates and weathering graph for the corresponding single spill trajectory and Table 12.8 summarises the mass balance peaks and at the end of the simulation.

Table 12.8 Summary of the mass balance for the trajectory with the largest swept area of floating oil above 10 g/m^2.

Exposure Metrics	Peak Volume	Day of occurrence	Volume at day 30
Surface (m^3)	650	0.5	2
Entrained (m^3)	624	2.0	195
Dissolved (m^3)	1	3.4	0
Evaporation (m^3)	605	30.0	605
Decay (m^3)	369	30.0	369
Ashore (m^3)	2	18.5	1

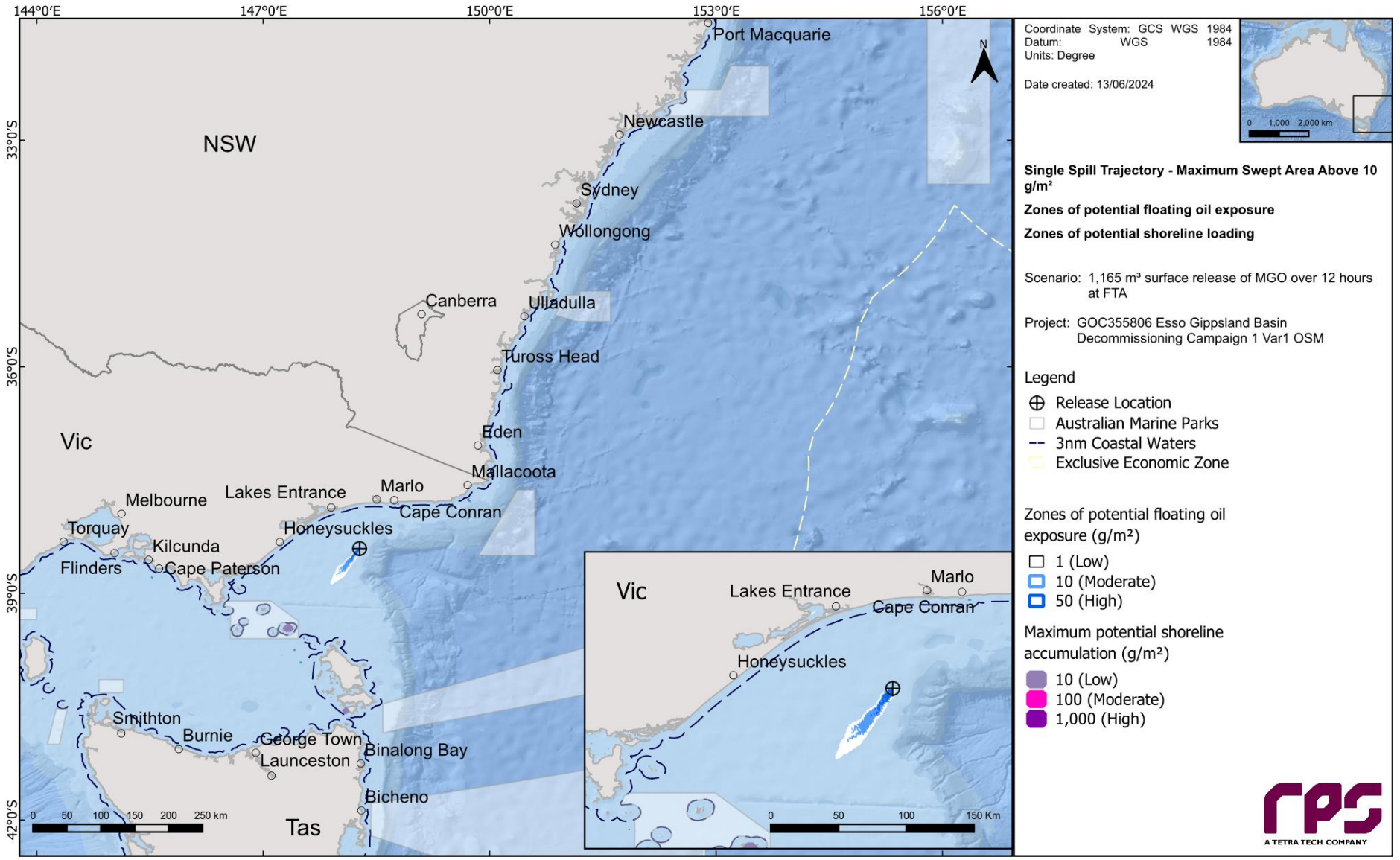

Figure 12.12 Zones of potential floating oil exposure and shoreline accumulation, for the trajectory with the largest swept area of floating oil above 10 g/m².

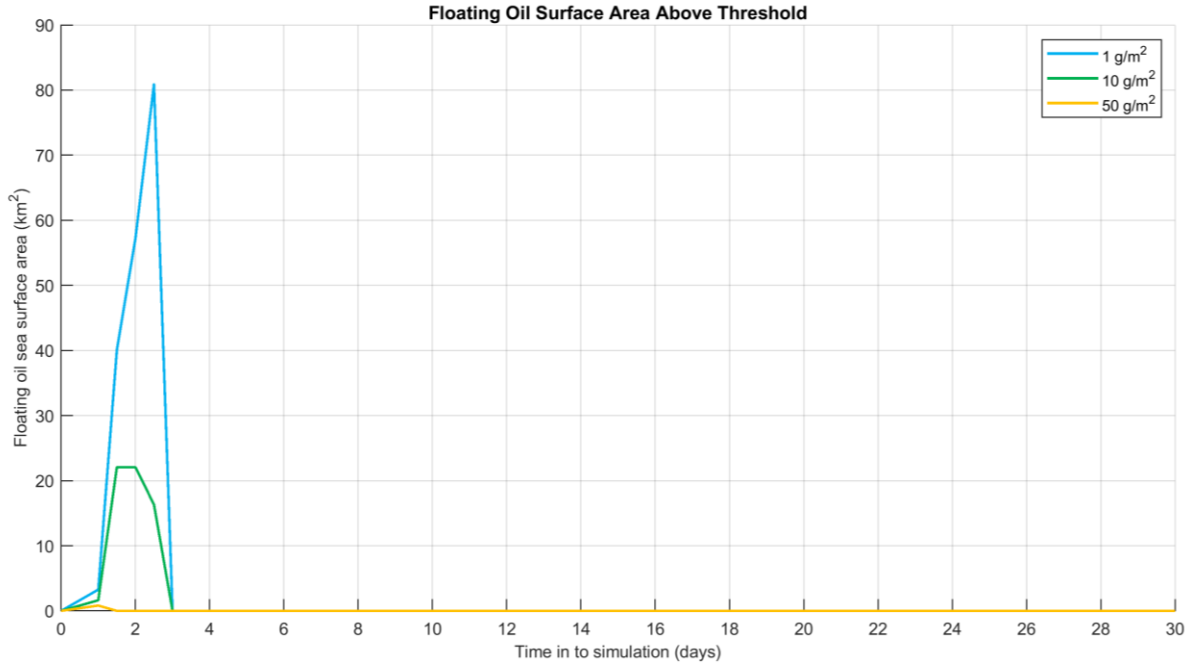

Figure 12.13 Time series of floating oil exposure above each threshold for the trajectory with the largest swept area of floating oil above 10 g/m^2.

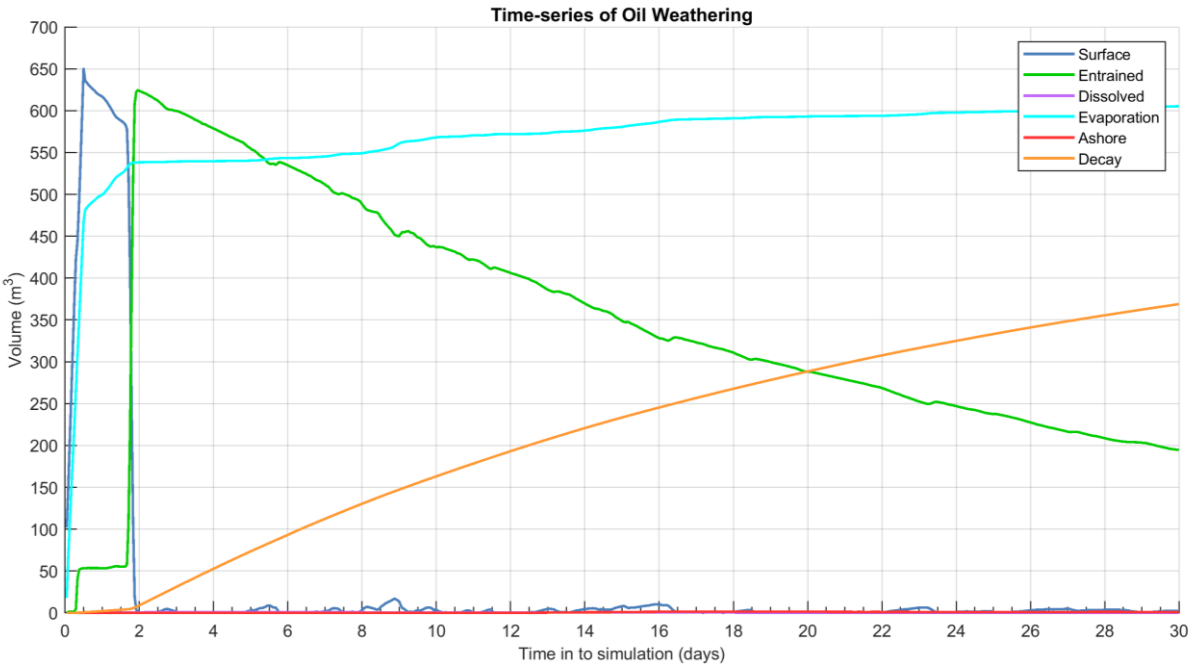

Figure 12.14 Predicted weathering and fates graph for the trajectory with the largest swept area of floating oil above 10 g/m^2.

12.2.2 Deterministic Case: Largest volume of oil ashore and longest length of shoreline contacted by oil above 100 g/m^2.

The deterministic trajectory that resulted in the largest volume of oil ashore also resulted in the longest length of shoreline contacted by oil above 100 g/m^2. This simulation was identified as run number 33, which started on the 28th of July 2012.

Figure 12.15 illustrates the floating oil exposure and shoreline accumulation over the 30-day simulation.

Figure 12.16 and Figure 12.17 display the time series of the volume of shoreline oil and the length of shoreline oil accumulation above the low (1 g/m^2), moderate (10 g/m^2) and high (50 g/m^2) thresholds over the 30-day simulation respectively.

Figure 12.18 presents the fates and weathering graph for the corresponding single spill trajectory and Table 12.9 summarises the mass balance peaks and at the end of the simulation.

Table 12.9 Summary of the mass balance for the trajectory with the largest volume of oil ashore and the longest length of shoreline contacted by oil above 100 g/m^2.

Exposure Metrics	Peak Volume	Day of occurrence	Volume at day 30
Surface (m^3)	53	0.4	1
Entrained (m^3)	972	0.5	177
Dissolved (m^3)	12	1.0	0
Evaporation (m^3)	520	30.0	520
Decay (m^3)	470	30.0	470
Ashore (m^3)	13	16.0	10

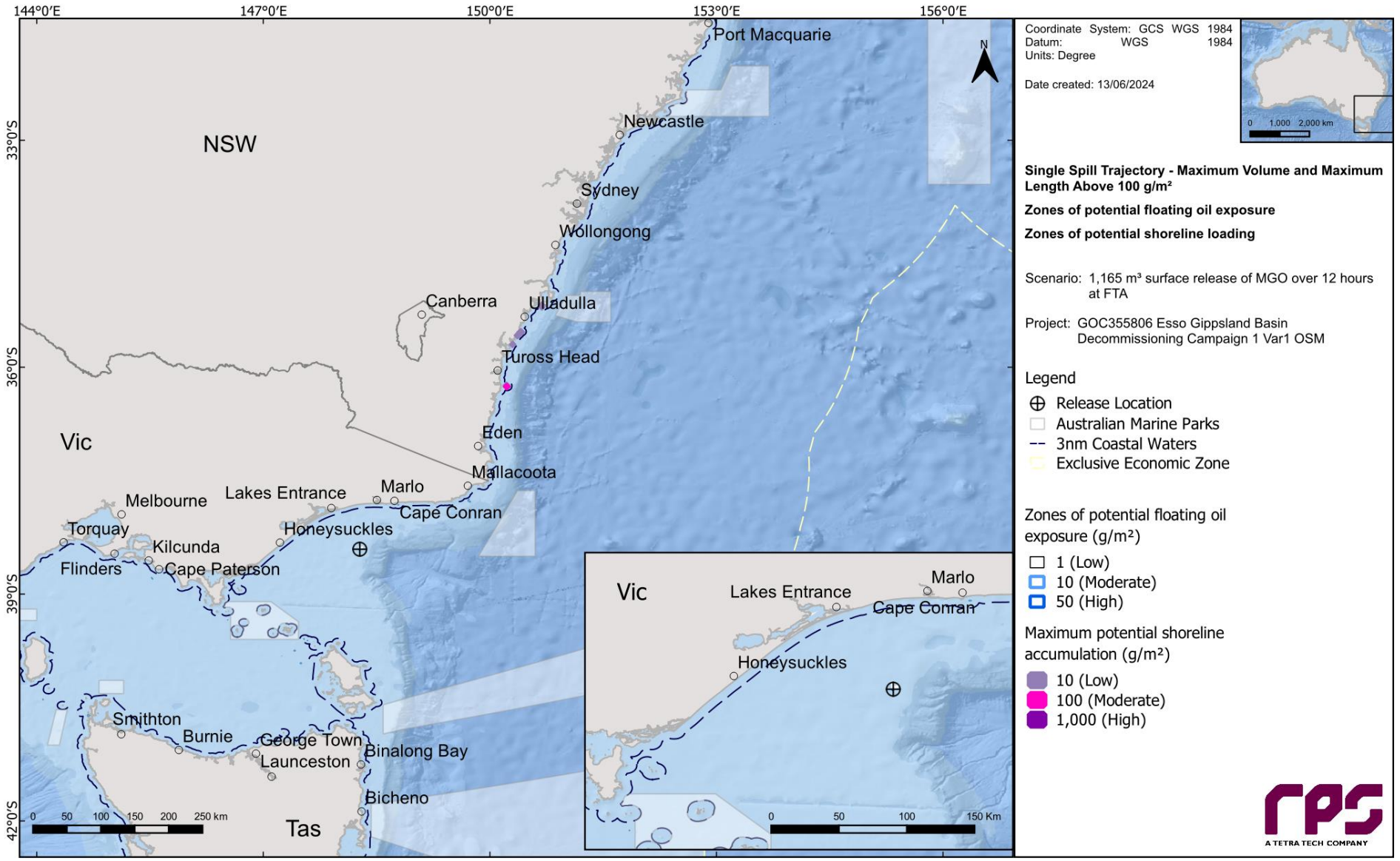

Figure 12.15 Zones of potential floating oil exposure and shoreline accumulation, for the trajectory with the largest volume of oil ashore and the longest length of shoreline contacted by oil above 100 g/m².

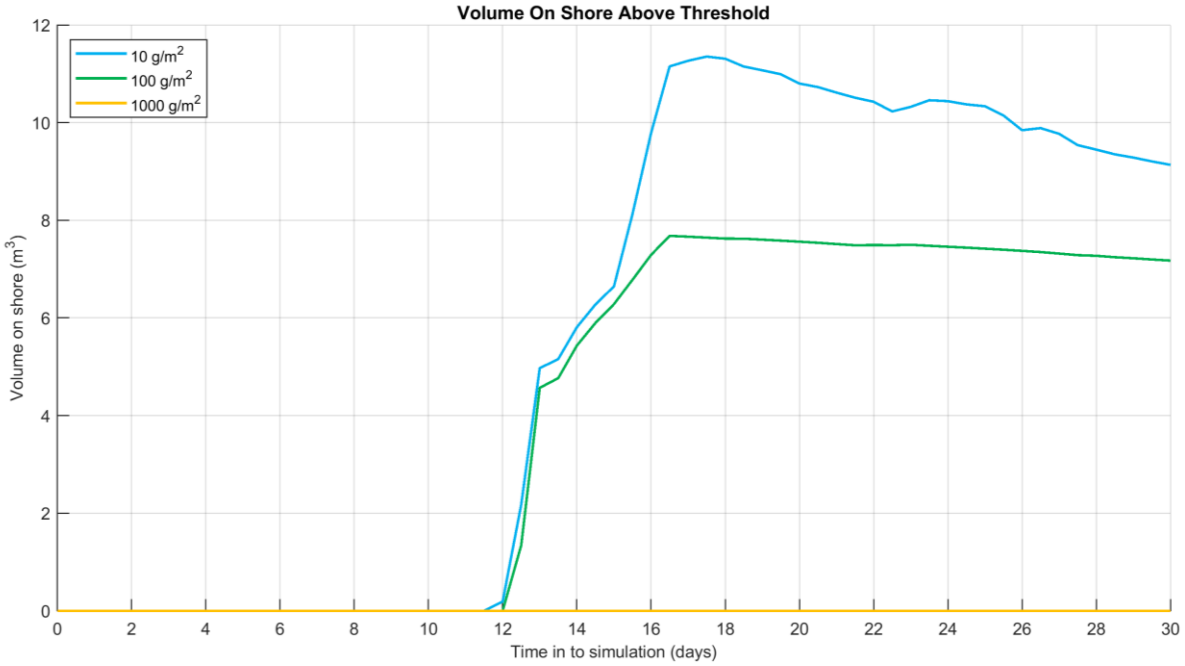

Figure 12.16 Time series of the volume of oil ashore above each threshold for the trajectory with the largest volume of oil ashore and the longest length of shoreline contacted by oil above 100 g/m^2.

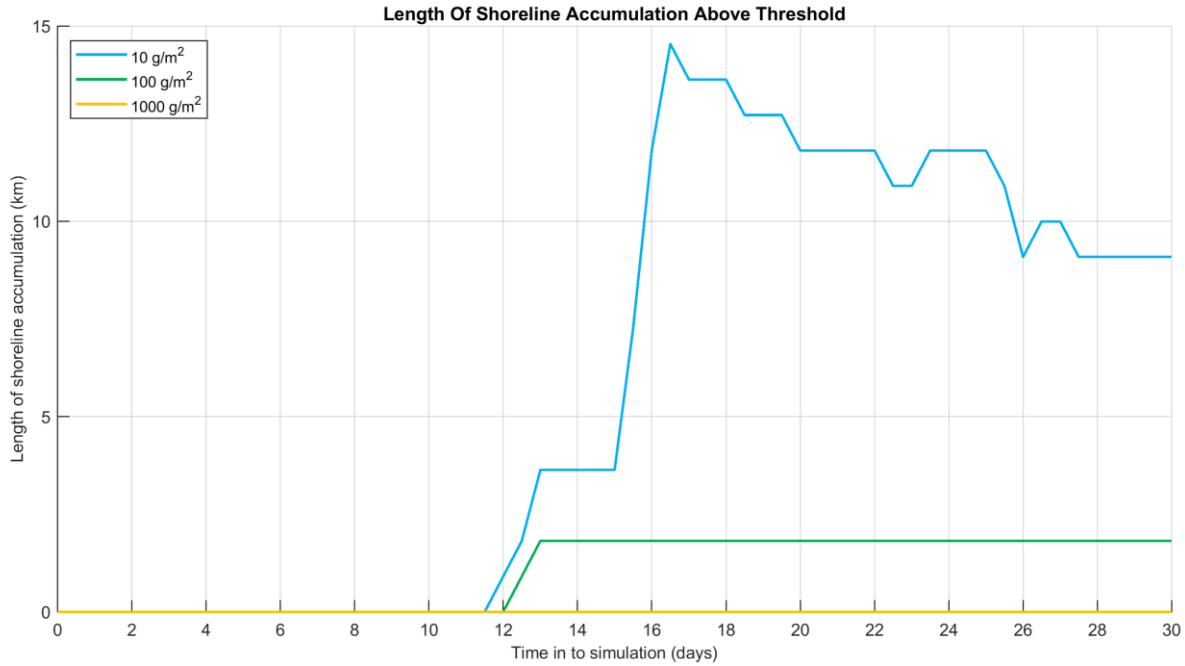

Figure 12.17 Time series of the length of shoreline oil accumulation above each threshold for the trajectory with the largest volume of oil ashore and the longest length of shoreline contacted by oil above 100 g/m^2.

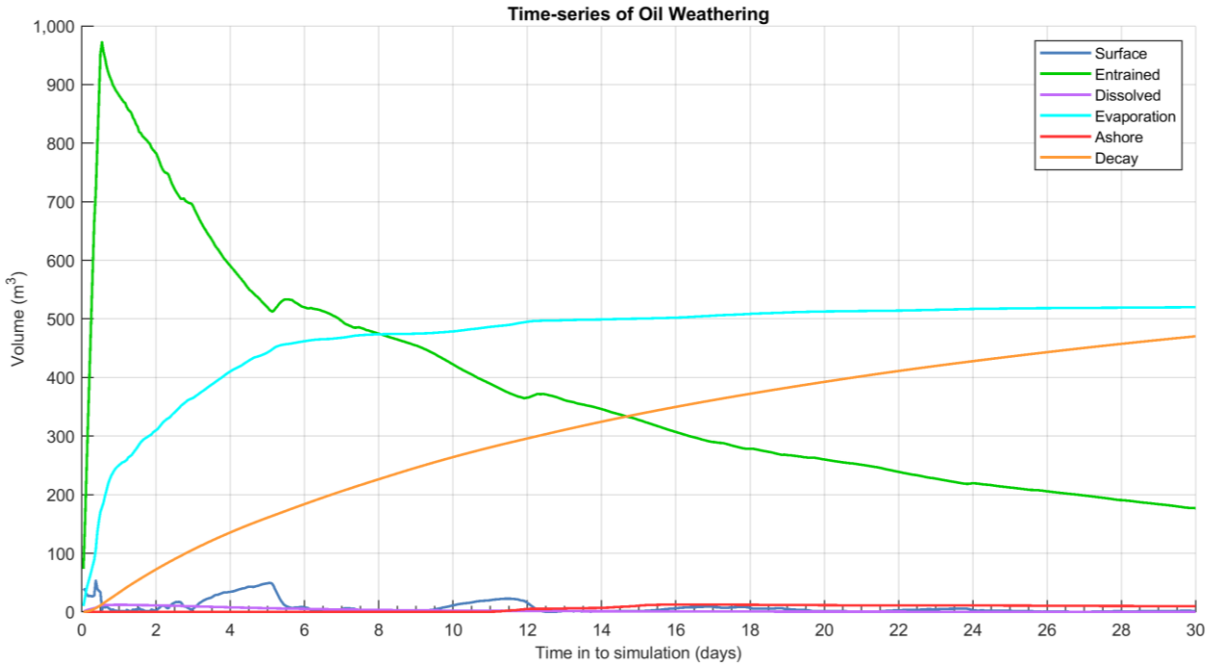

Figure 12.18 Predicted weathering and fates graph for the trajectory with the largest volume of oil ashore and the longest length of shoreline contacted by oil above 100 g/m^2.

12.2.3 Deterministic Case: Largest area of entrained hydrocarbon exposure above 100 ppb

The deterministic trajectory that resulted in the largest area of entrained hydrocarbon exposure above 100 ppb was identified as run number 69, which started on the 9th of May 2015.

Figure 12.19 illustrates the zones of potential entrained hydrocarbon exposure over the 30-day simulation.

Figure 12.20 displays the time series of the area of entrained hydrocarbon exposure at the low (10 ppb) and high (100 ppb) thresholds over the 30-day simulation.

Figure 12.21 presents the fates and weathering graph for the corresponding single spill trajectory and Table 12.10 summarises the mass balance peaks and at the end of the simulation.

Table 12.10 Summary of the mass balance for the trajectory with the largest area of entrained hydrocarbon exposure above 100 ppb.

Exposure Metrics	Peak Volume	Day of occurrence	Volume at day 30
Surface (m^3)	42	8.3	0
Entrained (m^3)	983	0.5	184
Dissolved (m^3)	11	1.2	0
Evaporation (m^3)	508	30.0	508
Decay (m^3)	484	30.0	484
Ashore (m^3)	1	6.9	0

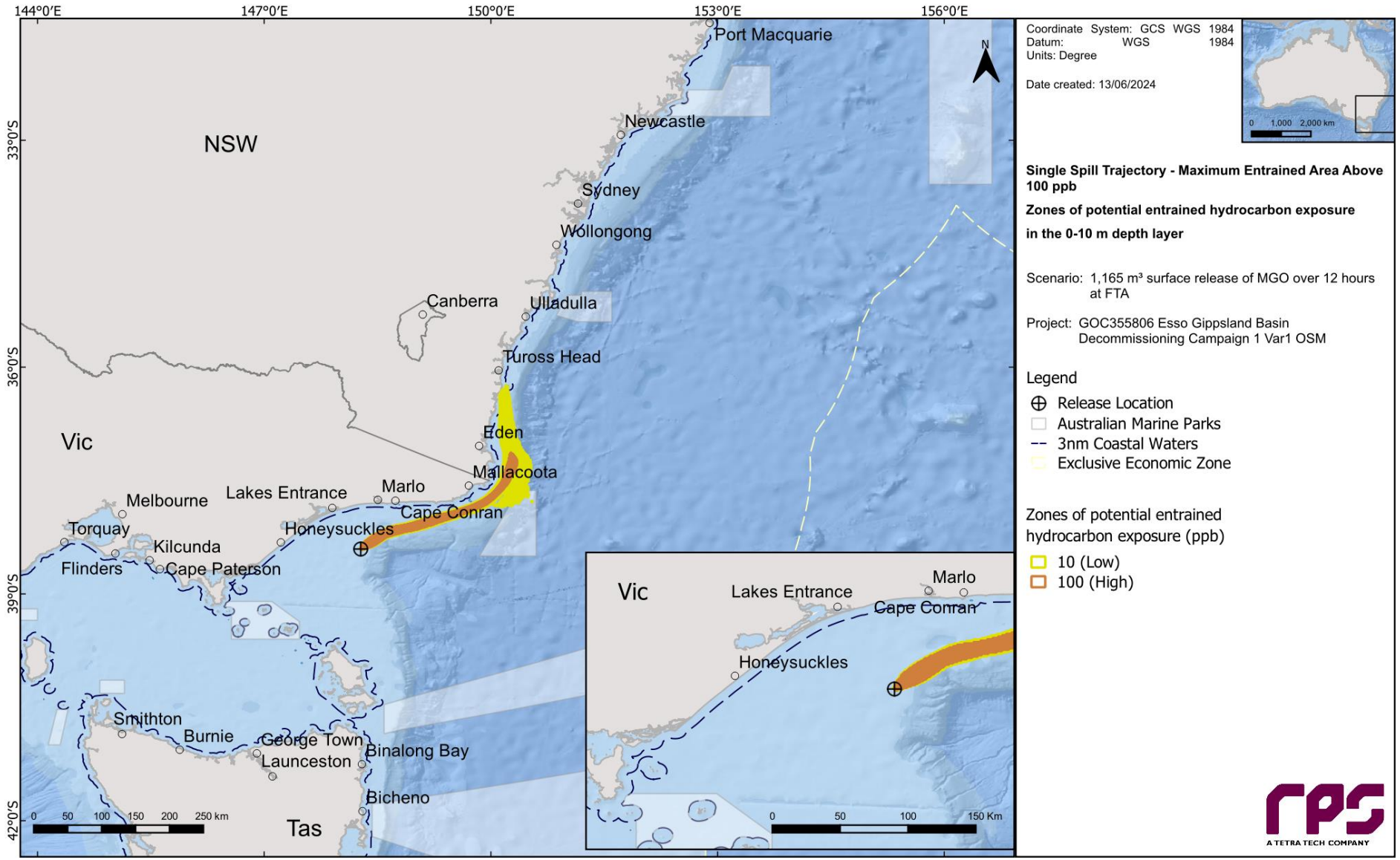

Figure 12.19 Zones of potential entrained hydrocarbon exposure, for the trajectory with the largest area of entrained hydrocarbon exposure above 100 ppb.

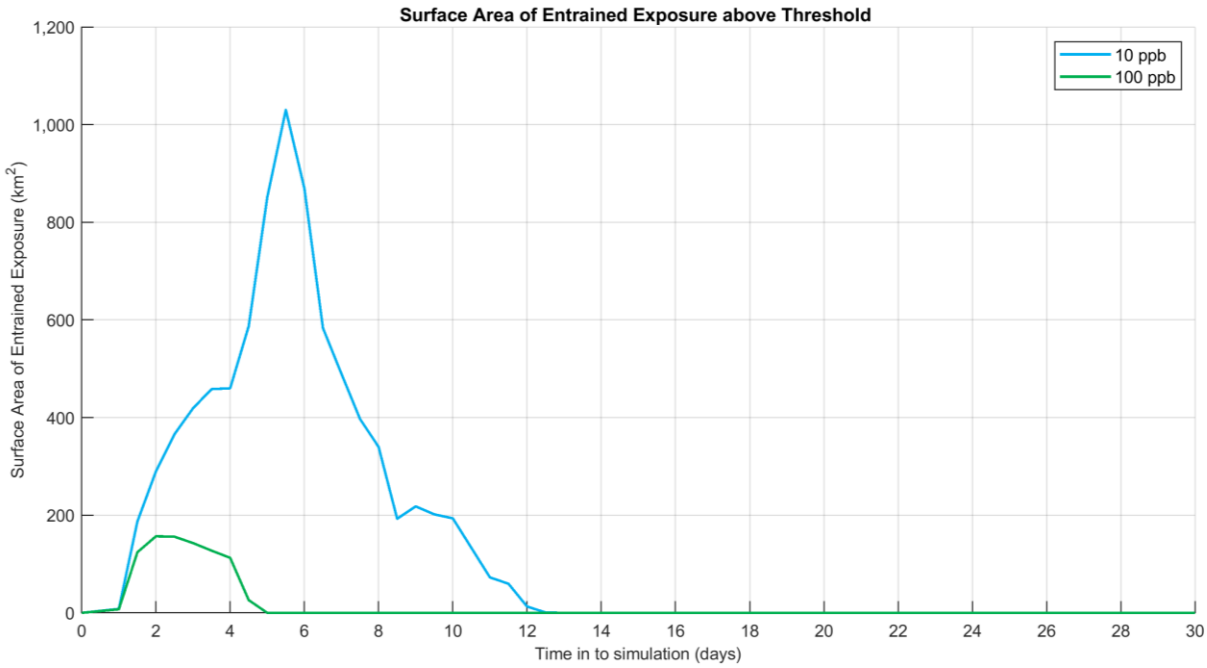

Figure 12.20 Time series of the entrained hydrocarbon exposure area above each threshold for the trajectory with the largest area of entrained hydrocarbon exposure above 100 ppb.

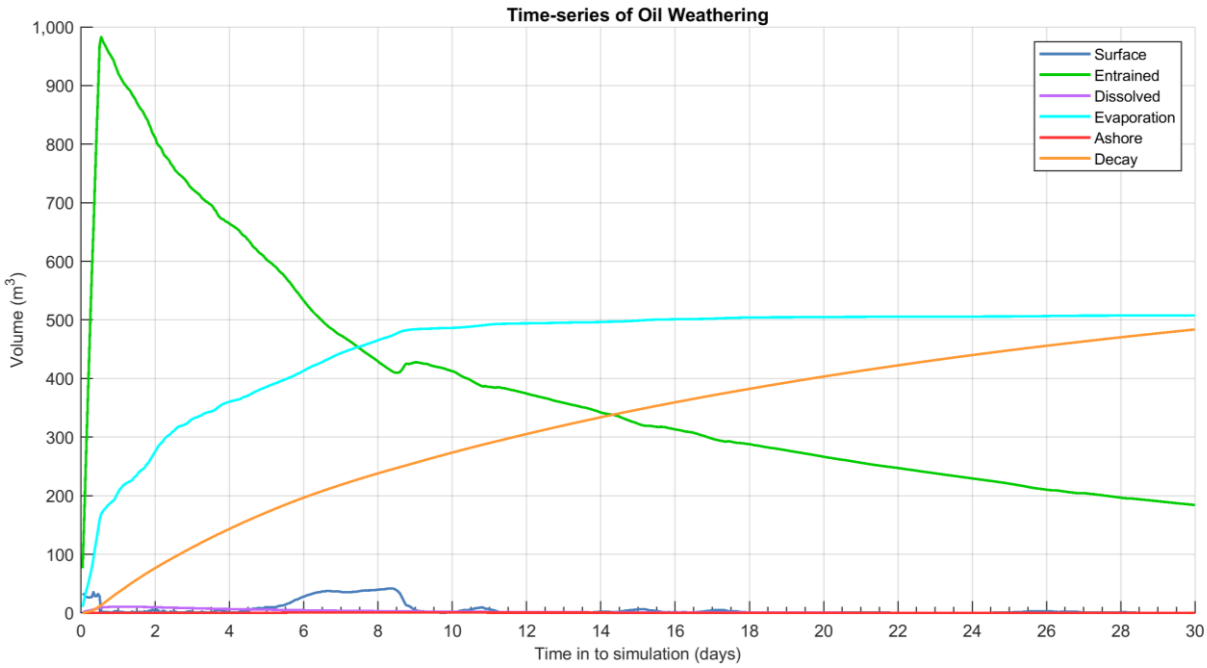

Figure 12.21 Predicted weathering and fates graph for the trajectory with the largest area of entrained hydrocarbon exposure above 100 ppb.

12.2.4 Deterministic Case: Largest area of dissolved hydrocarbon exposure above 50 ppb

The deterministic trajectory that resulted in the largest area of dissolved hydrocarbon exposure above 50 ppb was identified as run number 51, which started on the 23rd of September 2017.

Figure 12.22 illustrates the zones of potential dissolved hydrocarbon exposure over the 30-day simulation.

Figure 12.23 displays the time series of the area of dissolved hydrocarbon exposure at the low (10 ppb), moderate (50 ppb) and high (400 ppb) thresholds over the 30-day simulation.

Figure 12.24 presents the fates and weathering graph for the corresponding single spill trajectory and Table 12.11 summarises the mass balance peaks and at the end of the simulation.

Table 12.11 Summary of the mass balance for the trajectory with the largest area of dissolved hydrocarbon exposure above 50 ppb.

Exposure Metrics	Peak Volume	Day of occurrence	Volume at day 30
Surface (m^3)	84	0.1	0
Entrained (m^3)	883	0.5	222
Dissolved (m^3)	9	0.8	0
Evaporation (m^3)	437	30.0	437
Decay (m^3)	521	30.0	521
Ashore (m^3)	0	0.0	0

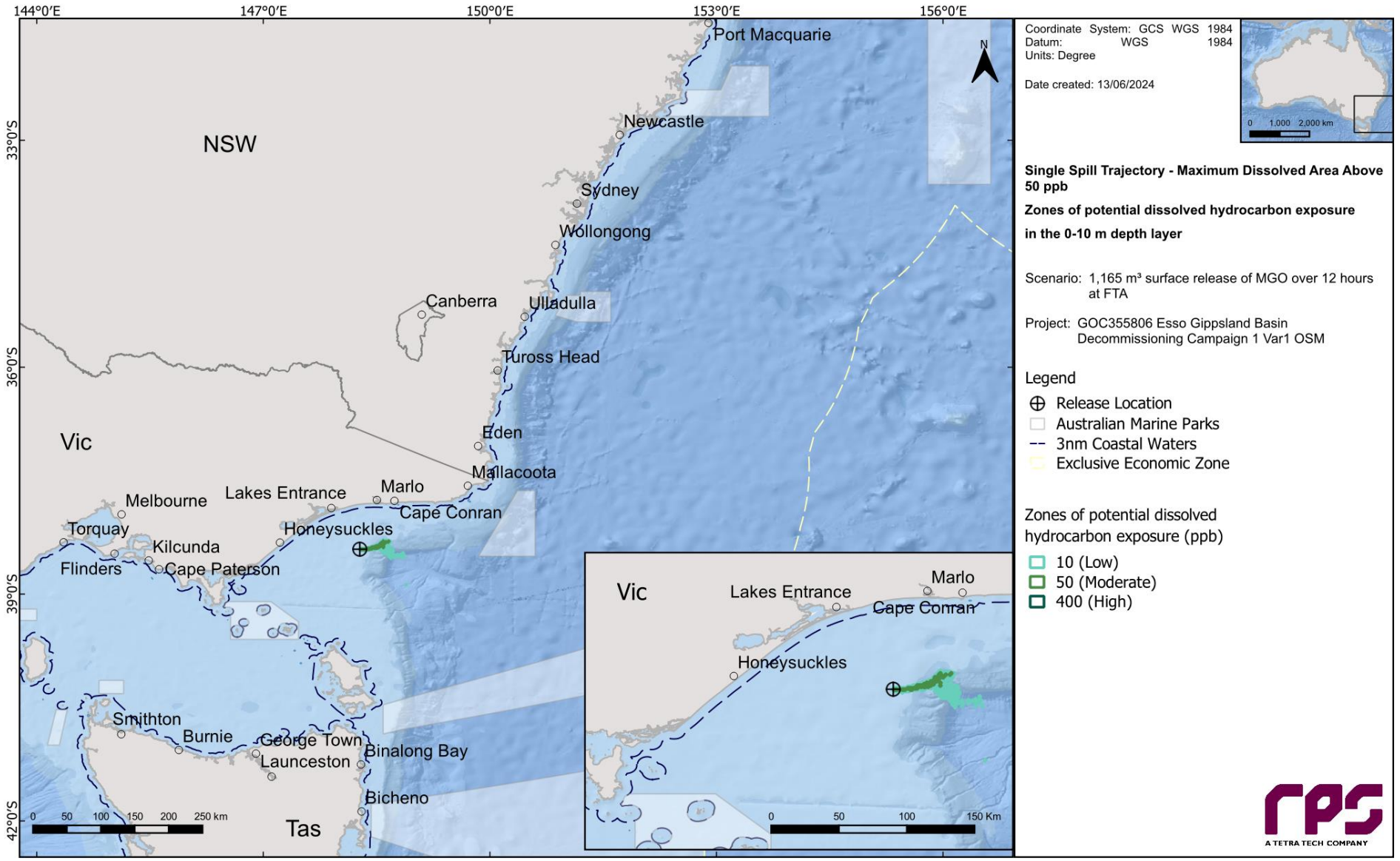

Figure 12.22 Zones of potential dissolved hydrocarbon exposure, for the trajectory with the largest area of dissolved hydrocarbon exposure above 50 ppb.

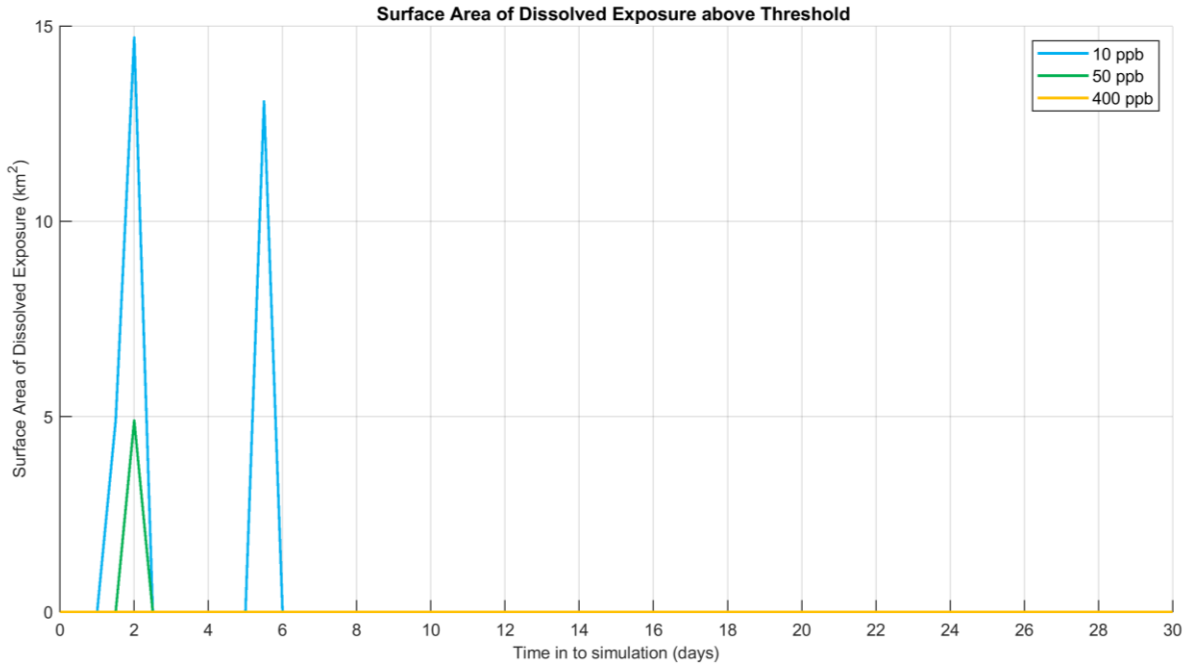

Figure 12.23 Time series of the dissolved hydrocarbon exposure area above each threshold for the trajectory with the largest area of dissolved hydrocarbon exposure above 50 ppb.

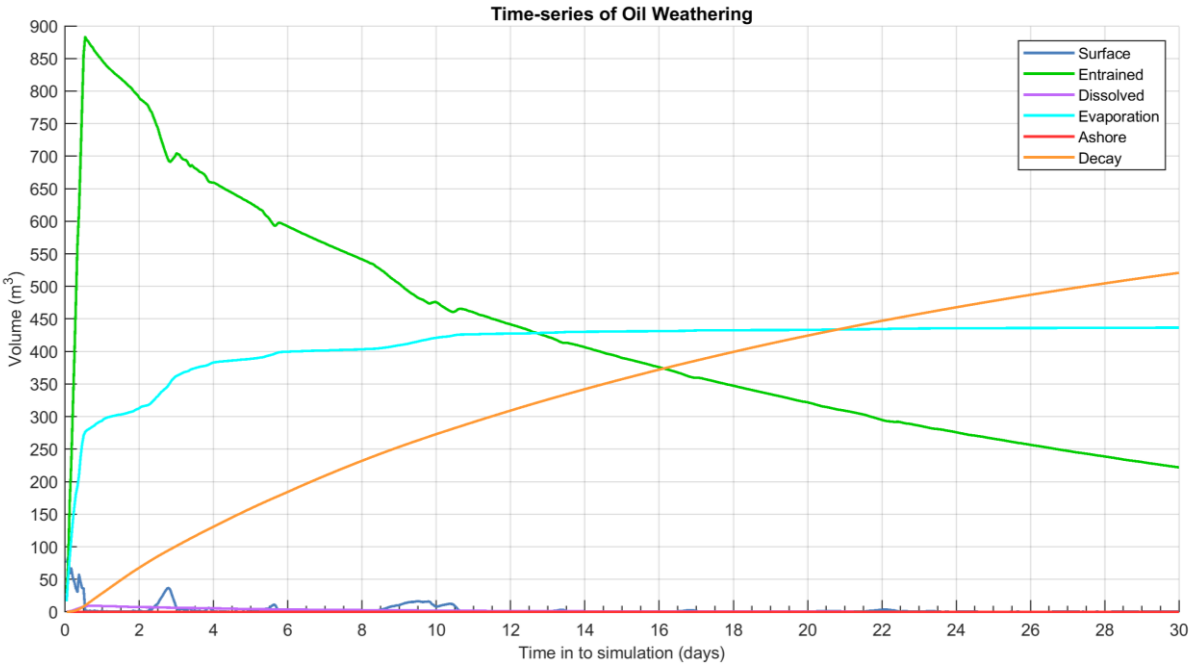

Figure 12.24 Predicted weathering and fates graph for the trajectory with the largest area of dissolved hydrocarbon exposure above 50 ppb.

13 RESULTS – SCENARIO 4 – A 1,165 M^3 SURFACE RELEASE OF MGO AT KINGFISH A

This scenario examined a 1,165 m^3 surface release of MGO over 12 hours at Kingfish A. A total of 100 spill simulations were run and each simulation was tracked for 30 days. The results are presented on an annual basis.

Sections 13.1 and 13.2 present the annual stochastic analysis and deterministic analysis results, respectively.

13.1 Stochastic Analysis

13.1.1 Floating Oil Exposure

Table 13.1 summarises the maximum distance travelled by floating oil on the sea surface at each threshold. The maximum distances and corresponding directions from the release location to the low (1–10 g/m^2), moderate (10–50 g/m^2) and high (>50 g/m^2) exposure zones were 70.9 km (northeast), 48.9 km (southwest) and 16.6 km (southwest), respectively.

Table 13.2 summarises the potential floating oil exposure, minimum time and maximum residence time of floating oil exposure to individual receptors.

With the exception of the receptors the release location is within (see

Table 9.2), the White-faced Storm-petrel - Foraging (BIA) recorded the highest probability of exposure at 6% to concentrations exceeding 1 g/m^2. Floating oil at the 1 g/m^2 threshold was predicted to reach the same receptor the quickest at 0.71 days (17.04 hours) following the spill commencement.

Figure 13.1 presents the zones of potential floating oil exposure for all thresholds, while Figure 13.2 to Figure 13.4 present the maximum residence time of floating oil exposure for all thresholds assessed under annual conditions.

Table 13.1 Maximum distance and direction from the release location to the edge of floating oil exposure. Results are based on a 1,165 m^3 surface release of MGO over 12 hours at Kingfish A. The results reflect annual conditions.

Distance and direction travelled	Zones of potential floating oil exposure		
	Annual		
	Low	Moderate	High
Maximum distance (km) from release location	70.9	48.9	16.6
Maximum distance (km) from release location (99th percentile)	54.9	42.7	16.6
Direction	NE	SW	SW

Table 13.2 Summary of the potential floating oil exposure to individual receptors. Results are based on a 1,165 m³ surface release of MGO over 12 hours at Kingfish A. The results reflect annual conditions.

	Receptor	Annual								
		Probability of floating oil exposure (%)			Minimum time before floating oil exposure (days)			Maximum residence time of floating oil exposure (days)		
		Low	Moderate	High	Low	Moderate	High	Low	Moderate	High
BIA	Black-browed Albatross – Foraging*	100	100	78	0.04	0.04	0.04	1.33	0.92	0.38
	Bullers Albatross – Foraging*	100	100	78	0.04	0.04	0.04	1.33	0.92	0.38
	Campbell Albatross – Foraging*	100	100	78	0.04	0.04	0.04	1.33	0.92	0.38
	Common Diving-petrel – Foraging*	100	100	78	0.04	0.04	0.04	1.33	0.92	0.38
	Indian Yellow-nosed Albatross – Foraging*	100	100	78	0.04	0.04	0.04	1.33	0.92	0.38
	Pygmy Blue Whale – Distribution*	100	100	78	0.04	0.04	0.04	1.33	0.92	0.38
	Pygmy Blue Whale – Foraging*	100	100	78	0.04	0.04	0.04	1.33	0.92	0.38
	Short-tailed Shearwater – Foraging*	100	100	78	0.04	0.04	0.04	1.04	0.67	0.38
	Shy Albatross – Foraging*	100	100	78	0.04	0.04	0.04	1.33	0.92	0.38
	Southern Right Whale - Known Core Range*	100	100	78	0.04	0.04	0.04	1.33	0.92	0.38
	Wandering Albatross – Foraging*	100	100	78	0.04	0.04	0.04	1.33	0.92	0.38
	White Shark – Distribution*	100	100	78	0.04	0.04	0.04	1.33	0.92	0.38
	White-faced Storm-petrel - Foraging	6	3	-	0.71	0.71	-	0.46	0.21	-
IMCRA	Twofold Shelf*	100	100	78	0.04	0.04	0.04	1.33	0.92	0.38
KEF	Upwelling East of Eden	4	-	-	1.33	-	-	0.13	-	-

*The release location resides within the receptor boundaries.

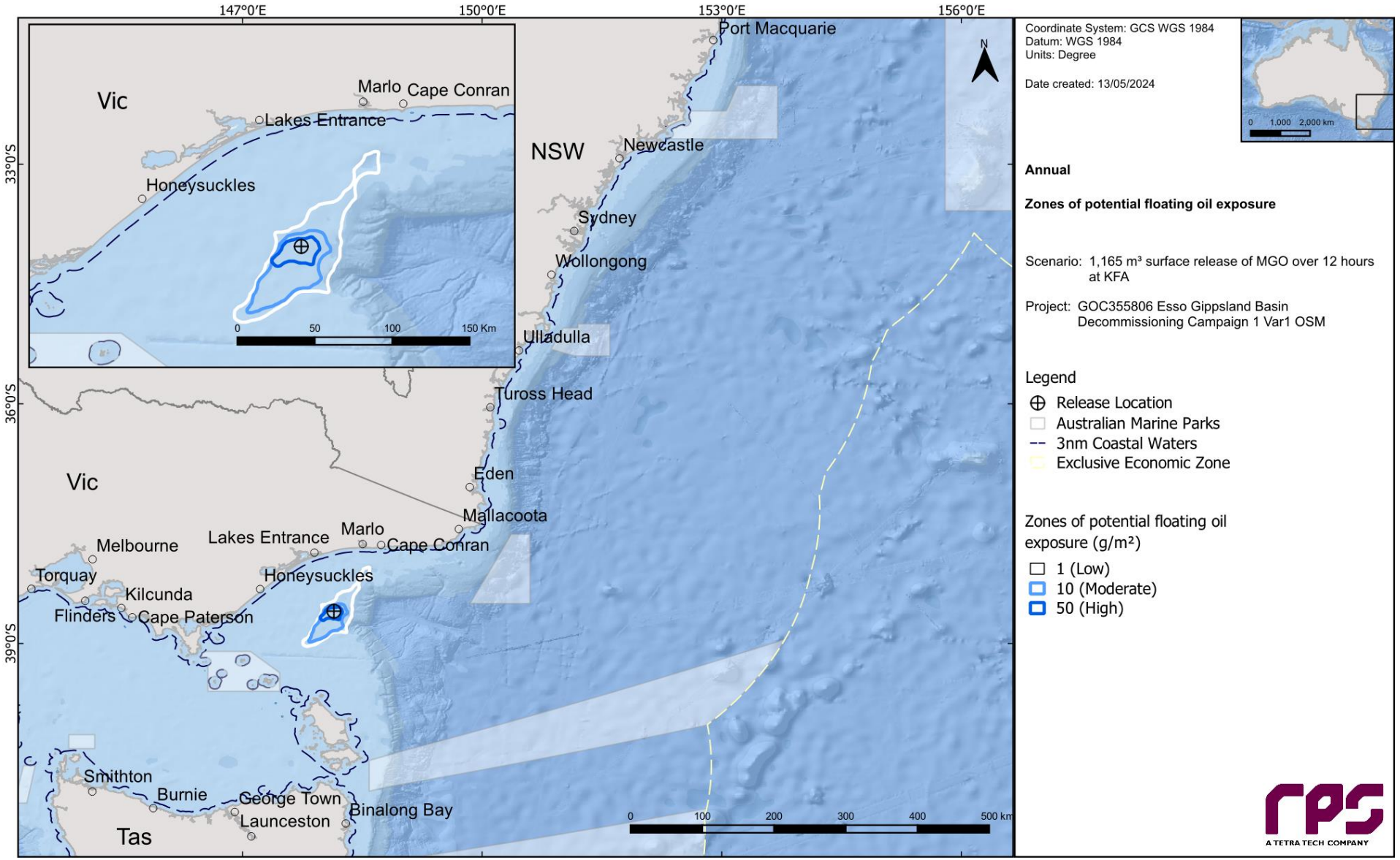

Figure 13.1 Zones of potential floating oil exposure in the event of a 1,165 m³ surface release of MGO over 12 hours at Kingfish A. The results reflect annual conditions.

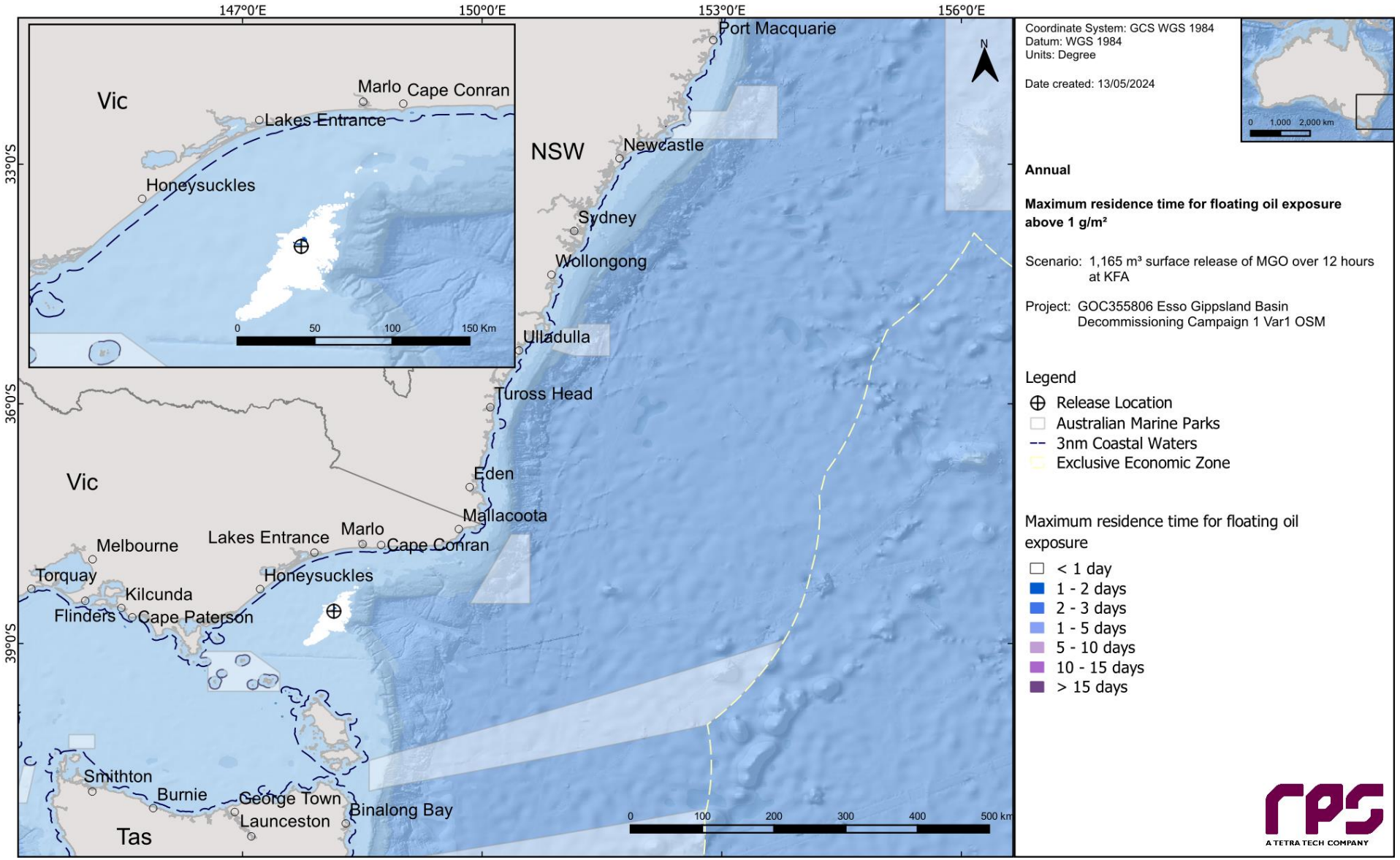

Figure 13.2 Maximum residence time of floating oil exposure above 1 g/m^2, in the event of a 1,165 m^3 surface release of MGO over 12 hours at Kingfish A. The results reflect annual conditions.

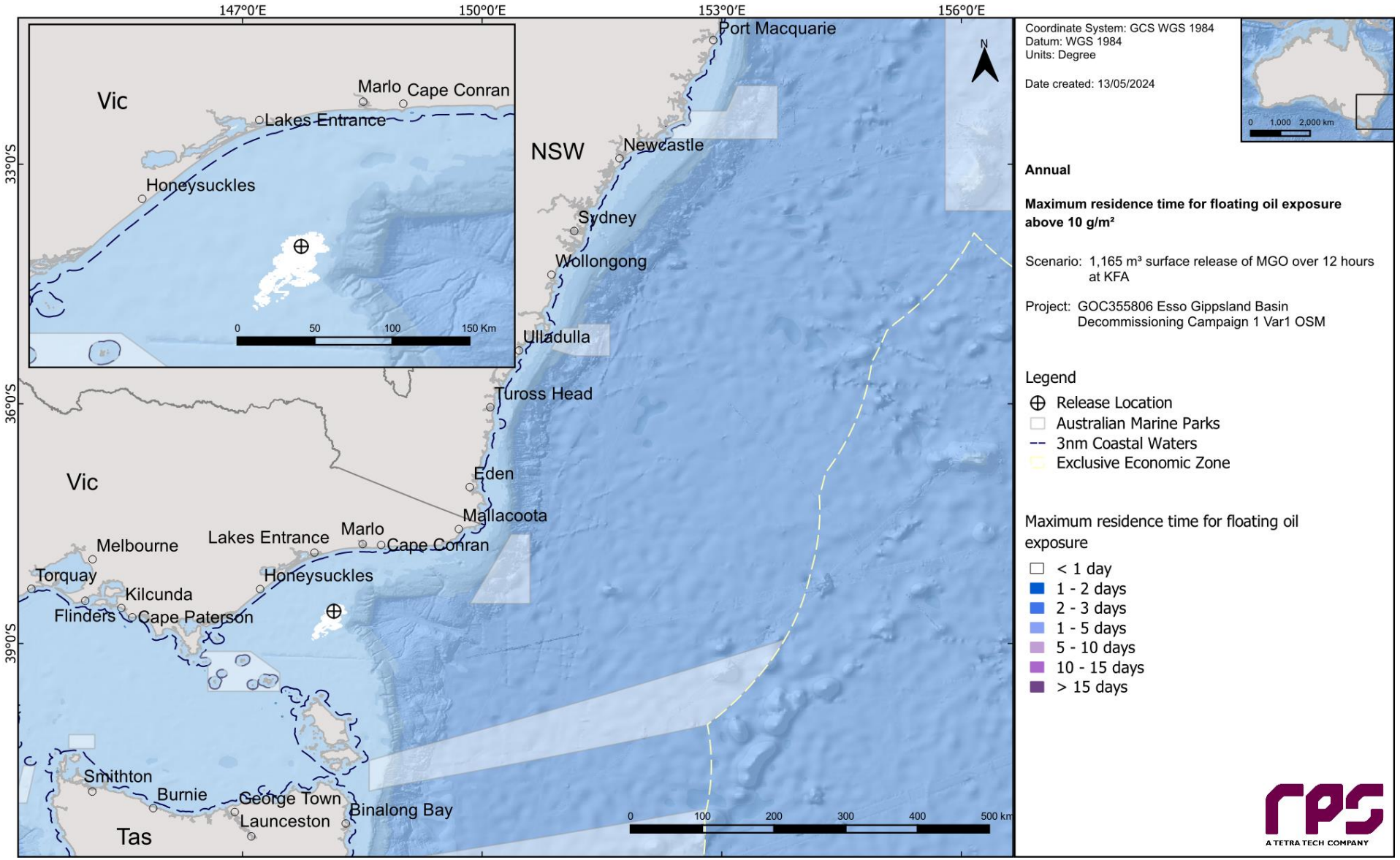

Figure 13.3 Maximum residence time of floating oil exposure above 10 g/m^2, in the event of a 1,165 m^3 surface release of MGO over 12 hours at Kingfish A. The results reflect annual conditions.

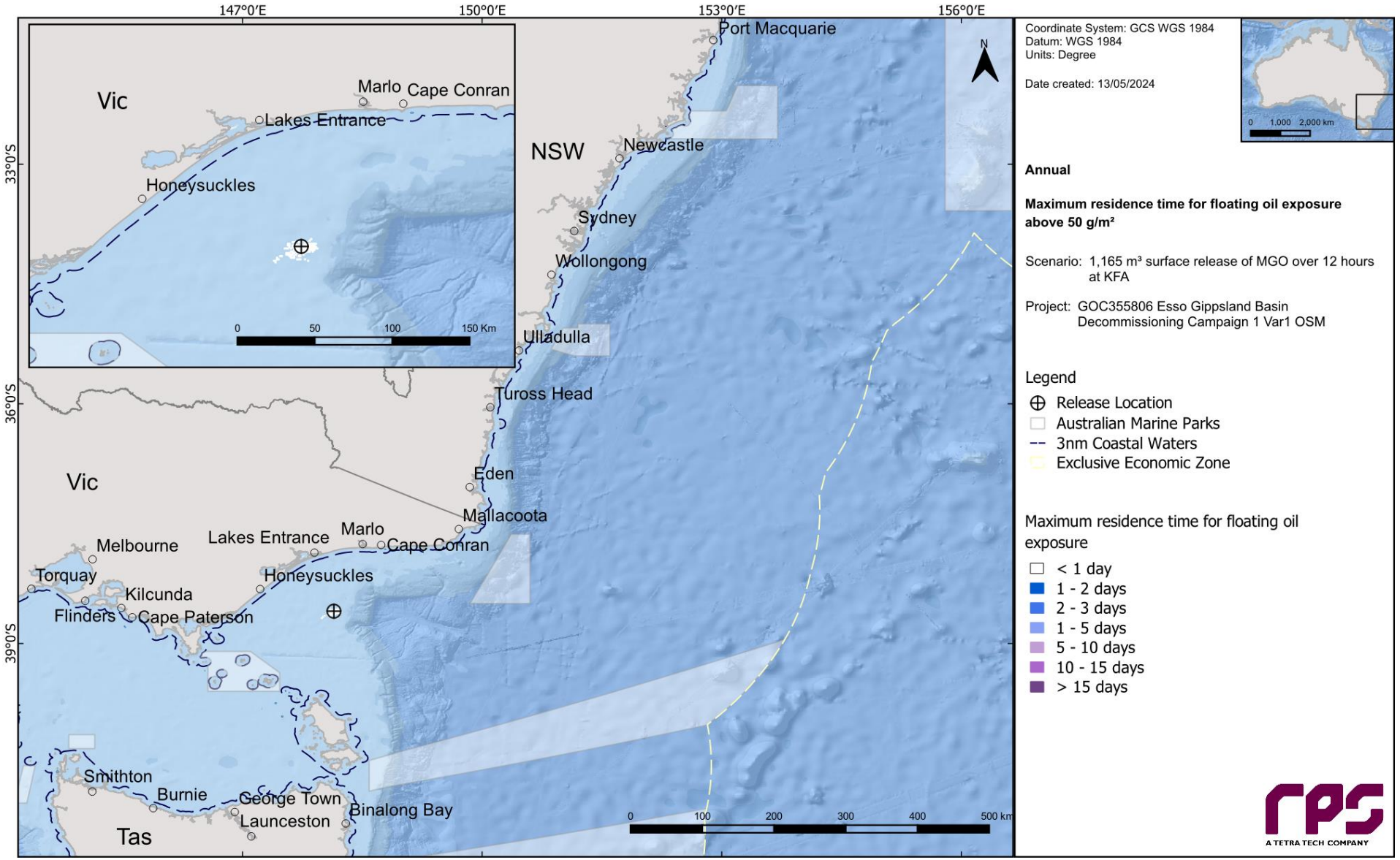

Figure 13.4 Maximum residence time of floating oil exposure above 50 g/m^2, in the event of a 1,165 m^3 surface release of MGO over 12 hours at Kingfish A. The results reflect annual conditions.

13.1.2 Shoreline Accumulation

Table 13.3 presents a summary of the potential shoreline accumulation. The probability of accumulation to any shoreline at, or above, the low (10 g/m^2) threshold was 18% throughout the year. The minimum time before oil accumulation at, or above, the low threshold was 6.04 days. The maximum total volume ashore for a single spill trajectory was 21 m^3, and the maximum length of shoreline with accumulation above the low and moderate thresholds were 45 km and 5 km, respectively. No shoreline contact was predicted at the high threshold.

Table 13.4 summarises the shoreline accumulation statistics for individual receptors.

The highest probability of shoreline oil accumulation at the 10 g/m^2 threshold was forecast for Montague Island (LGA) (7%). The maximum volume of oil ashore was 14.3 m^3 for the same receptor. Montague Island (LGA) was also forecast to record the quickest time before oil accumulation at the 10 g/m^2 threshold at 6.04 days (144.96 hours).

The maximum potential shoreline loadings above each shoreline thresholds are presented in Figure 13.5.

Table 13.3 Summary of oil accumulation across all shorelines. Results are based on a 1,165 m^3 surface release of MGO over 12 hours at Kingfish A. The results reflect annual conditions.

Shoreline Statistics	Annual
Probability of accumulation on any shoreline (%)	18
Absolute minimum time for visible oil to shore (days)	6.04
Maximum total volume of hydrocarbons ashore (m^3) ^	21
Average total volume of hydrocarbons ashore (m^3) ^	1.6
Maximum length of the shoreline at **10 g/m^2** (km)	45
Average shoreline length (km) at **10 g/m^2** (km)	8.6
Maximum length of the shoreline at **100 g/m^2** (km)	5
Average shoreline length (km) at **100 g/m^2** (km)	3.5
Maximum length of the shoreline at **1,000 g/m^2** (km)	-
Average shoreline length (km) at **1,000 g/m^2** (km)	-

^Total volume of oil stranded on shorelines over the entire simulation, not accounting for natural removal processes such as evaporation and decay.

Table 13.4 Summary of oil accumulation on individual shoreline receptors. Results are based on a 1,165 m³ surface release of MGO over 12 hours at Kingfish A. The results reflect annual conditions.

Shoreline Receptor		Maximum probability of shoreline loading (%)			Minimum time before shoreline accumulation (days)			Load on shoreline (g/m²)		Volume on shoreline (m³)		Mean length of shoreline accumulation (km)			Maximum length of shoreline accumulation (km)		
		Low	Mod	High	Low	Mod	High	Mean	Peak	Mean	Peak	Low	Mod	High	Low	Mod	High
Shoreline (LGA)	Babel Island	1	-	-	19.54	-	-	2	44	0.2	1.4	3.6	-	-	3.6	-	-
	Bega Valley	5	-	-	14.71	-	-	3	94	0.6	9.2	5.3	-	-	18.2	-	-
	Cape Barren Osland	1	-	-	22.21	-	-	2	14	0.4	2.4	3.6	-	-	3.6	-	-
	Craggy Island	1	-	-	14.00	-	-	4	11	0.1	0.2	0.9	-	-	0.9	-	-
	East Gippsland	4	-	-	11.33	-	-	2	69	0.6	4.4	3.4	-	-	4.5	-	-
	Eurobodalla	2	-	-	6.54	-	-	4	67	0.9	6	11.4	-	-	16.4	-	-
	Flinders Island	1	-	-	22.08	-	-	2	31	0.5	4.2	10	-	-	10	-	-
	Gabo Island	1	-	-	16.75	-	-	3	17	0.1	0.5	0.9	-	-	0.9	-	-
	Hogan Island Group	1	-	-	16.29	-	-	2	11	0.1	0.6	0.9	-	-	0.9	-	-
	Inner Sister Island	2	-	-	8.75	-	-	3	31	0.2	1.2	2.3	-	-	3.6	-	-
	Kent Island Group	1	-	-	13.08	-	-	3	71	0.4	3.2	5.5	-	-	5.5	-	-
	Montague Island	7	2	-	6.04	6.42	-	31	539	2.1	14.3	2.5	1.8	-	5.5	1.8	-
	Outer Sister Island	3	-	-	7.42	-	-	5	69	0.4	2.2	3	-	-	4.5	-	-
	Seal Islands	1	-	-	15.25	-	-	6	20	0.4	0.4	0.9	-	-	0.9	-	-
	Vansittart Island	1	-	-	23.79	-	-	3	27	0.2	0.5	0.9	-	-	0.9	-	-
	Wellington	1	-	-	16.13	-	-	3	12	0.5	0.5	0.9	-	-	0.9	-	-
Shoreline (Sub-LGA)	Bega Valley	5	-	-	14.71	-	-	3	94	0.6	9.2	5.3	-	-	18.2	-	-
	Cape Howe / Mallacoota	2	-	-	16.79	-	-	2	16	0.2	1.2	2.3	-	-	2.7	-	-
	Croajingolong - East	1	-	-	12.25	-	-	2	10	0.3	0.7	1.8	-	-	1.8	-	-
	Croajingolong - West	1	-	-	11.33	-	-	2	27	0.3	1	2.7	-	-	2.7	-	-
	Eurobodalla	2	-	-	6.54	-	-	4	67	0.9	6	11.4	-	-	16.4	-	-
	Point Hicks	1	-	-	19.04	-	-	3	69	0.4	3	4.5	-	-	4.5	-	-
	Snake Island	1	-	-	16.13	-	-	4	12	0.2	0.2	0.9	-	-	0.9	-	-

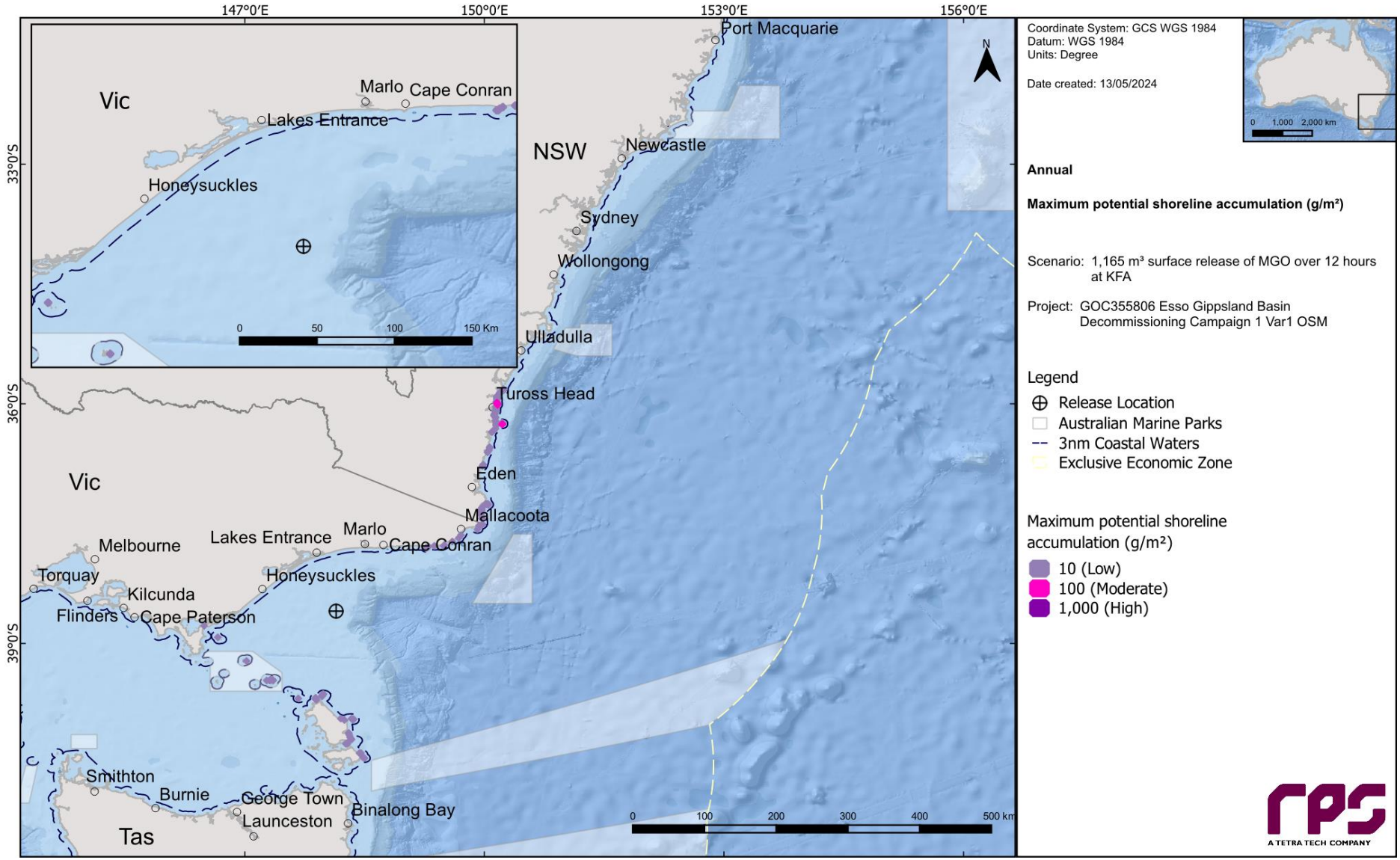

Figure 13.5 Maximum potential shoreline loading in the event of a 1,165 m³ surface release of MGO over 12 hours at Kingfish A. The results reflect annual conditions.

13.1.3 In-water exposure

13.1.3.1 Dissolved Hydrocarbons

Table 13.5 summarises the potential in-water exposure to individual receptors from dissolved hydrocarbons in the 0-10 m layer as well as the minimum time before exposure, for all thresholds assessed.

Excluding the receptors that the release location is within (see

Table 9.2), the probability of exposure at concentrations equal to, or greater than, 10 ppb is greatest at Upwelling East of Eden (KEF) (8%). The maximum dissolved hydrocarbon concentration at any given receptor(s) was shown to be 145 ppb, including the receptors the release location lies within, followed by the White-faced Storm-petrel – Foraging (BIA) at 83.8 ppb.

Figure 13.6 presents the zones of potential dissolved hydrocarbon exposure for 0-10 m depth layer.

Figure 13.7 and Figure 13.8 present the maximum residence time of dissolved hydrocarbon exposure for the low and moderate thresholds, respectively.

Table 13.5 Probability of dissolved hydrocarbons exposure to marine based receptors in the 0–10 m depth. Results are based on a 1,165 m³ surface release of MGO over 12 hours at Kingfish A. The results reflect annual conditions.

Receptor		Annual									
		Maximum dissolved hydrocarbon exposure (ppb)	Probability of dissolved hydrocarbon exposure (%)			Minimum time before dissolved hydrocarbon exposure (days)			Maximum residence time for dissolved hydrocarbon exposure (days)		
			Low	Moderate	High	Low	Moderate	High	Low	Moderate	High
AMP	Beagle	14.8	1	-	-	5.79	-	-	0.04	-	-
BIA	Antipodean Albatross - Foraging	75.4	5	1	-	1.08	1.58	-	0.25	0.04	-
	Black Petrel - Foraging	11.4	1	-	-	5.88	-	-	0.04	-	-
	Black-browed Albatross – Foraging*	145	72	17	-	0.04	0.04	-	0.79	0.25	-
	Bullers Albatross – Foraging*	145	72	17	-	0.04	0.04	-	0.79	0.25	-
	Campbell Albatross – Foraging*	145	72	17	-	0.04	0.04	-	0.79	0.25	-
	Common Diving-petrel – Foraging*	145	72	17	-	0.04	0.04	-	0.79	0.25	-
	Crested Tern – Breeding	10.8	1	-	-	6.79	-	-	0.04	-	-
	Crested Tern – Foraging	11.4	1	-	-	6.33	-	-	0.04	-	-
	Flesh-footed Shearwater - Foraging	11.4	1	-	-	5.88	-	-	0.04	-	-
	Grey Nurse Shark – Foraging	20.2	1	-	-	4.88	-	-	0.13	-	-
	Grey Nurse Shark – Migration	43.6	2	-	-	4.5	-	-	0.17	-	-
	Humpback Whale – Foraging	53	2	1	-	4.29	4.75	-	0.17	0.04	-
	Indian Yellow-nosed Albatross – Foraging*	145	72	17	-	0.04	0.04	-	0.79	0.25	-
	Indo-Pacific/Spotted Bottlenose Dolphin – Breeding	10.8	1	-	-	6.79	-	-	0.04	-	-
	Little Penguin – Breeding	11.4	1	-	-	6.46	-	-	0.04	-	-
	Pygmy Blue Whale – Distribution*	145	72	17	-	0.04	0.04	-	0.79	0.25	-
	Pygmy Blue Whale – Foraging*	145	72	17	-	0.04	0.04	-	0.79	0.25	-
	Short-tailed Shearwater – Foraging*	145	72	17	-	0.04	0.04	-	0.63	0.25	-
	Shy Albatross – Foraging*	145	72	17	-	0.04	0.04	-	0.79	0.25	-
	Sooty Shearwater - Foraging	15.7	1	-	-	4.79	-	-	0.04	-	-
	Southern Right Whale - Known Core Range*	145	72	17	-	0.04	0.04	-	0.79	0.25	-
	Wandering Albatross – Foraging*	145	72	17	-	0.04	0.04	-	0.79	0.25	-

Receptor		Annual								
		Maximum dissolved hydrocarbon exposure (ppb)	Probability of dissolved hydrocarbon exposure (%)			Minimum time before dissolved hydrocarbon exposure (days)			Maximum residence time for dissolved hydrocarbon exposure (days)	
			Low	Moderate	High	Low	Moderate	High	Low	Moderate	High
	Wedge-tailed Shearwater - Foraging	53	2	1	-	4	4.75	-	0.17	0.04	-
	White Shark – Distribution*	145	72	17	-	0.04	0.04	-	0.79	0.25	-
	White Shark - Foraging	75.4	3	1	-	2.46	3.83	-	0.13	0.04	-
	White-faced Storm-petrel - Breeding	13.8	1	-	-	5.29	-	-	0.04	-	-
	White-faced Storm-petrel - Foraging	83.8	7	1	-	0.42	0.67	-	0.29	0.08	-
IMCRA	Batemans Shelf	13.8	1	-	-	5.5	-	-	0.04	-	-
	Flinders	15.3	1	-	-	6.33	-	-	0.04	-	-
	Twofold Shelf*	145	72	17	-	0.04	0.04	-	0.79	0.25	-
KEF	Upwelling East of Eden	79.9	8	1	-	0.67	1	-	0.25	0.04	-
MP	Batemans	10.8	1	-	-	6.79	-	-	0.04	-	-
NP	Kent Group	10.2	1	-	-	8.50	-	-	-	-	-
RSB	New Zealand Star Bank	17.1	1	-	-	5.38	-	-	0.04	-	-
State Waters	New South Wales	10.8	1	-	-	6.79	-	-	0.04	-	-
	Tasmania State Waters	10.6	1	-	-	6.71	-	-	0.04	-	-
	Victoria State Waters	10.2	1	-	-	4.75	-	-	0.04	-	-

*The release location resides within the receptor boundaries.

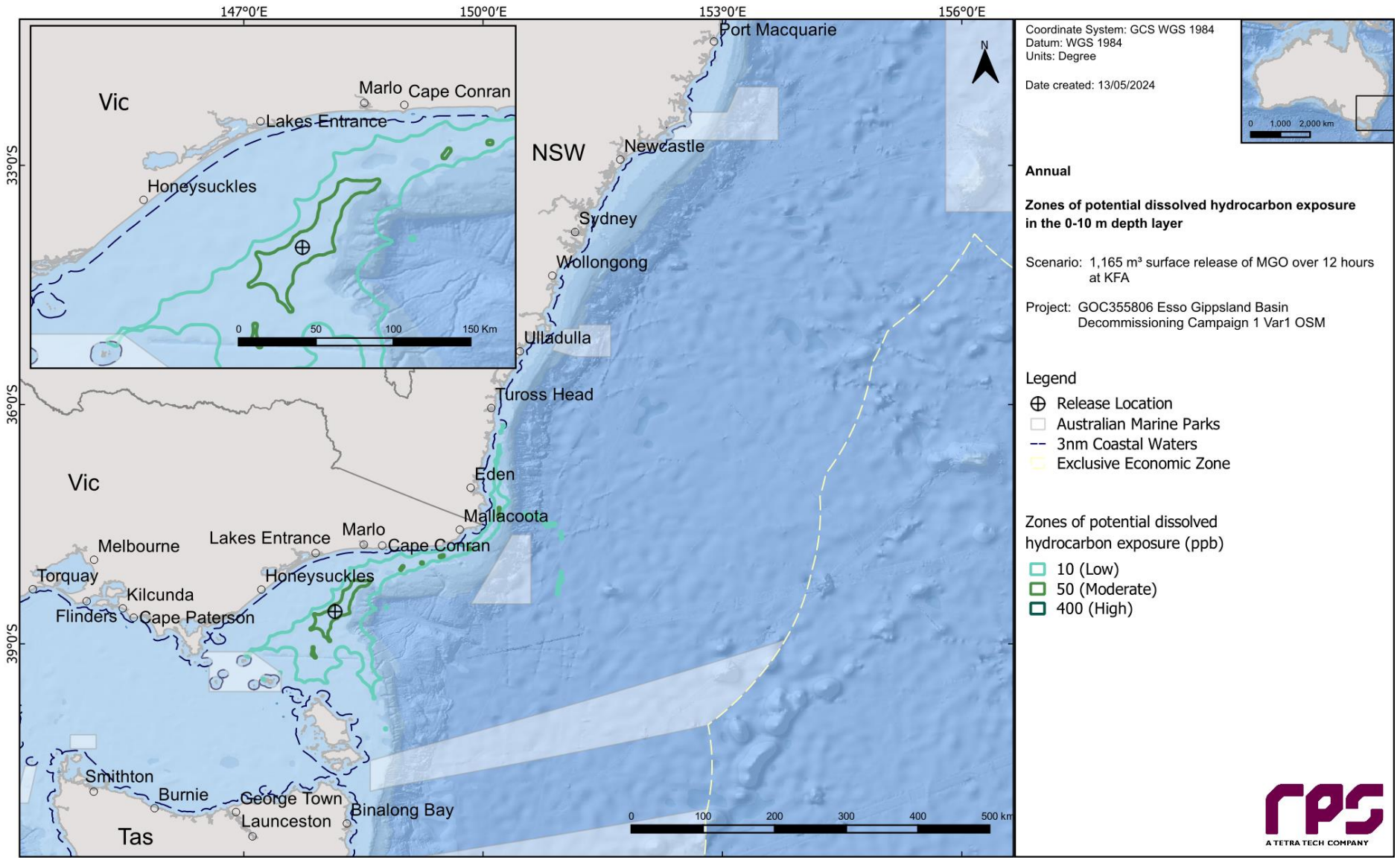

Figure 13.6 Zones of potential dissolved hydrocarbon exposure at 0-10 m below the sea in the event of a 1,165 m³ surface release of MGO over 12 hours at Kingfish A. The results reflect annual conditions.

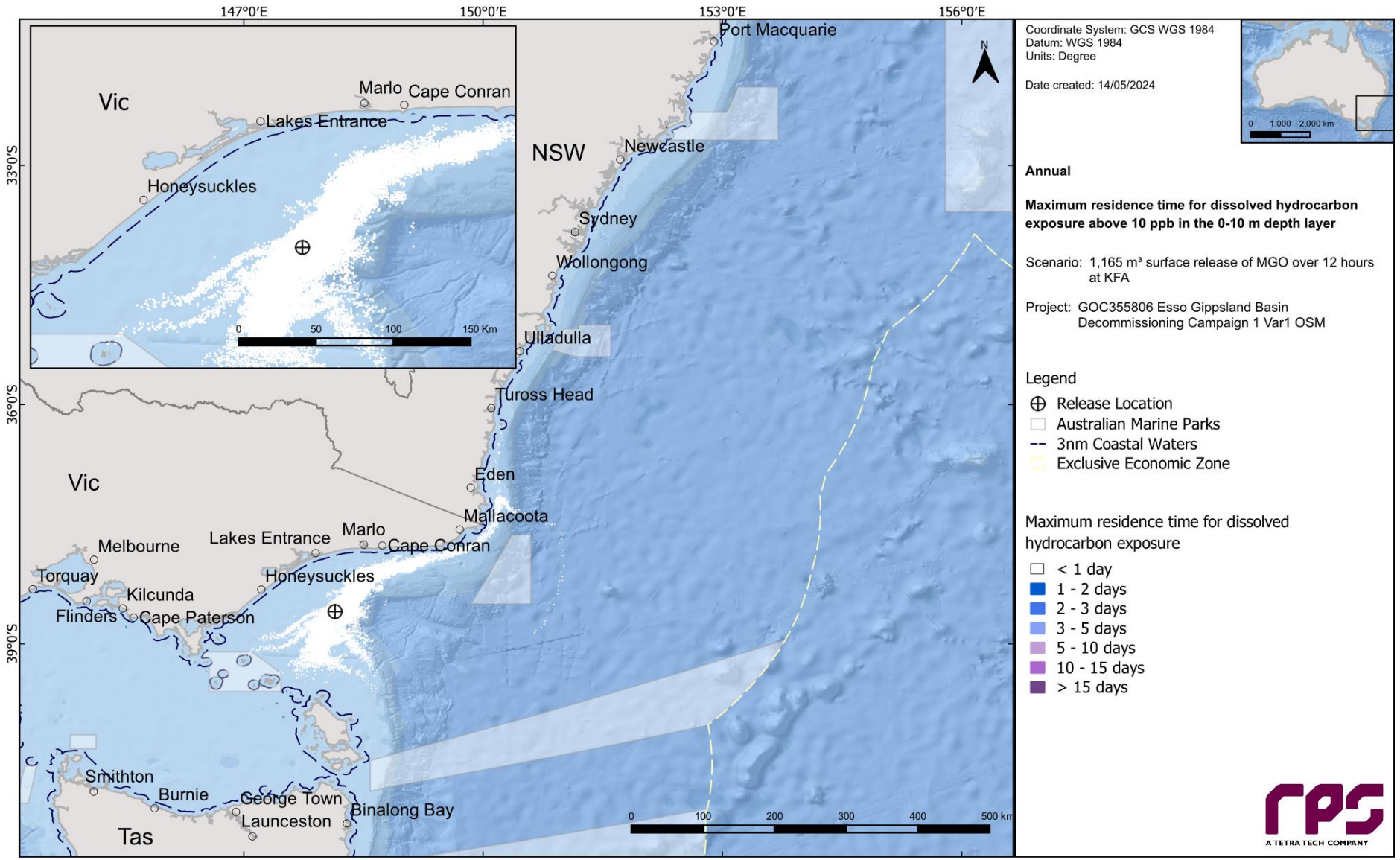

Figure 13.7 Maximum residence time for dissolved hydrocarbon exposure above 10 ppb, at 0-10 m below the sea surface in the event of 1,165 m³ surface release of MGO over 12 hours at Kingfish A. The results reflect annual conditions.

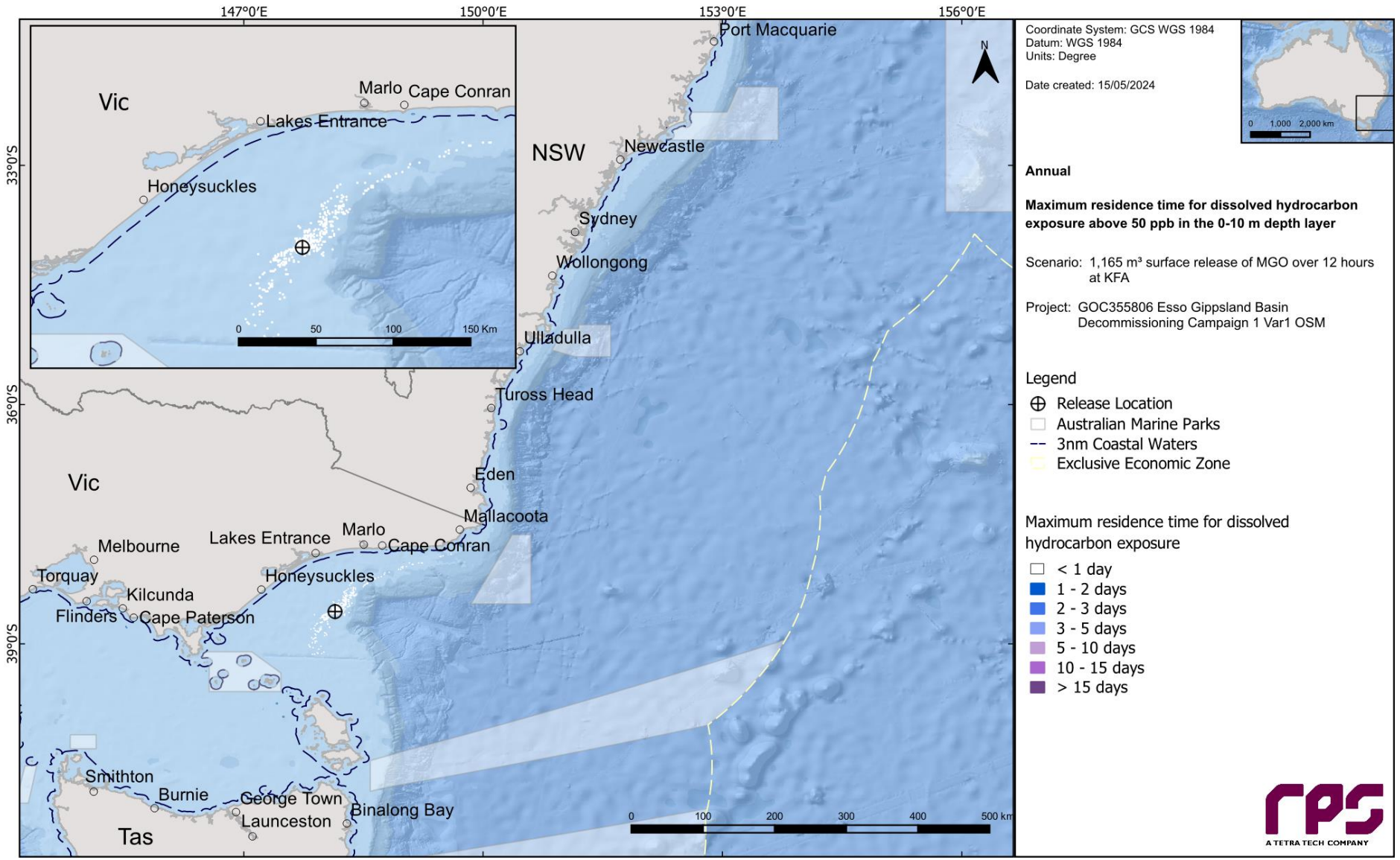

Figure 13.8 Maximum residence time for dissolved hydrocarbon exposure above 50 ppb, at 0-10 m below the sea surface in the event of 1,165 m³ surface release of MGO over 12 hours at Kingfish A. The results reflect annual conditions.

13.1.3.2 Entrained Hydrocarbons

Table 13.6 summarises the potential in-water exposure to individual receptors from entrained hydrocarbons in the 0-10 m depth layer, as well as the minimum time before exposure for all thresholds assessed.

Except for the receptors the release location is within (see

Table 9.2), the highest probability of low entrained hydrocarbon exposure was 56% recorded for the White-faced Storm-petrel – Foraging (BIA). The quickest time for exposure at the same threshold was 0.29 days (6.96 hours) for the White-faced Storm-petrel – Foraging (BIA). Additionally, the highest entrained hydrocarbon concentration was predicted to be 11,353 ppb, including the receptors the release location lies within, followed by 1,427 ppb at White-faced Storm-petrel – Foraging (BIA).

Figure 13.9 presents the zones of potential entrained hydrocarbon exposure for the 0-10 m depth layer.

Figure 13.10 and Figure 13.11 present the maximum residence time of entrained hydrocarbon exposure for 10 ppb and 100 ppb.

Table 13.6 Probability of entrained hydrocarbons exposure to marine based receptors in the 0–10 m depth layer. Results are based on a 1,165 m³ surface release of MGO over 12 hours at Kingfish A. The results reflect annual conditions.

Receptor		Annual						
		Maximum entrained hydrocarbon exposure (ppb)	Probability of entrained hydrocarbon exposure (%)		Minimum time before entrained hydrocarbon exposure (days)		Maximum residence time for entrained hydrocarbon exposure (days)	
			Low	High	Low	High	Low	High
AMP	Beagle	85.9	13	-	3.63	-	3.54	-
	East Gippsland	23.4	5	-	11.96	-	1.42	-
	Flinders	14.7	2	-	9.29	-	0.67	-
BIA	Antipodean Albatross - Foraging	427.6	40	8	0.79	0.83	11	2.5
	Black Petrel - Foraging	99.2	6	-	5.54	-	5	-
	Black-browed Albatross – Foraging*	11,353	100	98	0.04	0.04	11.75	3.58
	Bullers Albatross – Foraging*	11,353	100	98	0.04	0.04	11.75	3.58
	Campbell Albatross – Foraging*	11,353	100	98	0.04	0.04	11.75	3.58
	Common Diving-petrel – Foraging*	11,353	100	98	0.04	0.04	11.75	3.58
	Crested Tern - Breeding	125	6	1	5.96	6.67	3.71	0.58
	Crested Tern - Foraging	110.7	6	1	5.63	6.54	8.75	0.21
	Flesh-footed Shearwater - Foraging	99.2	6	-	5.54	-	5	-
	Great-winged Petrel - Foraging	22.4	3	-	11.46	-	1.63	-
	Grey Nurse Shark - Foraging	125	14	1	4.21	4.58	8.75	0.58
	Grey Nurse Shark - Migration	104.6	14	1	4.21	4.5	3.54	0.08
	Humpback Whale - Foraging	125	17	2	3.96	4.13	8.75	0.58
	Indian Yellow-nosed Albatross – Foraging*	11,353	100	98	0.04	0.04	11.75	3.58
	Indo-Pacific/Spotted Bottlenose Dolphin - Breeding	125	12	1	4.38	6.54	8.75	0.58
	Little Penguin - Breeding	125	6	1	5.83	6.54	5.83	0.58
	Little Penguin - Foraging	77.8	18	-	3.83	-	3.5	-
	Northern Giant Petrel - Foraging	22.4	3	-	11.46	-	1.63	-
	Pygmy Blue Whale – Distribution*	11,353	100	98	0.04	0.04	11.75	3.58
	Pygmy Blue Whale – Foraging*	11,353	100	98	0.04	0.04	11.75	3.58
	Short-tailed Shearwater – Foraging*	11,353	100	98	0.04	0.04	11.75	3.58
	Shy Albatross – Foraging*	11,353	100	98	0.04	0.04	11.75	3.58

Receptor		Annual						
		Maximum entrained hydrocarbon exposure (ppb)	Probability of entrained hydrocarbon exposure (%)		Minimum time before entrained hydrocarbon exposure (days)		Maximum residence time for entrained hydrocarbon exposure (days)	
			Low	High	Low	High	Low	High
	Sooty Shearwater - Foraging	125	14	1	4.38	5.08	8.75	0.58
	Southern Giant Petrel - Foraging	22.4	3	-	11.46	-	1.63	-
	Southern Right Whale - Connecting Habitat	29.8	3	-	9.46	-	3.21	-
	Southern Right Whale - Known Core Range*	11,353	100	98	0.04	0.04	11.75	3.58
	Wandering Albatross – Foraging*	11,353	100	98	0.04	0.04	11.75	3.58
	Wedge-tailed Shearwater - Foraging	138.7	20	2	3.75	3.88	8.75	0.58
	White Shark - Breeding	53.2	1	-	3.67	-	2.79	-
	White Shark – Distribution*	11,353	100	98	0.04	0.04	11.75	3.58
	White Shark - Foraging	165.8	28	4	2.13	2.25	7.04	0.21
	White-capped Albatross - Foraging	22.4	3	-	11.46	-	1.63	-
	White-faced Storm-petrel - Breeding	125	8	1	4.96	5.29	8.75	0.58
	White-faced Storm-petrel - Foraging	1,427	56	34	0.29	0.29	11.75	2.5
	Wilsons Storm Petrel - Migration	22.4	3	-	11.46	-	1.63	-
IBRA	Bateman	121.6	6	1	6	6.83	8.5	0.58
	East Gippsland Lowlands	31.4	6	-	6.17	-	3.38	-
	Flinders	50.7	6	-	4.17	-	7.04	-
	South East Coastal Ranges	14.8	2	-	6	-	0.25	-
IMCRA	Batemans Shelf	125	7	1	5	5.38	8.75	0.58
	Central Bass Strait	19.6	1	-	13.92	-	1.13	-
	Flinders	52.9	11	-	4.33	-	6	-
	Twofold Shelf*	11,353	100	98	0.04	0.04	11.75	3.58
KEF	Big Horseshoe Canyon	39.8	11	-	5.33	-	3.5	-
	Shelf rocky reefs	23.6	5	-	7.13	-	1.54	-
	Upwelling East of Eden	967.4	49	21	0.42	0.46	8.75	2.5
MNP	Cape Howe	38.5	11	-	4.79	-	1.67	-
	Point Hicks	65.7	5	-	7.58	-	5.58	-
MP	Batemans	125	6	1	5.83	6.54	8.75	0.58

Receptor		Annual						
		Maximum entrained hydrocarbon exposure (ppb)	Probability of entrained hydrocarbon exposure (%)		Minimum time before entrained hydrocarbon exposure (days)		Maximum residence time for entrained hydrocarbon exposure (days)	
			Low	High	Low	High	Low	High
NP	Kent Group	76.7	11	-	3.79	-	7.04	-
RSB	Endeavour Reef	37.9	8	-	5.46	-	2.38	-
	New Zealand Star Bank	93.9	20	-	3.63	-	3.38	-
	Wakitipu Rock	39.7	1	-	9.42	-	1.63	-
	Warrego Rock	23.1	1	-	13.42	-	3.67	-
	Wright Rock	38.3	9	-	4.88	-	1.54	-
Nearshore Waters (LGA)	Bega Valley	37.1	6	-	6	-	2.5	-
	Craggy Island	37.8	6	-	7.04	-	1.08	-
	East Gippsland	27.9	3	-	6.25	-	3.38	-
	Eurobodalla	73.4	4	-	6	-	8.5	-
	Flinders Island	12.4	2	-	11.25	-	0.08	-
	Gabo Island	23	2	-	14.96	-	0.67	-
	Hogan Island Group	36.3	2	-	7.83	-	1.17	-
	Inner Sister Island	23.5	2	-	11.04	-	2.96	-
	Kent Island Group	50.7	5	-	4.17	-	7.04	-
	Montague Island	121.6	6	1	6.04	6.83	3.5	0.58
	Outer Sister Island	29.8	3	-	9.25	-	3.42	-
	Pyramid Island	17.1	1	-	13.29	-	0.46	-
State Waters	New South Wales	125	12	1	4.38	6.54	8.75	0.58
	Tasmania State Waters	76.7	11	-	3.79	-	7.04	-
	Victoria State Waters	74.5	11	-	4.42	-	5.67	-
Nearshore Waters (Sub-LGA)	Bega Valley	37.1	6	-	6	-	2.5	-
	Cape Howe / Mallacoota	24.5	3	-	6.25	-	0.92	-
	Croajingolong - East	12.7	1	-	8.83	-	0.25	-
	Croajingolong - West	23.9	2	-	8.92	-	2.13	-
	Eurobodalla	73.4	4	-	6	-	8.5	-
	Point Hicks	23.7	2	-	8.17	-	3.38	-

Receptor	Annual						
	Maximum entrained hydrocarbon exposure (ppb)	Probability of entrained hydrocarbon exposure (%)		Minimum time before entrained hydrocarbon exposure (days)		Maximum residence time for entrained hydrocarbon exposure (days)	
		Low	High	Low	High	Low	High
Sydenham Inlet	10.1	1	-	20	-	0.04	-

*The release location resides within the receptor boundaries.

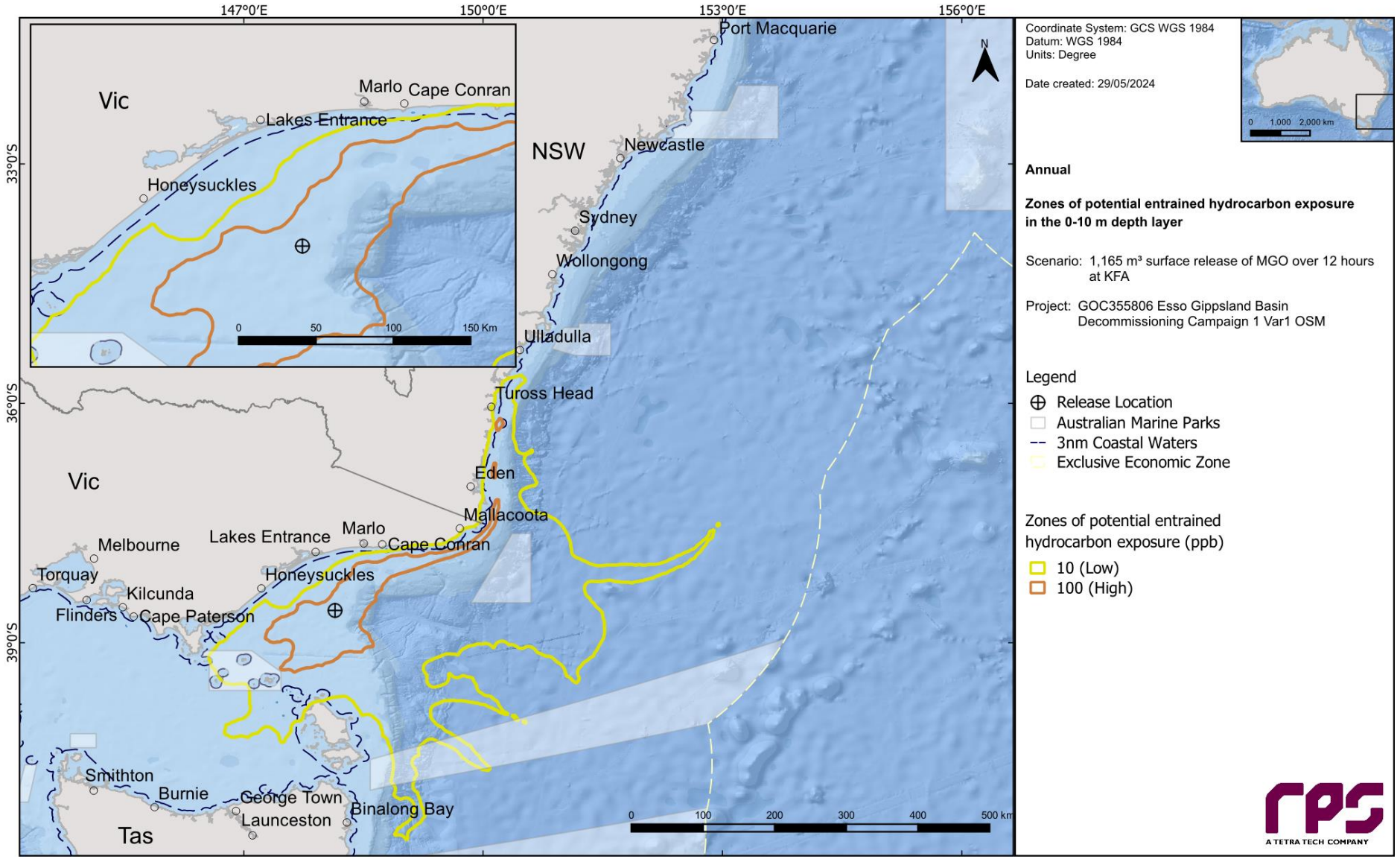

Figure 13.9 Zones of potential entrained hydrocarbon exposure at 0-10 m below the sea surface in the event of a 1,165 m³ surface release of MGO over 12 hours at Kingfish A. The results reflect annual conditions.

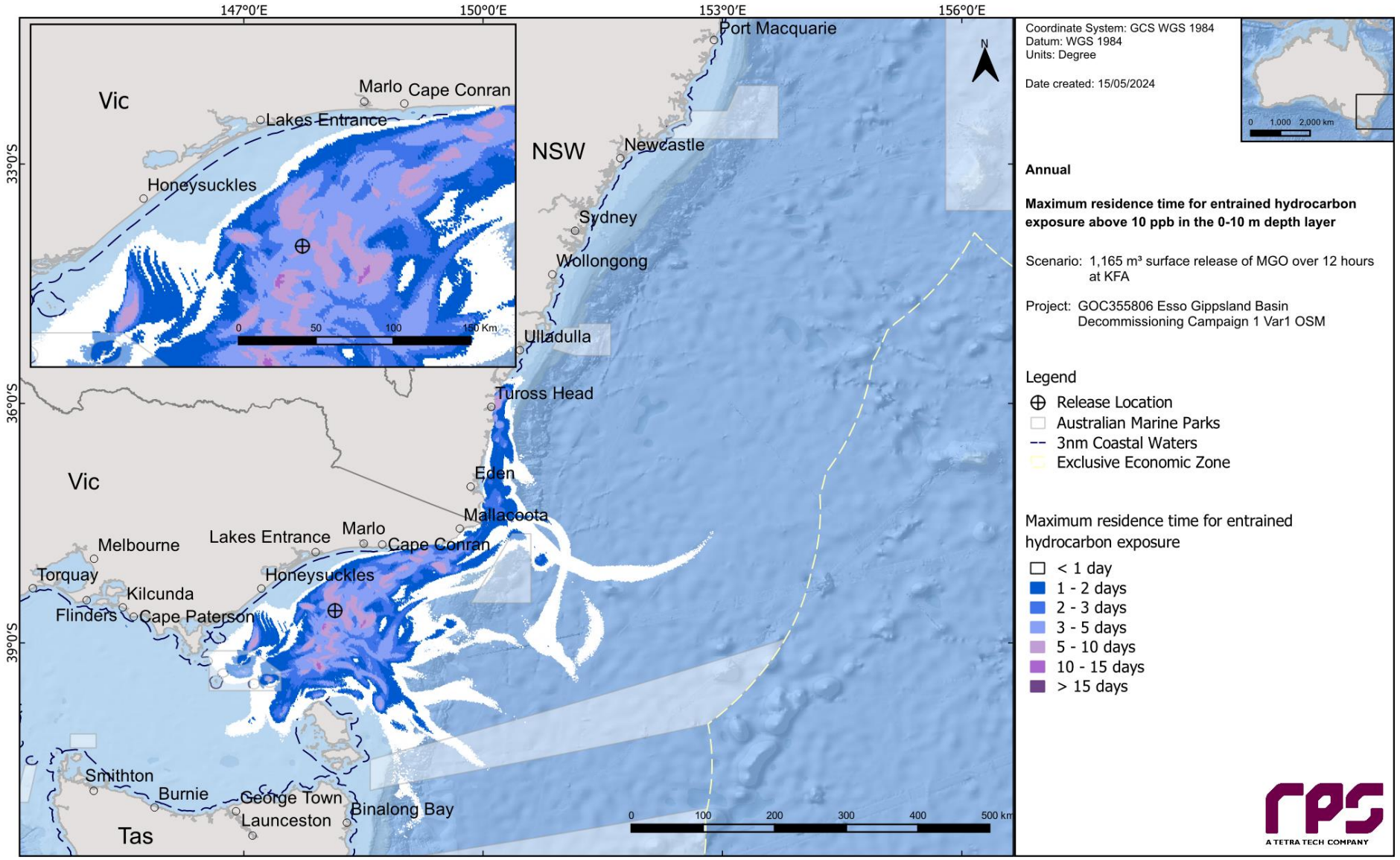

Figure 13.10 Maximum residence time for entrained hydrocarbon exposure above 10 ppb, at 0-10 m below the sea surface in the event of a 1,165 m³ surface release of MGO over 12 hours at Kingfish A. The results reflect annual conditions.

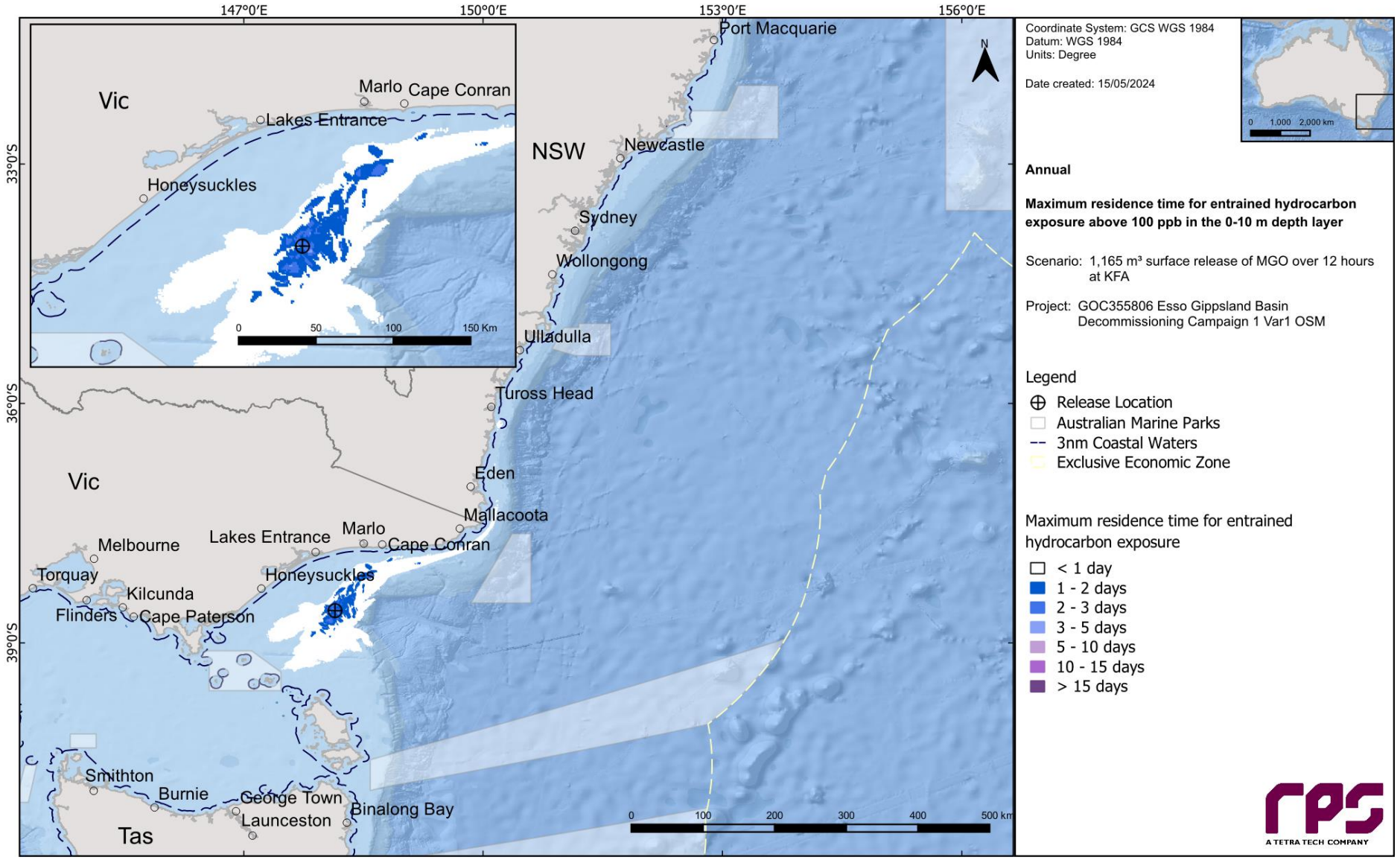

Figure 13.11 Maximum residence time for entrained hydrocarbon exposure above 100 ppb, at 0-10 m below the sea surface in the event of a 1,165 m³ surface release of MGO over 12 hours at Kingfish A. The results reflect annual conditions.

13.2 Deterministic Analysis

The stochastic modelling results were assessed, and the “worst case” deterministic runs were identified and are presented below for the following criteria:

a. Largest swept area for surface oil above 10 g/m^2; (Section 13.2.1)
b. Largest (total) volume of oil ashore (Section 13.2.2)
c. Longest length of shoreline with oil accumulation above 100 g/m^2 (Section 13.2.2)
d. Largest area of entrained hydrocarbon exposure above 100 ppb (Section 13.2.3)
e. Largest area of dissolved hydrocarbon exposure above 50 ppb (Section 13.2.4)

Table 13.7 presents a summary of sea surface and in-water exposure and shoreline accumulation at the assessed thresholds for the identified deterministic simulations.

Table 13.7 Summary of the worst-case deterministic analysis based on the scenario presented in the stochastic analysis section.

Variable	Threshold	Deterministic Analysis Criteria			
		Largest swept area of floating oil >10 g/m²	Largest volume of oil ashore and longest length of shoreline with accumulation >100 g/m²	Largest area of entrained hydrocarbon exposure >100 ppb	Largest area of dissolved hydrocarbon exposure >50 ppb
Run Number		62	29	68	94
Total area of floating Oil exposure (km²)	1 g/m²	620	203	10	11
	10 g/m²	**277**	25	3	2
	50 g/m²	4	1	0	1
Total length of shoreline accumulation (km)	10 g/m²	5	41	5	-
	100 g/m²	-	**5**	-	-
	1,000 g/m²	-	-	-	-
Minimum time before accumulation on any shoreline (hours)	10 g/m²	314	145	178	-
	100 g/m²	-	154	-	-
	1,000 g/m²	-	-	-	-
Peak volume of oil ashore (m³)		1	**25 (Total volume 21 m³)^**	1	-
Total area of entrained hydrocarbon exposure (km²)	10 ppb	7,536	7,563	9,268	3,387
	100 ppb	1,192	2,062	**2,112**	778
	1,000 ppb	-	81	**200**	132
Total area of dissolved hydrocarbon exposure (km²)	10 ppb	-	210	526	351
	50 ppb	-	-	29	**31**
	400 ppb	-	-	-	-
Start Date		16th February 2010 7am	13th September 2010 6am	9th October 2018 2pm	5th October 2015 10am

^Total volume of oil stranded on shorelines over the entire simulation, not accounting for natural removal processes such as evaporation and decay.

13.2.1 Deterministic Case: Largest swept area of floating oil above 10 g/m^2

The deterministic trajectory that resulted in the largest swept area of floating oil above 10 g/m^2 was identified as run number 62, which started on the 16th of February 2010.

Figure 13.12 illustrates the floating oil exposure and shoreline accumulation over the 30-day simulation.

Figure 13.13 displays the time series of the area of sea surface exposure above the low (1 g/m^2), moderate (10 g/m^2) and high (50 g/m^2) thresholds over the 30-day simulation.

Figure 13.14 presents the fates and weathering graph for the corresponding single spill trajectory and Table 13.8 summarises the mass balance peaks and at the end of the simulation.

Table 13.8 Summary of the mass balance for the trajectory with the largest swept area of floating oil above 10 g/m^2.

Exposure Metrics	Peak Volume	Day of occurrence	Volume at day 30
Surface (m^3)	655	0.5	2
Entrained (m^3)	645	2.1	200
Dissolved (m^3)	1	4.5	0
Evaporation (m^3)	596	30.0	596
Decay (m^3)	374	30.0	374
Ashore (m^3)	2	18.9	1

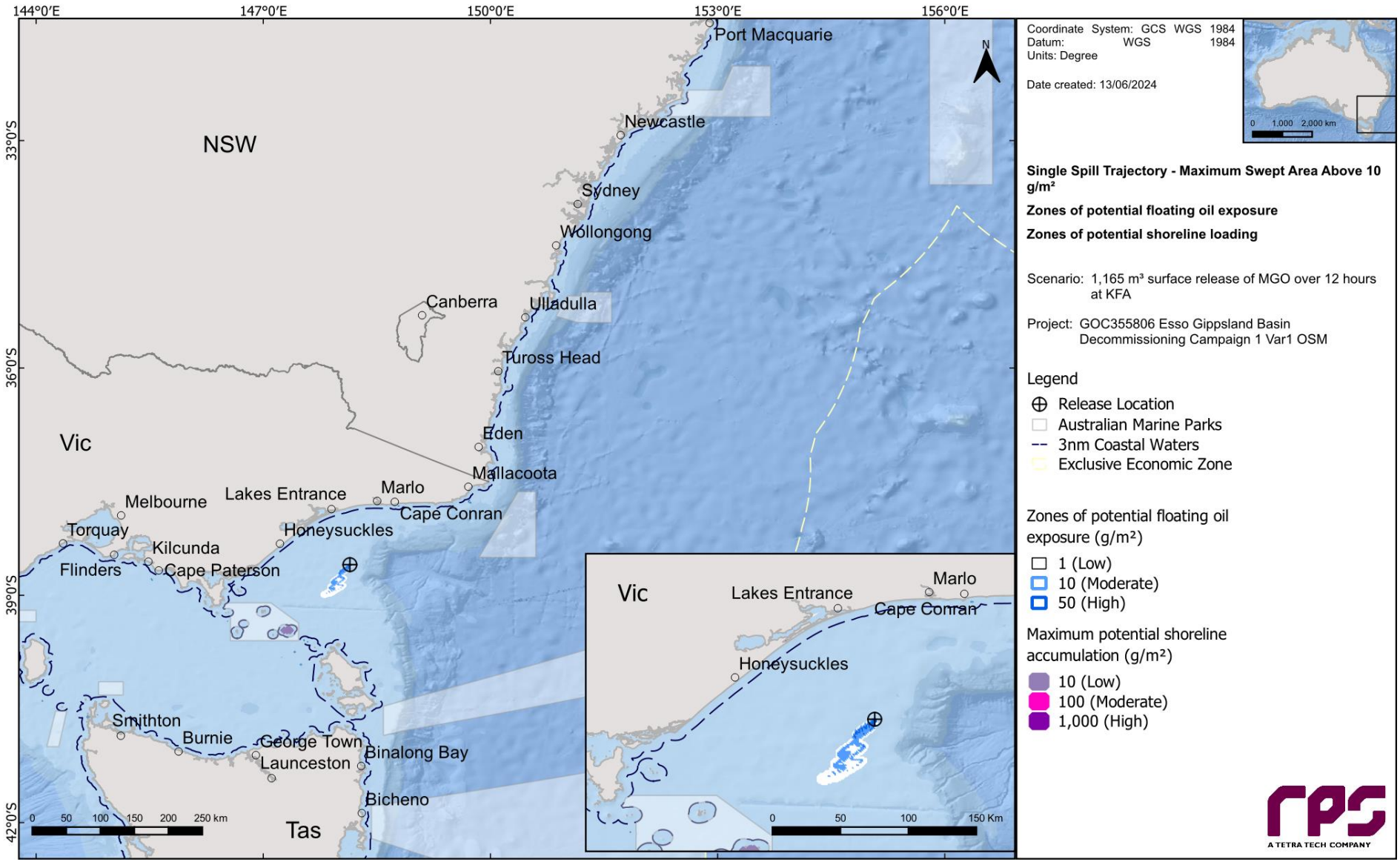

Figure 13.12 Zones of potential floating oil exposure and shoreline accumulation, for the trajectory with the largest swept area of floating oil above 10 g/m².

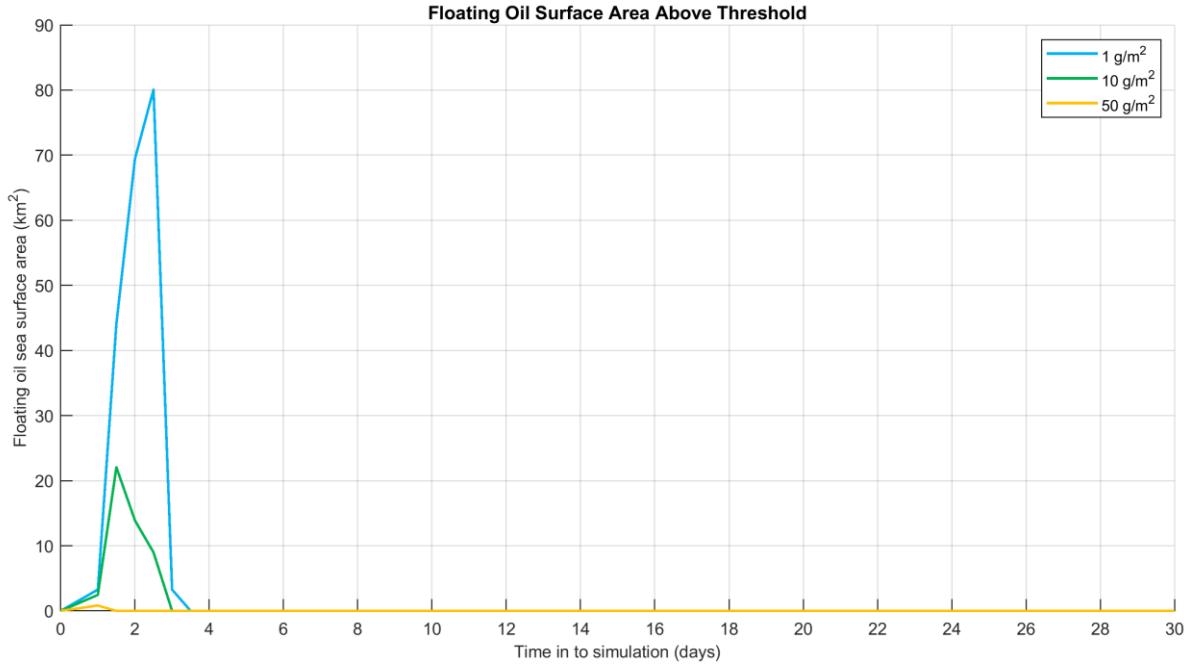

Figure 13.13 Time series of floating oil exposure above each threshold for the trajectory with the largest swept area of floating oil above 10 g/m^2.

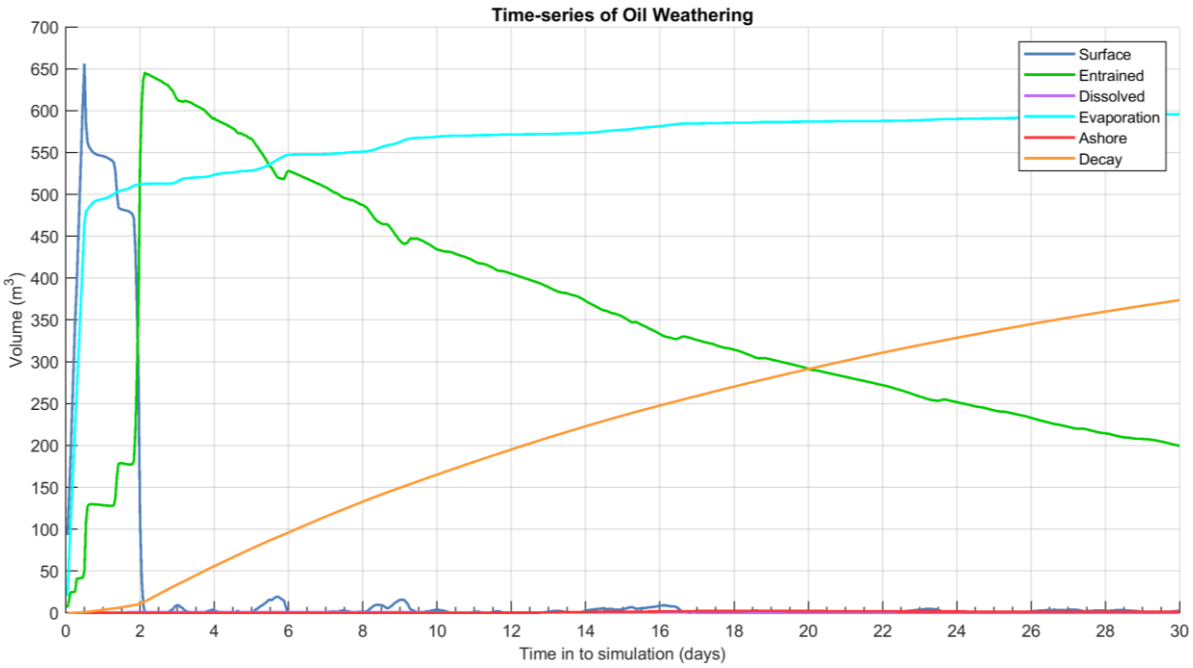

Figure 13.14 Predicted weathering and fates graph for the trajectory with the largest swept area of floating oil above 10 g/m^2.

13.2.2 Deterministic Case: Largest volume of oil ashore and longest length of shoreline contacted by oil above 100 g/m^2.

The deterministic trajectory that resulted in the largest volume of oil ashore also resulted in the longest length of shoreline contacted by oil above 100 g/m^2. This simulation was identified as run number 29, which started on the 13th of September 2010.

Figure 13.15 illustrates the floating oil exposure and shoreline accumulation over the 30-day simulation.

Figure 13.16 and Figure 13.17 display the time series of the volume of shoreline oil and the length of shoreline oil accumulation above the low (1 g/m^2), moderate (10 g/m^2) and high (50 g/m^2) thresholds over the 30-day simulation, respectively.

Figure 13.18 presents the fates and weathering graph for the corresponding single spill trajectory and Table 13.9 summarises the mass balance peaks and at the end of the simulation.

Table 13.9 Summary of the mass balance for the trajectory with the largest volume of oil ashore and the longest length of shoreline contacted by oil above 100 g/m^2.

Exposure Metrics	Peak Volume	Day of occurrence	Volume at day 30
Surface (m^3)	186	0.5	1
Entrained (m^3)	730	1.5	190
Dissolved (m^3)	7	0.8	0
Evaporation (m^3)	509	30.0	509
Decay (m^3)	454	30.0	454
Ashore (m^3)	28	20.9	25

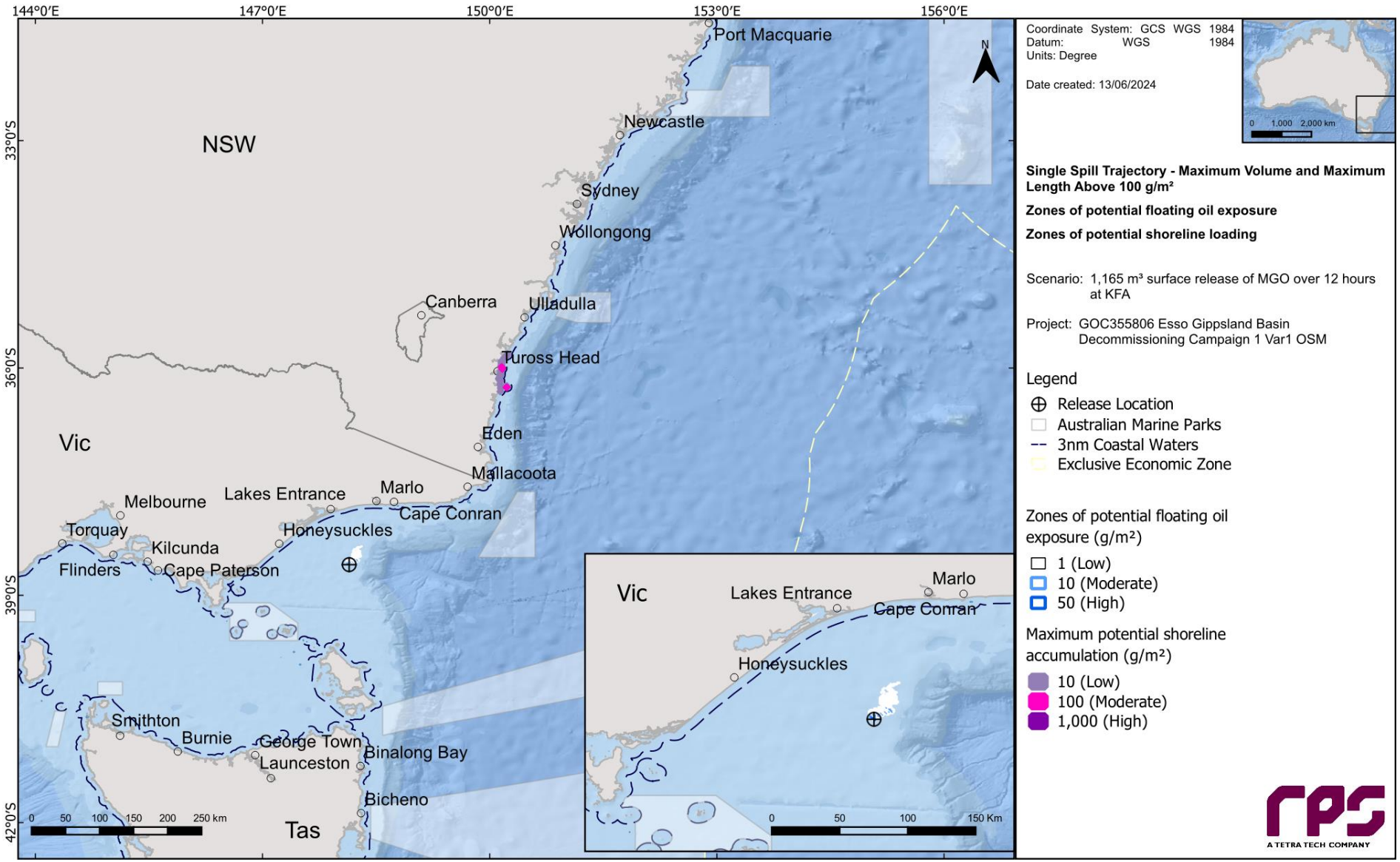

Figure 13.15 Zones of potential floating oil exposure and shoreline accumulation, for the trajectory with the largest volume of oil ashore and the longest length of shoreline contacted by oil above 100 g/m².

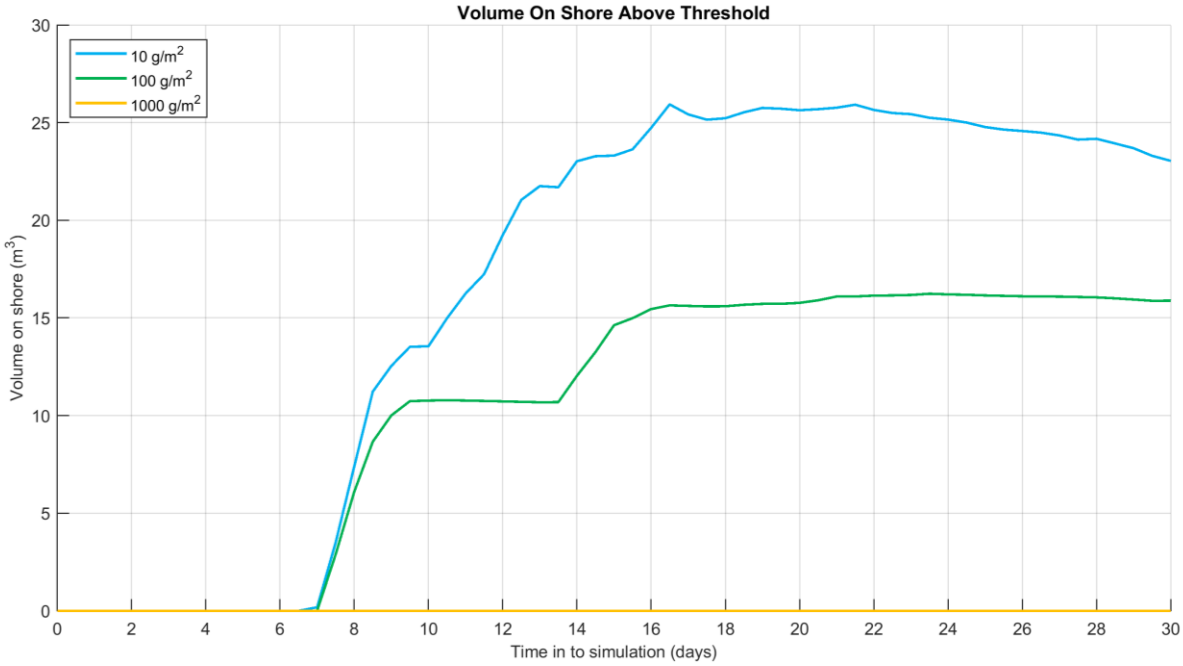

Figure 13.16 Time series of the volume of oil ashore above each threshold for the trajectory with the largest volume of oil ashore and the longest length of shoreline contacted by oil above 100 g/m².

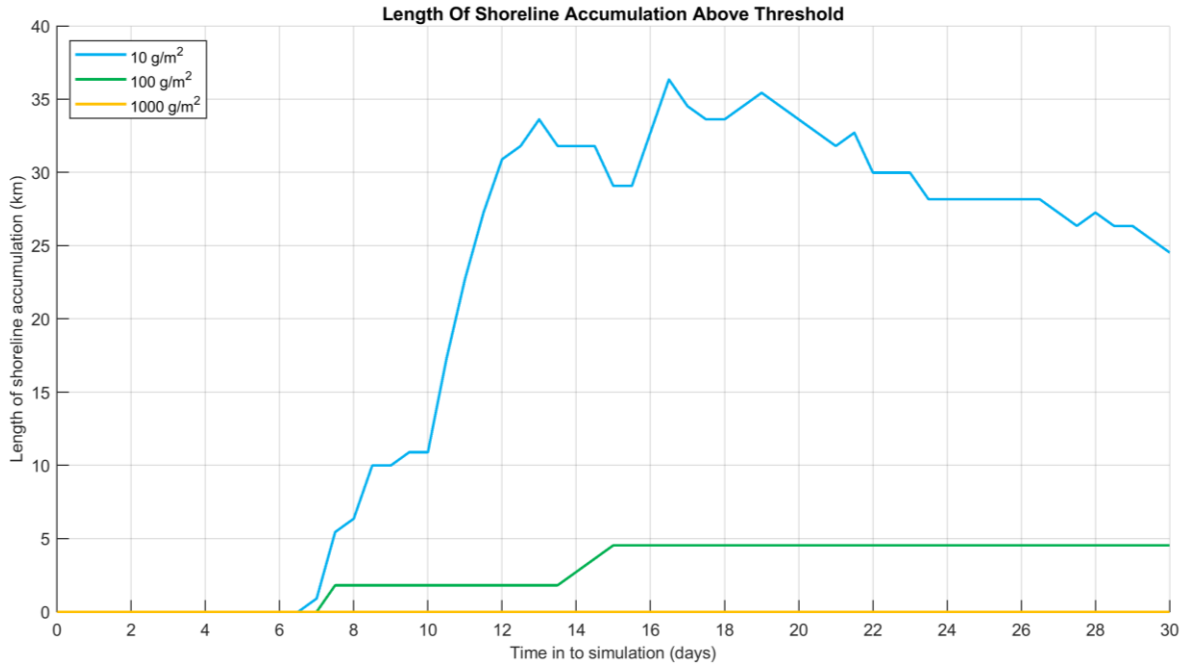

Figure 13.17 Time series of the length of shoreline accumulation above each threshold for the trajectory with the largest volume of oil ashore and the longest length of shoreline contacted by oil above 100 g/m².

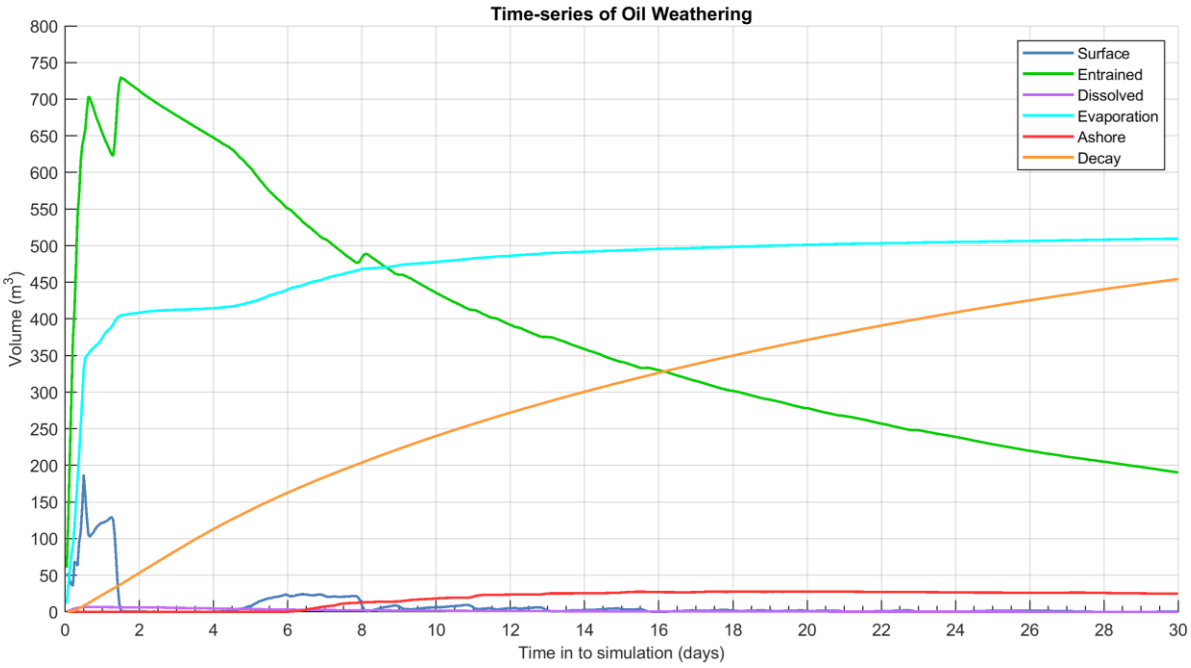

Figure 13.18 Predicted weathering and fates graph for the trajectory with the largest volume of oil ashore and the longest length of shoreline contacted by oil above 100 g/m^2.

13.2.3 Deterministic Case: Largest area of entrained hydrocarbon exposure above 100 ppb

The deterministic trajectory that resulted in the largest area of entrained hydrocarbon exposure above 100 ppb was identified as run number 68, which started on the 9th of October 2018.

Figure 13.19 illustrates the zones of potential entrained hydrocarbon exposure over the 30-day simulation.

Figure 13.20 displays the time series of the area of entrained hydrocarbon exposure at the low (10 ppb) and high (100 ppb) thresholds over the 30-day simulation.

Figure 13.21 presents the fates and weathering graph for the corresponding single spill trajectory and Table 13.10 summarises the mass balance peaks and at the end of the simulation.

Table 13.10 Summary of the mass balance for the trajectory with the largest area of entrained hydrocarbon exposure above 100 ppb.

Exposure Metrics	Peak Volume	Day of occurrence	Volume at day 30
Surface (m^3)	64	0.5	1
Entrained (m^3)	949	0.6	214
Dissolved (m^3)	12	0.9	0
Evaporation (m^3)	399	30.0	399
Decay (m^3)	566	30.0	566
Ashore (m^3)	2	9.8	1

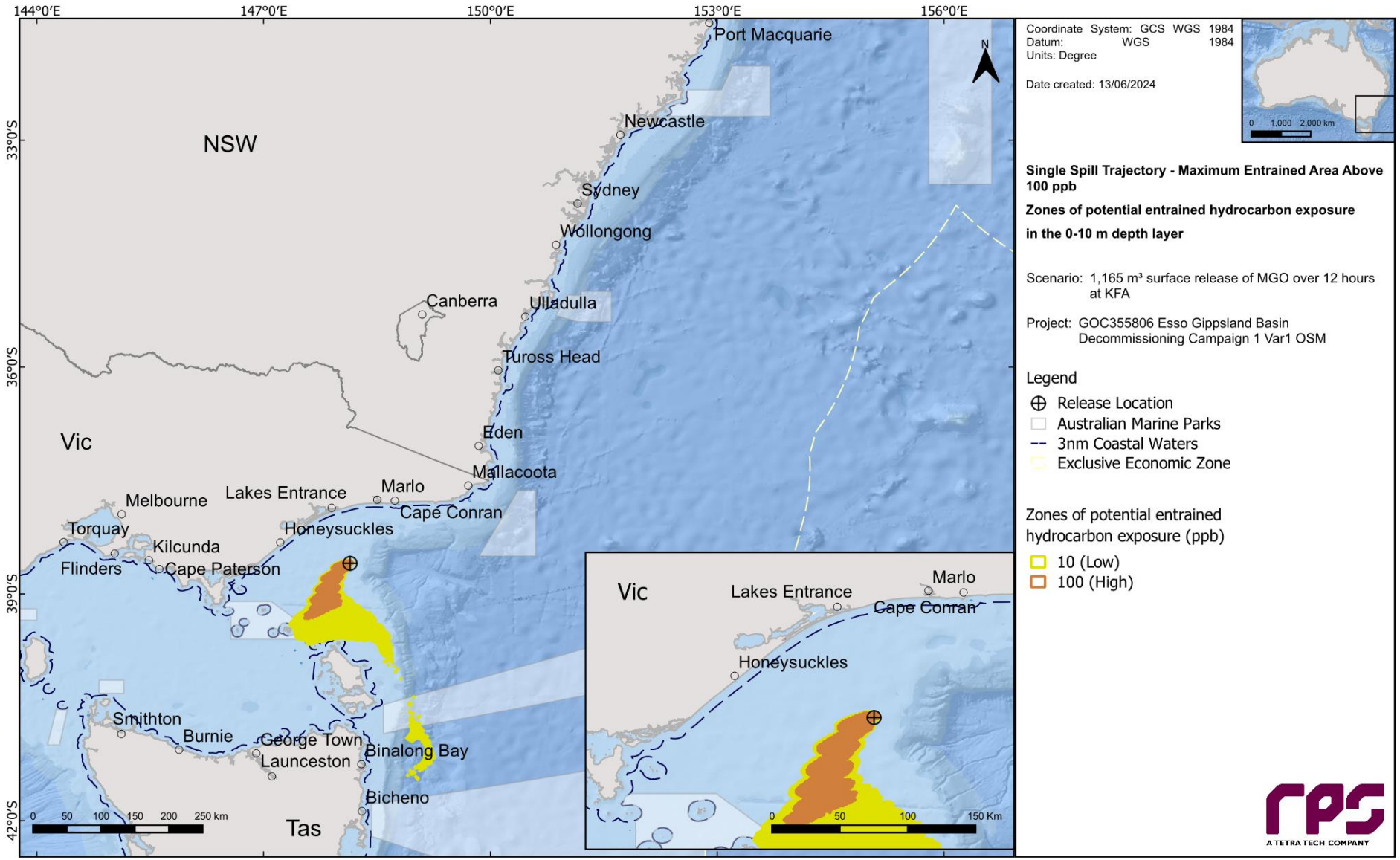

Figure 13.19 Zones of potential entrained hydrocarbon exposure, for the trajectory with the largest area of entrained hydrocarbon exposure above 100 ppb.

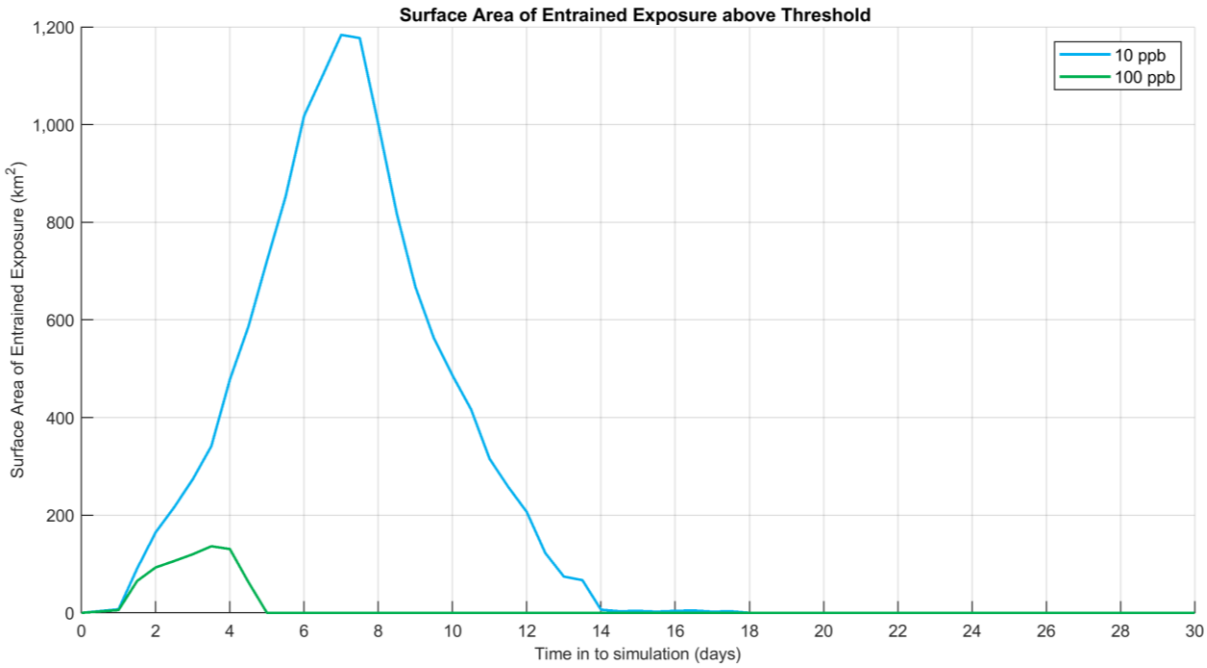

Figure 13.20 Time series of the entrained hydrocarbon exposure area above each threshold for the trajectory with the largest area of entrained hydrocarbon exposure above 100 ppb.

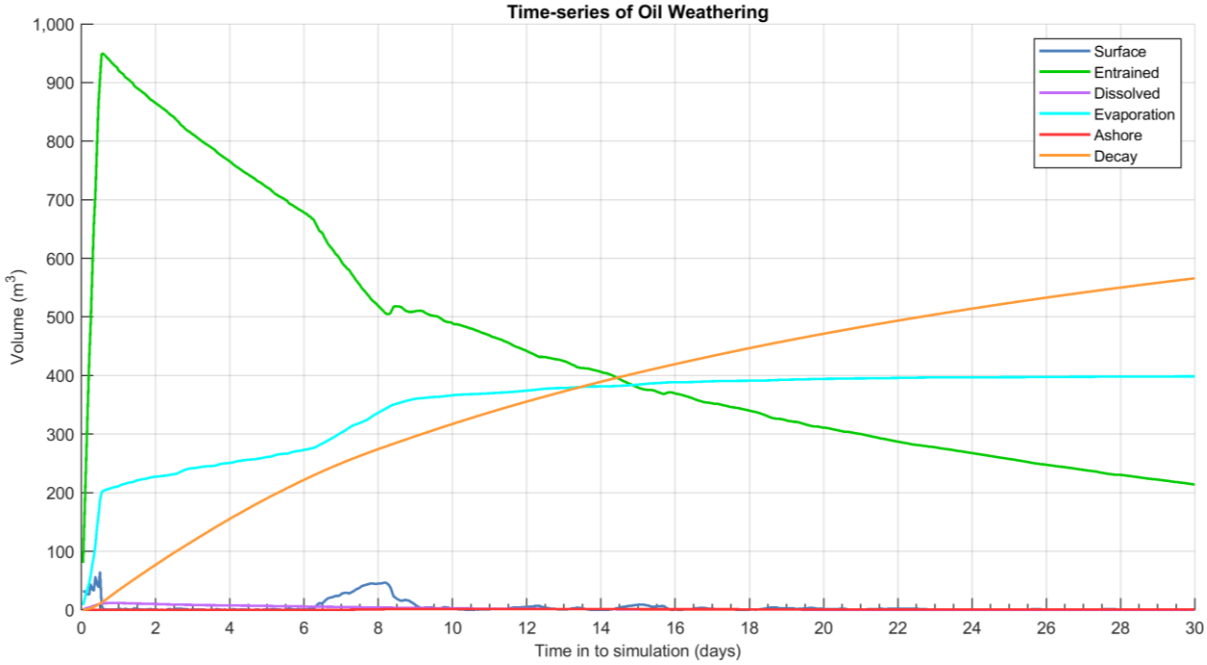

Figure 13.21 Predicted weathering and fates graph for the trajectory with the largest area of entrained hydrocarbon exposure above 100 ppb.

13.2.4 Deterministic Case: Largest area of dissolved hydrocarbon exposure above 50 ppb

The deterministic trajectory that resulted in the largest area of dissolved hydrocarbon exposure above 50 ppb was identified as run number 94, which started on the 5th of October 2015.

Figure 13.22 illustrates the zones of potential dissolved hydrocarbon exposure over the 30-day simulation.

Figure 13.23 displays the time series of the area of dissolved hydrocarbon exposure at the low (10 ppb), moderate (50 ppb) and high (400 ppb) thresholds over the 30-day simulation.

Figure 13.24 presents the fates and weathering graph for the corresponding single spill trajectory and Table 13.11 summarises the mass balance peaks and at the end of the simulation.

Table 13.11 Summary of the mass balance for the trajectory with the largest area of dissolved hydrocarbon exposure above 50 ppb.

Exposure Metrics	Peak Volume	Day of occurrence	Volume at day 30
Surface (m^3)	85	0.1	0
Entrained (m^3)	892	0.5	211
Dissolved (m^3)	10	0.9	0
Evaporation (m^3)	481	30.0	481
Decay (m^3)	488	30.0	488
Ashore (m^3)	0	0.0	0

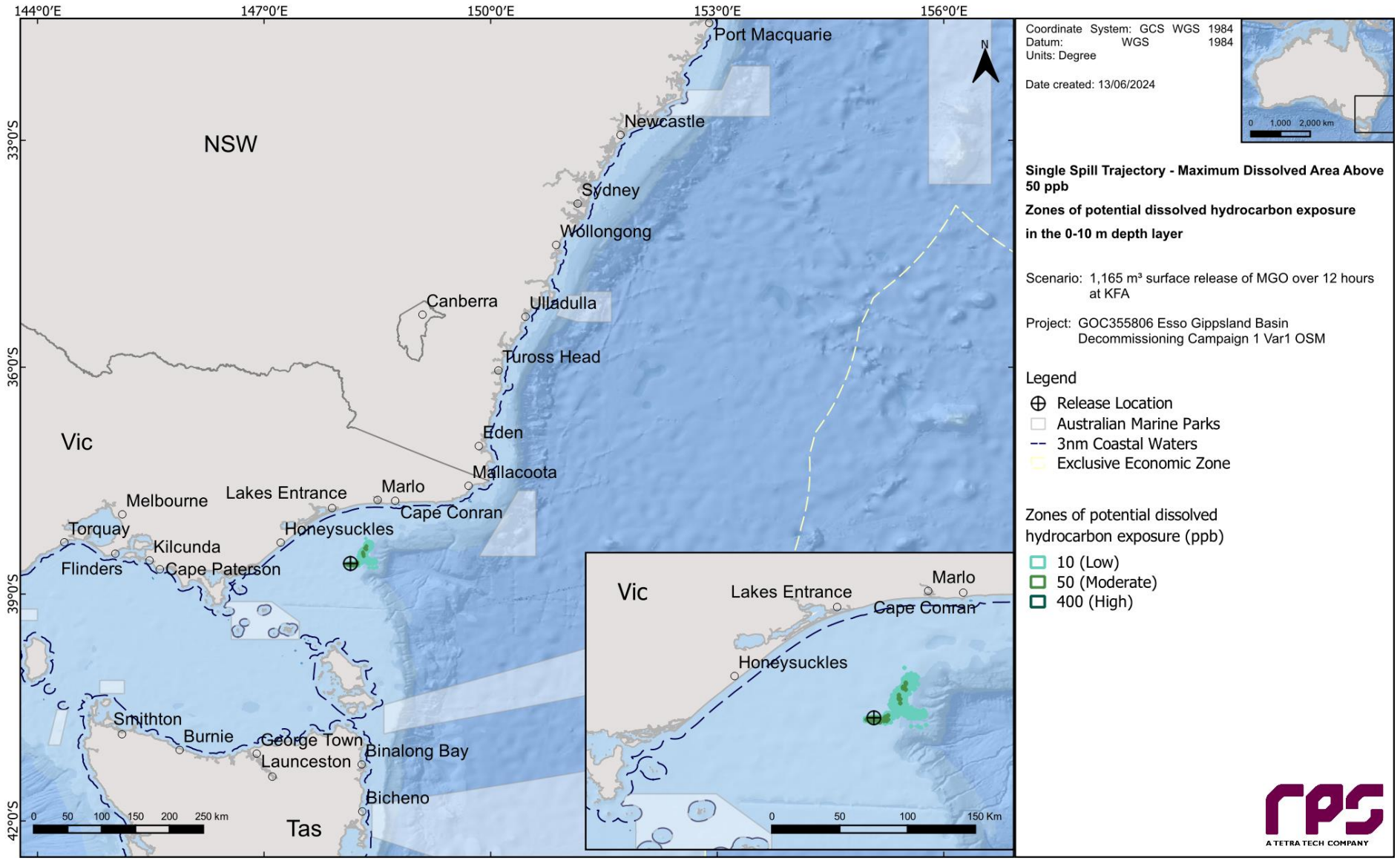

Figure 13.22 Zones of potential dissolved hydrocarbon exposure, for the trajectory with the largest area of dissolved hydrocarbon exposure above 50 ppb.

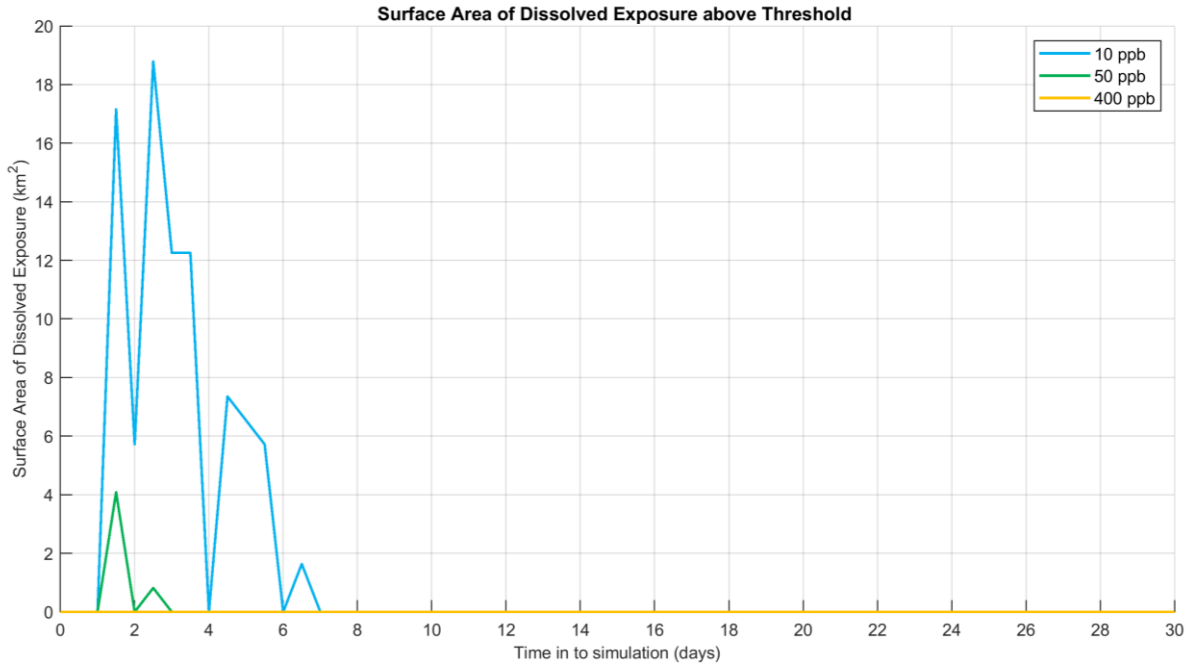

Figure 13.23 Time series of the dissolved hydrocarbon exposure area above each threshold for the trajectory with the largest area of dissolved hydrocarbon exposure above 50 ppb.

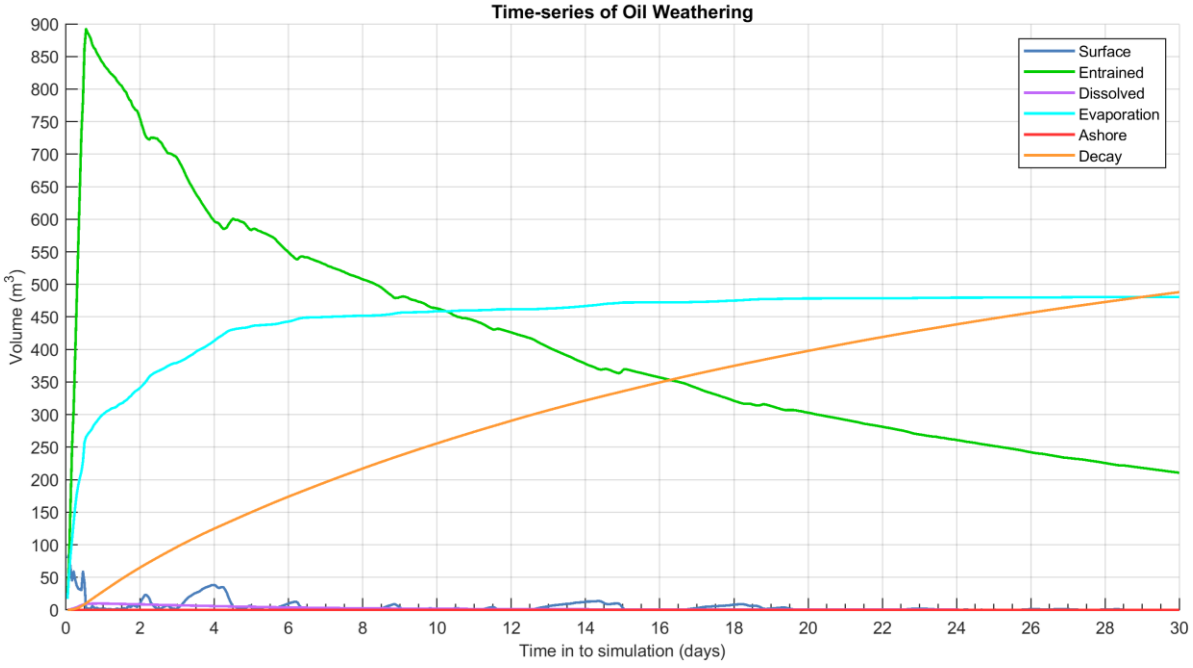

Figure 13.24 Predicted weathering and fates graph for the trajectory with the largest area of dissolved hydrocarbon exposure above 50 ppb.

14 RESULTS – SCENARIO 5 – A 1,165 M^3 SURFACE RELEASE OF MGO AT FLOUNDER

This scenario examined a 1,165 m^3 surface release of MGO over 12 hours at Flounder. A total of 100 spill simulations were run and each simulation was tracked for 30 days. The results are presented on an annual basis.

Sections 14.1 and 14.2 present the annual stochastic analysis and deterministic analysis results, respectively.

14.1 Stochastic Analysis

14.1.1 Floating Oil Exposure

Table 14.1 summarises the maximum distance travelled by floating oil on the sea surface at each threshold. The maximum distances and corresponding directions from the release location to the low (1–10 g/m^2), moderate (10–50 g/m^2) and high (>50 g/m^2) exposure zones were 179.5 km (east-northeast), 39.2 km (south-southwest) and 18.5 km (south-southwest), respectively.

Table 14.2 summarises the potential floating oil exposure, minimum time and maximum residence time of floating oil exposure to individual receptors.

With the exception of the receptors the release location is within (see

Table 9.2), Antipodean Albatross – Foraging (BIA) recorded the highest probability of exposure at 18% to concentrations exceeding 1 g/m^2. Floating oil at the 1 g/m^2 threshold was predicted to reach the same receptor (Antipodean Albatross – Foraging (BIA)) the quickest at 0.38 days (9.12 hours) following the spill commencement.

Figure 14.1 presents the zones of potential floating oil exposure for all thresholds, while Figure 14.2 to Figure 14.4 present the maximum residence time of floating oil exposure for all thresholds assessed under annual conditions.

Table 14.1 Maximum distance and direction from the release location to the edge of floating oil exposure. Results are based on a 1,165 m³ surface release of MGO over 12 hours at Flounder. The results reflect annual conditions.

Distance and direction travelled	Zones of potential floating oil exposure		
	Annual		
	Low	Moderate	High
Maximum distance (km) from release location	179.5	39.2	18.5
Maximum distance (km) from release location (99th percentile)	69.8	36.3	17.2
Direction	ENE	SSW	SSW

Table 14.2 Summary of the potential floating oil exposure to individual receptors. Results are based on a 1,165 m³ surface release of MGO over 12 hours at Flounder. The results reflect annual conditions.

	Receptor	Annual								
		Probability of floating oil exposure (%)			Minimum time before floating oil exposure (days)			Maximum residence time of floating oil exposure (days)		
		Low	Moderate	High	Low	Moderate	High	Low	Moderate	High
BIA	Antipodean Albatross - Foraging	18	3	1	0.38	1.21	1.63	0.67	0.29	0.04
	Black-browed Albatross – Foraging*	100	100	67	0.04	0.04	0.04	1.13	0.92	0.71
	Bullers Albatross – Foraging*	100	100	67	0.04	0.04	0.04	1.13	0.92	0.71
	Campbell Albatross – Foraging*	100	100	67	0.04	0.04	0.04	1.13	0.92	0.71
	Common Diving-petrel – Foraging*	100	100	67	0.04	0.04	0.04	1.13	0.92	0.71
	Humpback Whale - Foraging	1	-	-	3.04	-	-	< 0.04	-	-
	Indian Yellow-nosed Albatross – Foraging*	100	100	67	0.04	0.04	0.04	1.13	0.92	0.71
	Pygmy Blue Whale – Distribution*	100	100	67	0.04	0.04	0.04	1.13	0.92	0.71
	Pygmy Blue Whale – Foraging*	100	100	67	0.04	0.04	0.04	1.13	0.92	0.71
	Short-tailed Shearwater - Foraging	6	1	-	1.38	1.42	-	0.71	0.13	-
	Shy Albatross – Foraging*	100	100	67	0.04	0.04	0.04	1.13	0.92	0.71
	Southern Right Whale - Known Core Range*	100	100	67	0.04	0.04	0.04	1.13	0.92	0.71
	Wandering Albatross – Foraging*	100	100	67	0.04	0.04	0.04	1.13	0.92	0.71
	Wedge-tailed Shearwater - Foraging	1	-	-	3.04	-	-	< 0.04	-	-
	White Shark – Distribution*	100	100	67	0.04	0.04	0.04	1.13	0.92	0.71
	White Shark - Foraging	2	-	-	4.08	-	-	0.08	-	-
	White-faced Storm-petrel - Foraging	7	-	-	1.29	-	-	0.33	-	-
IMCRA	Twofold Shelf*	100	100	67	0.04	0.04	0.04	1.13	0.92	0.71
KEF	Upwelling East of Eden*	100	100	67	0.04	0.04	0.04	1.13	0.92	0.71

*The release location resides within the receptor boundaries.

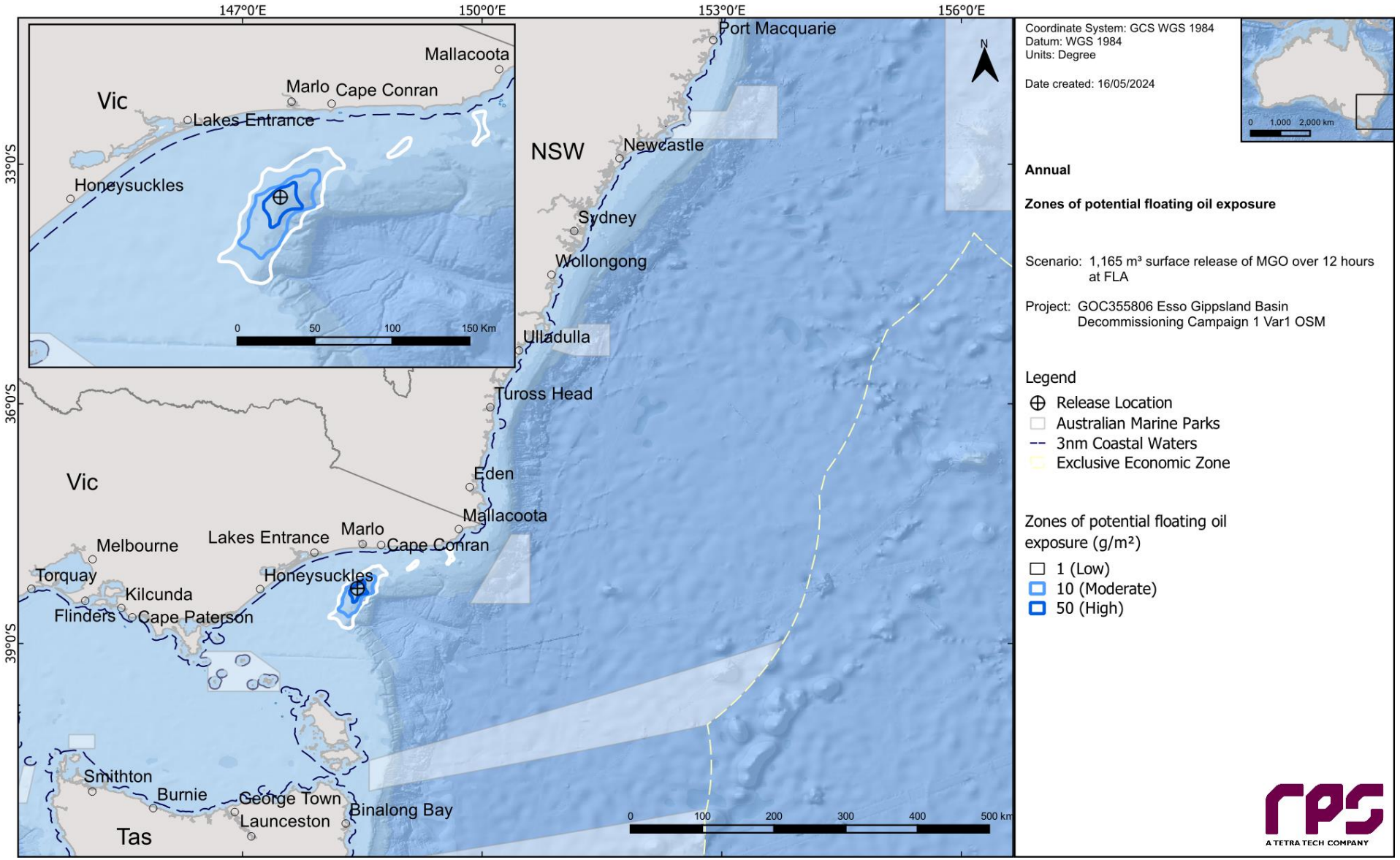

Figure 14.1 Zones of potential floating oil exposure in the event of a 1,165 m³ surface release of MGO over 12 hours at Flounder. The results reflect annual conditions.

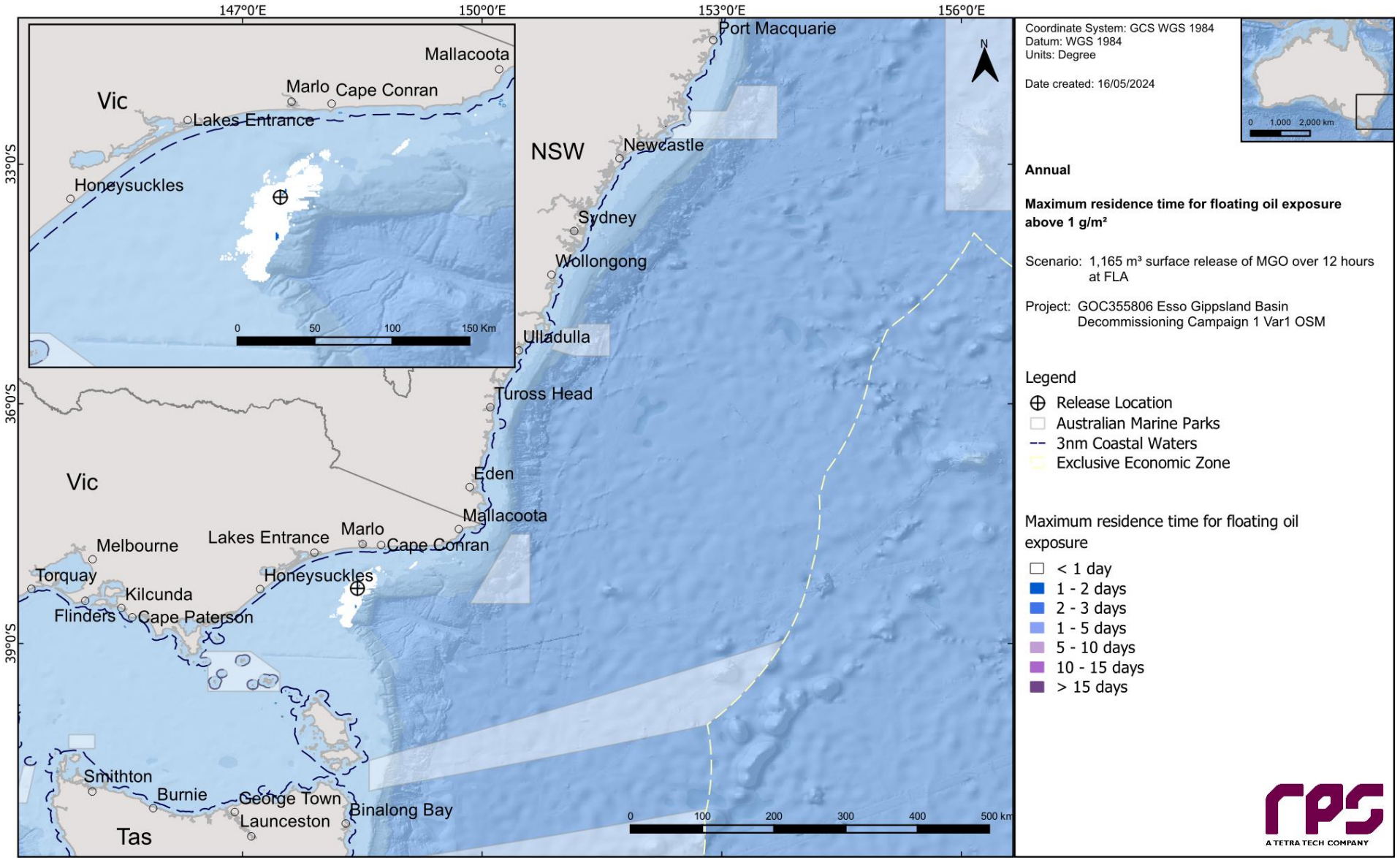

Figure 14.2 Maximum residence time of floating oil exposure above 1 g/m^2, in the event of a 1,165 m^3 surface release of MGO over 12 hours at Flounder. The results reflect annual conditions.

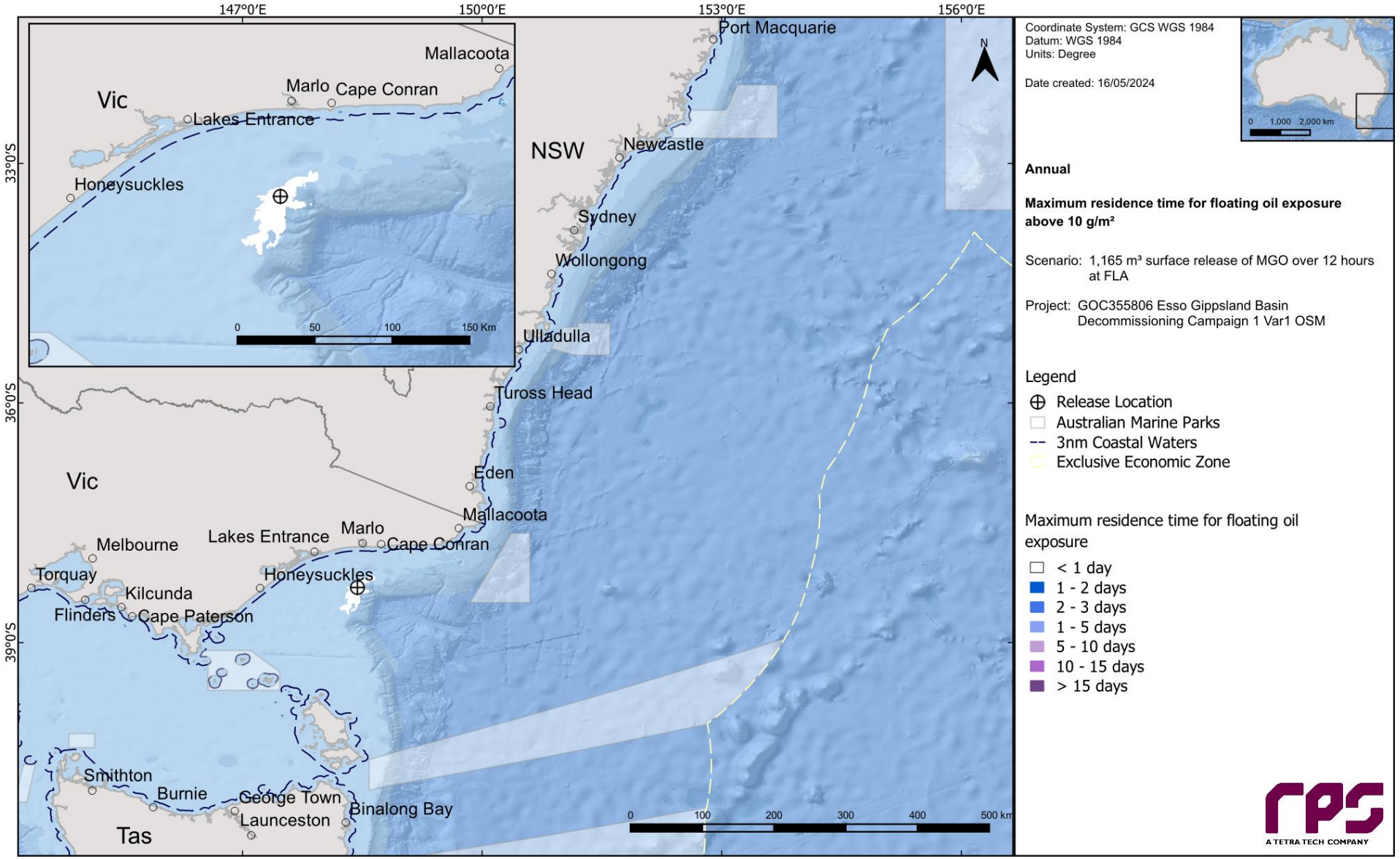

Figure 14.3 Maximum residence time of floating oil exposure above 10 g/m^2, in the event of a 1,165 m^3 surface release of MGO over 12 hours at Flounder. The results reflect annual conditions.

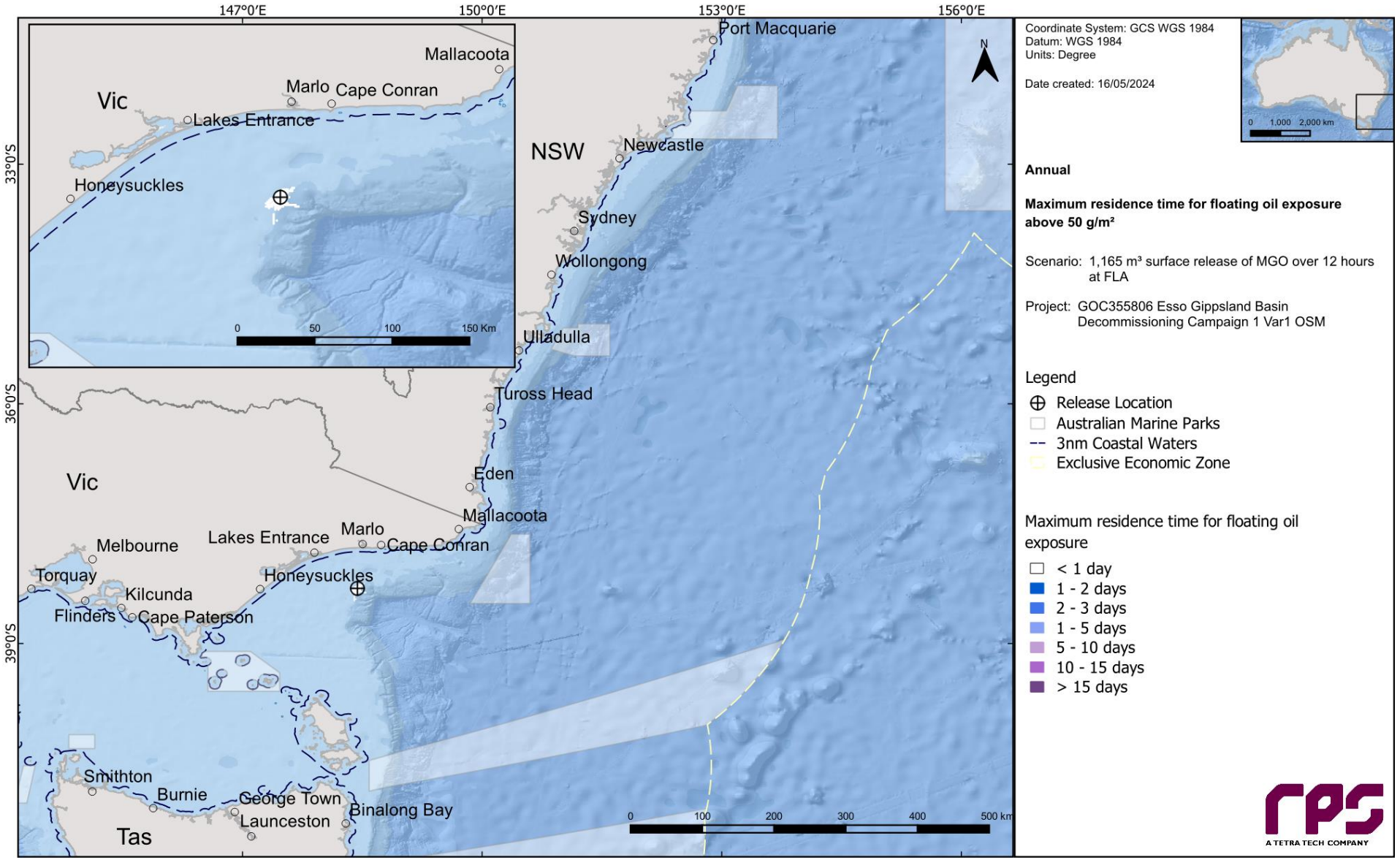

Figure 14.4 Maximum residence time of floating oil exposure above 50 g/m^2, in the event of a 1,165 m^3 surface release of MGO over 12 hours at Flounder. The results reflect annual conditions.

14.1.2 Shoreline Accumulation

Table 14.3 presents a summary of the potential shoreline accumulation. The probability of accumulation to any shoreline at, or above, the low (10 g/m^2) threshold was 17% throughout the year. The minimum time before oil accumulation at, or above, the low threshold was 5.08 days. The maximum total volume ashore for a single spill trajectory was 25.9 m^3, and the maximum length of shoreline with accumulation above the low and moderate thresholds were 41 km and 9 km, respectively. No shoreline contact was predicted at the high threshold.

Table 14.4 summarises the shoreline accumulation statistics for individual receptors.

The highest probability of shoreline oil accumulation at the 10 g/m^2 threshold was forecast for Bega Valley shoreline (LGA and Sub-LGA) (8%). The maximum volume of oil ashore was 18.1 m^3 for the same receptors. Montague Island (LGA) was forecast to record the quickest time before oil accumulation at the 10 g/m^2 threshold at 5.08 days (121.92 hours).

The maximum potential shoreline loadings above each shoreline thresholds are presented in Figure 14.5.

Table 14.3 Summary of oil accumulation across all shorelines. Results are based on a 1,165 m^3 surface release of MGO over 12 hours at Flounder. The results reflect annual conditions.

Shoreline Statistics	Annual
Probability of accumulation on any shoreline (%)	17
Absolute minimum time for visible oil to shore (days)	5.08
Maximum total volume of hydrocarbons ashore (m^3) ^	25.9
Average total volume of hydrocarbons ashore (m^3) ^	2
Maximum length of the shoreline at **10 g/m^2** (km)	41
Average shoreline length (km) at **10 g/m^2** (km)	9.1
Maximum length of the shoreline at **100 g/m^2** (km)	9
Average shoreline length (km) at **100 g/m^2** (km)	4.3
Maximum length of the shoreline at **1,000 g/m^2** (km)	-
Average shoreline length (km) at **1,000 g/m^2** (km)	-

^Total volume of oil stranded on shorelines over the entire simulation, not accounting for natural removal processes such as evaporation and decay.

Table 14.4 Summary of oil accumulation on individual shoreline receptors. Results are based on a 1,165 m³ surface release of MGO over 12 hours at Flounder. The results reflect annual conditions.

Shoreline Receptor		Maximum probability of shoreline loading (%)			Minimum time before shoreline accumulation (days)			Load on shoreline (g/m²)		Volume on shoreline (m³)		Mean length of shoreline accumulation (km)			Maximum length of shoreline accumulation (km)		
		Low	Mod	High	Low	Mod	High	Mean	Peak	Mean	Peak	Low	Mod	High	Low	Mod	High
Shoreline (LGA)	Bega Valley	8	3	-	5.63	10.33	-	3	209	1.8	18.1	9.5	1.8	-	36.3	1.8	-
	Cape Barren Osland	1	-	-	23.38	-	-	1	12	0.3	0.7	0.9	-	-	0.9	-	-
	Craggy Island	2	-	-	10.33	-	-	5	25	0.2	0.7	2.3	-	-	2.7	-	-
	East Gippsland	7	1	-	7.92	11.33	-	3	117	0.6	5.3	2.2	2.7	-	5.5	2.7	-
	Eurobodalla	2	-	-	13.21	-	-	2	26	0.4	1.4	1.8	-	-	2.7	-	-
	Flinders Island	1	-	-	25.33	-	-	1	20	0.2	0.8	1.8	-	-	1.8	-	-
	Gabo Island	5	1	-	7.50	7.79	-	13	313	0.8	9.6	2.7	3.6	-	5.5	3.6	-
	Kent Island Group	2	-	-	9.75	-	-	2	14	0.4	1.4	1.8	-	-	2.7	-	-
	Montague Island	6	-	-	5.08	-	-	10	93	0.7	3.9	3	-	-	4.5	-	-
	Prime Seal Island	1	-	-	19.13	-	-	2	13	0.5	1	0.9	-	-	0.9	-	-
Shoreline (Sub-LGA)	Bega Valley	8	3	-	5.63	10.33	-	3	209	1.8	18.1	9.5	1.8	-	36.3	1.8	-
	Cape Howe / Mallacoota	5	1	-	7.92	11.33	-	3	117	0.4	5.2	2.5	2.7	-	5.5	2.7	-
	Croajingolong - West	2	-	-	19.13	-	-	2	10	0.3	0.8	0.9	-	-	0.9	-	-
	Eurobodalla	2	-	-	13.21	-	-	2	26	0.4	1.4	1.8	-	-	2.7	-	-
	Point Hicks	1	-	-	24.42	-	-	2	11	0.2	0.4	0.9	-	-	0.9	-	-

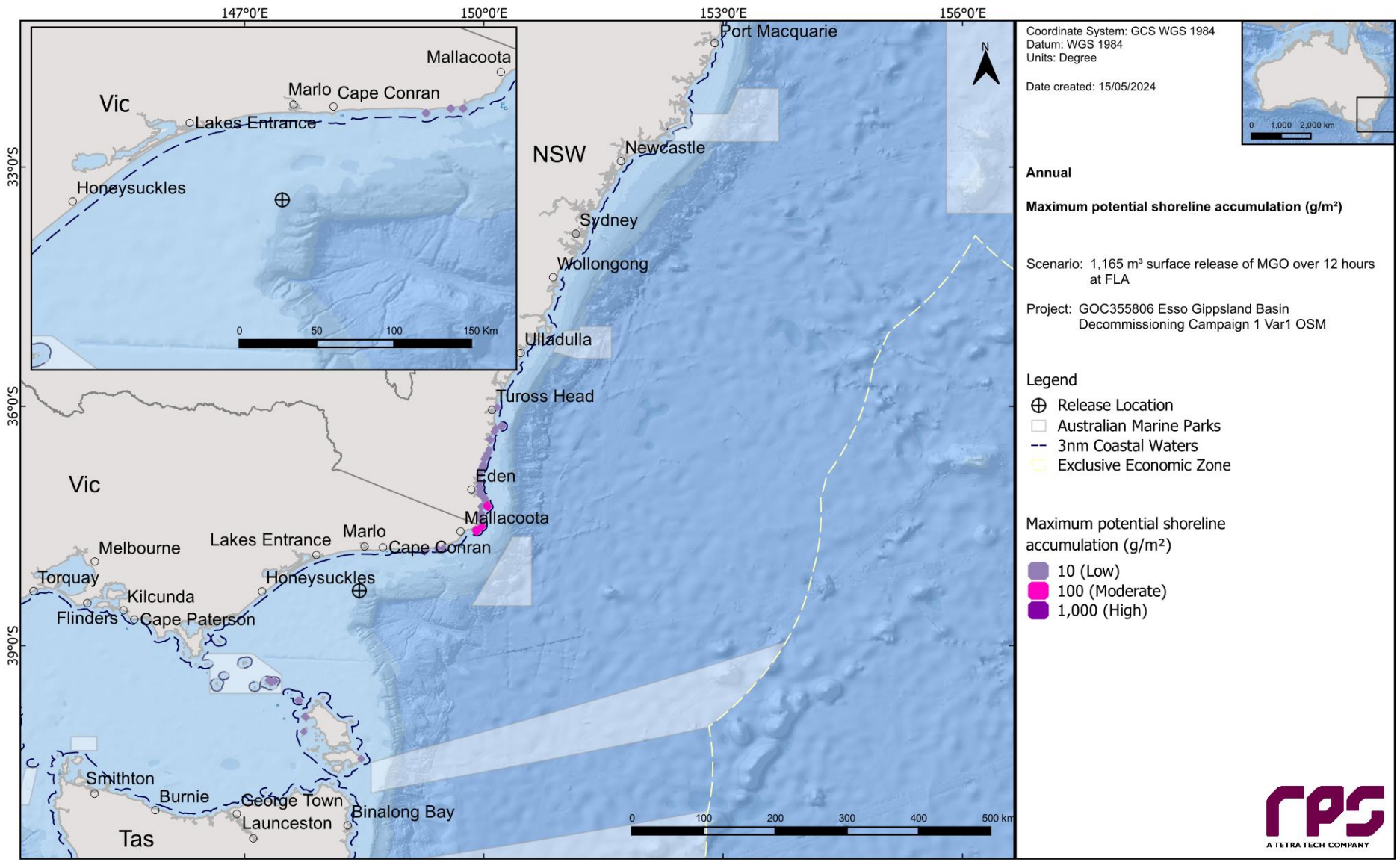

Figure 14.5 Maximum potential shoreline loading in the event of a 1,165 m³ surface release of MGO over 12 hours at Flounder. The results reflect annual conditions.

14.1.3 In-water exposure

14.1.3.1 Dissolved Hydrocarbons

Table 14.5 summarises the potential in-water exposure to individual receptors from dissolved hydrocarbons in the 0-10 m layer as well as the minimum time before exposure, for all thresholds assessed.

Excluding the receptors that the release location is within (see

Table 9.2), the probability of exposure at concentrations equal to, or greater than, 10 ppb is greatest at the Antipodean Albatross - Foraging (BIA) (13%). The maximum dissolved hydrocarbon concentration at any given receptor(s) was shown to be 197.3 ppb, including the receptors the release location lies within, followed by the Antipodean Albatross - Foraging (BIA) with a concentration of 129.8 ppb.

Figure 14.6 present the zones of potential dissolved hydrocarbon exposure for 0-10 m depth layer.

Figure 14.7 and Figure 14.8 presents the maximum residence time of dissolved hydrocarbon exposure for the low and moderate thresholds, respectively.

Table 14.5 Probability of dissolved hydrocarbons exposure to marine based receptors in the 0–10 m depth. Results are based on a 1,165 m³ surface release of MGO over 12 hours at Flounder. The results reflect annual conditions.

Receptor		Annual									
		Maximum dissolved hydrocarbon exposure (ppb)	Probability of dissolved hydrocarbon exposure (%)			Minimum time before dissolved hydrocarbon exposure (days)			Maximum residence time for dissolved hydrocarbon exposure (days)		
			Low	Moderate	High	Low	Moderate	High	Low	Moderate	High
AMP	East Gippsland	24.4	1	-	-	5.75	-	-	0.08	-	-
	Antipodean Albatross - Foraging	129.8	13	2	-	0.25	0.46	-	0.42	0.17	-
	Black-browed Albatross – Foraging*	197.3	68	24	-	0.04	0.04	-	1.33	0.46	-
	Bullers Albatross – Foraging*	197.3	68	24	-	0.04	0.04	-	1.33	0.46	-
	Campbell Albatross – Foraging*	197.3	68	24	-	0.04	0.04	-	1.33	0.46	-
	Common Diving-petrel – Foraging*	197.3	68	24	-	0.04	0.04	-	1.33	0.46	-
	Grey Nurse Shark - Foraging	30.1	1	-	-	4.08	-	-	0.13	-	-
	Humpback Whale - Foraging	54.2	2	1	-	2.38	4.25	-	0.13	-	-
	Indian Yellow-nosed Albatross – Foraging*	197.3	68	24	-	0.04	0.04	-	1.33	0.46	-
	Indo-Pacific/Spotted Bottlenose Dolphin – Breeding	24.3	1	-	-	4.00	-	-	0.08	-	-
	Little Penguin – Foraging	19.9	1	-	-	3.75	-	-	0.17	-	-
BIA	Pygmy Blue Whale – Distribution*	197.3	68	24	-	0.04	0.04	-	1.33	0.46	-
	Pygmy Blue Whale – Foraging*	197.3	68	24	-	0.04	0.04	-	1.33	0.46	-
	Short-tailed Shearwater - Foraging	71.6	6	1	-	1.21	2.13	-	0.29	0.04	-
	Shy Albatross – Foraging*	197.3	68	24	-	0.04	0.04	-	1.33	0.46	-
	Sooty Shearwater - Foraging	30.1	1	-	-	4.08	-	-	0.13	-	-
	Southern Right Whale - Known Core Range*	197.3	68	24	-	0.04	0.04	-	1.33	0.46	-
	Wandering Albatross – Foraging*	197.3	68	24	-	0.04	0.04	-	1.33	0.46	-
	Wedge-tailed Shearwater - Foraging	54.2	2	1	-	1.88	4.25	-	0.21	-	-
	White Shark – Distribution*	197.3	68	24	-	0.04	0.04	-	1.33	0.46	-
	White Shark - Foraging	44.5	5	-	-	1.00	3.96	-	0.29	0.04	-
	White-faced Storm-petrel - Foraging	101.8	7	1	-	0.46	0.83	-	0.42	0.17	-
IMCRA	Flinders	24.6	2	-	-	5.33	-	-	0.08	-	-

Receptor		Annual								
		Maximum dissolved hydrocarbon exposure (ppb)	Probability of dissolved hydrocarbon exposure (%)			Minimum time before dissolved hydrocarbon exposure (days)			Maximum residence time for dissolved hydrocarbon exposure (days)		
			Low	Moderate	High	Low	Moderate	High	Low	Moderate	High
	Twofold Shelf*	197.3	68	24	-	0.04	0.04	-	1.33	0.46	-
KEF	Upwelling East of Eden*	197.3	68	24	-	0.04	0.04	-	1.33	0.46	-
State Waters	New South Wales	24.3	1	-	-	4.08	-	-	0.08	-	-
	Victoria State Waters	20.5	1	-	-	3.50	-	-	0.08	-	-

*The release location resides within the receptor boundaries.

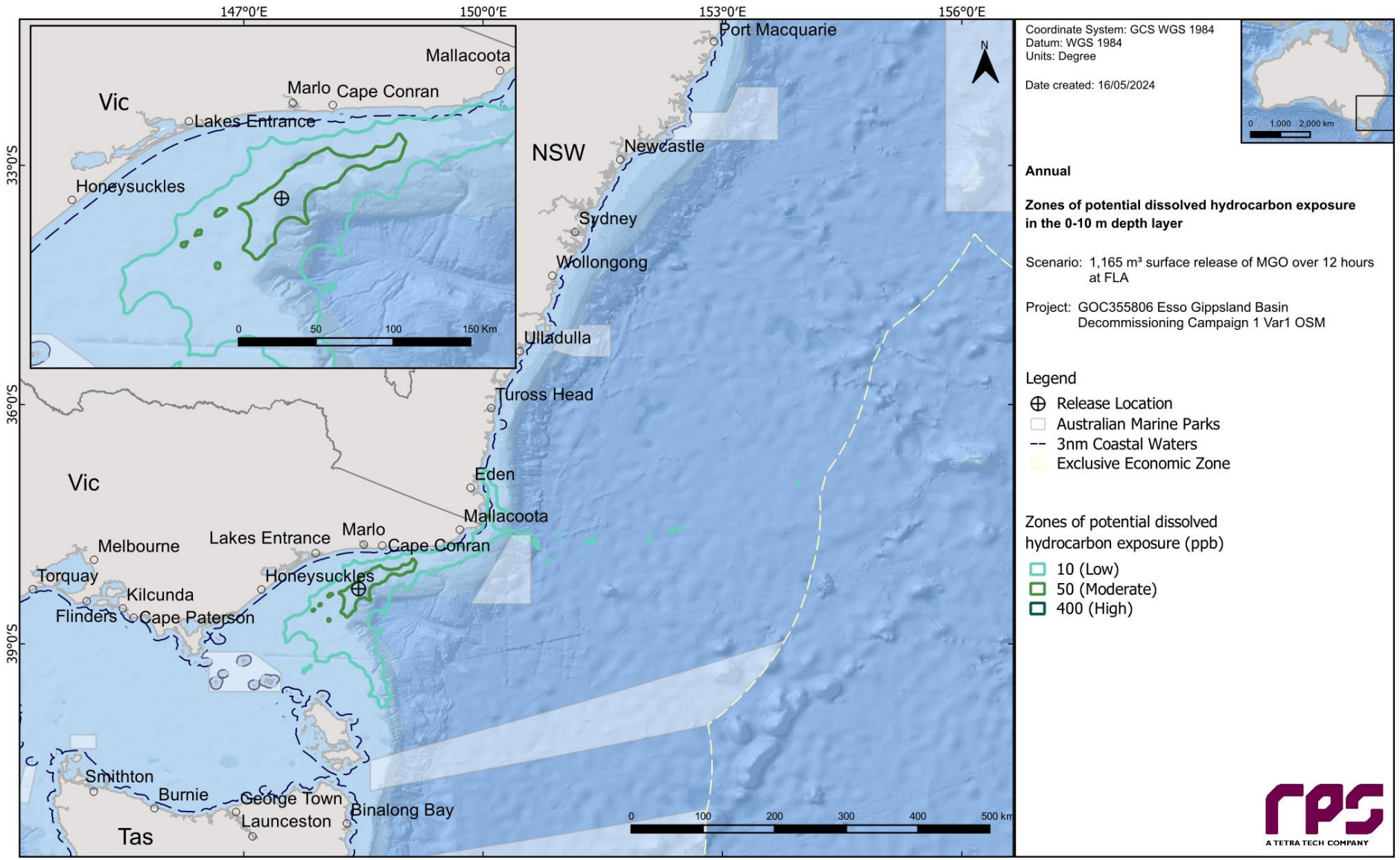

Figure 14.6 Zones of potential dissolved hydrocarbon exposure at 0-10 m below the sea in the event of a 1,165 m³ surface release of MGO over 12 hours at Flounder. The results reflect annual conditions.

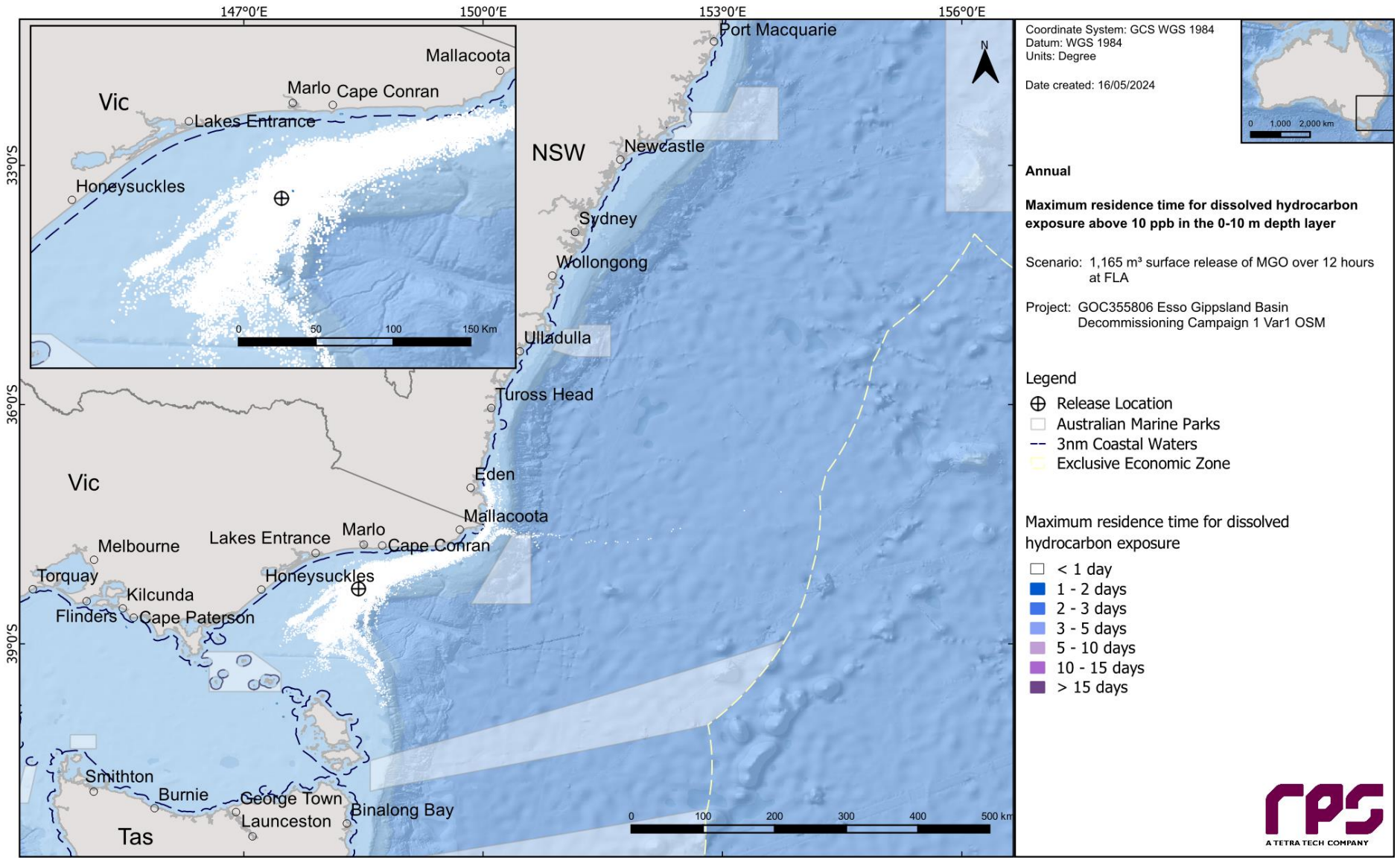

Figure 14.7 Maximum residence time for dissolved hydrocarbon exposure above 10 ppb, at 0-10 m below the sea surface in the event of 1,165 m³ surface release of MGO over 12 hours at Flounder. The results reflect annual conditions.

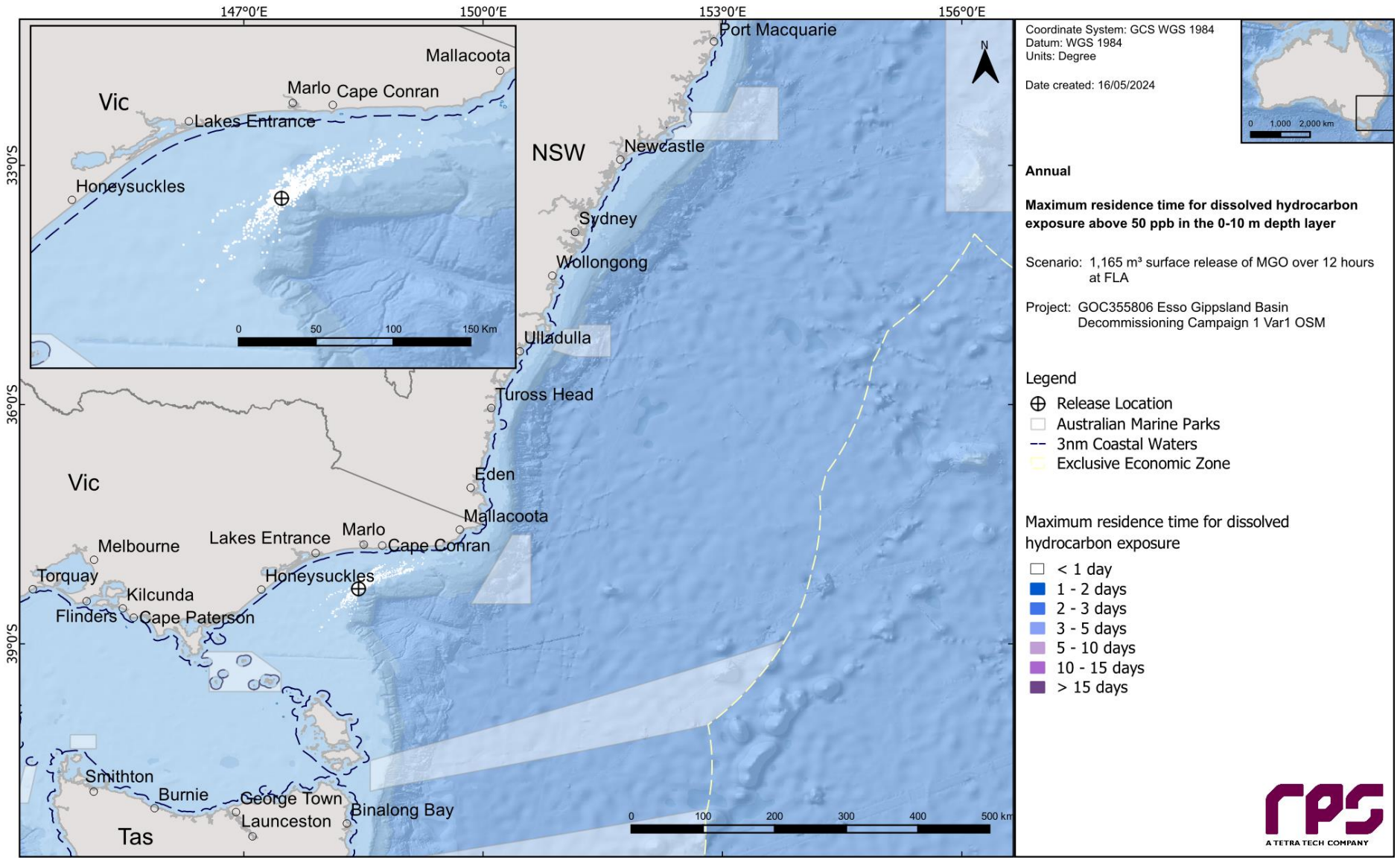

Figure 14.8 Maximum residence time for dissolved hydrocarbon exposure above 50 ppb, at 0-10 m below the sea surface in the event of 1,165 m³ surface release of MGO over 12 hours at Flounder. The results reflect annual conditions.

14.1.3.2 Entrained Hydrocarbons

Table 14.6 summarises the potential in-water exposure to individual receptors from entrained hydrocarbons in the 0-10 m depth layer, as well as the minimum time before exposure for all thresholds assessed.

Except for the receptors the release location is within (see

Table 9.2), the highest probability of low entrained hydrocarbon exposure was 59% recorded for the Antipodean Albatross – Foraging (BIA). The quickest time for exposure at the same threshold was 0.17 days (4.08 hours) for the Antipodean Albatross – Foraging (BIA). The highest entrained hydrocarbon concentration was predicted to be 18,716.1 ppb, including the receptors the release location lies within, followed by 2,987.4 ppb at Antipodean Albatross – Foraging (BIA).

Figure 14.9 presents the zones of potential entrained hydrocarbon exposure for the 0-10 m depth layer.

Figure 14.10 and Figure 14.11 present the maximum residence time of entrained hydrocarbon exposure for 10 ppb and 100 ppb.

Table 14.6 Probability of entrained hydrocarbons exposure to marine based receptors in the 0–10 m depth layer. Results are based on a 1,165 m³ surface release of MGO over 12 hours at Flounder. The results reflect annual conditions.

Receptor		Annual						
		Maximum entrained hydrocarbon exposure (ppb)	Probability of entrained hydrocarbon exposure (%)		Minimum time before entrained hydrocarbon exposure (days)		Maximum residence time for entrained hydrocarbon exposure (days)	
			Low	High	Low	High	Low	High
AMP	Beagle	94.6	6	-	5.21	-	1.88	-
	East Gippsland	100.9	5	1	4.54	6.54	1.42	0.04
	Flinders	47.9	8	-	7.00	-	2.88	-
	Freycinet	22.7	2	-	10.33	-	1.46	-
BIA	Antipodean Albatross - Foraging	2,987.4	59	39	0.17	0.17	11.63	3.33
	Black Petrel - Foraging	36.4	5	-	4.17	-	5.04	-
	Black-browed Albatross – Foraging*	18,716.1	96	91	0.04	0.04	13.29	3.71
	Bullers Albatross – Foraging*	18,716.1	96	91	0.04	0.04	13.29	3.71
	Campbell Albatross – Foraging*	18,716.1	96	91	0.04	0.04	13.29	3.71
	Common Diving-petrel – Foraging*	18,716.1	96	91	0.04	0.04	13.29	3.71
	Crested Tern – Breeding	34.2	5	-	5.71	-	5.42	-
	Crested Tern – Foraging	36.4	5	-	4.33	-	5.04	-
	Flesh-footed Shearwater - Foraging	36.4	5	-	4.17	-	5.04	-
	Great-winged Petrel – Foraging	27.6	4	-	7.96	-	1.33	-
	Grey Nurse Shark – Foraging	121.3	19	1	1.92	4.38	6.71	0.33
	Grey Nurse Shark – Migration	99.1	20	-	1.88	-	4.88	-
	Humpback Whale – Foraging	134.2	25	2	1.63	1.92	6.71	0.38
	Indian Yellow-nosed Albatross – Foraging*	18,716.1	96	91	0.04	0.04	13.29	3.71
	Indo-Pacific/Spotted Bottlenose Dolphin - Breeding	145.4	16	2	1.79	2.25	6.38	0.42
	Little Penguin – Breeding	36.4	5	-	4.83	-	5.42	-
	Little Penguin – Foraging	172	24	2	1.63	1.83	8.54	0.54
	Northern Giant Petrel – Foraging	27.6	4	-	7.96	-	1.33	-
	Pygmy Blue Whale – Distribution*	18,716.1	96	91	0.04	0.04	13.29	3.71
	Pygmy Blue Whale – Foraging*	18,716.1	96	91	0.04	0.04	13.29	3.71
	Short-tailed Shearwater - Foraging	827.1	47	29	0.96	1.13	9.25	3.13

Receptor		Annual						
		Maximum entrained hydrocarbon exposure (ppb)	Probability of entrained hydrocarbon exposure (%)		Minimum time before entrained hydrocarbon exposure (days)		Maximum residence time for entrained hydrocarbon exposure (days)	
			Low	High	Low	High	Low	High
	Shy Albatross – Foraging*	18,716.1	96	91	0.04	0.04	13.29	3.71
	Sooty Shearwater - Foraging	114	19	1	2.17	4.83	6.71	0.13
	Southern Giant Petrel - Foraging	27.6	4	-	7.96	-	1.33	-
	Southern Right Whale - Connecting Habitat	12.4	1	-	22.08	-	0.13	-
	Southern Right Whale - Known Core Range*	18,716.1	96	91	0.04	0.04	10.88	3.71
	Wandering Albatross – Foraging*	18,716.1	96	91	0.04	0.04	13.29	3.71
	Wedge-tailed Shearwater - Foraging	172.9	28	2	1.33	1.58	8.54	0.54
	White Shark - Breeding	44.5	2	-	2.38	-	1.17	-
	White Shark – Distribution*	18,716.1	96	91	0.04	0.04	13.29	3.71
	White Shark - Foraging	405.1	35	7	0.71	0.75	6.5	2.63
	White-capped Albatross - Foraging	27.6	4	-	7.96	-	1.33	-
	White-faced Storm-petrel - Breeding	75.3	9	-	3.33	-	5.42	-
	White-faced Storm-petrel - Foraging	1,142	50	22	0.25	0.25	10.88	3.21
	Wilsons Storm Petrel - Migration	27.6	4	-	7.96	-	1.33	-
IBRA	Bateman	32.4	4	-	6.88	-	5.00	-
	East Gippsland Lowlands	83.8	11	-	2.50	-	8.42	-
	Flinders	65	3	-	5.96	-	5.71	-
	South East Coastal Ranges	20.7	2	-	4.83	-	1.83	-
IMCRA	Batemans Shelf	75.3	9	-	3.42	-	5.42	-
	Central Bass Strait	18.5	3	-	12.17	-	1.00	-
	Flinders	137.9	18	2	4.54	5.13	8.17	0.5
	Freycinet	28.1	3	-	12.5	-	1.21	-
	Twofold Shelf*	18,716.1	96	91	0.04	0.04	10.88	3.71
KEF	Big Horseshoe Canyon	229.7	18	2	1.79	1.88	6.17	0.29
	Canyons on the Eastern Continental Slope	23.1	3	-	8.79	-	0.92	-
	Seamounts South and east of Tasmania	11.3	1	-	12.00	-	0.08	-
	Shelf rocky reefs	31.5	4	-	6.63	-	1.58	-

Receptor		Annual						
		Maximum entrained hydrocarbon exposure (ppb)	Probability of entrained hydrocarbon exposure (%)		Minimum time before entrained hydrocarbon exposure (days)		Maximum residence time for entrained hydrocarbon exposure (days)	
			Low	High	Low	High	Low	High
	Upwelling East of Eden*	18,716.1	96	91	0.04	0.04	10.88	3.71
MNP	Cape Howe	146.2	17	1	1.88	3.79	7.42	0.38
	Point Hicks	90.8	11	-	2.92	-	2.29	-
MP	Batemans	34.2	5	-	4.83	-	5.42	-
NP	Kent Group	72.9	4	-	5.63	-	5.71	-
RSB	Endeavour Reef	33.2	5	-	8.50	-	0.88	-
	New Zealand Star Bank	119.2	26	1	1.67	5.04	5.5	0.5
	Wakitipu Rock	29.1	4	-	9.00	-	1.17	-
	Warrego Rock	16.7	2	-	13.42	-	0.17	-
	Wright Rock	30.6	5	-	8.38	-	0.75	-
Nearshore Waters (LGA)	Bega Valley	106.8	11	1	2.33	4.63	6.21	0.04
	Craggy Island	16.1	2	-	10.08	-	0.29	-
	East Gippsland	55.3	9	-	3.50	-	7.63	-
	Eurobodalla	25.6	2	-	12.58	-	2.63	-
	Gabo Island	79.8	10	-	3.71	-	8.29	-
	Inner Sister Island	12.8	1	-	21.58	-	0.21	-
	Kent Island Group	65	3	-	5.96	-	5.71	-
	Montague Island	32.4	4	-	6.88	-	5.00	-
	Outer Sister Island	15.1	1	-	21.58	-	0.42	-
	Pyramid Island	10.5	1	-	11.79	-	0.04	-
State Waters	New South Wales	145.4	14	1	1.92	3.88	6.38	0.42
	Tasmania State Waters	72.9	6	-	5.63	-	5.71	-
	Victoria State Waters	166.6	18	1	1.88	3.33	8.54	0.67
Nearshore Waters (Sub-LGA)	Bega Valley	106.8	11	1	2.33	4.63	6.21	0.04
	Cape Howe / Mallacoota	55.3	9	-	3.79	-	7.63	-
	Croajingolong - East	21.6	2	-	6.33	-	0.88	-
	Croajingolong - West	37.7	5	-	3.58	-	2.79	-

Receptor		Annual						
		Maximum entrained hydrocarbon exposure (ppb)	Probability of entrained hydrocarbon exposure (%)		Minimum time before entrained hydrocarbon exposure (days)		Maximum residence time for entrained hydrocarbon exposure (days)	
			Low	High	Low	High	Low	High
	Eurobodalla	25.6	2	-	12.58	-	2.63	-
	Point Hicks	17	1	-	4.88	-	0.29	-

*The release location resides within the receptor boundaries.

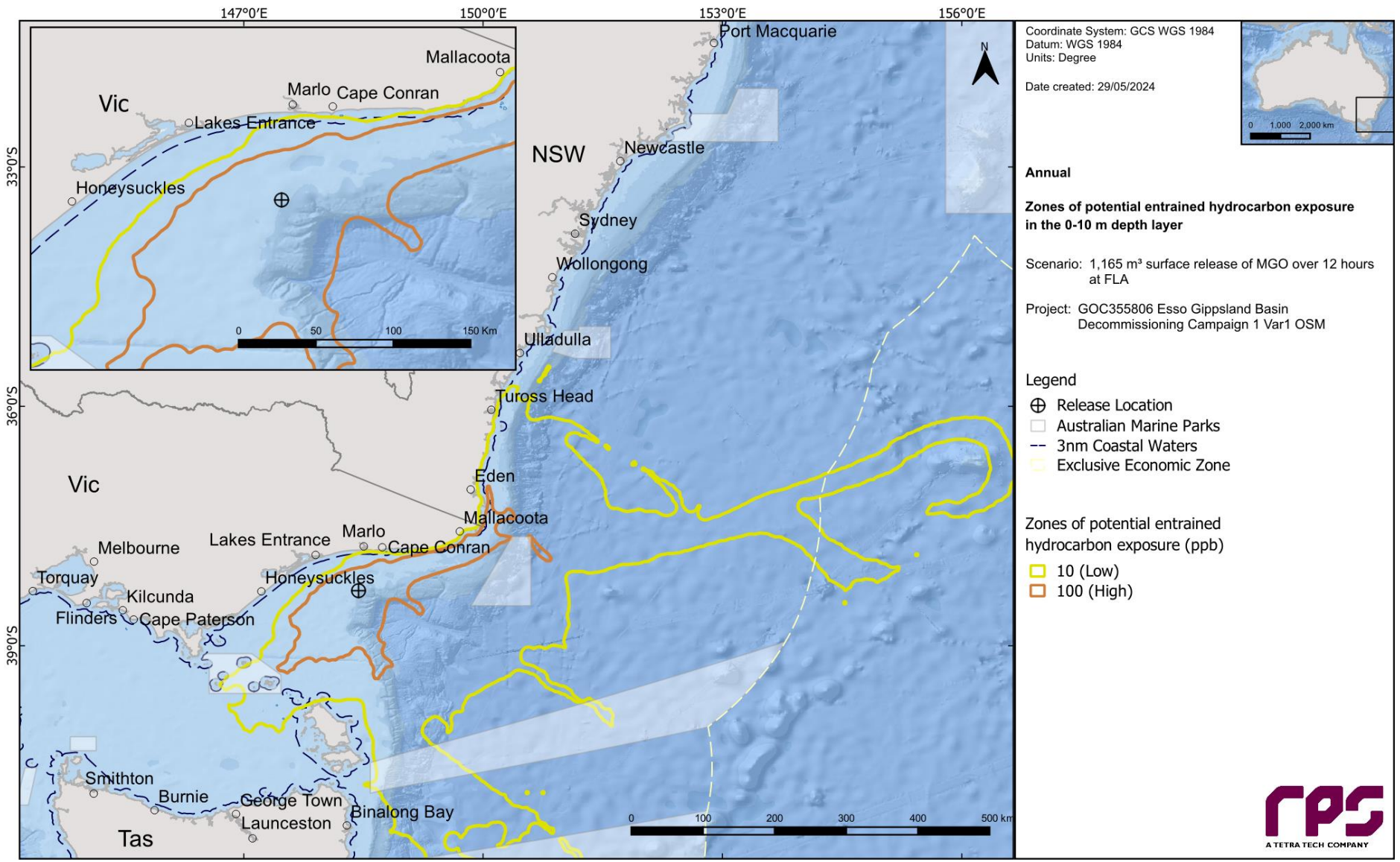

Figure 14.9 Zones of potential entrained hydrocarbon exposure at 0-10 m below the sea surface in the event of a 1,165 m³ surface release of MGO over 12 hours at Flounder. The results reflect annual conditions.

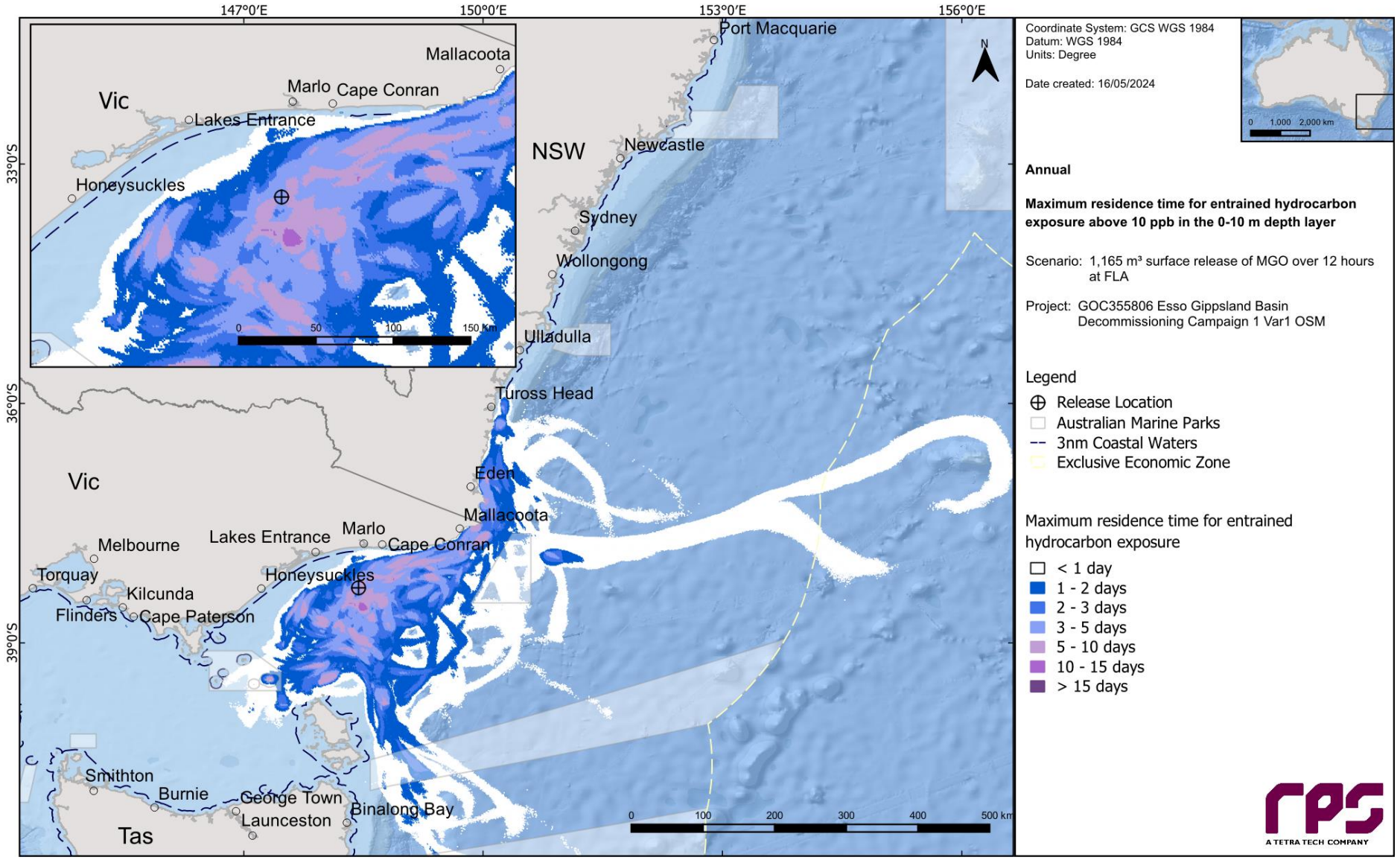

Figure 14.10 Maximum residence time for entrained hydrocarbon exposure above 10 ppb, at 0-10 m below the sea surface in the event of a 1,165 m³ surface release of MGO over 12 hours at Flounder. The results reflect annual conditions.

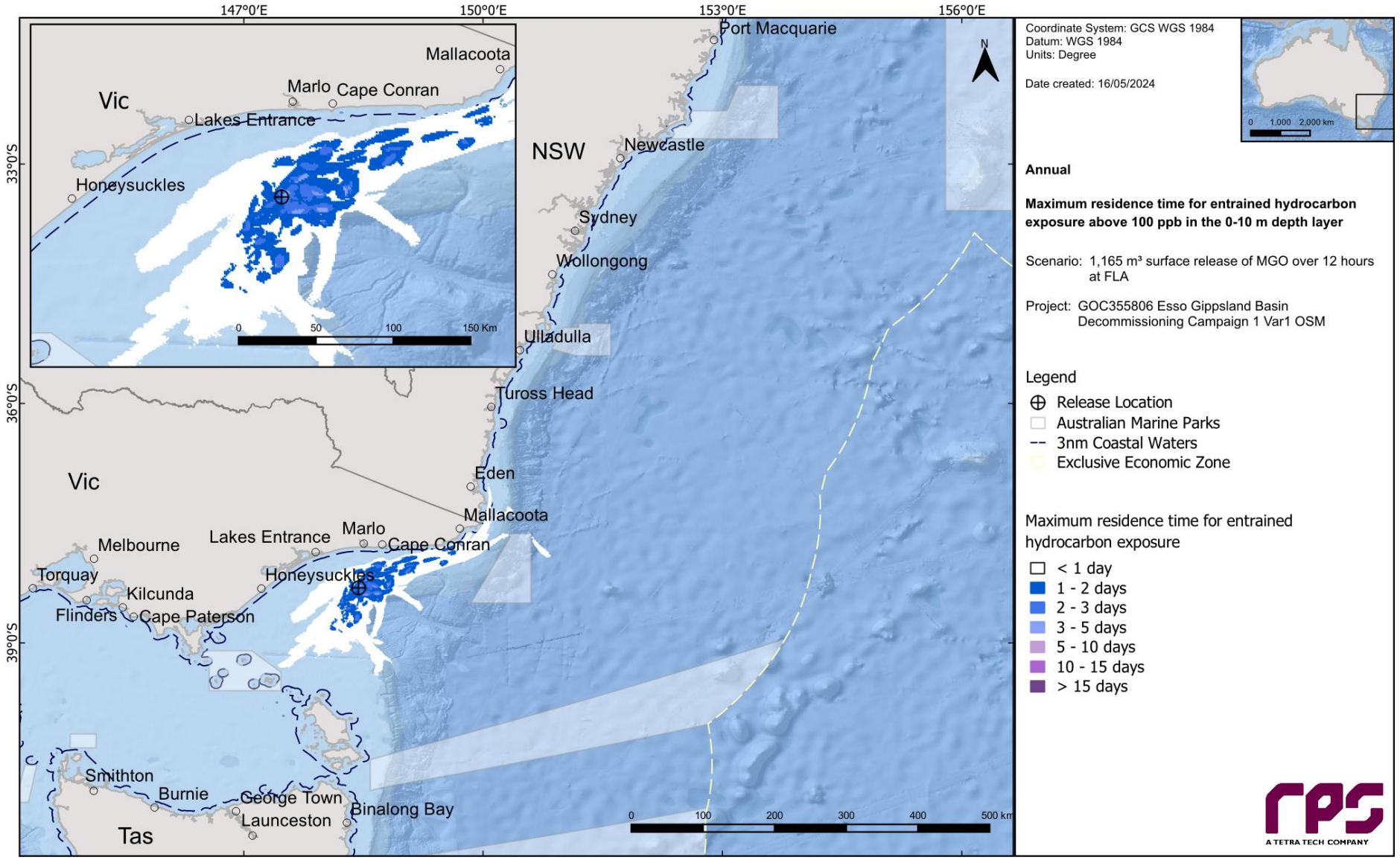

Figure 14.11 Maximum residence time for entrained hydrocarbon exposure above 100 ppb, at 0-10 m below the sea surface in the event of a 1,165 m³ surface release of MGO over 12 hours at Flounder. The results reflect annual conditions.

14.2 Deterministic Analysis

The stochastic modelling results were assessed, and the “worst case” deterministic runs were identified and are presented below for the following criteria:

a. Largest swept area for surface oil above 10 g/m^2; (Section 14.2.1)
b. Largest (total) volume of oil ashore (Section 14.2.2)
c. Longest length of shoreline with oil accumulation above 100 g/m^2 (Section 14.2.2)
d. Largest area of entrained hydrocarbon exposure above 100 ppb (Section 14.2.3)
e. Largest area of dissolved hydrocarbon exposure above 50 ppb (Section 14.2.4)

Table 14.7 presents a summary of sea surface and in-water exposure and shoreline accumulation at the assessed thresholds for the identified deterministic simulations.

Table 14.7 Summary of the worst-case deterministic analysis based on the scenario presented in the stochastic analysis section.

Variable	Threshold	Deterministic Analysis Criteria			
		Largest swept area of floating oil >10 g/m²	Largest volume of oil ashore and longest length of shoreline with accumulation >100 g/m²	Largest area of entrained hydrocarbon exposure >100 ppb	Largest area of dissolved hydrocarbon exposure >50 ppb
Run Number		62	72	97	58
Total area of floating Oil exposure (km²)	1 g/m²	314	8	327	28
	10 g/m²	**195**	1	185	1
	50 g/m²	7	-	9	-
Total length of shoreline accumulation (km)	10 g/m²	3	23	1	2
	100 g/m²	-	**8**	-	-
	1,000 g/m²	-	-	-	-
Minimum time before accumulation on any shoreline (hours)	10 g/m²	234	180	268	552
	100 g/m²	-	187	-	-
	1,000 g/m²	-	-	-	-
Peak volume of oil ashore (m³)		-	**16 (Total volume 25.9 m³)^**	-	-
Total area of entrained hydrocarbon exposure (km²)	10 ppb	9,651	6,292	9,966	8,705
	100 ppb	1,951	1,423	**2,173**	1,478
	1,000 ppb	-	80	33	54
Total area of dissolved hydrocarbon exposure (km²)	10 ppb	-	166	-	520
	50 ppb	-	-	-	**56**
	400 ppb	-	-	-	-
Start Date		11th March 2016 5am	17th September 2010 6pm	10th March 2016 11pm	13th November 2015 3am

^Total volume of oil stranded on shorelines over the entire simulation, not accounting for natural removal processes such as evaporation and decay.

14.2.1 Deterministic Case: Largest swept area of floating oil above 10 g/m^2

The deterministic trajectory that resulted in the largest swept area of floating oil above 10 g/m^2 was identified as run number 62, which started on the 11th of March 2016.

Figure 14.12 illustrates the floating oil exposure and shoreline accumulation over the 30-day simulation.

Figure 14.13 displays the time series of the area of sea surface exposure above the low (1 g/m^2), moderate (10 g/m^2) and high (50 g/m^2) thresholds over the 30-day simulation.

Figure 14.14 presents the fates and weathering graph for the corresponding single spill trajectory and Table 14.8 summarises the mass balance peaks and at the end of the simulation.

Table 14.8 Summary of the mass balance for the trajectory with the largest swept area of floating oil above 10 g/m^2.

Exposure Metrics	Peak Volume	Day of occurrence	Volume at day 30
Surface (m^3)	701	0.5	0
Entrained (m^3)	600	1.8	220
Dissolved (m^3)	1	6.6	0
Evaporation (m^3)	569	30.0	569
Decay (m^3)	383	30.0	383
Ashore (m^3)	1	11.1	0

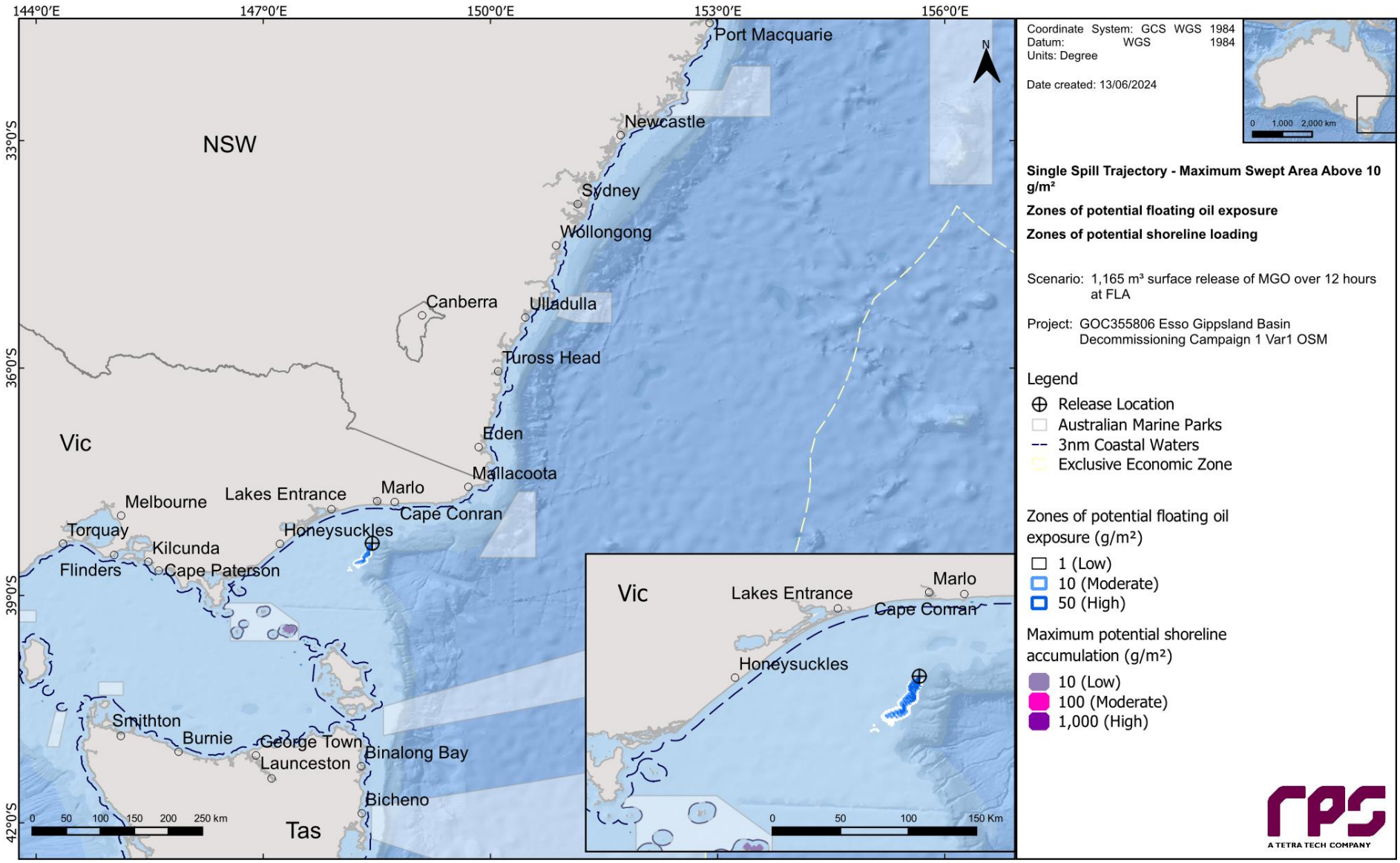

Figure 14.12 Zones of potential floating oil exposure and shoreline accumulation, for the trajectory with the largest swept area of floating oil above 10 g/m².

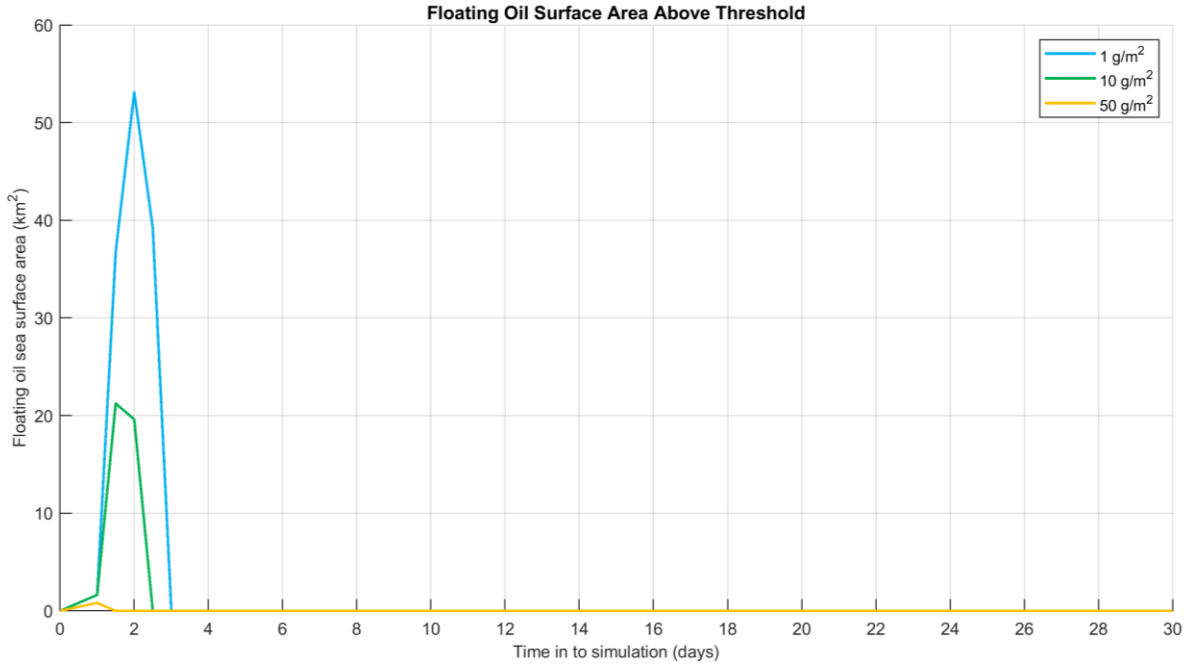

Figure 14.13 Time series of floating oil exposure above each threshold for the trajectory with the largest swept area of floating oil above 10 g/m^2.

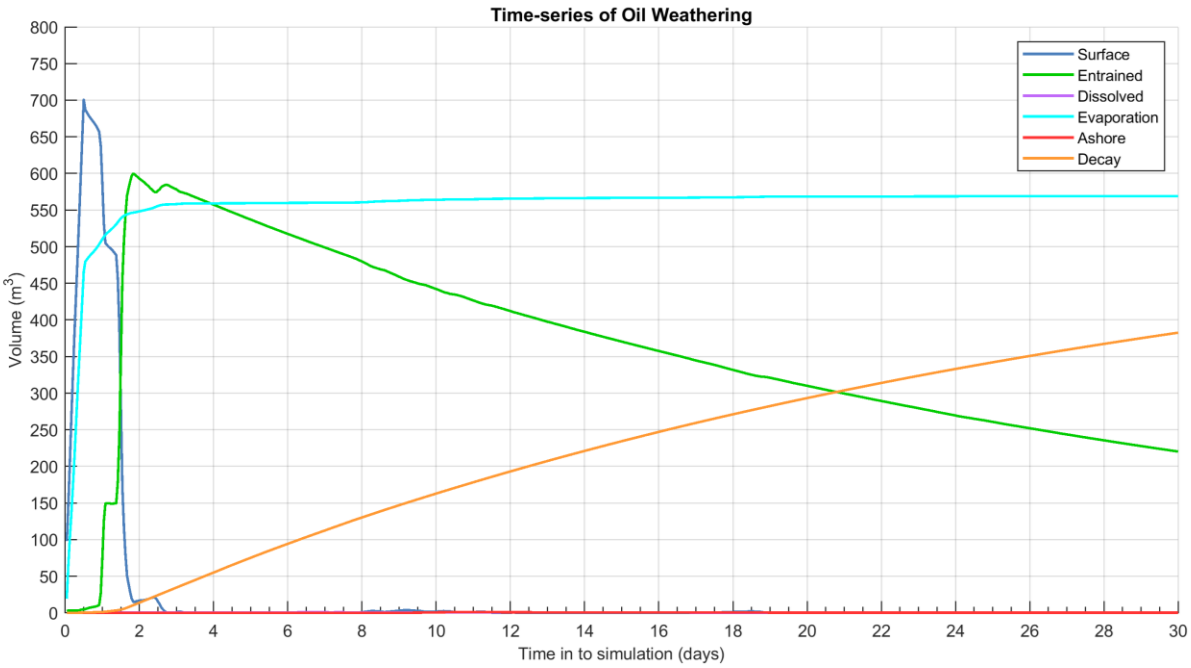

Figure 14.14 Predicted weathering and fates graph for the trajectory with the largest swept area of floating oil above 10 g/m^2.

14.2.2 Deterministic Case: Largest volume of oil ashore and longest length of shoreline contacted by oil above 100 g/m^2.

The deterministic trajectory that resulted in the largest volume of oil ashore also resulted in the longest length of shoreline contacted by oil above 100 g/m^2. This simulation was identified as run number 72, which started on the 17th of September 2010.

Figure 14.15 illustrates the floating oil exposure and shoreline accumulation over the 30-day simulation.

Figure 14.16 and Figure 14.17 display the time series of the volume of shoreline oil and the length of shoreline oil accumulation above the low (1 g/m^2), moderate (10 g/m^2) and high (50 g/m^2) thresholds over the 30-day simulation, respectively.

Figure 14.18 presents the fates and weathering graph for the corresponding single spill trajectory and Table 14.9 summarises the mass balance peaks and at the end of the simulation.

Table 14.9 Summary of the mass balance for the trajectory with the largest volume of oil ashore and the longest length of shoreline contacted by oil above 100 g/m^2.

Exposure Metrics	Peak Volume	Day of occurrence	Volume at day 30
Surface (m^3)	56	4.1	0
Entrained (m^3)	993	0.5	181
Dissolved (m^3)	10	0.9	0
Evaporation (m^3)	518	30.0	518
Decay (m^3)	464	30.0	464
Ashore (m^3)	22	14.4	16

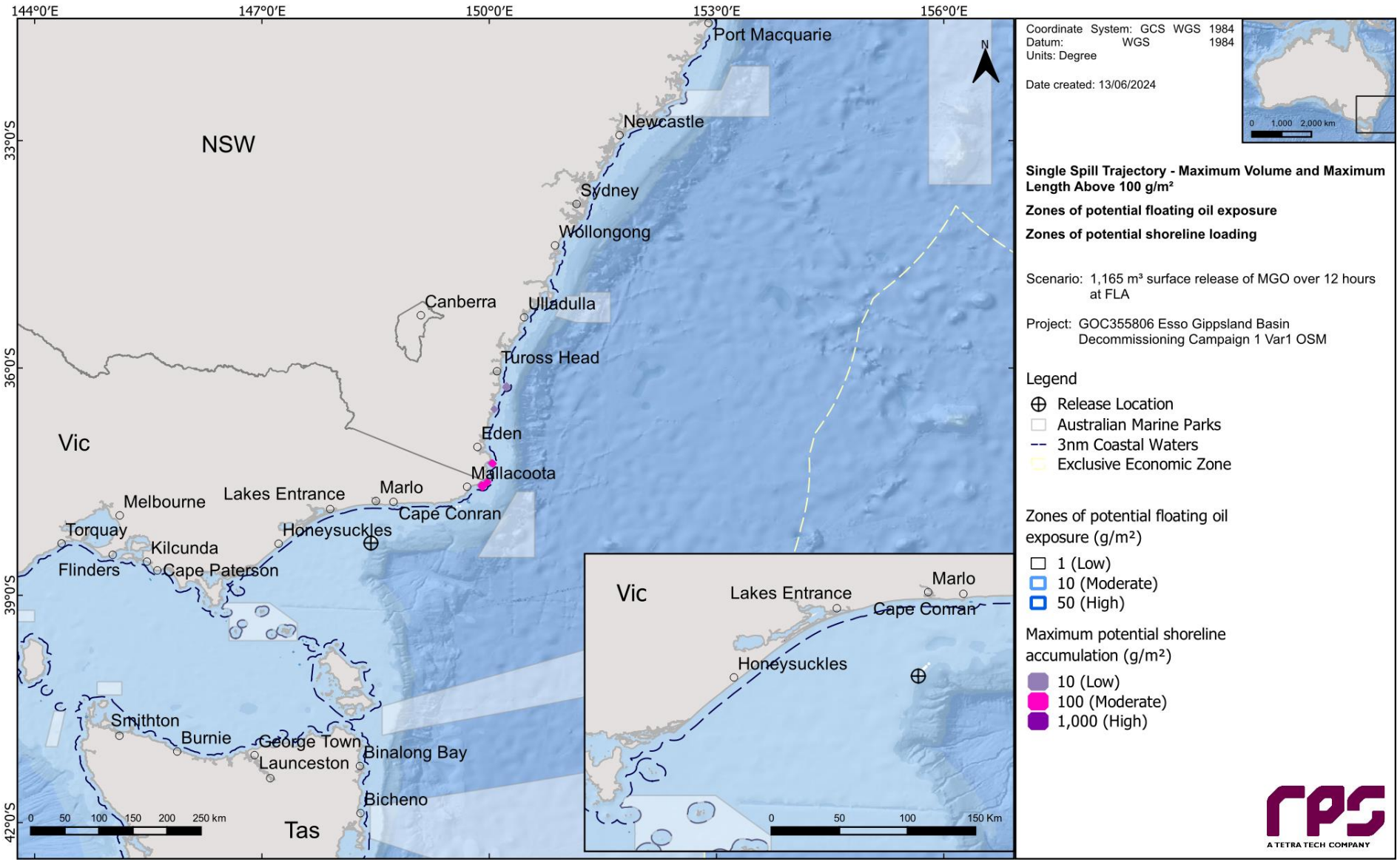

Figure 14.15 Zones of potential floating oil exposure and shoreline accumulation, for the trajectory with the largest volume of oil ashore and the longest length of shoreline contacted by oil above 100 g/m².

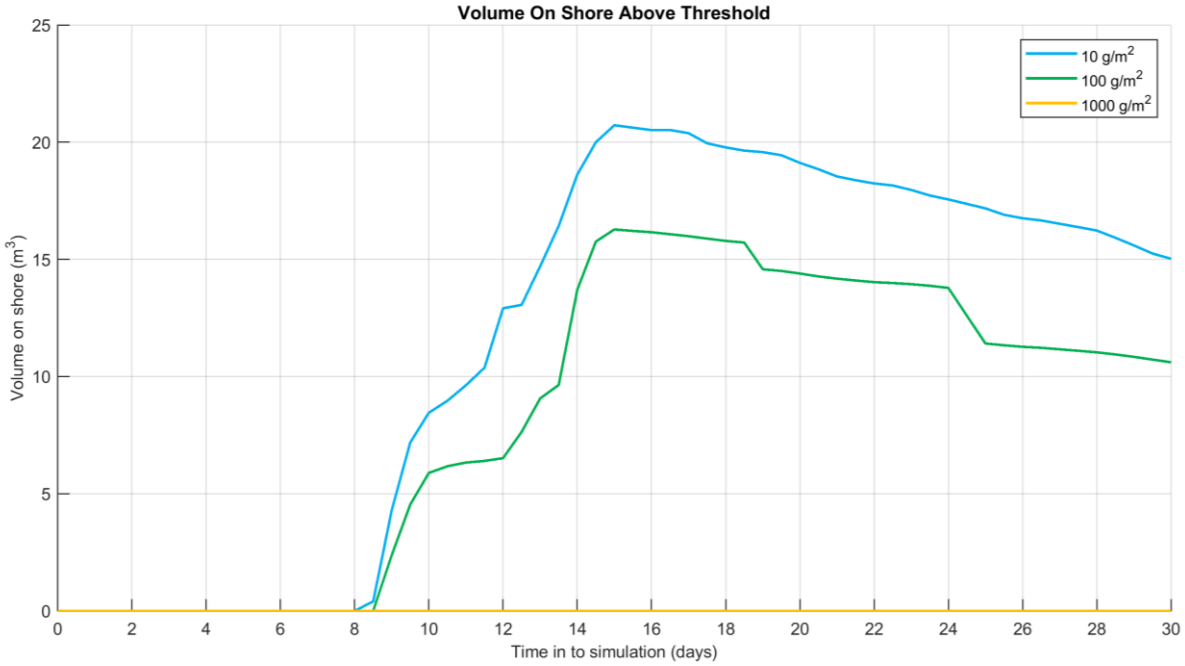

Figure 14.16 Time series of the volume of oil ashore above each threshold for the trajectory with the largest volume of oil ashore and the longest length of shoreline contacted by oil above 100 g/m^2.

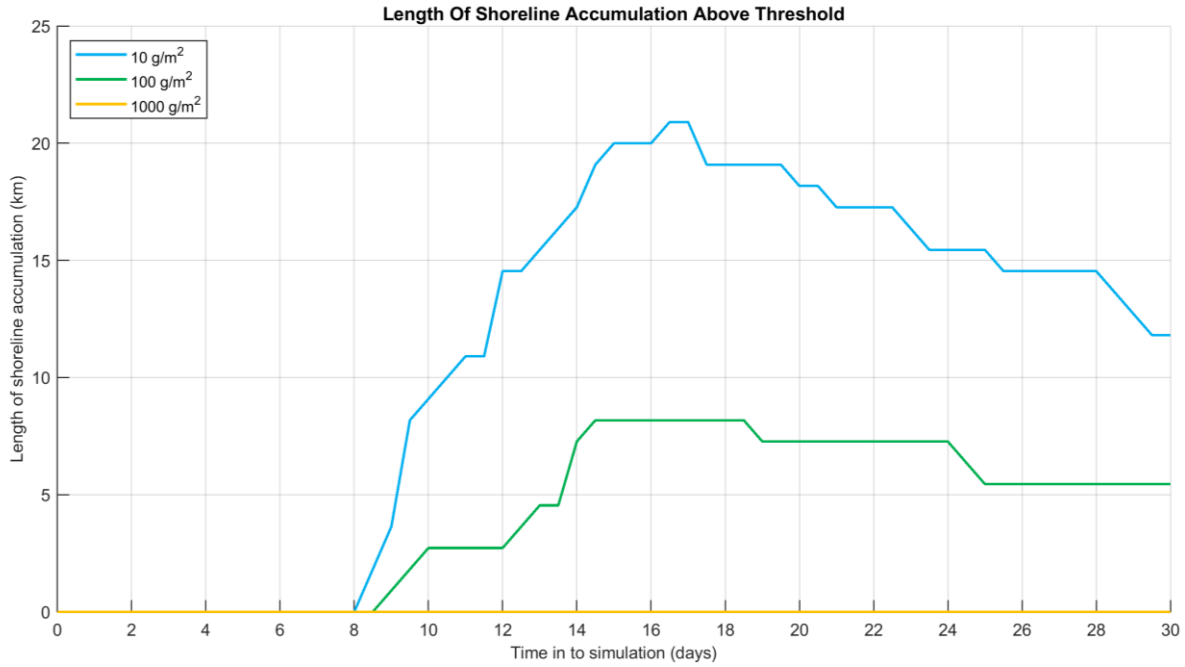

Figure 14.17 Time series of the length of shoreline contacted by oil above each threshold for the trajectory with the largest volume of oil ashore and the longest length of shoreline contacted by oil above 100 g/m^2.

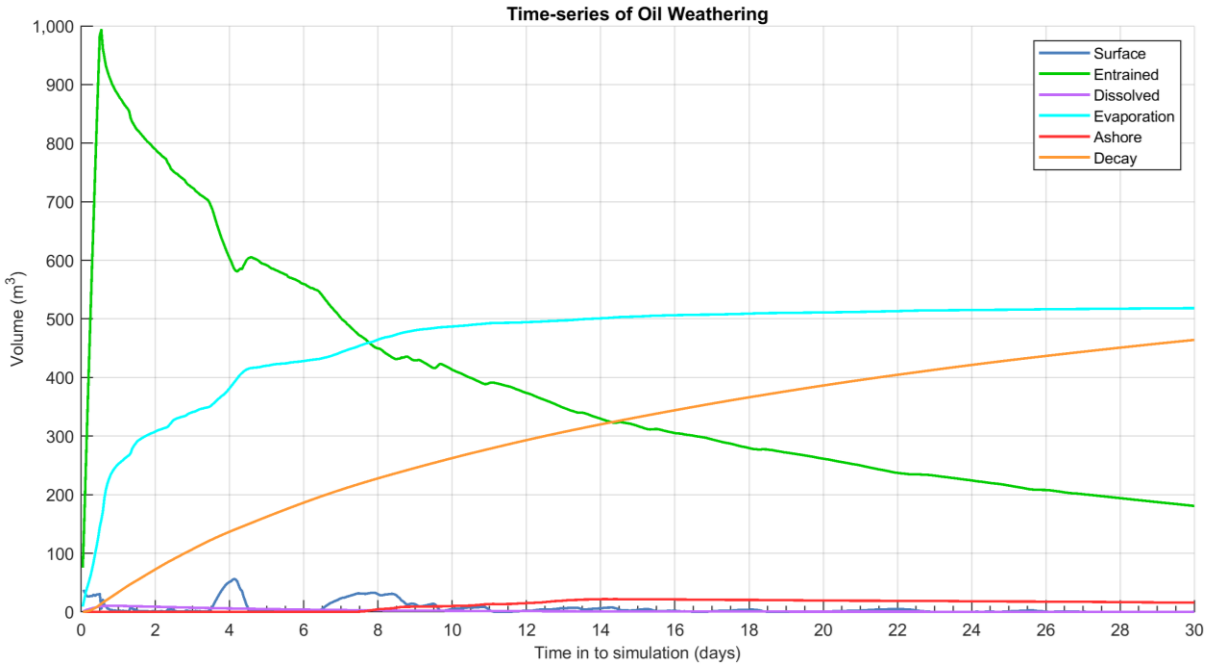

Figure 14.18 Predicted weathering and fates graph for the trajectory with the largest volume of oil ashore and the longest length of shoreline contacted by oil above 100 g/m^2.

14.2.3 Deterministic Case: Largest area of entrained hydrocarbon exposure above 100 ppb

The deterministic trajectory that resulted in the largest area of entrained hydrocarbon exposure above 100 ppb was identified as run number 97, which started on the 10th of March 2016.

Figure 14.19 illustrates the zones of potential entrained hydrocarbon exposure over the 30-day simulation.

Figure 14.20 displays the time series of the area of entrained hydrocarbon exposure at the low (10 ppb) and high (100 ppb) thresholds over the 30-day simulation.

Figure 14.21 presents the fates and weathering graph for the corresponding single spill trajectory and Table 14.10 summarises the mass balance peaks and at the end of the simulation.

Table 14.10 Summary of the mass balance for the trajectory with the largest area of entrained hydrocarbon exposure above 100 ppb.

Exposure Metrics	Peak Volume	Day of occurrence	Volume at day 30
Surface (m^3)	493	0.5	0
Entrained (m^3)	597	2.1	220
Dissolved (m^3)	1	6.6	0
Evaporation (m^3)	557	30.0	557
Decay (m^3)	394	30.0	394
Ashore (m^3)	1	11.2	0

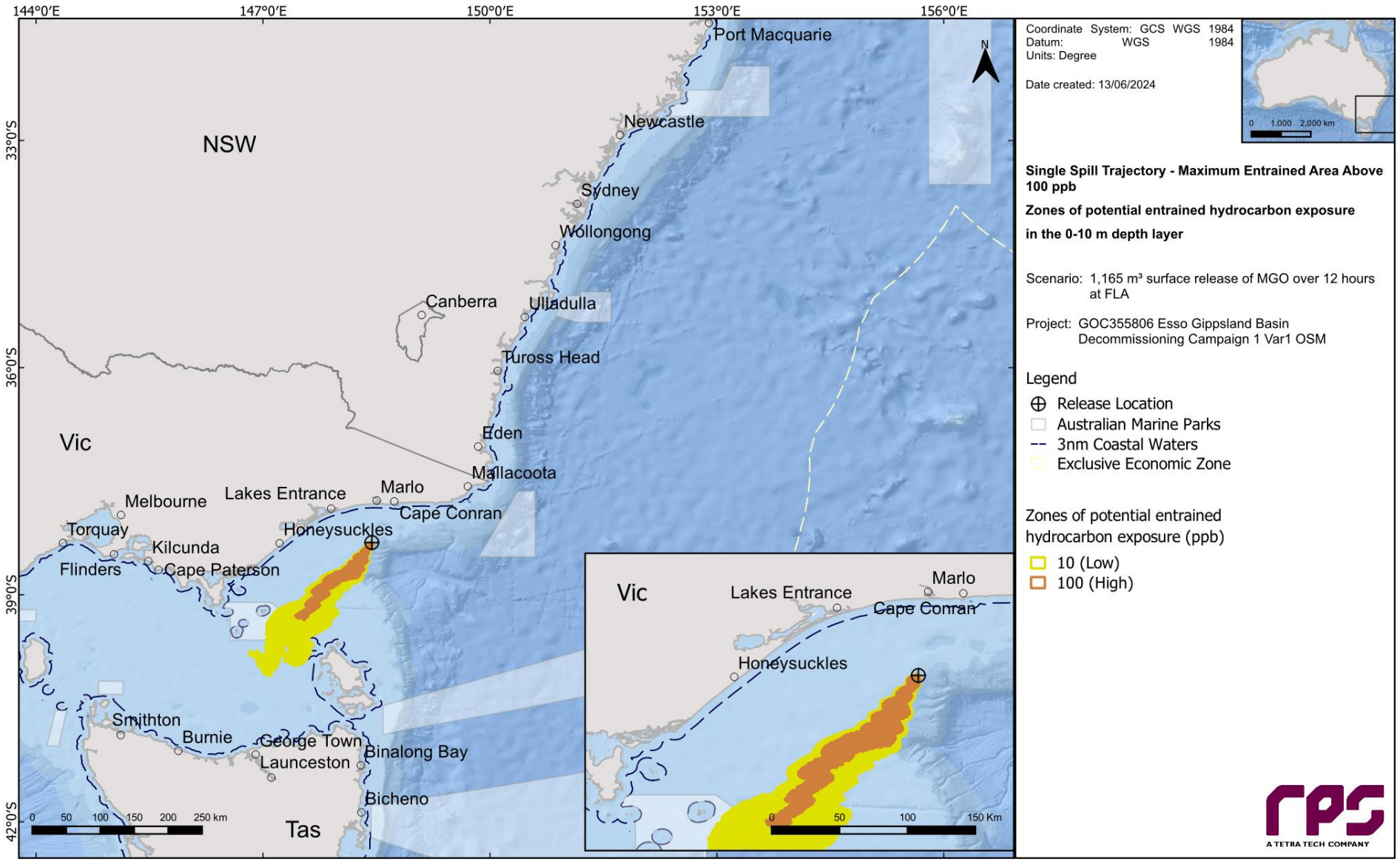

Figure 14.19 Zones of potential entrained hydrocarbon exposure, for the trajectory with the largest area of entrained hydrocarbon exposure above 100 ppb.

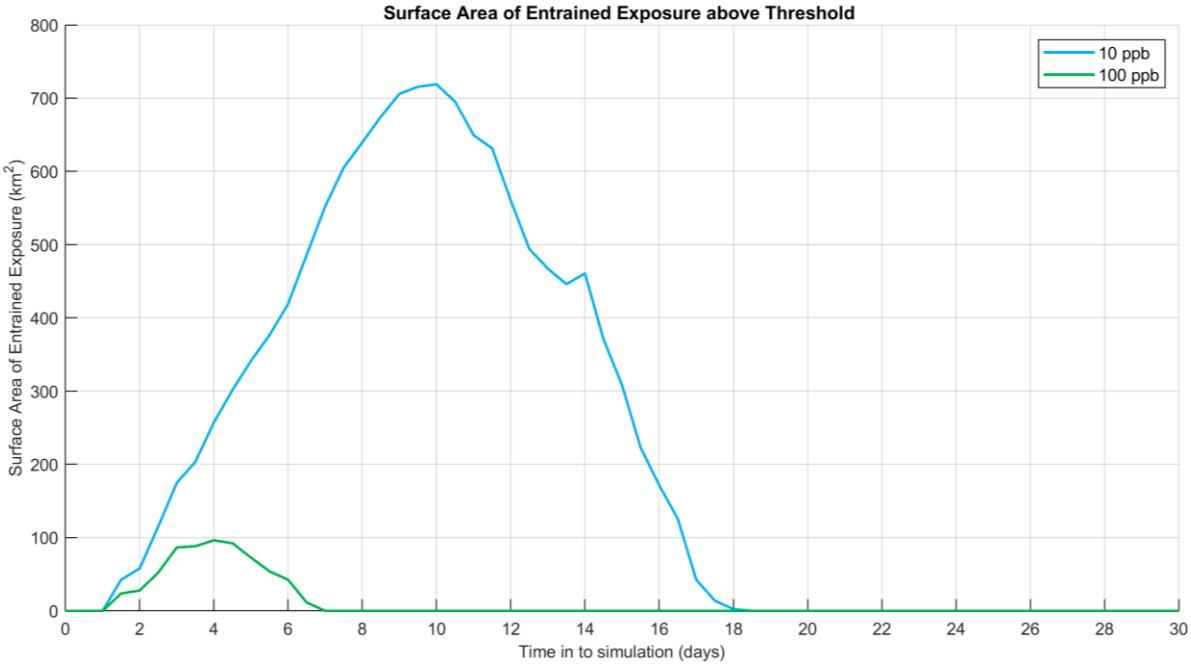

Figure 14.20 Time series of the entrained hydrocarbon exposure area above each threshold for the trajectory with the largest area of entrained hydrocarbon exposure above 100 ppb.

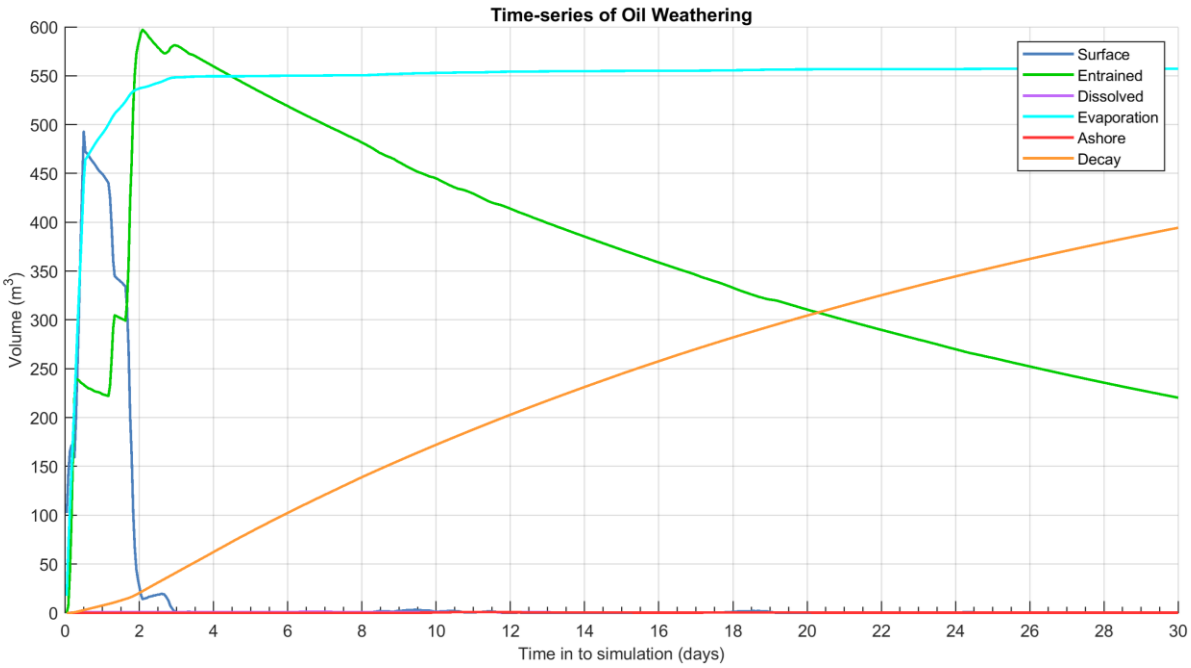

Figure 14.21 Predicted weathering and fates graph for the trajectory with the largest area of entrained hydrocarbon exposure above 100 ppb.

14.2.4 Deterministic Case: Largest area of dissolved hydrocarbon exposure above 50 ppb

The deterministic trajectory that resulted in the largest area of dissolved hydrocarbon exposure above 50 ppb was identified as run number 58, which started on the 13th of November 2015.

Figure 14.22 illustrates the zones of potential dissolved hydrocarbon exposure over the 30-day simulation.

Figure 14.23 displays the time series of the area of dissolved hydrocarbon exposure at the low (10 ppb), moderate (50 ppb) and high (400 ppb) thresholds over the 30-day simulation.

Figure 14.24 presents the fates and weathering graph for the corresponding single spill trajectory and Table 14.11 summarises the mass balance peaks and at the end of the simulation.

Table 14.11 Summary of the mass balance for the trajectory with the largest area of dissolved hydrocarbon exposure above 50 ppb.

Exposure Metrics	Peak Volume	Day of occurrence	Volume at day 30
Surface (m^3)	54	0.3	2
Entrained (m^3)	969	0.5	206
Dissolved (m^3)	12	0.8	0
Evaporation (m^3)	455	30.0	455
Decay (m^3)	515	30.0	515
Ashore (m^3)	1	23.2	0

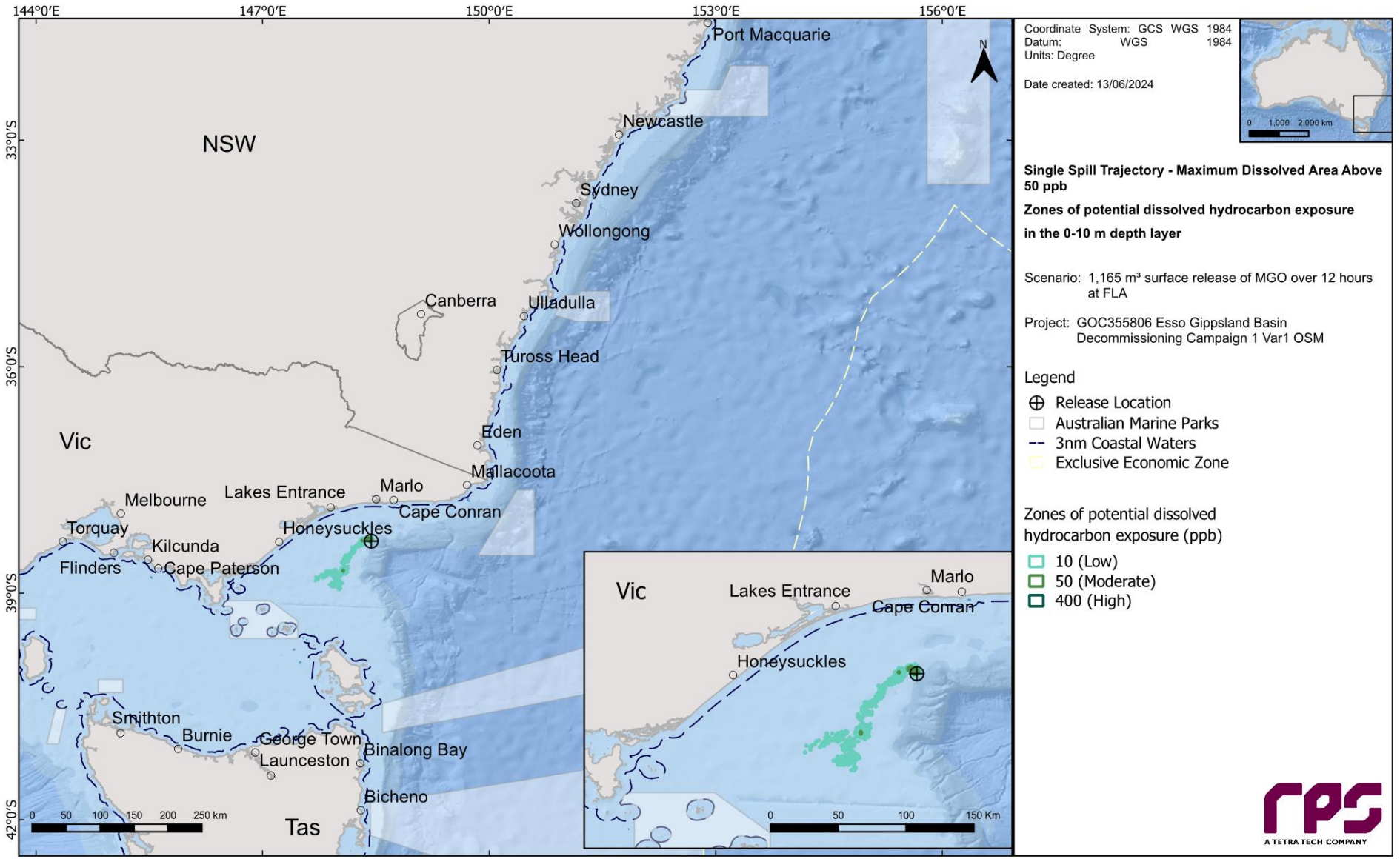

Figure 14.22 Zones of potential dissolved hydrocarbon exposure, for the trajectory with the largest area of dissolved hydrocarbon exposure above 50 ppb.

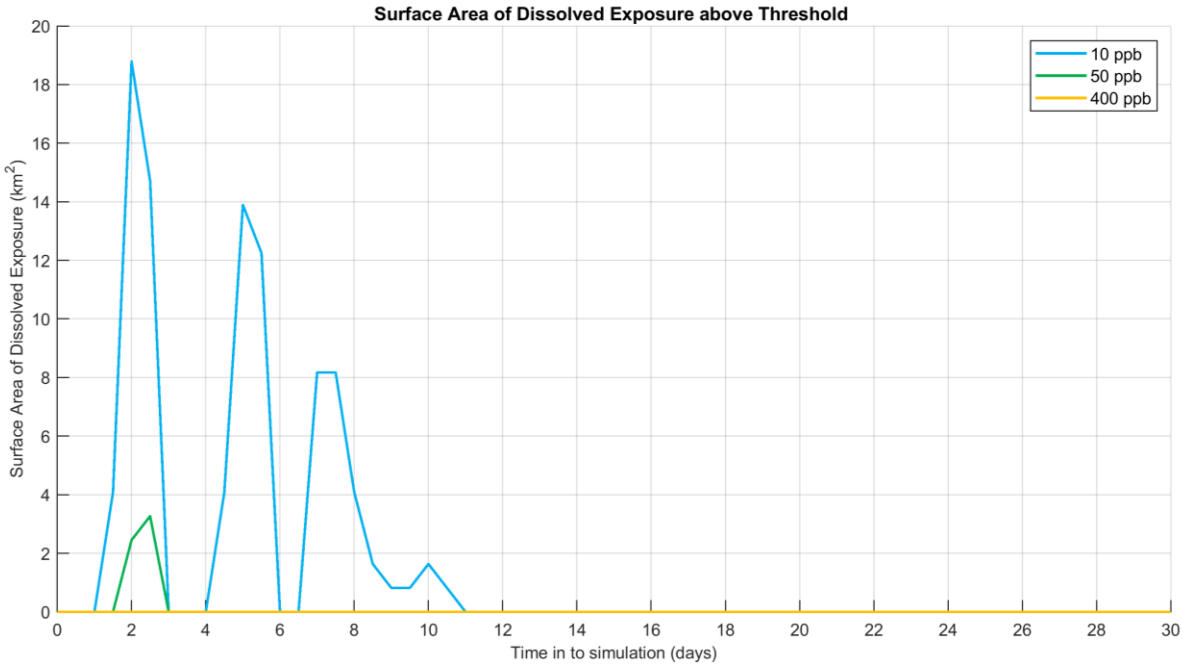

Figure 14.23 Time series of the dissolved hydrocarbon exposure area above each threshold for the trajectory with the largest area of dissolved hydrocarbon exposure above 50 ppb.

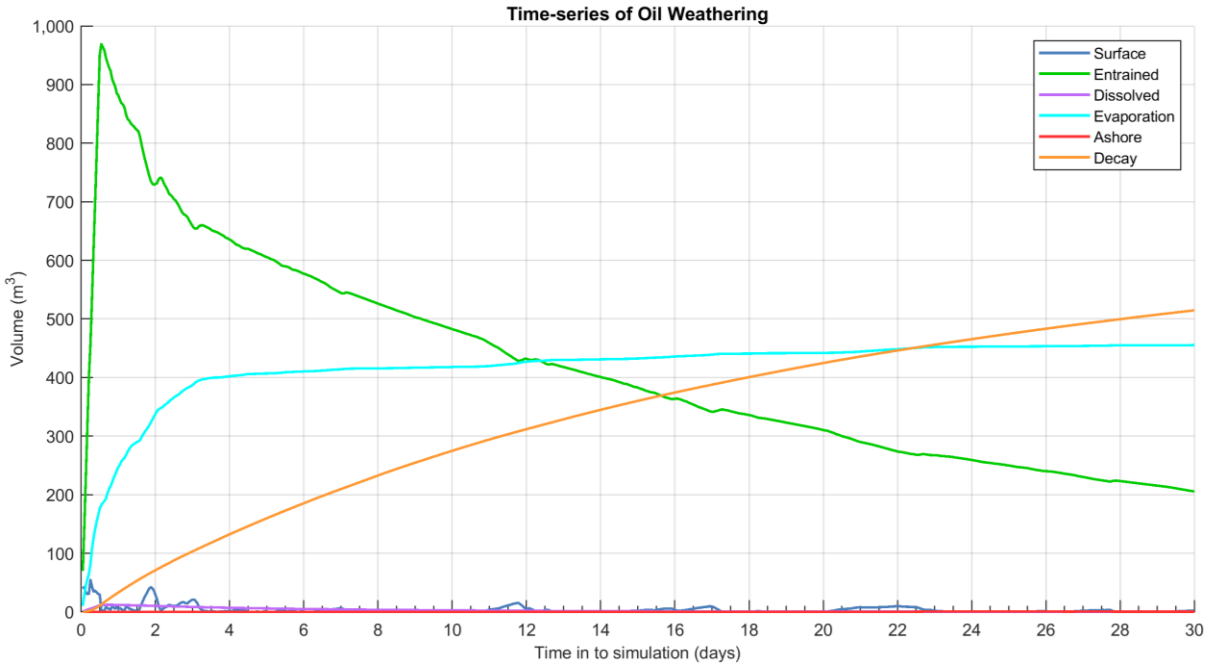

Figure 14.24 Predicted weathering and fates graph for the trajectory with the largest area of dissolved hydrocarbon exposure above 50 ppb.

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16 APPENDIX A - MODELLING RESULTS BASED ON 1,000 PPB ENTRAINED HYDROCARBON THRESHOLD

The assessment also considered exposure from entrained hydrocarbon concentrations at, or above, 1,000 ppb, based on the study by French-McCay (2023). Consequently, the entrained exposure areas outlined in Sections 10 to 14 were recalculated to account for the proposed exposure threshold.

16.1 Scenario 1 – A 1,165 m^3 surface release of MGO at Dolphin

Table 16.1 Probability of entrained hydrocarbons exposure above 1,000 ppb to marine based receptors in the 0–10 m depth layer. Results are based on a 1,165 m³ surface release of MGO over 12 hours at Dolphin. The results reflect annual conditions.

Receptors		Maximum entrained hydrocarbon exposure (ppb)	Probability of entrained hydrocarbon exposure (%)	Minimum time before entrained hydrocarbon exposure (days)	Maximum residence time for entrained hydrocarbon exposure (days)
			1,000 ppb	1,000 ppb	1,000 ppb
BIA	Black-browed Albatross - Foraging	10,680.60	62	0.04	0.63
	Bullers Albatross - Foraging	10,680.60	62	0.04	0.63
	Campbell Albatross - Foraging	10,680.60	62	0.04	0.63
	Common Diving-petrel - Foraging	10,680.60	62	0.04	0.63
	Indian Yellow-nosed Albatross - Foraging	10,680.60	62	0.04	0.63
	Pygmy Blue Whale - Distribution	10,680.60	62	0.04	0.63
	Pygmy Blue Whale - Foraging	10,680.60	62	0.04	0.63
	Short-tailed Shearwater - Foraging	10,680.60	62	0.04	0.63
	Shy Albatross - Foraging	10,680.60	62	0.04	0.63
	Southern Right Whale - Known Core Range	10,680.60	62	0.04	0.63
	Wandering Albatross - Foraging	10,680.60	62	0.04	0.63
	White Shark - Breeding	10,680.60	62	0.04	0.63
	White Shark - Distribution	10,680.60	62	0.04	0.63
IMCRA	Twofold Shelf	10,680.60	62	0.04	0.63

*The release location resides within the receptor boundaries.

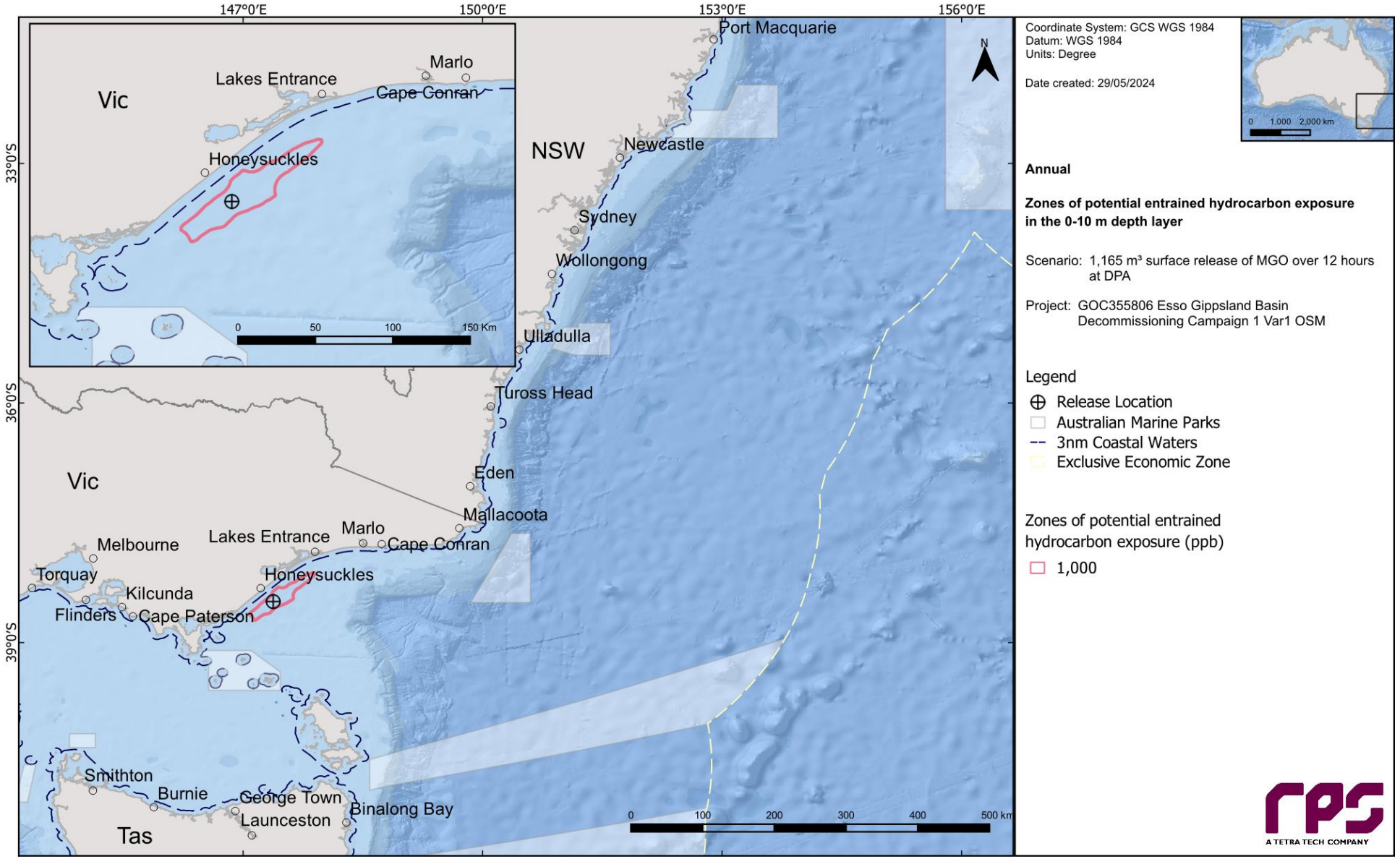

Figure 16.1 Zones of potential entrained hydrocarbon exposure above 1,000 ppb at 0-10 m below the sea surface in the event of a 1,165 m³ surface release of MGO over 12 hours at Dolphin. The results reflect annual conditions.

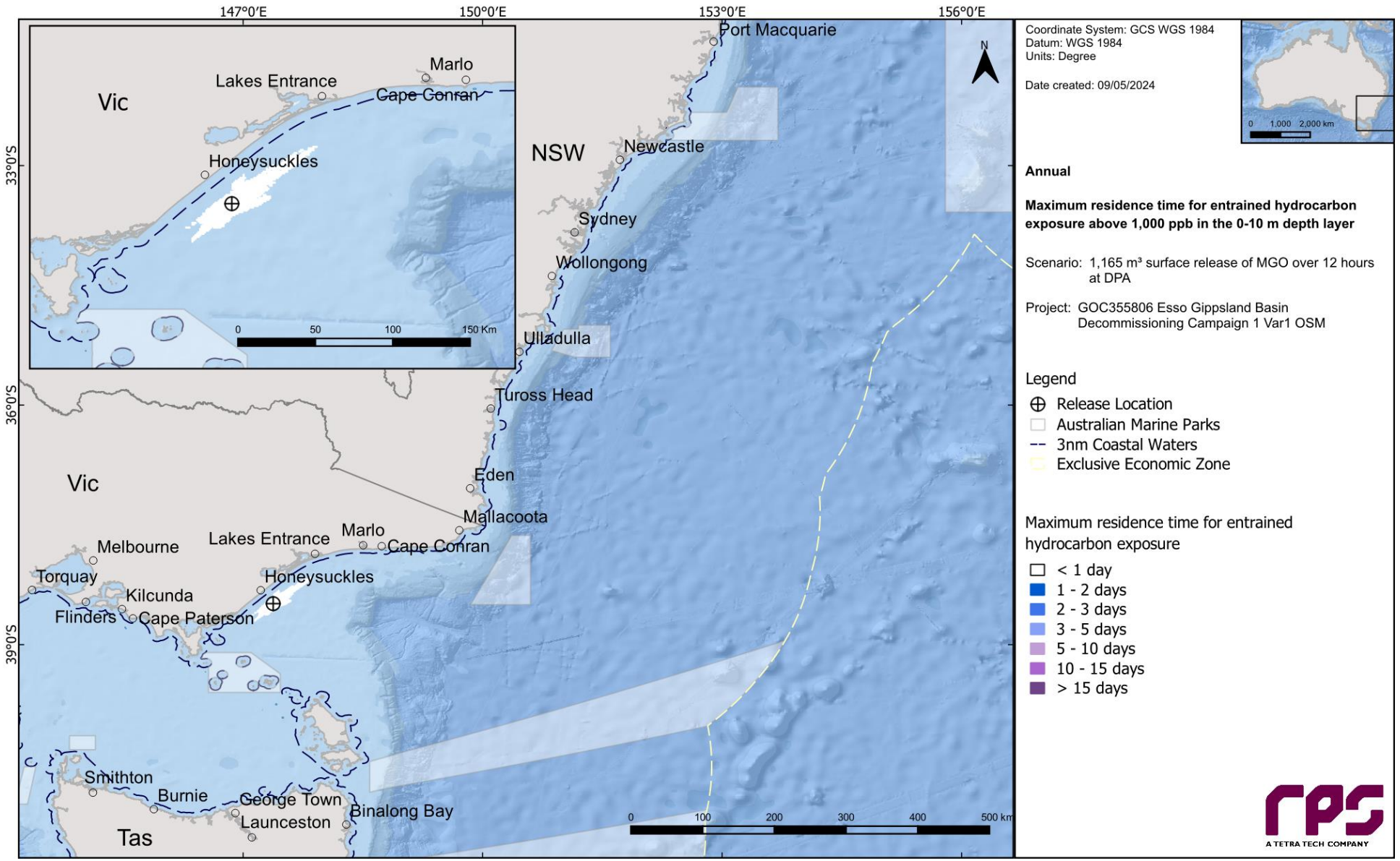

Figure 16.2 Maximum residence time for entrained hydrocarbon exposure above 1,000 ppb, at 0-10 m below the sea surface in the event of a 1,165 m³ surface release of MGO over 12 hours at Dolphin. The results reflect annual conditions.

16.2 Scenario 2 – A 1,165 m^3 surface release of MGO at Whiting

Table 16.2 Probability of entrained hydrocarbons exposure above 1,000 ppb to marine based receptors in the 0–10 m depth layer. Results are based on a 1,165 m^3 surface release of MGO over 12 hours at Whiting. The results reflect annual conditions.

Receptors		Maximum entrained hydrocarbon exposure (ppb)	Probability of entrained hydrocarbon exposure (%)	Minimum time before entrained hydrocarbon exposure (days)	Maximum residence time for entrained hydrocarbon exposure (days)
			1,000 ppb	1,000 ppb	1,000 ppb
BIA	Black-browed Albatross - Foraging	14,461.70	64	0.04	0.71
	Bullers Albatross - Foraging	14,461.70	64	0.04	0.71
	Campbell Albatross - Foraging	14,461.70	64	0.04	0.71
	Common Diving-petrel - Foraging	14,461.70	64	0.04	0.71
	Indian Yellow-nosed Albatross - Foraging	14,461.70	64	0.04	0.71
	Pygmy Blue Whale - Distribution	14,461.70	64	0.04	0.71
	Pygmy Blue Whale - Foraging	14,461.70	64	0.04	0.71
	Short-tailed Shearwater - Foraging	1,667.30	1	0.71	0.17
	Shy Albatross - Foraging	14,461.70	64	0.04	0.71
	Southern Right Whale - Known Core Range	14,461.70	64	0.04	0.71
	Wandering Albatross - Foraging	14,461.70	64	0.04	0.71
	White Shark - Breeding	3,167.80	7	0.29	0.33
	White Shark - Distribution	14,461.70	64	0.04	0.71
IMCRA	Twofold Shelf	14,461.70	64	0.04	0.71
KEF	Upwelling East of Eden	2,903.30	11	0.21	0.21

*The release location resides within the receptor boundaries.

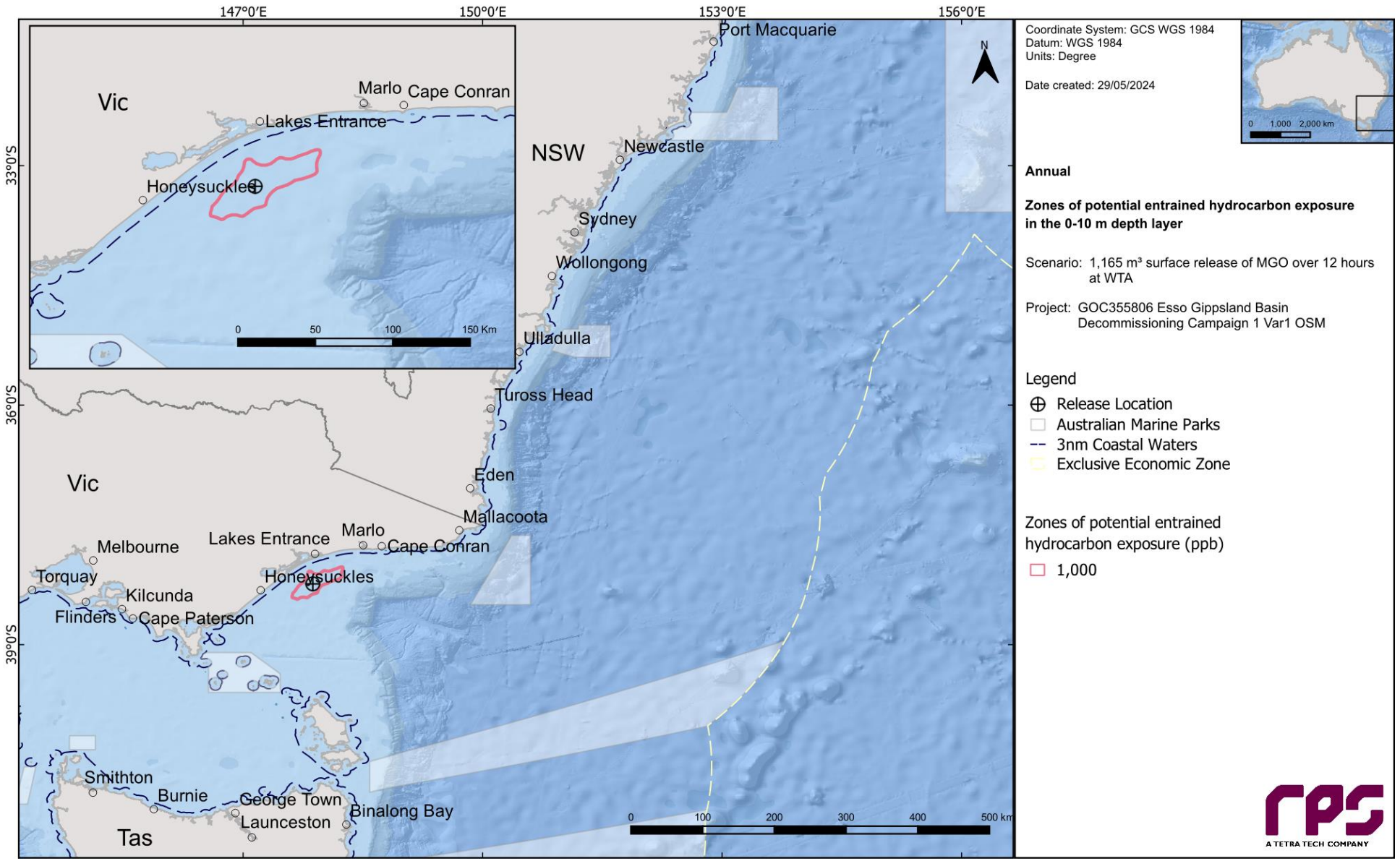

Figure 16.3 Zones of potential entrained hydrocarbon exposure above 1,000 ppb at 0-10 m below the sea surface in the event of a 1,165 m³ surface release of MGO over 12 hours at Whiting. The results reflect annual conditions.

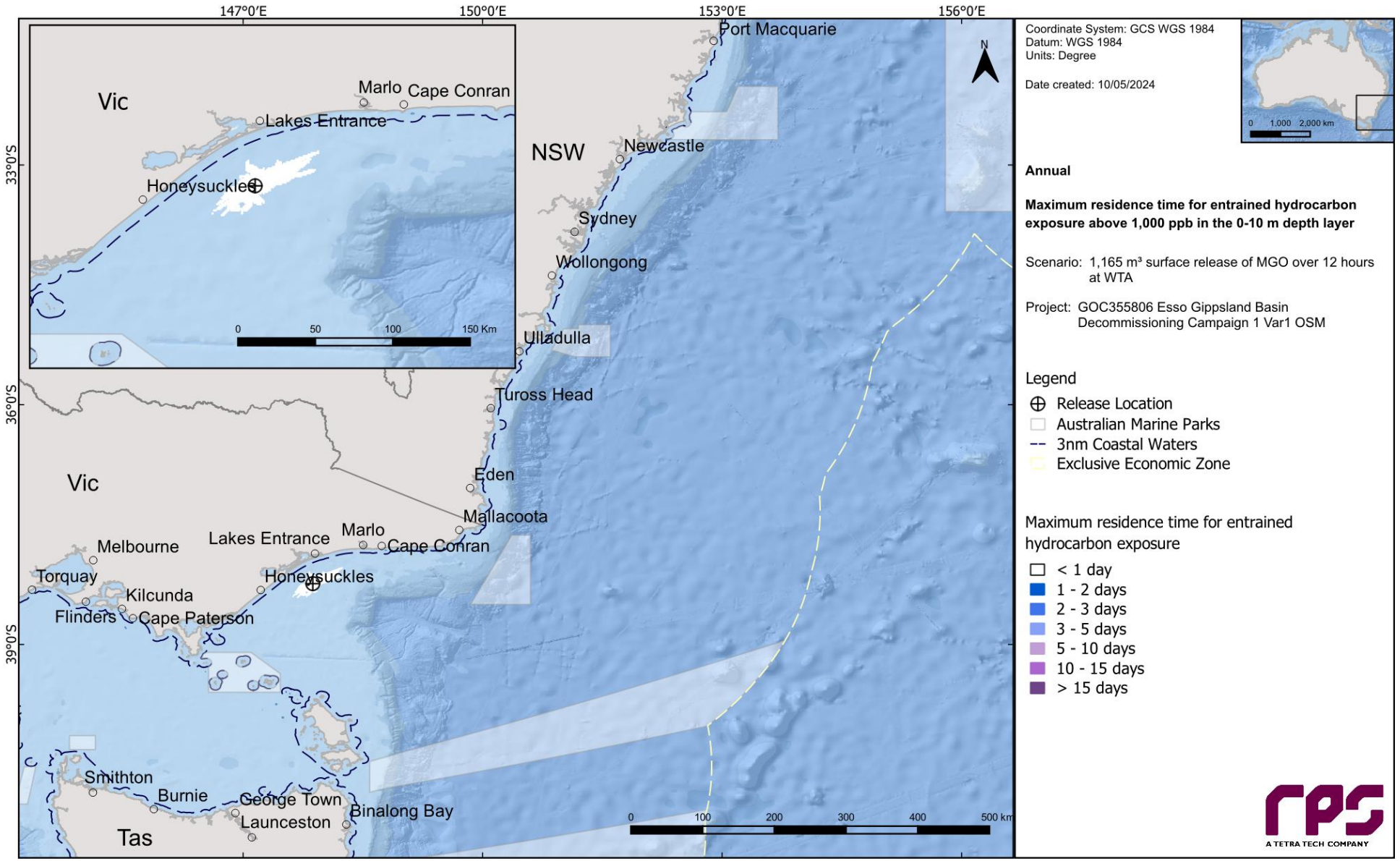

Figure 16.4 Maximum residence time for entrained hydrocarbon exposure above 1,000 ppb, at 0-10 m below the sea surface in the event of a 1,165 m³ surface release of MGO over 12 hours at Whiting. The results reflect annual conditions.

16.3 Scenario 3 – A 1,165 m^3 surface release of MGO at Fortescue

Table 16.3 Probability of entrained hydrocarbons exposure above 1,000 ppb to marine based receptors in the 0–10 m depth layer. Results are based on a 1,165 m³ surface release of MGO over 12 hours at Forstescue. The results reflect annual conditions.

Receptors		Maximum entrained hydrocarbon exposure (ppb)	Probability of entrained hydrocarbon exposure (%)	Minimum time before entrained hydrocarbon exposure (days)	Maximum residence time for entrained hydrocarbon exposure (days)
			1,000 ppb	1,000 ppb	1,000 ppb
BIA	Antipodean Albatross - Foraging	1,535.60	2	0.71	0.08
	Black-browed Albatross - Foraging	16,850.70	54	0.04	0.96
	Bullers Albatross - Foraging	16,850.70	54	0.04	0.96
	Campbell Albatross - Foraging	16,850.70	54	0.04	0.96
	Common Diving-petrel - Foraging	16,850.70	54	0.04	0.96
	Indian Yellow-nosed Albatross - Foraging	16,850.70	54	0.04	0.96
	Pygmy Blue Whale - Distribution	16,850.70	54	0.04	0.96
	Pygmy Blue Whale - Foraging	16,850.70	54	0.04	0.96
	Short-tailed Shearwater - Foraging	1,306.10	1	1.17	0.13
	Shy Albatross - Foraging	16,850.70	54	0.04	0.96
	Southern Right Whale - Known Core Range	16,850.70	54	0.04	0.96
	Wandering Albatross - Foraging	16,850.70	54	0.04	0.96
	White Shark - Distribution	16,850.70	54	0.04	0.96
IMCRA	Twofold Shelf	16,850.70	54	0.04	0.96
KEF	Upwelling East of Eden	3,516	18	0.17	0.33

*The release location resides within the receptor boundaries.

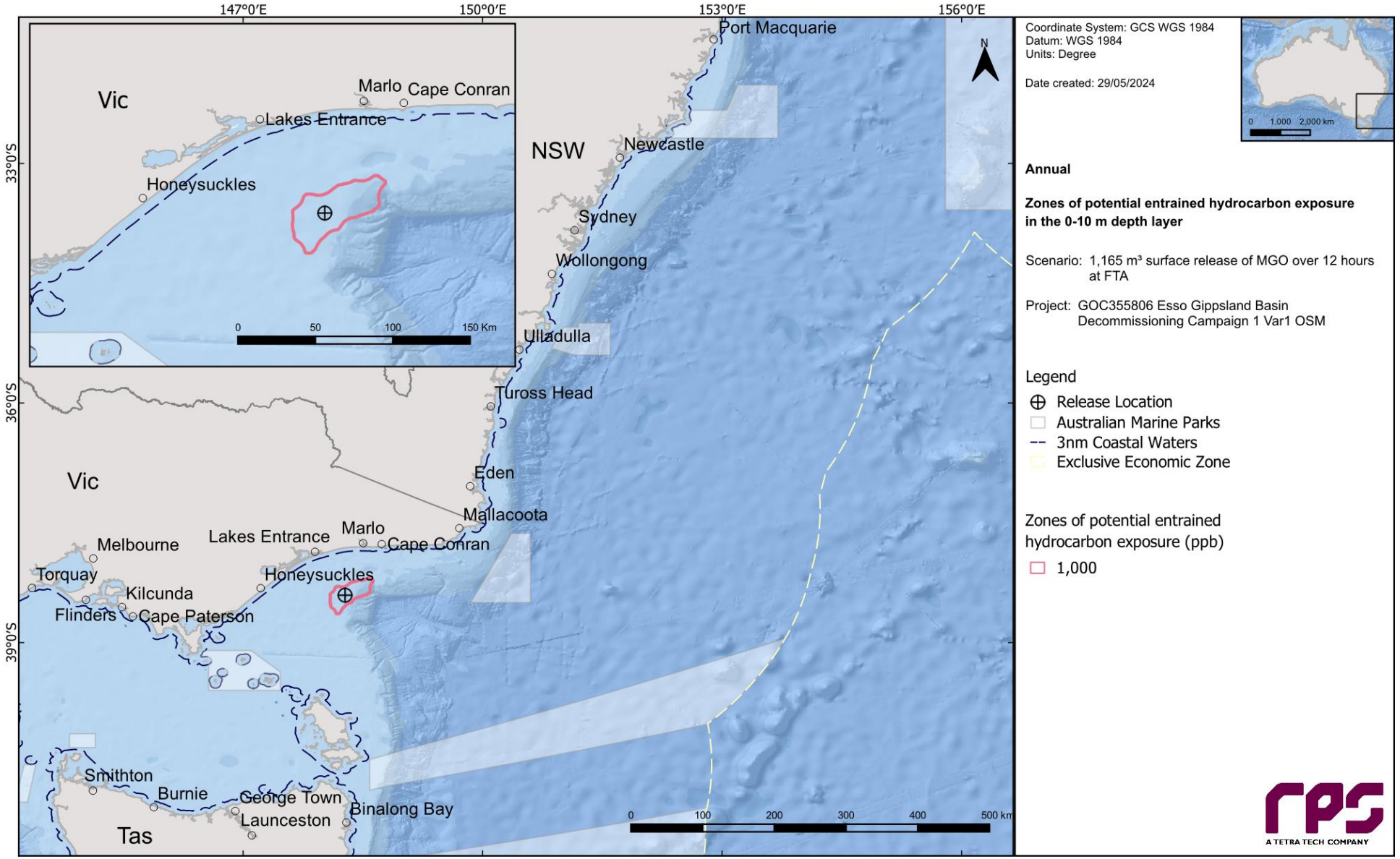

Figure 16.5 Zones of potential entrained hydrocarbon exposure above 1,000 ppb at 0-10 m below the sea surface in the event of a 1,165 m³ surface release of MGO over 12 hours at Forstescue. The results reflect annual conditions.

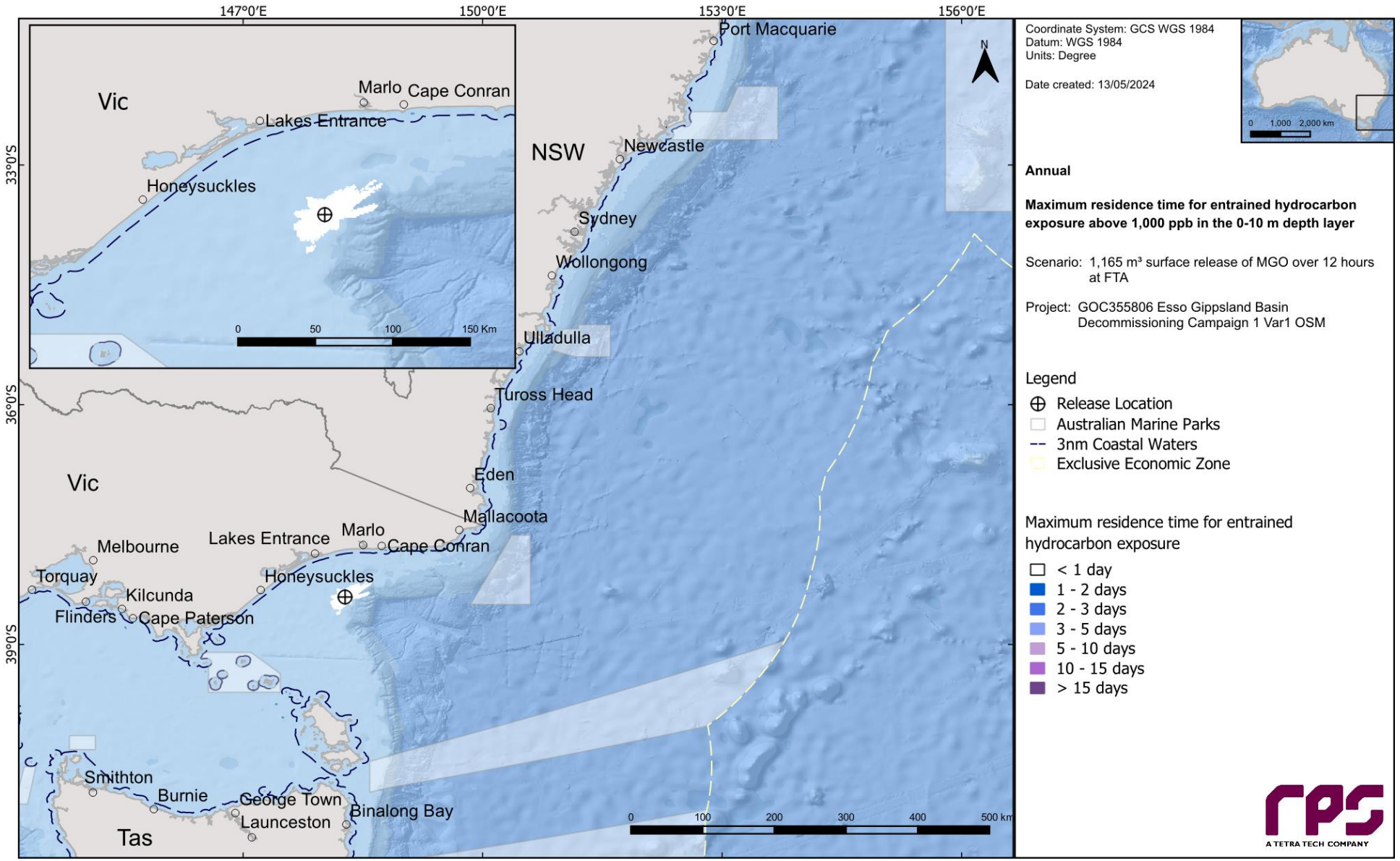

Figure 16.6 Maximum residence time for entrained hydrocarbon exposure above 1,000 ppb, at 0-10 m below the sea surface in the event of a 1,165 m³ surface release of MGO over 12 hours at Forstescue. The results reflect annual conditions

16.4 Scenario 4 – A 1,165 m^3 surface release of MGO at Kingfish A

Table 16.4 Probability of entrained hydrocarbons exposure above 1,000 ppb to marine based receptors in the 0–10 m depth layer. Results are based on a 1,165 m³ surface release of MGO over 12 hours at Kingfish A. The results reflect annual conditions.

Receptors		Maximum entrained hydrocarbon exposure (ppb)	Probability of entrained hydrocarbon exposure (%)	Minimum time before entrained hydrocarbon exposure (days)	Maximum residence time for entrained hydrocarbon exposure (days)
			1,000 ppb	1,000 ppb	1,000 ppb
BIA	Black-browed Albatross - Foraging	11,353	71	0.04	0.63
	Bullers Albatross - Foraging	11,353	71	0.04	0.63
	Campbell Albatross - Foraging	11,353	71	0.04	0.63
	Common Diving-petrel - Foraging	11,353	71	0.04	0.63
	Indian Yellow-nosed Albatross - Foraging	11,353	71	0.04	0.63
	Pygmy Blue Whale - Distribution	11,353	71	0.04	0.63
	Pygmy Blue Whale - Foraging	11,353	71	0.04	0.63
	Short-tailed Shearwater - Foraging	11,353	71	0.04	0.63
	Shy Albatross - Foraging	11,353	71	0.04	0.63
	Southern Right Whale - Known Core Range	11,353	71	0.04	0.63
	Wandering Albatross - Foraging	11,353	71	0.04	0.63
	White Shark - Distribution	11,353	71	0.04	0.63
	White-faced Storm-petrel - Foraging	1,427	2	0.92	0.08
IMCRA	Twofold Shelf	11,353	71	0.04	0.63

*The release location resides within the receptor boundaries.

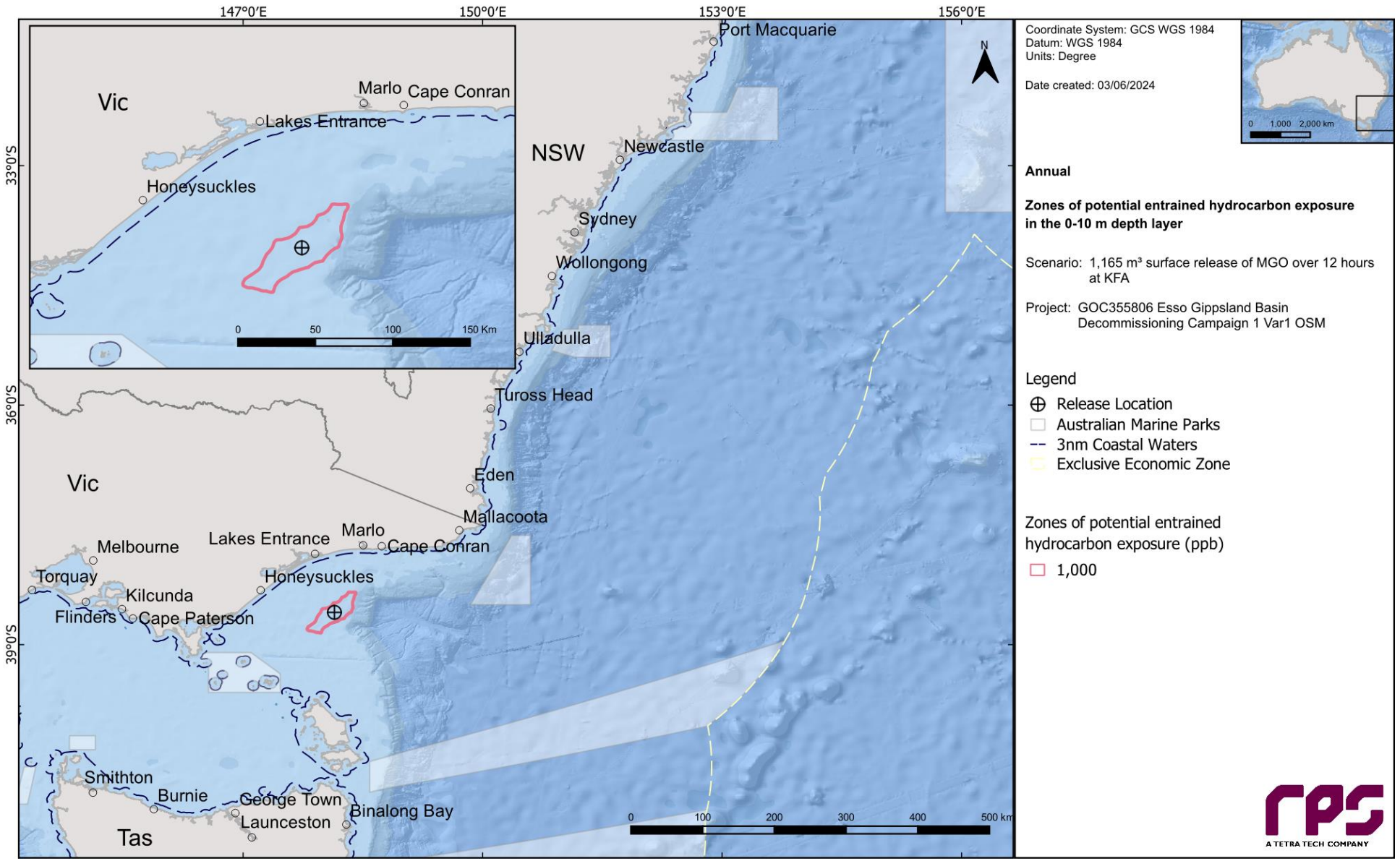

Figure 16.7 Zones of potential entrained hydrocarbon exposure above 1,000 ppb at 0-10 m below the sea surface in the event of a 1,165 m³ surface release of MGO over 12 hours at Kingfish A. The results reflect annual conditions.

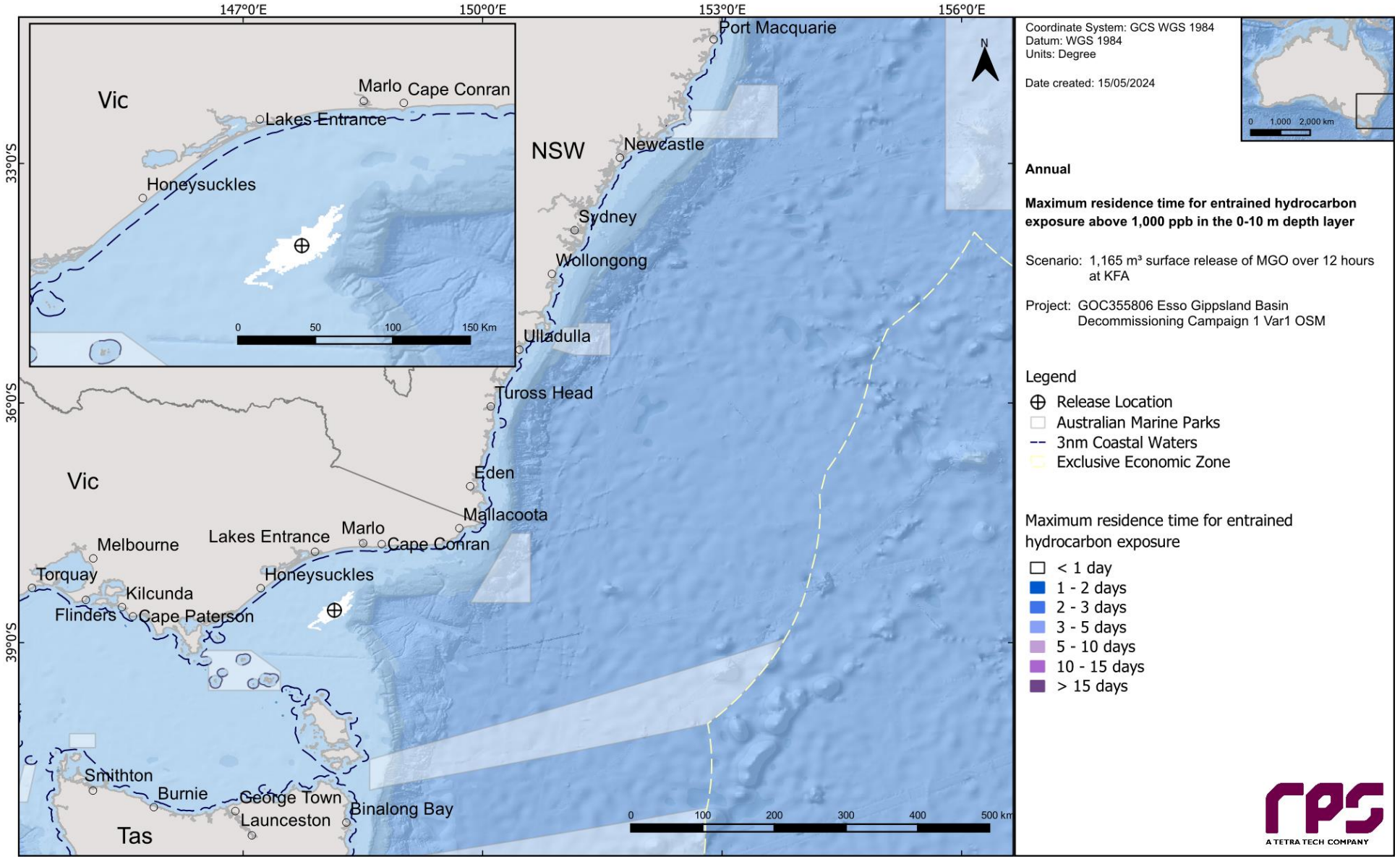

Figure 16.8 Maximum residence time for entrained hydrocarbon exposure above 1,000 ppb, at 0-10 m below the sea surface in the event of a 1,165 m³ surface release of MGO over 12 hours at Kingfish A. The results reflect annual conditions.

16.5 Scenario 5 – A 1,165 m^3 surface release of MGO at Flounder

Table 16.5 Probability of entrained hydrocarbons exposure above 1,000 ppb to marine based receptors in the 0–10 m depth layer. Results are based on a 1,165 m³ surface release of MGO over 12 hours at Flounder. The results reflect annual conditions.

Receptors		Maximum entrained hydrocarbon exposure (ppb)	Probability of entrained hydrocarbon exposure (%)	Minimum time before entrained hydrocarbon exposure (days)	Maximum residence time for entrained hydrocarbon exposure (days)
			1,000 ppb	1,000 ppb	1,000 ppb
	Antipodean Albatross - Foraging	2,987.40	6	0.29	0.33
	Black-browed Albatross - Foraging	18,716.10	70	0.04	1.5
	Bullers Albatross - Foraging	18,716.10	70	0.04	1.5
	Campbell Albatross - Foraging	18,716.10	70	0.04	1.5
	Common Diving-petrel - Foraging	18,716.10	70	0.04	1.5
	Indian Yellow-nosed Albatross - Foraging	18,716.10	70	0.04	1.5
BIA	Pygmy Blue Whale - Distribution	18,716.10	70	0.04	1.5
	Pygmy Blue Whale - Foraging	18,716.10	70	0.04	1.5
	Shy Albatross - Foraging	18,716.10	70	0.04	1.5
	Southern Right Whale - Known Core Range	18,716.10	70	0.04	1.5
	Wandering Albatross - Foraging	18,716.10	70	0.04	1.5
	White Shark - Distribution	18,716.10	70	0.04	1.5
	White-faced Storm-petrel - Foraging	1,142	2	1	0.04
IMCRA	Twofold Shelf	18,716.10	70	0.04	1.5
KEF	Upwelling East of Eden	18,716.10	70	0.04	1.5

*The release location resides within the receptor boundaries.

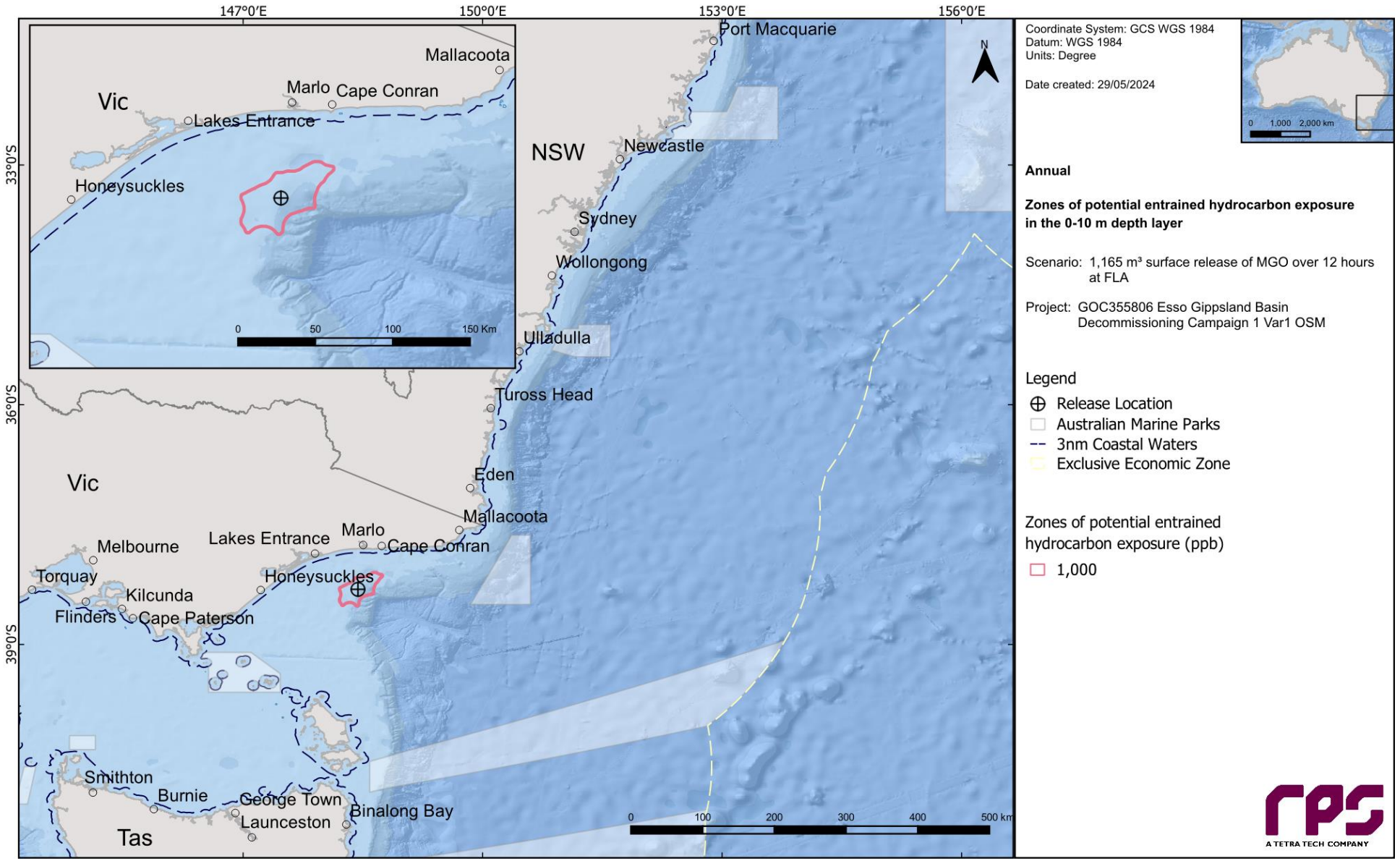

Figure 16.9 Zones of potential entrained hydrocarbon exposure above 1,000 ppb at 0-10 m below the sea surface in the event of a 1,165 m³ surface release of MGO over 12 hours at Flounder. The results reflect annual conditions.

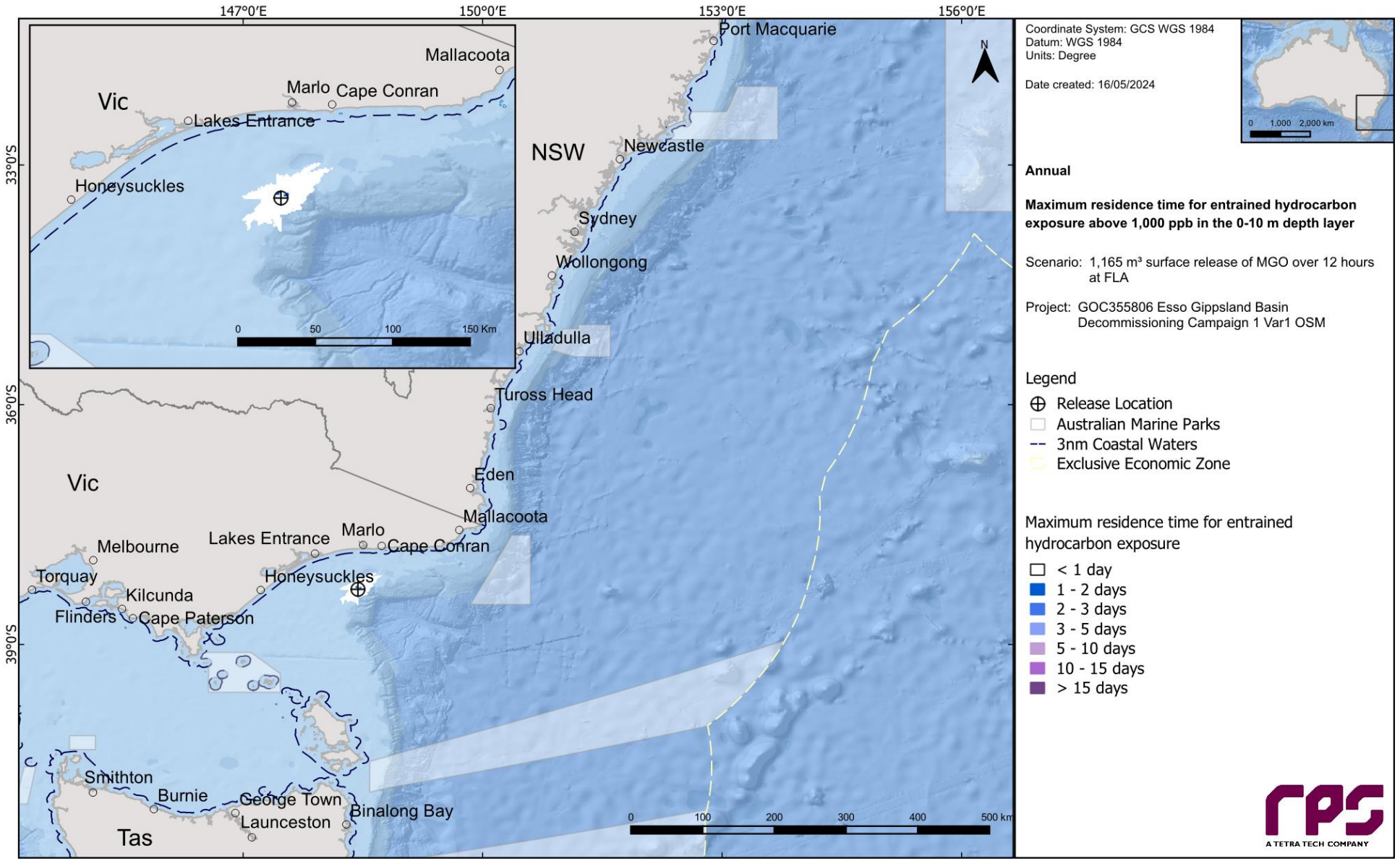

Figure 16.10 Maximum residence time for entrained hydrocarbon exposure above 1,000 ppb, at 0-10 m below the sea surface in the event of a 1,165 m³ surface release of MGO over 12 hours at Flounder. The results reflect annual conditions.

Appendix I-2: Gippsland Basin Vessel Activities - Oil Spill Modelling (CSV) (RPS, 2024b)

REPORT

Gippsland Basin Vessel Activities

Oil Spill Modelling

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No.:	MAQ0781J		
Version:	Rev2		
Date:	14 November 2024		

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Document Status

Version	Purpose of Document	Approved by	Reviewed by	Review Date
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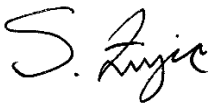
Rev0	Draft issued for client review	Dr. Sasha Zigic	Dr. Sasha Zigic	26 June 2019
Rev1	Revised Draft issued for client review	Dr. Sasha Zigic	Jeremie Bernard	24 July 2019
Rev2	Final report	Dr. Sasha Zigic	Jeremie Bernard	14 November 2024

Approval for issue

Name	Signature	Date
Dr. Sasha Zigic		14 November 2024

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RPS

Terms and Abbreviations

°	Degrees
‘	Minutes
“	Seconds
Actionable oil	Oil which is thick enough for effective use of mitigation strategies, such as mechanical clean up (e.g. skimmers), booms, dispersed, or burned
AMP	Australian marine parks
AMSA	Australian Maritime Safety Authority
ANZECC	Australian and New Zealand Environment and Conservation Council
API	American Petroleum Institute gravity (A measure of how heavy or light a petroleum liquid in comparison to water)
ASTM	American Society for Testing and Materials
bbl	Barrels (unit of volume; 1 bbl = 0.159 m3)
BIA	Biologically important areas
Bonn Agreement Oil Appearance Code	An agreement for cooperation in dealing with pollution of the North Sea by oil and other harmful substances, 1983, includes: Governments of the Kingdom of Belgium, the Kingdom of Denmark, the French Republic, the Federal Republic of Germany, the Republic of Ireland, the Kingdom of the Netherlands, the Kingdom of Norway, the Kingdom of Sweden, the United Kingdom of Great Britain and Northern Ireland and the European Union
°C	Degree Celsius (unit of temperature)
cP	Centipoise (unit of viscosity)
CFSR	Climate Forecast System Reanalysis
cm	Centimetre (unit of length)
Decay	The process where oil components are changed either chemically or biologically (biodegradation) to another compound. It includes breakdown to simpler organic carbon compounds by bacteria and other organisms, photo-oxidation by solar energy, and other chemical reactions
Dissolved hydrocarbons	Dissolved hydrocarbons within the water column with alternating double and single bonds between carbon atoms forming rings, containing at least one six-membered benzene ring
g/m2	Grams per square meter (unit of surface or area density)
EIA	Environmental impact assessment
Entrained hydrocarbons	Droplets or globules of oil that are physically mixed (but not dissolved) into the water column. Physical entrainment can occur either during pressurised release from a subsurface location, or through the action of breaking waves (>12 knots)
EP	Environmental plan
ESSO	Esso Australia
Evaporation	The process whereby components of the oil mixture are transferred from the sea-surface to the atmosphere
GODAE	Global Ocean Data Assimilation Experiment
HYCOM	Hybrid Coordinate Ocean Model is a data-assimilative, three-dimensional ocean model
HYDROMAP	Advanced ocean/coastal tidal model used to predict tidal water levels, current speed and current direction

IOA	Index of Agreement gives a non-dimensional measure of model accuracy or performance
Isopycnal layers	Water column layers with corresponding water densities
ITOPF	The International Tanker Owners Pollution Federation
km	Kilometre (unit of length)
km^2	Square Kilometres (unit of area)
KEF	Key ecological feature
Knot	unit of wind speed (1 knot = 0.514 m/s)
LC_{50}	Median lethal dose. The dose required for mortality of 50% of a tested population after a specified test duration
m	Metres (unit of length)
m^2	Metres squared (unit of area)
m^3	Metres cubed (unit of volume)
m/s	Meters per Second (unit of speed)
MAE	Mean Absolute Error is the average of the absolute values of the difference between the model predicted and observed surface elevations
MB	Marine boundary
NASA	National Aeronautics and Space Administration
NCEP	National Centres for Environmental Prediction
NOAA	National Oceanic and Atmospheric Administration
NOPSEMA	National Offshore Petroleum Safety and Environmental Management Authority
nm	nautical mile (unit of distance; 1 nm = 1.852 km)
NP	National Parks
Ocean current	Large scale and continuous movement of seawater generated by forces such as breaking waves, wind, the Coriolis effect, and temperature and salinity gradients. It is the main flow of ocean waters
OPEP	Oil pollution emergency plan
P&A	Plug and abandon
ppb	Parts per billion (concentration)
ppb.hrs	ppb multiplied for hours (concentration x time)
PSU	Practical salinity units
Ramsar site	A wetland site designated of international importance under the Ramsar Convention
RAMSAR Convention	The Convention on Wetlands, called the Ramsar Convention, is an intergovernmental treaty that provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources.
Sea surface exposure	Floating oil on the sea surface equal to or above reporting threshold (e.g. 1 g/m^2)
Shoreline contact	Stranded oil on the shoreline equal to or above reporting threshold (e.g. 10 g/m^2)
SIMAP	Spill Impact Mapping Analysis Program
Visible oil	Floating oil on the sea surface equal to or above reporting threshold (e.g. 0.5 g/m^2)

RPS

EXECUTIVE SUMMARY

Background

Esso Australia Pty Ltd (Esso) commissioned RPS to carry out quantitative oil spill modelling to assess four potential hydrocarbon spill scenarios associated with support vessel activities in the Gippsland Basin. The objective of this study is to support the update of the environmental plan (EP) and oil pollution emergency plan (OPEP) to be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA). This oil spill modelling study considered five spill scenarios:

- **Scenario 1:** a 280 m^3 surface release of MDO over 6 hours in the event of a loss of containment after a vessel collision at the West Kingfish (WKF) Platform;
- **Scenario 2:** a 280 m^3 surface release of MDO over 6 hours in the event of a loss of containment after a vessel collision at the Perch (PCA) Platform;
- **Scenario 3:** a 280 m^3 surface release of MDO over 6 hours in the event a loss of containment after a vessel collision at the Barracouta (BTA) Platform;
- **Scenario 4:** a 280 m^3 surface release of MDO over 6 hours in the event a loss of containment after a vessel collision at the Kipper (KPA) Facility; and
- **Scenario 5:** a 220 m^3 surface release of MDO over 6 hours in the event a loss of containment after a vessel collision at the Halibut A Platform;

The potential risk of exposure to the surrounding waters and contact to shorelines was assessed over the annual period.

Note that the modelling does not take into consideration any of the spill prevention, mitigation and response capabilities that might be in place during the operations, other than the capping stack. The modelling makes no allowance for any other intervention following a spill to reduce volumes and/or prevent hydrocarbons from reaching sensitive areas.

Methodology

The modelling study was carried out in several stages. Firstly, a five-year current dataset (2008–2012) that includes the combined influence of three-dimensional ocean and tidal currents was developed. Secondly, the currents, spatial winds and then detailed hydrocarbon properties were used as inputs in the three-dimensional oil spill model (SIMAP) to simulate the drift, spread, weathering and fate of the spilled condensate and crude.

As spills can occur during any set of wind and current conditions, for each scenario modelling was conducted using a stochastic (or statistical) approach, which involved running 100 spill simulations using the same release information (i.e. spill volume, duration and oil composition), though different start times. This ensured that each simulation was subjected to different wind and current conditions and, in turn, movement and weathering of the oil. For each scenario, once all 100 simulations were run, the model combined the results to determine the risk and potential exposure/contact to the surrounding waters and shorelines and specific sensitive resources over the annual period.

In addition to the stochastic modelling for the four scenarios, where applicable deterministic runs were also assessed and presented based on the following criteria;

1. largest volume of oil ashore;
2. longest length of shoreline contacted above 100 g/m^2 (actionable shoreline oil);

3. minimum time before exposure to immediate nearshore waters by visible oil (1 g/m^2); and
4. largest swept area of oil on the sea surface above 10 g/m^2 (actionable sea surface oil).

Oil Properties

The oil type used for the vessel collision incidents was a marine diesel oil (MDO). MDO is a light-persistent fuel oil used in the maritime industry. It has a density of 829.1 kg/m^3 (API of 37.6) and a low pour point (-14˚C). The low viscosity (4 cP) indicates that this oil will spread quickly when released and will form a thin to low thickness film on the sea surface, increasing the rate of evaporation. MDO is composed of 95% volatiles and semi- to low-volatile compounds and 5% persistent compounds. These properties classify it as a Group II oil according to the International Tanker Owners Pollution Federation classifications (ITOPF, 2014) and AMSA (2015a) guidelines.

1 Introduction

1.1 Project Background

Esso Australia Pty Ltd (Esso) commissioned RPS to carry out quantitative oil spill modelling to assess four potential hydrocarbon spill scenarios associated with support vessel activities in the Gippsland Basin. The objective of this study is to support the update of the environmental plan (EP) and oil pollution emergency plan (OPEP) to be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA). This oil spill modelling study considered four spill scenarios:

- **Scenario 1:** a 280 m^3 surface release of MDO over 6 hours in the event of a loss of containment after a vessel collision at the West Kingfish (WKF) Platform;
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- **Scenario 4:** a 280 m^3 surface release of MDO over 6 hours in the event a loss of containment after a vessel collision at the Kipper (KPA) Facility; and
- **Scenario 5:** a 220 m^3 surface release of MDO over 6 hours in the event a loss of containment after a vessel collision at the Halibut A Platform;

Figure 1 is a map showing the release locations, while the coordinates are presented in Table 1.

The potential risk of exposure to the surrounding waters and contact to shorelines was assessed for annual conditions.

The purpose of the modelling is to further improve understanding of a conservative 'outer envelope' of the potential area that may be affected in the unlikely event of hydrocarbon release. The modelling does not take into consideration any of the spill prevention, mitigation and response capabilities that would be implemented in response to the spill. Therefore, the modelling results represent the maximum extent that the released hydrocarbon may influence.

The spill modelling was performed using an advanced three-dimensional trajectory and fates model; Spill Impact Mapping Analysis Program (SIMAP). The SIMAP model calculates the transport, spreading, entrainment and evaporation of spilled hydrocarbons over time, based on the prevailing wind and current conditions and the physical and chemical properties.

The hydrocarbon spill model, the method and analysis applied herein uses modelling algorithms which have been peer reviewed and published in international journals. Further, RPS warrants that this work meets and exceeds the American Society for Testing and Materials (ASTM) Standard F2067-13 "*Standard Practice for Development and Use of Oil Spill Models*".

Table 1 Coordinates of the release locations used as part of the Gippsland Basin vessel activities oil spill modelling study.

Scenario	Location	Latitude	Longitude	Depth (mLAT)
1	West Kingfish Platform (WKF)	38° 35’ 39" S	148° 06’ 15" E	76
2	Perch Platform (PCA)	38° 34’ 15" S	147° 19’ 16” E	42
3	Barracouta Platform (BTA)	38° 17’ 53" S	147° 40’ 28" E	46
4	Kipper Facility (KPA)	38°10' 53" S	148° 35' 35” E	94
5	Halibut A Platform	38°24’15.30” S	148°19’12.91” E	73

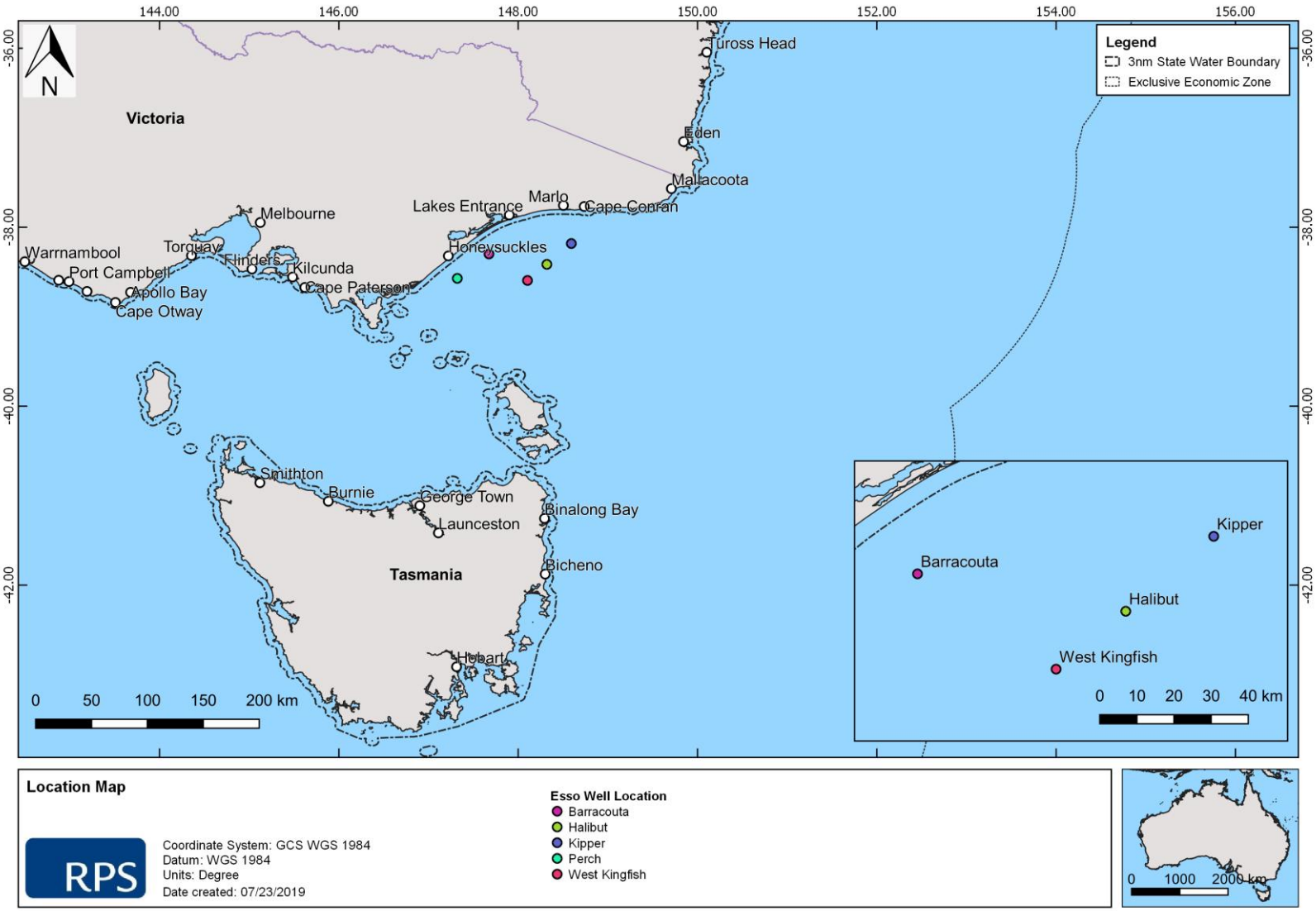

Figure 1 Map of the release locations used as part of the Gippsland Basin vessel activities oil spill modelling study.

2 Scope of Work

1. Generate five years of net hind-cast currents from 2008 to 2012 (inclusive) that include the combined influence large-scale ocean circulation from the HYCOM (Hybrid Coordinate Ocean Model) Ocean model and tidal circulation from the HYDROMAP tidal model;
2. Use high-resolution wind data, current data and hydrocarbon characteristics as input into the 3-dimensional oil spill model, SIMAP, to model the movement, spreading, entrainment, weathering and potential shoreline contact by the hydrocarbons over time;
3. Use SIMAP's stochastic model (also known as a probabilistic model) to calculate exposure to surrounding waters (sea surface and water column) and shorelines. This involved running 100 randomly selected single trajectory simulations per scenario, with each simulation having the same spill information (spill volume, duration and composition of hydrocarbons) but varying start times. This ensured that each spill trajectory was subjected to unique set of wind and current conditions; and
4. In addition to the stochastic modelling for the four scenarios, where applicable deterministic runs were also assessed and presented based on the following criteria;
    a. largest volume of oil ashore;
    b. longest length of shoreline contacted above 100 g/m^2 (actionable shoreline oil);
    c. minimum time before shoreline contact by visible oil (above 0.5 g/m^2); and
    d. largest swept area of oil on the sea surface above 10 g/m^2 (actionable sea surface oil).

3 Regional Currents

The Gippsland Basin lies within the eastern portion of the Bass Strait, which is a sea straight separating Tasmania from the southern Australian mainland. The strait is a relatively shallow area of the continental shelf, connecting the southeast Indian Ocean with the Tasman Sea. The Bass Strait region has a reputation for high winds and strong tidal currents (Jones, 1980). Currents within the strait are primarily driven by tides, winds and density driven flows. During winter the South Australian current moves dense, salty water eastward from the Great Australian Bight into the western margin of the Bass Strait (Sandery and Kampf, 2007). In winter and spring, waters within the strait are well mixed with no obvious stratification, while during summer the central regions of the strait become stratified (Baines and Fandry, 1983; Middleton and Black, 1994).

The varied geography and bathymetry of the region, in addition to the forcing of the south-eastern Indian Ocean and local meteorology lead to complex shelf and slope circulation patterns (Middleton and Bye, 2007). During winter there is a strong eastward water flow due to the strengthening of the South Australian Current (fed by the Leeuwin Current in the Northwest Shelf), which bifurcates with one extension moving though the Bass Strait, and another forming the Zeehan Current off western Tasmania (Sandery and Kampf, 2007). During summer, water flow reverses off Tasmania, King Island and the Otway Basin travelling eastward, as the coastal current develops due to southeasterly winds.

To accurately describe the variability in currents between the inshore and offshore region, a hybrid regional dataset was developed by combining deep ocean predictions obtained from HYCOM (Hybrid Coordinate Ocean Model) with surface tidal currents developed by RPS. The following sections provide a summary of the hybrid regional data set.

3.1 Tidal Currents

Tidal current data was generated using RPS's advanced ocean/coastal model, HYDROMAP. The HYDROMAP model has been thoroughly tested and verified through field measurements throughout the world over the past 32 years (Isaji & Spaulding, 1984; Isaji, et al., 2001; Zigic, et al., 2003). HYDROMAP tidal current data has been used as input to forecast (in the future) and hindcast (in the past) pollutant spills in Australian waters and forms part of the Australian National Oil Spill Emergency Response System operated by AMSA (Australian Maritime Safety Authority).

HYDROMAP employs a sophisticated sub-gridding strategy, which supports up to six levels of spatial resolution, halving the grid cell size as each level of resolution is employed. The sub-gridding allows for higher resolution of currents within areas of greater bathymetric and coastline complexity, and/or of particular interest to a study.

The numerical solution methodology follows that of Davies (1977a and 1977b) with further developments for model efficiency by Owen (1980) and Gordon (1982). A more detailed presentation of the model can be found in Isaji and Spaulding (1984) and Isaji et al. (2001).

3.1.1 Grid Setup

The tidal model domain has been sub-gridded to a resolution of 500 m for shallow and coastal regions, starting from an offshore (or deep water) resolution of 8 km. The finer grids were allocated in a step-wise fashion to more accurately resolve flows along the coastline, around islands and over regions with more complex bathymetry. Figure 2 shows the tidal model grid covering the study domain.

A combination of datasets was used and merged to describe the shape of the seabed within the grid domain (Figure 3). These included spot depths and contours which were digitised from nautical charts released by the

hydrographic offices as well as Geoscience Australia database and depths extracted from the Shuttle Radar Topography Mission (SRTM30_PLUS) Plus dataset (see Becker et al., 2009).

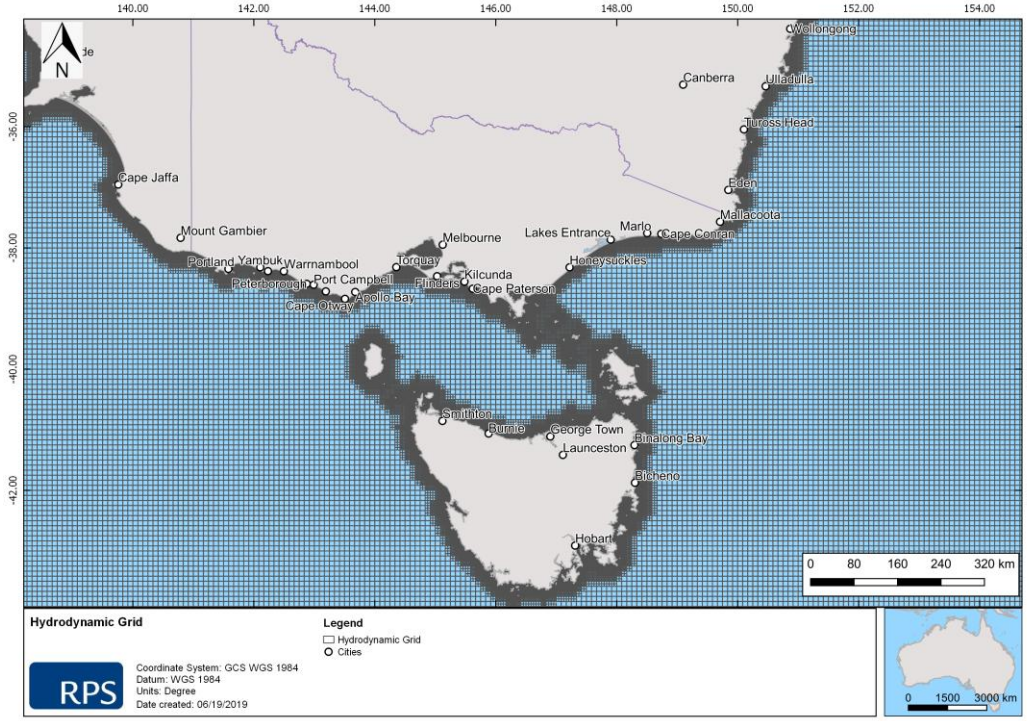

Figure 2 Map showing the regions of sub-gridding for the study area.

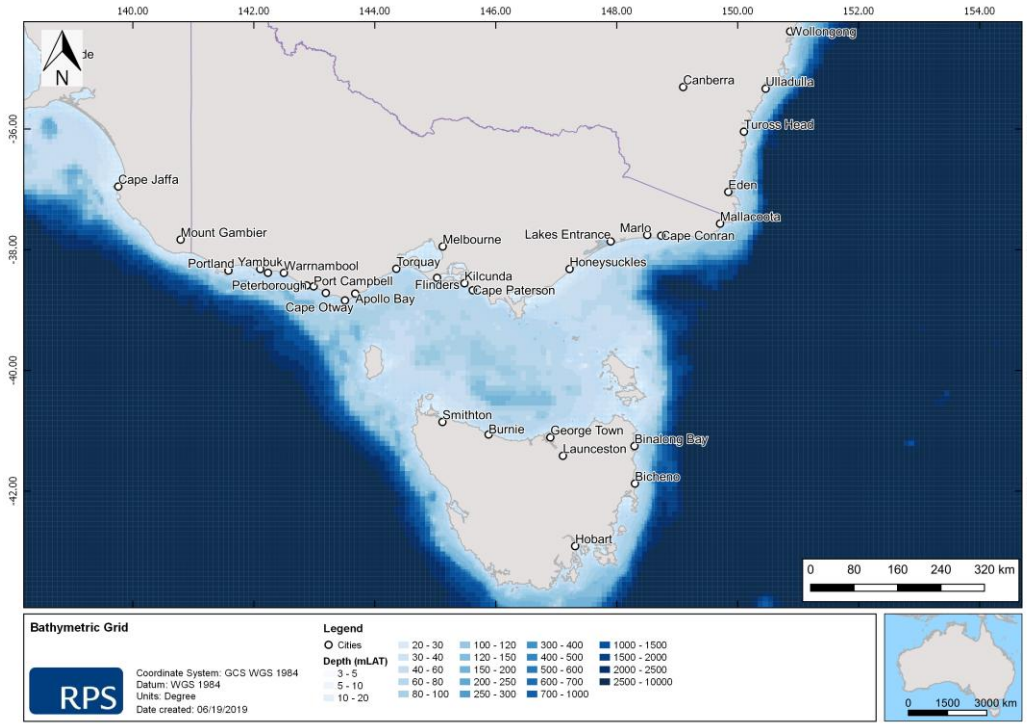

Figure 3 Bathymetry defined throughout the tidal model domain.

3.1.2 Tidal Conditions

The ocean boundary data for the regional model was obtained from satellite measured altimetry data (TOPEX/Poseidon 7.2) which provided estimates of the eight dominant tidal constituents at a horizontal scale of approximately 0.25 degrees. The eight major tidal constituents used were K_2, S_2, M_2, N_2, K_1, P_1, O_1 and Q_1. Using the tidal data, surface heights were firstly calculated along the open boundaries, at each time step in the model.

The TOPEX/Poseidon satellite data has a global resolution of 0.25 degrees and is produced and quality controlled by NASA (National Aeronautics and Space Administration). The satellites equipped with two highly accurate altimeters and capable of taking sea level measurements with an accuracy of ± 5 cm measured oceanic surface elevations (and the resultant tides) for over 13 years (1992–2005). In total, these satellites carried out 62,000 orbits of the planet.

The TOPEX/Poseidon tidal data has been widely used amongst the oceanographic community, being included in more than 2,100 research publications (e.g. Andersen, 1995; Ludicone et al., 1998; Matsumoto et al., 2000; Kostianoy et al., 2003; Yaremchuk and Tangdong, 2004; Qiu and Chen 2010). As such the TOPEX/Poseidon tidal data is considered suitably accurate for this study.

3.1.3 Surface Elevation Validation

To ensure that tidal predictions were accurate, predicted surface elevations were compared to data observed at five locations (see Figure 4).

To provide a statistical measure of the model performance, the Index of Agreement (IOA - Willmott (1981)) and the Mean Absolute Error (MAE - Willmott (1982) and Willmott and Matsuura (2005)) were used.

The MAE (Eq.1) is simply the average of the absolute values of the difference between the model-predicted (P) and observed (O) variables. It is a more natural measure of the average error (Willmott and Matsuura, 2005) and more readily understood. The MAE is determined by:

$$MAE = N^{-1}\sum_{i=1}^{N}|P_i - O_i| \qquad \text{Eq.1}$$

Where: N = Number of observations

P_i = Model predicted surface elevation

O_i = Observed surface elevation

The Index of Agreement (IOA; Eq. 2) in contrast, gives a non-dimensional measure of model accuracy or performance. A perfect agreement between the model predicted and observed surface elevations exists if the index gives an agreement value of 1, and complete disagreement between model and observed surface elevations will produce an index measure of 0 (Wilmott, 1981). Willmott et al (1985) also suggests that values larger than 0.5 may represent good model performance. The IOA is determined by:

$$IOA = 1 - \frac{\sum|X_{model} - X_{obs}|^2}{\sum(|X_{model} - \overline{X_{obs}}| + |X_{obs} - \overline{X_{obs}}|)^2} \qquad \text{Eq.2}$$

Where: X_{model} = Model predicted surface elevation

X_{obs} = Observed surface elevation

Clearly, a greater IOA and lower MAE represent a better model performance.

Figure 5 and Figure 6 illustrate a comparison of the predicted and observed surface elevations for each location for January 2014. As shown on the graph, the model accurately reproduced the phase and amplitudes throughout the spring and neap tidal cycles.

Table 2 Statistical comparison between the observed and predicted surface elevations.

Tide Station	IOA	MAE (m)
Gabo Island	0.98	0.08
Port MacDonnell	0.98	0.05
Port Welshpool	0.92	0.30
Portland	0.97	0.07
Stack Island	0.96	0.22

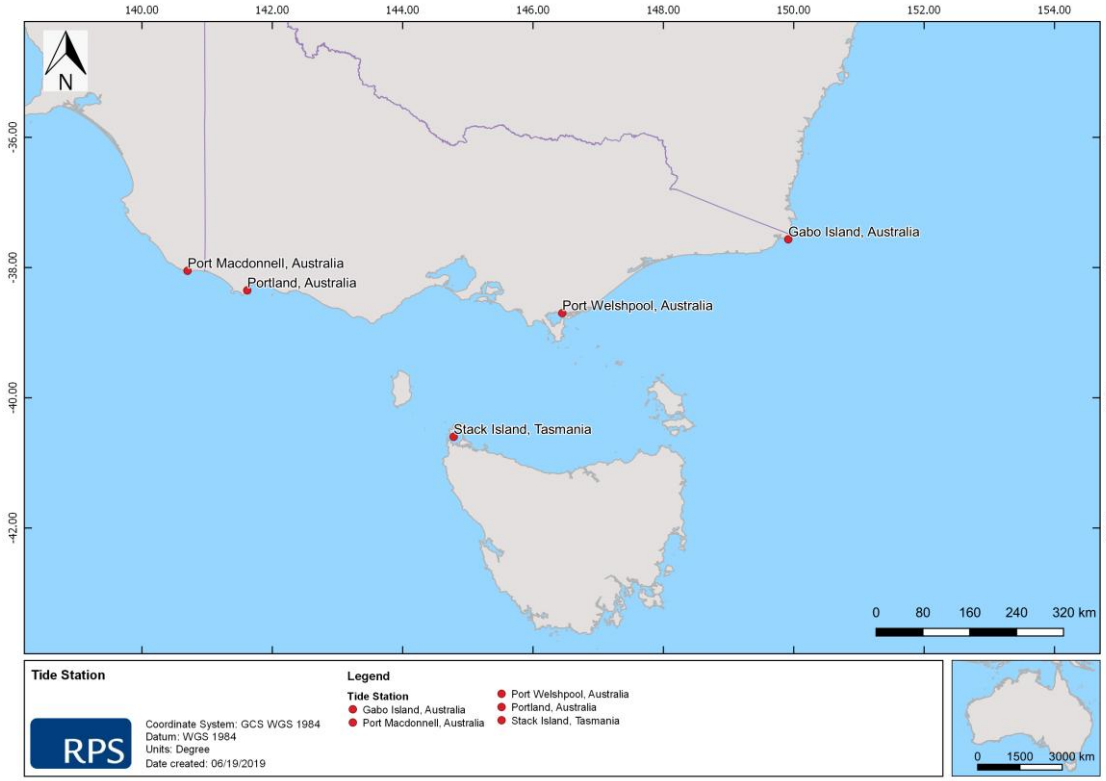

Figure 4 Tide stations used to calibrate surface elevation within the model.

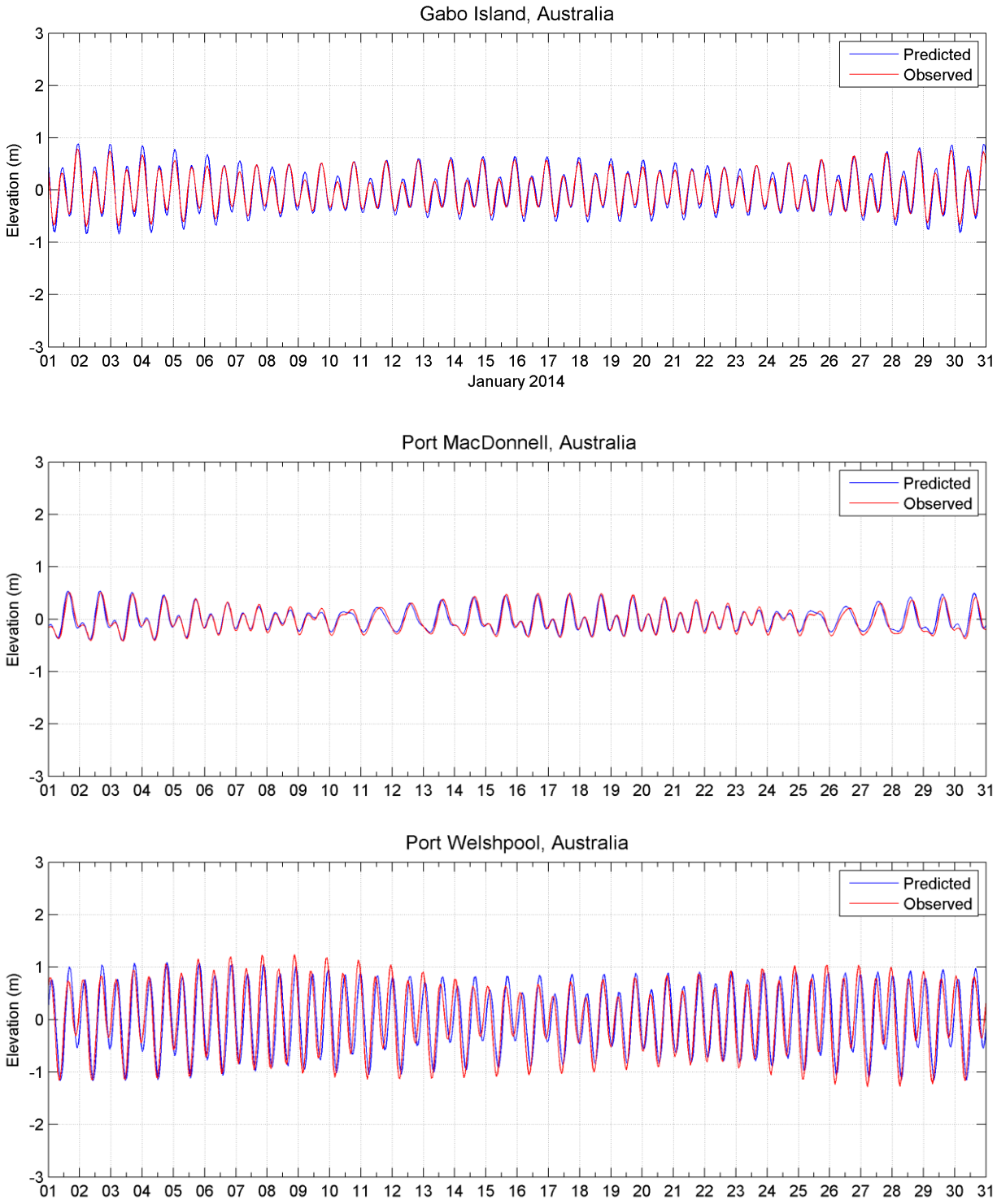

Figure 5 Comparison between HYDROMAP predicted (blue line) and observed (red line) surface elevation.

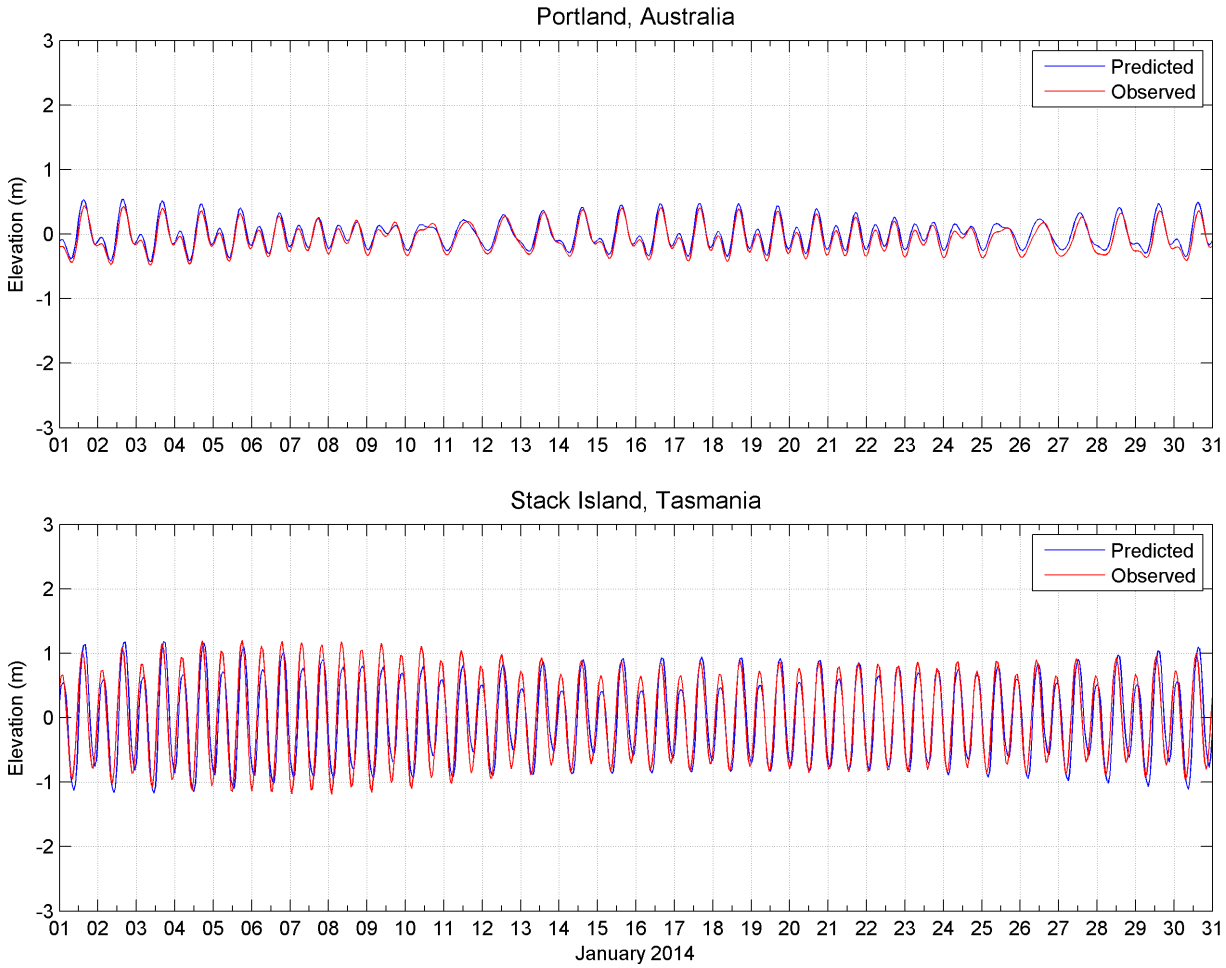

Figure 6 Comparison between HYDROMAP predicted (blue line) and observed (red line) surface elevation.

3.2 Ocean Currents

Data describing the flow of ocean currents was obtained from HYCOM (Hybrid Coordinate Ocean Model, (Chassignet et al., 2007), which is operated by the HYCOM Consortium, sponsored by the Global Ocean Data Assimilation Experiment (GODAE). HYCOM is a data-assimilative, three-dimensional ocean model that is run as a hindcast (for a past period), assimilating time-varying observations of sea surface height, sea surface temperature and in-situ temperature and salinity measurements (Chassignet et al., 2009). The HYCOM predictions for drift currents are produced at a horizontal spatial resolution of approximately 8.25 km (1/12th of a degree) over the region, at a frequency of once per day. HYCOM uses isopycnal layers in the open, stratified ocean, but uses the layered continuity equation to make a dynamically smooth transition to a terrain following coordinate in shallow coastal regions, and to z-level coordinates in the mixed layer and/or unstratified seas.

For this study, the HYCOM hindcast currents were obtained for the years 2008 to 2012 (inclusive). Figure 7 shows an example screenshot of the modelled surface ocean currents on 16th January 2011.

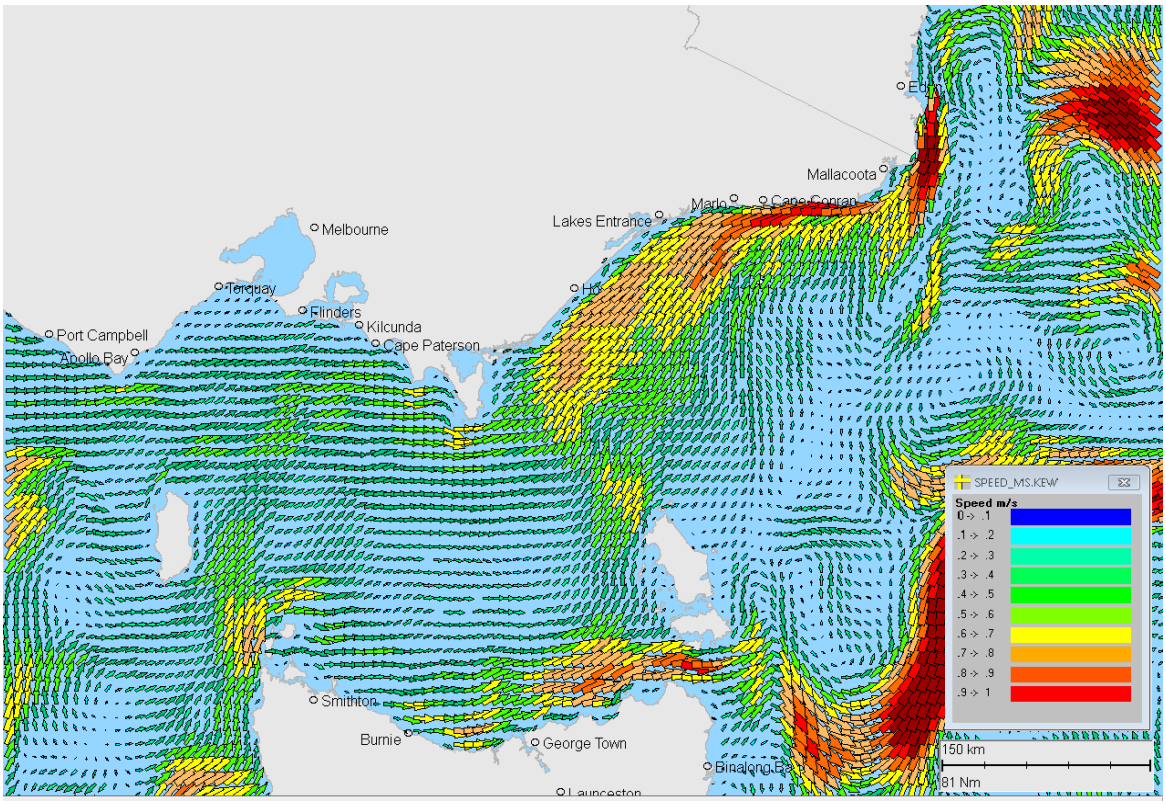

Figure 7 Modelled surface ocean currents on 16th January 2011. Derived from the HYCOM ocean hindcast model. The colours of the vectors indicate current speed in m/s.

3.3 Surface Currents

Table 3 displays the predicted average and maximum surface current speeds between the Kipper, Barracouta, Perch and West Kingfish release locations. Figure 8 and Figure 9 show the monthly and annual combined current rose distributions (2008-2012 inclusive) derived by aggregating the HYCOM ocean current data and HYDROMAP tidal data, respectively.

Note the convention for defining current direction throughout this report is the direction the current flows towards. Each branch of the current rose distribution represents the currents flowing to that direction, with north to the top of the diagram. The branches are divided into segments of different colour, which represent the current speed ranges for each direction. Speed intervals of 0.1 m/s are predominantly used in these current roses. The length of each coloured segment within a branch is proportional to the frequency of currents flowing within the corresponding speed and direction.

The combined current data (ocean plus tides) showed that the currents flowed along a predominant northeast to southwest axis, running parallel to the coastline. Average monthly surface current speed oscillated around 0.3 m/s while the maximum surface current speeds ranged between 0.7 m/s (November) and 1.3 m/s (February) near the spill locations.

Table 3 **Predicted average and maximum surface current speed near the study area. Data derived by combining the HYCOM ocean data and HYDROMAP high resolution tidal data from 2008-2012 (inclusive).**

Month	Average current speed (m/s)	Maximum current speed (m/s)	General Direction
January	0.27	1.11	Northeast – Southwest
February	0.28	1.26	Northeast – Southwest
March	0.26	0.87	Northeast – Southwest
April	0.26	0.75	Northeast – Southwest
May	0.31	1.10	West - Southwest
June	0.31	0.99	West - Southwest
July	0.31	0.97	West - Southwest
August	0.29	0.99	West - Southwest
September	0.29	0.84	Variable
October	0.26	0.77	Northeast – Southwest
November	0.26	0.71	Northeast – Southwest
December	0.27	0.87	Northeast
Minimum	**0.25**	**0.71**	
Maximum	**0.31**	**1.26**	

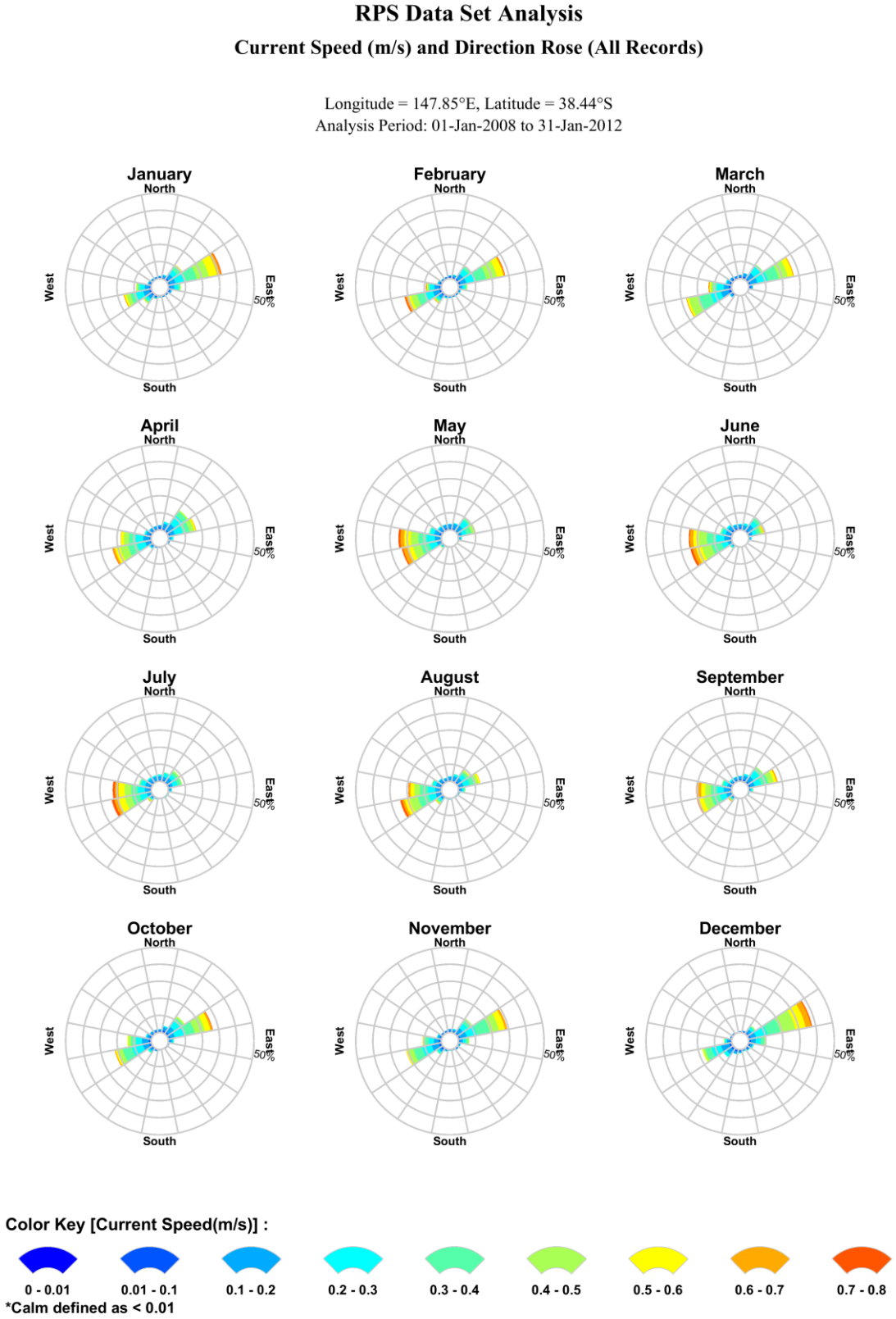

Figure 8 Monthly surface current rose plots near the release locations (derived by combining the HYDROMAP tidal currents and HYCOM ocean currents for 2008 – 2012 inclusive).

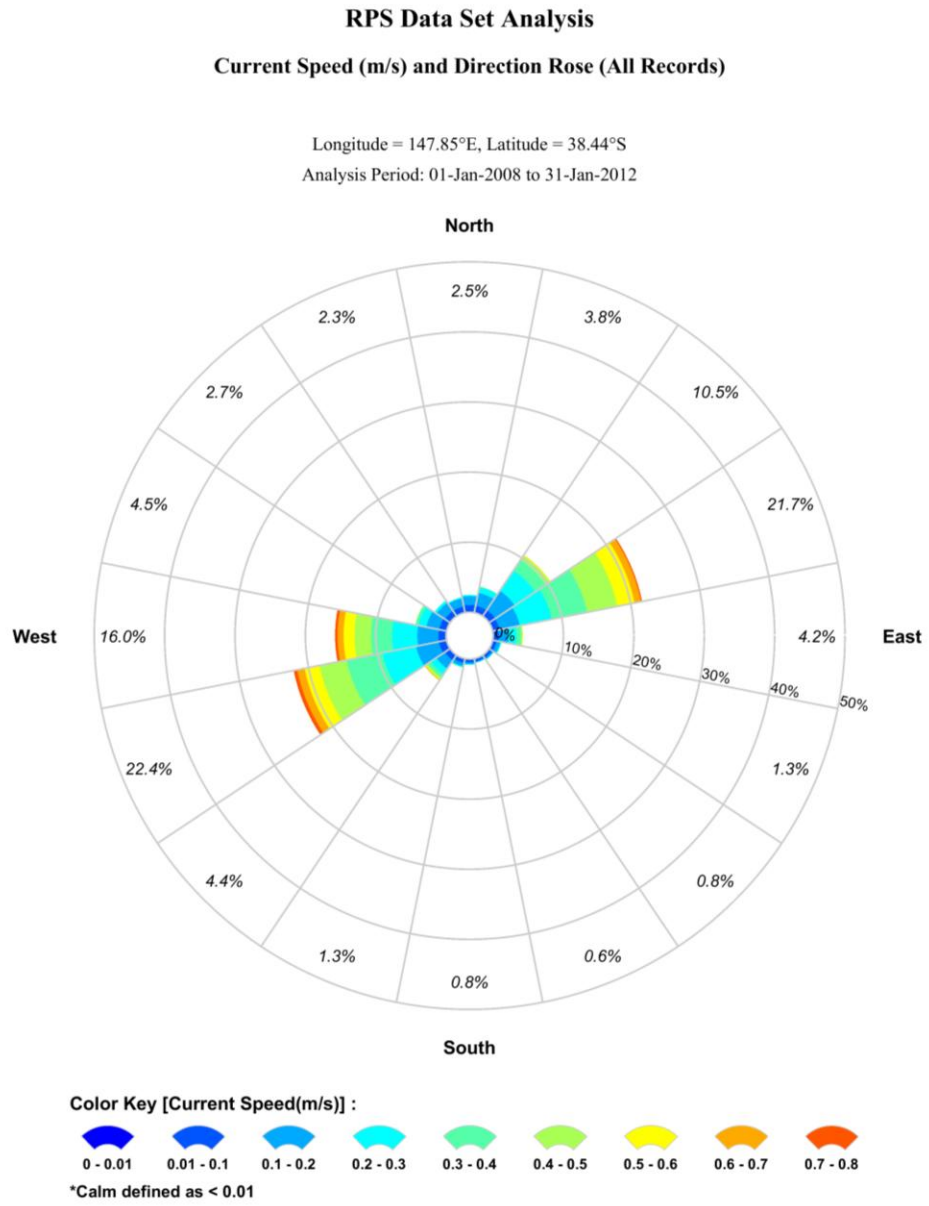

Figure 9 Annual surface current rose plot near the release locations (derived by combining the HYDROMAP tidal currents and HYCOM ocean currents for 2008 – 2012 inclusive).

4 Wind Data

High resolution wind data from 2008 to 2012 (inclusive) was sourced from the National Centre for Environmental Prediction (NCEP) Climate Forecast System Reanalysis (CFSR; see Saha et al., 2010). The CFSR wind model includes observations from many data sources; surface observations, upper-atmosphere air balloon observations, aircraft observations and satellite observations. The model is capable of accurately representing the interaction between the earth's oceans, land and atmosphere. The gridded wind data output is available at ¼ of a degree resolution (~33 km) and 1-hourly time intervals. Figure 10 shows the spatial resolution of the wind field used as input into the oil spill model and the wind node used to create the wind roses.

Table 4 shows the monthly average and maximum winds derived from the CFSR node located near the release locations. Figure 11 and Figure 12 illustrates the monthly and annual wind rose distributions.

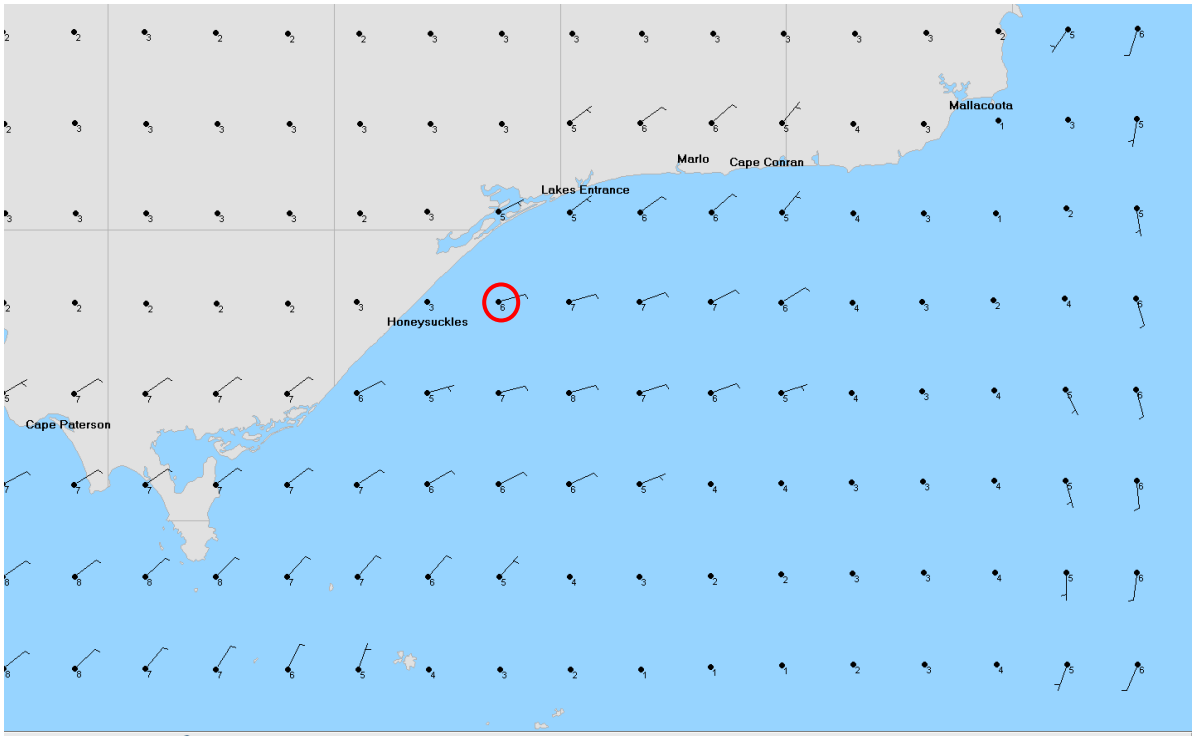

Figure 10 Spatial resolution of the CFSR modelled wind data used as input into the oil spill model. The red circle indicates the wind node used to generate the wind roses.

Note that the atmospheric convention for defining wind direction, that is, the direction the wind blows from, is used to reference wind direction throughout this report. Each branch of the rose represents wind coming from that direction, with north to the top of the diagram. Sixteen directions are used. The branches are divided into segments of different colour, which represent wind speed ranges from that direction. Speed ranges of 3 knot intervals, excluding the calm and near calm conditions are used in these wind roses. The length of each segment within a branch is proportional to the frequency of winds blowing within the corresponding range of speeds from that direction.

The model wind data demonstrated that this region typically experiences strong winds all year round and although the monthly average wind speeds remain under 14 knots, winds can at times blow over 50 knots. Winds in the region typically blow from the northeast and/or southwest from January to April and October to December while westerly winds are dominant during the winter months.

Table 4 **Predicted average and maximum winds for the wind station closest to the release sites. Data derived from CFSR hindcast model from 2008-2012 (inclusive).**

Month	Average wind (knots)	Maximum wind (knots)	General Direction (From)
January	13	34	Northeast - Southwest
February	13	33	Northeast – Southwest
March	12	40	Northeast – Southwest
April	12	44	Northeast – Southwest
May	12	38	West - Southwest
June	13	38	West
July	14	40	West
August	14	36	West
September	14	43	West - Southwest
October	13	34	Northeast - Southwest
November	12	36	Northeast - Southwest
December	13	53	Northeast - Southwest
Minimum	**12**	**33**	
Maximum	**14**	**53**	

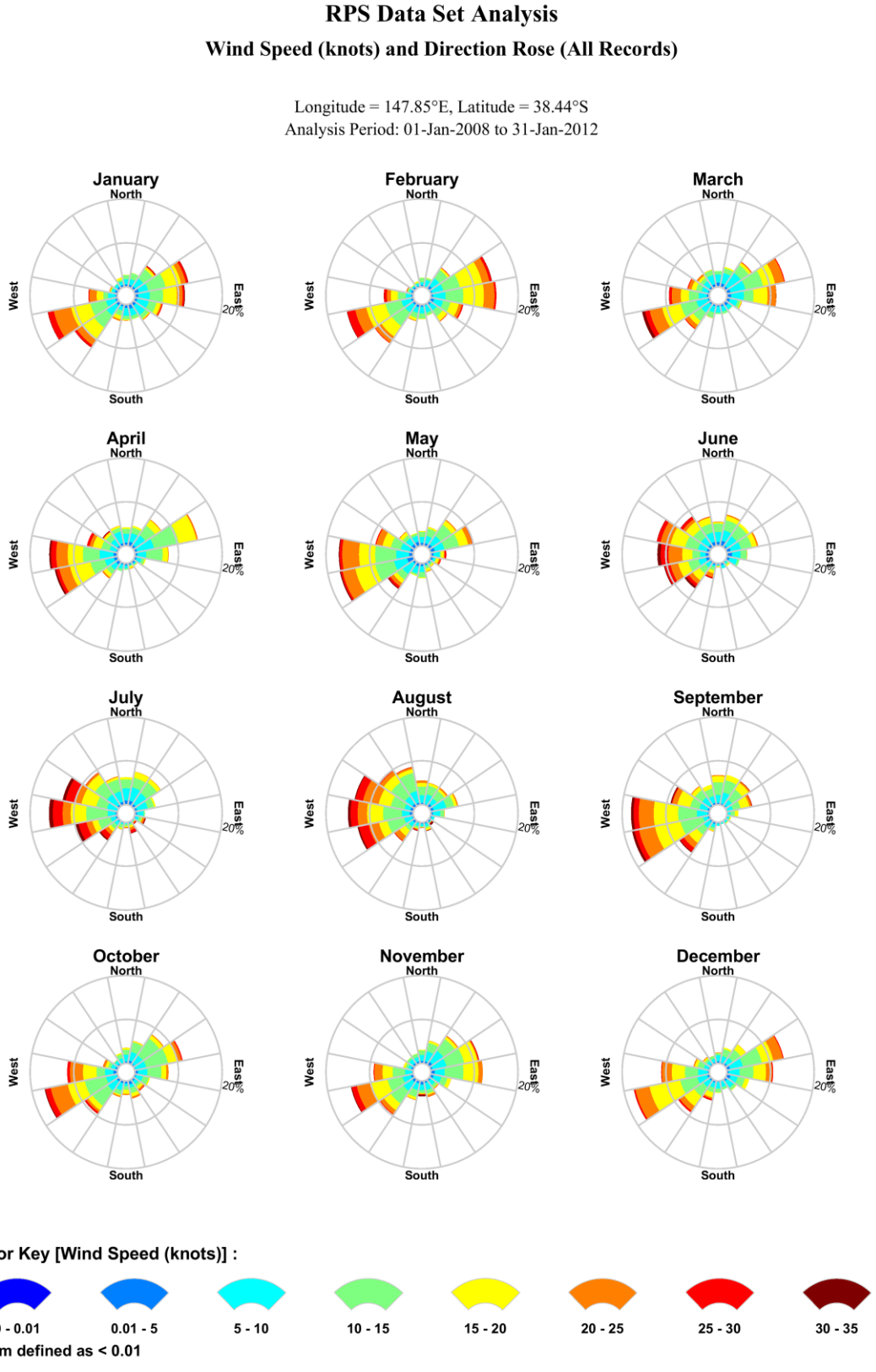

Figure 11 Monthly wind rose distributions derived from the CFSR model from 2008–2012 (inclusive), for the wind node closest to the release locations.

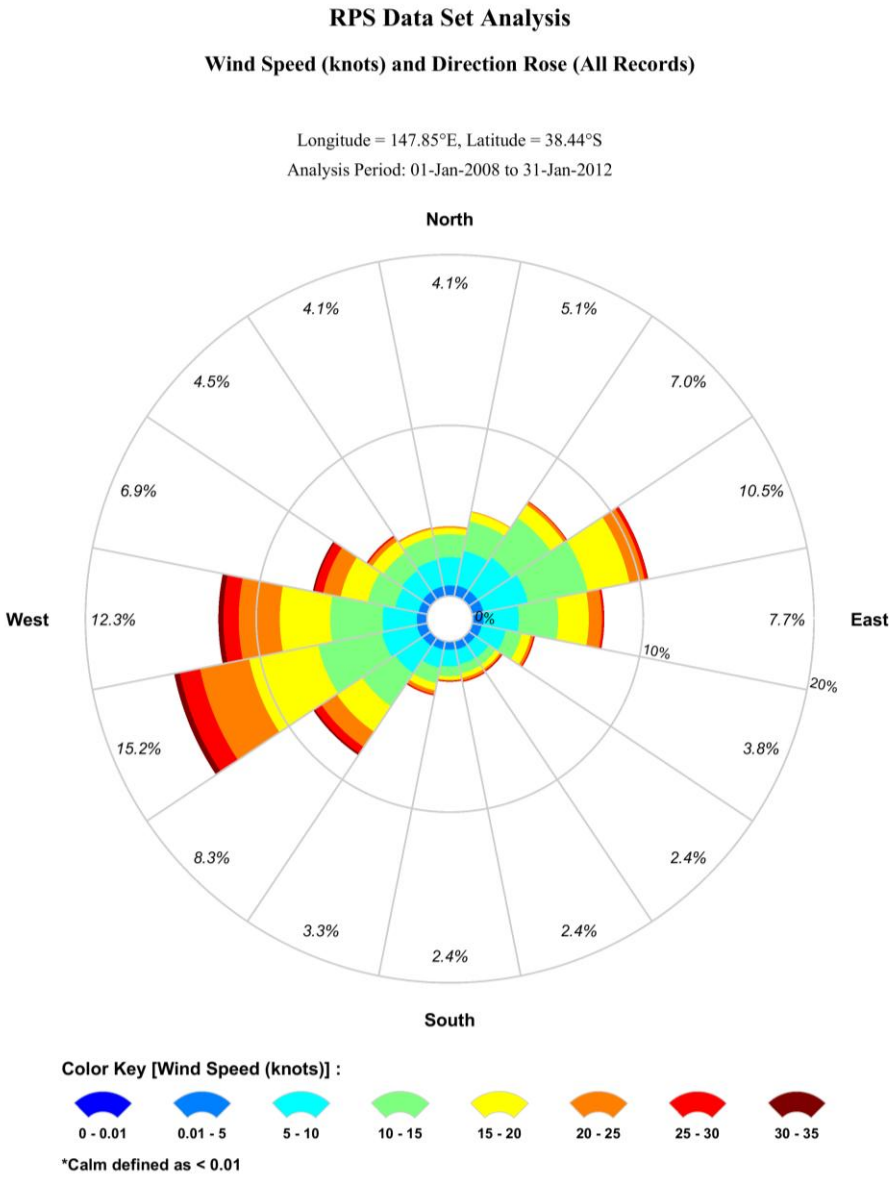

Figure 12 Annual wind rose distributions derived from the CFSR model from 2008–2012 (inclusive), for the wind node closest to the release locations.

5 Water Temperature and Salinity

The monthly depth-varying water temperature and salinity profiles at 5 m intervals through the water column from the nearest locations to the release sites (refer to Figure 13 to Figure 16) was obtained from the World Ocean Atlas 2013 database produced by the National Oceanic and Atmospheric Administration's (NOAA) National Centers for Environmental Information (formerly the National Oceanographic Data Centre) (see Levitus et al., 2013). The data is used to inform the weathering, movement and evaporative loss of hydrocarbon spills in the surface and subsurface layers.

Table 5 to Table 8 detail the monthly average sea surface temperatures and salinity (from the 0-5 m depth layer) nearest to the release locations. Monthly average sea surface temperatures were shown to range from 13-14°C (August, September) to 19-21°C (March), across all release locations. Salinity remained consistent throughout the year oscillating between 35 and 36 psu.

Table 5 Monthly average sea surface temperature and salinity nearby the West Kingfish Platform, in the 0–5 m depth layer.

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperature (°C)	18	19	19	19	18	16	15	14	14	15	16	17
Salinity (psu)	35	35	36	36	35	35	35	36	36	36	36	35

Table 6 Monthly average sea surface temperature and salinity nearby the Perch Platform in the 0–5 m depth layer.

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperature (°C)	18	18	19	18	18	15	14	13	13	15	16	17
Salinity (psu)	35	35	36	36	35	35	35	36	36	36	36	35

Table 7 Monthly average sea surface temperature and salinity nearby the Barracouta Platform in the 0–5 m depth layer.

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperature (°C)	18	18	19	18	16	15	14	13	13	14	16	17
Salinity (psu)	35	35	36	36	35	36	35	36	35	36	36	35

Table 8 **Monthly average sea surface temperature and salinity nearby the Kipper Facility in the 0–5 m depth layer.**

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperature (°C)	19	20	21	19	17	16	14	14	14	15	16	17
Salinity (psu)	35	35	36	36	35	36	35	36	35	35	35	35

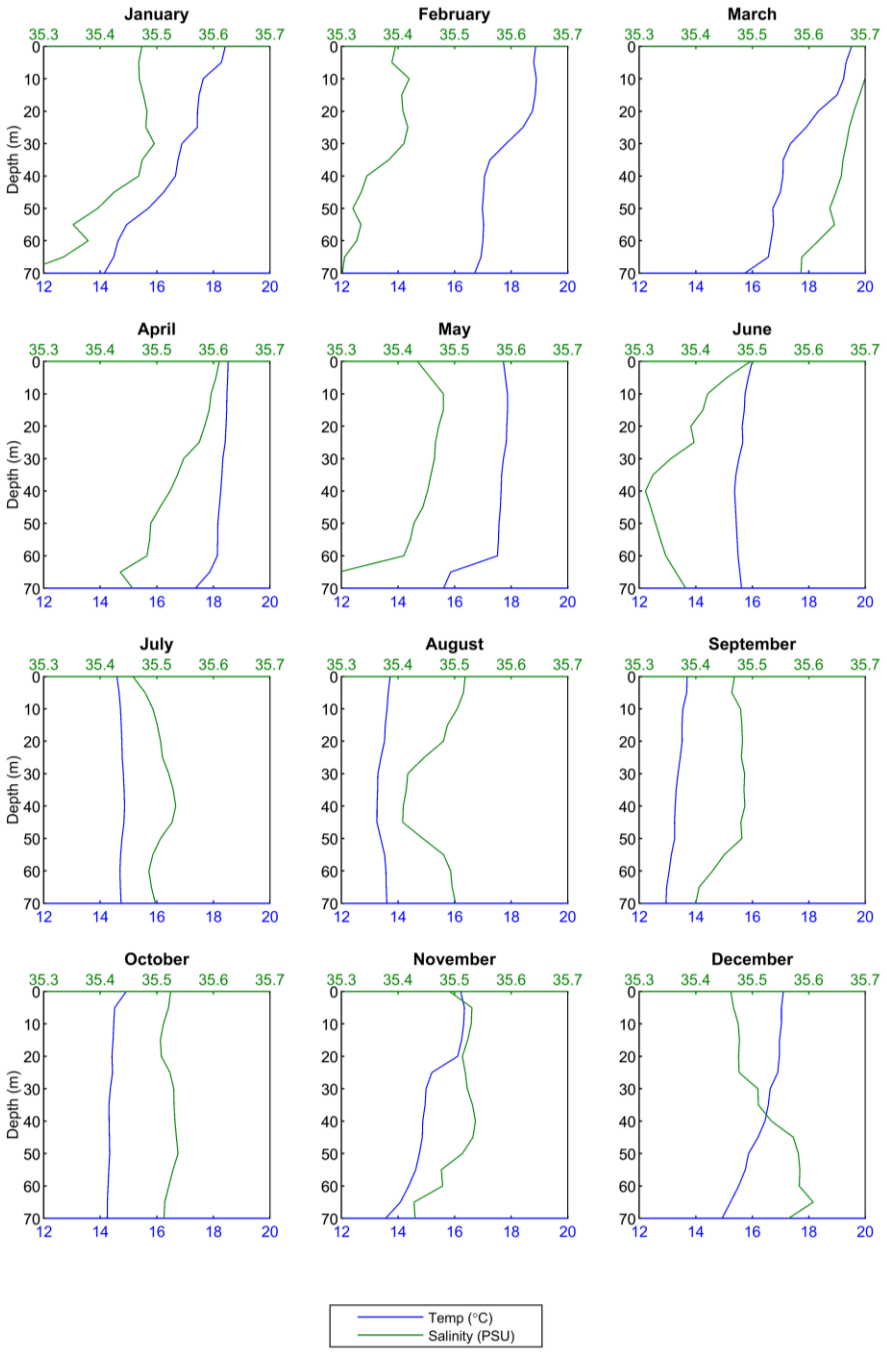

Figure 13 **Monthly temperature and salinity profiles throughout the water column nearby the West Kingfish Platform.**

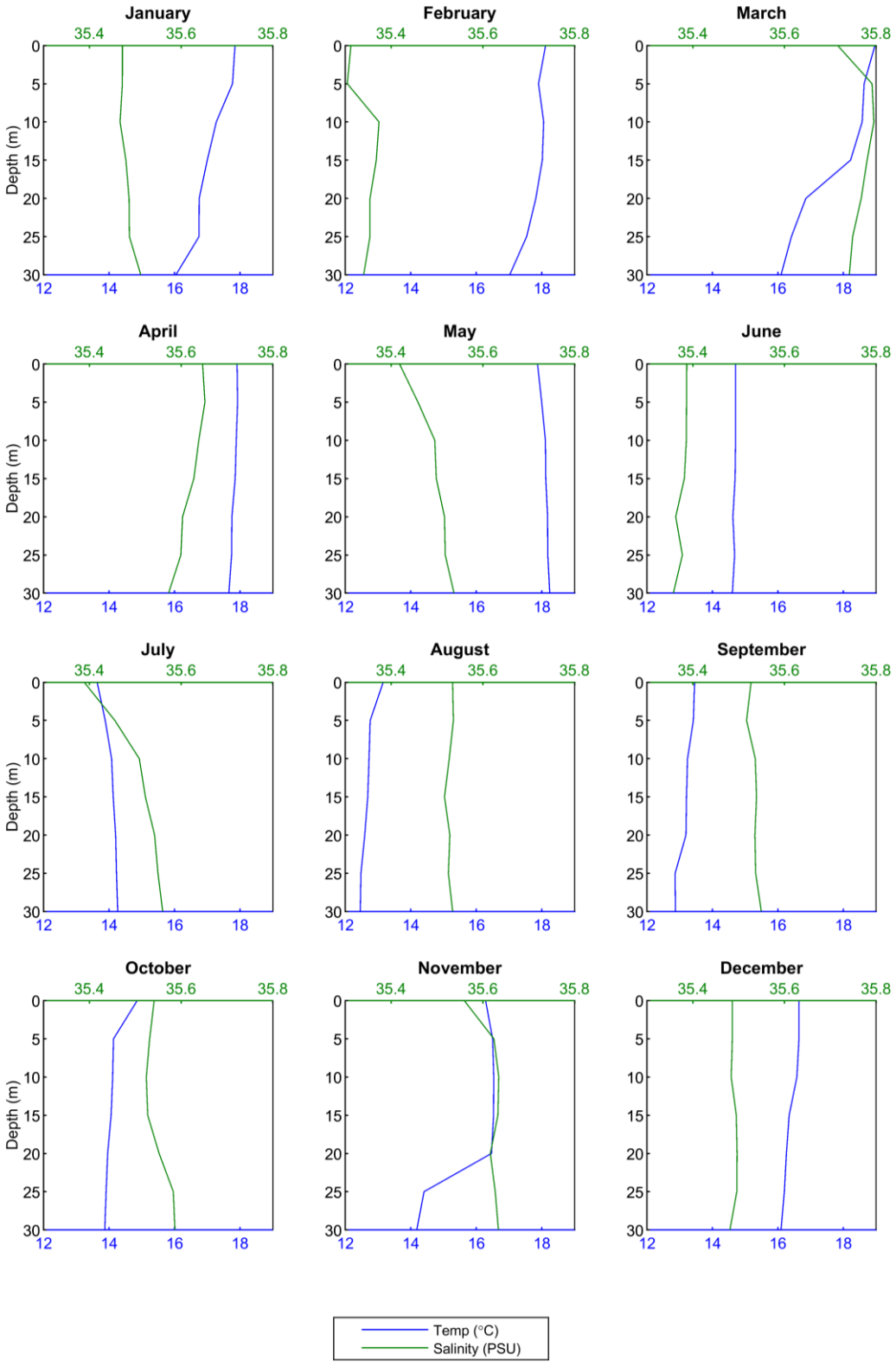

Figure 14 Monthly temperature and salinity profiles throughout the water column nearby the Perch Platform release location.

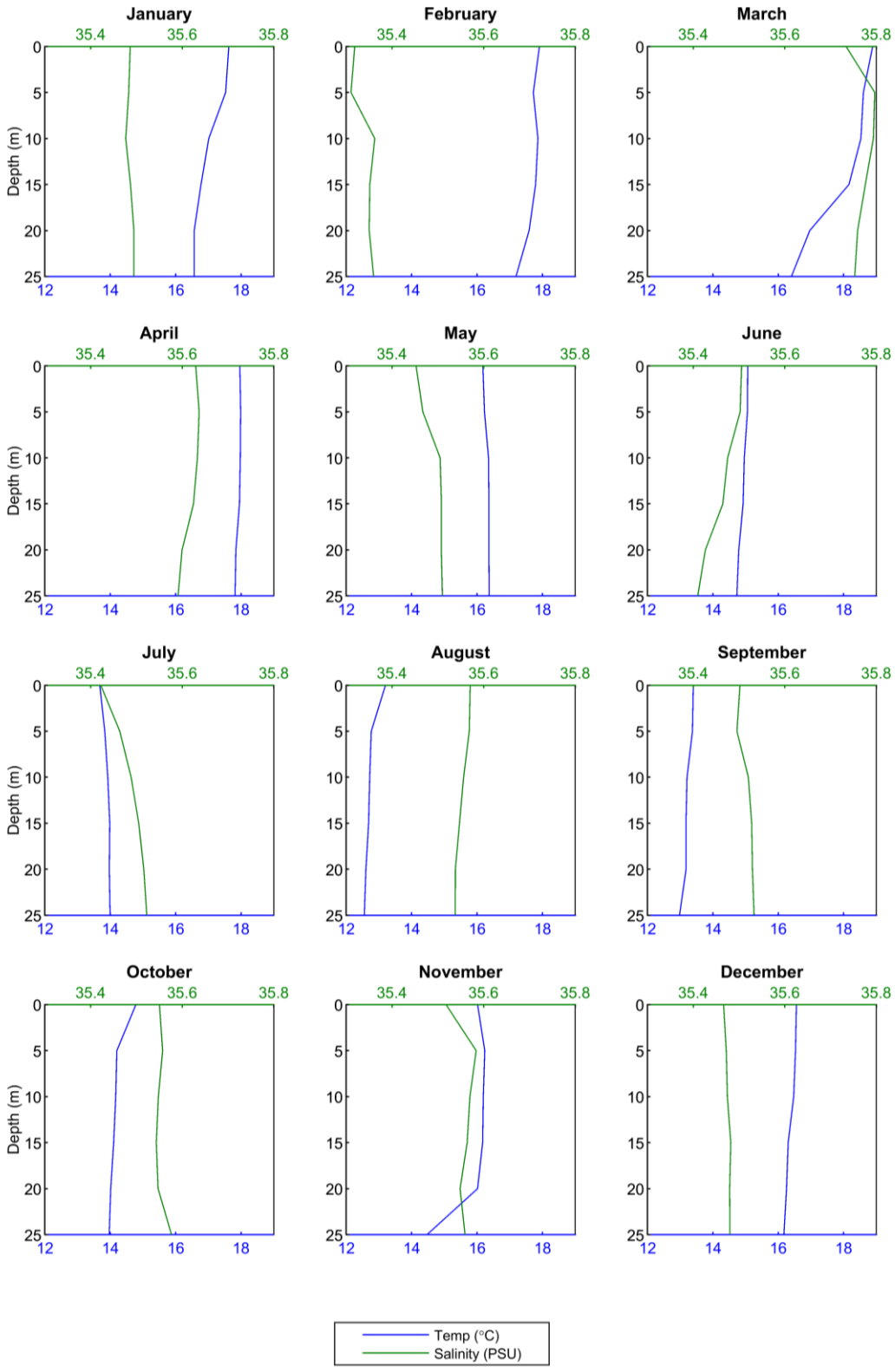

Figure 15 Monthly temperature and salinity profiles throughout the water column nearby the Barracouta Platform release location.

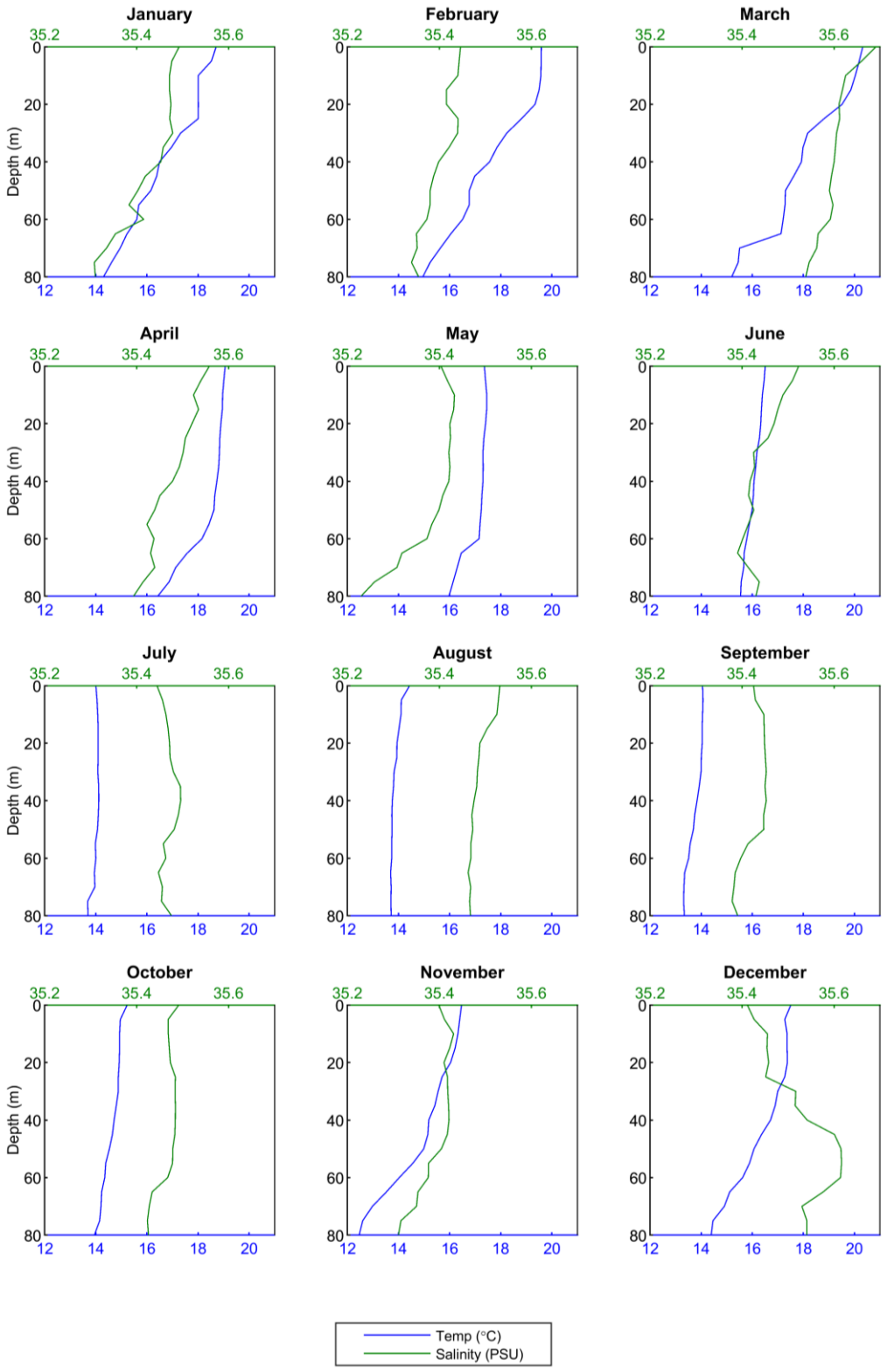

Figure 16 Monthly temperature and salinity profiles throughout the water column nearby the Kipper Facility release location.

6 Oil Spill Model – SIMAP

Modelling of the fate of oil was performed using the Spill Impact Mapping Analysis Program (SIMAP). SIMAP is designed to simulate the fate and effects of spilled hydrocarbons for both the surface and subsurface releases (Spaulding et al. 1994; French et al. 1999; French-McCay, 2003, 2004; French-McCay et al. 2004).

SIMAP has been used to predict the weathering and fate of oil spills during and after major incidents including: Montara (Australia) well blowout August 2009 in the Timor Sea (Asia-Pacific ASA, 2010); Macondo (USA) well blowout April 2010 in the Gulf of Mexico; Bohai Bay (China) oil spill August 2011; and the pipeline oil spill July 2013 in the Gulf of Thailand

The SIMAP model calculates the transport, spreading, entrainment, evaporation and decay of surface hydrocarbon slicks as well as the entrained and dissolved oil components in the water column, either from surface slicks or from oil discharged subsea. The movement and weathering of the spilled oil is calculated for specific oil types. Input specifications for oil mixtures include the density, viscosity, pour point, distillation curve (volume lost versus temperature) and the aromatic/aliphatic component ratios within given boiling point ranges.

SIMAP is a 3D model that allows for various response actions to be modelled including oil removal from skimming, burning, or collection booms, and surface and subsurface dispersant application.

The SIMAP oil spill model includes advanced weathering algorithms, specifically focussed on unique oils that tend to form emulsions and/or tar balls. The weathering algorithms are based on 5 years of extensive research conducted in response to the Deepwater Horizon oil spill in the Gulf of Mexico (French et al., 2015).

Biodegradation is included in the oil spill model. In the model, SIMAP, degradation is calculated for the surface slick, deposited oil on the shore, the entrained oil and dissolved constituents in the water column, and oil in the sediments. For surface oil, water column oil, and sedimented oil a first order degradation rate is specified. Biodegradation rates are relatively high for hydrocarbons in dissolved state or in dispersed small droplets.

6.1 Stochastic Modelling

Stochastic oil spill modelling is created by overlaying a great number (often 100 hundred) simulated hypothetical oil spills (Figure 17). Stochastic modelling involves running numerous individual oil spill simulations using a range of prevailing wind and current conditions that are historically representative of the season and location of where the spill event may occur.

For the stochastic modelling presented herein, **100 oil spills** were simulated for each season for each scenario using the same spill information (release location, spill volume, duration and oil type) but with varied start dates and times corresponding to the period represented by the available wind and current data. During each simulation, the model records whether any grid cells are exposed to any oil concentrations, the concentrations involved and the elapsed time before exposure. The results of all 100 oil spill simulations were analysed to determine the following seasonal statistics for every grid cell:

- Exposure load (concentrations and volumes);
- Minimum time before exposure;
- Probability of contact above defined concentrations;
- Volume of oil that may strand on shorelines from any single simulation;
- Concentration that might occur on sections of individual shorelines;
- Exposure (concentration x duration of exposure) to dissolved hydrocarbons in the water column; and
- Exposure (concentration x duration of exposure) to entrained hydrocarbons in the water column.

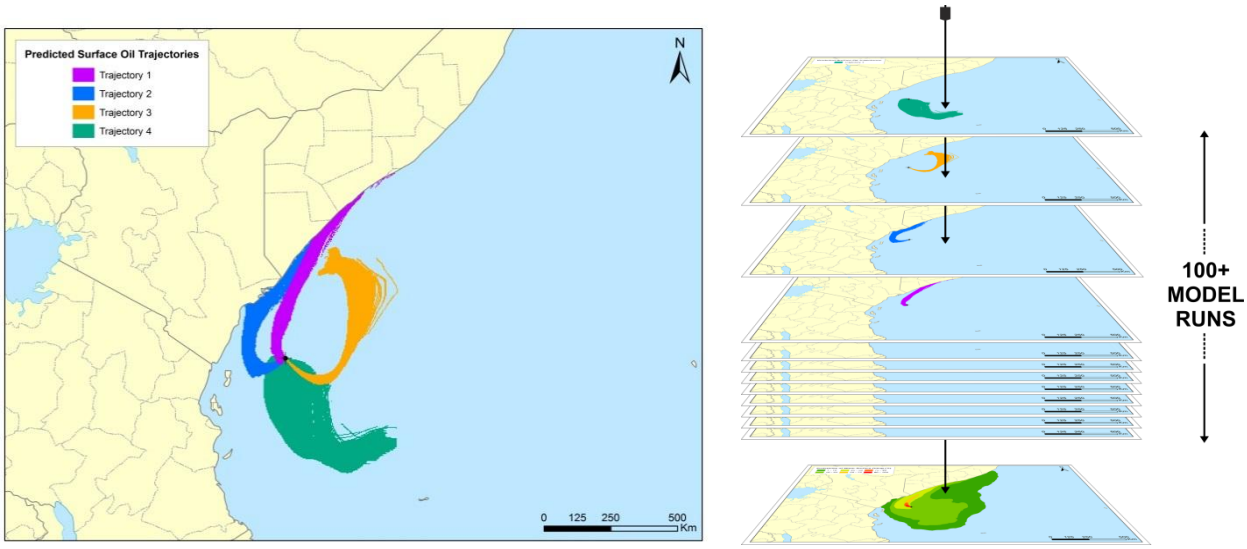

Figure 17 Predicted movement of four single oil spill simulations by SIMAP for the same scenario (Left image). All model runs are overlain (shown as the stacked runs on the right) and the number of times that trajectories contact a given location at a concentration is used to calculate the probability (Source: NOPSEMA, 2018).

6.2 Sea-surface, Shoreline and In-Water Thresholds

6.2.1 Sea-surface Exposure Thresholds

The modelling results can be presented to very low, therefore, thresholds have been specified (based on scientific literature) to record exposure to sea-surface locations at meaningful levels only.

The lowest threshold to better assess the potential for sea surface exposure, was 1 g/m^2, which equates approximately to an average thickness of 1 µm, referred to as visible oil. Oil of this thickness is described as rainbow sheen in appearance, according to the Bonn Agreement Oil Appearance Code (Bonn Agreement 2009) (see Table 9). Figure 18 shows photographs highlighting the difference in appearance between a silvery sheen, rainbow sheen and metallic sheen. This threshold is considered below levels which would cause environmental harm and it is more indicative of the areas perceived to be affected due to its visibility on the sea surface and potential to trigger temporary closures of areas (i.e. fishing grounds) as a precautionary measure. Table 9 provides a description of the appearance in relation to exposure zone thresholds used to classify the zones of sea surface exposure.

Ecological impact has been estimated to occur at 10 g/m^2 (a film thickness of approximately 10 µm or 0.01 mm) according to French et al. (1996) and French-McCay (2009) as this level of fresh oiling has been observed to mortally impact some birds through adhesion of oil to their feathers, exposing them to secondary effects such as hypothermia. The appearance of oil at this average thickness has been described as a metallic sheen (Bonn Agreement, 2009). Concentrations above 10 g/m^2 is also considered the lower actionable threshold, where oil may be thick enough for containment and recovery as well as dispersant treatment (AMSA, 2015).

Scholten et al. (1996) and Koops et al. (2004) indicated that at oil concentrations on the sea surface of 25 g/m^2 (or greater), would be harmful for all birds that have landed in an oil film due to potential contamination of their feathers, with secondary effects such as loss of temperature regulation and ingestion of oil through preening. The appearance of oil at this thickness is also described as metallic sheen (Bonn Agreement, 2009). For this study the high exposure threshold was set to 50 g/m^2 and above based on NOPSEMA (2019). This threshold can also be used to inform response planning.

Table 10 defines the thresholds used to classify the zones of sea surface exposure reported herein.

Table 9 The Bonn Agreement Oil Appearance Code

Code	Description Appearance	Layer Thickness Interval (g/m^2 or µm)	Litres per km^2
1	*Sheen (silvery/grey)*	0.04 – 0.30	40 – 300
2	*Rainbow*	0.30 – 5.0	300 – 5,000
3	*Metallic*	5.0 – 50	5,000 – 50,000
4	*Discontinuous True Oil Colour*	50 – 200	50,000 – 200,000
5	*Continuous True Oil Colour*	200 –>	200,000 –>

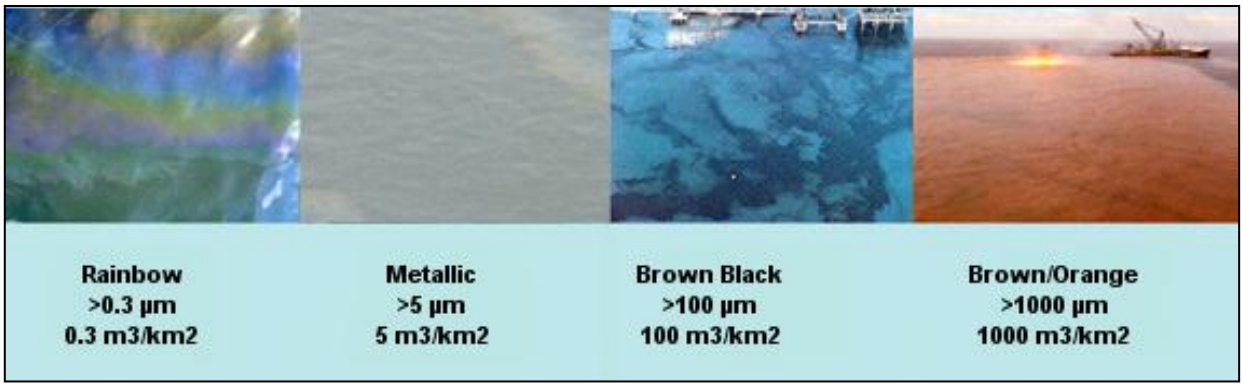

Figure 18 Photographs showing the difference between oil colour and thickness on the sea surface (source: adapted from Oil SpillSolutions.org, 2015)

Table 10 Oil exposure thresholds on the sea surface as per NOPSEMA (2019)

Threshold level	Floating oil g/m^2
Low	1
Moderate	10*
High	50

* 10 g/m^2 also used to define the threshold for actionable sea surface oil

6.2.2 Shoreline Contact Threshold

There are many different types of shorelines, ranging from cliffs, rocky beaches, sandy beaches, mud flats and mangroves, and each of these influences the volume of oil that can remain stranded ashore and its thickness before the shoreline saturation point occurs. For instance, a sandy beach may allow oil to percolate through the sand, thus increasing its ability to hold more oil ashore over tidal cycles and various wave actions than an equivalent area of water; hence oil can increase in thickness onshore over time. A

sandy beach shoreline was assumed as the default shoreline type for the modelling herein, as it allows for the highest carrying capacity of oil (of the available open/exposed shoreline types). Hence the results contained herein would be indicative of a worst case scenario, where the highest volume of oil may be stranded on the shoreline (when compared to other shoreline types, such as exposed rocky shores).

In previous risk assessment studies, French-McCay et al. (2005a; 2005b) used a threshold of 10 g/m^2 to assess the potential for shoreline contact. This is a conservative threshold used to define regions of socio-economic impact, such as triggering temporary closures of adjoining fisheries or the need for shore clean-up on beaches or man-made features/amenities (breakwaters, jetties, marinas, etc.). It would equate to approximately 2 teaspoons of hydrocarbon per square meter of shoreline contacted. The appearance is described as a stain/film. On that basis, the 10 g/m^2 shoreline contact threshold has been selected to define the zone of potential "low shoreline contact".

French et al. (1996) and French-McCay (2009) have defined a hydrocarbon exposure threshold for shorebirds and wildlife (furbearing aquatic mammals and marine reptiles) on or along the shore at 100 g/m^2, which is based on studies for sub-lethal and lethal impacts. This threshold has been used in previous environmental risk assessment studies (see French-McCay 2003; French-McCay et al. 2004, French-McCay et al. 2011; 2012; NOAA 2013). The 100 g/m^2 shoreline contact threshold is also recommended in the Australian Maritime Safety Authority's (AMSA) foreshore assessment guide[1] as the acceptable minimum thickness that does not inhibit the potential for recovery and is best remediated by natural coastal processes alone (AMSA 2007). It equates to approximately ½ a cup of hydrocarbon per square meter of shoreline contacted. The appearance is described as a hydrocarbon coat. Therefore, 100 g/m^2 has been selected to define the zone of potential "moderate shoreline contact".

Observations by Lin & Mendelssohn (1996), demonstrated that loadings of more than 1,000 g/m^2 of hydrocarbon during the growing season would be required to impact marsh plants significantly. Similar thresholds have been found in studies assessing hydrocarbon impacts on mangroves (Grant, Clarke & Allaway 1993; Suprayogi & Murray 1999). Hence, 1,000 g/m^2 has been selected to define the zone of potential "high shoreline contact". It equates to approximately 1 litre of hydrocarbon per square meter of shoreline contacted. The appearance is described as a hydrocarbon cover.

It is worth noting that the shoreline contact thresholds derived from extensive literature review (outlined in Table 11) agree with the commonly used threshold values for oil spill modelling specified in NOPSEMA (2019). It should be noted that the low to high thresholds were assessed, although, low and moderate are presented herein.

Table 11 Thresholds use to assess shoreline contact, which is also in accordance with the NOPSEMA (2019) recommended thresholds.

Zone Description	Shoreline Concentration (g/m^2)
Low (socioeconomic/sublethal)	10 – 100
Moderate	100* - 1,000
High	> 1,000

* 100 g/m^2 also used to define the threshold for actionable shoreline oil.

[1] Recommended for shoreline types including sandy beach, boulder shorelines, pebble shorelines, rock platforms and industry facility structures.

6.2.3 In-Water Exposure Thresholds

Oil is a mixture of thousands of hydrocarbons of varying physical, chemical, and toxicological characteristics, and therefore, demonstrate varying fates and impacts on organisms. As such, for in-water exposure, the SIMAP model provides separate outputs for dissolved and entrained hydrocarbons from oil droplets. The consequences of exposure to dissolved and entrained components will differ because they have different modes and magnitudes of effect.

Entrained hydrocarbon concentrations were calculated based on oil droplets that are suspended in the water column, though not dissolved. The composition of this oil would vary with the state of weathering (oil age) and may contain soluble hydrocarbons when the oil is fresh. Calculations for dissolved hydrocarbons specifically calculates oil components which are dissolved in water, which are known to be the primary source of toxicity exerted by oil.

6.2.3.1 Dissolved Hydrocarbons

Laboratory studies have shown that dissolved hydrocarbons exert most of the toxic effects of oil on aquatic biota (Carls et al., 2008; Nordtug et al., 2011; Redman, 2015). The mode of action is a narcotic effect, which is positively related to the concentration of soluble hydrocarbons in the body tissues of organisms (French-McCay, 2002). Dissolved hydrocarbons are taken up by organisms directly from the water column by absorption through external surfaces and gills, as well as through the digestive tract. Thus, soluble hydrocarbons are termed “bioavailable”.

Hydrocarbon compounds vary in water-solubility and the toxicity exerted by individual compounds is inversely related to solubility, however bioavailability will be modified by the volatility of individual compounds (Nirmalakhandan &Speece, 1988; Blum & Speece, 1990; McCarty, 1986; McCarty et al., 1992a, 1992b; Mackay et al., 1992; McCarty & Mackay, 1993; Verhaar et al., 1992, 1999; Swartz et al., 1995; French-McCay, 2002; McGrath et al., 2009). Of the soluble compounds, the greatest contributor to toxicity for water-column and benthic organisms are the lower-molecular-weight aromatic compounds, which are both volatile and soluble in water. Although they are not the most water-soluble hydrocarbons within most oil types, the polynuclear aromatic hydrocarbons (PAHs) containing 2-3 aromatic ring structures typically exert the largest narcotic effects because they are semi-soluble and not highly volatile, so they persist in the environment long enough for significant accumulation to occur (Anderson et al., 1974, 1987; Neff & Anderson, 1981; Malins & Hodgins, 1981; McAuliffe, 1987; NRC, 2003). The monoaromatic hydrocarbons (MAHs), including the BTEX compounds (benzene, toluene, ethylbenzene, and xylenes), and the soluble alkanes (straight chain hydrocarbons) also contribute to toxicity, but these compounds are highly volatile, so that their contribution will be low when oil is exposed to evaporation and higher when oil is discharged at depth where volatilisation does not occur (French-McCay, 2002).

French-McCay (2002) reviewed available toxicity data, where marine biota was exposed to dissolved hydrocarbons prepared from oil mixtures, finding that 95% of species and life stages exhibited 50% population mortality (LC_{50}) between 6 and 400 ppb total PAH concentration after 96 hrs exposure, with an average of 50 ppb. Hence, concentrations lower than 6 ppb total PAH value should be protective of 97.5% of species and life stages even with exposure periods of days (at least 96 hours). Early life-history stages of fish appear to be more sensitive than older fish stages and invertebrates.

Exceedances of 10, 50 or 400 ppb over a 1 hour timestep (see Table 12) was applied to indicate increasing potential for sub-lethal to lethal toxic effects (or low to high), based on NOPSEMA (2019).

6.2.3.2 Entrained hydrocarbons

Entrained hydrocarbons consist of oil droplets that are suspended in the water column and insoluble. As such, insoluble compounds in oil cannot be absorbed from the water column by aquatic organisms, hence

are not bioavailable through absorption of compounds from the water. Exposure to these compounds would require routes of uptake other than absorption of soluble compounds. The route of exposure of organisms to whole oil alone include direct contact with tissues of organisms and uptake of oil by direct consumption, with potential for biomagnification through the food chain (NRC, 2005).

The 10 ppb threshold represents the very lowest concentration and corresponds generally with the lowest trigger levels for chronic exposure for entrained hydrocarbons in the ANZECC (2000) water quality guidelines. Due to the requirement for relatively long exposure times (> 24 hours) for these concentrations to be significant, they are likely to be more meaningful for juvenile fish, larvae and planktonic organisms that might be entrained (or otherwise moving) within the entrained plumes, or when entrained hydrocarbons adhere to organisms or trapped against a shoreline for periods of several days or more.

This exposure zone is not considered to be of significant biological impact and is therefore outside the adverse exposure zone. This exposure zone represents the area contacted by the spill. This area does not define the area of influence as it is considered that the environment will not be affected by the entrained hydrocarbon at this level.

Thresholds of 10 ppb and 100 ppb were applied over a 1 hour time exposure (Table 12), to cover the range of thresholds outlined in the ANZECC/ARMCANZ (2000) water quality guidelines, the incremental change for greater potential effect and is per NOPSEMA (2019).

A complicating factor that should be considered when assessing the consequence of dissolved and entrained oil distributions is that there will be some areas where both physically entrained oil droplets and dissolved hydrocarbons co-exist. Higher concentrations of each will tend to occur close to the source where sea conditions can force mixing of relatively unweathered oil into the water column, resulting in more rapid dissolution of soluble compounds.

Table 12 Dissolved and entrained hydrocarbon exposure values assess over a 1 hour time step, as per NOPSEMA (2019).

Level	Dissolved Hydrocarbon Concentration (ppb)	Entrained Hydrocarbon Concentrations (ppb)
Low	10	10
Moderate	50	NA
High	400	100

Additional Thresholds

A range of in-water exposure thresholds over several durations as detailed in Table 13 (dissolved hydrocarbons) and Table 14 (entrained hydrocarbons) were assessed upon the client's request in addition to the commonly used NOPSEMA (2019) thresholds.

Table 13 Dissolved aromatic threshold values applied as part of the modelling study.

Potential level of exposure	Threshold value for dissolved hydrocarbon concentration (ppb)	Exposure Duration (hours)
Moderate	50	1
Moderate	50	96

Potential level of exposure	Threshold value for dissolved hydrocarbon concentration (ppb)	Exposure Duration (hours)
High	400	96

Table 14 Entrained hydrocarbon threshold values applied as part of the modelling study.

Potential level of exposure	Threshold value for entrained hydrocarbon concentrations (ppb)	Exposure Duration (hours)
Moderate	98	96
Moderate	98	168
High	488	96

7 Oil Properties

The oil type used for the vessel collision incidents was a marine diesel oil (MDO). MDO is a light-persistent fuel oil used in the maritime industry. It has a density of 829.1 kg/m^3 (API of 37.6) and a low pour point (-14˚C). The low viscosity (4 cP) indicates that this oil will spread quickly when released and will form a thin to low thickness film on the sea surface, increasing the rate of evaporation. MDO is composed of 95% volatiles and semi- to low-volatile compounds and 5% persistent compounds. These properties classify it as a Group II oil according to the International Tanker Owners Pollution Federation classifications (ITOPF, 2014) and AMSA (2015a) guidelines.

The physical properties and boiling point ranges of the MDO used in this study are summarised in Table 16 and Table 15, respectively.

Figure 19 to Figure 22 show the weathering graphs for MDO for the replicates with the largest swept area from Scenarios 1 to 4. Given the releases are occurring on the sea surface, the volatile and semi-volatile components of the oil are predicted to evaporate within first 24 hours, with the remaining oil tending to remain within the wave-mixed layer of the water column (3-10 m deep, depending on the conditions).

Table 16 Physical properties of the MDO used in this study.

Characteristic	Marine Diesel Oil
Density (kg/m^3)	829.0 (at 25 °C)
API	37.6
Dynamic viscosity (cP)	4.0 (at 25 °C)
Pour Point (ºC)	-14
Hydrocarbon property category	Group II

Table 17 Boiling point ranges of the MDO used in this study.

Characteristic	Not Persistent		Persistent	
	Volatile (%)	Semi-volatile (%)	Low volatility (%)	Residual (%)
Boiling point (ºC)	< 180	180 - 265	265 - 380	>380
MDO	6.0	34.6	54.4	5.0

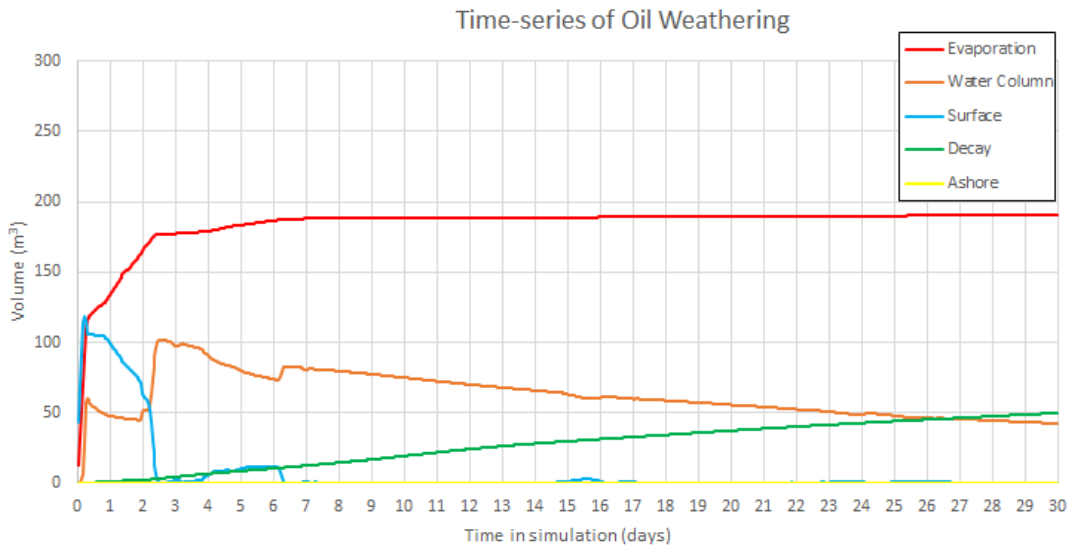

Figure 19 Predicted weathering and fates graph for the single spill trajectory with the largest sea surface swept area at the 10 g/m^2 threshold. Results are based on a 280 m^3 surface release of MDO over 6 hours at West Kingfish, tracked for 30 days, 8 am 22nd of June 2009.

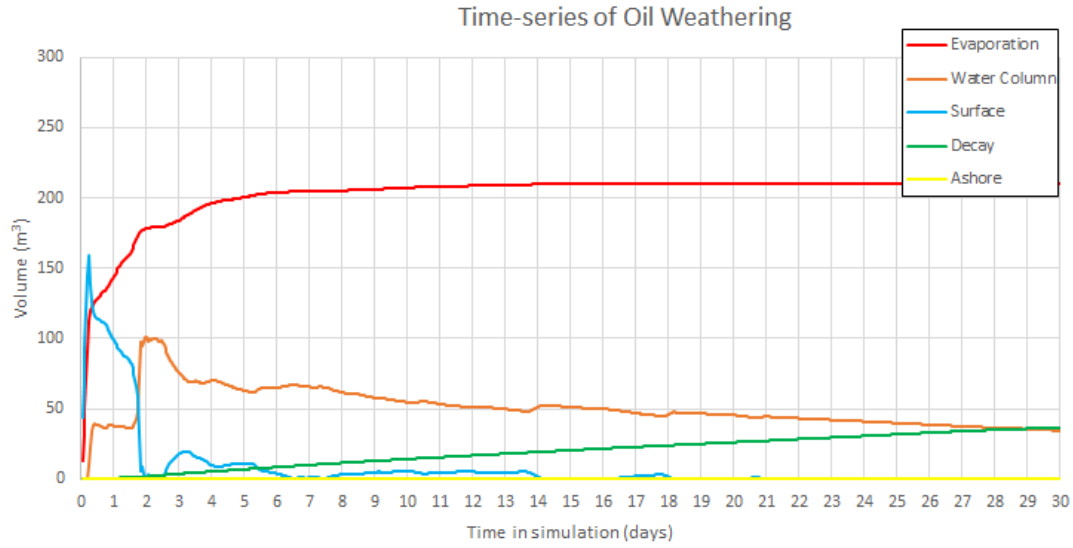

Figure 20 Predicted weathering and fates graph for the single spill trajectory with the largest sea surface swept area at the 10 g/m^2 threshold. Results are based on a 280 m^3 surface release of MDO over 6 hours at the Perch Platform, tracked for 30 days, 1 am 20th of April 2011.

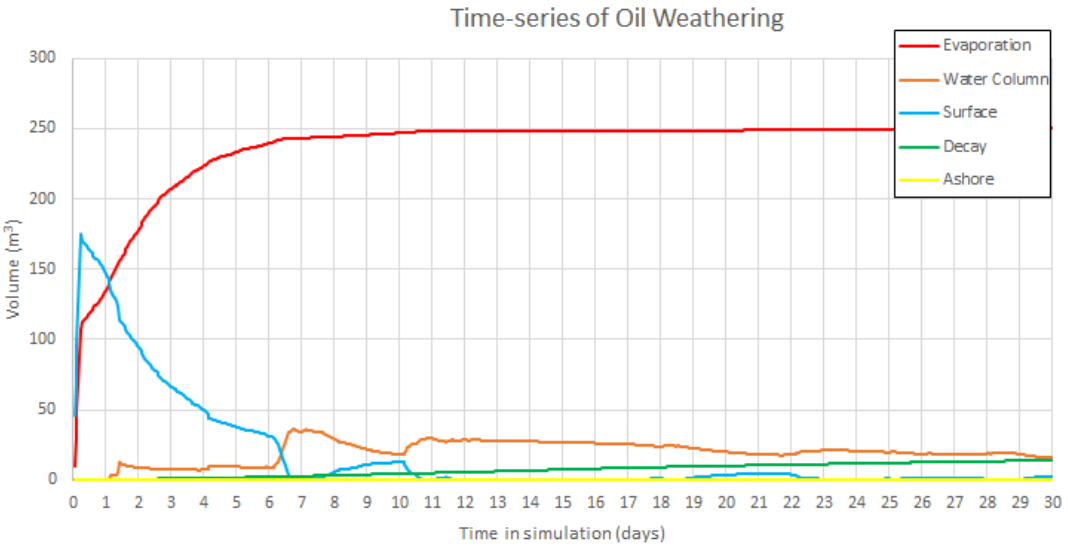

Figure 21 Predicted weathering and fates graph for the single spill trajectory with the largest sea surface swept area at the 10 g/m^2 threshold. Results are based on a 280 m^3 surface release of MDO over 6 hours at the Barracouta Platform, tracked for 30 days, 10am 18th of June 2009.

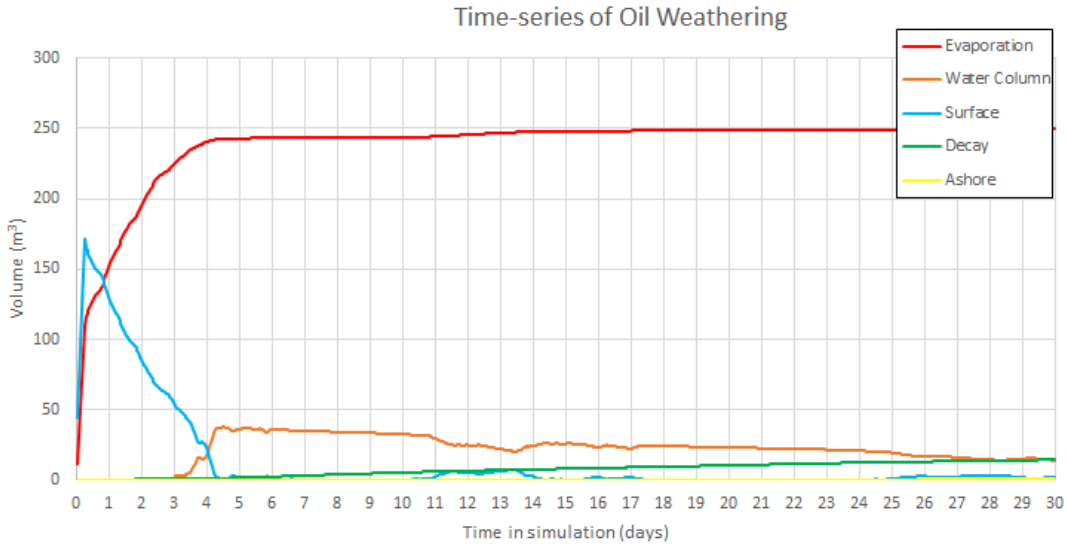

Figure 22 Predicted weathering and fates graph for the single spill trajectory with the largest sea surface swept area at the 10 g/m^2 threshold. Results are based on a 280 m^3 surface release of MDO over 6 hours at the Kipper Facility, tracked for 30 days, 10am 17th of May 2011.

8 Model Settings

Table 18 provides a summary of the oil spill model settings.

Table 18 Summary of the oil spill model settings.

	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5
Scenario Description	Surface release of MDO in the event of loss of containment after vessel collision				
Location Name	West Kingfish Platform	Perch Platform	Barracouta Platform	Kipper Facility	Halibut A Platform
Geographic Location	38° 35’ 39" S 148° 06’ 15" E	38° 34’ 15" S 147° 19’ 16” E	38° 17’ 53" S 147° 40’ 28" E	38°10' 53" S 148° 35' 35” E	38°24’15.30” S 148°19’12.91” E
Period to analyse	Annual				
Oil Type	Marine Diesel Oil				
Release Type	surface				
Total Release Volume (m^3)	280				220
Release Duration	6 hours				
Release Rate (m^3/h)	46.7				36.7
Surface Thresholds (g/m^2)	1 (low exposure) 10 (moderate exposure) 50 (high exposure)				
Shoreline Accumulation Thresholds (g/m^2)	10 (low potential exposure) 100 (moderate potential exposure) 1,000 (high potential exposure)				
Dissolved Hydrocarbon Thresholds (ppb)	10 (10 ppb x 1 hr, potential low exposure) 50 (50 ppb x 1 hrs, potential moderate exposure) 400 (400 ppb x 1 hrs, potential high exposure) 50 (50 ppb x 96 hrs, potential moderate exposure) 400 (400 ppb x 96 hrs, potential high exposure)				
Entrained Hydrocarbon Thresholds (ppb)	10 (10 ppb x 1 hr, potential low exposure) 100 (100 ppb x 1 hr, potential low exposure) 98 (98 ppb x 96 hrs, potential moderate exposure) 98 (98 ppb x 168 hrs, potential moderate exposure) 488 (488 ppb x 96 hrs, potential high exposure)				

9 Presentation and Interpretation of Model Results

The results from the modelling study are presented in a number of tables and figures, which aim to provide an understanding of the predicted sea-surface and water column (subsurface) exposure and shoreline contact (if predicted).

9.1 Annual Analysis

9.1.1 Figures

The figures are based on the following principles:

- *The* ***potential zones of exposure (surface oil, entrained and dissolved hydrocarbons)*** – is determined by identifying the maximum loading (surface) or exposure (in-water) within a grid cell and is then classified according to identified surface or subsea thresholds.
- The ***probability of exposure/contact (surface oil, shoreline oil, entrained and dissolved hydrocarbons)*** **–** is calculated by dividing the number of spill trajectories passing over that given cell (surface, shoreline or subsea) by the total number of spill trajectories, above the specified threshold value.
- The **Maximum potential shoreline loading –** is determined by identifying the maximum loading within a shoreline cell and is then classified according to the identified thresholds (i.e. 10 g/m^2, 100 g/m^2 and 1,000 g/m^2).
- The ***dissolved and entrained hydrocarbon concentration*** – is determined by recording the maximum instantaneous concentrations (i.e. exposure over the model 1-hour timestep) at each grid cell.

9.1.2 Statistics

The statistics are based on the following principles:

- The ***greatest distance travelled by a spill trajectory*** **–** is determined by a) recording the maximum and b) second greatest distance travelled (or 99th percentile) by a single trajectory, within a scenario, from the release location to the identified exposure thresholds.
- The ***probability of oil exposure to a receptor*** **–** is determined by recording the number of spill trajectories to reach a specified sea surface or subsea threshold within a receptor polygon, divided by the total number of spill trajectories within that scenario.
- The ***minimum time before oil exposure to a receptor*****–** is determined by ranking the elapsed time before sea surface exposure, at a specified threshold, to grid cells within a receptor polygon and recording the minimum value.
- The ***probability of oil contact to a receptor*** **–** is determined by recording the number of spill trajectories to reach a specified shoreline contact threshold within a receptor polygon, divided by the total number of spill trajectories within that scenario.
- The ***maximum potential oil loading within a receptor*** – is determined by identifying the maximum loading to any grid cell within a receptor polygon, for a scenario.

9.2 Deterministic Trajectories

A review of the stochastic model results for all eight scenarios (i.e. the collective output of 100 spill trajectories per scenario) was performed to identify (any) individual spill trajectories that resulted in worst outcomes based on four individual metrics:

5. The single spill trajectory that resulted in the **maximum volume of oil on shore**,
6. The single spill trajectory that resulted in the **longest length of shoreline contacted above 100 g/m^2 (actionable shoreline oil)**,
7. The single spill trajectory that resulted in the **minimum time before exposure to immediate nearshore waters by visible oil (0.5 g/m^2)**, and
8. The single spill trajectory that resulted in the **largest swept area of oil on the sea surface above 10 g/m^2 (actionable sea surface oil)**.

Deterministic trajectories are only provided for those metrics analysed that were satisfied in each of the scenarios.

9.3 Sensitive Receptors Assessed

A range of environmental receptors and biological receptors and shorelines were assessed for sea surface exposure, shoreline contact and water column exposure as part of the study (see Table 19). The receptors are geographically represented in Figure 23 to Figure 33. Note, the receptor maps for BIAs are presented in Appendix A.

Table 19 Summary of receptors used to assess surface, shoreline and in-water exposure to hydrocarbons.

Receptor Category	Acronym	Hydrocarbon Exposure Assessment		
		Water Column	Sea Surface	Shoreline
Marine National Park	MNP	✓	✓	×
Australian Marine Park	AMP	✓	✓	×
State Marine Parks	MP	✓	✓	×
RAMSAR	RAMSAR	✓	✓	×
Integrated Marine and Coastal Regionalisation of Australia	IMCRA	✓	✓	×
Interim Biogeographic Regionalisation of Australia	IBRA	✓	✓	✓
Key Ecological Feature	KEF	✓	✓	×
Reefs, Shoals and Banks	RSB	✓	✓	×
State Waters	State Waters	✓	✓	×
Local Government Areas	LGA	✓	✓	✓
Sub-Local Government Areas	Sub-LGA	✓	✓	✓
Biologically Important Areas	BIA	✓	✓	×

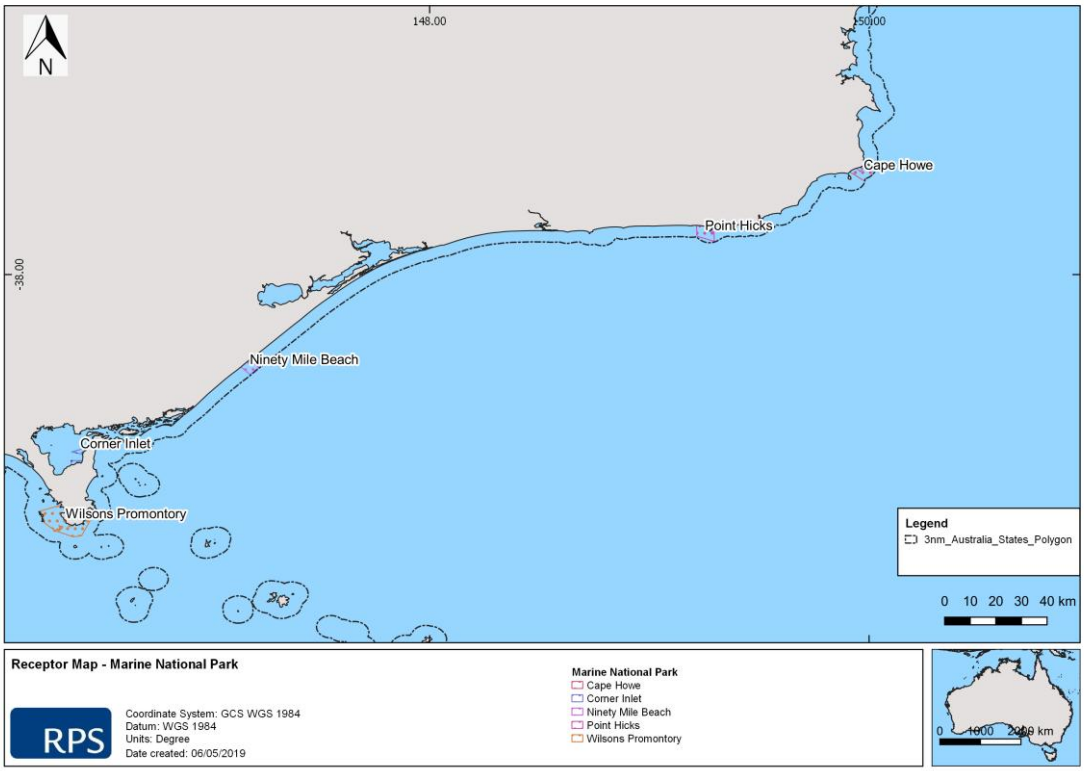

Figure 23 Receptor map for Marine National Parks.

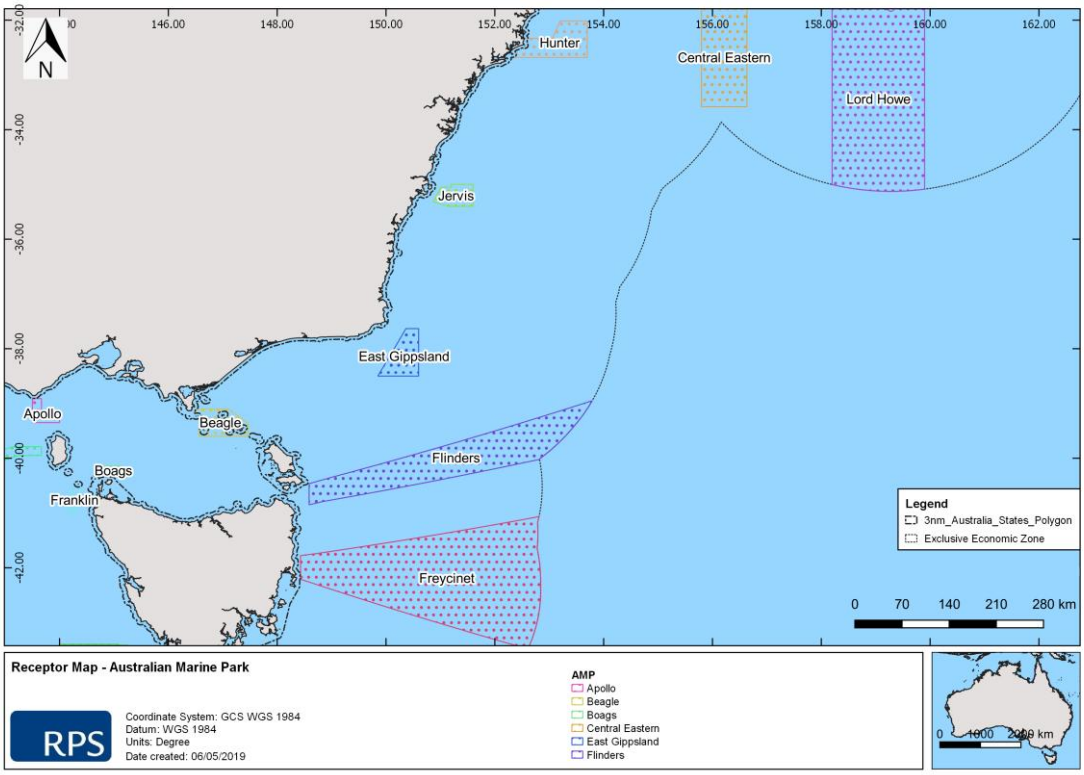

Figure 24 Receptor map for Australian Marine Parks.

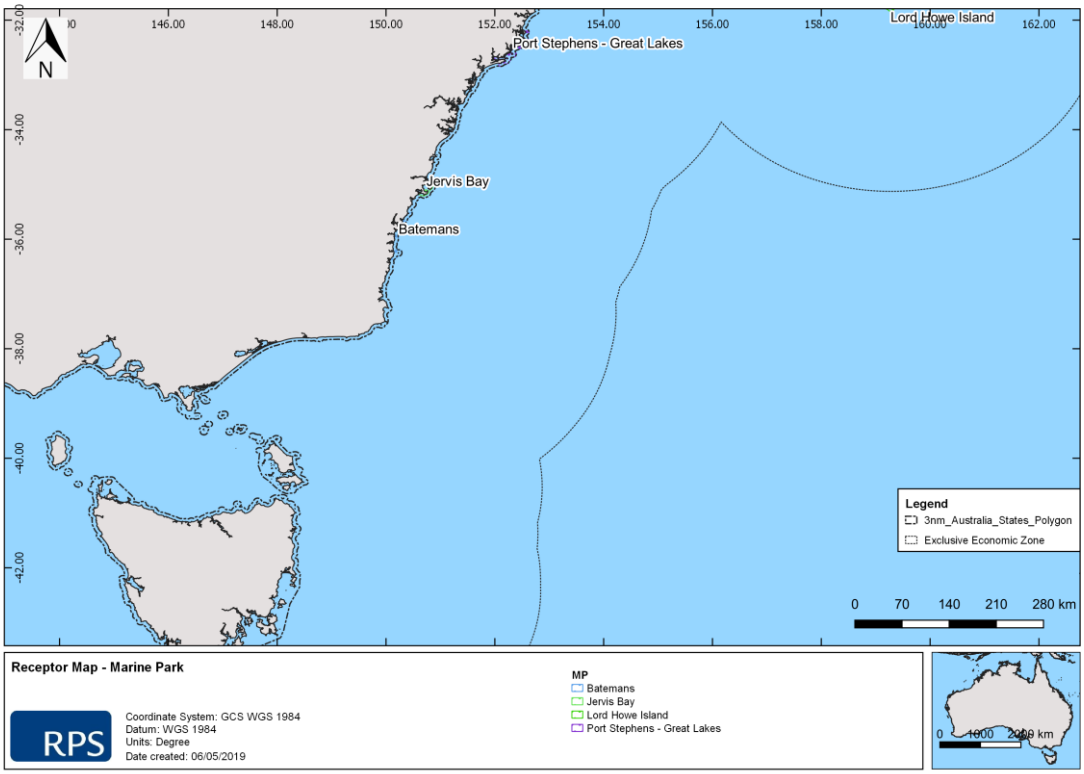

Figure 25 Receptor map for State Marine Parks.

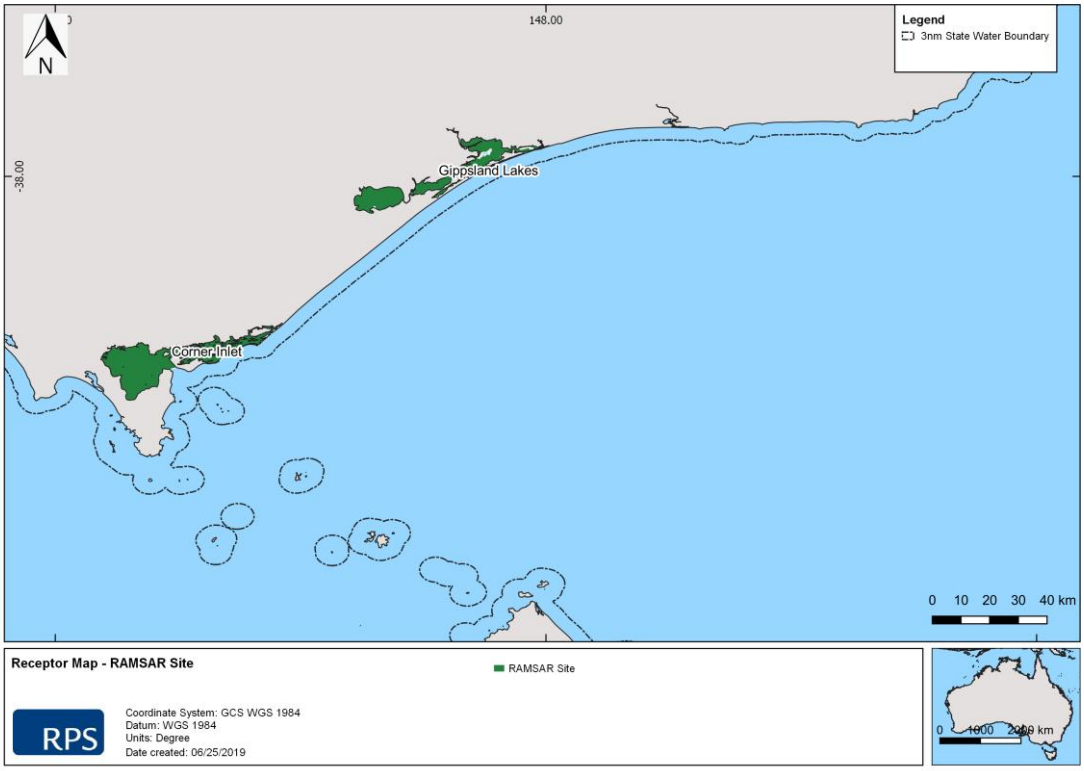

Figure 26 Receptor map for RAMSAR sites.

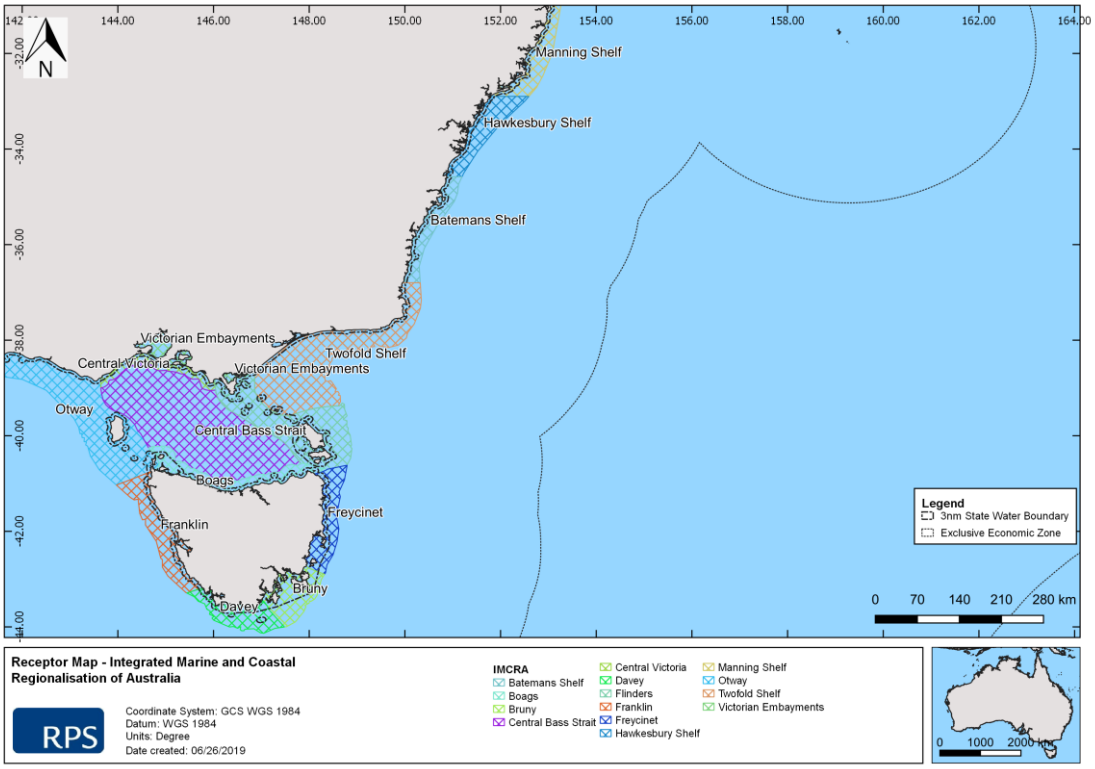

Figure 27 Receptor map for Integrated Marine and Coastal Regionalisation of Australia.

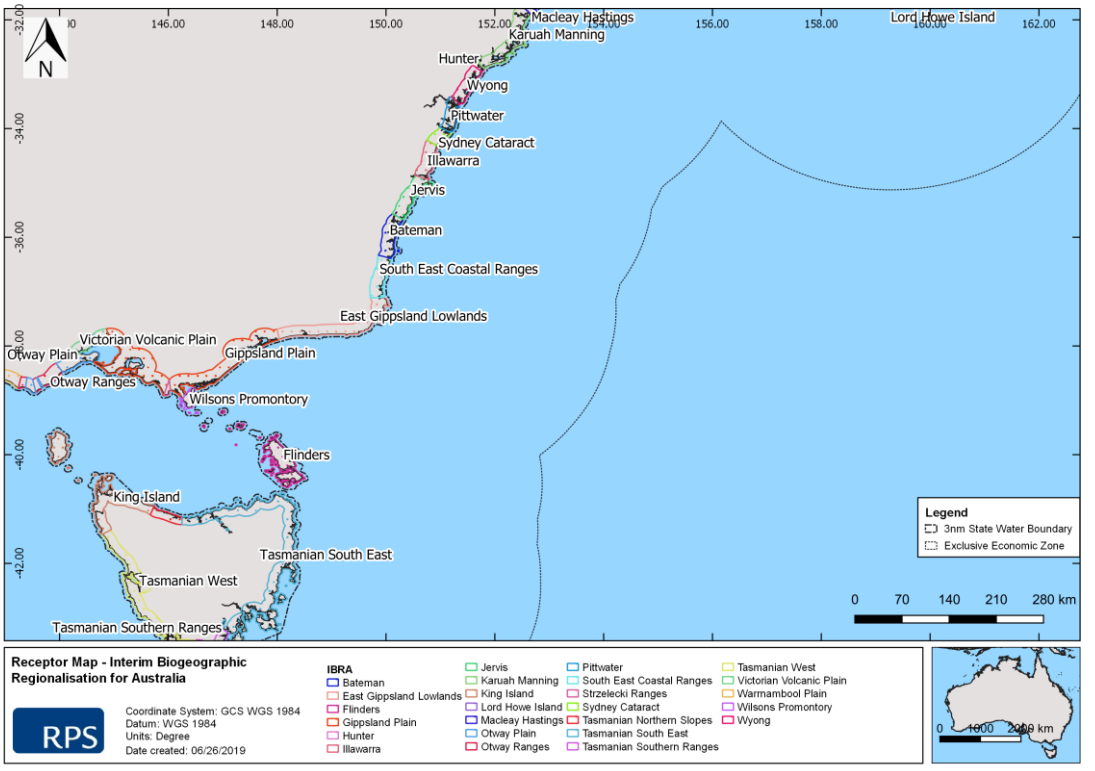

Figure 28 Receptor map for Interim Biogeographic Regionalisation of Australia.

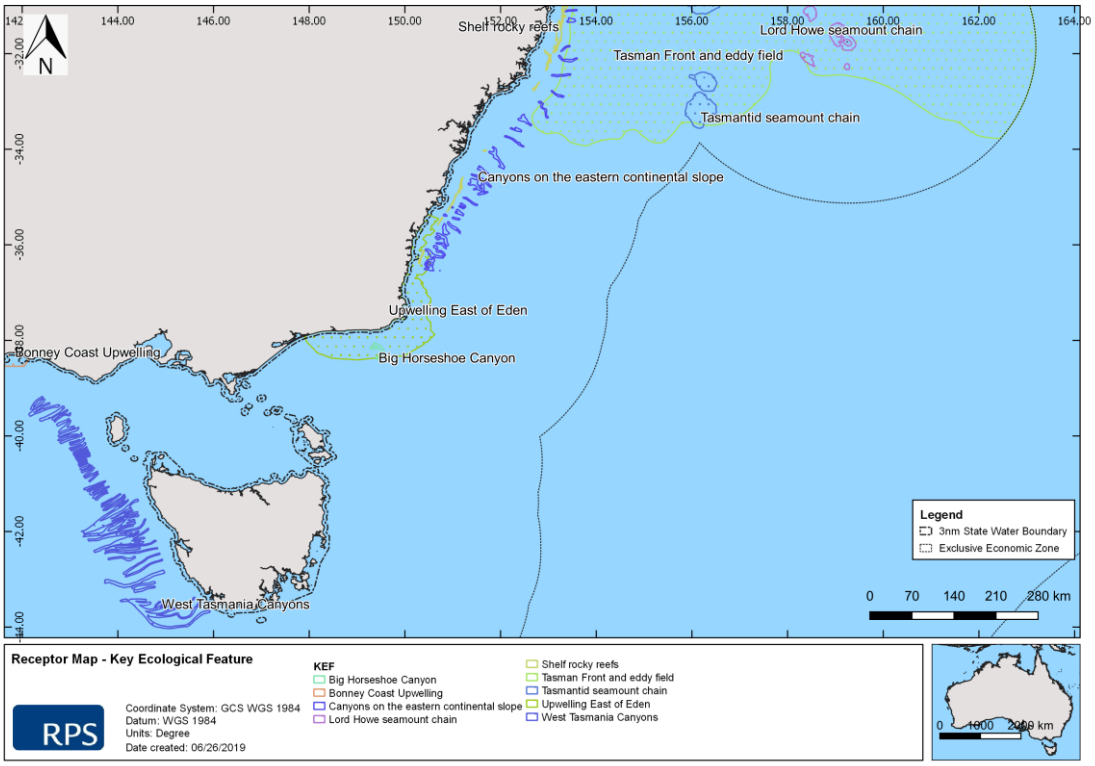

Figure 29 Receptor map for Key Ecological Features.

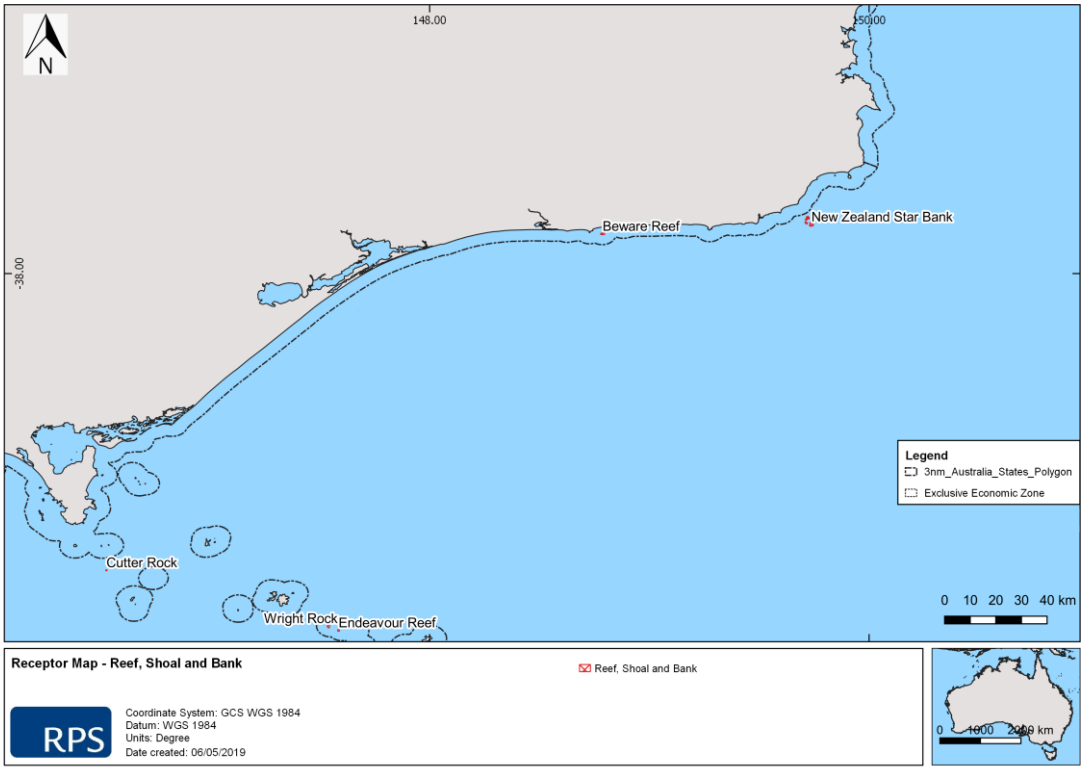

Figure 30 Receptor map for Reefs, Shoals and Banks.

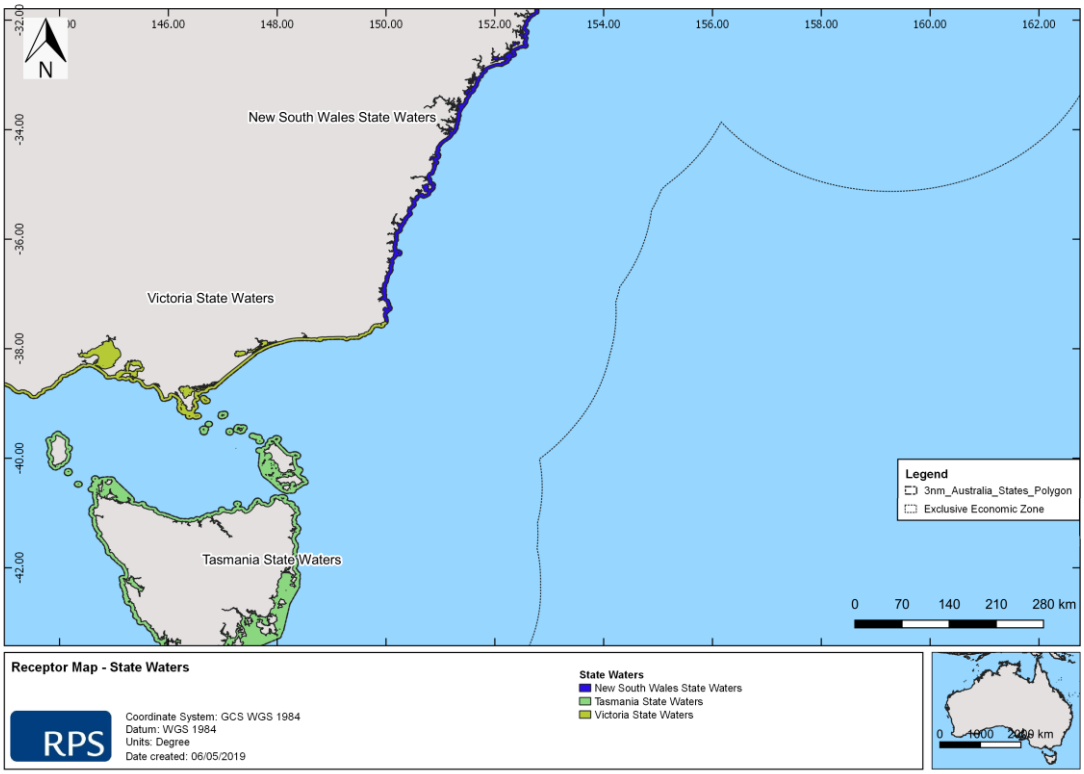

Figure 31 Receptor map for State Waters.

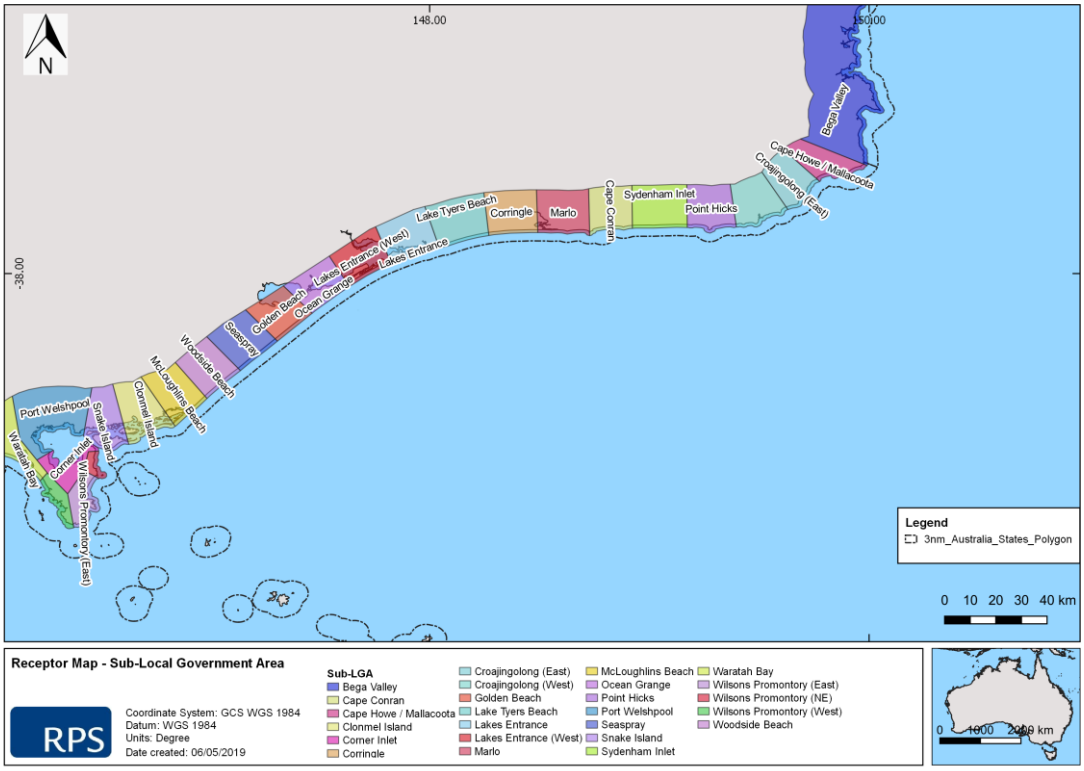

Figure 32 Receptor map for Sub-Local Government Areas (1 of 2).

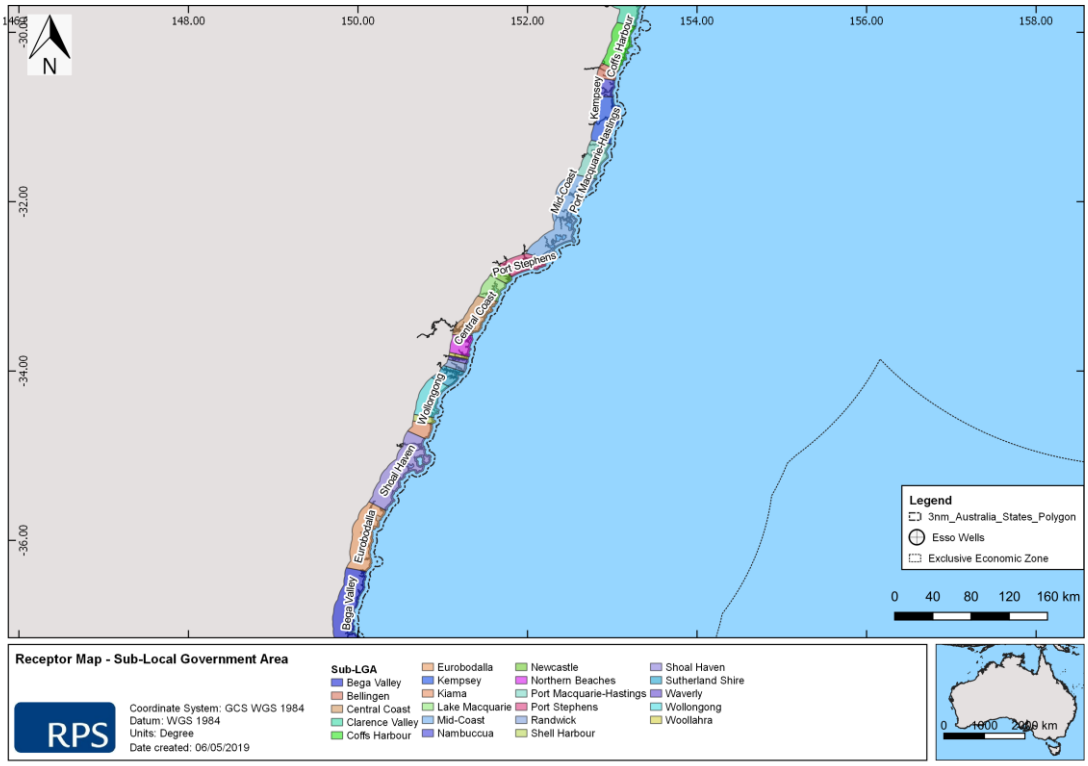

Figure 33 Receptor map for Sub-Local Government Areas (2 of 2).

10 Results: Scenario 1 – 280 m^3 Surface Release of MDO at West Kingfish

The scenario examined a surface release of 280 m^3 of MDO over 6 hours (tracked for 30 days) following a vessel collision at the West Kingfish Platform. A total of 100 spill trajectories were simulated over the annual period.

Section 10.1 presents the stochastic analysis results and Section 10.2 presents the deterministic analysis results.

10.1 Stochastic Analysis Results

10.1.1 Sea Surface Exposure

No shoreline contact was predicted above the low threshold for this scenario, consequently no shoreline contact results are presented.

Table 20 presents the maximum distance and the corresponding direction travelled by oil on the sea surface at each threshold. The maximum distance from the release site predicted for low (1–10 g/m^2), moderate (10–50 g/m^2) and high (>50 g/m^2) exposure was 67 km (northeast), 15 km and 5 km (west), respectively.

Table 21 summarises the potential sea surface exposure to individual receptors. The results indicated there was a 100% probability of surface oil exposure at the low threshold predicted for biologically important areas (BIAs) for several species of birds (e.g. Black-browed Albatross – Foraging, Bullers Albatross- Foraging, Campbell Albatross – Foraging, Common Diving-petrel – Foraging, Indian Yellow-nosed Albatross – Foraging, Short-tailed Shearwater – Foraging, Shy Albatross – Foraging and Wandering Albatross – Foraging). Additionally, the Pygmy Blue Whale – Foraging and Distribution, Southern Right Whale – Migration and White Shark – Distribution were predicted to have a 100% probability of sea surface exposure at the low exposure threshold.

The Upwelling East of Eden had the greatest predicted probability to experience surface oil at, or above, the low exposure threshold (5% probability of exposure) of all KEFs assessed. The corresponding predicted minimum time before sea surface exposure for this receptor at, or above, the low threshold was 39 hours.

Figure 34 presents zones of sea surface exposure over the modelled period. Zones of low and moderate potential exposure were shown to extend predominantly northeast and south-southwest of the release site.

Table 20 **Maximum distance and direction travelled on the sea surface by a single trajectory from the release location to oil exposure thresholds. Results are based on a 280 m^3 surface release of MDO over 6 hours at West Kingfish, tracked for 30 days. The results were calculated from 100 spill trajectories.**

Period	Distance and direction	Zones of potential sea surface exposure		
		Low (1–10 g/m^2)	Moderate (10–50 g/m^2)	High (>50 g/m^2)
Annual	Maximum distance from release site (km)	67	15	5
	Maximum distance from release site (km) (99th percentile)	57	15	5
	Direction	NE	ENE	W

Table 21 **Summary of the potential sea surface exposure to receptors. Results are based on a 280 m^3 surface release of MDO over 6 hours at West Kingfish, tracked for 30 days. The results were calculated from 100 spill trajectories.**

Receptors		Probability of oil exposure on the sea surface (%)			Minimum time before oil exposure on the sea surface (hours)		
		Low (1-10 g/m^2)	Moderate (10-50 g/m^2)	High (>50 g/m^2)	Low (1-10 g/m^2)	Moderate (10-50 g/m^2)	High (>50 g/m^2)
BIA	Black-browed Albatross - Foraging	100	92	10	1	1	2
	Bullers Albatross - Foraging	100	92	10	1	1	2
	Campbell Albatross - Foraging	100	92	10	1	1	2
	Common Diving-petrel - Foraging	100	92	10	1	1	2
	Indian Yellow-nosed Albatross - Foraging	100	92	10	1	1	2
	Pygmy Blue Whale - Distribution	100	92	10	1	1	2
	Pygmy Blue Whale - Foraging	100	92	10	1	1	2
	Short-tailed Shearwater - Foraging	100	92	10	1	1	2
	Shy Albatross - Foraging	100	92	10	1	1	2
	Southern Right Whale - Migration	100	92	10	1	1	2
	Wandering Albatross - Foraging	100	92	10	1	1	2
	White Shark - Distribution	100	92	10	1	1	2
	White-faced Storm-petrel - Foraging	8	-	-	12	-	-
KEF	Upwelling East of Eden	5	-	-	39	-	-

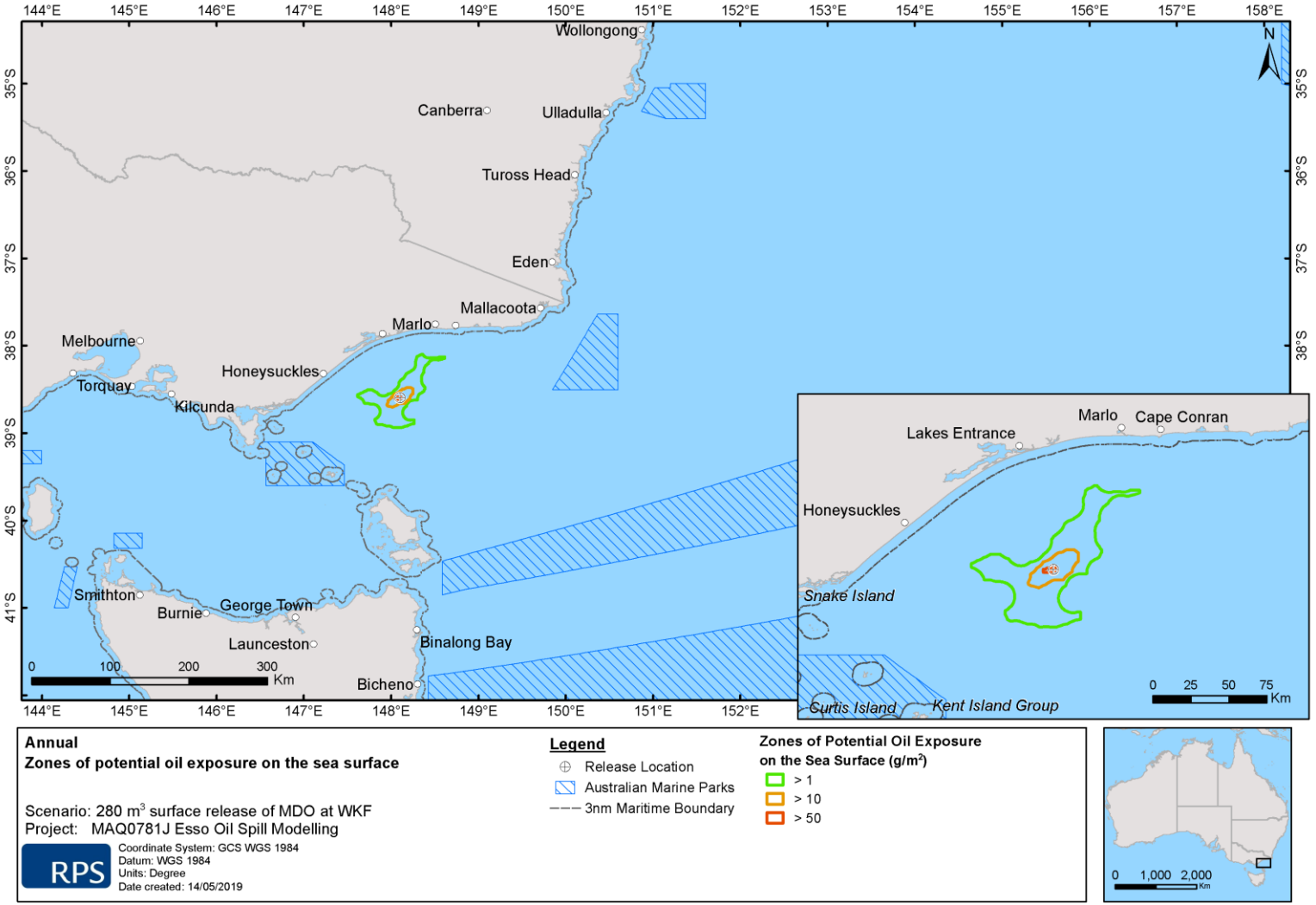

Figure 34 Zones of potential oil exposure on the sea surface, in the event of a 280 m^3 surface release of MDO over 6 hours at West Kingfish, tracked for 30 days. The results were calculated from 100 spill trajectories.

10.1.2 Water Column Exposure

10.1.2.1 Dissolved Aromatic Hydrocarbons

Table 22 summarises the probability of exposure to receptors from dissolved hydrocarbons in the 0–10 m depth layer at the low (10 ppb), moderate (50 ppb) and high (400 ppb) dissolved hydrocarbon exposure thresholds (NOPSEMA, 2019) and the additional thresholds described in 1013913984.81 predicted over the annual assessment. The probability of dissolved hydrocarbon exposure at the low threshold varied between 1% and 6% (Table 22).

The Upwelling East of Eden KEF was the only KEF receptor exposed to dissolved hydrocarbons (above the low threshold) with a probability of 1%. Several BIAs were predicted to be exposed at the low threshold within the 0-10 m surface layer (Table 22). The greatest probability of dissolved hydrocarbon exposure above the low reporting threshold of 6% was predicted for the following BIAs: Black-browed Albatross – Foraging, Bullers Albatross – Foraging, Campbell Albatross – Foraging, Common Diving-petrel – Foraging, Indian Yellow-nosed Albatross – Foraging, Pygmy Blue Whale – Distribution and Foraging, Shy Albatross – Foraging, Southern Right Whale – Migration, Wandering Albatross – Foraging and White Shark – Distribution.

Figure 34 and Figure 35 presents the zones of potential dissolved hydrocarbon exposure for the 0-10 m depth layers, for several reporting thresholds.

RPS

Table 22 Probability of exposure to receptors from dissolved aromatics in the 0–10 m depth layer below the sea surface. Results are based on a 280 m^3 surface release of MDO over 6 hours at West Kingfish, tracked for 30 days. The results were calculated from 100 spill trajectories.

	Receptor	Maximum instantaneous dissolved aromatic hydrocarbon exposure (ppb)	Probability of instantaneous dissolved hydrocarbon			Maximum time-averaged dissolved aromatic hydrocarbon exposure (ppb) (over 96 hours)	Probability of time-averaged hydrocarbon exposure	
			Low >10 ppb	Moderate > 50 ppb	High > 400 ppb		Moderate > 50 ppb	High > 400 ppb
AMP	Beagle	1	-	-	-	<1	-	-
	Antipodean Albatross - Foraging	6	-	-	-	1	-	-
	Black-browed Albatross - Foraging	41	6	-	-	7	-	-
	Bullers Albatross - Foraging	41	6	-	-	7	-	-
	Campbell Albatross - Foraging	41	6	-	-	7	-	-
	Common Diving-petrel - Foraging	41	6	-	-	7	-	-
	Grey Nurse Shark - Foraging	1	-	-	-	<1	-	-
	Humpback Whale - Foraging	1	-	-	-	<1	-	-
	Indian Yellow-nosed Albatross - Foraging	41	6	-	-	7	-	-
BIA	Indo-Pacific/Spotted Bottlenose Dolphin - Breeding	1	-	-	-	<1	-	-
	Little Penguin - Foraging	1	-	-	-	<1	-	-
	Pygmy Blue Whale - Distribution	41	6	-	-	7	-	-
	Pygmy Blue Whale - Foraging	41	6	-	-	7	-	-
	Short-tailed Shearwater - Foraging	41	3	-	-	7	-	-
	Shy Albatross - Foraging	41	6	-	-	7	-	-
	Sooty Shearwater - Foraging	1	-	-	-	<1	-	-
	Southern Right Whale - Migration	41	6	-	-	7	-	-
	Wandering Albatross - Foraging	41	6	-	-	7	-	-

	Receptor	Maximum instantaneous dissolved aromatic hydrocarbon exposure (ppb)	Probability of instantaneous dissolved hydrocarbon			Maximum time-averaged dissolved aromatic hydrocarbon exposure (ppb) (over 96 hours)	Probability of time-averaged hydrocarbon exposure	
			Low >10 ppb	Moderate > 50 ppb	High > 400 ppb		Moderate > 50 ppb	High > 400 ppb
	Wedge-tailed Shearwater - Foraging	1	-	-	-	<1	-	-
	White Shark - Distribution	41	6	-	-	7	-	-
	White Shark - Foraging	2	-	-	-	<1	-	-
	White-faced Storm-petrel - Foraging	14	1	-	-	3	-	-
KEF	Big Horseshoe Canyon	1	-	-	-	<1	-	-
	Upwelling East of Eden	12	1	-	-	2	-	-
MNP	Cape Howe	1	-	-	-	<1	-	-
State Waters	New South Wales	1	-	-	-	<1	-	-
	Victoria State Waters	1	-	-	-	<1	-	-
SUB-LGA	Cape Howe / Mallacoota	1	-	-	-	<1	-	-

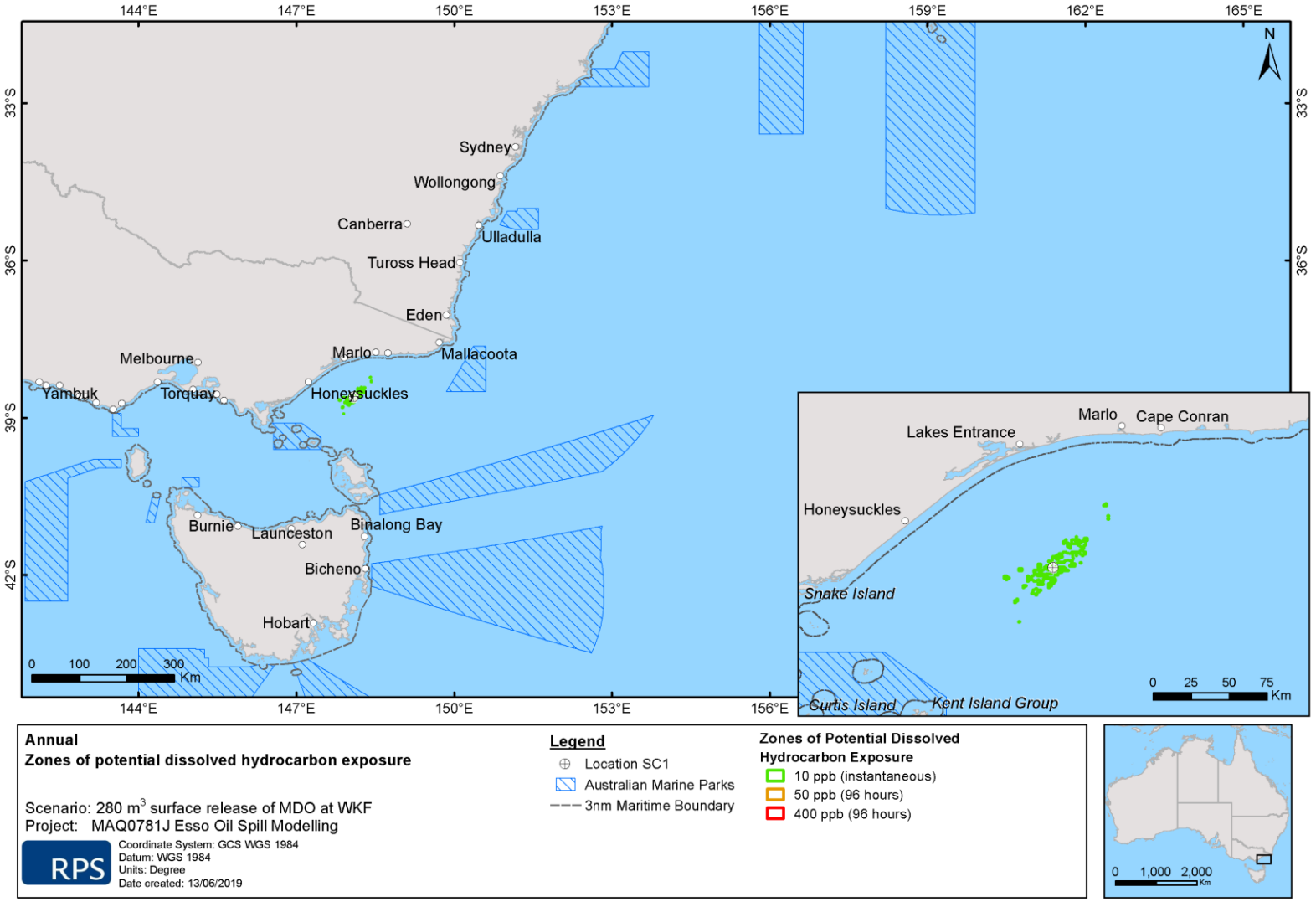

Figure 35 Zones of potential dissolved hydrocarbon exposure at 0–10 m below the sea surface in the event of a 280 m^3 surface release of MDO over 6 hours at West Kingfish, tracked for 30 days. The results were calculated from 100 spill trajectories.

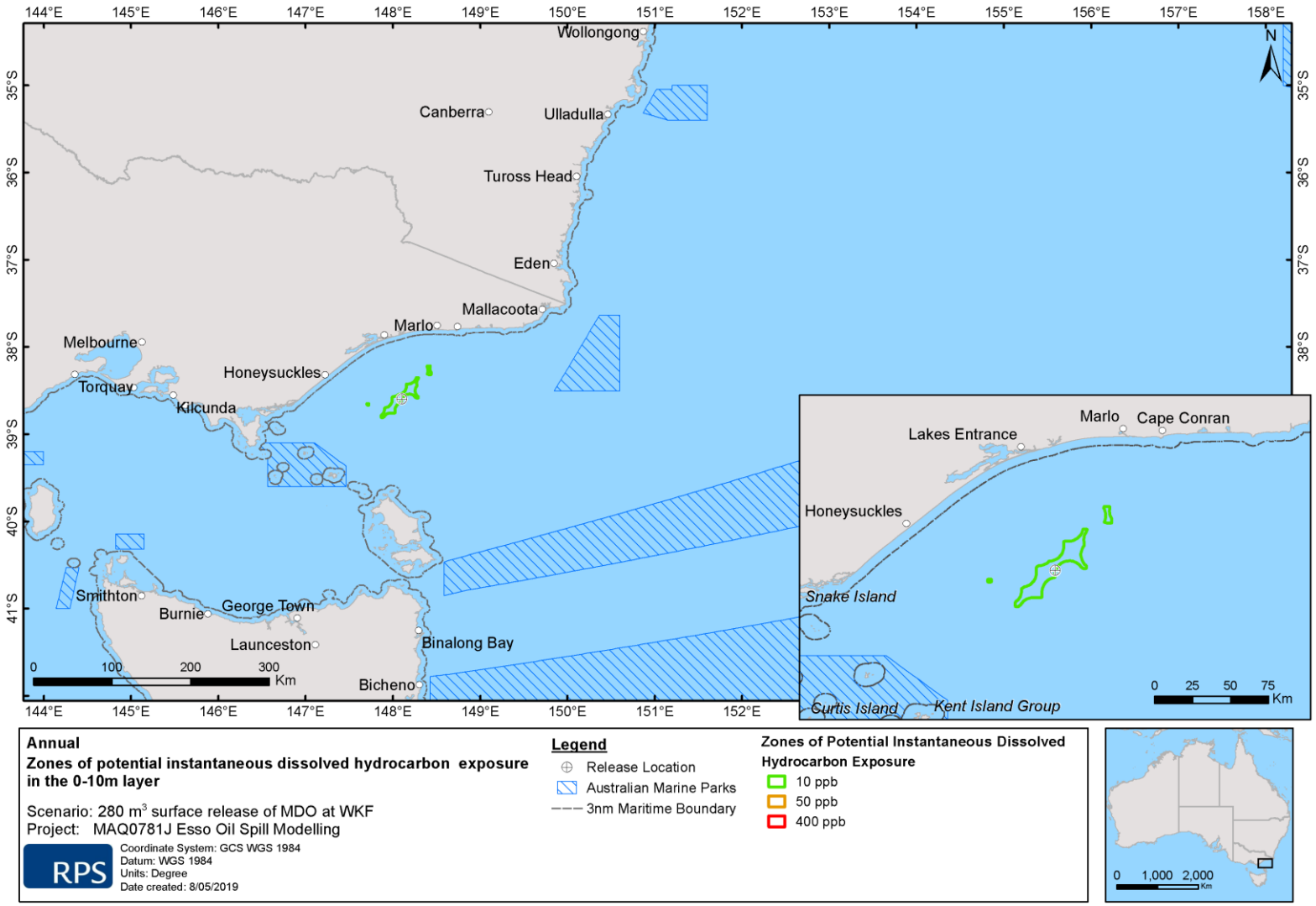

Figure 36 Zones of potential instantaneous dissolved hydrocarbon exposure at 0–10 m below the sea surface in the event of a 280 m^3 surface release of MDO over 6 hours at West Kingfish, tracked for 30 days. The results were calculated from 100 spill trajectories.

10.1.2.2 Entrained Hydrocarbons

Table 23 summarises the probability of exposure to receptors from entrained oil in the 0–10 m depth at the low (10ppb) and high (100 ppb) entrained hydrocarbon exposure thresholds (NOPSEMA, 2019) and the additional thresholds described in 1013913984.81 predicted over the annual assessment. No exposure at or above the low entrained hydrocarbon exposure threshold was predicted in the waters below 10 m.

The greatest probability of entrained oil exposure above the low threshold was 43%, predicted for the following BIAs: Black-browed Albatross – Foraging, Bullers Albatross- Foraging, Campbell Albatross – Foraging, Common Diving-petrel – Foraging, Indian Yellow-nosed Albatross – Foraging, Pygmy Blue Whale – Distribution, and Foraging, Shy Albatross – Foraging, Southern Right Whale – Migration, Wandering Albatross – Foraging and White Shark Distribution.

Figure 37 to Figure 39 present the zones of potential entrained hydrocarbon exposure in the 0-10 m depth layer, for several reporting thresholds.

RPS

Table 23 Probability of exposure to receptors from entrained oil in the 0–10 m depth layer below the sea surface. Results are based on a 280 m^3 surface release of MDO over 6 hours at West Kingfish, tracked for 30 days. The results were calculated from 100 spill trajectories.

Receptors		Maximum instantaneous entrained hydrocarbon exposure (ppb)	Probability of Instantaneous hydrocarbon exposure		Maximum time-averaged entrained hydrocarbon exposure (ppb) (over 96 hrs)	Maximum time-averaged entrained hydrocarbon exposure (ppb) (over 168 hrs)	Probability of time-averaged entrained hydrocarbon exposure		
			Low >10 ppb	High >100 ppb			Moderate > 98 ppb (over 96 hrs)	Moderate > 98 ppb (over 168 hrs)	High > 488 ppb (over 96 hours)
AMP	Beagle	132	7	1	33	26	-	-	-
	East Gippsland	92	8	-	24	13	-	-	-
	Flinders	41	3	-	7	4	-	-	-
	Freycinet	3	-	-	1	1	-	-	-
BIA	Antipodean Albatross - Foraging	540	28	7	84	51	-	-	-
	Black Petrel - Foraging	24	1	-	12	8	-	-	-
	Black-browed Albatross - Foraging	2,302	43	23	303	173	8	3	-
	Black-faced Cormorant - Foraging	5	-	-	3	3	-	-	-
	Bullers Albatross - Foraging	2,302	43	23	303	173	8	3	-
	Campbell Albatross - Foraging	2,302	43	23	303	173	8	3	-
	Common Diving-petrel - Foraging	2,302	43	23	303	173	8	3	-
	Crested Tern - Breeding	6	-	-	2	1	-	-	-
	Crested Tern - Foraging	24	1	-	6	5	-	-	-
	Flesh-footed Shearwater - Foraging	24	1	-	12	8	-	-	-
	Great-winged Petrel - Foraging	24	1	-	3	2	-	-	-
	Grey Nurse Shark - Foraging	126	5	1	54	32	-	-	-
	Grey Nurse Shark - Migration	122	6	1	52	31	-	-	-
	Humpback Whale - Foraging	132	15	1	54	32	-	-	-
	Indian Yellow-nosed Albatross - Foraging	2,302	43	23	303	173	8	3	-
	Indo-Pacific/Spotted Bottlenose Dolphin - Breeding	96	15	-	25	19	-	-	-
	Little Penguin - Breeding	24	1	-	14	9	-	-	-
	Little Penguin - Foraging	150	20	1	40	31	-	-	-
	Northern Giant Petrel - Foraging	24	1	-	3	2	-	-	-
	Pygmy Blue Whale - Distribution	2,302	43	23	303	173	8	3	-
	Pygmy Blue Whale - Foraging	2,302	43	23	303	173	8	3	-
	Short-tailed Shearwater - Breeding	19	1	-	6	3	-	-	-
	Short-tailed Shearwater - Foraging	2,302	35	18	303	173	6	3	-
	Shy Albatross - Foraging	2,302	43	23	303	173	8	3	-
	Sooty Shearwater - Foraging	126	5	1	54	32	-	-	-
	Southern Giant Petrel - Foraging	24	1	-	3	2	-	-	-

Receptors		Maximum instantaneous entrained hydrocarbon exposure (ppb)	Probability of Instantaneous hydrocarbon exposure		Maximum time-averaged entrained hydrocarbon exposure (ppb) (over 96 hrs)	Maximum time-averaged entrained hydrocarbon exposure (ppb) (over 168 hrs)	Probability of time-averaged entrained hydrocarbon exposure		
			Low >10 ppb	High >100 ppb			Moderate > 98 ppb (over 96 hrs)	Moderate > 98 ppb (over 168 hrs)	High > 488 ppb (over 96 hours)
Southern Right Whale - Connecting Habitat		7	-	-	2	2	-	-	-
Southern Right Whale - Migration		2,302	43	23	303	173	8	3	-
Wandering Albatross - Foraging		2,302	43	23	303	173	8	3	-
Wedge-tailed Shearwater - Foraging		150	20	1	54	32	-	-	-
White Shark - Breeding		105	8	2	20	14	-	-	-
White Shark - Distribution		2,302	43	23	303	173	8	3	-
White Shark - Foraging		195	26	2	64	41	-	-	-
White-capped Albatross - Foraging		24	1	-	3	2	-	-	-
White-faced Storm-petrel - Breeding		58	2	-	17	10	-	-	-
White-faced Storm-petrel - Foraging		913	26	10	174	100	1	1	-
White-fronted Tern - Foraging		1	-	-	1	1	-	-	-
Wilsons Storm Petrel - Migration		24	1	-	3	2	-	-	-
KEF	Big Horseshoe Canyon	121	11	1	18	13	-	-	-
	Canyons on the eastern continental slope	23	1	-	3	2	-	-	-
	Shelf rocky reefs	18	1	-	2	1	-	-	-
	Upwelling East of Eden	655	30	13	124	79	1	-	-
MNP	Cape Howe	127	16	1	32	23	-	-	-
	Ninety Mile Beach	3	-	-	1	1	-	-	-
	Point Hicks	97	14	-	33	28	-	-	-
MP	Batemans	24	1	-	14	9	-	-	-
MS	Beware Reef	17	2	-	6	4	-	-	-
NP	Kent Group	78	7	-	49	41	-	-	-
RAMSAR	Gippsland Lakes	4	-	-	2	1	-	-	-
RSB	New Zealand Star Bank	102	24	1	30	17	-	-	-
	Wakitipu Rock	37	3	-	8	5	-	-	-
	Warrego Rock	15	2	-	5	3	-	-	-
	Wright Rock	22	2	-	9	6	-	-	-
SMA	The Skerries Special Management Area	31	10	-	27	25	-	-	-
State Waters	New South Wales	96	14	-	25	19	-	-	-
	Tasmania State Waters	78	7	-	49	41	-	-	-
	Victoria State Waters	150	19	1	58	35	-	-	-
SUB-LGA	Bega Valley	41	6	-	24	18	-	-	-

Receptors	Maximum instantaneous entrained hydrocarbon exposure (ppb)	Probability of Instantaneous hydrocarbon exposure		Maximum time-averaged entrained hydrocarbon exposure (ppb) (over 96 hrs)	Maximum time-averaged entrained hydrocarbon exposure (ppb) (over 168 hrs)	Probability of time-averaged entrained hydrocarbon exposure		
		Low >10 ppb	High >100 ppb			Moderate > 98 ppb (over 96 hrs)	Moderate > 98 ppb (over 168 hrs)	High > 488 ppb (over 96 hours)
Cape Conran	20	1	-	6	4	-	-	-
Cape Howe / Mallacoota	42	11	-	34	26	-	-	-
Clonmel Island	2	-	-	1	0	-	-	-
Corringle	6	-	-	3	2	-	-	-
Croajingolong (East)	70	10	-	38	27	-	-	-
Croajingolong (West)	95	12	-	41	27	-	-	-
Eurobodalla	13	1	-	11	9	-	-	-
Golden Beach	3	-	-	2	1	-	-	-
Lake Tyers Beach	5	-	-	3	2	-	-	-
Lakes Entrance	6	-	-	4	2	-	-	-
Lakes Entrance (West)	5	-	-	3	2	-	-	-
Marlo	14	3	-	7	4	-	-	-
McLoughlins Beach	3	-	-	1	0	-	-	-
Ocean Grange	3	-	-	2	1	-	-	-
Point Hicks	78	13	-	30	25	-	-	-
Seaspray	3	-	-	1	1	-	-	-
Shoal Haven	22	1	-	14	9	-	-	-
Snake Island	1	-	-	0	0	-	-	-
Sydenham Inlet	21	2	-	13	13	-	-	-
Waratah Bay	1	-	-	1	0	-	-	-
Wilsons Promontory (East)	5	-	-	2	1	-	-	-
Wilsons Promontory (West)	4	-	-	2	2	-	-	-
Woodside Beach	3	-	-	1	1	-	-	-

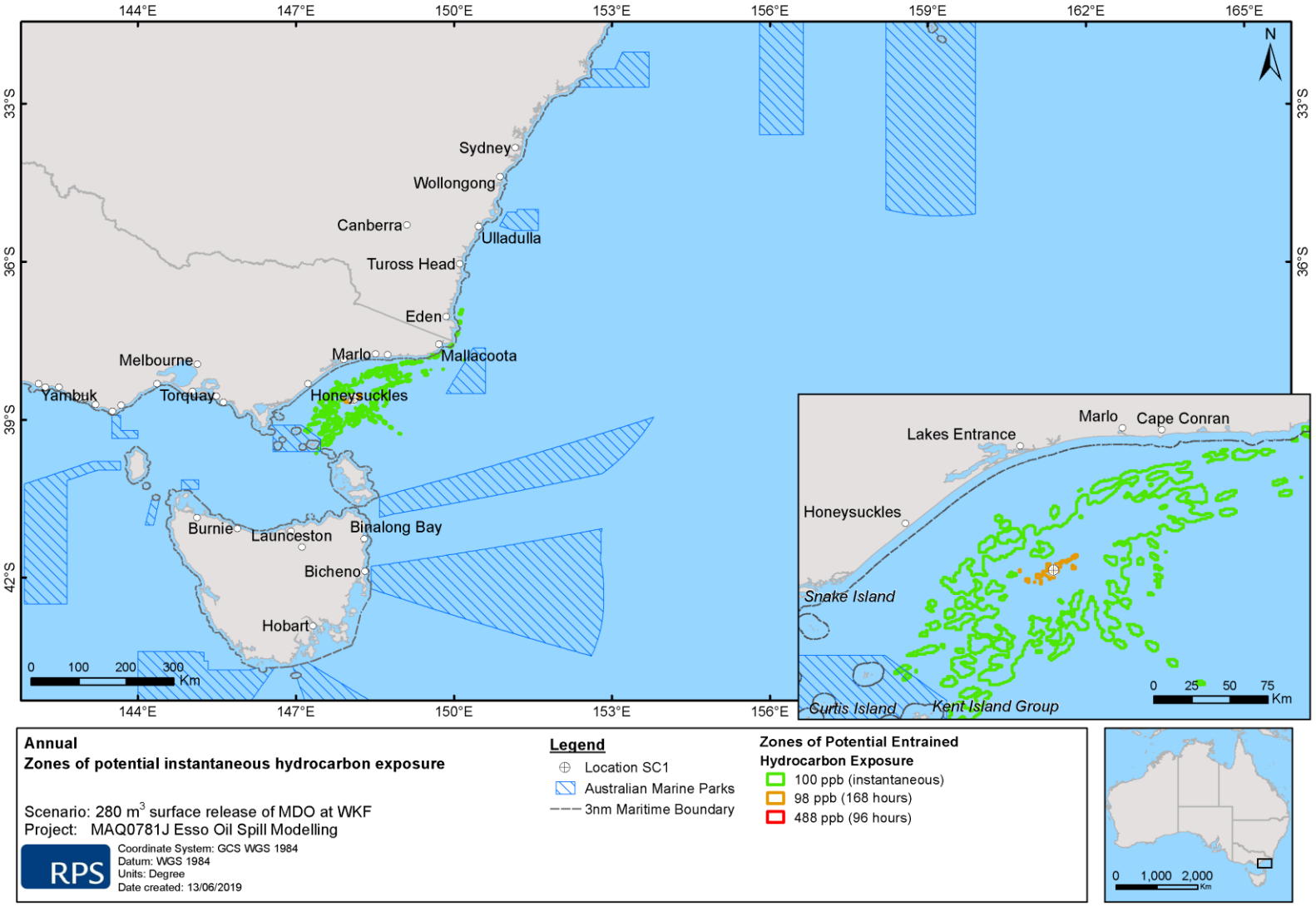

Figure 37 Zone of potential entrained hydrocarbon exposure representing the 100 ppb (instantaneous), 98 ppb (over 168 hours) and 488 ppb (over 96 hours) thresholds at 0-10 m below the sea surface. Results are based in the event of a 280 m³ surface release of MDO over 6 hours at West Kingfish, tracked for 30 days. The results were calculated from 100 spill trajectories.

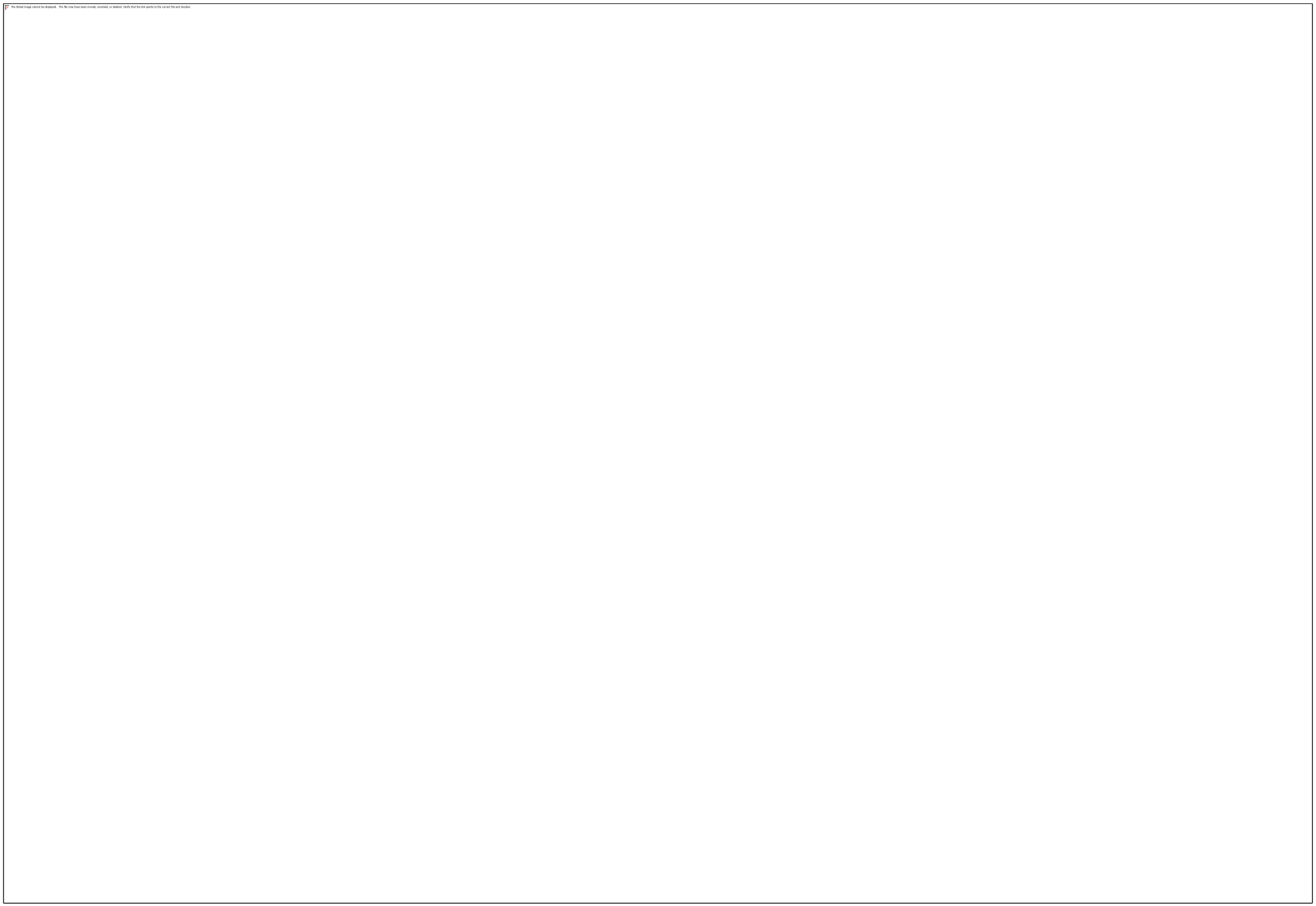

Figure 38 Zone of potential entrained hydrocarbon exposure representing the 100 pb (instantaneous), 98 ppb (over 96 hours) and 488 ppb (over 96 hours) thresholds at 0-10 m below the sea surface. Results are based in the event of a 280 m^3 surface release of MDO over 6 hours at West Kingfish, tracked for 30 days. The results were calculated from 100 spill trajectories.

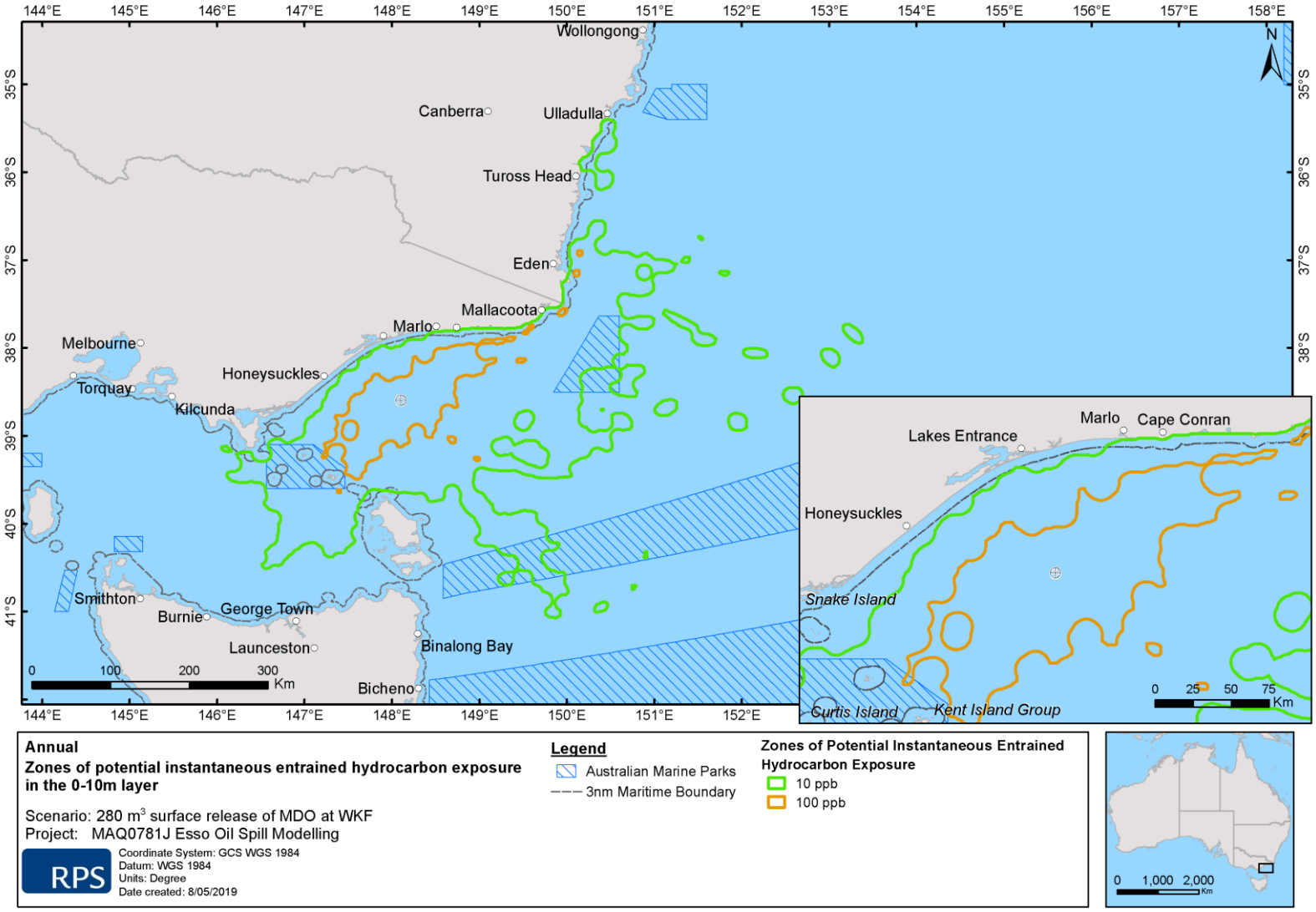

Figure 39 Zone of potential entrained hydrocarbon exposure representing the 10 ppb (instantaneous) and 100 ppb (instantaneous) thresholds at 0-10 m below the sea surface. Results are based in the event of a 280 m^3 surface release of MDO over 6 hours at West Kingfish, tracked for 30 days. The results were calculated from 100 spill trajectories.

10.2 Deterministic Analysis

No shoreline contact was predicted for this scenario, consequently, only the deterministic model run resulting in the largest swept area of oil on the sea surface above 10 g/m^2 (actionable sea surface oil, also the moderate zone of sea surface exposure) is presented (Case 4).

10.2.1 Deterministic Case: Largest Sea Surface Swept Area

The deterministic trajectory that had the largest swept area of oil on the sea surface of 10 g/m^2 (actionable oil) was identified as run number 11 which commenced at 8 am 22nd of June 2009.

Zones of exposure from sea surface oil (swept area) over the entire simulation are presented in Figure 40. Zones of sea surface exposure were predicted to travel northeast from the release site.

For response planning purposes Figure 41 displays the time series of the area of visible oil (0.5 g/m^2) and actionable oil (10 g/m^2) exposure on the sea surface over the 30-day simulation. The maximum area of coverage of visible oil on the on the sea surface at any given time throughout the scenario was predicted to occur 2 days after the spill started and covered approximately 20 km^2.

Figure 42 presents the fates and weathering graph for the corresponding single spill trajectory. At the conclusion of the simulation period, approximately 190 m^3 (68%) spilled oil was lost to the atmosphere through evaporation. Approximately 50 m^3 (1%) of the MDO was predicted to have decayed by the end of the simulation, while approximately 42 m^3 (15%) was predicted to remain within the water column.



Figure 40 Zones of potential exposure on the sea surface for the trajectory with the largest sea surface swept area at the 10 g/m^2 threshold. Results are based on a 280 m^3 surface release of MDO over 6 hours at West Kingfish, tracked for 30 days, 8 am 22nd of June 2009.



Figure 41 Time series of the area of visible (0.5 g/m^2) and actionable oil (10 g/m^2) on the sea surface for the trajectory with the largest sea surface swept area at the 10 g/m^2 threshold. Results are based on a 280 m^3 surface release of MDO over 6 hours at West Kingfish, tracked for 30 days, 8 am 22nd of June 2009.



Figure 42 Predicted weathering and fates graph for the single spill trajectory with the largest sea surface swept area at the 10 g/m^2 threshold. Results are based on a 280 m^3 surface release of MDO over 6 hours at West Kingfish, tracked for 30 days, 8 am 22nd of June 2009.

11 Results: Scenario 2 – 280 m^3 Surface Release of MDO at Perch

The scenario examined a surface release of 280 m^3 of MDO over 6 hours (tracked for 30 days) following a vessel collision at the Perch Platform. A total of 100 spill trajectories were simulated over the annual period.

Section 11.1 presents the stochastic analysis results and Section 11.2 presents the deterministic analysis results.

11.1 Stochastic Analysis Results

11.1.1 Sea Surface Exposure and Shoreline Contact

Table 24 presents the maximum distance and direction travelled by oil on the sea surface at each threshold. The maximum distance from the release site predicted for low (1–10 g/m^2), moderate (10–50 g/m^2) and high (>50 g/m^2) exposure was 75 km (east-northeast), 24 km (northeast) and 1 km (southwest), respectively.

Table 25 summarises the potential sea surface exposure to individual receptors. The results indicated there was a 100% probability of low surface oil exposure predicted for BIAs for several species of birds (e.g. Black-browed Albatross – Foraging, Bullers Albatross – Foraging, Campbell Albatross – Foraging, Common Diving-petrel – Foraging, Indian Yellow-nosed Albatross – Foraging, Short-tailed Shearwater – Foraging and Wandering Albatross - Foraging). Additionally, the Pygmy Blue Whale – Distribution and Foraging, Southern Right Whale – Migration and White Shark – Breeding and Distribution were predicted to have a 100% probability of sea surface exposure at the low exposure threshold.

Of all Sub-LGA receptors considered, Woodside Beach recorded a probability of 1% to experience surface oil at, or above, the low exposure threshold. The corresponding predicted minimum time before sea surface exposure at, or above, the low threshold was approximately 32 hours.

Figure 43 presents the zones of sea surface exposure over the modelled period. Zones of low and moderate potential exposure were shown to extend predominantly southwest and northeast of the release location.

Table 26 presents a summary of the predicted shoreline contact. The predicted probability of contact to any shoreline at, or above, the minimum shoreline contact threshold (10 g/m^2) was 2% (i.e. 2 of the 100 trajectories simulated were predicted to make shoreline contact at the low contact threshold). The minimum time before oil contact was approximately 28 hours and the maximum volume of oil ashore was 28.1 m^3. The maximum potential shoreline loading above the low and moderate shoreline thresholds are presented in Figure 44.

Table 27 summarises the shoreline contact to individual receptors. The highest probabilities of contact by shoreline oil were predicted at Wellington (2%) and Woodside Beach (1%) at the low (10 g/m^2) and moderate (100 g/m^2) thresholds. These receptors were predicted to be the first shoreline receptors to be exposed at the low and moderate contact thresholds, at 28 hours.

Table 24 **Maximum distance and direction travelled on the sea surface by a single trajectory from the release location to oil exposure thresholds. Results are based on a 280 m^3 surface release of MDO over 6 hours at the Perch Platform, tracked for 30 days. The results were calculated from 100 spill trajectories.**

Period	Distance and direction	Zones of potential sea surface exposure		
		Low (1–10 g/m^2)	Moderate (10–50 g/m^2)	High (>50 g/m^2)
Annual	Maximum distance from release site (km)	75	24	1
	Maximum distance from release site (km) (99th percentile)	62	22	1
	Direction	ENE	NE	SW

Table 25 **Summary of the potential sea surface exposure to receptors. Results are based on a 280 m^3 surface release of MDO over 6 hours at the Perch Platform, tracked for 30 days. The results were calculated from 100 spill trajectories.**

Receptor		Probability of oil exposure on the sea surface (%)			Minimum time before oil exposure on the sea surface (hours)		
		Low (1-10 g/m^2)	Moderate (10-50 g/m^2)	High (>50 g/m^2)	Low (1-10 g/m^2)	Moderate (10-50 g/m^2)	High (>50 g/m^2)
BIA	Black-browed Albatross - Foraging	100	99	6	1	1	3
	Bullers Albatross - Foraging	100	99	6	1	1	3
	Campbell Albatross - Foraging	100	99	6	1	1	3
	Common Diving-petrel - Foraging	100	99	6	1	1	3
	Indian Yellow-nosed Albatross - Foraging	100	99	6	1	1	3
	Pygmy Blue Whale - Distribution	100	99	6	1	1	3
	Pygmy Blue Whale - Foraging	100	99	6	1	1	3
	Short-tailed Shearwater - Foraging	100	99	6	1	1	3
	Shy Albatross - Foraging	100	99	6	1	1	3
	Southern Right Whale - Migration	100	99	6	1	1	3
	Wandering Albatross - Foraging	100	99	6	1	1	3
	White Shark - Breeding	100	99	6	1	1	3
	White Shark - Distribution	100	99	6	1	1	3
State Waters	Victoria State Waters	3	-	-	21	-	-
SUB-LGA	Woodside Beach	1	-	-	32	-	-

Table 26 Summary of oil contact across all shorelines. Results are based on a 280 m^3 surface release of MDO over 6 hours at the Perch Platform, tracked for 30 days. The results were calculated from 100 spill trajectories.

Shoreline Statistics

Probability of contact to any shoreline (%)	2
Absolute minimum time for visible oil to shore (hours)	28.0
Maximum volume of hydrocarbons ashore (m^3)	28.1
Average volume of hydrocarbons ashore (m^3)	0.5
Maximum length of the shoreline at **10 g/m^2** (km)	24.0
Average shoreline length (km) at **10 g/m^2** (km)	<1
Maximum length of the shoreline at **100 g/m^2** (km)	14.0
Average shoreline length (km) at **100 g/m^2** (km)	2
Maximum length of the shoreline at **1,000 g/m^2** (km)	-
Average shoreline length (km) at **1,000 g/m^2** (km)	-

Table 27 Summary of oil contact to individual shoreline receptors. Results are based on a 280 m^3 surface release of MDO over 6 hours at the Perch Platform, tracked for 30 days. The results were calculated from 100 spill trajectories.

Receptor	Maximum probability of shoreline loading (%)			Minimum time before shoreline accumulation (hours)			Load on shoreline (g/m^2)		Volume on shoreline (m^3)		Mean length of shoreline contacted (km)			Maximum length of shoreline contacted (km)		
	Low >10 g/m^2	Moderate >100 g/m^2	High >1,000 g/m^2	Low >10 g/m^2	Moderate >100 g/m^2	High >1,000 g/m^2	Mean	Peak	Mean	Peak	Low >10 g/m^2	Moderate >100 g/m^2	High >1,000 g/m^2	Low >10 g/m^2	Moderate >100 g/m^2	High >1,000 g/m^2
Wellington	2	2		28	28		183	593	1	28	12	7		13	7	
Woodside Beach	1	1		28	28		161	593	<1	26	13	7		13	7	

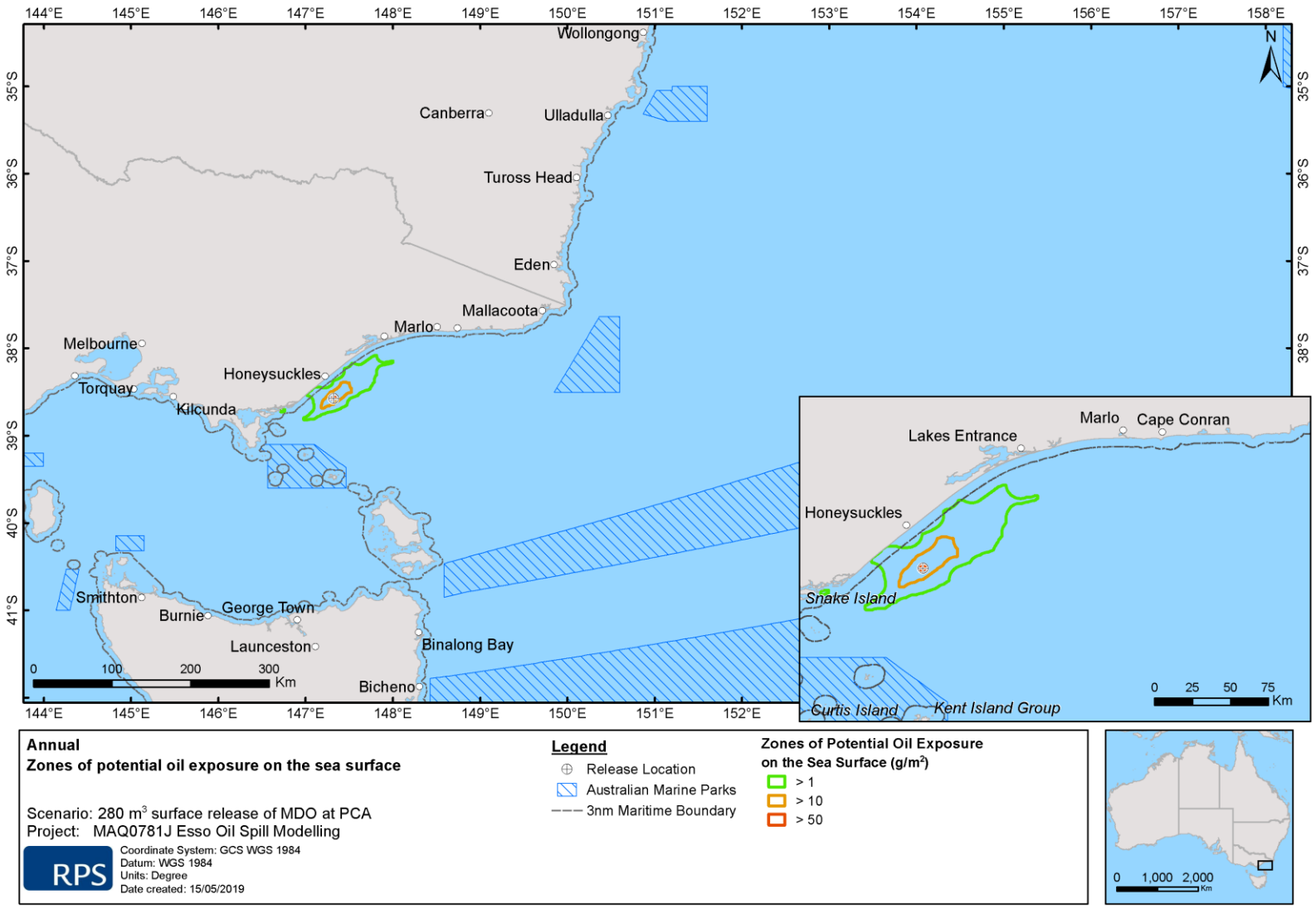

Figure 43 Zones of potential oil exposure on the sea surface, in the event of a 280 m³ surface release of MDO over 6 hours at the Perch Platform, tracked for 30 days. The results were calculated from 100 spill trajectories.

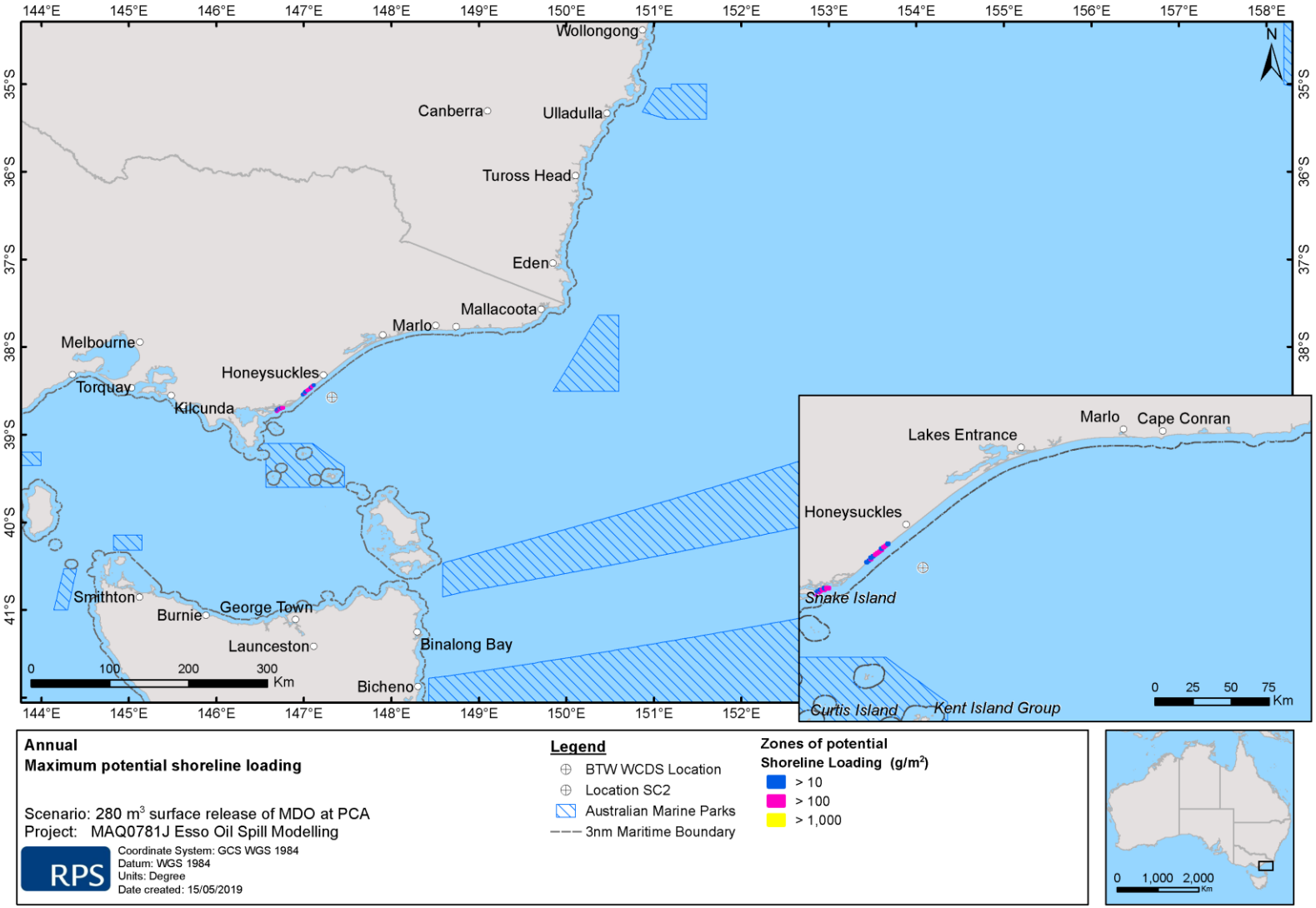

Figure 44 Maximum potential shoreline loading for the low (≥ 10 g/m^2), moderate (≥ 100 g/m^2) and high (≥ 1,000 g/m^2) thresholds. Results were based on a 280 m^3 surface release of MDO over 6 hours at the Perch Platform, tracked for 30 days.

11.1.2 Water Column Exposure

11.1.2.1 Dissolved Aromatic Hydrocarbons

Table 28 summarises the probability of exposure to receptors from dissolved hydrocarbons in the 0–10 m depth layer at the low (10 ppb), moderate (50 ppb) and high (400 ppb) dissolved hydrocarbon exposure thresholds (NOPSEMA, 2019) and the additional thresholds described in 1013913984.81 predicted over the annual assessment. At the surface layer (0-10 m), the probability of dissolved hydrocarbon exposure remained below 3% (Table 28).

Several BIAs including Black-browed Albatross – Foraging, Bullers Albatross – Foraging, Campbell Albatross – Foraging, Common Diving-petrel – Foraging, Indian Yellow-nosed Albatross – Foraging, Pygmy Blue Whale – Distribution and Foraging, Short-tailed Shearwater – Foraging, Shy Albatross- Foraging, Southern Right Whale – Migration, Wandering Albatross – Foraging, White Shark – Breeding and Distribution recorded a probability of dissolved hydrocarbon exposure at the low (10 ppb; instantaneous) threshold of 3% (Table 28).

Figure 45 and Figure 46 presents the zones of potential dissolved hydrocarbon exposure for the 0-10 m depth layers, for several reporting thresholds.

RPS

Table 28 Probability of exposure to receptors from dissolved aromatics in the 0–10 m depth layer below the sea surface. Results are based on a 280 m^3 surface release of MDO over 6 hours at the Perch Platform, tracked for 30 days. The results were calculated from 100 spill trajectories.

	Receptor	Maximum instantaneous dissolved aromatic hydrocarbon exposure (ppb)	Probability of instantaneous dissolved hydrocarbon			Maximum time-averaged dissolved aromatic hydrocarbon exposure (ppb) (over 96 hours)	Probability of time-averaged hydrocarbon exposure	
			Low >10 ppb	Moderate > 50 ppb	High > 400 ppb		Moderate > 50 ppb	High > 400 ppb
BIA	Black-browed Albatross - Foraging	26	3	-	-	4	-	-
	Bullers Albatross - Foraging	26	3	-	-	4	-	-
	Campbell Albatross - Foraging	26	3	-	-	4	-	-
	Common Diving-petrel - Foraging	26	3	-	-	4	-	-
	Indian Yellow-nosed Albatross - Foraging	26	3	-	-	4	-	-
	Pygmy Blue Whale - Distribution	26	3	-	-	4	-	-
	Pygmy Blue Whale - Foraging	26	3	-	-	4	-	-
	Short-tailed Shearwater - Foraging	26	3	-	-	4	-	-
	Shy Albatross - Foraging	26	3	-	-	4	-	-
	Southern Right Whale - Migration	26	3	-	-	4	-	-
	Wandering Albatross - Foraging	26	3	-	-	4	-	-
	White Shark - Breeding	26	3	-	-	4	-	-
	White Shark - Distribution	26	3	-	-	4	-	-

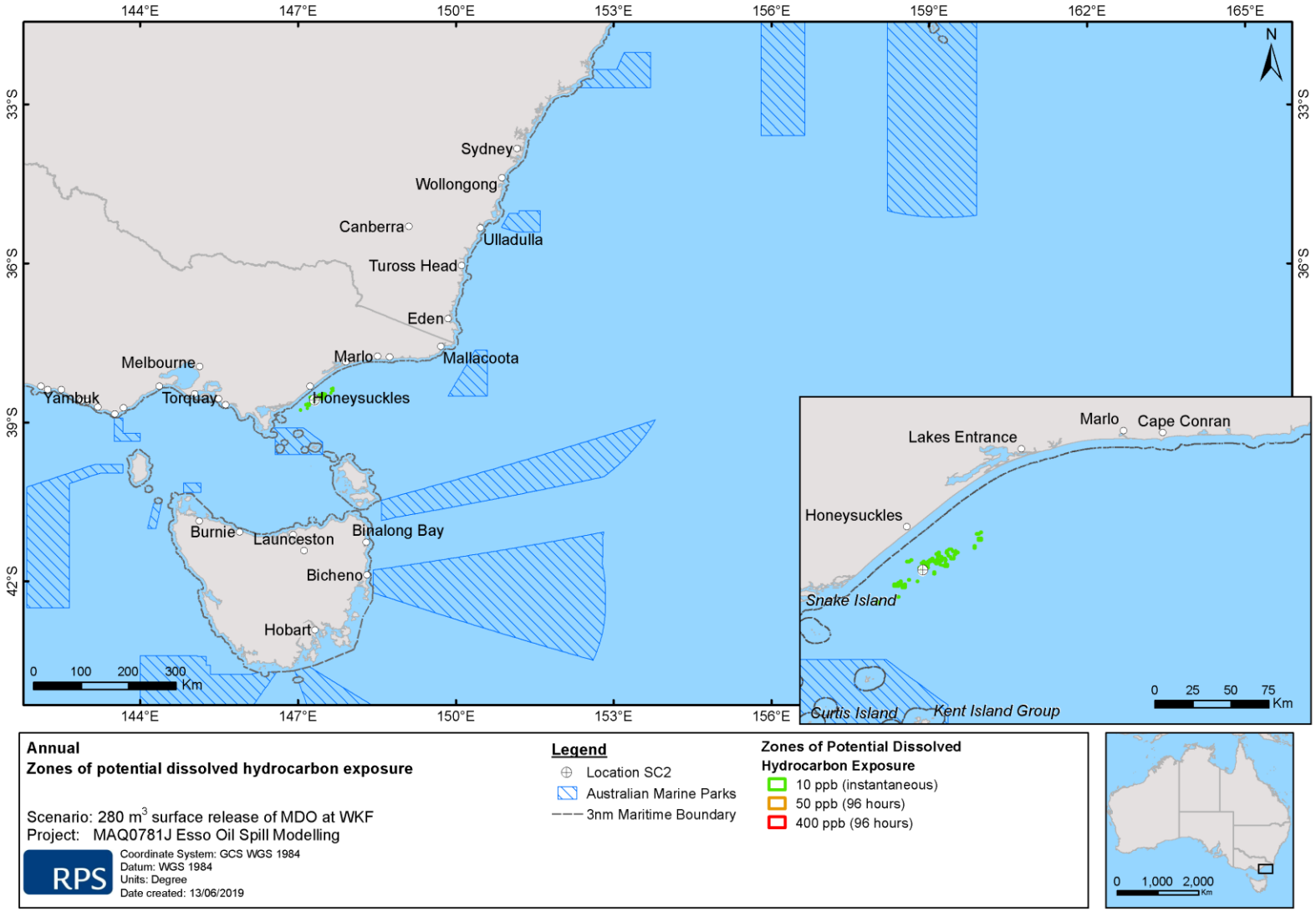

Figure 45 Zones of potential dissolved hydrocarbon exposure at 0–10 m below the sea surface in the event of a 280 m^3 surface release of MDO over 6 hours at the Perch Platform, tracked for 30 days. The results were calculated from 100 spill trajectories.

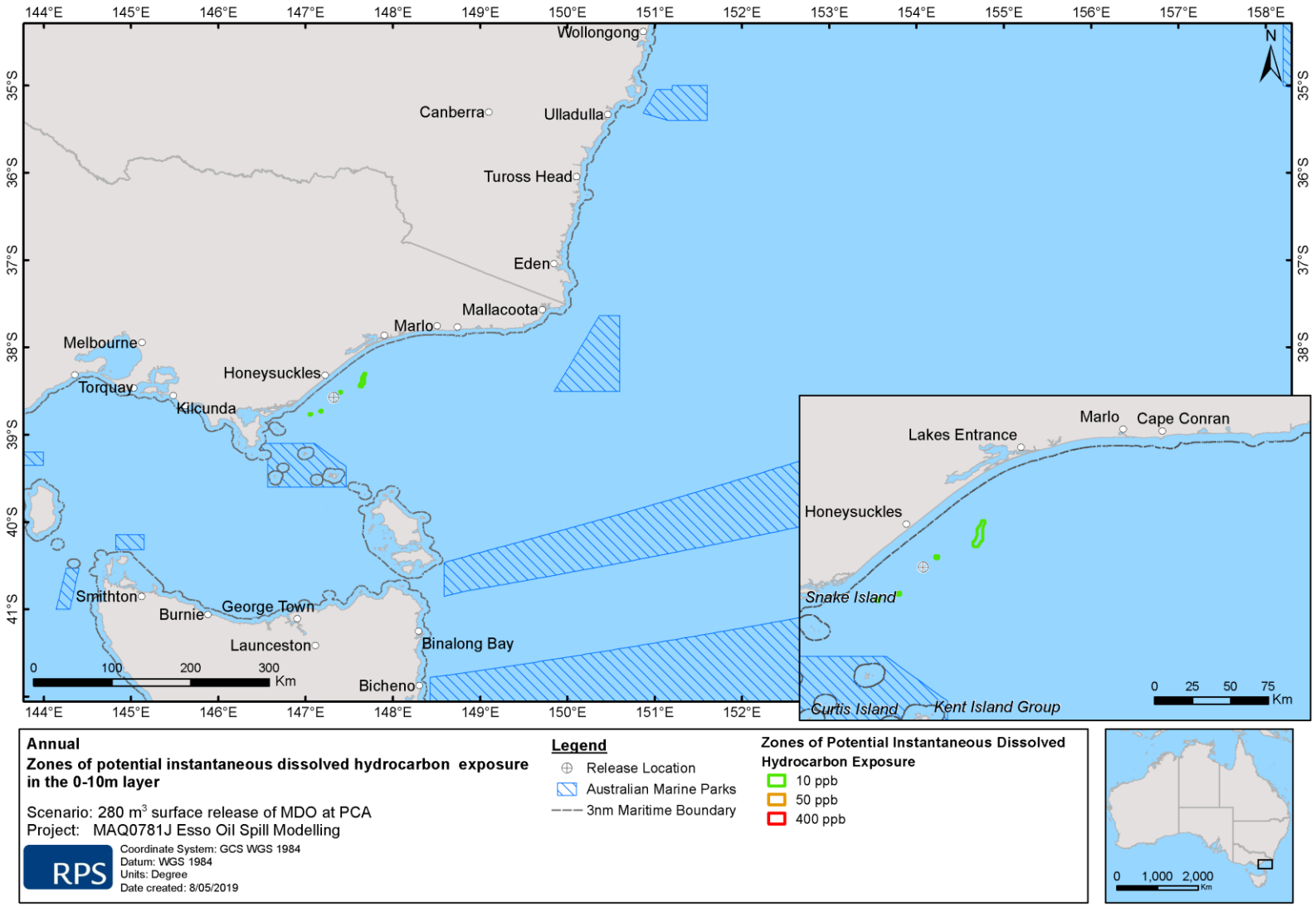

Figure 46 Zones of potential instantaneous dissolved hydrocarbon exposure at 0–10 m below the sea surface in the event of a 280 m³ surface release of MDO over 6 hours at the Perch Platform, tracked for 30 days. The results were calculated from 100 spill trajectories.

11.1.2.2 Entrained Hydrocarbons

Table 29 summarises the probability of exposure to receptors from entrained oil in the 0–10 m depth at the low (10 ppb) and high (100 ppb) entrained hydrocarbon exposure thresholds (NOPSEMA, 2019) and the additional thresholds described in 1013913984.81 predicted over the annual assessment. No exposure at or above the low entrained hydrocarbon exposure threshold was predicted in the waters below 10 m.

The greatest probability of entrained oil exposure above the low threshold was 51%, predicted for the following BIAs: Black-browed Albatross – Foraging, Bullers Albatross – Foraging, Campbell Albatross-Foraging, Common Diving-petrel – Foraging, Indian Yellow-nosed Albatross – Foraging, Pygmy Blue Whale – Distribution and Foraging, Short-tailed Shearwater – Foraging, Shy Albatross – Foraging, Southern Right Whale – Migration, Wandering Albatross – Foraging and White Shark – Breeding and Distribution.

Figure 47 to Figure 49 present the zones of potential entrained hydrocarbon exposure in the 0-10 m depth layer, for several reporting thresholds.

Table 29 Probability of exposure to receptors from entrained oil in the 0–10 m depth layer below the sea surface. Results are based on a 280 m^3 surface release of MDO over 6 hours at the Perch Platform, tracked for 30 days. The results were calculated from 100 spill trajectories.

	Receptors	Maximum instantaneous entrained hydrocarbon exposure (ppb)	Probability of Instantaneous hydrocarbon exposure		Maximum time-averaged entrained hydrocarbon exposure (ppb) (over 96 hrs)	Maximum time-averaged entrained hydrocarbon exposure (ppb) (over 168 hrs)	Probability of time-averaged entrained hydrocarbon exposure		
			Low >10 ppb	High >100 ppb			Moderate > 98 ppb (over 96 hrs)	Moderate > 98 ppb (over 168 hrs)	High > 488 ppb (over 96 hours)
AMP	Beagle	219	9	2	33	21	-	-	-
	East Gippsland	104	5	1	13	8	-	-	-
	Flinders	24	1	-	4	2	-	-	-
	Freycinet	3	-	-	1	1	-	-	-
BIA	Antipodean Albatross - Foraging	203	48	3	93	55	-	-	-
	Black Petrel - Foraging	125	8	1	17	10	-	-	-
	Black-browed Albatross - Foraging	2,011	51	26	307	175	4	2	-
	Bullers Albatross - Foraging	2,011	51	26	307	175	4	2	-
	Campbell Albatross - Foraging	2,011	51	26	307	175	4	2	-
	Common Diving-petrel - Foraging	2,011	51	26	307	175	4	2	-
	Crested Tern - Breeding	26	5	-	9	6	-	-	-
	Crested Tern - Foraging	119	8	1	16	9	-	-	-
	Flesh-footed Shearwater - Foraging	125	8	1	17	10	-	-	-
	Great-winged Petrel - Foraging	125	5	1	17	10	-	-	-
	Grey Nurse Shark - Foraging	56	17	-	30	19	-	-	-
	Grey Nurse Shark - Migration	134	17	1	31	19	-	-	-
	Humpback Whale - Foraging	156	27	1	32	24	-	-	-
	Indian Yellow-nosed Albatross - Foraging	2,011	51	26	307	175	4	2	-
	Indo-Pacific/Spotted Bottlenose Dolphin - Breeding	65	30	-	39	32	-	-	-
	Little Penguin - Breeding	54	6	-	9	6	-	-	-
	Little Penguin - Foraging	107	34	1	79	53	-	-	-
	Northern Giant Petrel - Foraging	125	5	1	17	10	-	-	-
	Pygmy Blue Whale - Distribution	2,011	51	26	307	175	4	2	-
	Pygmy Blue Whale - Foraging	2,011	51	26	307	175	4	2	-
	Short-tailed Shearwater - Breeding	18	3	-	6	4	-	-	-
	Short-tailed Shearwater - Foraging	2,011	51	26	307	175	4	2	-
	Shy Albatross - Foraging	2,011	51	26	307	175	4	2	-

Receptors		Maximum instantaneous entrained hydrocarbon exposure (ppb)	Probability of Instantaneous hydrocarbon exposure		Maximum time-averaged entrained hydrocarbon exposure (ppb) (over 96 hrs)	Maximum time-averaged entrained hydrocarbon exposure (ppb) (over 168 hrs)	Probability of time-averaged entrained hydrocarbon exposure		
			Low >10 ppb	High >100 ppb			Moderate > 98 ppb (over 96 hrs)	Moderate > 98 ppb (over 168 hrs)	High > 488 ppb (over 96 hours)
Sooty Shearwater - Foraging		134	12	1	26	18	-	-	-
Southern Giant Petrel - Foraging		125	5	1	17	10	-	-	-
Southern Right Whale - Migration		2,011	51	26	307	175	4	2	-
Wandering Albatross - Foraging		2,011	51	26	307	175	4	2	-
Wedge-tailed Shearwater - Foraging		156	34	1	79	53	-	-	-
White Shark - Breeding		2,011	51	26	307	175	4	2	-
White Shark - Distribution		2,011	51	26	307	175	4	2	-
White Shark - Foraging		208	50	3	165	134	1	1	-
White-capped Albatross - Foraging		125	5	1	17	10	-	-	-
White-faced Storm-petrel - Breeding		134	8	1	17	14	-	-	-
White-faced Storm-petrel - Foraging		273	50	3	176	141	1	1	-
Wilsons Storm Petrel - Migration		125	5	1	17	10	-	-	-
KEF	Big Horseshoe Canyon	50	3	-	11	6	-	-	-
	Canyons on the eastern continental slope	66	4	-	13	8	-	-	-
	Seamounts South and east of Tasmania	1	-	-	0	0	-	-	-
	Shelf rocky reefs	78	6	-	10	6	-	-	-
	Upwelling East of Eden	413	50	5	176	141	1	1	-
MNP	Cape Howe	89	32	-	66	53	-	-	-
	Ninety Mile Beach	107	10	1	48	31	-	-	-
	Point Hicks	208	49	3	165	134	1	1	-
MP	Batemans	27	5	-	9	6	-	-	-
MS	Beware Reef	60	16	-	25	15	-	-	-
NP	Kent Group	17	2	-	11	7	-	-	-
RAMSAR	Gippsland Lakes	23	1	-	6	3	-	-	-
RSB	New Zealand Star Bank	131	35	1	28	16	-	-	-
	Wakitipu Rock	2	-	-	1	1	-	-	-
	Wright Rock	11	1	-	5	3	-	-	-
SMA	The Skerries Special Management Area	65	16	-	22	13	-	-	-
	New South Wales	65	29	-	35	28	-	-	-

	Receptors	Maximum instantaneous entrained hydrocarbon exposure (ppb)	Probability of Instantaneous hydrocarbon exposure		Maximum time-averaged entrained hydrocarbon exposure (ppb) (over 96 hrs)	Maximum time-averaged entrained hydrocarbon exposure (ppb) (over 168 hrs)	Probability of time-averaged entrained hydrocarbon exposure		
			Low >10 ppb	High >100 ppb			Moderate > 98 ppb (over 96 hrs)	Moderate > 98 ppb (over 168 hrs)	High > 488 ppb (over 96 hours)
State Waters	Tasmania State Waters	107	5	1	30	18	-	-	-
	Victoria State Waters	526	49	3	176	141	1	1	-
SUB-LGA	Bega Valley	40	12	-	21	18	-	-	-
	Cape Conran	78	17	-	38	22	-	-	-
	Cape Howe / Mallacoota	76	22	-	66	53	-	-	-
	Clonmel Island	247	9	1	78	45	-	-	-
	Corner Inlet	7	-	-	6	5	-	-	-
	Corringle	40	9	-	27	25	-	-	-
	Croajingolong (East)	69	15	-	57	43	-	-	-
	Croajingolong (West)	79	32	-	25	17	-	-	-
	Eurobodalla	8	-	-	4	3	-	-	-
	Golden Beach	24	5	-	13	10	-	-	-
	Lake Tyers Beach	45	3	-	33	27	-	-	-
	Lakes Entrance	45	1	-	21	12	-	-	-
	Lakes Entrance (West)	10	1	-	6	5	-	-	-
	Marlo	97	18	-	53	30	-	-	-
	McLoughlins Beach	110	10	1	33	22	-	-	-
	Ocean Grange	21	5	-	13	9	-	-	-
	Point Hicks	232	39	3	176	141	1	1	-
	Port Welshpool	6	-	-	5	5	-	-	-
	Seaspray	81	8	-	40	28	-	-	-
	Shoal Haven	26	2	-	20	13	-	-	-
	Snake Island	15	4	-	10	9	-	-	-
	Sydenham Inlet	96	23	-	45	32	-	-	-
	Waratah Bay	7	-	-	4	4	-	-	-
	Wilsons Promontory (East)	19	3	-	13	10	-	-	-
	Wilsons Promontory (NE)	12	2	-	8	6	-	-	-
	Wilsons Promontory (West)	11	1	-	8	6	-	-	-
	Woodside Beach	99	9	-	32	20	-	-	-

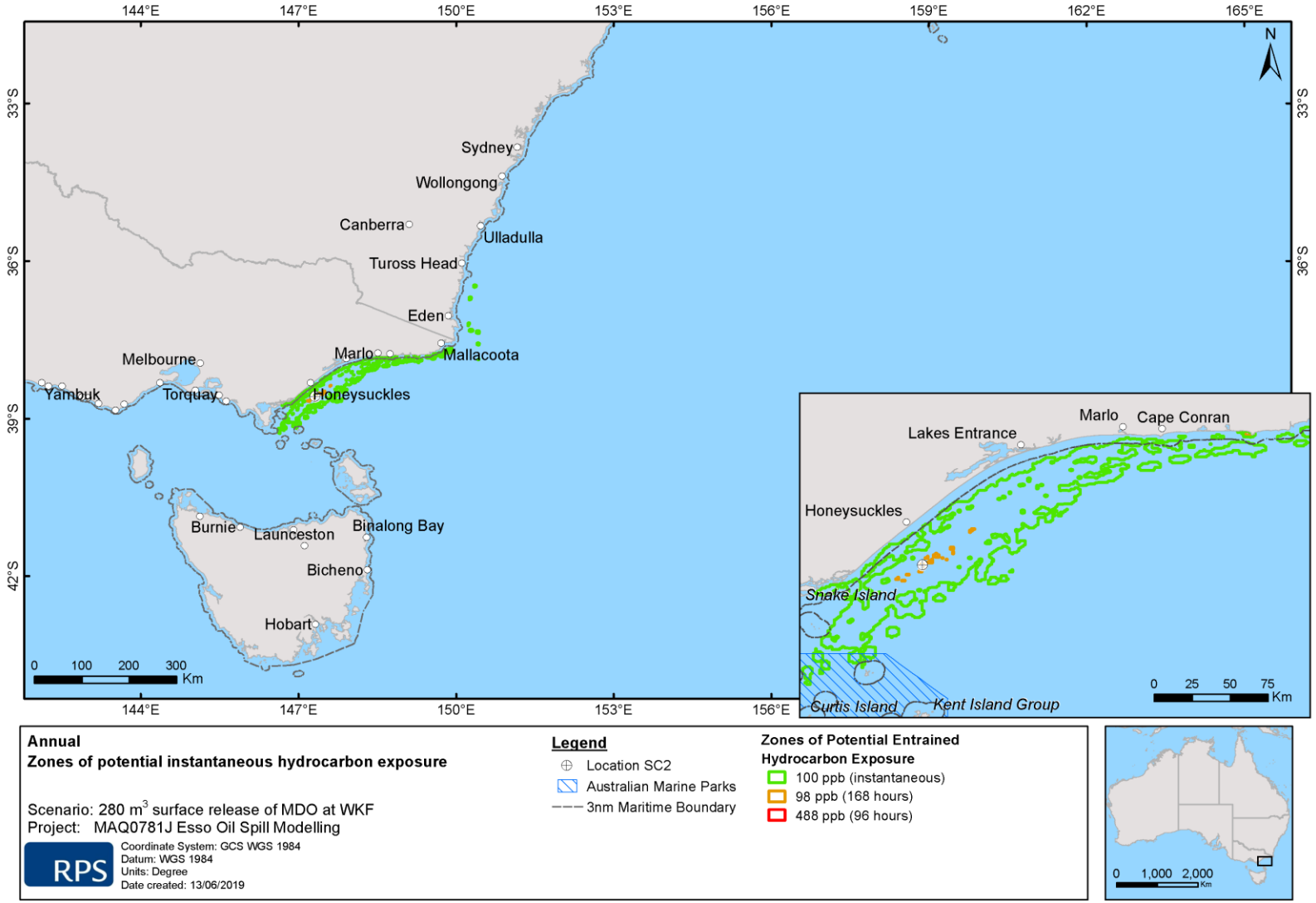

Figure 47 Zone of potential entrained hydrocarbon exposure representing the 100 ppb (instantaneous), 98 ppb (over 168 hours) and 488 ppb (over 96 hours) thresholds at 0-10 m below the sea surface. Results are based in the event of a 280 m^3 surface release of MDO over 6 hours at the Perch Platform, tracked for 30 days. The results were calculated from 100 spill trajectories.

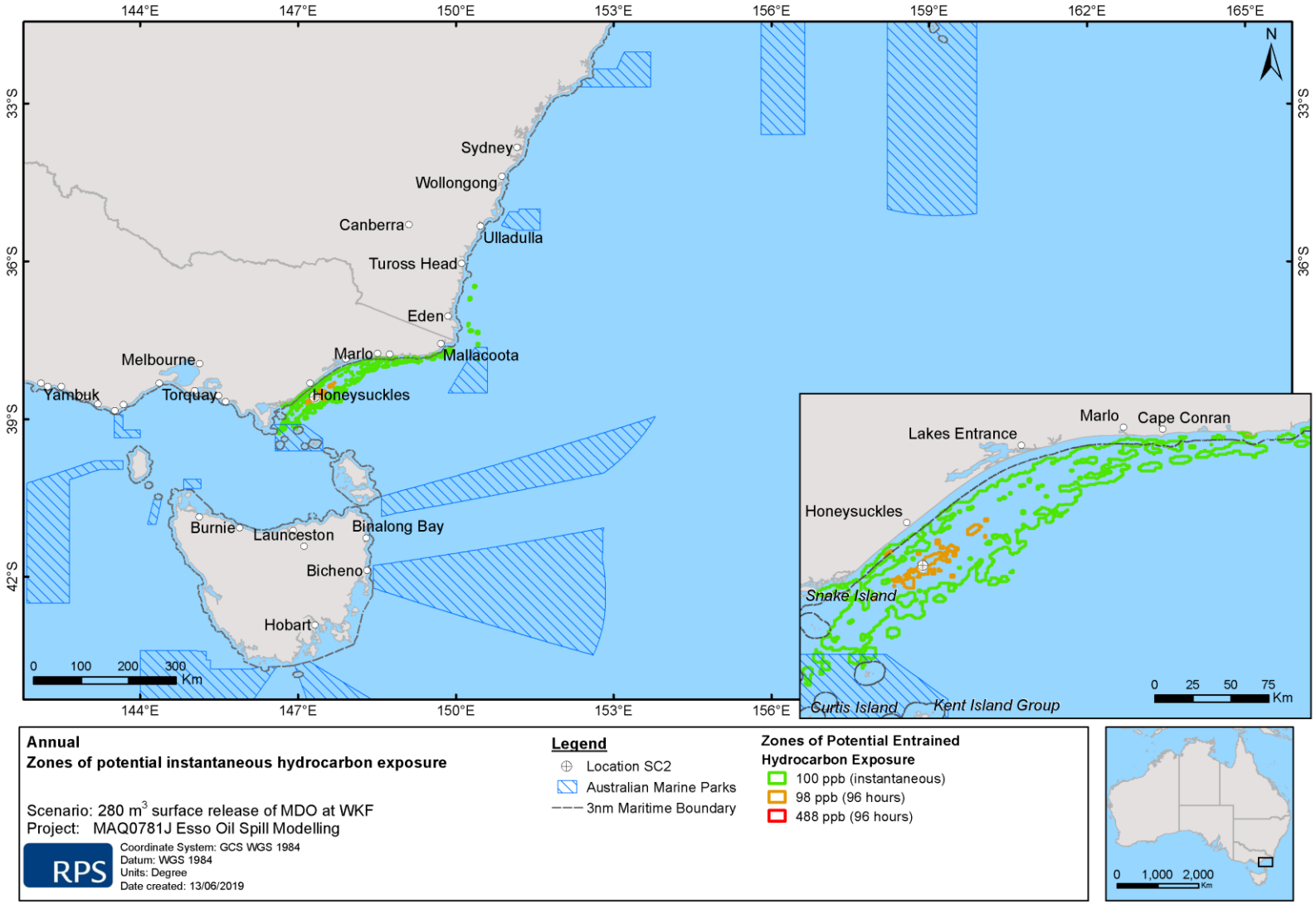
144°E
147°E
150°E
153°E
156°E
159°E
162°E
165°E
33°S
36°S
39°S
42°S
N
Sydney
Wollongong
Canberra
Ulladulla
Tuross Head
Eden
Mallacoota
Marlo
Melbourne
Yambuk
Torquay
Honeysuckles
Burnie
Launceston
Binalong Bay
Bicheno
Hobart
0 100 200 300 Km
Lakes Entrance
Cape Conran
Snake Island
Curtis Island
Kent Island Group
0 25 50 75 Km
Annual
Zones of potential instantaneous hydrocarbon exposure
Scenario: 280 m3 surface release of MDO at WKF
Project: MAQ0781J Esso Oil Spill Modelling
Coordinate System: GCS WGS 1984
Datum: WGS 1984
Units: Degree
Date created: 13/06/2019
Legend
Location SC2
Australian Marine Parks
3nm Maritime Boundary
Zones of Potential Entrained Hydrocarbon Exposure
100 ppb (instantaneous)
98 ppb (96 hours)
488 ppb (96 hours)
0 1,000 2,000 Km

Figure 48 Zones of potential entrained hydrocarbon exposure greater than the 100 ppb (instantaneous), 98 ppb (over 96 hours) and 488 ppb (over 96 hours) thresholds at 0-10 m below the sea surface. Results are based in the event of a 280 m^3 surface release of MDO over 6 hours at the Perch Platform, tracked for 30 days. The results were calculated from 100 spill trajectories.

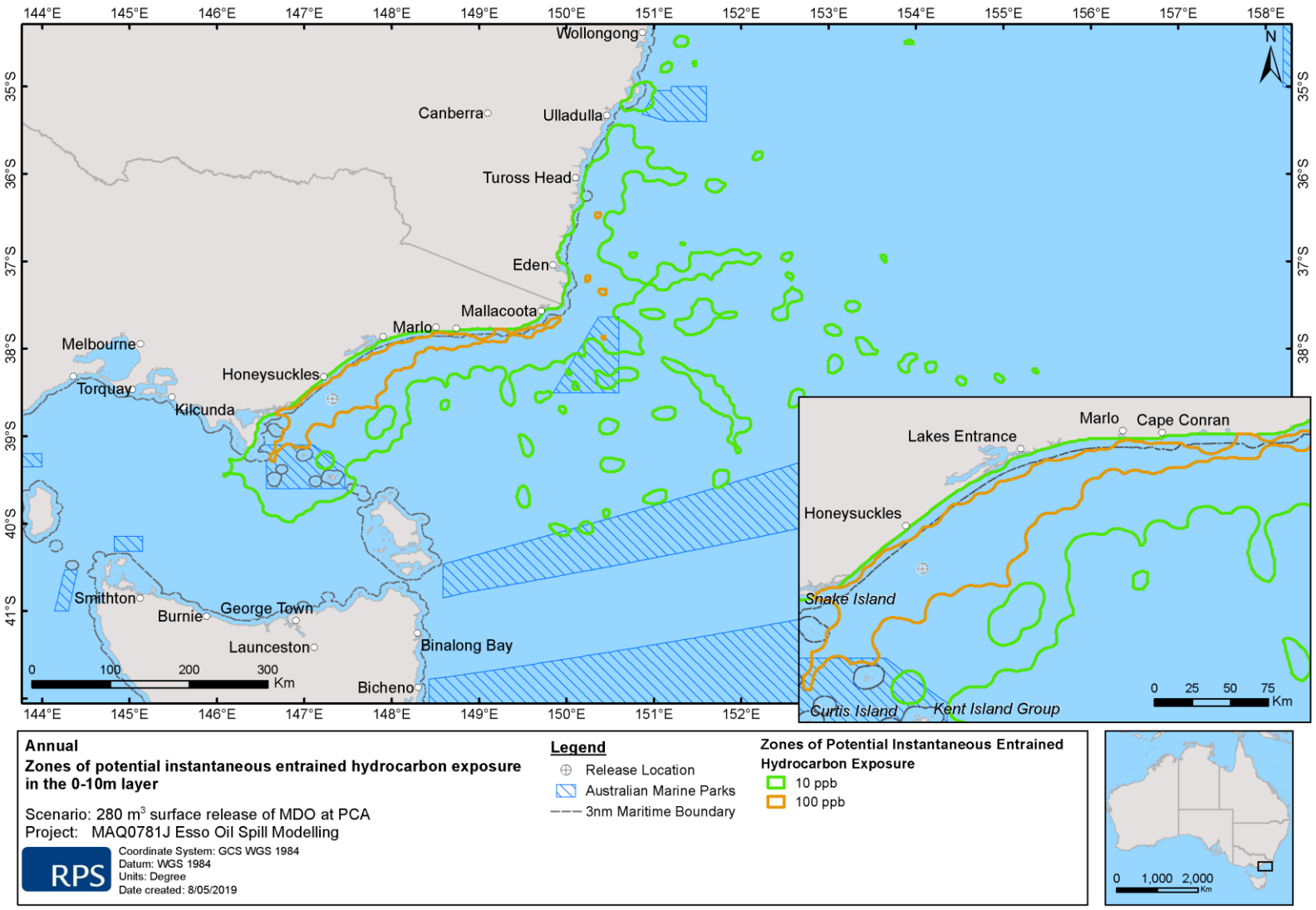

Figure 49 Zones of potential entrained hydrocarbon exposure greater than the 10 ppb (instantaneous) and 100 ppb (instantaneous) thresholds at 0-10 m below the sea surface. Results are based in the event of a 280 m³ surface release of MDO over 6 hours at the Perch Platform, tracked for 30 days. The results were calculated from 100 spill trajectories.

11.2 Deterministic Analysis

The stochastic modelling results were assessed, and the deterministic runs were identified and presented below based on the following criteria;

a. largest volume of oil ashore;

b. longest length of shoreline contacted above 100 g/m^2 (actionable shoreline oil);

c. minimum time before exposure to immediate nearshore waters by oil above 1 g/m^2 (low threshold); and

d. largest swept area of oil on the sea surface above 10 g/m^2 (actionable sea surface oil).

11.2.1 Deterministic Case: Maximum Volume of Oil on Shore

The deterministic trajectory that had the largest volume of shoreline loading was identified as run number 39 which commenced at 12 am 2nd of June 2012.

Zones of exposure from sea surface oil (swept area) and potential shoreline loading over the entire simulation are presented in Figure 50. Zones of sea surface exposure were predicted to travel southwest from the release site.

For response planning purposes Figure 51 displays the time series of the area and length of visible oil (0.5 g/m^2) and actionable oil (10 g/m^2) exposure on the sea surface over the 30-day simulation. The maximum area of coverage of visible oil on the on the sea surface at any given time throughout the scenario was predicted to occur 1 day after the spill started and covered approximately 13 km^2. While the maximum length of actionable shoreline oil (100 g/m^2) at any given time was predicted as 7.42 km, approximately 5 days into the simulation. Figure 52 is a time series of the mass on shore at the low (10 g/m^2), moderate (100 g/m^2) and high (1,000 g/m^2) thresholds.

Figure 53 presents the fates and weathering graph for the corresponding single spill trajectory. At the conclusion of the simulation period, approximately 148 m^3 (53%) spilled oil was lost to the atmosphere through evaporation. Approximately 63 m^3 (22%) of the MDO was predicted to have decayed by the end of the simulation, while approximately 49 m^3 (17%) was predicted to remain within the water column and 23 m^3 (8%) is predicted to arrive ashore.

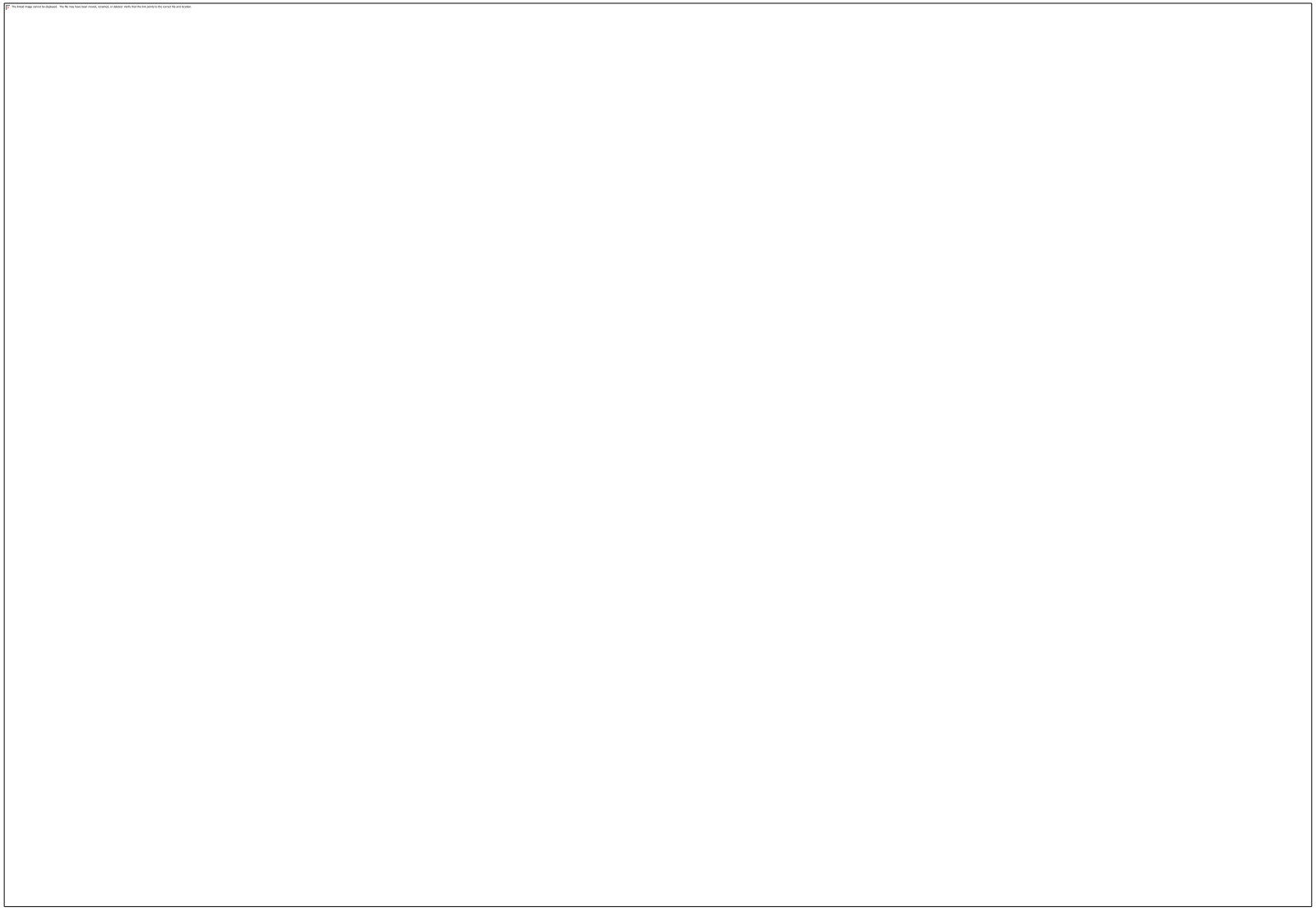

Figure 50 Zones of potential exposure on the sea surface and shoreline loading for the trajectory with the largest oil volume ashore. Results are based on a 280 m^3 surface release of MDO over 6 hours at the Perch Platform, tracked for 30 days, 12 am 2nd of June 2012.



Figure 51 Time series of the area of visible (0.5 g/m^2) and actionable oil (10 g/m^2) on the sea surface and length of actionable shoreline oil (100 g/m^2) for the trajectory with the largest oil volume ashore. Results are based on a 280 m^3 surface release of MDO over 6 hours at the Perch Platform, tracked for 30 days, 12 am 2nd of June 2012.



Figure 52 Time series of the mass on shore at the low (10 g/m2), moderate (100 g/m2) and high (1,000 g/m2) thresholds for the trajectory with the largest oil volume ashore. Results are based on a 280 m3 surface release of MDO over 6 hours at the Perch Platform, tracked for 30 days, 12 am 2nd of June 2012.

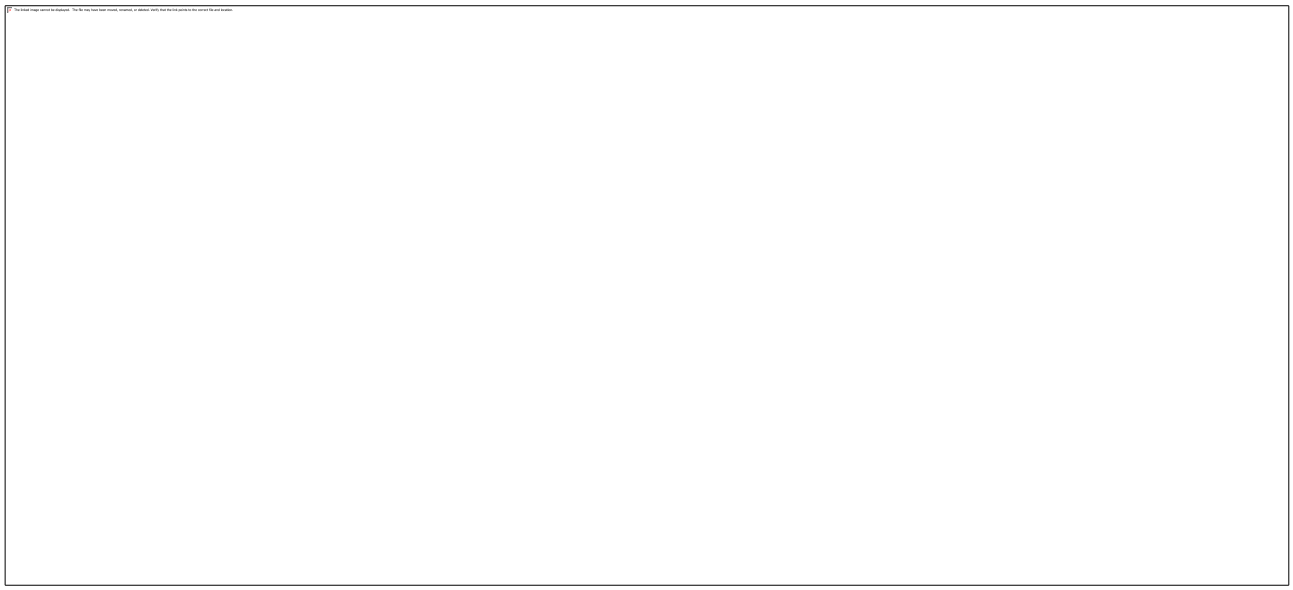

Figure 53 Predicted weathering and fates graph for the single spill trajectory with the largest oil volume ashore. Results are based on a 280 m^3 surface release of MDO over 6 hours at the Perch Platform, tracked for 30 days, 12 am 2nd of June 2012.

11.2.2 Deterministic Cases: Longest Length of Shoreline Contact and Minimum Time Before Exposure to Nearshore Waters by Visible Oil

The deterministic trajectory that had the longest length of shoreline contacted above 100 g/m^2 (actionable shoreline oil) and the minimum time before exposure to immediate nearshore waters by visible oil (0.5 g/m^2) was identified as run number 14 which commenced at 8 am 10th of August 2011.

Zones of exposure from sea surface oil (swept area) and potential shoreline loading over the entire simulation are presented in Figure 54. Zones of sea surface exposure were predicted to travel northwest from the release site.

For response planning purposes Figure 55 displays the time series of the area and length of visible oil (0.5 g/m^2) and actionable oil (10 g/m^2) exposure on the sea surface over the 30-day simulation. The maximum area of coverage of visible oil on the on the sea surface at any given time throughout the scenario was predicted to occur 2 days after the spill started and covered approximately 8 km^2 in area. While the maximum length of actionable shoreline oil (100 g/m^2) at any given time was predicted as 7.42 km, approximately 3 days into the simulation. Figure 56 is a time series of the mass on shore at the low (10 g/m^2), moderate (100 g/m^2) and high (1,000 g/m^2) thresholds.

Figure 57 presents the fates and weathering graph for the corresponding single spill trajectory. At the conclusion of the simulation period, approximately 113 m^3 (40%) spilled oil was lost to the atmosphere through evaporation. Approximately 86 m^3 (31%) of the MDO was predicted to have decayed by the end of the simulation, while approximately 62 m^3 (22%) was predicted to remain within the water column and 22 m^3 (8%) is predicted to arrive ashore.

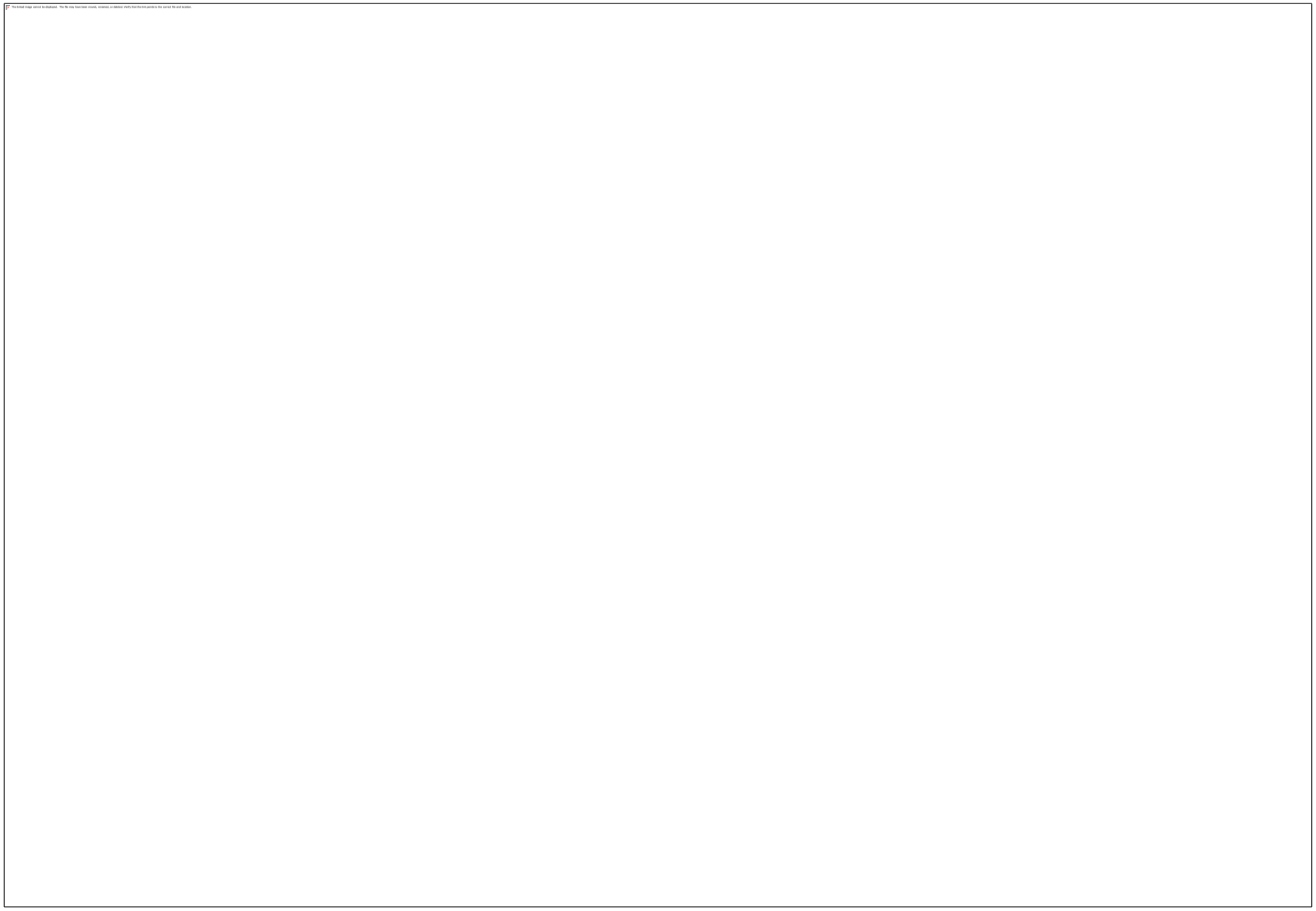

Figure 54 **Zones of potential exposure on the sea surface and shoreline loading for the trajectory with the longest length of shoreline contacted above the 100 g/m^2 threshold and the minimum time before exposure to immediate nearshore waters by visible oil (0.5 g/m^2). Results are based on a 280 m^3 surface release of MDO over 6 hours at the Perch Platform, tracked for 30 days, 8 am 10th of August 2011.**



Figure 55 Time series of the area of visible (0.5 g/m^2) and actionable oil (10 g/m^2) on the sea surface and length of actionable shoreline oil (100 g/m^2) for the trajectory with the longest length of shoreline contacted above the 100 g/m^2 threshold and the minimum time before exposure to immediate nearshore waters by visible oil (0.5 g/m^2). Results are based on a 280 m^3 surface release of MDO over 6 hours at the Perch Platform, tracked for 30 days, 8 am 10th of August 2011.

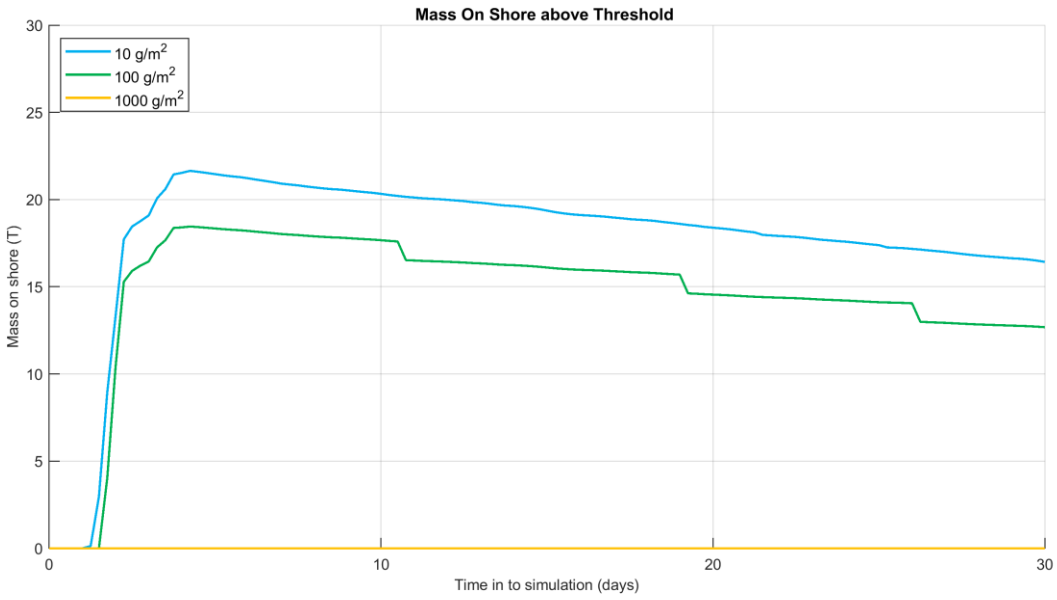

Figure 56 Time series of the mass on shore at the low (10 g/m^2), moderate (100 g/m^2) and high (1,000 g/m^2) thresholds for the trajectory with the longest length of shoreline contacted above the 100 g/m^2 threshold and the minimum time before exposure to immediate nearshore waters by visible oil (0.5 g/m^2). Results are based on a 280 m^3 surface release of MDO over 6 hours at the Perch Platform, tracked for 30 days, 8 am 10th of August 2011.

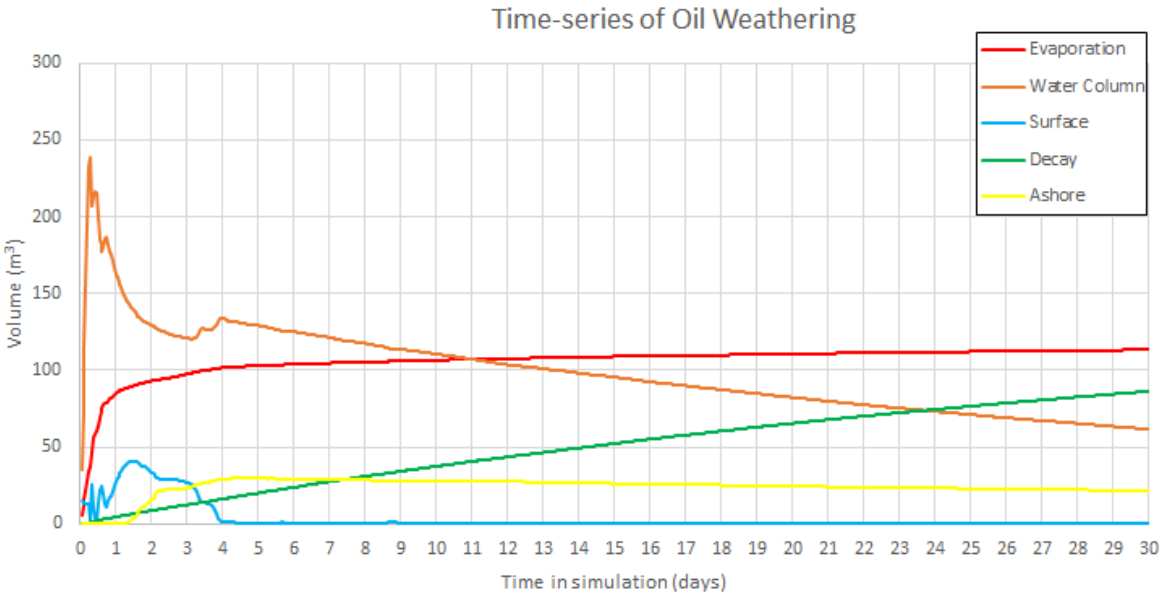

Figure 57 Predicted weathering and fates graph for the single spill trajectory with the longest length of shoreline contacted above the 100 g/m^2 threshold and the minimum time before exposure to immediate nearshore waters by visible oil (0.5 g/m^2). Results are based on a 280 m^3 surface release of MDO over 6 hours at the Perch Platform, tracked for 30 days, 8 am 10th of August 2011.

11.2.3 Deterministic Case: Largest Sea Surface Swept Area

The deterministic trajectory that had the largest swept area of oil on the sea surface of 10 g/m^2 (actionable oil) was identified as run number 98 which commenced at 1 am 20th April 2011.

Zones of exposure from sea surface oil (swept area) over the entire simulation are presented in Figure 58. Zones of sea surface exposure were predicted to travel northeast from the release site.

For response planning purposes Figure 59 displays the time series of the area of visible oil (0.5 g/m^2) and actionable oil (10 g/m^2) exposure on the sea surface over the 30-day simulation. The maximum area of coverage of visible oil on the on the sea surface at any given time throughout the scenario was predicted to occur 1 day after the spill started and covered approximately 26 km^2.

Figure 60 presents the fates and weathering graph for the corresponding single spill trajectory. At the conclusion of the simulation period, approximately 210 m^3 (75%) spilled oil was lost to the atmosphere through evaporation. Approximately 36 m^3 (13%) of the MDO was predicted to have decayed by the end of the simulation, while approximately 34 m^3 (12%) was predicted to remain within the water column.



Figure 58 Zones of potential exposure on the sea surface for the trajectory with the largest sea surface swept area at the 10 g/m^2 threshold. Results are based on a 280 m^3 surface release of marine diesel oil MDO over 6 hours at the Perch Platform, tracked for 30 days, 1 am 20th April 2011.



Figure 59 Time series of the area of visible (0.5 g/m^2) and actionable oil (10 g/m^2) on the sea surface for the trajectory with the largest sea surface swept area at the 10 g/m^2 threshold. Results are based on a 280 m^3 surface release of MDO over 6 hours at the Perch Platform, tracked for 30 days, 1 am 20th April 2011.

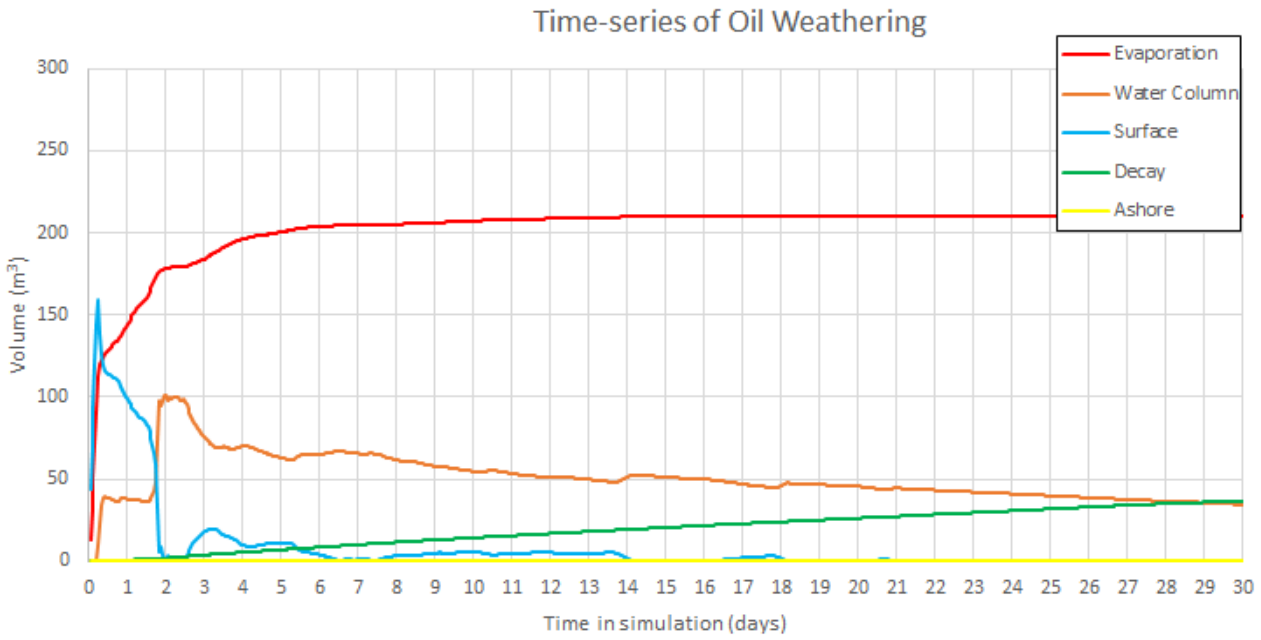

Figure 60 Predicted weathering and fates graph for the single spill trajectory with the largest sea surface swept area at the 10 g/m^2 threshold. Results are based on a 280 m^3 surface release of MDO over 6 hours at West Kingfish, tracked for 30 days, 1 am 20th April 2011.

12 Results: Scenario 3 – 280 m^3 Surface Release of MDO at Barracouta

The scenario examined a surface release of 280 m^3 of MDO over 6 hours (tracked for 30 days) following a vessel collision at the Barracouta Platform. A total of 100 spill trajectories were simulated over the annual period.

Section 12.1 presents the stochastic analysis results and Section 12.2 presents the deterministic analysis results.

12.1 Stochastic Analysis Results

12.1.1 Sea Surface Exposure and Shoreline Contact

Table 30 presents the maximum distance and direction travelled by oil on the sea surface at each threshold. The maximum distance from the release site predicted for low (1–10 g/m^2), moderate (10–50 g/m^2) and high (>50 g/m^2) exposure was 74 km (east-northeast), 33 km (southwest) and 10 km (east-northeast), respectively.

Table 31 summarises the potential sea surface exposure to individual receptors. The results indicated there was a 100% probability of low and moderate surface oil exposure predicted for BIAs for several species of birds (e.g. Black-browed Albatross – Foraging, Bullers Albatross – Foraging, Campbell Albatross – Foraging, Common Diving-petrel – Foraging, Indian Yellow-nosed Albatross – Foraging, Short-tailed Shearwater – Foraging, Shy Albatross – Foraging and Wandering Albatross – Foraging). Additionally, the Pygmy Blue Whale – Distribution and Foraging, Southern Right Whale – Migration and White Shark – Breeding and Distribution, were predicted to have a 100% probability of sea surface exposure at the low and moderate exposure thresholds.

The Upwelling East of Eden had the greatest predicted probability to experience surface oil at, or above, the low exposure threshold (13% probability of exposure) of all KEF receptors considered. The corresponding predicted minimum time before sea surface exposure for this receptor at, or above, the low threshold was 22 hours.

Figure 61 presents the zones of sea surface exposure over the modelled period. Zones of low and moderate potential exposure were shown to extend predominantly southwest and northeast of the release location.

Table 32 presents a summary of the predicted shoreline contact. The predicted probability of contact to any shoreline at, or above, the minimum shoreline contact threshold (10 g/m^2) was 4% (i.e. 4 out of 100 trajectories simulated were predicted to make shoreline contact at the low contact threshold). The minimum time before oil contact was approximately 2 hours and the maximum volume of oil ashore was 25.1 m^3. The maximum potential shoreline loading above the low and moderate shoreline thresholds are presented in Figure 62.

Table 33 summarises the shoreline contact to individual receptors. The highest probabilities of contact by shoreline oil were predicted at Wellington (3%), Seaspray (2%) and Ocean Grange (1%) at the moderate (10 g/m^2) threshold. Wellington and Ocean Grange were predicted to be the first shoreline receptor to be exposed at the low contact threshold, at 48 hours.

Table 30 Maximum distance and direction travelled on the sea surface by a single trajectory from the release location to oil exposure thresholds. Results are based on a 280 m^3 surface

release of MDO over 6 hours at the Barracouta Platform, tracked for 30 days. The results were calculated from 100 spill trajectories.

Period	Distance and direction	Zones of potential sea surface exposure		
		Low (1–10 g/m^2)	Moderate (10–50 g/m^2)	High (>50 g/m^2)
Annual	Maximum distance from release site (km)	74	33	10
	Maximum distance from release site (km) (99th percentile)	67	31	10
	Direction	ENE	SW	ENE

Table 31 Summary of the potential sea surface exposure to receptors. Results are based on a 280 m^3 surface release of MDO over 6 hours at the Barracouta Platform, tracked for 30 days. The results were calculated from 100 spill trajectories.

Receptor		Probability of oil exposure on the sea surface (%)			Minimum time before oil exposure on the sea surface (hours)		
		Low (1-10 g/m^2)	Moderate (10-50 g/m^2)	High (>50 g/m^2)	Low (1-10 g/m^2)	Moderate (10-50 g/m^2)	High (>50 g/m^2)
BIA	Black-browed Albatross - Foraging	100	100	25	1	1	2
	Bullers Albatross - Foraging	100	100	25	1	1	2
	Campbell Albatross - Foraging	100	100	25	1	1	2
	Common Diving-petrel - Foraging	100	100	25	1	1	2
	Indian Yellow-nosed Albatross - Foraging	100	100	25	1	1	2
	Pygmy Blue Whale - Distribution	100	100	25	1	1	2
	Pygmy Blue Whale - Foraging	100	100	25	1	1	2
	Short-tailed Shearwater - Foraging	54	34	-	2	3	-
	Shy Albatross - Foraging	100	100	25	1	1	2
	Southern Right Whale - Migration	100	100	25	1	1	2
	Wandering Albatross - Foraging	100	100	25	1	1	2
	White Shark - Breeding	100	100	25	1	1	2
	White Shark - Distribution	100	100	25	1	1	2
KEF	Upwelling East of Eden	13	-	-	22	-	-
MNP	Ninety Mile Beach	1	-	-	77	-	-
State Waters	Victoria State Waters	6	-	-	41	-	-

Receptor		Probability of oil exposure on the sea surface (%)			Minimum time before oil exposure on the sea surface (hours)		
		Low (1-10 g/m^2)	Moderate (10-50 g/m^2)	High (>50 g/m^2)	Low (1-10 g/m^2)	Moderate (10-50 g/m^2)	High (>50 g/m^2)
SUB-LGA	Ocean Grange	1	-	-	60	-	-

Table 32 Summary of oil contact across all shorelines. Results are based on a 280 m^3 surface release of MDO over 6 hours at the Barracouta Platform, tracked for 30 days. The results were calculated from 100 spill trajectories.

Shoreline Statistics	
Probability of contact to any shoreline (%)	4
Absolute minimum time for visible oil to shore (hours)	2
Maximum volume of hydrocarbons ashore (m^3)	25.1
Average volume of hydrocarbons ashore (m^3)	0.4
Maximum length of the shoreline at **10 g/m^2** (km)	16.0
Average shoreline length (km) at **10 g/m^2** (km)	5.0
Maximum length of the shoreline at **100 g/m^2** (km)	9.0
Average shoreline length (km) at **100 g/m^2** (km)	3.8
Maximum length of the shoreline at **1,000 g/m^2** (km)	-
Average shoreline length (km) at **1,000 g/m^2** (km)	-

Table 33 Summary of oil contact to individual shoreline receptors Results are based on a 280 m^3 surface release of MDO over 6 hours at the Barracouta Platform, tracked for 30 days. The results were calculated from 100 spill trajectories.

Receptor	Maximum probability of shoreline loading (%)			Minimum time before shoreline accumulation (hours)			Load on shoreline (g/m^2)		Volume on shoreline (m^3)		Mean length of shoreline contacted (km)			Maximum length of shoreline contacted (km)		
	Low >10 g/m^2	Moderate >100 g/m^2	High >1,000 g/m^2	Low >10 g/m^2	Moderate >100 g/m^2	High >1,000 g/m^2	Mean	Peak	Mean	Peak	Low >10 g/m^2	Moderate >100 g/m^2	High >1,000 g/m^2	Low >10 g/m^2	Moderate >100 g/m^2	High >1,000 g/m^2
Wellington	4	3	-	48	66	-	143	494	<1	25	5	4	-	8	5	-
Ocean Grange	2	1	-	48	66	-	147	494	<1	25	6	5	-	8	5	-
Seaspray	2	2	-	65	82	-	139	225	<1	9	4	3	-	5	4	-

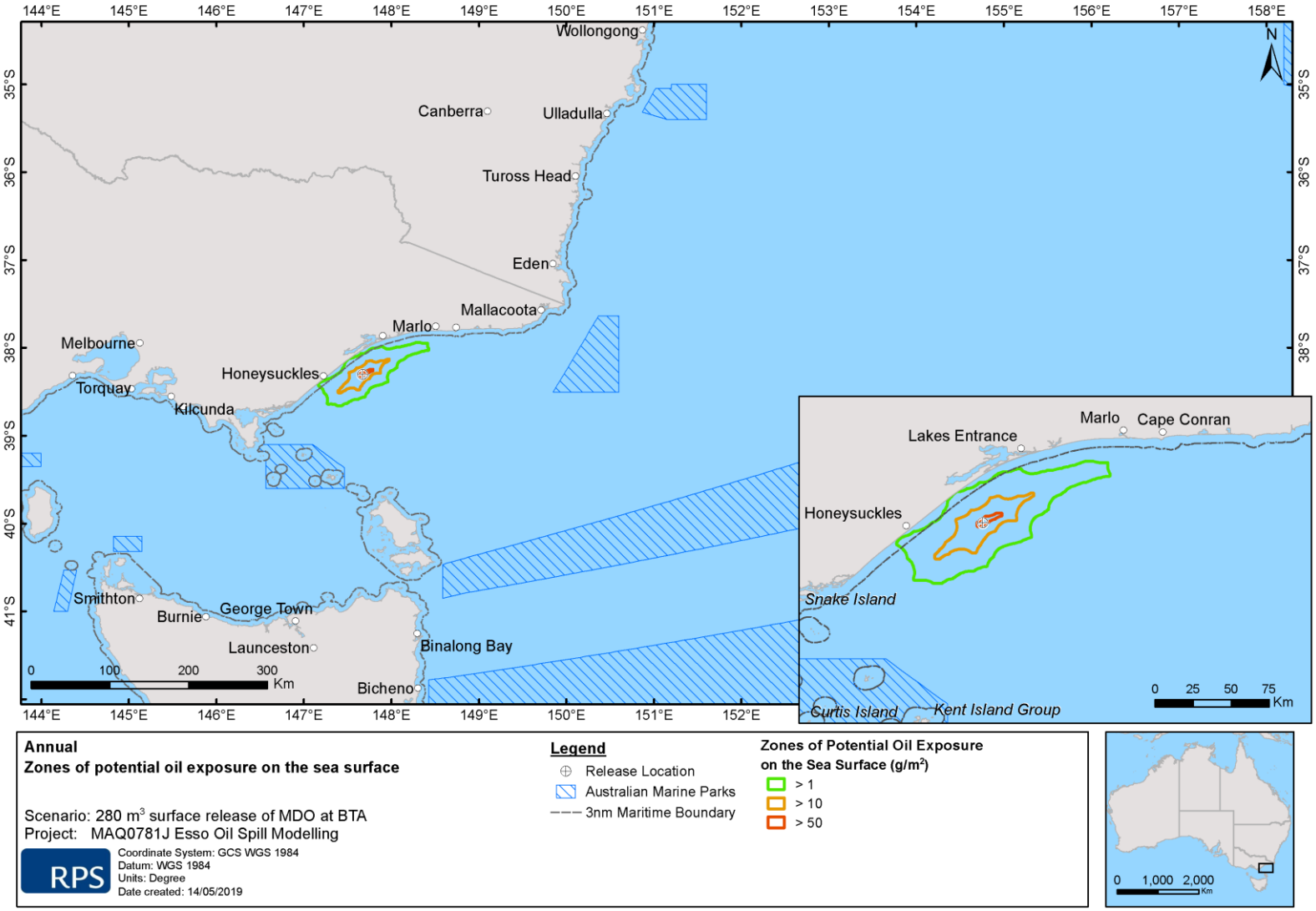

Figure 61 Zones of potential oil exposure on the sea surface, in the event of a 280 m^3 surface release of MDO over 6 hours at the Barracouta Platform, tracked for 30 days. The results were calculated from 100 spill trajectories.

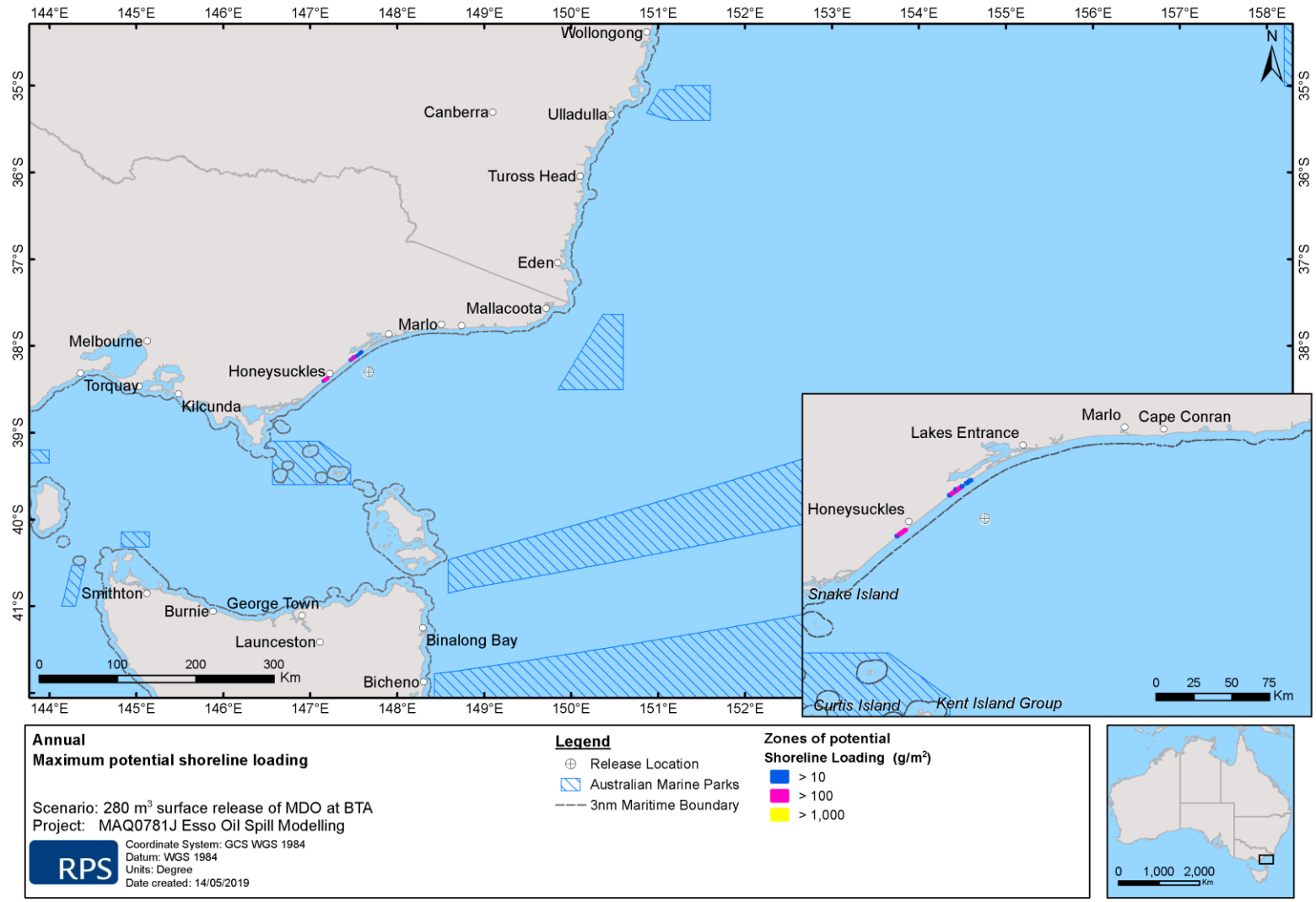

Figure 62 Maximum potential shoreline loading for the low (≥ 10 g/m^2), moderate (≥ 100 g/m^2) and high (≥ 1,000 g/m^2) thresholds. Results were based on a 280 m^3 surface release of MDO over 6 hours at the Barracouta Platform, tracked for 30 days. The results were calculated from 100 spill trajectories.

12.1.2 Water Column Exposure

12.1.2.1 Dissolved Aromatic Hydrocarbons

Table 34 summarises the probability of exposure to receptors from dissolved hydrocarbons in the 0–10 m depth layer at the low (10 ppb), moderate (50 ppb) and high (400 ppb) dissolved hydrocarbon exposure thresholds (NOPSEMA, 2019) and the additional thresholds described in 1013913984.81 predicted over the annual assessment. No exposure at or above the low entrained hydrocarbon exposure threshold was predicted in the waters below 10 m.

The greatest probability of dissolved hydrocarbon exposure (1%) above the low reporting threshold was predicted for the following BIAs: Black-browed Albatross – Foraging, Bullers Albatross – Foraging, Campbell Albatross – Foraging, Common Diving-petrel – Foraging, Indian Yellow-nosed Albatross – Foraging, Pygmy Blue Whale – Distribution and Foraging, Shy Albatross – Foraging, Southern Right Whale – Migration, Wandering Albatross – Foraging and White Shark – Distribution (Table 34).

Figure 63 and Figure 64 presents the zones of potential dissolved hydrocarbon exposure for the 0-10 m depth layers, for several reporting thresholds.

RPS

Table 34 **Probability of exposure to receptors from dissolved aromatics in the 0–10 m depth layer below the sea surface. Results are based on a 280 m^3 surface release of MDO over 6 hours at the Barracouta Platform, tracked for 30 days. The results were calculated from 100 spill trajectories.**

	Receptor	Maximum instantaneous dissolved aromatic hydrocarbon exposure (ppb)	Probability of instantaneous dissolved hydrocarbon			Maximum time-averaged dissolved aromatic hydrocarbon exposure (ppb) (over 96 hours)	Probability of time-averaged hydrocarbon exposure	
			Low >10 ppb	Moderate > 50 ppb	High > 400 ppb		Moderate > 50 ppb	High > 400 ppb
BIA	Black-browed Albatross - Foraging	12	1	-	-	1	-	-
	Bullers Albatross - Foraging	12	1	-	-	1	-	-
	Campbell Albatross - Foraging	12	1	-	-	1	-	-
	Common Diving-petrel - Foraging	12	1	-	-	1	-	-
	Indian Yellow-nosed Albatross - Foraging	12	1	-	-	1	-	-
	Pygmy Blue Whale - Distribution	12	1	-	-	1	-	-
	Pygmy Blue Whale - Foraging	12	1	-	-	1	-	-
	Short-tailed Shearwater - Foraging	5	-	-	-	1	-	-
	Shy Albatross - Foraging	12	1	-	-	1	-	-
	Southern Right Whale - Migration	12	1	-	-	1	-	-
	Wandering Albatross - Foraging	12	1	-	-	1	-	-
	White Shark - Distribution	12	1	-	-	1	-	-

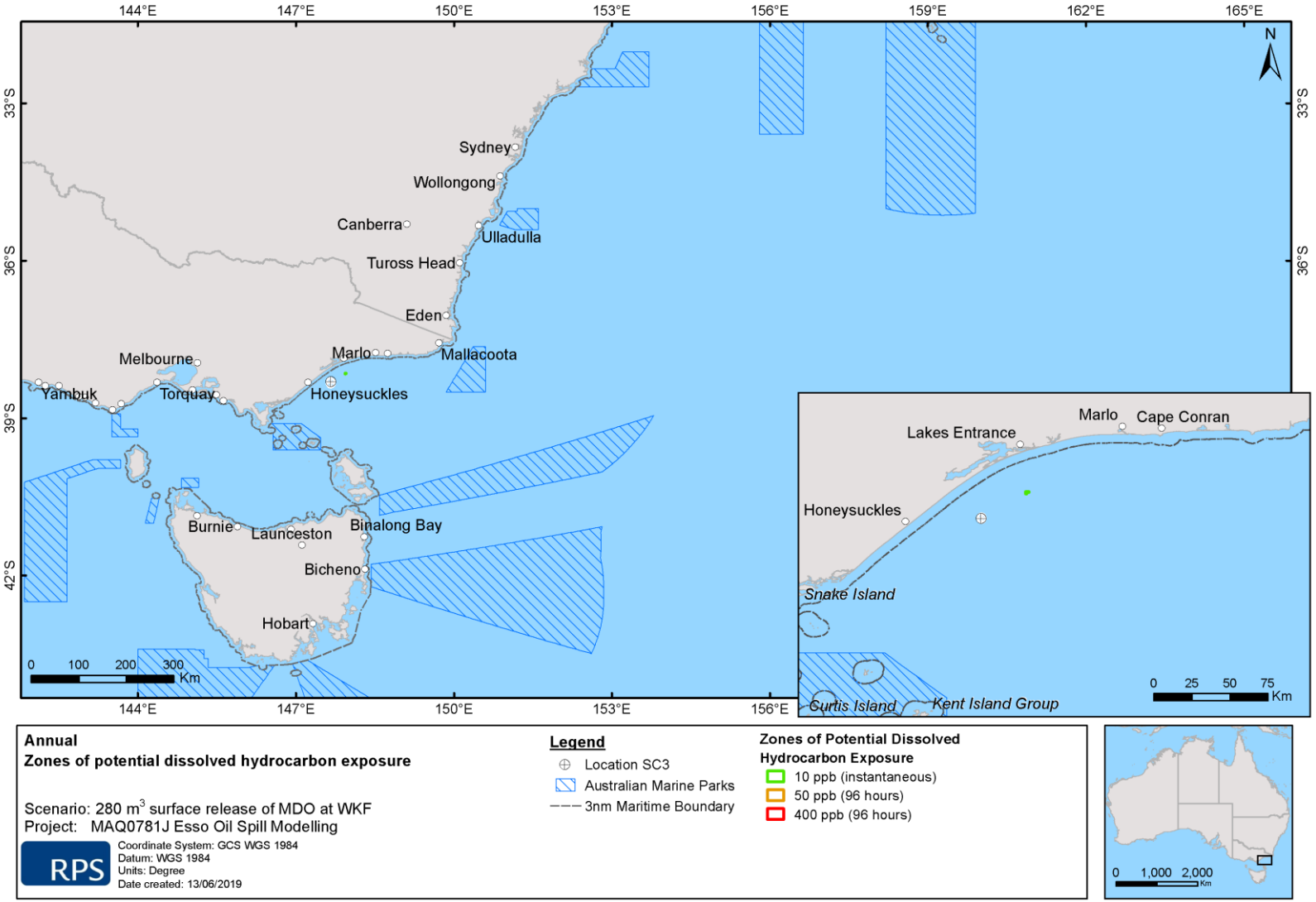

Figure 63 Zones of potential dissolved hydrocarbon exposure at 0–10 m below the sea surface in the event of a 280 m^3 surface release of MDO over 6 hours at the Barracouta Platform, tracked for 30 days. The results were calculated from 100 spill trajectories.

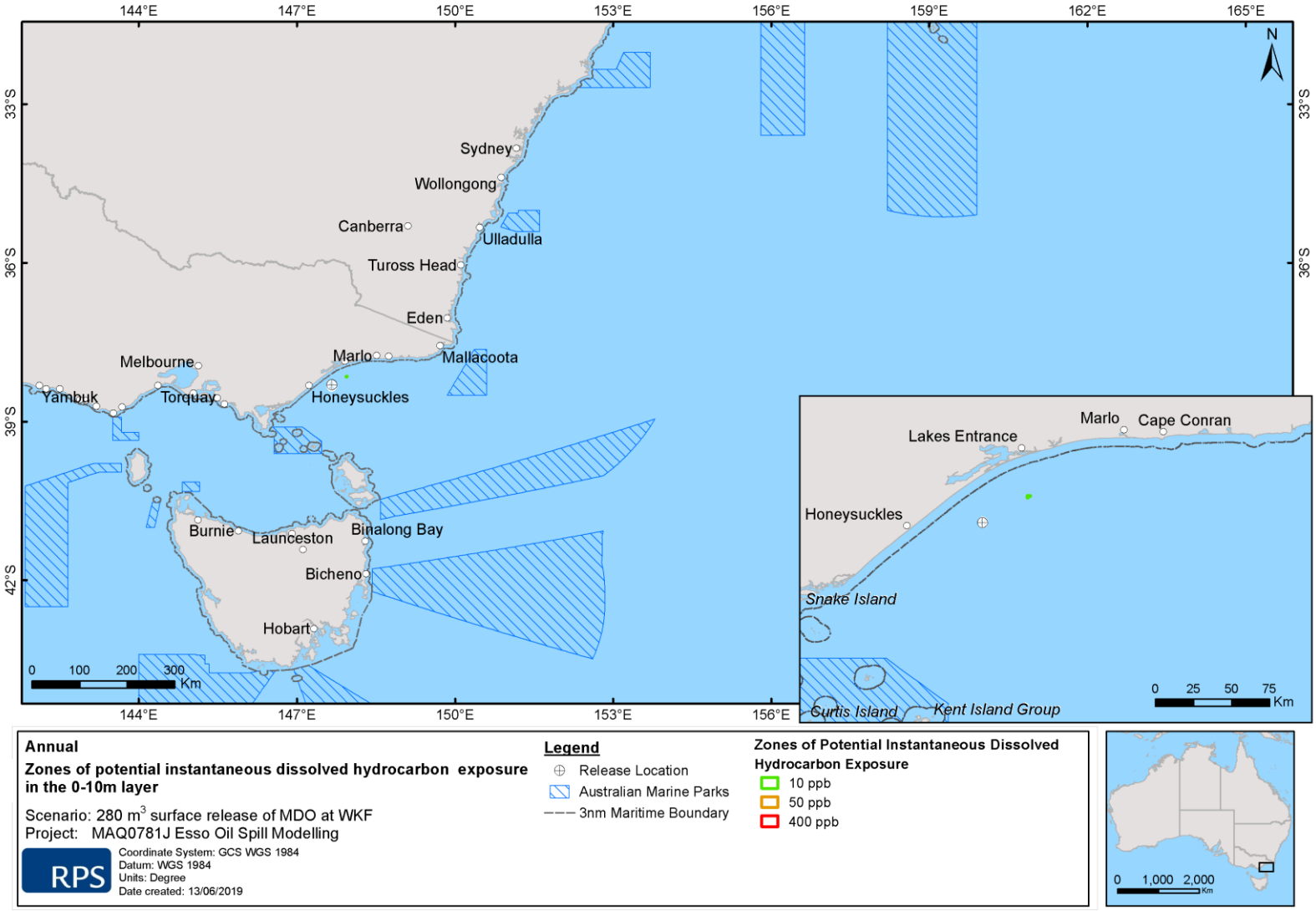

Figure 64 Zones of potential instantaneous dissolved hydrocarbon exposure at 0–10 m below the sea surface in the event of a 280 m^3 surface release of MDO over 6 hours at the Barracouta Platform, tracked for 30 days. The results were calculated from 100 spill trajectories.

12.1.2.2 Entrained Hydrocarbons

Table 35 summarises the probability of exposure to receptors from entrained oil in the 0–10 m depth at the low (10 ppb) and high (100 ppb) entrained hydrocarbon exposure thresholds (NOPSEMA, 2019) and the additional thresholds described in 1013913984.81 predicted over the annual assessment. No exposure at or above the low entrained hydrocarbon exposure threshold was predicted in the waters below 10 m.

The greatest probability of entrained oil exposure above the low threshold was 51%, predicted for the following BIAs: Pygmy Blue Whale – Distribution and Foraging, Shy Albatross – Foraging, Southern Right Whale – Migration, White Shark – Breeding and Distribution and White-faced Storm-petrel - Foraging. The Upwelling East of Eden KEF, and Point Hicks MNP also recorded a 51% probability of low entrained hydrocarbon exposure (Table 35).

Figure 65 to Figure 67 present the zones of potential entrained hydrocarbon exposure in the 0-10 m depth layer, for several reporting thresholds.

Table 35 Probability of exposure to receptors from entrained oil in the 0–10 m depth layer below the sea surface. Results are based on a 280 m^3 surface release of MDO over 6 hours at the Barracouta Platform, tracked for 30 days. The results were calculated from 100 spill trajectories.

Receptors		Maximum instantaneous entrained hydrocarbon exposure (ppb)	Probability of Instantaneous hydrocarbon exposure		Maximum time-averaged entrained hydrocarbon exposure (ppb) (over 96 hrs)	Maximum time-averaged entrained hydrocarbon exposure (ppb) (over 168 hrs)	Probability of time-averaged entrained hydrocarbon exposure		
			Low >10 ppb	High >100 ppb			Moderate > 98 ppb (over 96 hrs)	Moderate > 98 ppb (over 168 hrs)	High > 488 ppb (over 96 hours)
AMP	Beagle	160	4	1	30	17	-	-	-
	East Gippsland	58	4	-	7	4	-	-	-
BIA	Antipodean Albatross - Foraging	333	45	3	67	38	-	-	-
	Black Petrel - Foraging	55	4	-	9	6	-	-	-
	Black-browed Albatross - Foraging	1,480	45	19	192	110	2	1	-
	Bullers Albatross - Foraging	1,480	41	19	192	110	2	1	-
	Campbell Albatross - Foraging	1,480	45	19	192	110	2	1	-
	Common Diving-petrel - Foraging	1,480	41	19	192	110	2	1	-
	Crested Tern - Breeding	45	1	-	6	4	-	-	-
	Crested Tern - Foraging	48	4	-	8	6	-	-	-
	Flesh-footed Shearwater - Foraging	55	4	-	9	6	-	-	-
	Great-winged Petrel - Foraging	33	3	-	7	5	-	-	-
	Grey Nurse Shark - Foraging	213	14	2	55	31	-	-	-
	Grey Nurse Shark - Migration	155	14	1	24	14	-	-	-
	Humpback Whale - Foraging	213	18	2	55	31	-	-	-
	Indian Yellow-nosed Albatross - Foraging	1,480	45	19	192	110	2	1	-
	Indo-Pacific/Spotted Bottlenose Dolphin - Breeding	153	24	1	31	27	-	-	-
	Little Penguin - Breeding	48	3	-	6	4	-	-	-
	Little Penguin - Foraging	174	27	2	94	54	-	-	-
	Northern Giant Petrel - Foraging	33	3	-	7	5	-	-	-
	Pygmy Blue Whale - Distribution	1,480	51	19	192	110	2	1	-
	Pygmy Blue Whale - Foraging	1,480	51	19	192	110	2	1	-
	Short-tailed Shearwater - Breeding	23	1	-	6	3	-	-	-
	Short-tailed Shearwater - Foraging	1,113	18	5	139	79	1	-	-
	Shy Albatross - Foraging	1,480	51	19	192	110	2	1	-
	Sooty Shearwater - Foraging	195	10	2	55	31	-	-	-
	Southern Giant Petrel - Foraging	33	3	-	7	5	-	-	-
	Southern Right Whale - Migration	1,480	51	19	192	110	2	1	-

	Receptors	Maximum instantaneous entrained hydrocarbon exposure (ppb)	Probability of Instantaneous hydrocarbon exposure		Maximum time-averaged entrained hydrocarbon exposure (ppb) (over 96 hrs)	Maximum time-averaged entrained hydrocarbon exposure (ppb) (over 168 hrs)	Probability of time-averaged entrained hydrocarbon exposure		
			Low >10 ppb	High >100 ppb			Moderate > 98 ppb (over 96 hrs)	Moderate > 98 ppb (over 168 hrs)	High > 488 ppb (over 96 hours)
	Wandering Albatross - Foraging	1,480	45	19	192	110	2	1	-
	Wedge-tailed Shearwater - Foraging	230	27	2	94	54	-	-	-
	White Shark - Breeding	1,199	41	17	192	110	2	1	-
	White Shark - Distribution	1,480	51	19	192	110	2	1	-
	White Shark - Foraging	333	51	3	113	86	1	-	-
	White-capped Albatross - Foraging	33	3	-	7	5	-	-	-
	White-faced Storm-petrel - Breeding	107	6	1	39	23	-	-	-
	White-faced Storm-petrel - Foraging	333	51	5	119	90	1	-	-
	Wilsons Storm Petrel - Migration	33	3	-	7	5	-	-	-
KEF	Big Horseshoe Canyon	23	3	-	9	6	-	-	-
	Canyons on the eastern continental slope	12	1	-	5	4	-	-	-
	Shelf rocky reefs	44	3	-	5	4	-	-	-
	Upwelling East of Eden	697	51	11	119	90	1	-	-
MNP	Cape Howe	163	27	2	96	55	-	-	-
	Ninety Mile Beach	17	3	-	11	8	-	-	-
	Point Hicks	184	51	2	113	86	1	-	-
MP	Batemans	45	1	-	6	4	-	-	-
MS	Beware Reef	47	13	-	16	15	-	-	-
NP	Kent Group	21	2	-	11	7	-	-	-
RAMSAR	Gippsland Lakes	32	2	-	23	17	-	-	-
RSB	New Zealand Star Bank	215	39	2	32	18	-	-	-
SMA	The Skerries Special Management Area	70	14	-	55	35	-	-	-
State Waters	New South Wales	153	20	1	28	24	-	-	-
	Tasmania State Waters	72	4	-	11	7	-	-	-
	Victoria State Waters	239	51	3	119	90	1	-	-
SUB-LGA	Bega Valley	43	8	-	19	13	-	-	-
	Cape Conran	67	13	-	24	22	-	-	-
	Cape Howe / Mallacoota	174	17	2	96	55	-	-	-
	Corringle	180	6	1	77	47	-	-	-
	Croajingolong (East)	115	15	1	19	11	-	-	-

Receptors	Maximum instantaneous entrained hydrocarbon exposure (ppb)	Probability of Instantaneous hydrocarbon exposure		Maximum time-averaged entrained hydrocarbon exposure (ppb) (over 96 hrs)	Maximum time-averaged entrained hydrocarbon exposure (ppb) (over 168 hrs)	Probability of time-averaged entrained hydrocarbon exposure		
		Low >10 ppb	High >100 ppb			Moderate > 98 ppb (over 96 hrs)	Moderate > 98 ppb (over 168 hrs)	High > 488 ppb (over 96 hours)
Croajingolong (West)	174	26	2	63	40	-	-	-
Golden Beach	121	3	1	57	35	-	-	-
Lake Tyers Beach	94	7	-	64	50	-	-	-
Lakes Entrance	35	6	-	26	20	-	-	-
Lakes Entrance (West)	34	5	-	18	11	-	-	-
Marlo	88	15	-	43	27	-	-	-
Ocean Grange	154	5	1	74	44	-	-	-
Point Hicks	168	37	2	119	90	1	-	-
Seaspray	18	1	-	10	7	-	-	-
Sydenham Inlet	62	18	-	26	21	-	-	-
Wilsons Promontory (East)	12	1	-	10	7	-	-	-
Woodside Beach	11	1	-	7	5	-	-	-

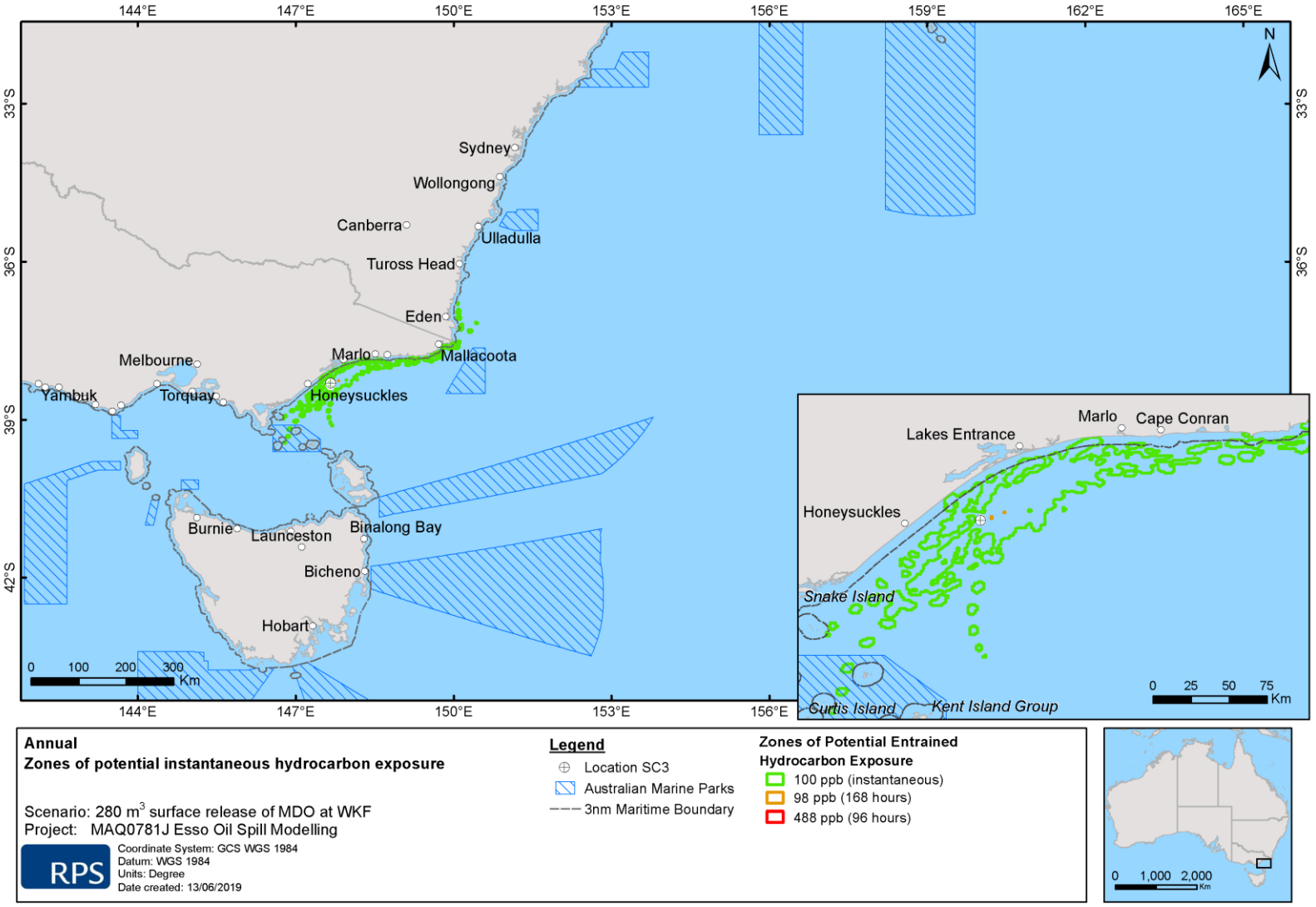

Figure 65 Zone of potential entrained hydrocarbon exposure representing the 100 ppb (instantaneous), 98 ppb (over 168 hours) and 488 ppb (over 96 hours) thresholds at 0-10 m below the sea surface. Results are based in the event of a 280 m^3 surface release of MDO over 6 hours at the Barracouta Platform, tracked for 30 days. The results were calculated from 100 spill trajectories.

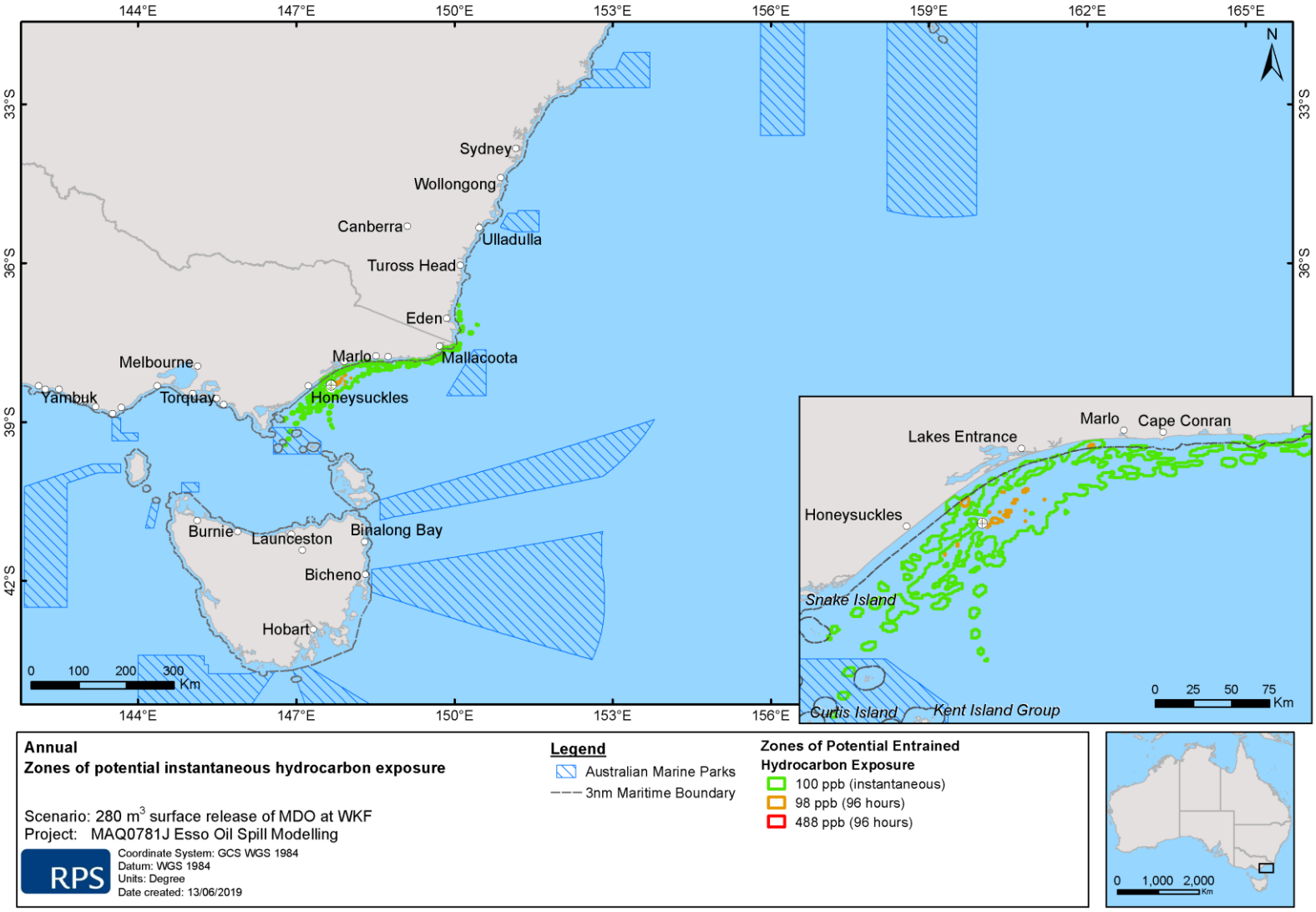

Figure 66 Zones of potential entrained hydrocarbon exposure greater than the 100 ppb (instantaneous), 98 ppb (over 96 hours) and 488 ppb (over 96 hours) thresholds at 0-10 m below the sea surface. Results are based in the event of a 280 m³ surface release of MDO over 6 hours at the Barracouta Platform, tracked for 30 days. The results were calculated from 100 spill trajectories.

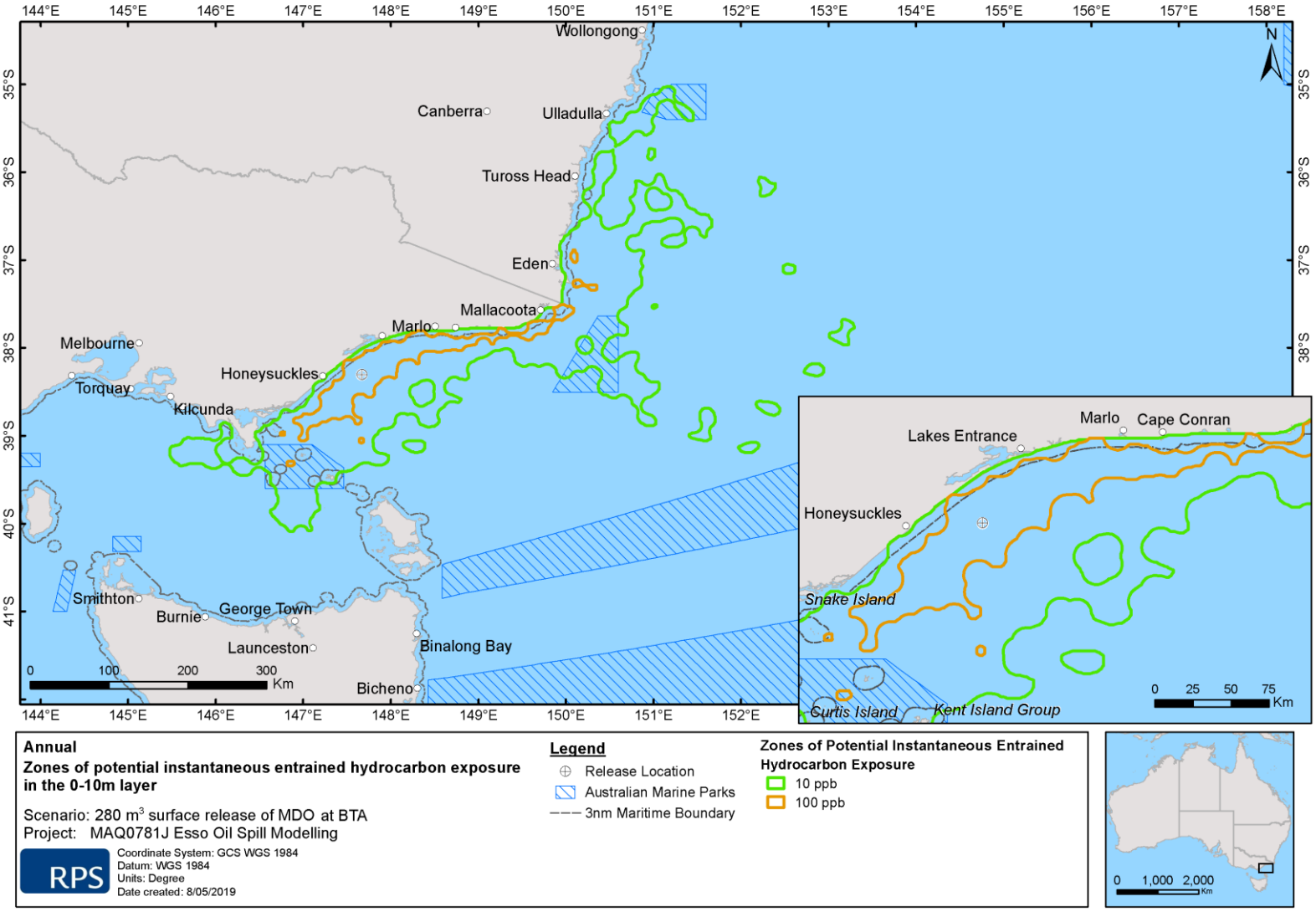

Figure 67 Zones of potential entrained hydrocarbon exposure greater than the 10 ppb (instantaneous) and 100 ppb (instantaneous) thresholds at 0-10 m below the sea surface. Results are based in the event of a 280 m³ surface release of MDO over 6 hours at the Barracouta Platform, tracked for 30 days. The results were calculated from 100 spill trajectories.

12.2 Deterministic Analysis

The stochastic modelling results were assessed, and the deterministic runs were identified and presented below based on the following criteria;

a. largest volume of oil ashore;

b. longest length of shoreline contacted above 100 g/m^2 (actionable shoreline oil);

c. minimum time before exposure to immediate nearshore waters by oil above 1 g/m^2 (low threshold); and

d. largest swept area of oil on the sea surface above 10 g/m^2 (actionable sea surface oil).

12.2.1 Deterministic Cases: Maximum Volume of Oil on Shore, Longest Length of Shoreline Contact and Minimum Time Before Exposure to Nearshore Waters by Visible Oil

The deterministic trajectory that had the largest volume of shoreline loading, the longest length of shoreline contacted above 100 g/m^2 (actionable shoreline oil) and the minimum time before exposure to immediate nearshore waters by visible oil (0.5 g/m^2) was identified as run number 88 which commenced at 3 am 22nd of October 2011.

Zones of exposure from sea surface oil (swept area) and potential shoreline loading over the entire simulation are presented in Figure 68. Zones of sea surface exposure were predicted to travel northwest from the release site.

For response planning purposes Figure 69 displays the time series of the area and length of visible oil (0.5 g/m^2) and actionable oil (10 g/m^2) exposure on the sea surface over the 30-day simulation. The maximum area of coverage of visible oil on the on the sea surface at any given time throughout the scenario was predicted to occur 2 day after the spill started and covered approximately 24 km^2. While the maximum length of actionable shoreline oil (100 g/m^2) at any given time was predicted as 5.3 km, approximately 4 days into the simulation. Figure 70 is a time series of the mass on shore at the low (10 g/m^2), moderate (100 g/m^2) and high (1,000 g/m^2) thresholds.

Figure 71 presents the fates and weathering graph for the corresponding single spill trajectory. At the conclusion of the simulation period, approximately 189 m^3 (67%) spilled oil was lost to the atmosphere through evaporation. Approximately 39 m^3 (14%) of the MDO was predicted to have decayed by the end of the simulation, while approximately 33 m^3 (12%) was predicted to remain within the water column and 22 m^3 (8%) is predicted to arrive ashore.

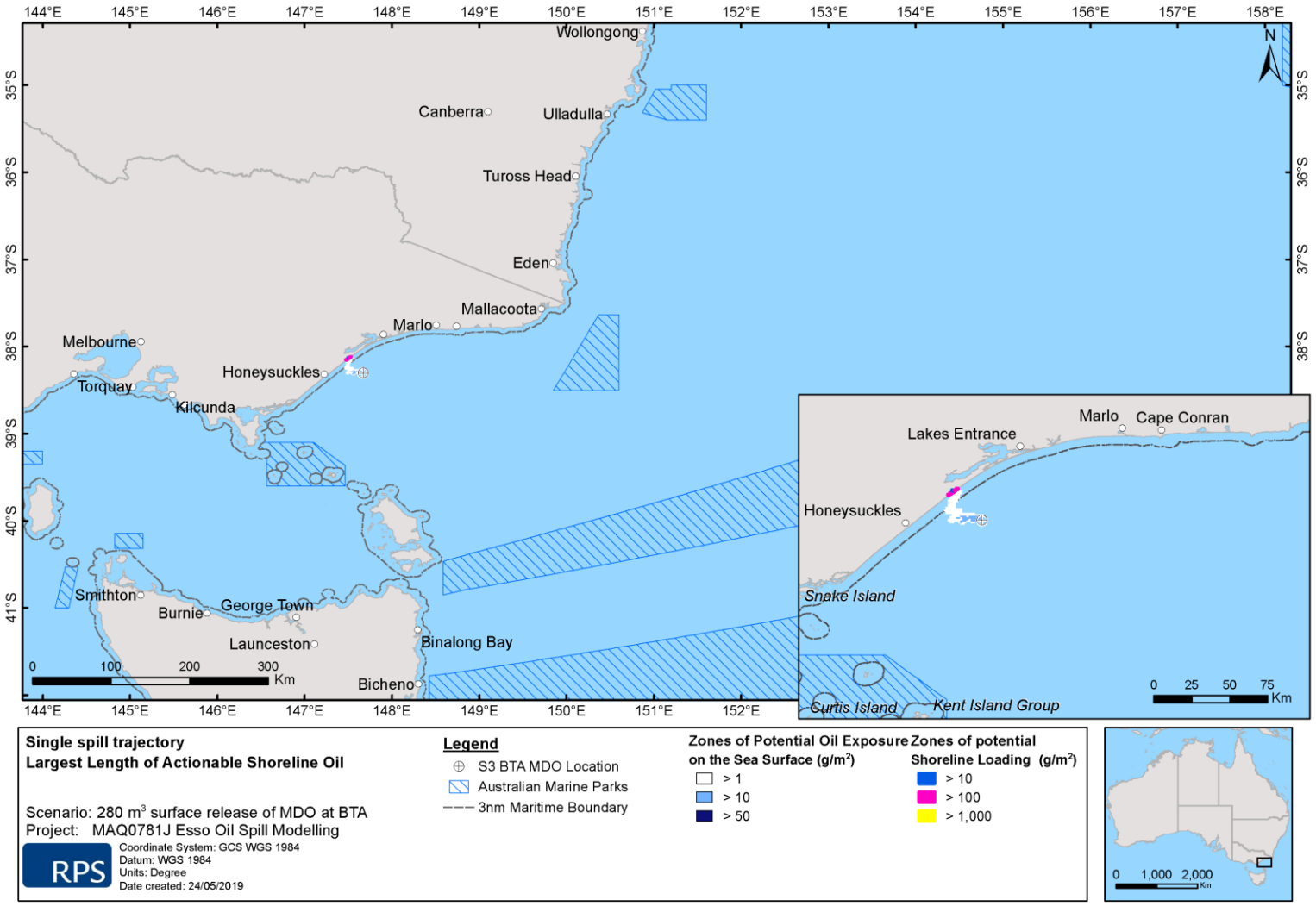

Figure 68 Zones of potential exposure on the sea surface and shoreline loading for the trajectory with the largest oil volume ashore, longest length of shoreline contacted above the 100 g/m^2 threshold and the minimum time before exposure to immediate nearshore waters by visible oil (0.5 g/m^2). Results are based on a 280 m^3 surface release of MDO over 6 hours at the Barracouta Platform, tracked for 30 days, 3 am 22nd of October 2011.

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Figure 69 Time series of the area of visible (0.5 g/m^2) and actionable oil (10 g/m^2) on the sea surface and length of actionable shoreline oil (100 g/m^2) for the trajectory with the largest oil volume ashore, longest length of shoreline contacted above the 100 g/m^2 threshold and the minimum time before exposure to immediate nearshore waters by visible oil (0.5 g/m^2). Results are based on a 280 m^3 surface release of MDO over 6 hours at the Barracouta Platform, tracked for 30 days, 3 am 22nd of October 2011.

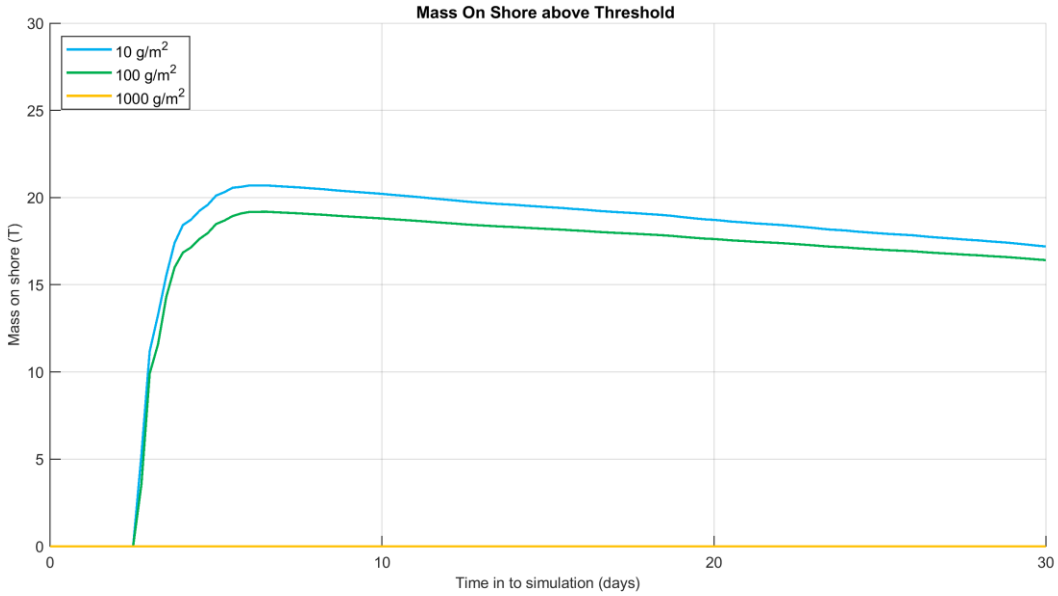

Figure 70 Time series of the mass on shore at the low (10 g/m^2), moderate (100 g/m^2) and high (1,000 g/m^2) thresholds for the trajectory with the largest oil volume ashore, longest length of shoreline contacted above the 100 g/m^2 threshold and the minimum time before exposure to immediate nearshore waters by visible oil (0.5 g/m^2). Results are based on a 280 m^3 surface release of MDO over 6 hours at the Barracouta Platform, tracked for 30 days, 3 am 22nd of October 2011.

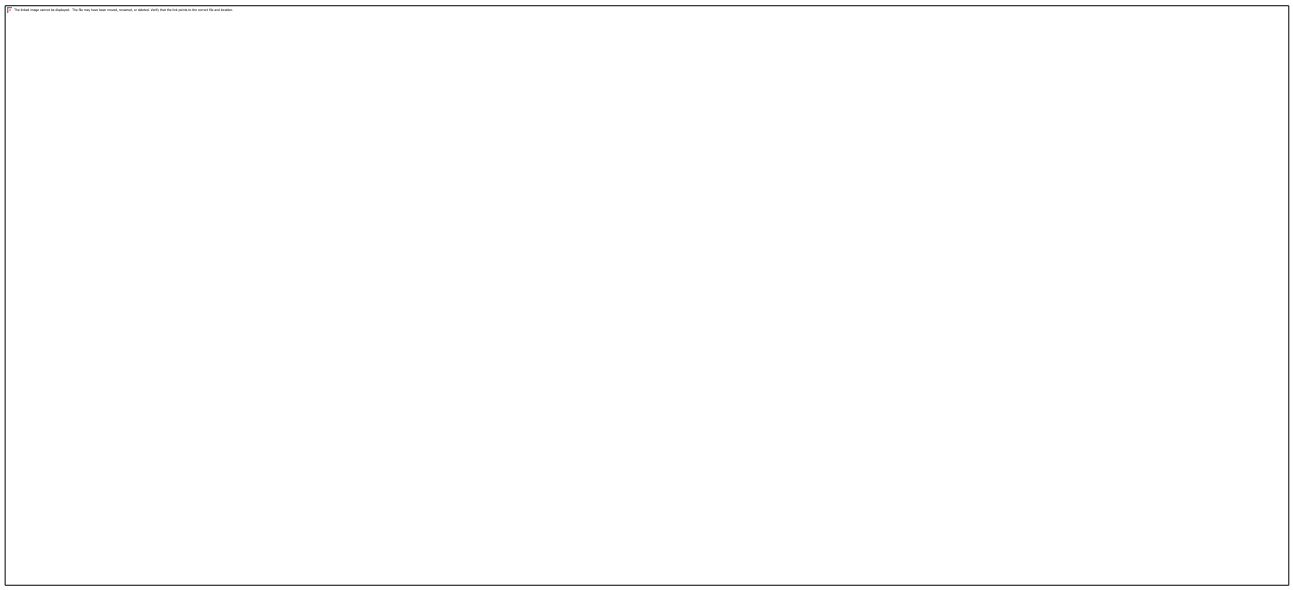

Figure 71 Predicted weathering and fates graph for the single spill trajectory with the largest oil volume ashore, longest length of shoreline contacted above the 100 g/m^2 threshold and the minimum time before exposure to immediate nearshore waters by visible oil (0.5 g/m^2). Results are based on a 280 m^3 surface release of MDO over 6 hours at the Barracouta Platform, tracked for 30 days, 8 am 3 am 22nd of October 2011.

12.2.2 Deterministic Case: Largest Sea Surface Swept Area

The deterministic trajectory that had the largest swept area of oil on the sea surface of 10 g/m^2 (actionable oil) was identified as run number 22 which commenced at 10 am 18th of June 2009.

Zones of exposure from sea surface oil (swept area) over the entire simulation are presented in Figure 72. Zones of sea surface exposure were predicted to travel southwest and northeast from the release site.

For response planning purposes Figure 73 displays the time series of the area of visible oil (0.5 g/m^2) and actionable oil (10 g/m^2) exposure on the sea surface over the 30-day simulation. The maximum area of coverage of visible oil on the on the sea surface at any given time throughout the scenario was predicted to occur 2 day after the spill started and covered approximately 25 km^2.

Figure 74 presents the fates and weathering graph for the corresponding single spill trajectory. At the conclusion of the simulation period, approximately 250 m^3 (89%) spilled oil was lost to the atmosphere through evaporation. Approximately 14 m^3 (5%) of the condensate was predicted to have decayed by the end of the simulation, while approximately 16 m^3 (6%) was predicted to remain within the water column.

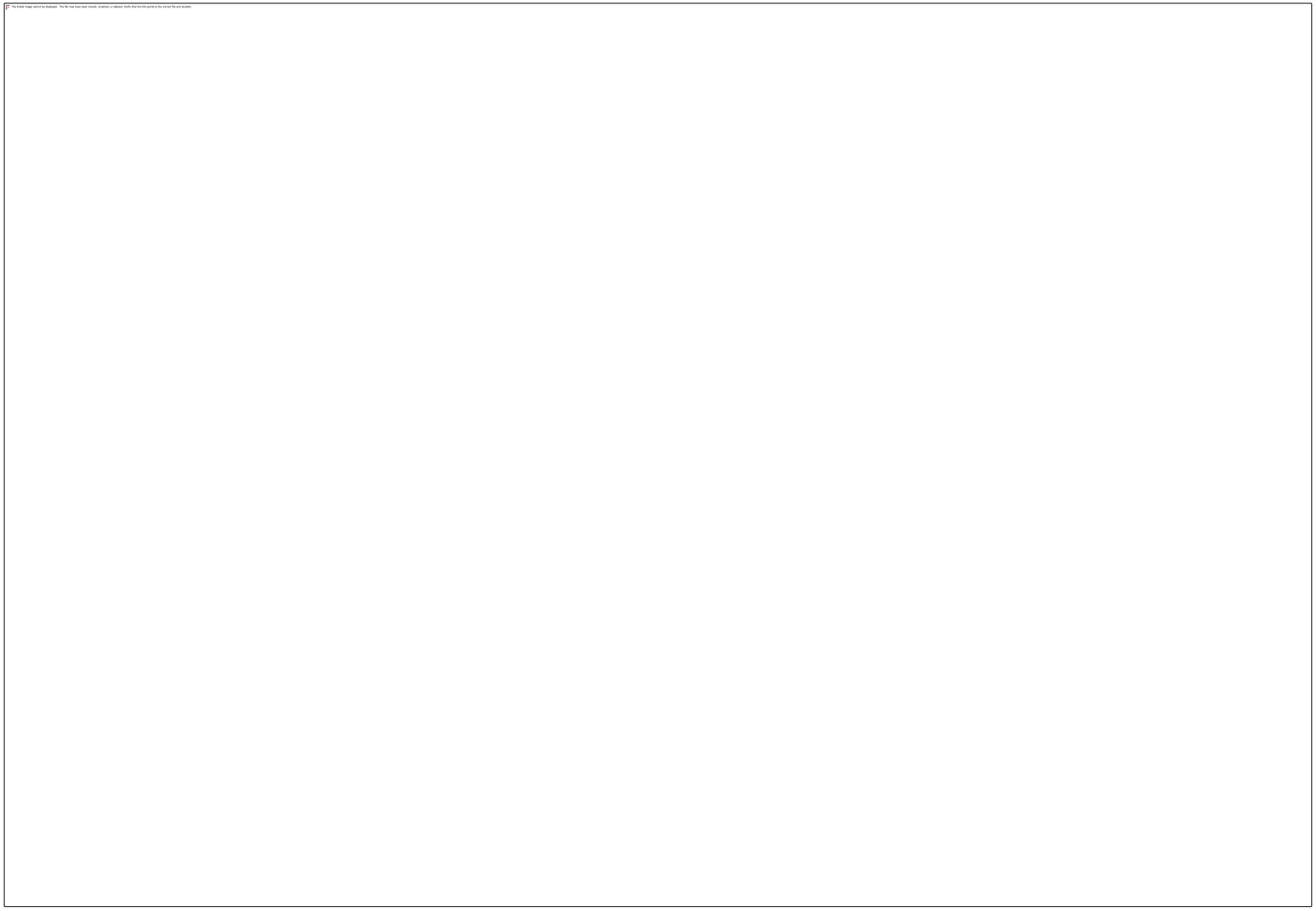

Figure 72 Zones of potential exposure on the sea surface for the trajectory with the largest sea surface swept area at the 10 g/m^2 threshold. Results are based on a 280 m^3 surface release of MDO over 6 hours at the Barracouta Platform, tracked for 30 days, 10 am 18th of June 2009.



Figure 73 Time series of the area of visible (0.5 g/m^2) and actionable oil (10 g/m^2) on the sea surface for the trajectory with the largest sea surface swept area at the 10 g/m^2 threshold. Results are based on a 280 m^3 surface release of MDO over 6 hours at the Barracouta Platform, tracked for 30 days, 10 am 18th of June 2009.

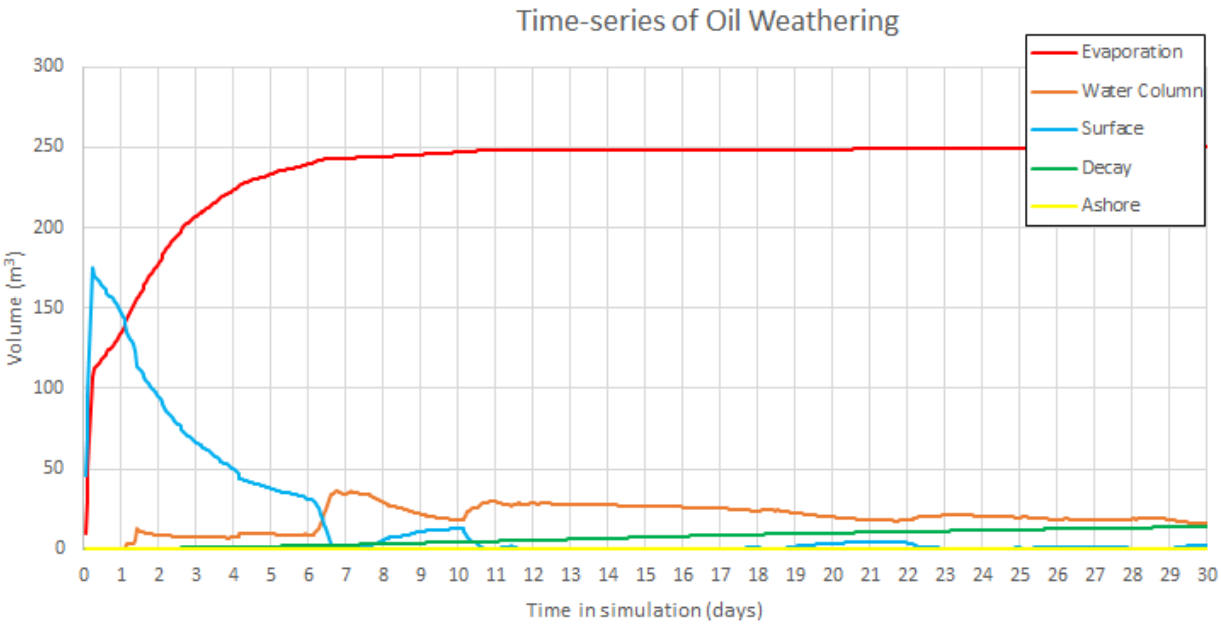

Figure 74 Predicted weathering and fates graph for the single spill trajectory with the largest sea surface swept area at the 10 g/m^2 threshold. Results are based on a 280 m^3 surface release of MDO over 6 hours at the Barracouta Platform, tracked for 30 days, 10 am 18th of June 2009.

13 Results: Scenario 4 – 280 m^3 Surface Release of MDO at Kipper

The scenario examined a surface release of 280 m^3 of MDO over 6 hours (tracked for 30 days) following a vessel collision at the Kipper Facility. A total of 100 spill trajectories were simulated over the annual period.

Section 13.1 presents the stochastic analysis results and Section 13.2 presents the deterministic analysis results.

13.1 Stochastic Analysis Results

13.1.1 Sea Surface Exposure and Shoreline Contact

No shoreline contact was predicted above the low threshold for this scenario, consequently no shoreline contact results are presented.

Table 36 presents the maximum distance and direction travelled by oil on the sea surface at each threshold. The maximum distance from the release site predicted for low (1–10 g/m^2), moderate (10–50 g/m^2) and high (>50 g/m^2) exposure was 161 km (east-northeast), 17 km (east) and 2 km (north-northeast), respectively.

Table 37 summarises the potential sea surface exposure to individual receptors. The results indicated there was a 100% and 97% probability of low and moderate surface oil exposure, respectively, predicted for BIAs for several species of birds (e.g. Black-browed Albatross – Foraging, Bullers Albatross – Foraging, Campbell Albatross – Foraging, Common Diving-petrel -Foraging, Indian Yellow-nosed Albatross – Foraging, Shy Albatross – Foraging, Wandering Albatross -Foraging and White-faced Storm-petrel - Foraging). Additionally, the Pygmy Blue Whale – Distribution and Foraging, Southern Right Whale – Migration and White Shark – Distribution BIAs were also predicted to have a 100% and 97% probability of sea surface exposure at the low and moderate exposure thresholds, respectively.

Of all KEF receptors considered, the Upwelling East of Eden had the greatest predicted probability to experience surface oil at, or above, the low exposure threshold (100% probability of exposure). The corresponding predicted minimum time before sea surface exposure for this receptor at, or above, the low threshold was 1 hours.

Figure 75 presents the zones of sea surface exposure over the modelled period. Zones of low and moderate potential exposure were shown to extend predominantly west, east and north of the release location.

Table 36 **Maximum distance and direction travelled on the sea surface by a single trajectory from the release location to oil exposure thresholds. Results are based on a 280 m^3 surface release of MDO over 6 hours at the Kipper Facility, tracked for 30 days. The results were calculated from 100 spill trajectories.**

Period	Distance and direction	Zones of potential sea surface exposure		
		Low (1–10 g/m^2)	Moderate (10–50 g/m^2)	High (>50 g/m^2)
Annual	Maximum distance from release site (km)	161	17	2
	Maximum distance from release site (km) (99th percentile)	44	15	2
	Direction	ENE	E	NNE

Table 37 **Summary of the potential sea surface exposure to receptors. Results are based on a 280 m^3 surface release of MDO over 6 hours at the Kipper Facility, tracked for 30 days. The results were calculated from 100 spill trajectories.**

	Receptor	Probability of oil exposure on the sea surface (%)			Minimum time before oil exposure on the sea surface (hours)		
		Low (1-10 g/m^2)	Moderate (10-50 g/m^2)	High (>50 g/m^2)	Low (1-10 g/m^2)	Moderate (10-50 g/m^2)	High (>50 g/m^2)
BIA	Antipodean Albatross - Foraging	61	36	1	1	1	7
	Black-browed Albatross - Foraging	100	97	13	1	1	2
	Bullers Albatross - Foraging	100	97	13	1	1	2
	Campbell Albatross - Foraging	100	97	13	1	1	2
	Common Diving-petrel - Foraging	100	97	13	1	1	2
	Humpback Whale - Foraging	1	-	-	57	-	-
	Indian Yellow-nosed Albatross - Foraging	100	97	13	1	1	2
	Pygmy Blue Whale - Distribution	100	97	13	1	1	2
	Pygmy Blue Whale - Foraging	100	97	13	1	1	2
	Shy Albatross - Foraging	100	97	13	1	1	2
	Southern Right Whale - Migration	100	97	13	1	1	2
	Wandering Albatross - Foraging	100	97	13	1	1	2
	Wedge-tailed Shearwater - Foraging	1	-	-	57	-	-
	White Shark - Distribution	100	97	13	1	1	2
	White-faced Storm-petrel - Foraging	20	2	-	8	13	-
KEF	Upwelling East of Eden	100	97	13	1	1	2

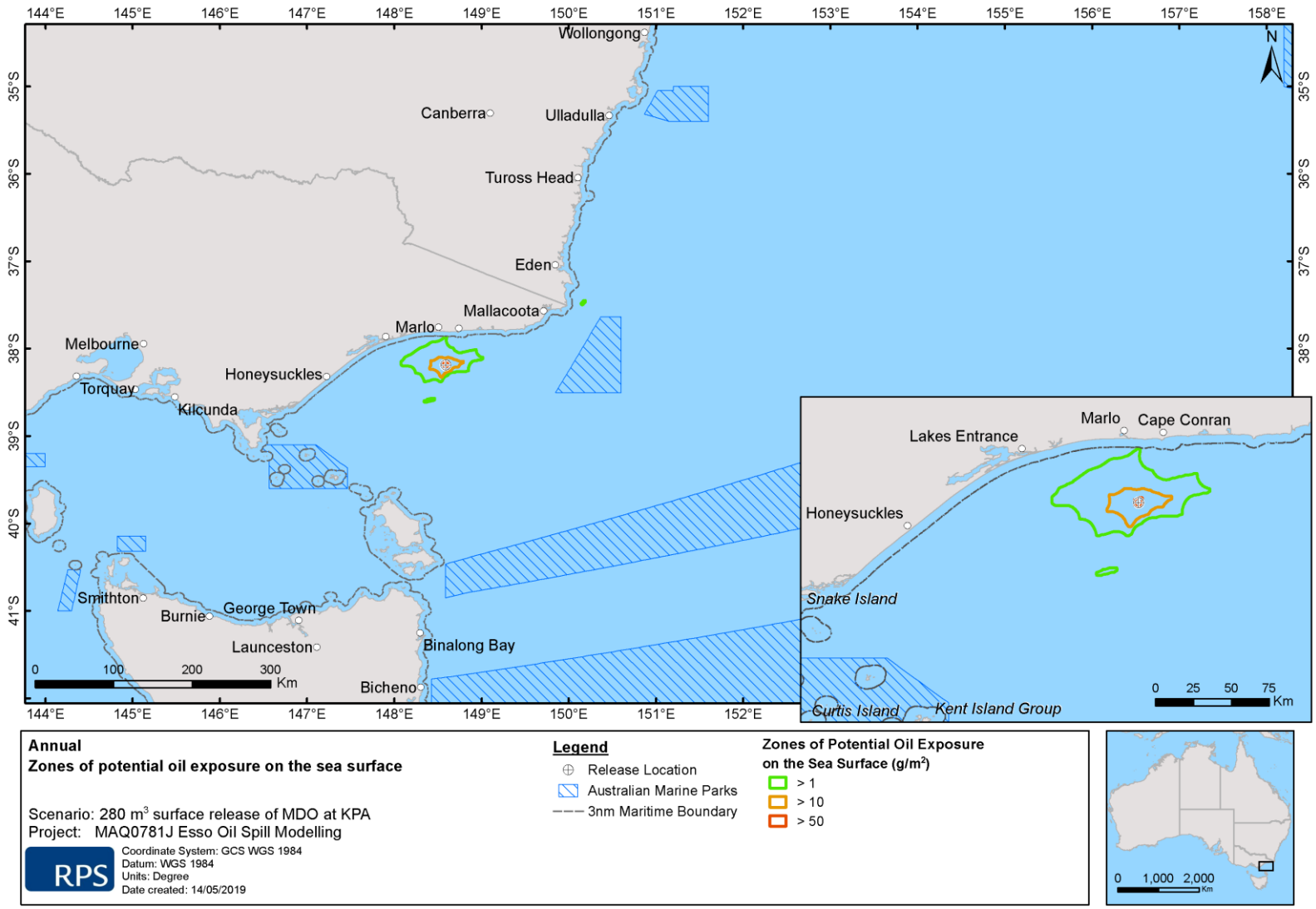

Figure 75 Zones of potential oil exposure on the sea surface, in the event of a 280 m^3 surface release of MDO over 6 hours at the Kipper Facility, tracked for 30 days. The results were calculated from 100 spill trajectories.

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13.1.2 Water Column Exposure

13.1.2.1 Dissolved Aromatic Hydrocarbons

Table 38 summarises the probability of exposure to receptors from dissolved hydrocarbons in the 0–10 m depth layer at the low (10 ppb), moderate (50 ppb) and high (400 ppb) dissolved hydrocarbon exposure thresholds (NOPSEMA, 2019) and the additional thresholds described in 1013913984.81 predicted over the annual assessment. No exposure at or above the low entrained hydrocarbon exposure threshold was predicted in the waters below 10 m.

The greatest probability of dissolved hydrocarbon exposure (2%) above the low reporting threshold was predicted for the following BIAs: Antipodean Albatross – Foraging, Black-browed Albatross – Foraging, Bullers Albatross – Foraging, Campbell Albatross – Foraging, Common Diving-petrel – Foraging, Indian, Pygmy Blue Whale – Distribution and Foraging, Shy Albatross – Foraging, Southern Right Whale – Migration, Wandering Albatross – Foraging and White Shark – Distribution as well as the Upwelling East of Eden KEF (Table 38).

Figure 76 and Figure 77 presents the zones of potential dissolved hydrocarbon exposure for the 0-10 m depth layers, for several reporting thresholds..

Table 38 Probability of exposure to receptors from dissolved aromatics in the 0–10 m depth layer below the sea surface. Results are based on a 280 m^3 surface release of MDO over 6 hours at the Kipper Facility, tracked for 30 days. The results were calculated from 100 spill trajectories.

Receptor		Maximum instantaneous dissolved aromatic hydrocarbon exposure (ppb)	Probability of instantaneous dissolved hydrocarbon			Maximum time-averaged dissolved aromatic hydrocarbon exposure (ppb) (over 96 hours)	Probability of time-averaged hydrocarbon exposure	
			Low >10 ppb	Moderate > 50 ppb	High > 400 ppb		Moderate > 50 ppb	High > 400 ppb
BIA	Antipodean Albatross - Foraging	24	2	-	-	3	-	-
	Black-browed Albatross - Foraging	24	2	-	-	3	-	-
	Bullers Albatross - Foraging	24	2	-	-	3	-	-
	Campbell Albatross - Foraging	24	2	-	-	3	-	-
	Common Diving-petrel - Foraging	24	2	-	-	3	-	-
	Indian Yellow-nosed Albatross - Foraging	24	2	-	-	3	-	-
	Pygmy Blue Whale - Distribution	24	2	-	-	3	-	-
	Pygmy Blue Whale - Foraging	24	2	-	-	3	-	-
	Shy Albatross - Foraging	24	2	-	-	3	-	-
	Southern Right Whale - Migration	24	2	-	-	3	-	-
	Wandering Albatross - Foraging	24	2	-	-	3	-	-
	White Shark - Distribution	24	2	-	-	3	-	-
	White-faced Storm-petrel - Foraging	14	1	-	-	2	-	-
KEF	Upwelling East of Eden	24	2	-	-	3	-	-

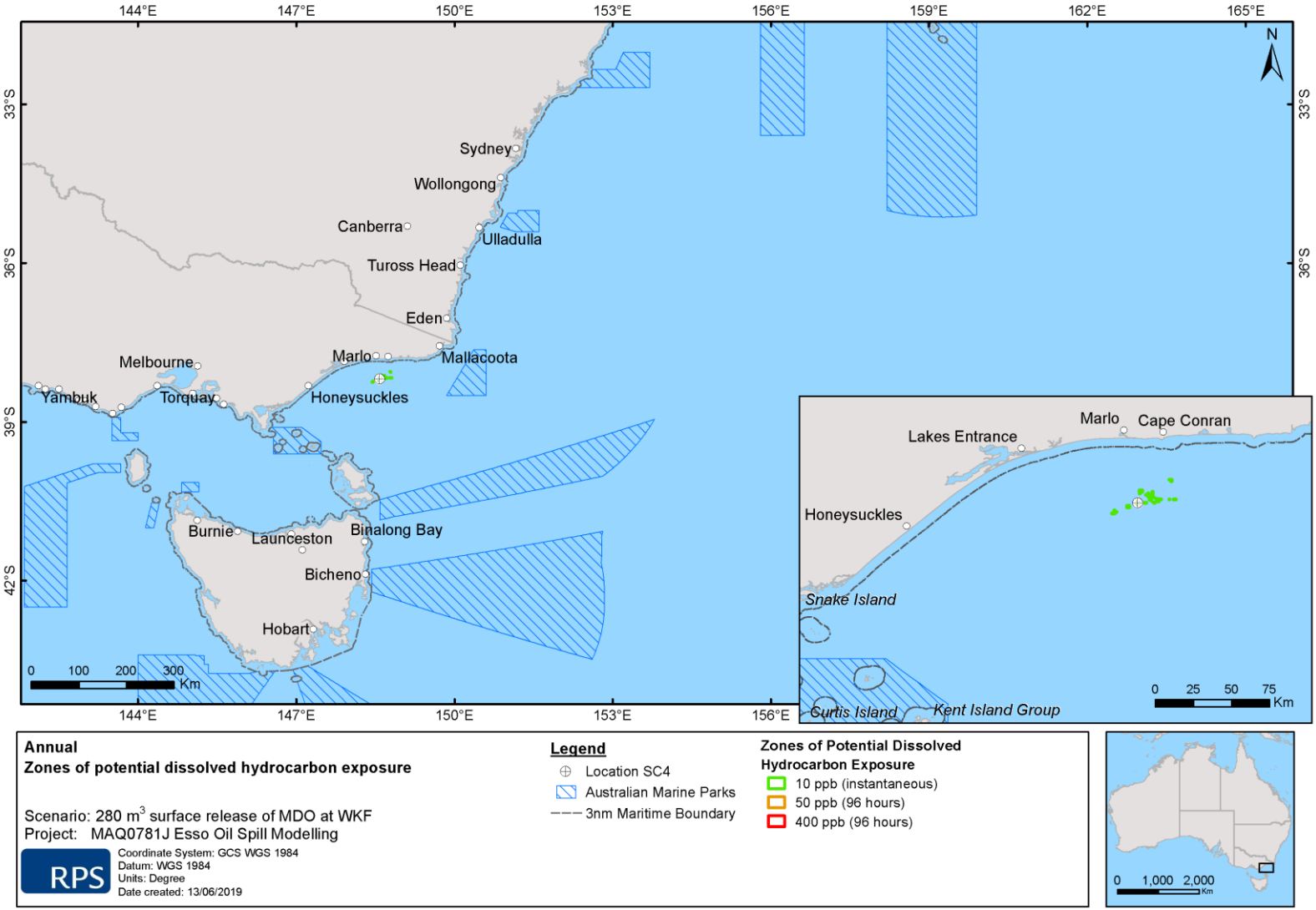

Figure 76 Zones of potential dissolved hydrocarbon exposure at 0–10 m below the sea surface in the event of a 280 m^3 surface release of MDO over 6 hours at the Kipper Facility, tracked for 30 days. The results were calculated from 100 spill trajectories.

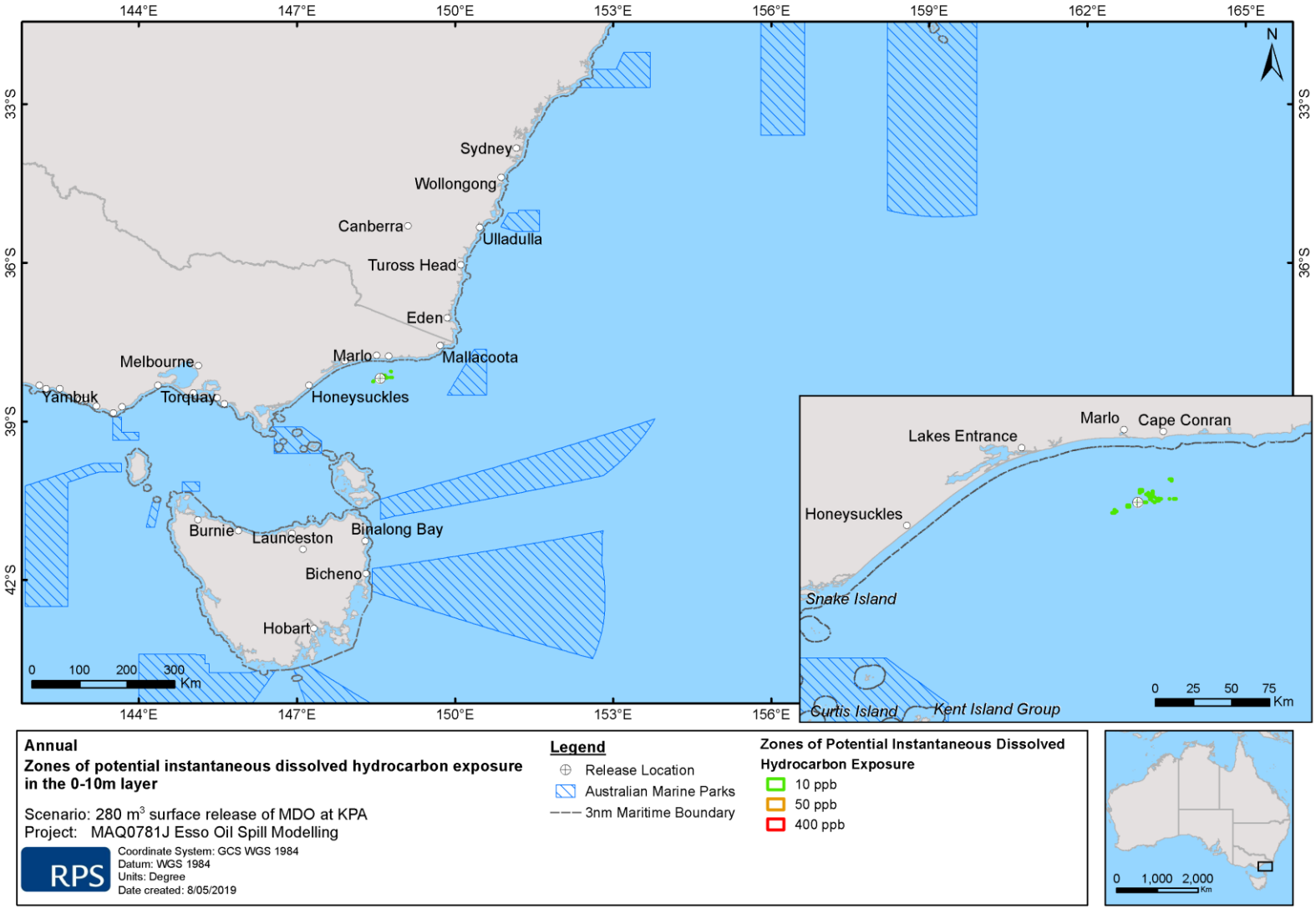

Figure 77 Zones of potential instantaneous dissolved hydrocarbon exposure at 0–10 m below the sea surface in the event of a 280 m^3 surface release of MDO over 6 hours at the Kipper Facility, tracked for 30 days. The results were calculated from 100 spill trajectories.

13.1.2.2 Entrained Hydrocarbons

Table 39 summarises the probability of exposure to receptors from entrained oil in the 0–10 m depth at the low (10 ppb) and high (100 ppb) entrained hydrocarbon exposure thresholds (NOPSEMA, 2019) and the additional thresholds described in 1013913984.81 predicted over the annual assessment. No exposure at or above the low entrained hydrocarbon exposure threshold was predicted in the waters below 10 m.

The greatest probability of entrained oil exposure above the low threshold was 34%, predicted for the following BIAs: Antipodean Albatross – Foraging, Black-browed Albatross – Foraging, Campbell Albatross-Foraging, Indian Yellow-nosed Albatross – Foraging, Pygmy Blue Whale – Distribution and Foraging, Shy Albatross – Foraging, Southern Right Whale – Migration, Wandering Albatross – Foraging, White Shark – Distribution, White-faced Storm-petrel – Foraging as well as the Upwelling East of Eden KEF (Table 39).

Figure 78 to Figure 80 present the zones of potential entrained hydrocarbon exposure in the 0-10 m depth layer, for several reporting thresholds.

RPS

Table 39 Probability of exposure to receptors from entrained oil in the 0–10 m depth layer below the sea surface. Results are based on a 280 m^3 surface release of MDO over 6 hours at the Kipper Facility, tracked for 30 days. The results were calculated from 100 spill trajectories.

	Receptors	Maximum instantaneous entrained hydrocarbon exposure (ppb)	Probability of Instantaneous hydrocarbon exposure		Maximum time-averaged entrained hydrocarbon exposure (ppb) (over 96 hrs)	Maximum time-averaged entrained hydrocarbon exposure (ppb) (over 168 hrs)	Probability of time-averaged entrained hydrocarbon exposure		
			Low >10 ppb	High >100 ppb			Moderate > 98 ppb (over 96 hrs)	Moderate > 98 ppb (over 168 hrs)	High > 488 ppb (over 96 hours)
AMP	Beagle	61	6	-	14	8	-	-	-
	East Gippsland	100	9	1	20	12	-	-	-
	Flinders	19	2	-	6	3	-	-	-
	Freycinet	11	1	-	3	2	-	-	-
BIA	Antipodean Albatross - Foraging	1,762	34	15	219	125	4	1	-
	Black Petrel - Foraging	138	10	1	30	22	-	-	-
	Black-browed Albatross - Foraging	2,164	34	15	271	155	5	2	-
	Bullers Albatross - Foraging	2,164	32	15	271	155	5	2	-
	Campbell Albatross - Foraging	2,164	34	15	271	155	5	2	-
	Common Diving-petrel - Foraging	2,164	32	15	271	155	5	2	-
	Crested Tern - Breeding	21	3	-	17	14	-	-	-
	Crested Tern - Foraging	115	6	1	31	23	-	-	-
	Flesh-footed Shearwater - Foraging	138	10	1	30	22	-	-	-
	Great-winged Petrel - Foraging	138	10	1	17	10	-	-	-
	Grey Nurse Shark - Foraging	126	16	1	45	26	-	-	-
	Grey Nurse Shark - Migration	190	18	2	29	19	-	-	-
	Humpback Whale - Foraging	249	23	4	45	26	-	-	-
	Indian Yellow-nosed Albatross - Foraging	2,164	34	15	271	155	5	2	-
	Indo-Pacific/Spotted Bottlenose Dolphin - Breeding	120	19	1	45	26	-	-	-
	Little Penguin - Breeding	82	4	-	29	17	-	-	-
	Little Penguin - Foraging	179	26	4	45	26	-	-	-
	Northern Giant Petrel - Foraging	138	10	1	17	10	-	-	-
	Pygmy Blue Whale - Distribution	2,164	34	15	271	155	5	2	-
	Pygmy Blue Whale - Foraging	2,164	34	15	271	155	5	2	-
	Short-tailed Shearwater - Breeding	17	2	-	9	7	-	-	-
	Short-tailed Shearwater - Foraging	302	22	3	45	26	-	-	-
	Shy Albatross - Foraging	2,164	34	15	271	155	5	2	-
	Sooty Shearwater - Foraging	180	15	2	31	23	-	-	-

RPS

Receptors		Maximum instantaneous entrained hydrocarbon exposure (ppb)	Probability of Instantaneous hydrocarbon exposure		Maximum time-averaged entrained hydrocarbon exposure (ppb) (over 96 hrs)	Maximum time-averaged entrained hydrocarbon exposure (ppb) (over 168 hrs)	Probability of time-averaged entrained hydrocarbon exposure		
			Low >10 ppb	High >100 ppb			Moderate > 98 ppb (over 96 hrs)	Moderate > 98 ppb (over 168 hrs)	High > 488 ppb (over 96 hours)
Southern Giant Petrel - Foraging		138	10	1	17	10	-	-	-
Southern Right Whale - Connecting Habitat		18	3	-	9	7	-	-	-
Southern Right Whale - Migration		2,164	34	15	271	155	5	2	-
Wandering Albatross - Foraging		2,164	34	15	271	155	5	2	-
Wedge-tailed Shearwater - Foraging		252	27	4	45	26	-	-	-
White Shark - Breeding		111	7	1	17	12	-	-	-
White Shark - Distribution		2,164	34	15	271	155	5	2	-
White Shark - Foraging		550	34	7	69	39	-	-	-
White-capped Albatross - Foraging		138	10	1	17	10	-	-	-
White-faced Storm-petrel - Breeding		154	11	1	31	23	-	-	-
White-faced Storm-petrel - Foraging		1,030	34	15	147	84	1	-	-
Wilsons Storm Petrel - Migration		138	10	1	17	10	-	-	-
KEF	Big Horseshoe Canyon	358	10	3	45	26	-	-	-
	Canyons on the eastern continental slope	105	8	1	17	10	-	-	-
	Seamounts South and east of Tasmania	11	1	-	2	1	-	-	-
	Shelf rocky reefs	57	4	-	8	5	-	-	-
	Upwelling East of Eden	2,164	34	15	271	155	5	2	-
MNP	Cape Howe	94	21	-	35	20	-	-	-
	Point Hicks	176	12	2	57	33	-	-	-
MP	Batemans	70	3	-	31	23	-	-	-
MS	Beware Reef	15	2	-	5	5	-	-	-
NP	Kent Group	19	2	-	10	7	-	-	-
RSB	New Zealand Star Bank	144	27	2	35	20	-	-	-
	Wright Rock	20	4	-	7	6	-	-	-
SMA	The Skerries Special Management Area	40	9	-	10	6	-	-	-
State Waters	New South Wales	119	19	1	45	26	-	-	-
	Tasmania State Waters	44	4	-	16	10	-	-	-
	Victoria State Waters	212	21	3	57	33	-	-	-
SUB-LGA	Bega Valley	105	6	1	32	18	-	-	-
	Cape Conran	18	1	-	6	6	-	-	-

Receptors	Maximum instantaneous entrained hydrocarbon exposure (ppb)	Probability of Instantaneous hydrocarbon exposure		Maximum time-averaged entrained hydrocarbon exposure (ppb) (over 96 hrs)	Maximum time-averaged entrained hydrocarbon exposure (ppb) (over 168 hrs)	Probability of time-averaged entrained hydrocarbon exposure		
		Low >10 ppb	High >100 ppb			Moderate > 98 ppb (over 96 hrs)	Moderate > 98 ppb (over 168 hrs)	High > 488 ppb (over 96 hours)
Cape Howe / Mallacoota	60	12	-	24	14	-	-	-
Croajingolong (East)	25	8	-	12	10	-	-	-
Croajingolong (West)	95	11	-	19	11	-	-	-
Eurobodalla	33	3	-	27	19	-	-	-
Marlo	24	1	-	9	7	-	-	-
Point Hicks	129	11	1	54	31	-	-	-
Shoal Haven	60	2	-	17	11	-	-	-
Sydenham Inlet	55	8	-	21	12	-	-	-

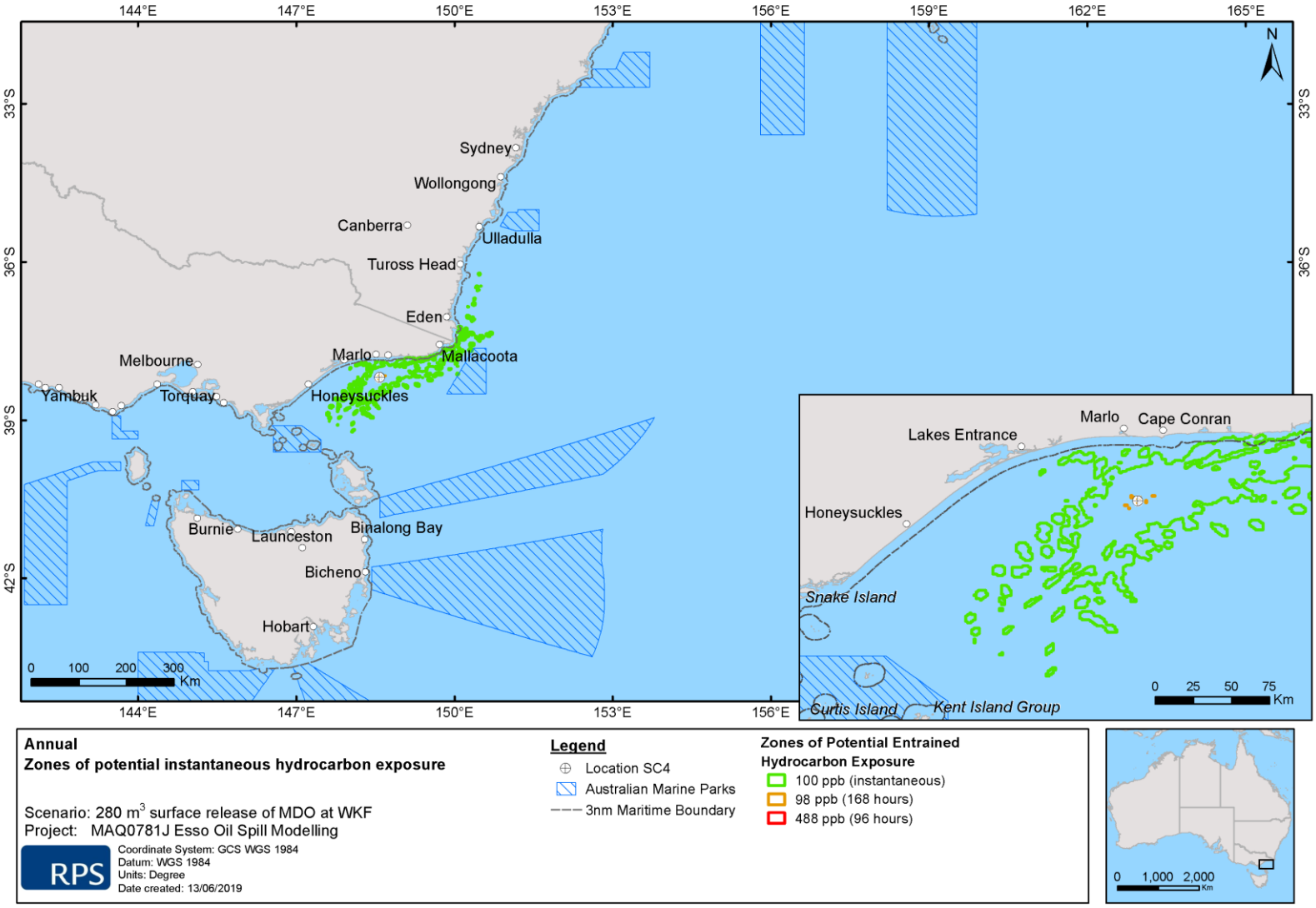

Figure 78 Zone of potential entrained hydrocarbon exposure representing the 100 ppb (instantaneous), 98 ppb (over 168 hours) and 488 ppb (over 96 hours) thresholds at 0-10 m below the sea surface. Results are based in the event of a 280 m^3 surface release of MDO over 6 hours at the Kipper Facility, tracked for 30 days. The results were calculated from 100 spill trajectories.

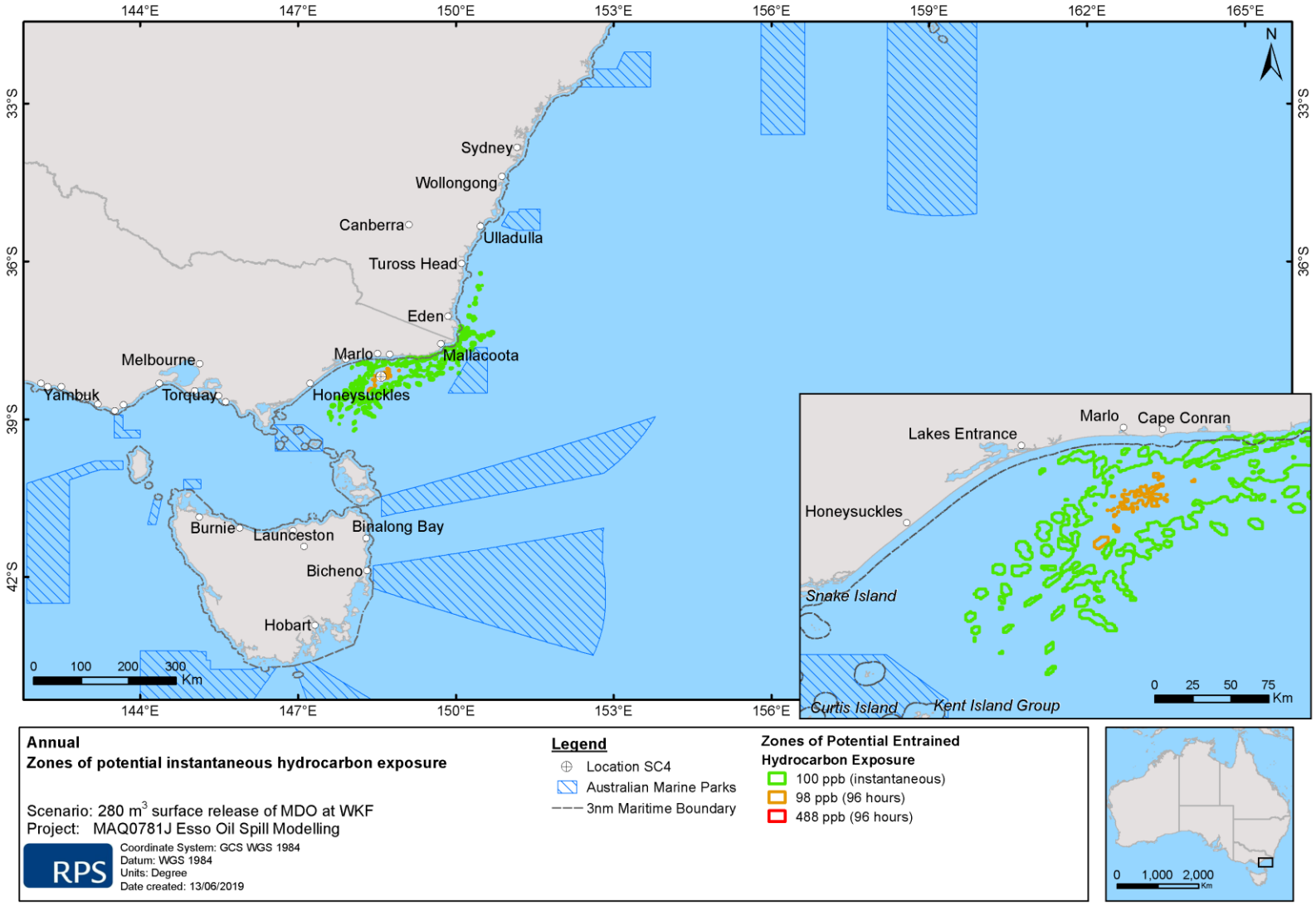

Figure 79 Zone of potential entrained hydrocarbon exposure representing the 100 ppb (instantaneous), 98 ppb (over 96 hours) and 488 ppb (over 96 hours) thresholds at 0-10 m below the sea surface. Results are based in the event of a 280 m^3 surface release of MDO over 6 hours at the Kipper Facility, tracked for 30 days. The results were calculated from 100 spill trajectories.

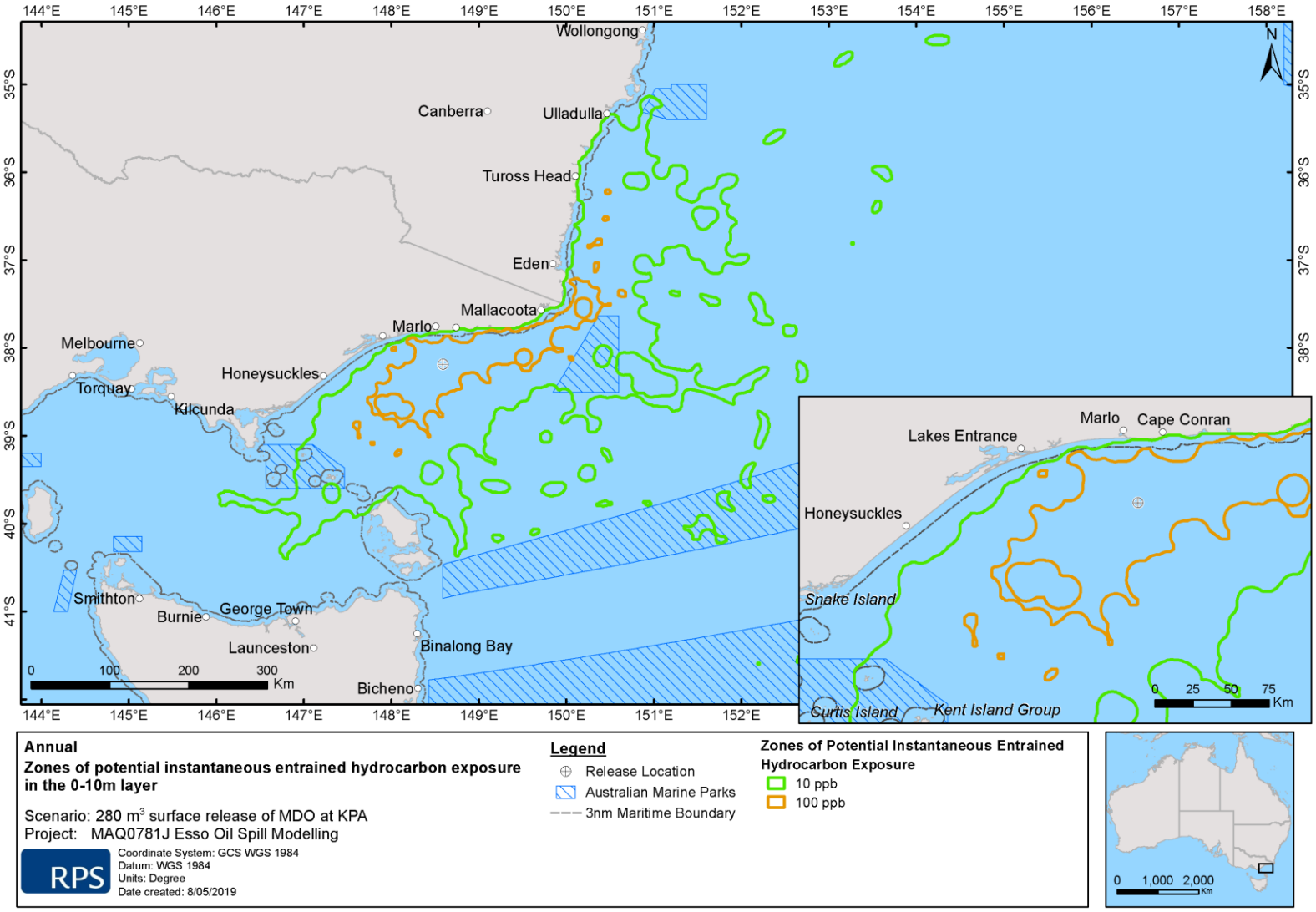

Figure 80 **Zone of potential entrained hydrocarbon exposure representing the 10 ppb (instantaneous) and 100 ppb (instantaneous) thresholds at 0-10 m below the sea surface. Results are based in the event of a 280 m^3 surface release of MDO over 6 hours at the Kipper Facility, tracked for 30 days. The results were calculated from 100 spill trajectories.**

13.2 Deterministic Analysis

No shoreline contact was predicted for this scenario, consequently, only the deterministic model run resulting in the largest swept area of oil on the sea surface above 10 g/m^2 (actionable sea surface oil, also the moderate zone of sea surface exposure) is presented (Case 4).

13.2.1 Deterministic Case: Largest Sea Surface Swept Area

The deterministic trajectory that had the largest swept area of oil on the sea surface of 10 g/m^2 (actionable oil) was identified as run number 83 which commenced at 10 am 17th of May 2011.

Zones of exposure from sea surface oil (swept area) over the entire simulation are presented in Figure 81. Zones of sea surface exposure were predicted to travel west from the release site.

For response planning purposes Figure 82 displays the time series of the area of visible oil (0.5 g/m^2) and actionable oil (10 g/m^2) exposure on the sea surface over the 30-day simulation. The maximum area of coverage of visible oil on the on the sea surface at any given time throughout the scenario was predicted to occur 2 day after the spill started and covered approximately 22 km^2.

Figure 83 presents the fates and weathering graph for the corresponding single spill trajectory. At the conclusion of the simulation period, approximately 250 m^3 (89%) spilled oil was lost to the atmosphere through evaporation. Approximately 14 m^3 (5%) of the MDO was predicted to have decayed by the end of the simulation, while approximately 14 m^3 (5%) was predicted to remain within the water column.

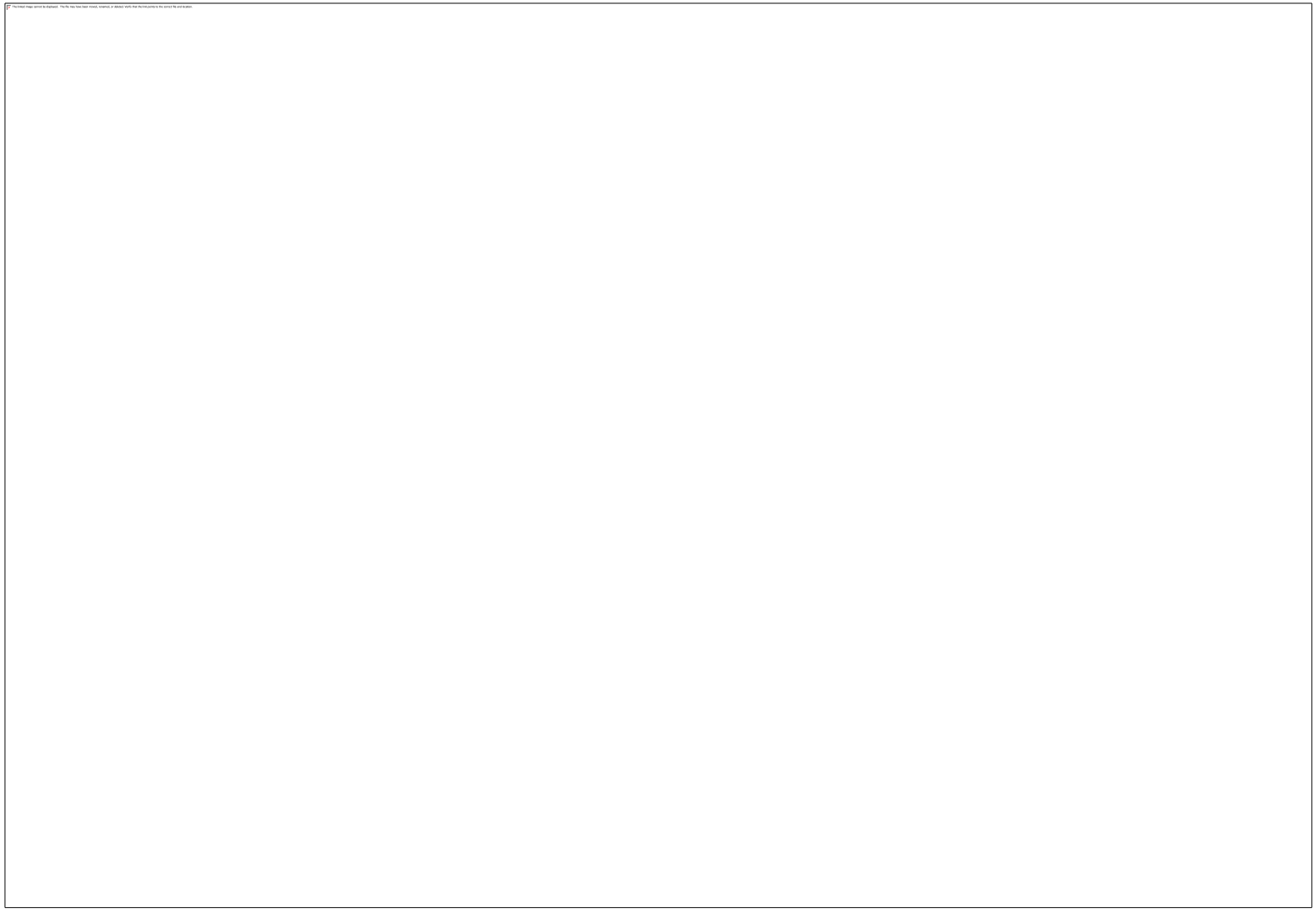

Figure 81 Zones of potential exposure on the sea surface for the trajectory with the largest sea surface swept area at the 10 g/m^2 threshold. Results are based on a 280 m^3 surface release of MDO over 6 hours at the Kipper Facility, tracked for 30 days, 10 am 17th of May 2011.



Figure 82 Time series of the area of visible (0.5 g/m^2) and actionable oil (10 g/m^2) on the sea surface for the trajectory with the largest sea surface swept area at the 10 g/m^2 threshold. Results are based on a 280 m^3 surface release of MDO over 6 hours at the Kipper Facility, tracked for 30 days, 10 am 17th of May 2011.

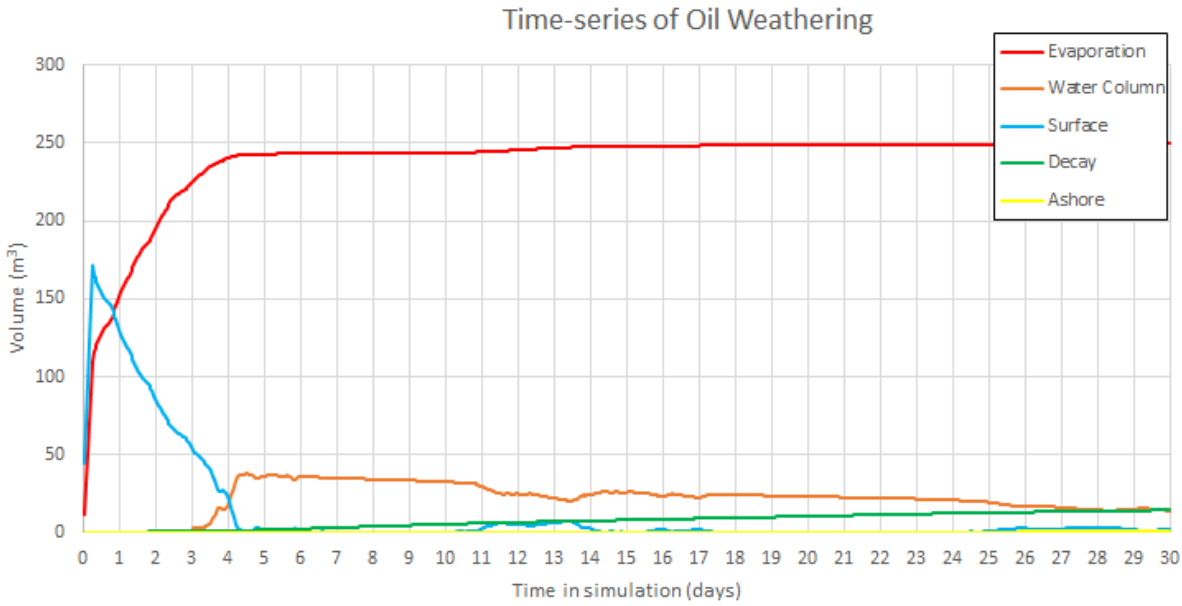

Figure 83 Predicted weathering and fates graph for the single spill trajectory with the largest sea surface swept area at the 10 g/m^2 threshold. Results are based on a 280 m^3 surface release of MDO over 6 hours at the Kipper Facility, tracked for 30 days, 10 am 17th of May 2011.

14 Results: Scenario 5 – 220 m^3 Surface Release of MDO at Halibut A

The scenario examined a surface release of 220 m^3 of MDO over 6 hours (tracked for 20 days) following a vessel collision at the Halibut A Platform. A total of 100 spill trajectories were simulated over the annual period.

Section 14.1 presents the stochastic analysis results.

14.1 Stochastic Analysis Results

14.1.1 Sea Surface Exposure and Shoreline Contact

No shoreline contact was predicted above the low threshold for this scenario, consequently no shoreline contact results are presented.

Table 40 presents the maximum distance and direction travelled by oil on the sea surface at each threshold. The maximum distance from the release site predicted for low (1–10 g/m^2), moderate (10–50 g/m^2) and high (>50 g/m^2) exposure was 40.1 km (south), 15.5 km (east-northeast) and 3 km (east), respectively.

Table 41 summarises the potential sea surface exposure to individual receptors. The results indicated there was a 100% and 74% probability of low and moderate surface oil exposure, respectively, predicted for BIAs for several species of birds (e.g. Black-browed Albatross – Foraging, Bullers Albatross – Foraging, Campbell Albatross – Foraging, Common Diving-petrel -Foraging, Indian Yellow-nosed Albatross – Foraging, Shy Albatross – Foraging, Short-tailed Shearwater – Foraging and Wandering Albatross -Foraging. Additionally, the Pygmy Blue Whale – Distribution and Foraging, Southern Right Whale – Migration and White Shark – Distribution BIAs were also predicted to have a 100% and 74% probability of sea surface exposure at the low and moderate exposure thresholds, respectively.

Of all KEF receptors considered, the Upwelling East of Eden had the greatest predicted probability to experience surface oil at, or above, the low exposure threshold (12% probability of exposure). The corresponding predicted minimum time before sea surface exposure for this receptor at, or above, the low threshold was 4 hours.

Figure 84 presents the zones of sea surface exposure over the modelled period. Zones of low and moderate potential exposure were shown to extend predominantly south and east-northeast of the release location.

Table 40 **Maximum distance and direction travelled on the sea surface by a single trajectory from the release location to oil exposure thresholds. Results are based on a 220 m^3 surface release of MDO over 6 hours at the Halibut A Platform, tracked for 20 days. The results were calculated from 100 spill trajectories.**

Period	Distance and direction	Zones of potential sea surface exposure		
		Low (1–10 g/m^2)	Moderate (10–50 g/m^2)	High (>50 g/m^2)
Annual	Maximum distance from release site (km)	40.1	15.5	3
	Maximum distance from release site (km) (99th percentile)	38.8	15.2	3
	Direction	S	ENE	E

Table 41 **Summary of the potential sea surface exposure to receptors. Results are based on a 220 m^3 surface release of MDO over 6 hours at the Halibut A Platform, tracked for 20 days. The results were calculated from 100 spill trajectories.**

	Receptor	Probability of oil exposure on the sea surface (%)			Minimum time before oil exposure on the sea surface (hours)		
		Low (1-10 g/m^2)	Moderate (10-50 g/m^2)	High (>50 g/m^2)	Low (1-10 g/m^2)	Moderate (10-50 g/m^2)	High (>50 g/m^2)
BIA	Black-browed Albatross - Foraging	100	74	8	2	2	4
	Bullers Albatross - Foraging	100	74	8	2	2	4
	Campbell Albatross - Foraging	100	74	8	2	2	4
	Common Diving-petrel - Foraging	100	74	8	2	2	4
	Indian Yellow-nosed Albatross - Foraging	100	74	8	2	2	4
	Pygmy Blue Whale - Distribution	100	74	8	2	2	4
	Pygmy Blue Whale - Foraging	100	74	8	2	2	4
	Short-tailed Shearwater - Foraging	1	-	-	20	-	-
	Shy Albatross - Foraging	100	74	8	2	2	4
	Southern Right Whale - Migration	100	74	8	2	2	4
	Wandering Albatross - Foraging	100	74	8	2	2	4
	White Shark - Distribution	100	74	8	2	2	4
EEZ	Australian Exclusive Economic Zone	100	74	8	2	2	4
KEF	Upwelling East of Eden	12	1	-	4	12	-

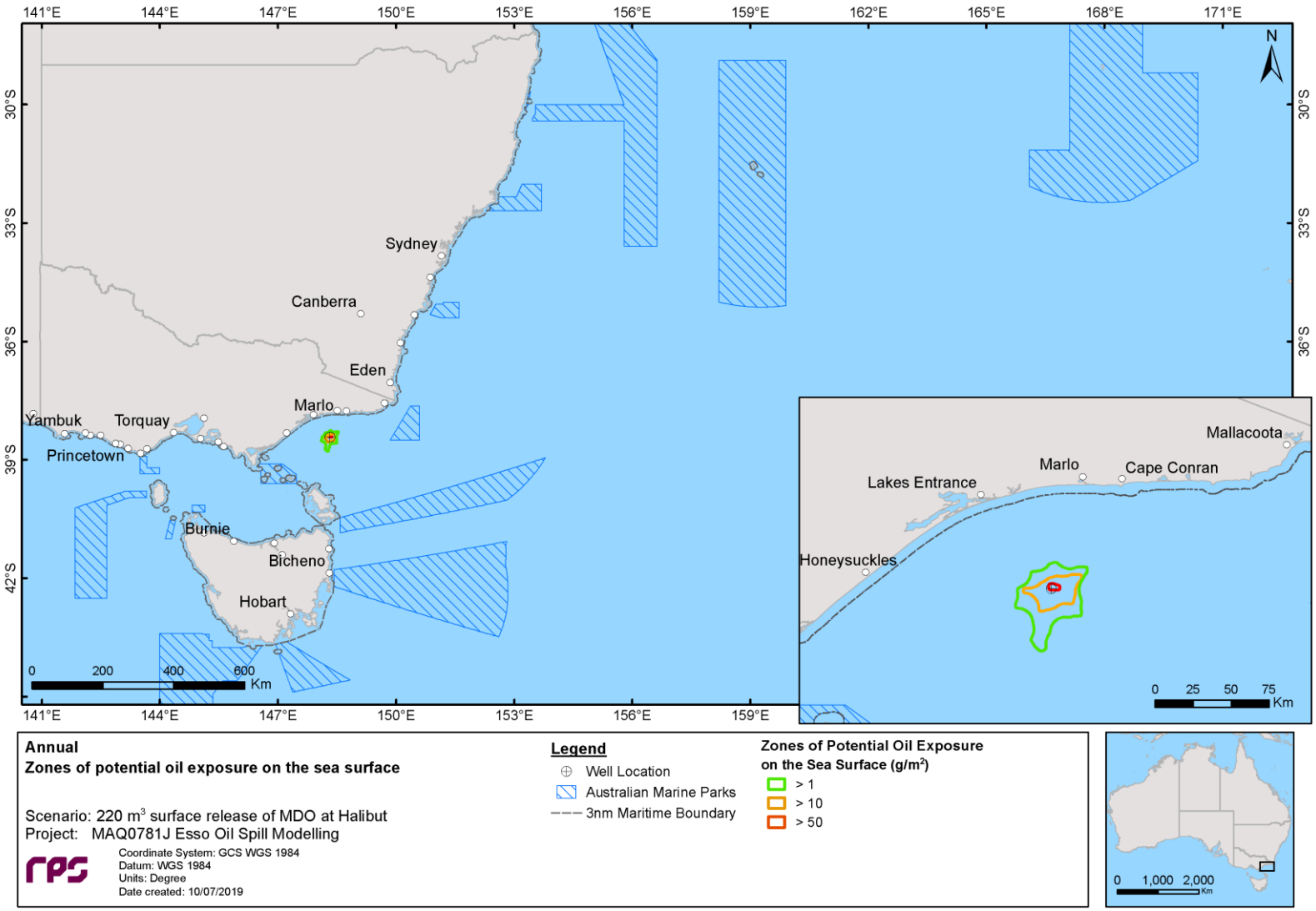

Figure 84 Zones of potential oil exposure on the sea surface, in the event of a 220 m^3 surface release of MDO over 6 hours at the Halibut A Platform, tracked for 20 days. The results were calculated from 100 spill trajectories.

14.1.2 Water Column Exposure

14.1.2.1 Dissolved Aromatic Hydrocarbons

Table 42 summarises the probability of exposure to receptors from dissolved hydrocarbons in the 0–10 m depth layer at the low (10 ppb), moderate (50 ppb) and high (400 ppb) dissolved hydrocarbon exposure thresholds (NOPSEMA, 2019) and the additional thresholds described in 1013913984.81 predicted over the annual assessment.

The greatest probability of dissolved hydrocarbon exposure (13%) above the low reporting threshold was predicted for the following BIAs: Black-browed Albatross – Foraging, Bullers Albatross – Foraging, Campbell Albatross – Foraging, Common Diving-petrel – Foraging, Indian Yellow-nosed Albatross – Foraging, Pygmy Blue Whale – Distribution and Foraging, Shy Albatross – Foraging, Southern Right Whale – Migration and White Shark – Distribution (Table 42).

Figure 85 presents the zones of potential dissolved hydrocarbon exposure for the 0-10 m depth layers.

Table 42 Probability of exposure to receptors from dissolved aromatics in the 0–10 m depth layer below the sea surface. Results are based on a 220 m³ surface release of MDO over 6 hours at the Halibut A Platform, tracked for 20 days. The results were calculated from 100 spill trajectories.

	Receptor	Maximum instantaneous dissolved aromatic hydrocarbon exposure (ppb)	Probability of instantaneous dissolved hydrocarbon			Maximum time-averaged dissolved aromatic hydrocarbon exposure (ppb) (over 96 hours)	Probability of time-averaged hydrocarbon exposure	
			Low >10 ppb	Moderate > 50 ppb	High > 400 ppb		Moderate > 50 ppb	High > 400 ppb
BIA	Antipodean Albatross - Foraging	20	2	-	-	1	-	-
	Black-browed Albatross - Foraging	37	13	-	-	1	-	-
	Bullers Albatross - Foraging	37	13	-	-	1	-	-
	Campbell Albatross - Foraging	37	13	-	-	1	-	-
	Common Diving-petrel - Foraging	37	13	-	-	1	-	-
	Humpback Whale - Foraging	13	1	-	-	<1	-	-
	Indian Yellow-nosed Albatross - Foraging	37	13	-	-	1	-	-
	Pygmy Blue Whale - Distribution	37	13	-	-	1	-	-
	Pygmy Blue Whale - Foraging	37	13	-	-	1	-	-
	Short-tailed Shearwater - Foraging	23	1	-	-	1	-	-
	Shy Albatross - Foraging	37	13	-	-	1	-	-
	Southern Right Whale - Migration	37	13	-	-	1	-	-
	Wandering Albatross - Foraging	37	13	-	-	1	-	-
	Wedge-tailed Shearwater - Foraging	13	1	-	-	<1	-	-
	White Shark - Breeding	10	1	-	-	<1	-	-
	White Shark - Distribution	37	13	-	-	1	-	-

	Receptor	Maximum instantaneous dissolved aromatic hydrocarbon exposure (ppb)	Probability of instantaneous dissolved hydrocarbon			Maximum time-averaged dissolved aromatic hydrocarbon exposure (ppb) (over 96 hours)	Probability of time-averaged hydrocarbon exposure	
			Low >10 ppb	Moderate > 50 ppb	High > 400 ppb		Moderate > 50 ppb	High > 400 ppb
	White Shark - Foraging	20	1	-	-	1	-	-
	White-faced Storm-petrel - Foraging	20	1	-	-	1	-	-
EEZ	Australian Exclusive Economic Zone	37	13	-	-	1	-	-
KEF	Upwelling East of Eden	29	3	-	-	1	-	-

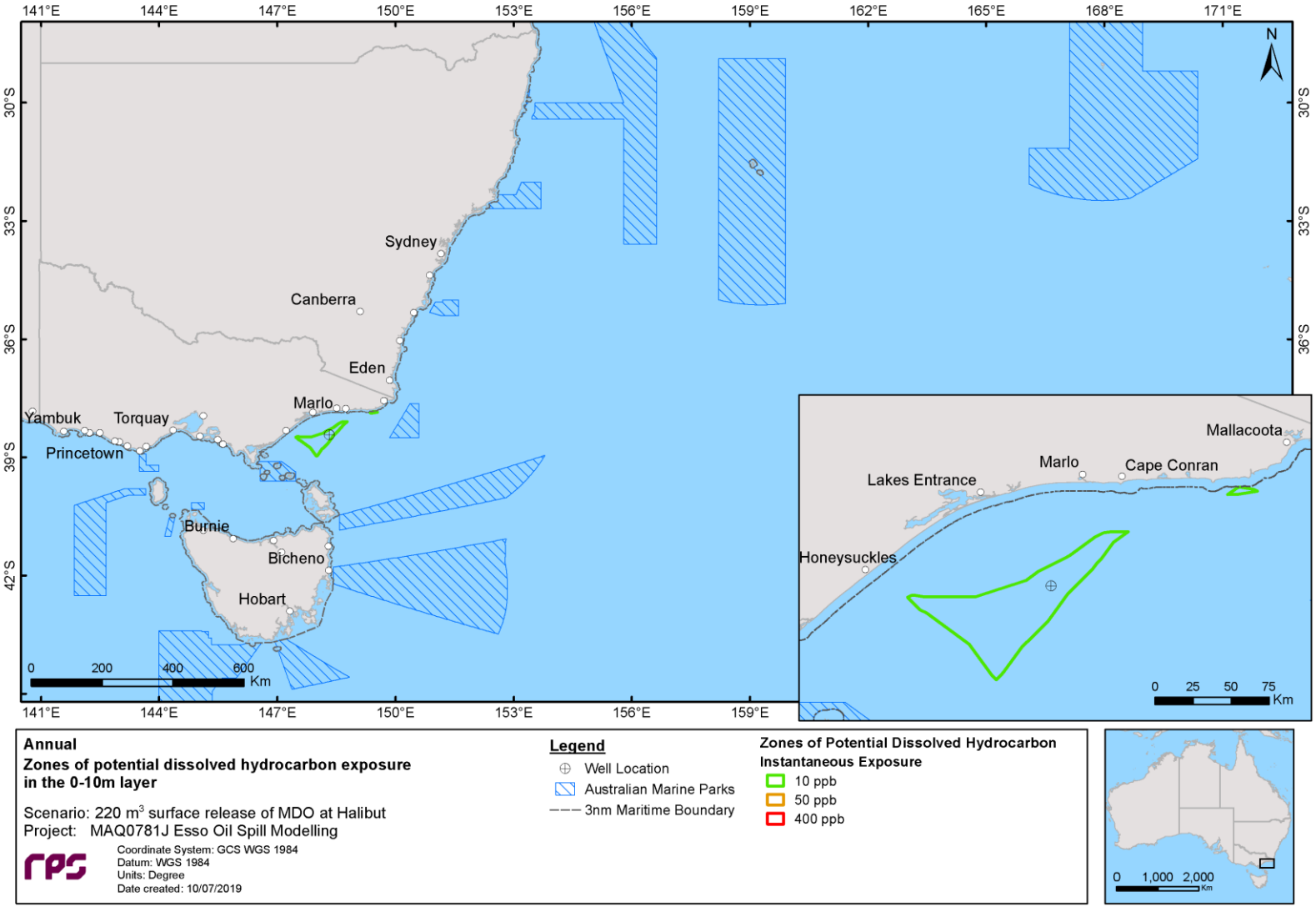

Figure 85 Zones of potential instantaneous dissolved hydrocarbon exposure at 0–10 m below the sea surface in the event of a 220 m^3 surface release of MDO over 6 hours at the Halibut A Platform, tracked for 20 days. The results were calculated from 100 spill trajectories.

14.1.2.2 Entrained Hydrocarbons

Table 43 summarises the probability of exposure to receptors from entrained oil in the 0–10 m depth at the low (10 ppb) and high (100 ppb) entrained hydrocarbon exposure thresholds (NOPSEMA, 2019) and the additional thresholds described in 1013913984.81 predicted over the annual assessment.

The greatest probability of entrained oil exposure above the low threshold was 83%, predicted for the following BIAs: Black-browed Albatross – Foraging, Bullers Albatross – Foraging, Campbell Albatross- Foraging, Common Diving-petrel – Foraging, Indian Yellow-nosed Albatross – Foraging, Pygmy Blue Whale – Distribution and Foraging, Shy Albatross – Foraging, Southern Right Whale – Migration, Wandering Albatross – Foraging, White Shark – Distribution.

Figure 86 presents the zones of potential instantaneous entrained hydrocarbon exposure in the 0-10 m depth layer.

RPS

Table 43 Probability of exposure to receptors from entrained oil in the 0–10 m depth layer below the sea surface. Results are based on a 220 m^3 surface release of MDO over 6 hours at the Halibut A Platform, tracked for 20 days. The results were calculated from 100 spill trajectories.

	Receptors	Maximum instantaneous entrained hydrocarbon exposure (ppb)	Probability of Instantaneous hydrocarbon exposure		Maximum time-averaged entrained hydrocarbon exposure (ppb) (over 96 hrs)	Maximum time-averaged entrained hydrocarbon exposure (ppb) (over 168 hrs)	Probability of time-averaged entrained hydrocarbon exposure		
			Low >10 ppb	High >100 ppb			Moderate > 98 ppb (over 96 hrs)	Moderate > 98 ppb (over 168 hrs)	High > 488 ppb (over 96 hours)
AMP	Beagle	152	6	1	15	10	-	-	-
	East Gippsland	50	7	-	11	7	-	-	-
	Flinders	21	3	-	7	4	-	-	-
BIA	Antipodean Albatross - Foraging	734	29	14	82	64	-	-	-
	Black-browed Albatross - Foraging	4,123	83	59	167	96	4	-	-
	Bullers Albatross - Foraging	4,123	83	59	167	96	4	-	-
	Campbell Albatross - Foraging	4,123	83	59	167	96	4	-	-
	Common Diving-petrel - Foraging	4,123	83	59	167	96	4	-	-
	Grey Nurse Shark - Foraging	71	17	-	34	21	-	-	-
	Grey Nurse Shark - Migration	115	18	2	80	64	-	-	-
	Humpback Whale - Foraging	115	20	2	80	64	-	-	-
	Indian Yellow-nosed Albatross - Foraging	4,123	83	59	167	96	4	-	-
	Indo-Pacific/Spotted Bottlenose Dolphin - Breeding	83	16	-	14	9	-	-	-
	Little Penguin - Foraging	146	23	2	52	38	-	-	-
	Pygmy Blue Whale - Distribution	4,123	83	59	167	96	4	-	-
	Pygmy Blue Whale - Foraging	4,123	83	59	167	96	4	-	-
	Short-tailed Shearwater - Foraging	573	30	13	80	64	-	-	-
	Shy Albatross - Foraging	4,123	83	59	167	96	4	-	-
	Sooty Shearwater - Foraging	115	15	2	80	64	-	-	-
	Southern Right Whale - Migration	4,123	83	59	167	96	4	-	-
	Wandering Albatross - Foraging	4,123	83	59	167	96	4	-	-
	Wedge-tailed Shearwater - Foraging	146	23	2	80	64	-	-	-
	White Shark - Breeding	227	6	2	26	15	-	-	-
	White Shark - Distribution	4,123	83	59	167	96	4	-	-
	White Shark - Foraging	261	27	4	92	67	-	-	-
	White-faced Storm-petrel - Foraging	492	27	7	92	67	-	-	-
EEZ	Australian Exclusive Economic Zone	4,123	83	59	167	96	4	-	-
KEF	Big Horseshoe Canyon	150	17	3	28	16	-	-	-

	Receptors	Maximum instantaneous entrained hydrocarbon exposure (ppb)	Probability of Instantaneous hydrocarbon exposure		Maximum time-averaged entrained hydrocarbon exposure (ppb) (over 96 hrs)	Maximum time-averaged entrained hydrocarbon exposure (ppb) (over 168 hrs)	Probability of time-averaged entrained hydrocarbon exposure		
			Low >10 ppb	High >100 ppb			Moderate > 98 ppb (over 96 hrs)	Moderate > 98 ppb (over 168 hrs)	High > 488 ppb (over 96 hours)
	Upwelling East of Eden	1,057	46	35	106	68	4	-	-
MNP	Cape Howe	94	21	-	18	13	-	-	-
MNP	Point Hicks	194	20	3	42	26	-	-	-
MNP	Wilsons Promontory	16	1	-	8	6	-	-	-
MS	Beware Reef	77	3	-	17	11	-	-	-
NP	Kent Group	93	6	-	24	18	-	-	-
RSB	New Zealand Star Bank	142	24	2	21	13	-	-	-
RSB	Wakitipu Rock	14	1	-	4	2	-	-	-
State Waters	New South Wales State Waters	70	16	-	14	9	-	-	-
State Waters	Tasmania State Waters	116	6	1	24	18	-	-	-
State Waters	Victoria State Waters	195	22	3	92	67	-	-	-
SUB-LGA	Bega Valley	55	12	-	8	7	-	-	-
SUB-LGA	Cape Conran	68	3	-	31	20	-	-	-
SUB-LGA	Cape Howe / Mallacoota	44	13	-	20	14	-	-	-
SUB-LGA	Corringle	47	3	-	21	14	-	-	-
SUB-LGA	Croajingolong (East)	100	9	1	48	42	-	-	-
SUB-LGA	Croajingolong (West)	155	13	2	75	61	-	-	-
SUB-LGA	Golden Beach	51	1	-	11	6	-	-	-
SUB-LGA	Lake Tyers Beach	66	2	-	27	15	-	-	-
SUB-LGA	Lakes Entrance	19	1	-	6	3	-	-	-
SUB-LGA	Marlo	82	3	-	64	55	-	-	-
SUB-LGA	Ocean Grange	45	1	-	9	5	-	-	-
SUB-LGA	Point Hicks	57	11	-	29	22	-	-	-
SUB-LGA	Sydenham Inlet	70	6	-	28	19	-	-	-
SUB-LGA	Wilsons Promontory (East)	15	1	-	8	6	-	-	-
SUB-LGA	Wilsons Promontory (West)	13	1	-	7	5	-	-	-

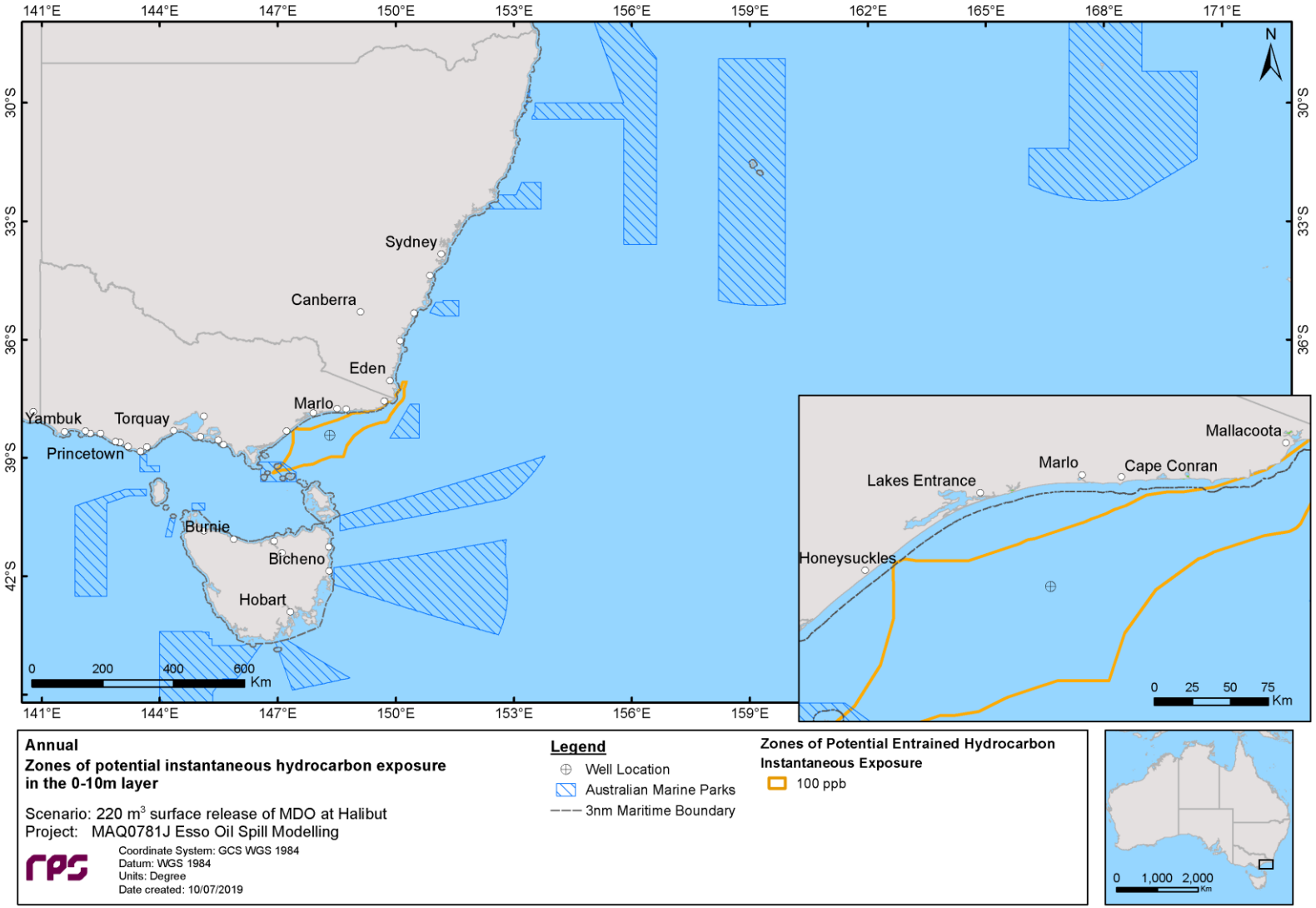

Figure 86 Zone of potential entrained hydrocarbon exposure representing the 100 ppb (instantaneous) thresholds at 0-10 m below the sea surface. Results are based in the event of a 220 m³ surface release of MDO over 6 hours at the Halibut A Platform, tracked for 20 days. The results were calculated from 100 spill trajectories.

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Appendix A
Biologically Important Areas

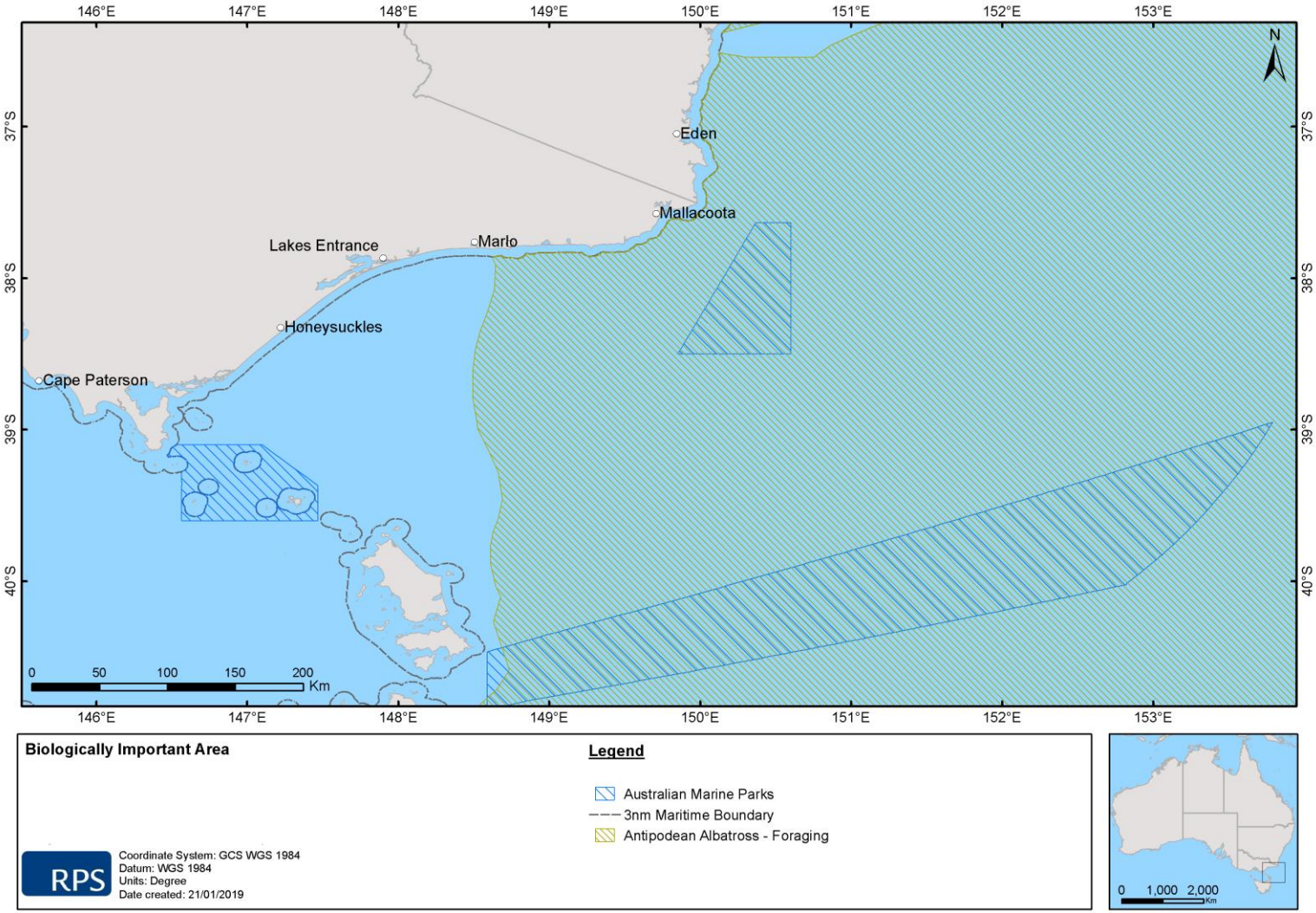


Figure 87 Biologically Important Area for the Antipodean Albatross.

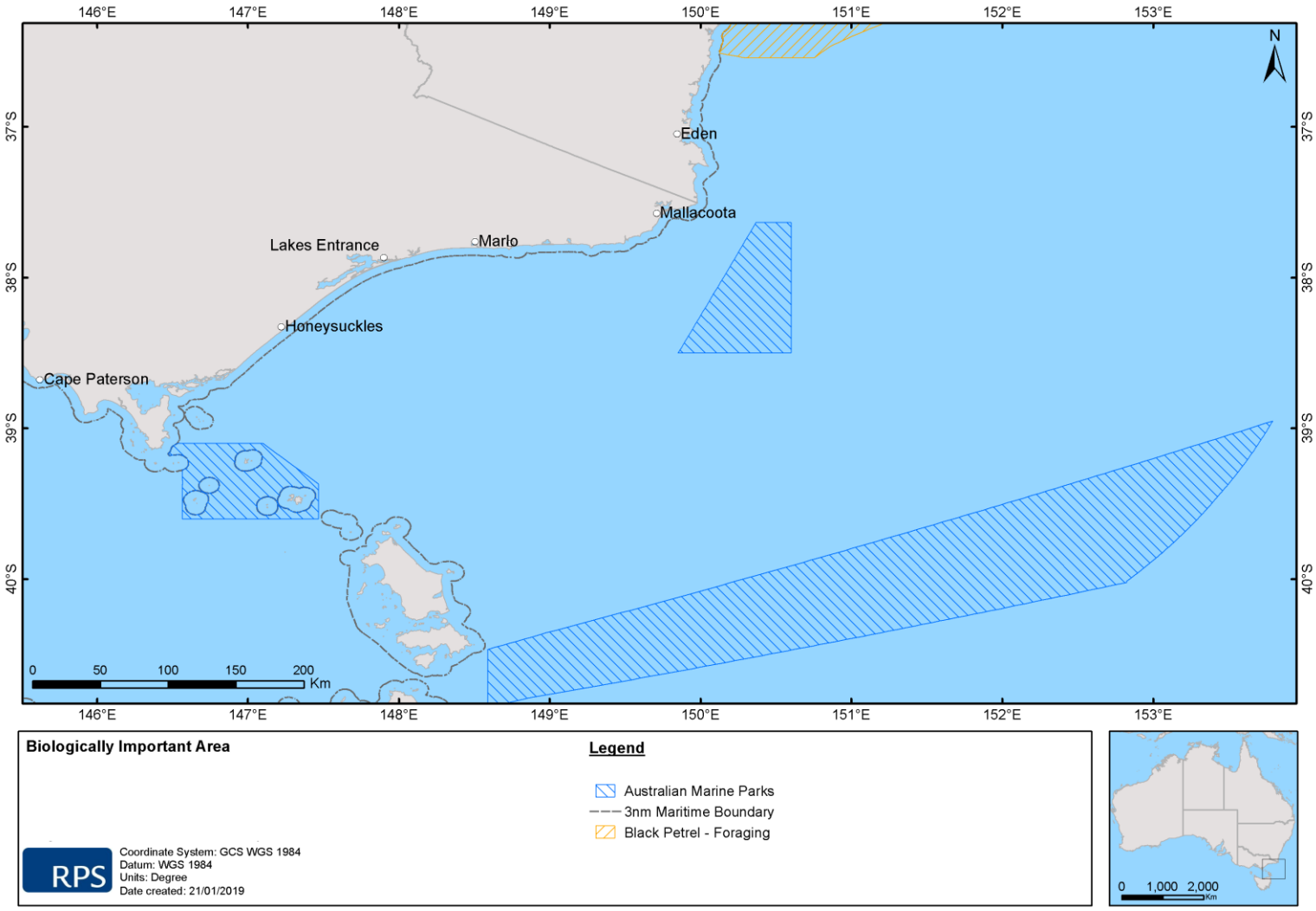


Figure 88 Biologically Important Area for the Black Petrel.

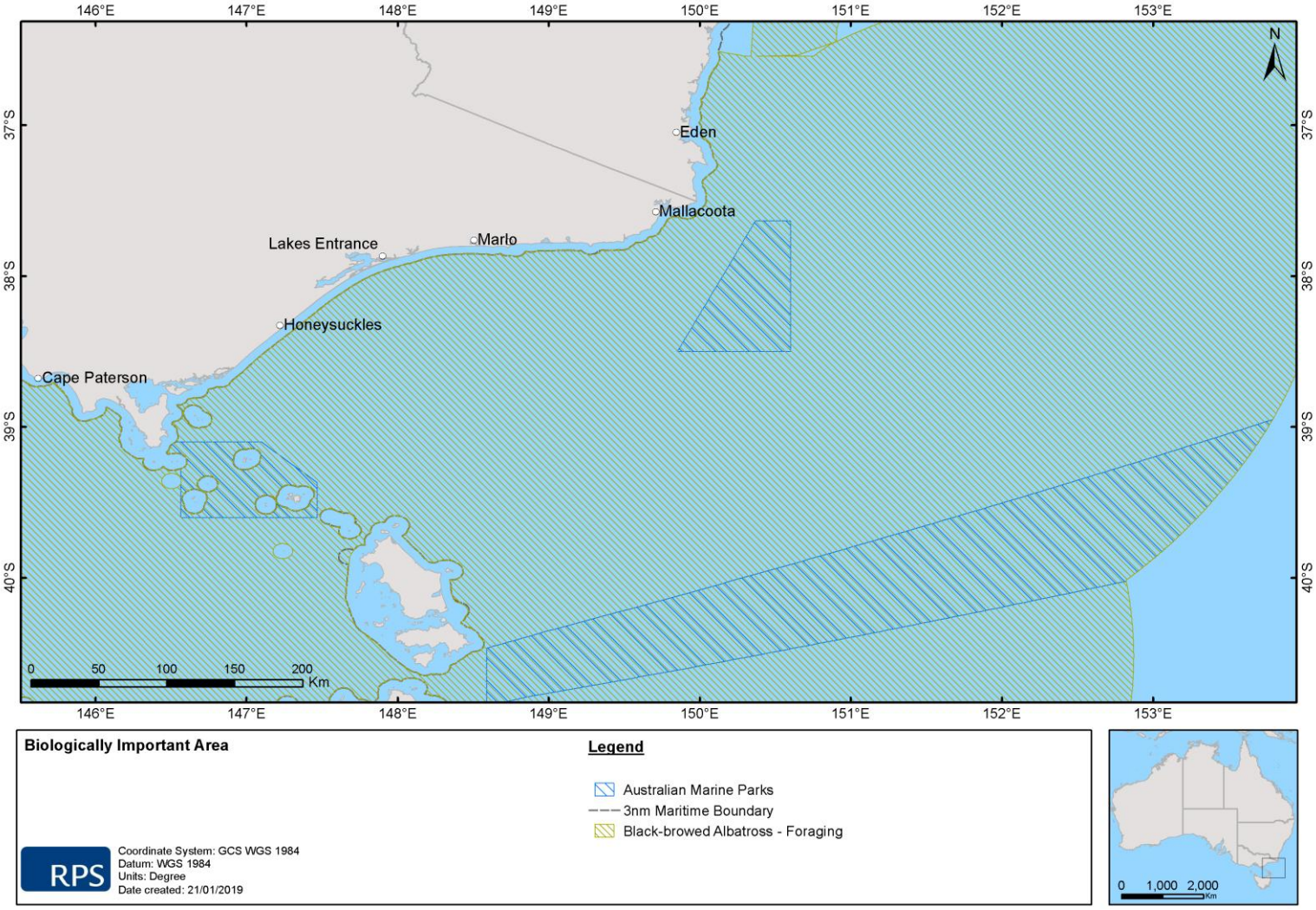


Figure 89 Biologically Important Area for the Blacked Browed Albatross.

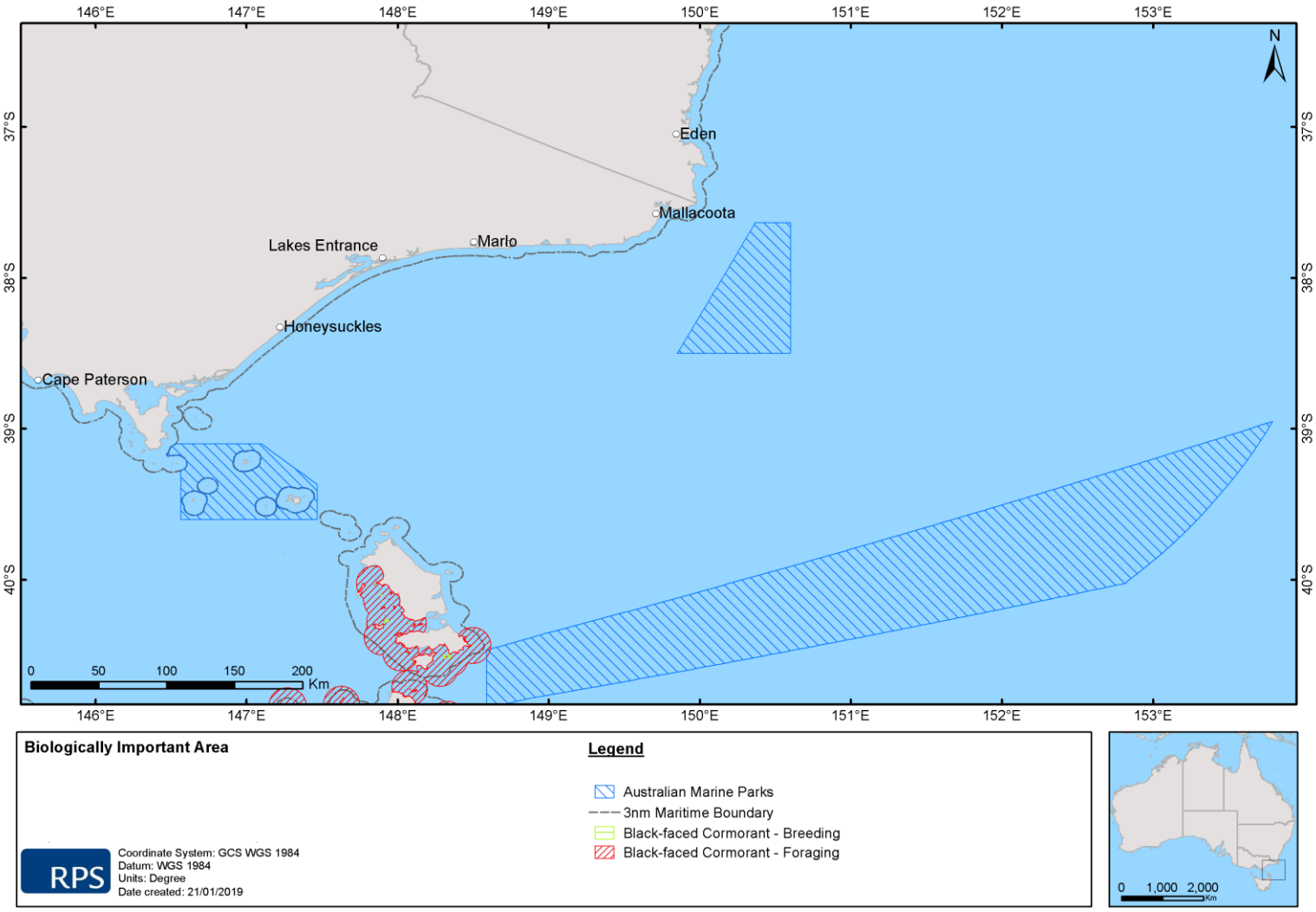


Figure 90 Biologically Important Area for the Black-faced Cormorant.

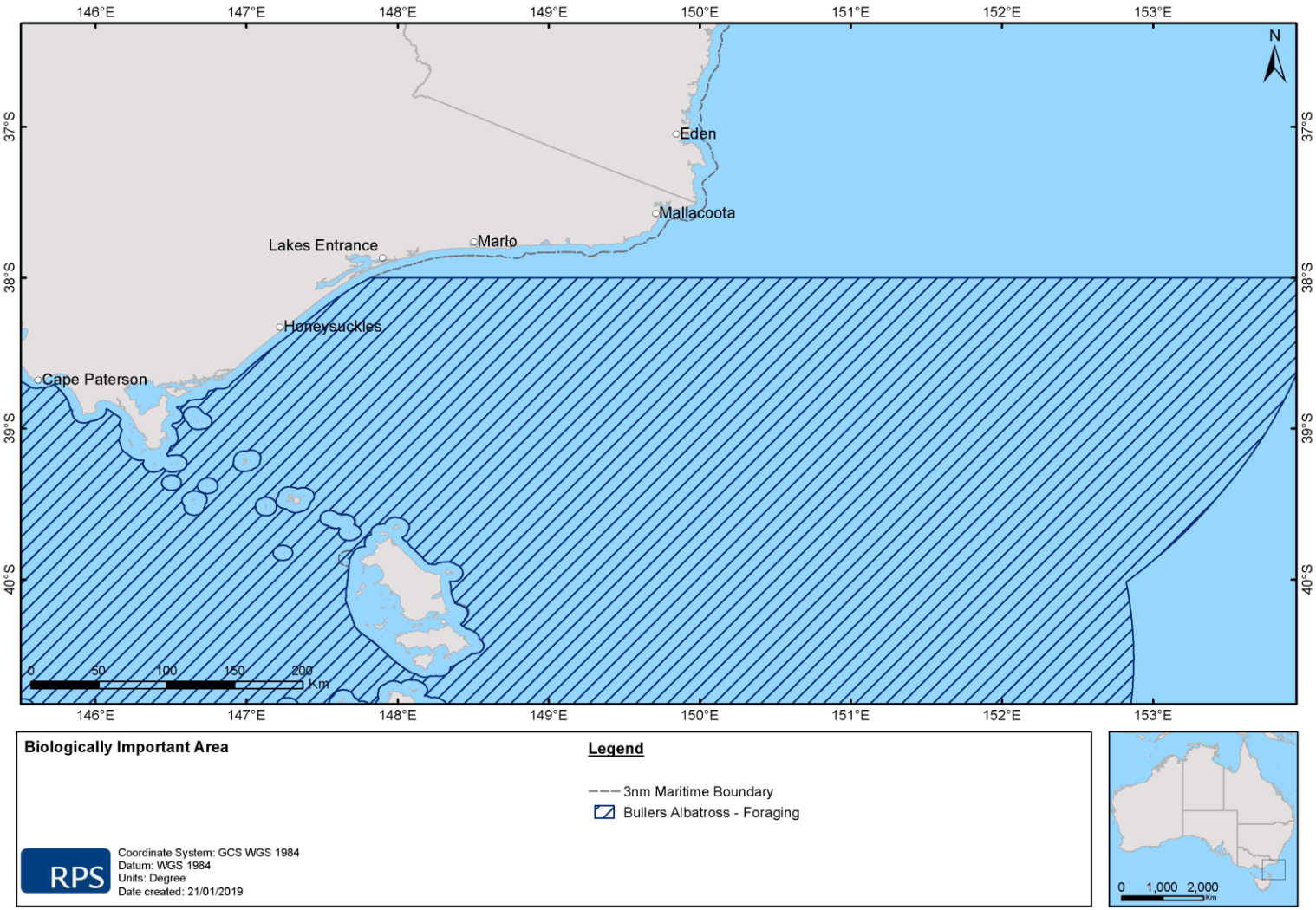


Figure 91 Biologically Important Area for the Bullers Albatross.

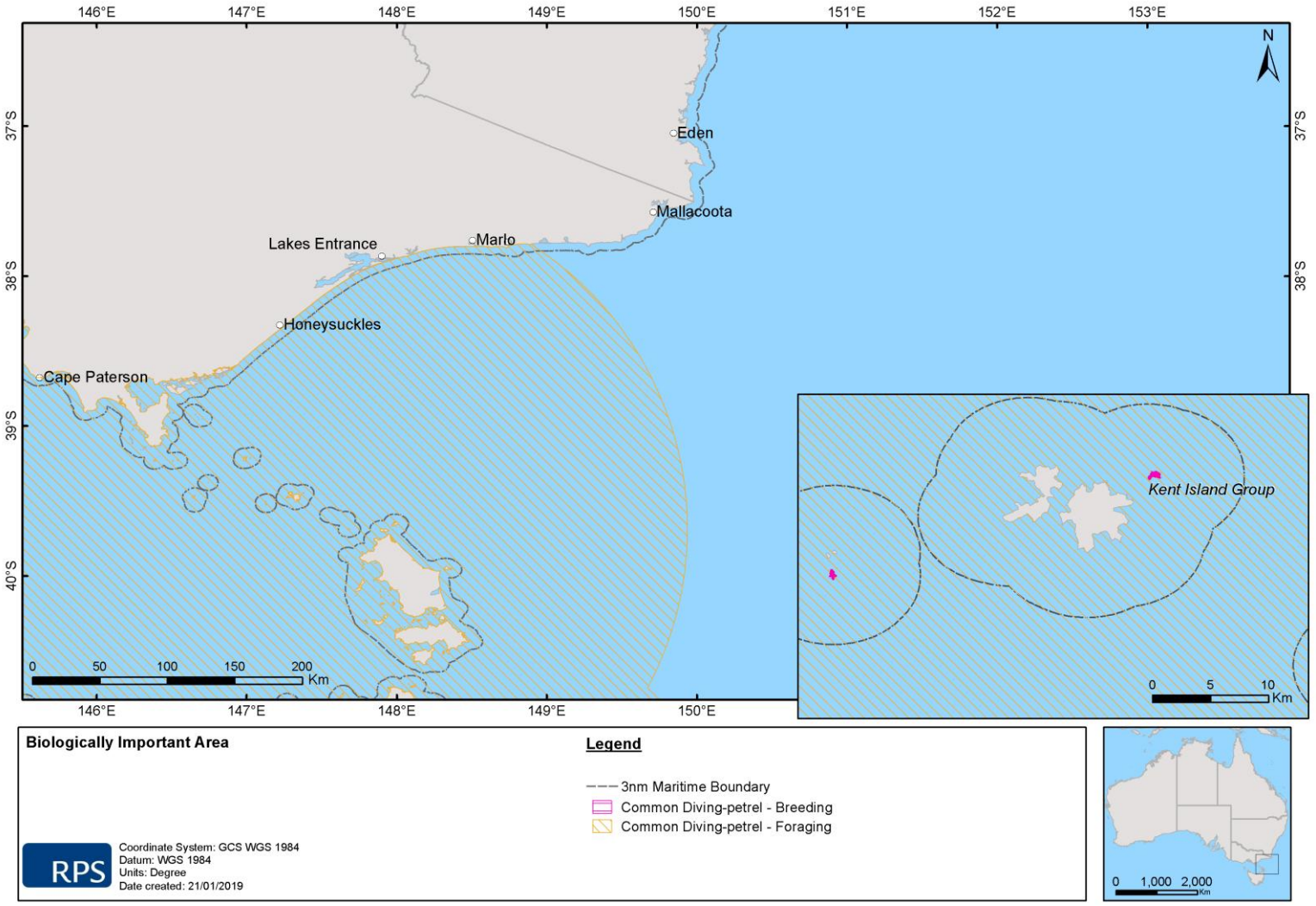


Figure 92 Biologically Important Area for the Common Diving Petrel.

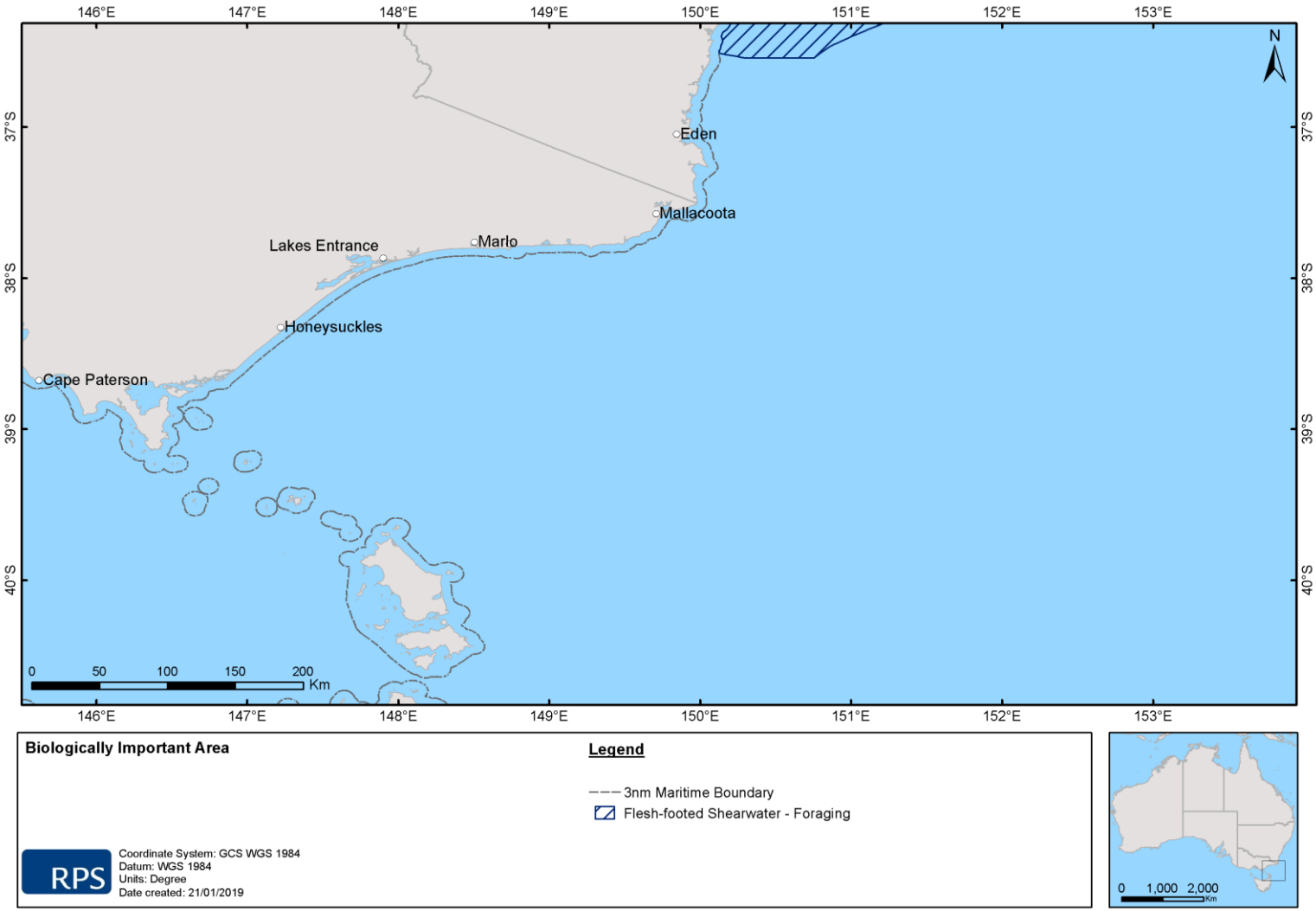


Figure 93 Biologically Important Area for the Flesh-footed Shearwater.

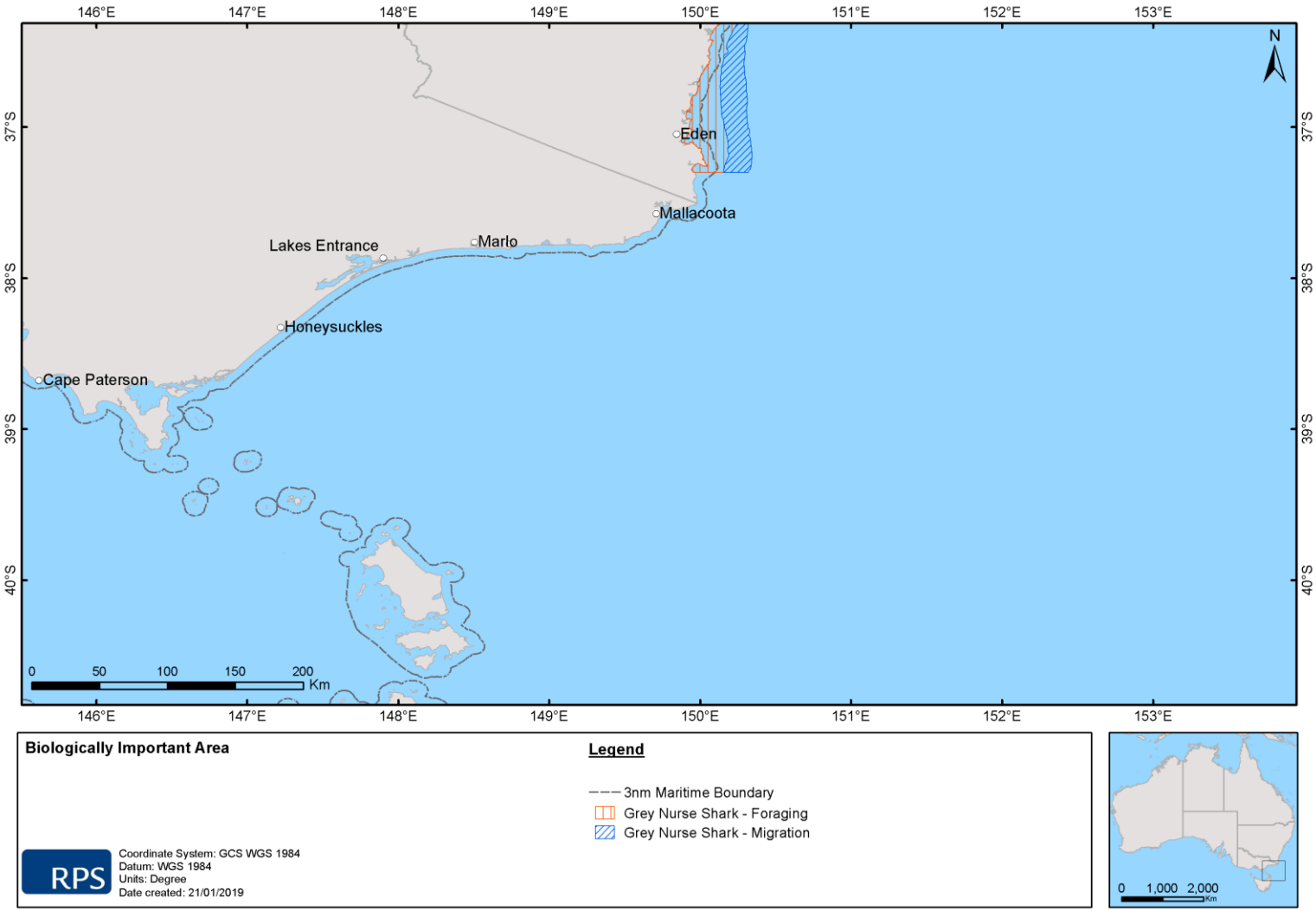


Figure 94 Biologically Important Area for the Grey Nurse Shark.

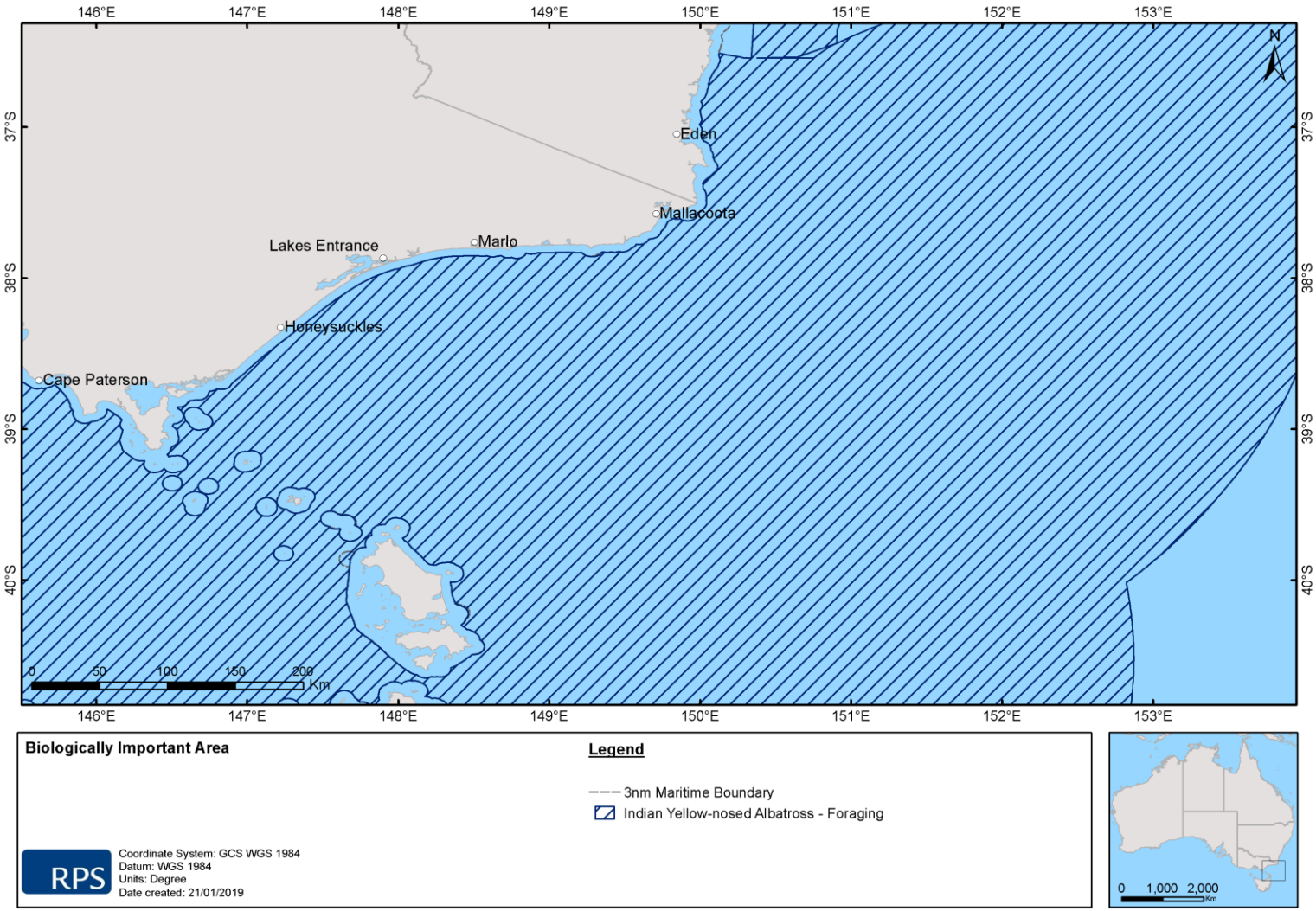


Figure 95 Biologically Important Area for the Indian Yellow-nosed Albatross.

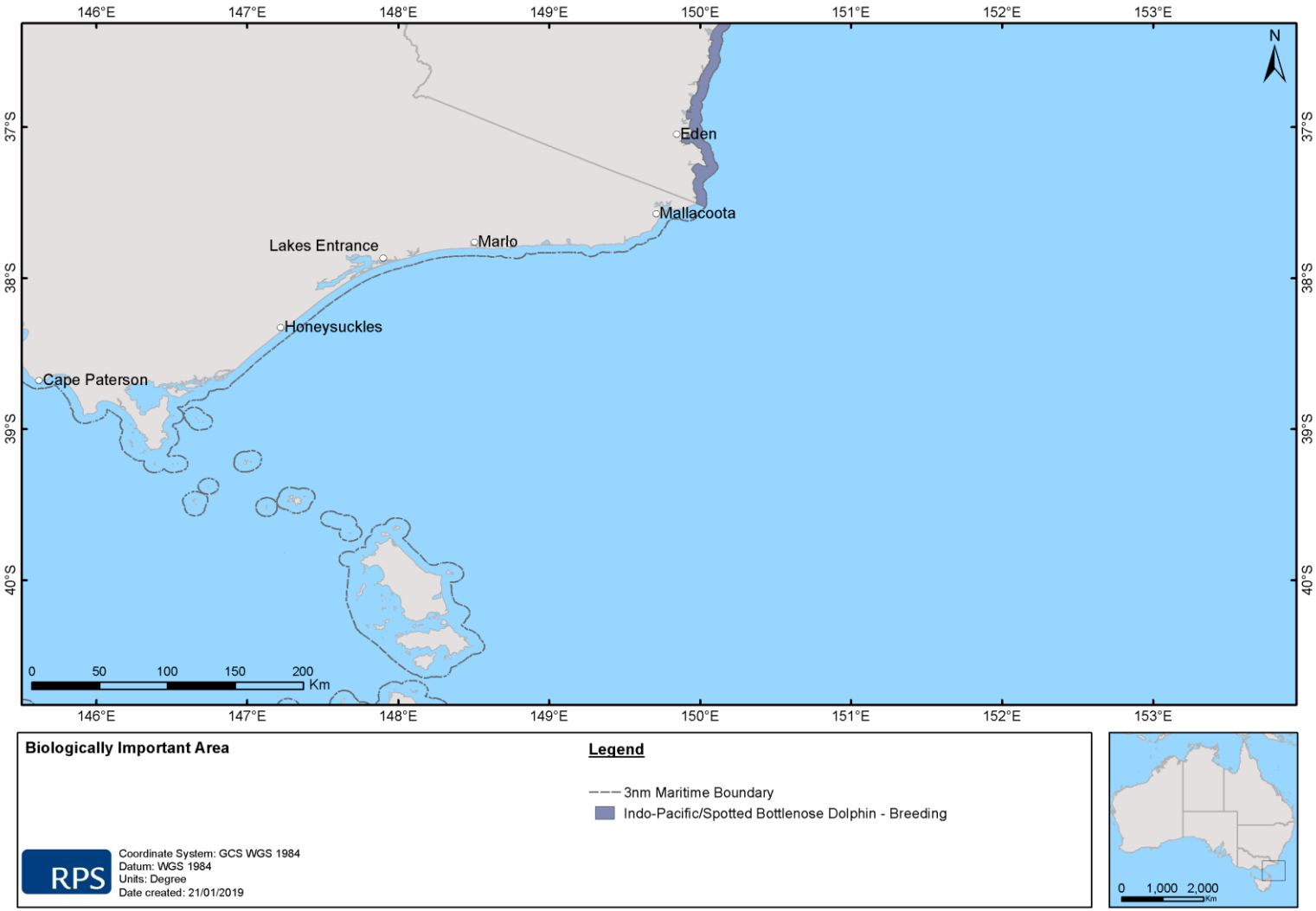


Figure 96 Biologically Important Area for the Indo-pacific Spotted Bottlenose Dolphin.

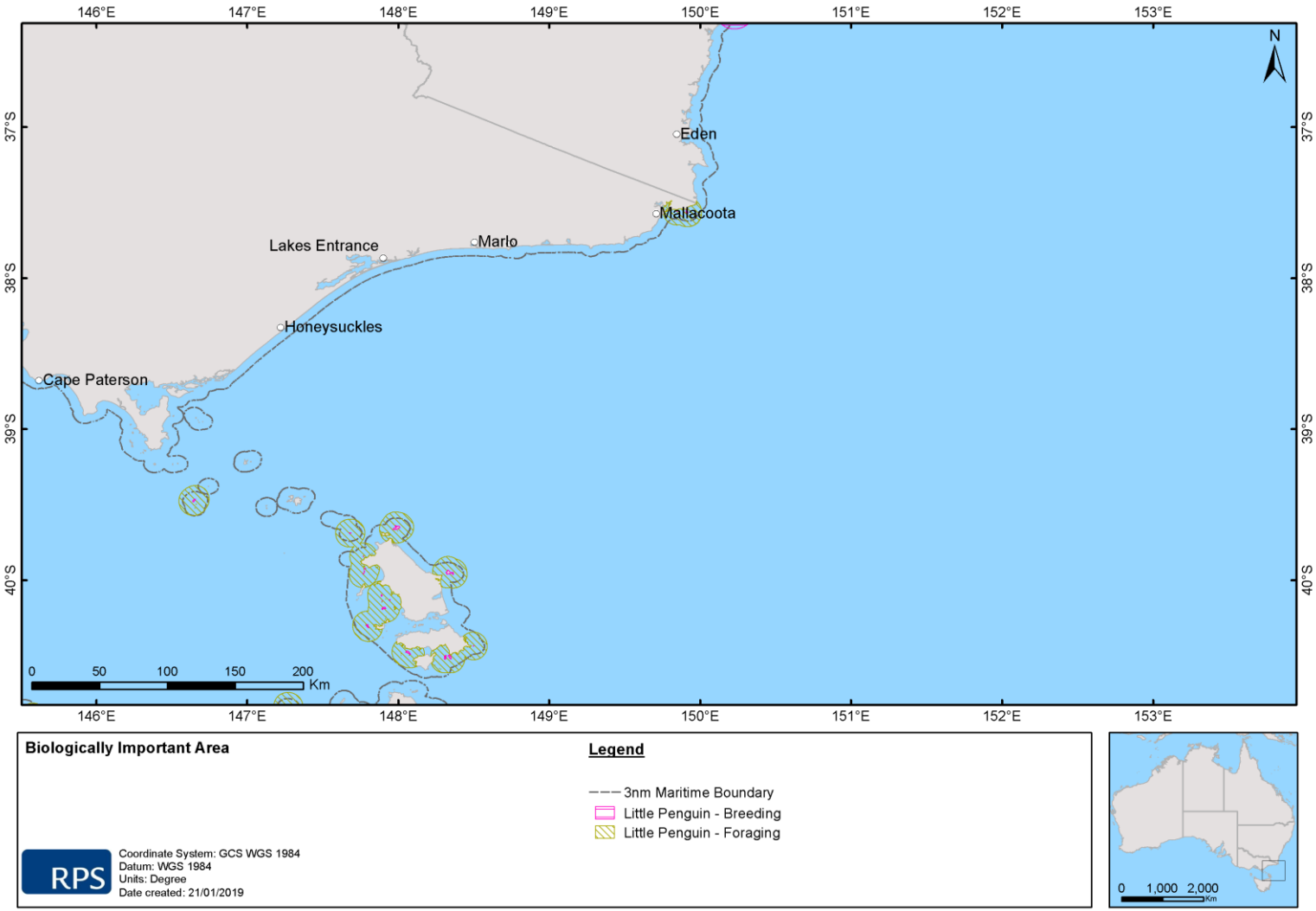


Figure 97 Biologically Important Area for the Little Penguin.

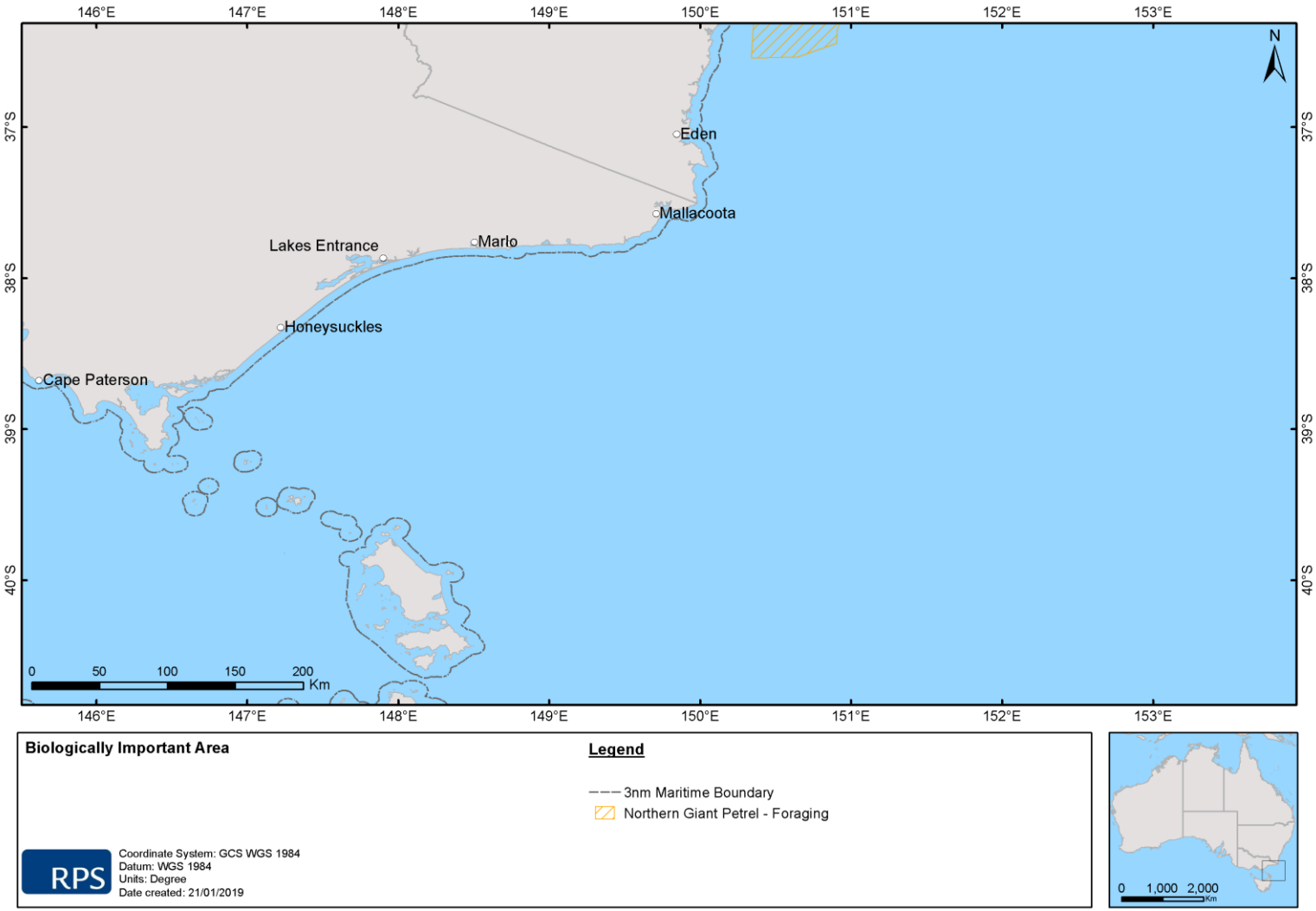


Figure 98 Biologically Important Area for the Northern Giant Petrel.

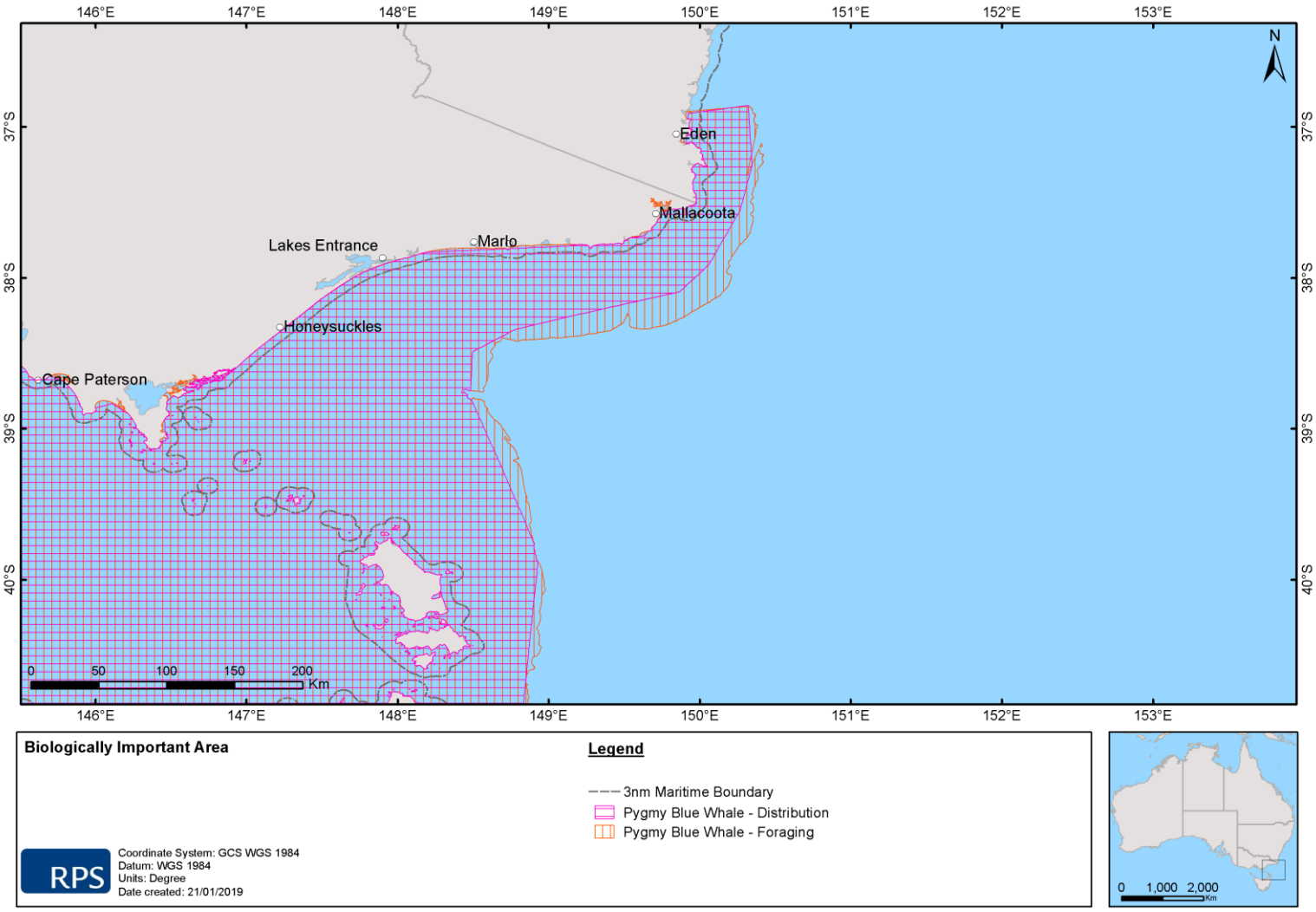


Figure 99 Biologically Important Area for the Pygmy Blue Whale.

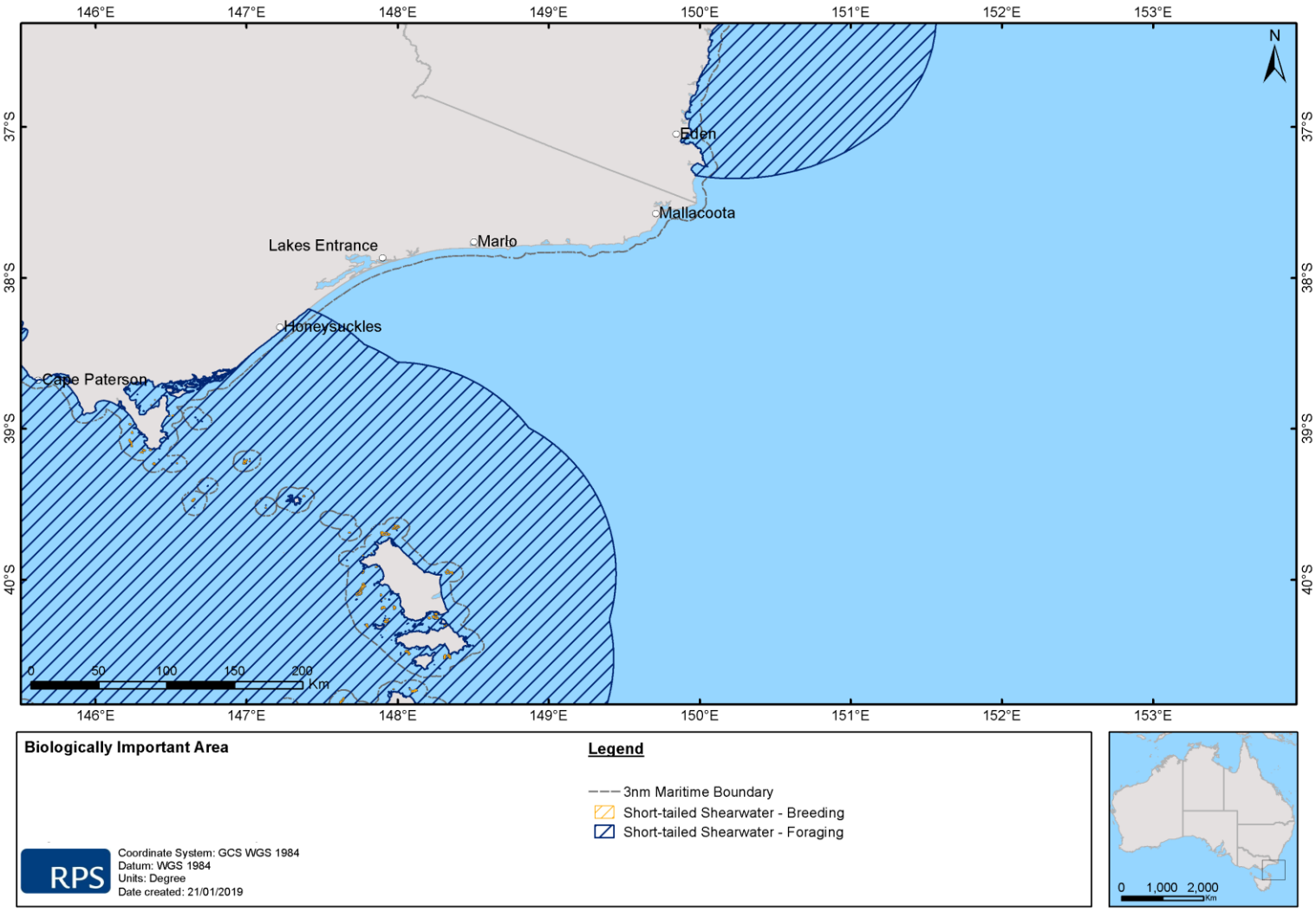


Figure 100 Biologically Important Area for the Short-tailed Shearwater.

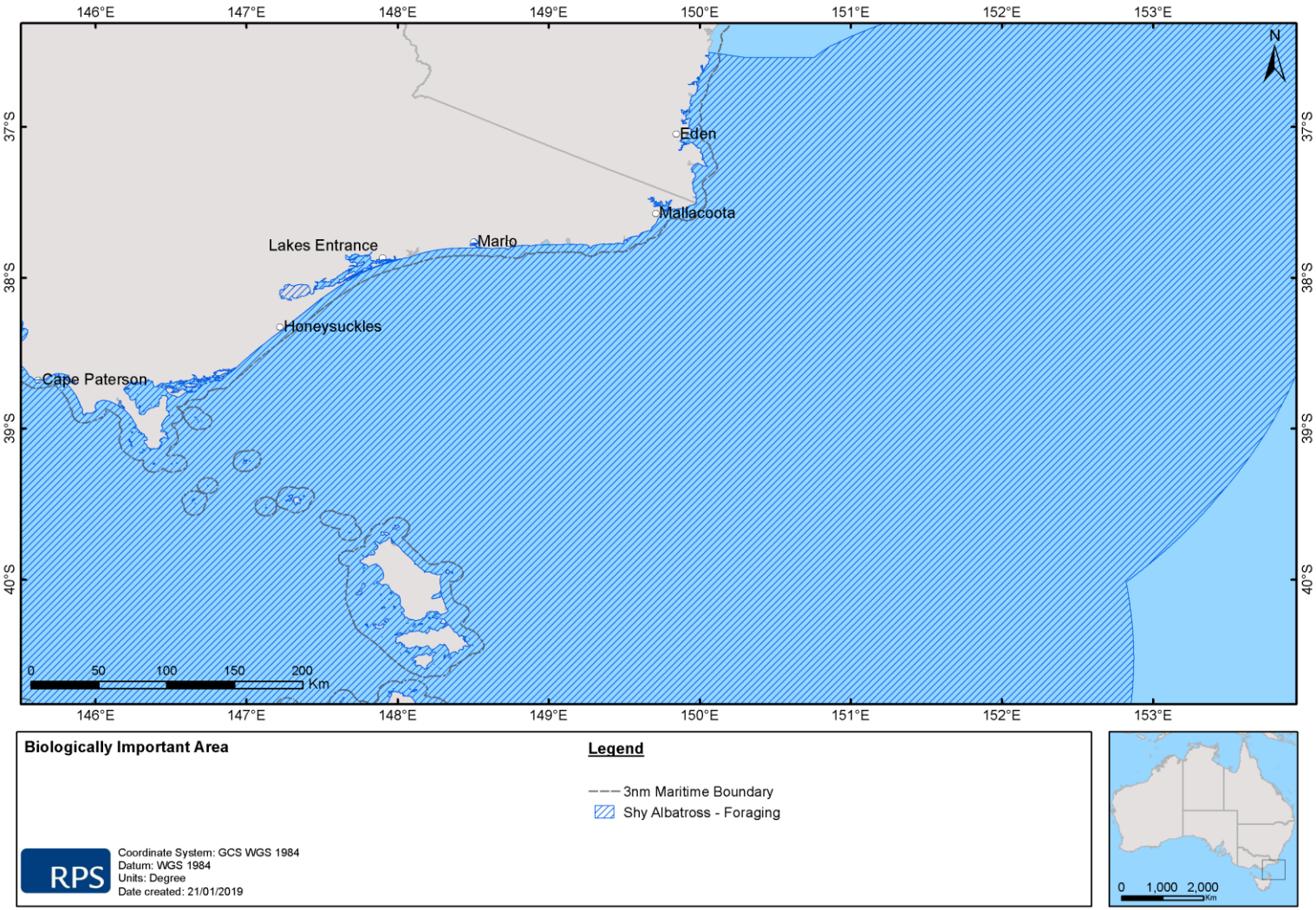


Figure 101 Biologically Important Area for the Shy Albatross.

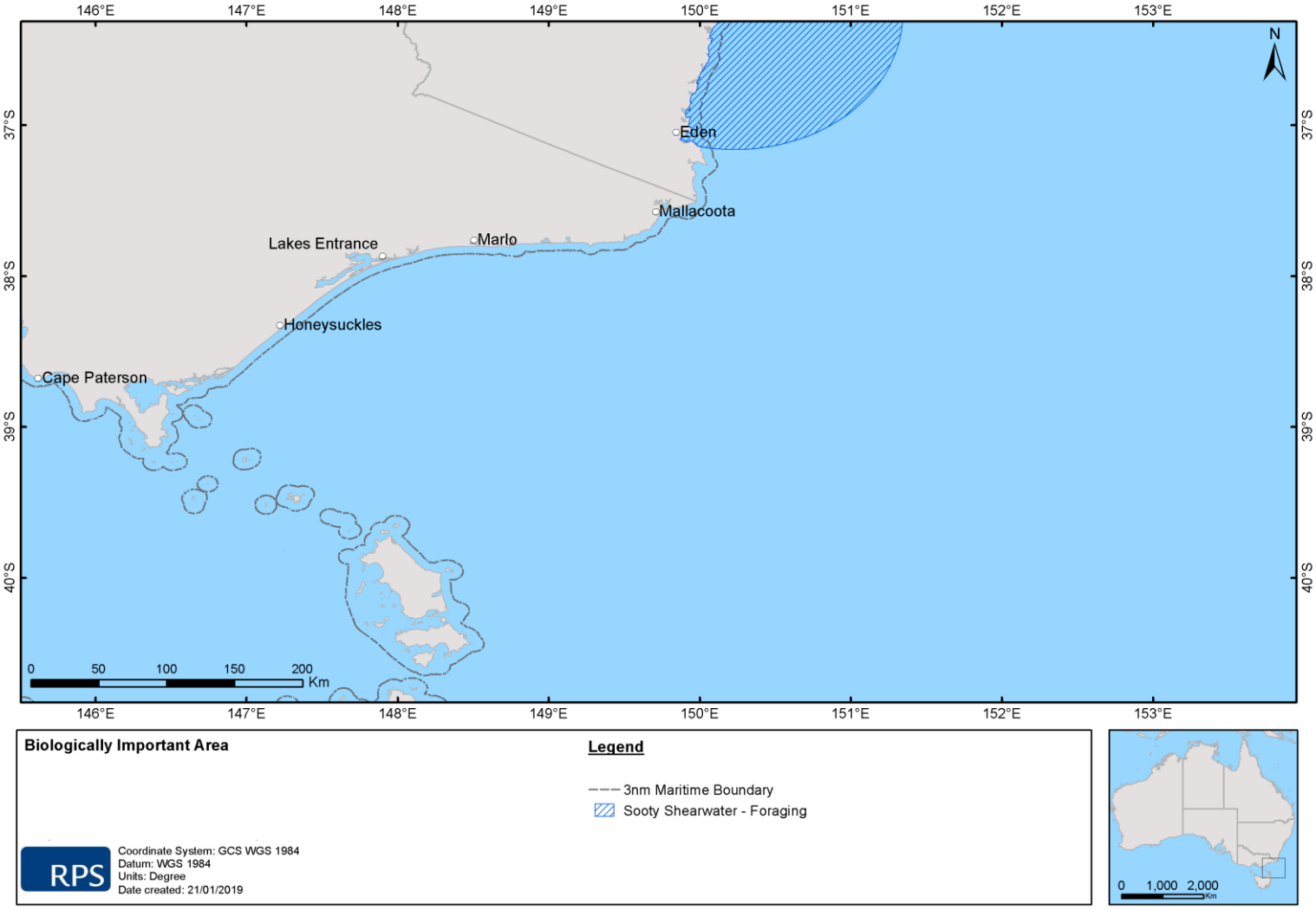


Figure 102 Biologically Important Area for the Sooty Shearwater.

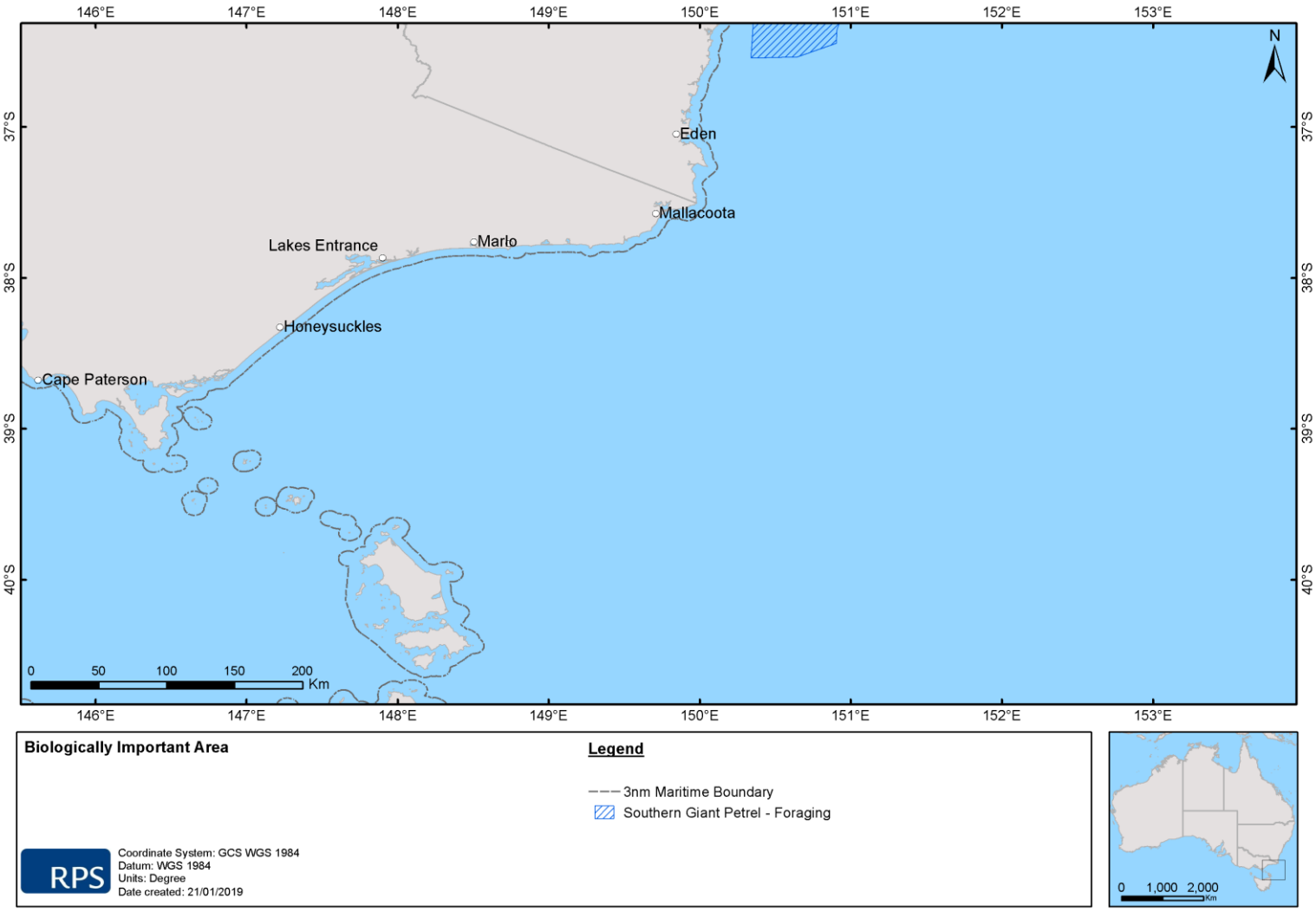


Figure 103 Biologically Important Area for the Southern Giant Petrel.

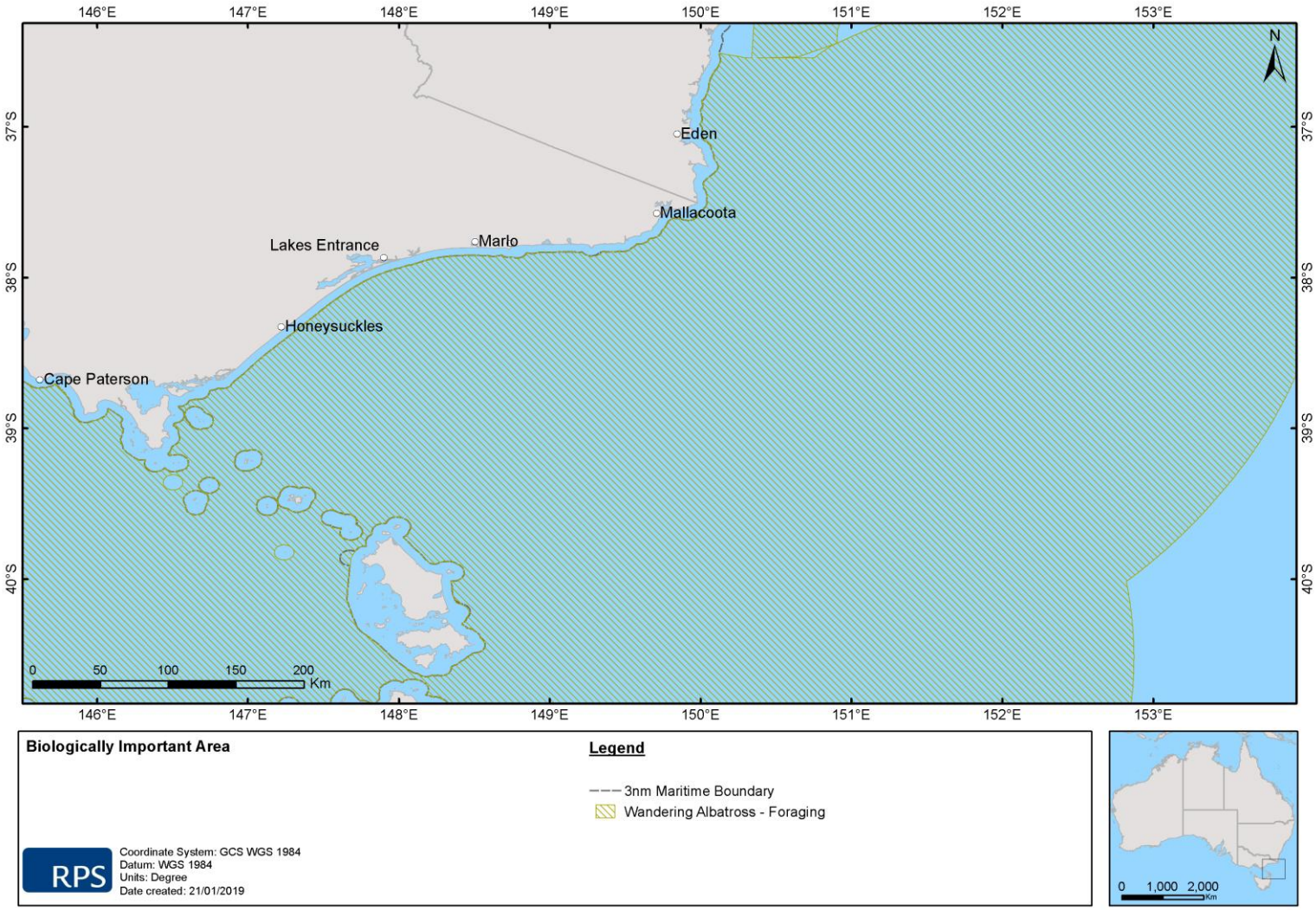


Figure 104 Biologically Important Area for the Wandering Albatross.

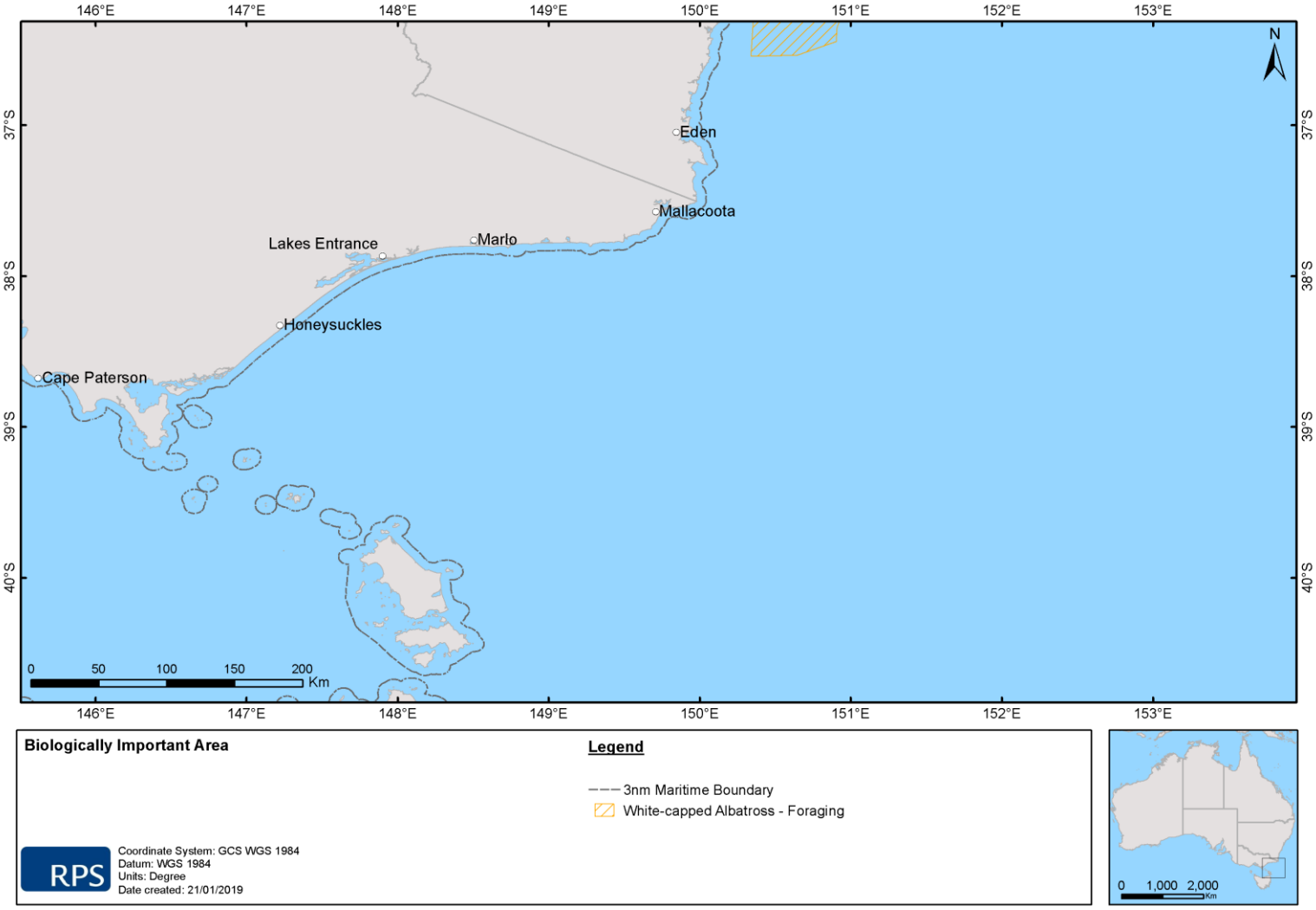


Figure 105 Biologically Important Area for the White-capped Albatross.

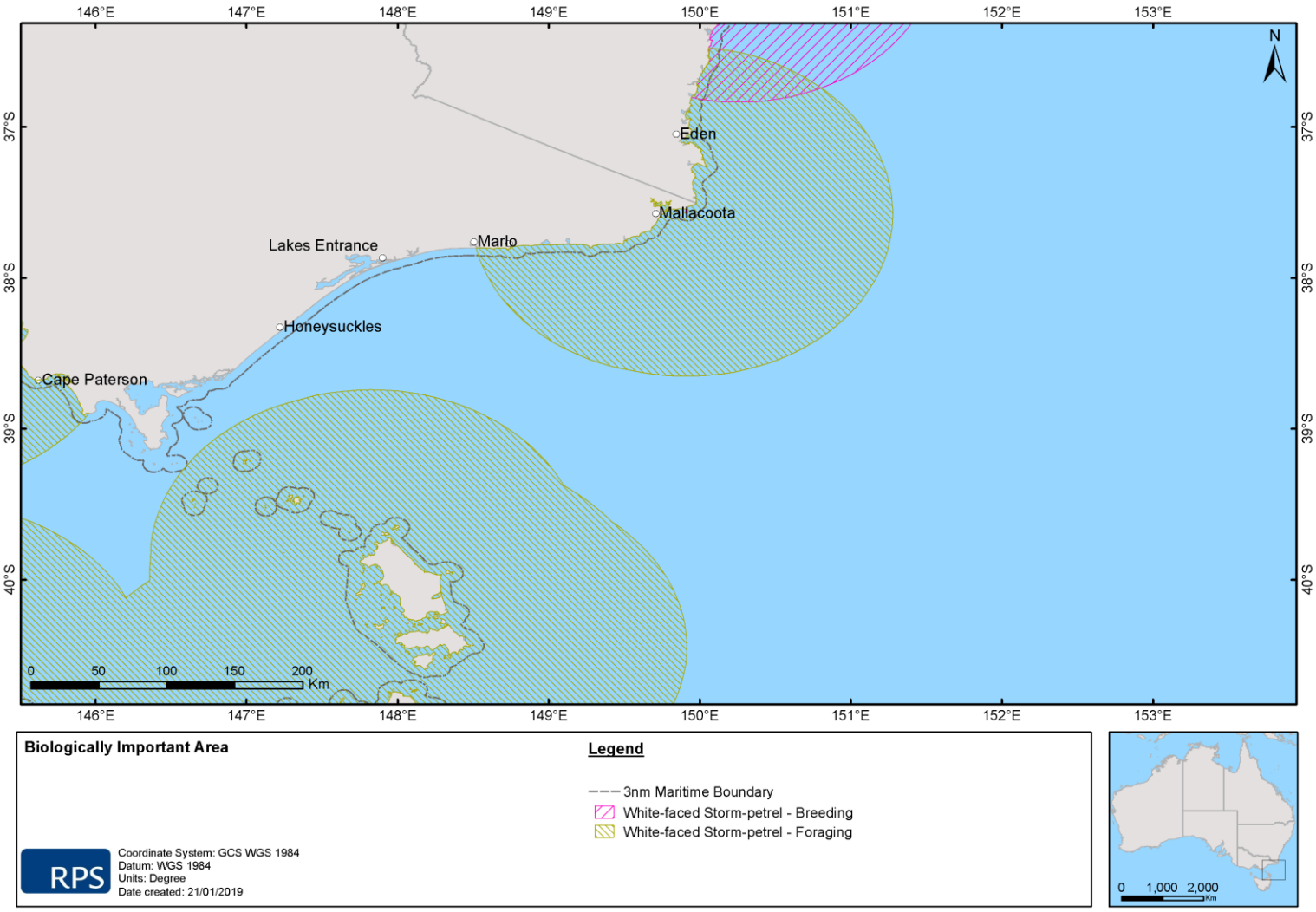


Figure 106 Biologically Important Area for the White-faced Storm Petrel.

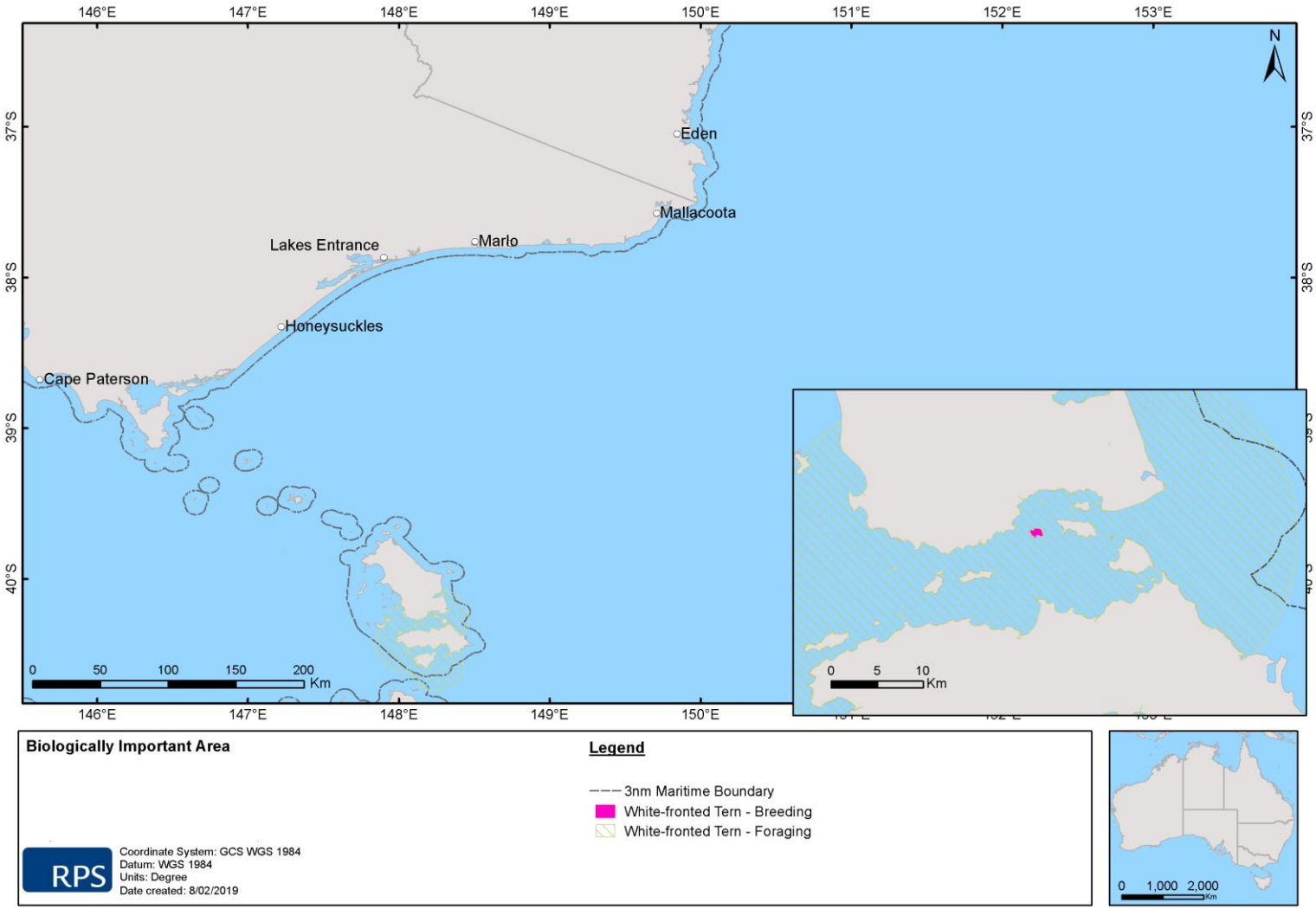
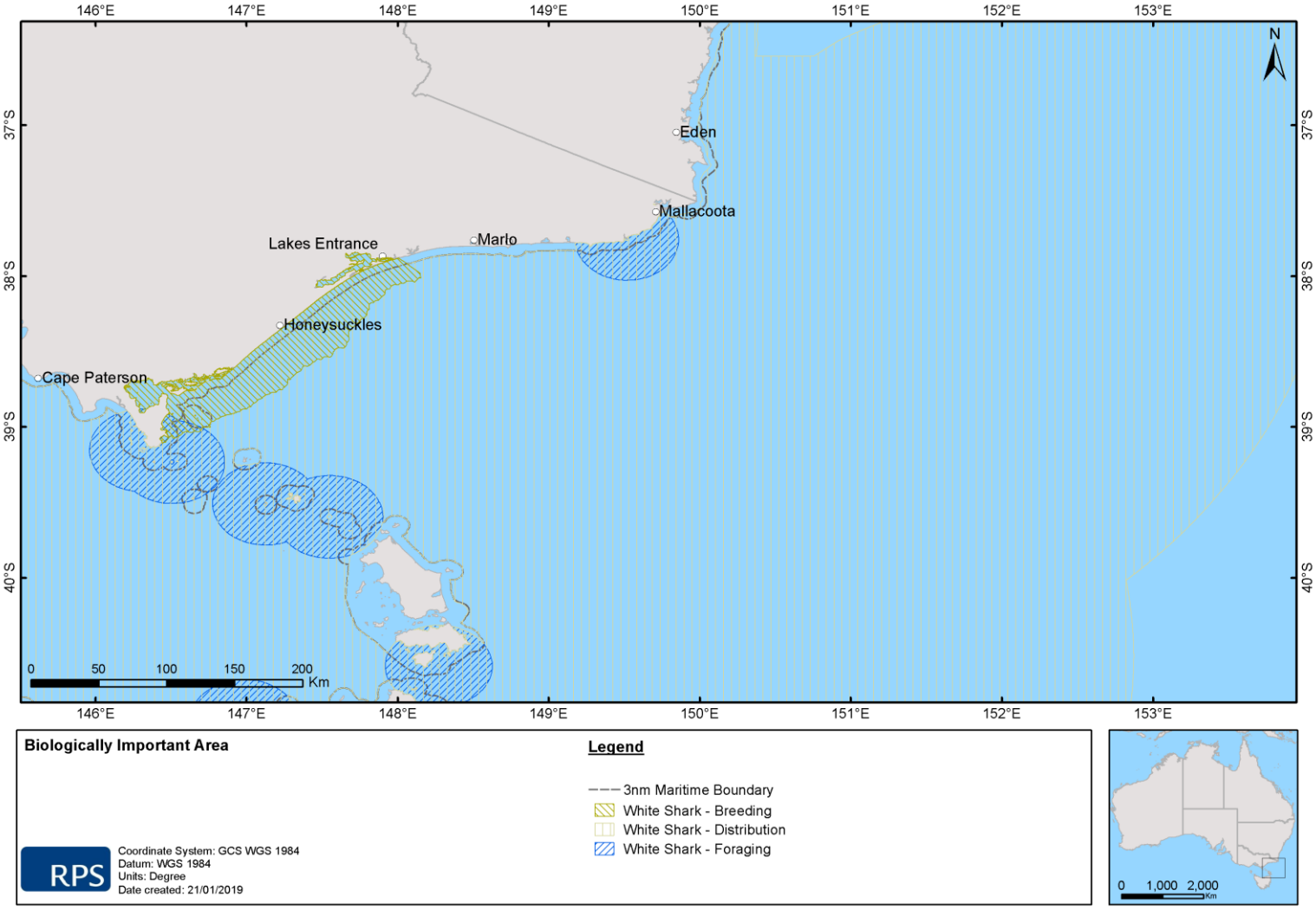


Figure 107 Biologically Important Area for the White-fronted Tern.



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Appendix J: Gippsland Basin Decommissioning Campaign #1 Acoustic Modelling for Assessing Marine Fauna Sound Exposures

Gippsland Basin Decommissioning Campaign 1

Acoustic Modelling for Assessing Marine Fauna Sound Exposures

JASCO Applied Sciences (Australia) Pty Ltd

11 September 2024

Submitted to:

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Executive Summary

JASCO Applied Sciences (JASCO) performed a modelling study of underwater sound levels associated with the decommissioning campaign in the Gippsland Basin proposed by Esso Australia Pty Ltd (Esso). This modelling study considers the activities involved with the decommissioning operations. These include a heavy lift vessel (HLV) under dynamic positioning (DP) and in transit, a construction support vessel (CSV) under DP, a platform support vessel (PSV), a tug/towed barge combination and a remotely operated vehicle (ROV) equipped with cutting tools. *Allseas Pioneering Spirit* and *Fortitude* are planned to be used as the HLV and CSV respectively, whilst the *Allseas Alegria*, *MMA Mermaid Cove* and the *Cashman Equipment Corp. Miss Hannah* were chosen for modelling the PSV, tug and barge respectively. The vessels were modelled in 9 scenarios across 4 different areas: the Dolphin Facility, the Kingfish A Facility, and two transfer locations near the shore west of the facilities.

The modelling study specifically assessed distances from operations where underwater sound levels reached thresholds corresponding to behavioural response, impairment (temporary reduction in hearing sensitivity or TTS) and injury (permanent threshold shift or PTS). The animals considered here included low-, high-, and very high-frequency cetaceans, phocid and otariid seals, fish (including fish larvae and eggs), and sea turtles.

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

The SPL metric is the root-mean-square pressure level over a stated frequency band over a specified time window. In this study, for continuous noise, a time window of 1 s was used.

In this report, to evaluate the potential for accumulated sound exposure levels (SEL), the duration of the SEL accumulation was defined as integrated over a 24-hour period. The SEL_{24h} is a cumulative metric that reflects the dosimetric impact of noise levels within 24 hours based on the assumption that an animal is consistently exposed to such noise levels at a fixed position. The corresponding SEL_{24h} radii represent an unlikely worst-case scenario. More realistically, marine mammals (as well as fish and turtles) would not stay in the same location for 24 hours. Therefore, a reported radius for SEL_{24h} criteria does not mean that marine fauna travelling within this radius of the source will be injured, but rather that an animal could be exposed to the sound level associated with impairment if it remained in that location for 24 hours.

The key results of this acoustic modelling study are summarised in the marine mammal, sea turtle and fish sections below. Maps are provided in the report to assist with contextualising tabulated distances.

Marine mammals

The maximum distances to the NOAA (2019) marine mammal behavioural response criterion of 120 dB re 1 µPa (SPL) ranged between 5.71 km (Scenario 1) and 25.1 km (Scenario 7) (Table 1). Low-frequency cetaceans (LFC) is the marine mammal group whose TTS and PTS ranges are the farthest in all scenarios (except for its PTS range in Scenario 1, where very-high-frequency cetaceans had the farthest PTS range at 0.07 km). For TTS, the maximum distances for accumulated SEL_{24h} criteria for low-frequency cetaceans were between 0.02 km (Scenarios 8 and 9) and 6.1 km (Scenario 6). For PTS, the maximum distances for accumulated SEL_{24h} criteria from Southall et al. (2019) varied between distances less than 20 m (Scenario 8 and 9) and 0.31 km (in Scenario 4).

Table 1. Summary of maximum (R_{max}) horizontal distances (in km), from all scenarios considered, to the marine mammal behavioural response criterion of 120 dB re 1 µPa (SPL) and frequency-weighted LF-cetacean SEL_{24h} TTS and PTS thresholds (179 and 199 dB re 1 µPa²·s, respectively) based on Southall et al. (2019). Ensonified areas are also provided for TTS and PTS thresholds.

Scenario Number	Description	Marine Mammal Behavioural Response - SPL [a] R_{max} (km)	LF-cetacean TTS - SEL_{24h} [b]		LF-cetacean PTS - SEL_{24h} [b]	
			R_{max} (km)	Area (km²)	R_{max} (km)	Area (km²)
1	CSV and ROV cutter at Dolphin	5.71	1.54	7.01	0.05	0.01
2	HLV at Kingfish A	19.6	3.97	46.4	0.14	0.05
3	HLV, CSV and ROV cutter at Kingfish A	20.6	4.45	56.5	0.24	0.08
4	HLV, CSV and PSV at Transfer Location A	20.9	4.78	64.2	0.31	0.20
5	HLV, CSV and PSV at Transfer Location B	23.4	4.71	65.1	0.28	0.11
6	HLV and Tug/Towed Barge at Transfer Location A	25.0	6.08	93.2	0.41	0.45
7	HLV and Tug/Towed Barge at Transfer Location B	25.1	6.01	103	0.31	0.25
8	HLV transiting from Kingfish A to Transfer Location A	9.23	0.02	4.52	–	–
9	HLV transiting from Kingfish A to Transfer Location B	8.34	0.02	4.98	–	–

Noise exposure criteria: [a] NOAA (2019) and [b] Southall et al. (2019).
A dash indicates the level was not reached within the limits of the modelled resolution (20 m).

Sea turtles

The threshold criteria from Finneran et al. (2017) were used to assess PTS and TTS for sea turtles. Across all scenarios, the maximum distances to threshold were 20 m for PTS and 380 m for TTS.

Fish

Sound produced by the HLV and support vessels reached the sound levels associated with recoverable injury and TTS for fish species with a swim bladder involved in hearing that are in close proximity to the sound sources (Table 2). But in order for the thresholds to be exceeded, the fish must remain within those distances for either 48 h or 12 h, respectively.

Table 2. Summary: Maximum (R_{max}) horizontal distances (in km), from all scenarios considered, to sound pressure level (SPL) criteria based on Popper et al. (2014).

Scenario Number	Description	Maximum (R_{max}) distance to threshold (km)	
		Recoverable injury (48 h)	TTS (12 h)
1	CSV and ROV cutter at Dolphin	0.02	0.02
2	HLV at Kingfish A	0.02	0.05
3	HLV, CSV and ROV cutter at Kingfish A	0.02	0.06
4	HLV, CSV and PSV at Transfer Location A	0.02	0.08
5	HLV, CSV and PSV at Transfer Location B	–	0.05
6	HLV and Tug/Towed Barge at Transfer Location A	0.02	0.19
7	HLV and Tug/Towed Barge at Transfer Location B	–	0.15
8	HLV transiting from Kingfish A to Transfer Location A	–	0.03
9	HLV transiting from Kingfish A to Transfer Location B	–	0.02

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

1. Introduction

JASCO Applied Sciences (JASCO) performed a modelling study of underwater acoustic source levels associated with Esso Australia's (Esso) decommissioning operations in the Gippsland Basin. The modelling study specifically predicted the distances from the operating vessels at which underwater sound levels reached noise effect thresholds and criteria. The marine mammal thresholds include levels associated with behavioural response, permanent threshold shift (PTS) and temporary threshold shift (TTS). The marine mammal functional hearing groups considered were low-, high-, and very high-frequency cetaceans, and phocid and otariid seals. Thresholds for fish include recoverable injury and TTS, and the thresholds for sea turtles include PTS and TTS. Estimated underwater acoustic levels are presented as sound pressure levels (SPL, L_p), and accumulated sound exposure levels (over 24 hours) (SEL_{24h}, $L_{E,24h}$), as appropriate for non-impulsive (continuous) noise sources.

SEL_{24h} is a cumulative metric that reflects the dosimetric effect of noise levels within 24 hours, based on the assumption that a receiver (e.g., an animal) is consistently exposed to such noise levels at a fixed position. More realistically, marine mammals, fish, and sea turtles would not stay in the same location for 24 hours (especially in the absence of location-specific habitat) but rather a shorter period, depending on the animal's behaviour and the source's proximity and movements. Therefore, a reported radius for the SEL_{24h} criteria does not mean that marine fauna travelling within this radius of the source will be impaired, but rather that an animal could be exposed to the sound level associated with impairment (either permanent threshold shift (PTS) or temporary threshold shift (TTS)) if it remained within the ensonified area for 24 hours.

This report is further structured as follows. The remainder of Section 1 provides details on the scenarios considered for modelling. Section 2 explains the metrics used to represent underwater acoustic fields and the effect criteria considered. Section 3 details the methodology for predicting the source levels and modelling the sound propagation, including the specifications of the considered sound sources and the environmental parameters. Section 4.1 presents the acoustic results as tabulated ranges to thresholds, Section 4.2 provides sound level contour maps. The acoustic modelling results are then discussed in Section 5.

1.1. Modelling Scenarios

For modelling, we considered the Dolphin Facility, the Kingfish A Facility and two transfer locations near the shore west of the facilities. Figure 1 displays an overview of the modelling area showing modelling locations, Biologically Important Areas (BIAs) for southern right whales (*Eubalaena australis*) and pygmy blue whales (*Balaenoptera musculus brevicauda*), and the regional bathymetry. This study considered the following sound-producing activities associated with the decommissioning works:

- *Allseas Pioneering Spirit* as a Heavy Lift Vessel (HLV) under DP and in transit,
- *Allseas Fortitude* as a Construction Support Vessel (CSV) under DP,
- Vessel noise from platform support vessel (PSV) – similar to *Allseas Alegria*,
- Vessel noise from tug/towed barge under DP – similar to *MMA Mermaid Cove* and *Cashman Equipment Corp. Miss Hannah*, and
- Cutting tool noise from a remotely operated vehicle (ROV) performing underwater cutting of subsea infrastructure.

The exact position and orientation of the vessels in modelled scenarios is not known and will likely vary due to operational conditions and requirements. Therefore, for scenarios involving multiple adjacent sources in simultaneous operation, the best estimates of the relative geographic positions of the vessels were used, which considers the dimensions of each vessel.

Figure 1 displays an overview of the modelling area showing the modelled sites, the southern right whale BIAs, the pygmy blue whale BIA, and the regional bathymetry. Figures 2 and 3 show the individual modelled sites for all scenarios and Tables 3 and 4 outline the modelling locations and scenarios.

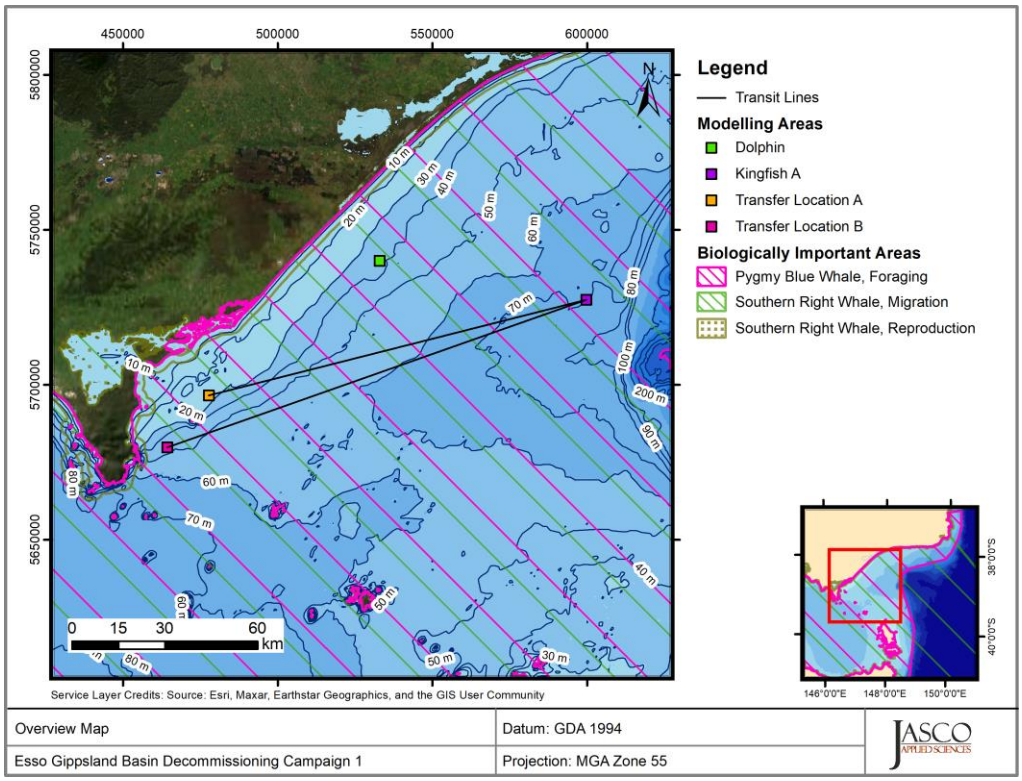

Figure 1. Overview map of the relevant features of the decommissioning campaign in the Gippsland Basin.

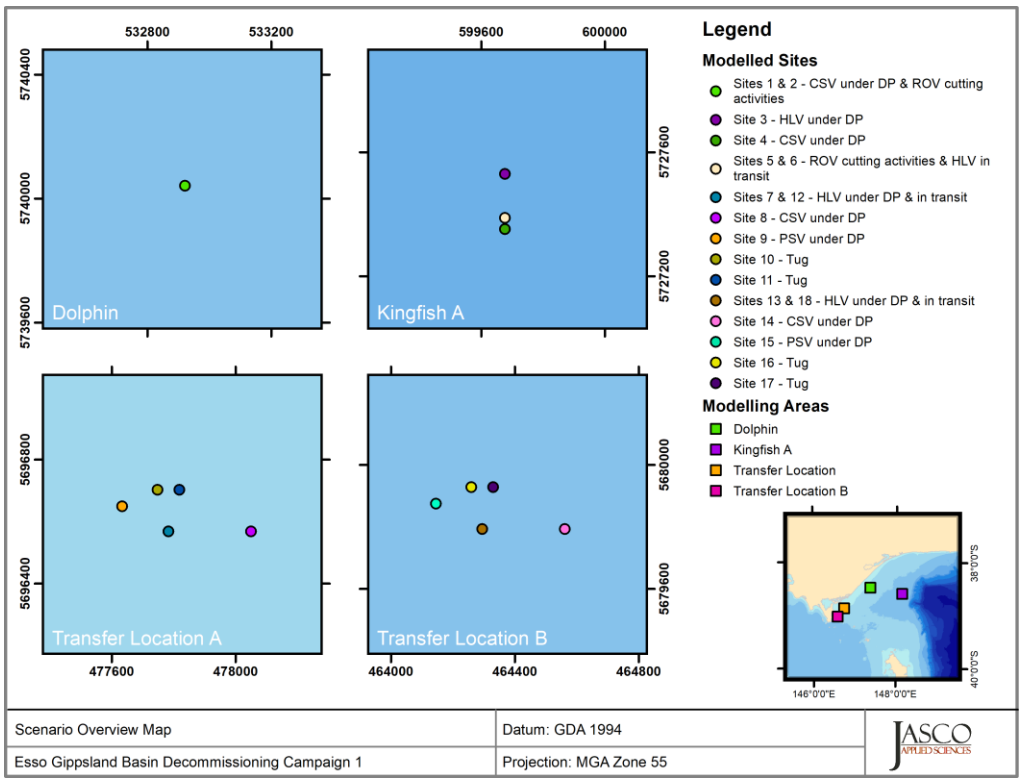

Figure 2. An overview map showing the relative positions of the sites located at the main four areas.

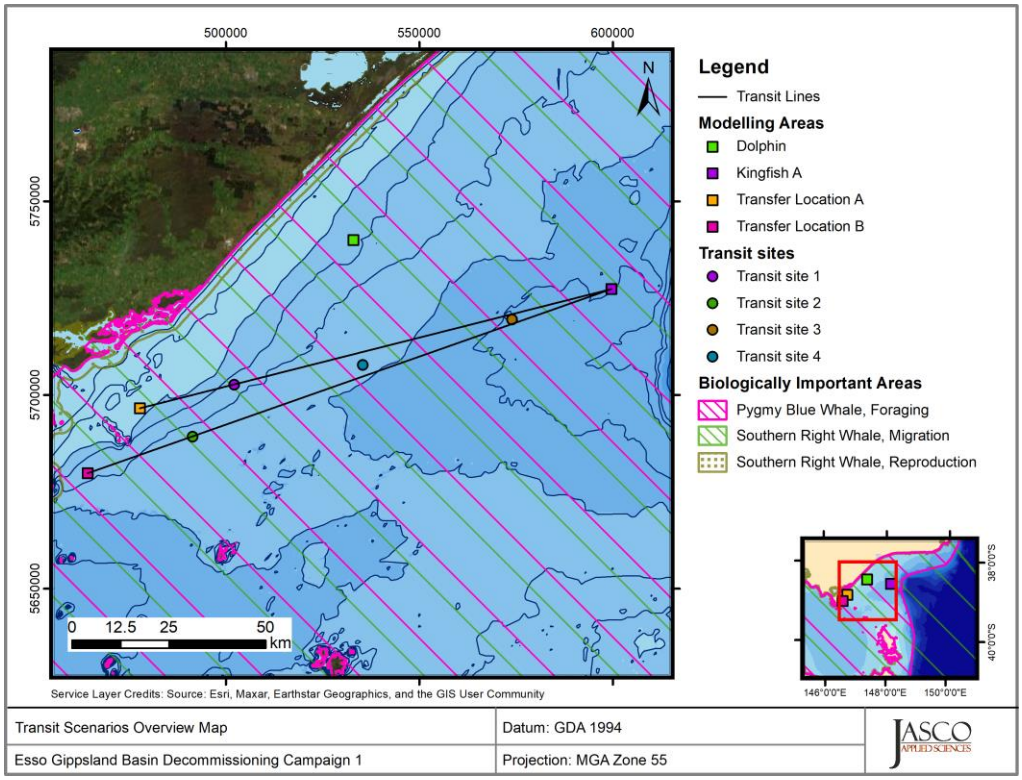

Figure 3. An overview map showing the intermittent sites used for modelling the transit scenarios (8 and 9).

Table 3. Modelled site locations and source information.

Site	Source/Vessel	Latitude (°S)	Longitude (°E)	MGA[1] Zone 55		Water depth (m)
				X (m)	Y (m)	
1	Allseas Fortitude	38° 29’ 14.49”	147° 22’ 38.92”	532921	5740042	38
2	ROV Cutter	38° 29’ 14.49”	147° 22’ 38.92”	532921	5740042	38
3	Allseas Pioneering Spirit	38° 35’ 42.43”	148° 08’ 40.54”	599676	5727531	69
4	Allseas Fortitude	38° 35’ 48.20”	148° 08’ 40.63”	599676	5727353	70
5	ROV Cutter	38° 35’ 47.04”	148° 08’ 40.61”	599676	5727389	69
6	Allseas Pioneering Spirit	38° 35’ 47.04”	148° 08’ 40.61”	599676	5727389	69
7	Allseas Pioneering Spirit	38° 52’ 46.08”	146° 44’ 37.90”	477783	5696568	26
8	Allseas Fortitude	38° 52’ 46.10”	146° 44’ 48.96”	478049	5696568	26
9	Allseas Alegria	38° 52' 43.41"	146° 44' 31.70"	477633	5696649	25
10	MMA Mermaid Cove	38° 52' 41.70"	146° 44' 36.46"	477748	5696703	26
11	MMA Mermaid Cove	38° 52' 41.71"	146° 44' 39.37"	477818	5696703	26
12	Allseas Pioneering Spirit	38° 52' 46.08"	146° 44' 37.90"	477783	5696568	26
13	Allseas Pioneering Spirit	39° 01' 48.63"	146° 35' 14.93"	464294	5679794	47
14	Allseas Fortitude	39° 01' 48.67"	146° 35' 26.01"	464561	5679794	47
15	Allseas Alegria	39° 01' 45.96"	146° 35' 08.73"	464145	5679876	47
16	MMA Mermaid Cove	39° 01' 44.25"	146° 35' 13.50"	464259	5679929	47
17	MMA Mermaid Cove	39° 01' 44.26"	146° 35' 16.41"	464329	5679929	47
18	Allseas Pioneering Spirit	39° 01' 48.63"	146° 35' 14.93"	464294	5679794	47
19	Allseas Pioneering Spirit	38° 49' 27.11"	147° 01' 29.64"	502162	5702732	47
20	Allseas Pioneering Spirit	38° 56' 42.30"	146° 54' 01.52"	491371	5689313	54
21	Allseas Pioneering Spirit	38° 40' 10.47"	147° 51' 00.17"	573949	5719547	71
22	Allseas Pioneering Spirit	38° 46' 40.64"	147° 24' 25.39"	535357	5707785	56

[1]Map Grid of Australia (MGA)

Table 4. Description of modelled scenarios.

Scenario	Site(s)	Location	Vessel(s)	Operation Description	Operation Time (hours)
1	1, 2	Dolphin Facility	CSV under DP, ROV cutter	CSV and ROV cutter at Dolphin Facility	24
2	3	Kingfish A Facility	HLV under DP	HLV at Kingfish A	24
3	3, 4, 5	Kingfish A Facility	HLV and CSV under DP, ROV cutter	HLV, CSV and ROV cutter at Kingfish A	24
4	7, 8, 9	Transfer Location A	HLV, CSV, PSV all under DP	HLV, CSV and PSV at Transfer Location A	24
5	13, 14, 15	Transfer Location B		HLV, CSV and PSV at Transfer Location B	24
6	7, 10, 11	Transfer Location A	HLV, two tugs all under DP	HLV and Tug/towed barge at Transfer Location A	24
7	13, 16, 17	Transfer Location B		HLV and Tug/towed barge at Transfer Location B	24
8	6, 12, 19 21, 22	Transfer Location A	HLV in transit	HLV transiting from Kingfish A to Transfer Location A	6.8
9	6, 18, 20, 21, 22	Transfer Location B	HLV in transit	HLV transiting from Kingfish A to Transfer Location B	7.7

2. Noise Effect Criteria

To assess the potential effects of a sound-producing activity, it is necessary to first establish exposure criteria (thresholds) for which sound levels may be expected to have an adverse effect on animals. Whether acoustic levels might injure or disturb marine fauna is an active research topic. Since 2007, several expert groups have developed SEL-based assessment approaches for evaluating auditory injury, with key works including Southall et al. (2007), Finneran and Jenkins (2012), Popper et al. (2014), United States National Marine Fisheries Service (NMFS 2018) and Southall et al. (2019). The number of studies that investigate the level of behavioural disturbance to marine fauna by anthropogenic sound has also increased substantially.

Two sound level metrics, SPL and SEL, are commonly used to evaluate non-impulsive noise and its effects on marine life. In this report, the duration of the SEL accumulation is defined as integrated over a 24-hour period. Appropriate subscripts indicate any frequency weighting applied (see Appendix A.4). The acoustic metrics in this report reflect the ANSI and ISO standards for acoustic terminology, ANSI S1.1 (S1.1-2013) and ISO 18405:2017 (2017).

The following thresholds and guidelines for this study were chosen because they represent the best available science:

1. Frequency-weighted accumulated sound exposure levels (SEL; $L_{E,24h}$) from Southall et al. (2019) for the onset of permanent threshold shift (PTS) and temporary threshold shift (TTS) in marine mammals for non-impulsive sound sources.
2. Marine mammal behavioural threshold based on the current interim US National Oceanic and Atmospheric Administration (NOAA) (2019) criterion for marine mammals of 120 dB re 1 µPa (SPL; L_p) for non-impulsive sound sources.
3. Sound exposure guidelines for fish, fish eggs, and larvae (Popper et al. 2014).
4. Frequency-weighted accumulated sound exposure levels (SEL; $L_{E,24h}$) from Finneran et al. (2017) for the onset of permanent threshold shift (PTS) and temporary threshold shift (TTS) in sea turtles.

Section 2.1, along with Appendix A.3 and A.4, expand on the thresholds, guidelines, and sound levels for marine mammals. Section 2.2 expands on the guidelines for fish and sea turtles.

2.1. Marine Mammals

The criteria applied in this study to assess possible effects of non-impulsive noise sources on marine mammals are summarised in Table 5. Cetaceans, phocids, and otariid seals were identified as the marine mammals requiring assessment. Details on thresholds related to auditory threshold shifts or hearing loss and behavioural response are provided in Appendix A.3, with frequency weighting explained in detail in Appendix A.4.

Table 5. Criteria for effects of non-impulsive noise exposure, including vessel noise, for marine mammals: unweighted SPL and weighted SEL_{24h} thresholds.

Hearing group	NOAA (2019)	Southall et al. (2019)	
	Behaviour	PTS onset thresholds (received level)	TTS onset thresholds (received level)
	SPL (L_p; dB re 1 µPa)	Weighted SEL_{24h} ($L_{E,24h}$; dB re 1 µPa²·s)	Weighted SEL_{24h} ($L_{E,24h}$; dB re 1 µPa²·s)
Low-frequency (LF) cetaceans	120	199	179
High-frequency (HF) cetaceans		198	178
Very High-frequency (VHF) cetaceans		173	153
Phocid Seals		201	181
Otariid Seals		219	199

L_p denotes sound pressure level and has a reference value of 1 µPa.
L_E denotes cumulative sound exposure over a 24 h period and has a reference value of 1 µPa²·s.

2.1.1. Behavioural Response

The NOAA continuous noise criterion was selected for this assessment because it represents the most commonly applied behavioural response criterion by regulators. The distances at which behavioural responses could occur are therefore determined by areas ensonified above an unweighted SPL of 120 dB re 1 µPa (NMFS 2014, NOAA 2019). Appendix A.3 provides more information about the development of this criteria. Whilst newer research by Southall et al. (2021) provides recommendations and discusses the nuances of assessing behavioural response, the authors do not recommend new numerical thresholds for onset of behavioural responses for marine mammals.

2.1.2. Injury and Hearing Sensitivity Changes

There are two categories of auditory threshold shifts or hearing loss: permanent threshold shift (PTS), a physical injury to an animal's hearing organs; and temporary threshold shift (TTS), a temporary reduction in an animal's hearing sensitivity as the result of receptor hair cells in the cochlea becoming fatigued.

To assist in assessing the potential for effect on marine mammals, this report applies the criteria recommended by Southall et al. (2019), considering both PTS and TTS (see Table 5). Appendix A.3 provides more information about the Southall et al. (2019) criteria.

2.2. Fish, Sea Turtles, Fish Eggs, and Fish Larvae

In 2006, the Working Group on the Effects of Sound on Fish and Turtles was formed to continue developing noise exposure criteria for fish and sea turtles based on work began by a NOAA panel two years earlier. The Working Group developed guidelines with specific thresholds for different levels of effects for several species groups (Popper et al. 2014). The guidelines define quantitative thresholds for three types of immediate effects:

- Mortality, including injury leading to death;
- Recoverable injury, including injuries unlikely to result in mortality, such as hair cell damage and minor haematoma;

- TTS.

Masking and behavioural effects can be assessed qualitatively, by assessing relative risk rather than by specific sound level thresholds. However, as these depend upon activity-based subjective ranges, these effects are not addressed in this report, and are included in Table 6 for completeness only. Because the presence or absence of a swim bladder has a role in hearing, fish susceptibility to injury from noise exposure depends on the species and the presence and possible role of a swim bladder in hearing. Thus, different thresholds were proposed for fish without a swim bladder (also appropriate for sharks), fish with a swim bladder not used for hearing, and fish that use their swim bladders for hearing. Sea turtles, fish eggs, and fish larvae are considered separately.

Table 6 lists the relevant effects thresholds from Popper et al. (2014) for shipping and continuous noise. Some evidence suggests that fish sensitive to acoustic pressure show a recoverable loss in hearing sensitivity, or injury when exposed to high levels of noise (Scholik and Yan 2002, Amoser and Ladich 2003, Smith et al. 2006); this is reflected in the SPL thresholds for fish with a swim bladder involved in hearing (shaded cells in Table 6). Finneran et al. (2017) presented revised thresholds for sea turtle PTS and TTS onset from continuous noise sources, considering frequency weighted SEL, which have been applied in this study (Table 7).

Table 6. Criteria for vessel noise exposure for fish and sea turtles , adapted from Popper et al. (2014).

Type of animal	Mortality and Potential mortal injury	Impairment			Behaviour
		Recoverable injury	TTS	Masking	
Fish: No swim bladder (particle motion detection)	(N) Low (I) Low (F) Low	(N) Low (I) Low (F) Low	(N) Moderate (I) Low (F) Low	(N) High (I) High (F) Moderate	(N) Moderate (I) Moderate (F) Low
Fish: Swim bladder not involved in hearing (particle motion detection)	(N) Low (I) Low (F) Low	(N) Low (I) Low (F) Low	(N) Moderate (I) Low (F) Low	(N) High (I) High (F) Moderate	(N) Moderate (I) Moderate (F) Low
Fish: Swim bladder involved in hearing (primarily pressure detection)	(N) Low (I) Low (F) Low	170 dB SPL for 48 h	158 dB SPL for 12 h	(N) High (I) High (F) High	(N) High (I) Moderate (F) Low
Sea Turtles	(N) Low (I) Low (F) Low	(N) Low (I) Low (F) Low	(N) Moderate (I) Low (F) Low	(N) High (I) High (F) Moderate	(N) High (I) Moderate (F) Low
Fish eggs and fish larvae	(N) Low (I) Low (F) Low	(N) Low (I) Low (F) Low	(N) Low (I) Low (F) Low	(N) High (I) Moderate (F) Low	(N) Moderate (I) Moderate (F) Low

Sound pressure level dB re 1 µPa.
Relative risk (high, moderate, low) is given for animals at three distances from the source defined in relative terms as near (N) – tens of metres, intermediate (I) – hundreds of metres, and far (F) – thousands of metres.

Table 7. Acoustic effects of continuous noise on sea turtles, weighted SEL_{24h}, Finneran et al. (2017).

PTS onset thresholds (received level)	TTS onset thresholds (received level)
Weighted SEL_{24h} ($L_{E,24h}$; dB re 1 µPa^{2}s)	Weighted SEL_{24h} ($L_{E,24h}$; dB re 1 µPa^{2}s)
220	200

$L_{E,24h}$ denotes cumulative sound exposure over a 24 h period and has a reference value of 1 µPa^{2}s.

3. Methods and Parameters

The modelled sites for the activities considered in this study were located on the continental shelf off the coast of Gippsland near the shelf break (refer to wide regional bathymetry in Appendix B.1.1). The modelled sites were situated in water depths of approximately 25 – 71 m and are considered representative of the vessel activity locations.

To allow for operational flexibility, the sound speed profile considered for the modelling was selected through a sensitivity analysis considering all months of the year. The month of June was found to be the most favourable for sound propagation, resulting in the longest ranges to considered isopleth criteria. As such, June was selected as a conservative choice for modelling. Additional detail can be found in Appendix B.1.2.

The seabed beneath the modelled sites will likely consist of medium/fine sand, marl, and limestone. The geologic and geoacoustic profiles of the seabed were generated using borehole analysis from Holdgate et al. (2003) and Mitchell et al. (2007). Further details on the associated geoacoustic properties used in this modelling study are provided in Appendix B.1.3.

The following sections provide a description of the inputs used for this underwater noise modelling study. The sections are divided into subsections detailing the source inputs for the *Pioneering Spirit*, *Fortitude*, PSV vessel, tug/towed barge, and ROV cutter (Section 3.1) with Sections 3.2–3.3 providing details on the applied modelling techniques and model configuration information.

3.1. Vessel Noise Sources

Underwater sound that radiates from vessels is produced mainly by propeller and thruster cavitation, with a smaller fraction of noise produced by sound transmitted through the hull, such as by engines, gearing, and other mechanical systems. Sound levels tend to be the highest when thrusters are used to position the vessel and when the vessel is transiting at high speeds. A vessel's sound signature depends on the vessel's size, power output, propulsion system (e.g., conventional propellers vs. Voith Schneider propulsion), and the design characteristics of the given system (e.g., blade shape and size). A vessel produces broadband acoustic energy with most of the energy emitted below a few kilohertz. Sound from onboard machinery, particularly sound below 200 Hz, dominates the sound spectrum before cavitation begins (Spence et al. 2007).

Figure 4 presents a summary plot of all considered source spectra for comparison purposes. The source spectra plot shows the distribution of sound across the decidecade frequency bands that the modelling considers. Additional detail on the sources is provided in Sections 3.1.1, 3.1.2, 3.1.3.

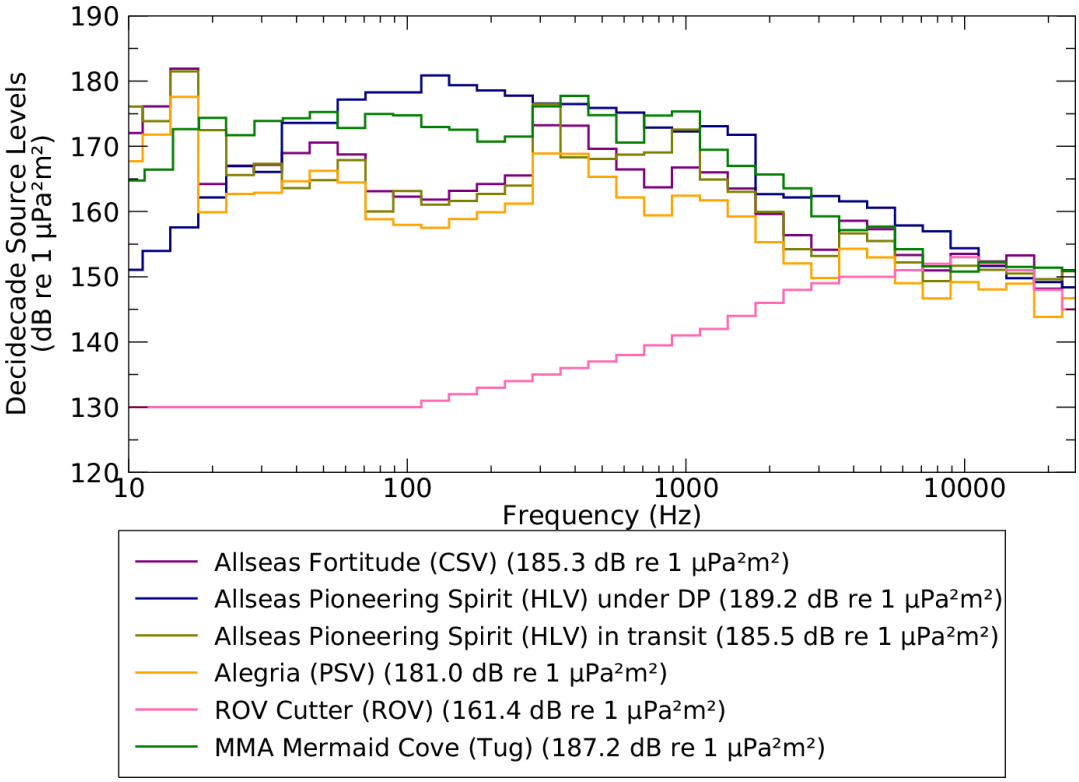

Figure 4. Source level spectra (in decidecade frequency-band) for all sound sources.

3.1.1. Heavy Lift Vessel (HLV)

The HLV considered for the Esso Gippsland Decommissioning Campaign is the *Allseas Pioneering Spirit*. The *Allseas Pioneering Spirit* is currently the largest offshore construction vessel, with a lifting capacity of 48,000 t. It has 72,600 kW of installed thruster power and dimensions 382 m length, 124 m width, max 27 m draft when in operation and max 17 m draft when transporting. While in operation, it will hold position using thrusters under DP. The source depth is modelled as 0.7× draft, which aligns with current international standards, ISO 17208-1 (2016). Therefore, the Pioneering Spirit was modelled with a source depth of 18.9 m while under DP and 11.9 m while in transit.

As there is no publicly available measurements of the source level of the *Pioneering Spirit*, the source levels of the *Allseas Pioneering Spirit* under DP had been estimated using the source levels associated with the *Allseas Solitaire*. The *Solitaire's* source level and spectrum was previously measured during the installation of the *Nord Stream 2* pipeline as part of a monitoring study presented in Tougaard and Griffiths (2020). The *Solitaire* has a maximum installed thruster power of 55,500 kW, and the median broadband source level from several measurements for the *Solitaire* was 188.0 dB re 1 µPa²m²s.

To account for the difference in thruster power, the source levels of the *Solitaire* was scaled by the difference in maximum installed thruster power following Equation (1).

$$\mathrm{SL} = \mathrm{SL}_{\mathrm{ref}} + 10\log_{10}\left(\frac{P}{P_{surrogate}}\right) \quad (1)$$

Hence, the broadband (10 Hz to 25 kHz) source level (BBSL) of the *Pioneering Spirit* while under DP was modelled as 189.2 dB re 1 µPa²m²s. The final source spectrum is shown below in Figure 5.

Publicly available noise measurements of *Pioneering Spirit* whilst in transit were not available at the time of this report; therefore, to estimate the source level of the while in transit a surrogate vessel was considered. Two approaches were considered.

Source levels for transiting cargo/container ships were considered in selecting a surrogate level for the transiting *Pioneering Spirit*. Measurements and noise correlation curves from MacGillivray et al. (2022) were considered as potentially applicable to the *Pioneering Spiri.* However, the propulsion system of the majority these container vessels measured in this study consist of single or twin screw propellers, which differ from the thruster pods of the *Pioneering Spirit*.

The *Skandi Feistein* was considered a potential surrogate, primarily because its propulsion system is composed of thruster pods which are similar to the *Pioneering Spirit.* The source levels of the *Feistein* while in transit were previously measured during a monitoring report conducted by JASCO for Esso (McPherson et al. 2022), which contained source level measurements for the *Feistein* transiting at about 10 knots. 10 knots also aligns with the modelled transit speed for the HLV in Scenarios 8 and 9 (see Table 4). Whilst a smaller vessel, the *Skandi Feistein* was consider a potential useful surrogate, because its thruster pod propulsion system, as opposed to single/twin screw propellers, and because the source level measurements of the *Feistein* were acquired at similar transit speeds.

The average source level for the *Feistein* while in transit, was 174.1 dB re 1 μPa^2m^2s. The *Feistein's* propulsion system contains a single 880 kW bow thruster, a single 880 kW azimuth thruster, and two 2200 kW stern thrusters. While in transit the bow thruster is not operational, a total thrust power of 5280 kW was considered. To account for the difference in thruster power, the source levels of the *Feistein* were scaled following Equation (1). Hence, the broadband (10 Hz to 25 kHz) source level (BBSL) of the *Pioneering Spirit* while transiting was modelled as 185.5 dB re 1 μPa^2m^2s. The source spectrum is shown below in Figure 5.

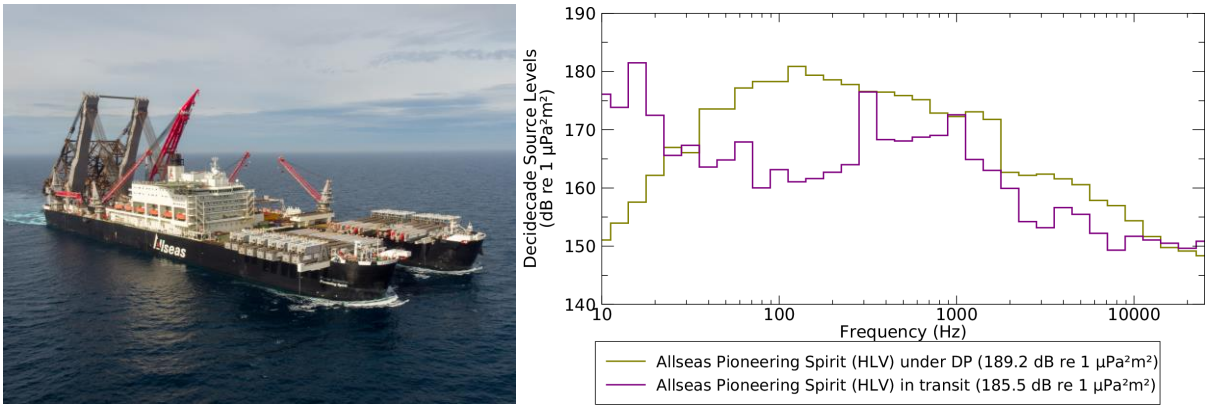

Figure 5. Photo of the *Pioneering Spirit* (left) and the source level spectra (right) (Photo source: Allseas 2024).

3.1.2. Remotely Operated Vehicle (ROV)

The model analysed the operation of an ROV undertaking cutting activities. The source levels were previously used for Cooper Energy in Connell et al. (2021). Published literature available to quantify the underwater sound fields from cutting technologies is very limited.

Pangerc et al. (2016) described the underwater sound measurement data during an underwater diamond wire cutting of a 32" conductor (10 m above seabed in approximately 80 m depth) and found that at lower frequencies, the operation was generally indistinguishable above the background noise; however, the sound that could be associated with the diamond wire cutting was primarily detectable above the background noise at the higher acoustic frequencies (above around 5 kHz). The background noise levels were substantially higher at lower frequencies; therefore, it is likely that the spectra of the noise peaks at lower frequencies, which has been approximated between 2.5 and 20 kHz.

In another study, the US Navy measured underwater sound levels when the diamond saw was cutting caissons for replacing piles at an old fuel pier at Naval Base Point Loma and reported an average SPL for a single cutter at 136.1-141.4 dB re 1 µPa²m²s at 10 m, as reported in Fairweather Science (2018).

In the absence of other information, the information provided in Pangerc et al. (2016) was used to estimate a representative decidecade-band spectra for the diamond wire saw underwater, which was scaled to have a level of 141.4 dB re 1 µPa²m²s at 10 m and then backpropagated using spherical spreading ($20\,log_{10}(R)$) to determine an ESL spectra (in decidecade frequency bands). This was estimated to be the most appropriate approach given the limited information available. Figure 4 shows the representative decidecade-band ESL spectra, with a broadband ESL for the cutter being 161.4 dB re 1 µPa²m²s.

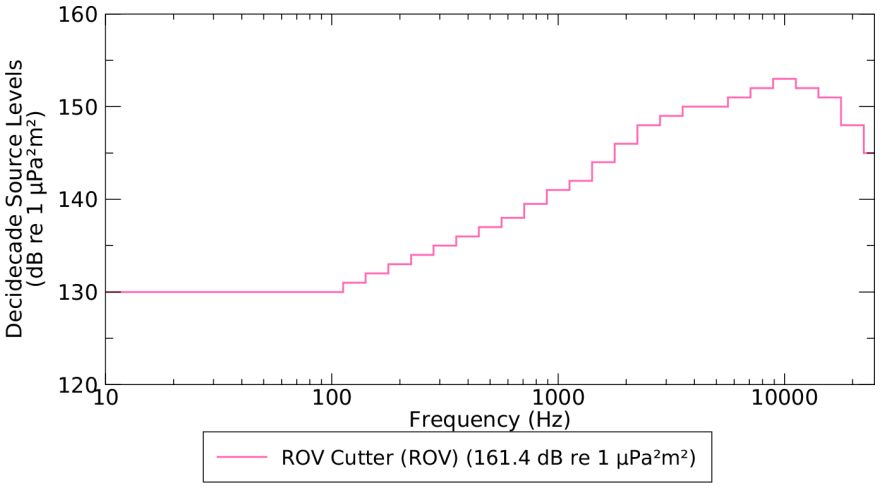

Figure 6. Energy source level (ESL) spectra for the diamond cutter, operated by the ROV.

3.1.3. Support Vessels

There are no publicly available measurements of the source levels of the listed support vessels at the time of this study. As such, the Skandi *Feistein* and the *Siem Sapphire* were used as the surrogate vessels for the support vessels considered in this modelling study of this campaign.

3.1.3.1. Construction Support Vessel (CSV)

The CSV considered for the Esso Gippsland Decommissioning Campaign is the *Allseas Fortitude*. The vessel has dimensions 150 m length, 32 m width and 8 m draft. Like the HLV, it will hold its position using DP while under operation. The source depth is modelled as 0.7× draft, thus the *Fortitude* has been modelled with a source depth of 4.4 m.

The *Allseas Fortitude* has a total of 21,750 kW installed power comprising two 2500 kW bow thrusters, two 3350 kW retractable azimuth thrusters, and three 3350 kW main propulsion thrusters. The *Feistein* was used previously as a surrogate vessel for the *Allseas Fortitude* as described in Warren et al. (2024). The authors in Warren et al. (2024) estimated the source levels of the *Allseas Fortitude* by considering the engineering field data and source levels for *Feistein* as reported *in* (McPherson et al. 2021). A regression analysis of source level vs actual thruster engine power was conducted, resulting in a regression relationship between the two variables. Using this relationship and a total power usage of 45%, the source level (BBSL) of the *Allseas Fortitude* while under DP was modelled as 185.3 dB re 1 µPa²m²s. A total power usage of 45% represents typical operational thrust combinations, within the upper bound range during normal DP field operations. The source spectrum is shown below in Figure 7.

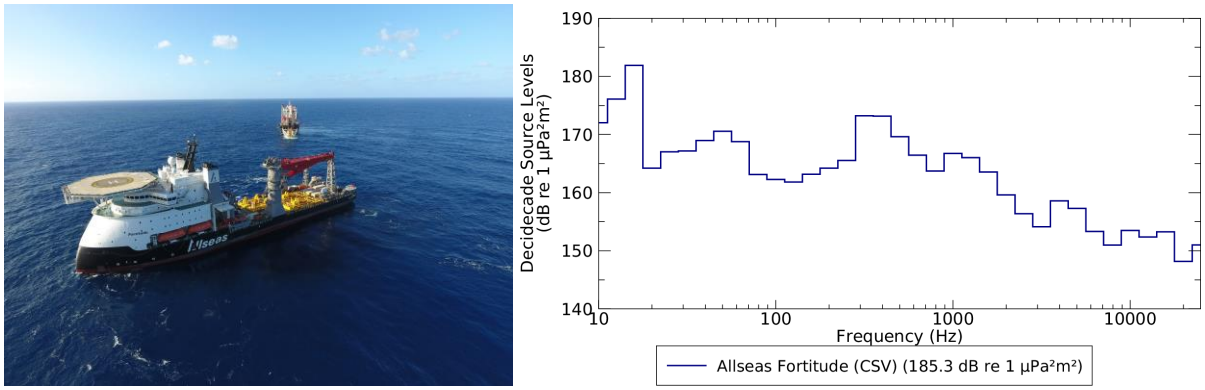

Figure 7. Photo of the *Allseas Fortitude* (left) and the source spectrum (right) (Photo source: Allseas 2024)

3.1.3.2. Platform Support Vessel (PSV)

The PSV modelled in this study is the *Allseas Alegria*. The Alegria is considered a vessel representative of potential PSVs that may be used within the decommissioning campaign. It has 8053 kW of installed thruster power and dimensions 82.88 m length, 19.3 m width and 6.31 m draft. The source depth is modelled as 0.7× draft, and so the *Alegria* has been modelled with a source depth of 5.6 m. Following the same procedure described above in Section 3.1.3.1 and Warren et al. (2024) regression curve between source level vs actual thruster engine power was used to estimate the source level of the *Allseas Alegria* while on DP. Using regression correlation with a total power usage of 45%, the source level (BBSL) of the *Allseas Alegria* while under DP was modelled as 181.0 dB re 1 µPa^{2}m^{2}s. A total power usage of 45% represents typical operational thrust combinations, within the upper bound range during normal DP field operations. The source spectrum is shown below in Figure 8.

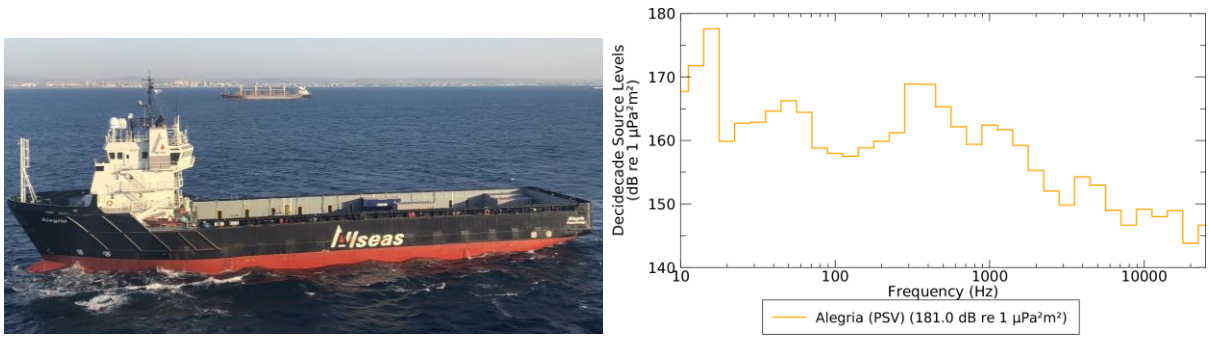

Figure 8. Photo of the *Allseas Alegria* (left) and source spectrum (right) (Photo source: Allseas 2020)

3.1.3.3. Tug/Towed Barge

The modelled scenarios which consider off-take operations (see Table 4) consists of two tugs, the HLV and a Barge (considered to be noiseless). The scenarios considered the tugs conducting '*pushing/maneuvering*' operations with the barge to set it in position with the HLV. These activities potentially involve higher power DP operations to hold the barge in position until transfer of structures from HLV to the barge has been completed and barge can then be towed away. A representative tug has been identified as *MMA Mermaid Cove*, or of equivalent a similar design.

The Mermaid Cove was purpose built to be an offtake support vessel with 4700 kW of maximum installed thruster power and 70.3 t bollard pull with an overall length, beam, and draft of 52.35 m,

14.6 m, and 4.9 m. The source depth was modelled as 0.7× draft, and so the *Mermaid Cove* has been modelled with a source depth of 3.43 m.

Estimates of the source levels for the Mermaid Cove were based on a surrogate vessel, the *Siem Sapphire* (Siem VS491 CD design AHTS) and its specifications were used to form a basis for vessel source level estimation for acoustic modelling purposes. The *Siem Sapphire* is an Anchor Handling Tug Supply vessel (AHTS) with an overall length, beam, and draft of 91 m, 22 m, and 7.98 m and has a total installed thruster power of 23,020 kW. The *Siem Sapphire* was selected as a surrogate because it may better represent noise generated from the considered tug operations, as opposed to the *Skandi Feistein* considered in other sections of this report. The measurements of the *Skandi Feistein* were primarily conducted to represent platform resupply activities, see McPherson et al. 2022, and might not be suitable to represent '*pushing/maneuvering*' operations.

The monopole source levels (MSLs) and spectra for the surrogate vessel were measured by JASCO in McPherson et al. (2021) and scaled to the Mermaid Cove based on the ratio of maximum installed thruster power following Equation (1). The broadband (10 Hz to 25 kHz) source level of the Mermaid Cove under DP was modelled as 187.2 dB re 1 μPa^2m^2. The source spectrum is shown below in Figure 9. This resultant source level is consistent with similar tug source levels that JASCO has measured for tugs berthing container vessels and is considered more suitable to represent tug '*pushing/maneuvering*' operations.

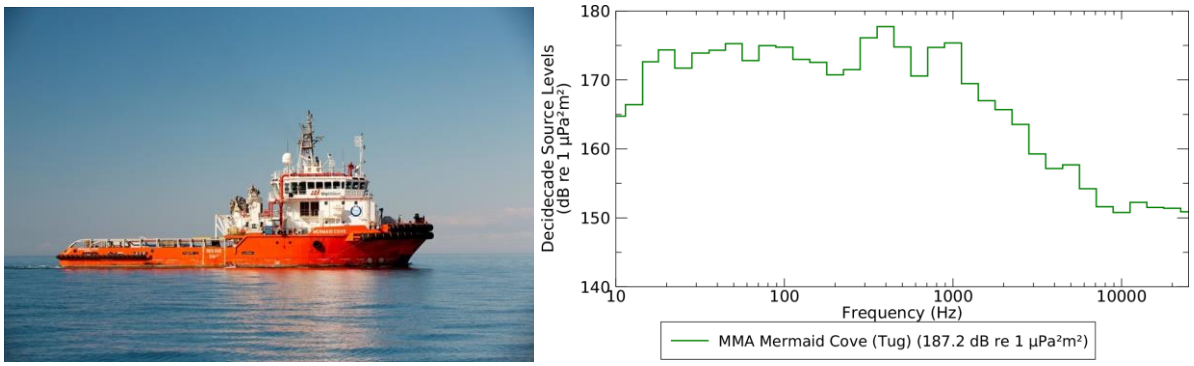

Figure 9. Photo of MMA Mermaid Cove (left) and source spectrum (right) (Photo source: MMA Offshore)

3.2. Geometry and Modelled Regions

JASCO's Marine Operations Noise Model (MONM-BELLHOP; see Appendix B.2.2) was used to predict the acoustic field at frequencies of 10 Hz to 25 kHz for all vessels. To supplement the MONM results (10 Hz to 1 kHz), high-frequency results for propagation loss were modelled using BELLHOP (Porter and Liu 1994) for frequencies from 1.26 to 25 kHz. The MONM and BELLHOP results were combined to produce results for the full frequency range of interest.

The sound field modelling calculated propagation losses up to 100 km from the source, with a horizontal separation of 20 m between receiver points along the modelled radials. The sound fields were modelled with a horizontal angular resolution of $\Delta\theta = 2.5$ for a total of N = 144 radial planes. Receiver depths were chosen to span the entire water column over the modelled areas, from 2 m to a maximum of 4250 m.

To produce the maps of received sound level isopleths, and to calculate distances to specified sound level thresholds, the maximum-over-depth level was calculated at each sampling point within the modelled region. The radial grids of maximum-over-depth levels were then resampled (by linear triangulation) to produce a regular Cartesian grid. The contours and threshold ranges were calculated from these grids of the modelled acoustic fields.

3.3. Accumulated SEL

In this study, the sound sources were considered to be continuously operating with new sound energy constantly being introduced to the environment. The reported source levels are usually in terms of sound pressure levels (SPL), representing the average instantaneous acoustic level of a considered source. The evaluation of the cumulative sound field (i.e., in terms of SEL_{24h}) depends on the number of seconds of operation during the accumulation period.

The SPL modelling results were converted to SEL by the duration of the measurement, which is appropriate for a non-impulsive noise source. For scenarios where the vessels are stationary, SEL was assessed over 24 h. For scenarios where the vessel is in transit, the SEL was assessed over the duration of the transit (see Table 4). For a stationary vessel, the conversion from SPL was obtained by increasing the levels by $10*\log_{10}(T)$, where T is 86,400 (the number of seconds in 24 h). For scenarios where a vessel was transiting along a track, a similar adjustment to the SPL was applied, however the time factor was determined based on the step size along the track and the vessel's speed. See Appendix B.4 for detail.

4. Results

The maximum-over-depth sound fields for the modelled scenarios are presented below in two formats: as tables of distances to sound levels and, where the distances are long enough, as contour maps showing the directivity and range to various sound levels.

For the results below, the distances to isopleths/thresholds were reported from either the centroid of several sources or from the most dominant single source. When an isopleth completely envelopes multiple sources the centroid was used. When several closed isopleths exist the most dominant source was used. Maps are provided in Section 4.2 to assist with contextualising tabulated distances.

4.1. Tabulated Results

Tables 8 and 9 present the maximum and 95% horizontal distances to specific SPL contours. The SPL sound footprints represent instantaneous sound fields and do not depend on time accumulation.

Tables 11 and 12 present the maximum distances to frequency-weighted SEL_{24h} thresholds, as well as total ensonified area.

Table 8. *Dolphin and Kingfish A Facility, SPL*: Maximum (R_{max}) and 95% ($R_{95\%}$) horizontal distances (in km) to sound pressure level (SPL) from most appropriate location for considered sources per scenario.

SPL (L_p; dB re 1 µPa)	Scenario 1: CSV and ROV cutter at Dolphin		Scenario 2: HLV at Kingfish A		Scenario 3: HLV, CSV and ROV cutter at Kingfish A	
	R_{max} (km)	$R_{95\%}$ (km)	R_{max} (km)	$R_{95\%}$ (km)	R_{max} (km)	$R_{95\%}$ (km)
180	–	–	–	–	–	–
170[a]	0.02	0.02	0.02	0.02	0.02	0.02
160	0.02	0.02	0.04	0.04	0.04	0.04
158[b]	0.02	0.02	0.05	0.05	0.06	0.06
150	0.06	0.05	0.22	0.21	0.32	0.29
140	0.34	0.33	1.28	1.23	1.60	1.42
130	1.80	1.71	5.53	5.26	5.90	5.58
120[c]	5.71	5.21	19.6	18.0	20.6	18.9
110	17.4	15.3	81.1	67.5	82.1	69.1

[a] 48 h threshold for recoverable injury for fish with a swim bladder involved in hearing (Popper et al. 2014).
[b] 12 h threshold for TTS for fish with a swim bladder involved in hearing (Popper et al. 2014).
[c] Threshold for marine mammal behavioural response to non-impulsive noise (NOAA 2019).
A dash indicates the level was not reached within the limits of the modelled resolution (20 m).

Table 9. *Transfer Location A and B, SPL*: Maximum (R_{max}) and 95% ($R_{95\%}$) horizontal distances (in km) to sound pressure level (SPL) from most appropriate location for considered sources per scenario.

SPL (L_p; dB re 1 µPa)	Scenario 4: HLV, CSV and PSV at Transfer Location A		Scenario 5: HLV, CSV and PSV at Transfer Location B		Scenario 6: HLV and Tug/Towed Barge at Transfer Location A		Scenario 7: HLV and Tug/Towed Barge at Transfer Location B	
	R_{max} (km)	$R_{95\%}$ (km)	R_{max} (km)	$R_{95\%}$ (km)	R_{max} (km)	$R_{95\%}$ (km)	R_{max} (km)	$R_{95\%}$ (km)
180	–	–	–	–	–	–	–	–
170[a]	0.02	0.02	–	–	0.02	0.02	–	–
160	0.06	0.05	0.04	0.04	0.14	0.13	0.07	0.07
158[b]	0.08	0.08	0.05	0.05	0.19	0.17	0.15	0.13
150	0.46	0.41	0.33	0.31	0.60	0.55	0.43	0.39
140	1.89	1.74	1.69	1.52	2.22	2.08	2.10	1.96
130	5.81	5.23	6.22	5.90	6.66	6.09	7.43	6.80
120[c]	20.9	18.8	23.4	21.0	25.0	22.6	25.1	23.0
110	88.0	78.0	90.8	80.3	102	92.6	95.2	83.9

[a] 48 h threshold for recoverable injury for fish with a swim bladder involved in hearing (Popper et al. 2014).
[b] 12 h threshold for TTS for fish with a swim bladder involved in hearing (Popper et al. 2014).
[c] Threshold for marine mammal behavioural response to non-impulsive noise (NOAA 2019).
A dash indicates the level was not reached within the limits of the modelled resolution (20 m).

Table 10. *Transiting scenarios, SPL*: Maximum (R_{max}) and 95% ($R_{95\%}$) horizontal distances (in km) to sound pressure level (SPL) from most appropriate location for considered sources per scenario.

SPL (L_p; dB re 1 µPa)	Scenario 8: HLV transiting from Kingfish A to Transfer Location A		Scenario 9: HLV transiting from Kingfish A to Transfer Location B	
	R_{max} (km)	$R_{95\%}$ (km)	R_{max} (km)	$R_{95\%}$ (km)
170[a]	–	–	–	–
160	0.02	0.02	–	–
158[b]	0.03	0.03	0.02	0.02
150	0.09	0.09	0.08	0.08
140	0.56	0.53	0.55	0.53
130	2.32	2.16	2.28	2.15
120[c]	9.23	8.13	8.34	7.29
110	44.4	39.6	30.3	26.7

[a] 48 h threshold for recoverable injury for fish with a swim bladder involved in hearing (Popper et al. 2014).
[b] 12 h threshold for TTS for fish with a swim bladder involved in hearing (Popper et al. 2014).
[c] Threshold for marine mammal behavioural response to non-impulsive noise (NOAA 2019).
A dash indicates the level was not reached within the limits of the modelled resolution (20 m).

Table 11. *SEL_{24h}:* Maximum (R_{max}) horizontal distances (in km) to frequency-weighted SEL_{24h} PTS and TTS thresholds based on Southall et al. (2019) and Finneran et al. (2017) from most appropriate location for considered sources per scenario and ensonified area (km^2).

Hearing group	Frequency-weighted SEL_{24h} threshold ($L_{E,24h}$; dB re 1 $\mu Pa^2 \cdot s$)	Scenario 1: CSV and ROV cutter at Dolphin		Scenario 2: HLV at Kingfish A		Scenario 3: HLV, CSV and ROV cutter at Kingfish A	
		R_{max} (km)	Area (km^2)	R_{max} (km)	Area (km^2)	R_{max} (km)	Area (km^2)
PTS							
LF cetaceans	199	0.05	0.01	0.14	0.05	0.24	0.08
HF cetaceans	198	0.02	/	0.02	/	0.03	/
VHF cetaceans	173	0.07	0.02	0.05	0.01	0.15	0.03
Phocids	201	0.02	/	0.02	/	0.03	/
Otariid Seals	219	–	–	–	–	–	–
Sea turtles	220	–	–	0.02	/	0.02	/
TTS							
LF cetaceans	179	1.54	7.01	3.97	46.4	4.45	56.5
HF cetaceans	178	0.05	0.01	0.05	0.01	0.06	0.02
VHF cetaceans	153	0.99	2.81	0.83	2.07	1.24	4.59
Phocids	181	0.19	0.11	0.42	0.54	0.58	0.84
Otariid Seals	199	0.02	/	0.02	/	0.03	/
Sea turtles	200	0.04	/	0.15	0.08	0.28	0.08

A dash indicates the level was not reached within the limits of the modelled resolution (20 m).
A slash indicates that the area is less than an area associated with the modelled resolution (0.0013 km^2).

Table 12. *SEL_{24h}:* Maximum (R_{max}) horizontal distances (in km) to frequency-weighted SEL_{24h} PTS and TTS thresholds based on Southall et al. (2019) and Finneran et al. (2017) from most appropriate location for considered sources per scenario and ensonified area (km^2).

Hearing group	Frequency-weighted SEL_{24h} threshold ($L_{E,24h}$; dB re 1 $\mu Pa^2 \cdot s$)	Scenario 4: HLV, CSV and PSV at Transfer Location A		Scenario 5: HLV, CSV and PSV at Transfer Location B		Scenario 6: HLV and Tug/Towed Barge at Transfer Location A		Scenario 7: HLV and Tug/Towed Barge at Transfer Location B	
		R_{max} (km)	Area (km^2)	R_{max} (km)	Area (km^2)	R_{max} (km)	Area (km^2)	R_{max} (km)	Area (km^2)
PTS									
LF cetaceans	199	0.31	0.20	0.28	0.11	0.41	0.45	0.31	0.25
HF cetaceans	198	0.02	/	–	–	0.02	/	–	–
VHF cetaceans	173	0.08	0.03	0.05	0.02	0.17	0.06	0.14	0.04
Phocids	201	0.02	/	–	–	0.06	0.01	0.05	0.01
Otariid Seals	219	–	–	–	–	–	–	–	–
Sea turtles	220	0.02	/	–	–	0.02	/	–	–
TTS									
LF cetaceans	179	4.78	64.2	4.71	65.1	6.08	93.2	6.01	103
HF cetaceans	178	0.06	0.02	0.04	0.01	0.15	0.04	0.13	0.03
VHF cetaceans	153	1.33	5.11	1.28	4.57	1.53	6.69	1.44	6.21
Phocids	181	0.93	2.47	0.69	1.30	1.57	6.47	1.28	4.18
Otariid Seals	199	0.03	0.01	0.02	/	0.12	0.02	0.07	0.01
Sea turtles	200	0.31	0.22	0.27	0.11	0.38	0.35	0.28	0.19

A dash indicates the level was not reached within the limits of the modelled resolution (20 m).
A slash indicates that the area is less than an area associated with the modelled resolution (0.0013 km^2).

Table 13. *SEL$_{24h}$*: Maximum (R_{max}) horizontal distances (in km) to frequency-weighted SEL$_{24h}$ PTS and TTS thresholds based on Southall et al. (2019) and Finneran et al. (2017) from most appropriate location for considered sources per scenario and ensonified area (km^2).

Hearing group	Frequency-weighted SEL$_{24h}$ threshold ($L_{E,24h}$; dB re 1 µPa^2·s)	Scenario 8: HLV transiting from Kingfish A to Transfer Location A		Scenario 9: HLV transiting from Kingfish A to Transfer Location B	
		R_{max} (km)	Area (km^2)	R_{max} (km)	Area (km^2)
PTS					
LF cetaceans	199	–	–	–	–
HF cetaceans	198	–	–	–	–
VHF cetaceans	173	–	–	–	–
Phocids	201	–	–	–	–
Otariid Seals	219	–	–	–	–
Sea turtles	220	–	–	–	–
TTS					
LF cetaceans	179	0.02	4.52	0.02	4.98
HF cetaceans	178	–	–	–	–
VHF cetaceans	153	0.02	4.84	0.02	5.49
Phocids	181	–	–	–	–
Otariid Seals	199	–	–	–	–
Sea turtles	200	–	–	–	–

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

4.2. Sound Field Maps

Maps of the estimated sound fields, threshold contours, and isopleths of interest for SPL and SEL$_{24h}$ sound fields are presented for the modelled scenarios.

4.2.1. SPL Sound Level Contour Maps

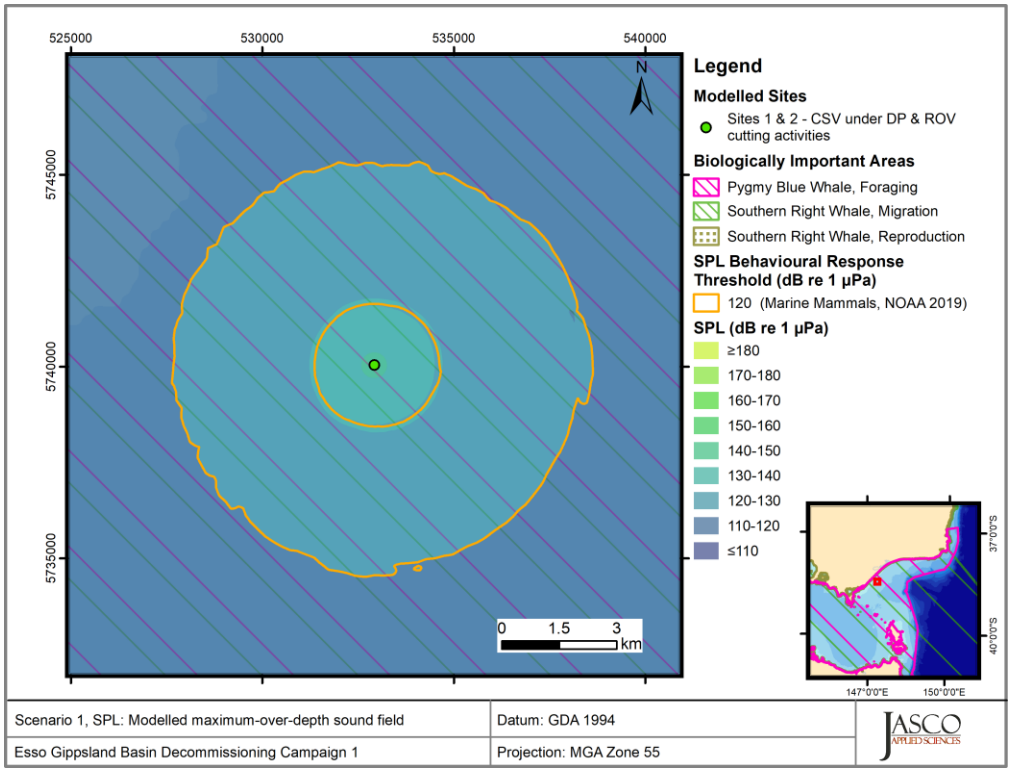

Figure 10. *Scenario 1, CSV and ROV cutter at Dolphin, SPL*: Sound level contour map showing the unweighted maximum-over-depth sound field in 10 dB steps, and the isopleths for behavioural response threshold for marine mammals.

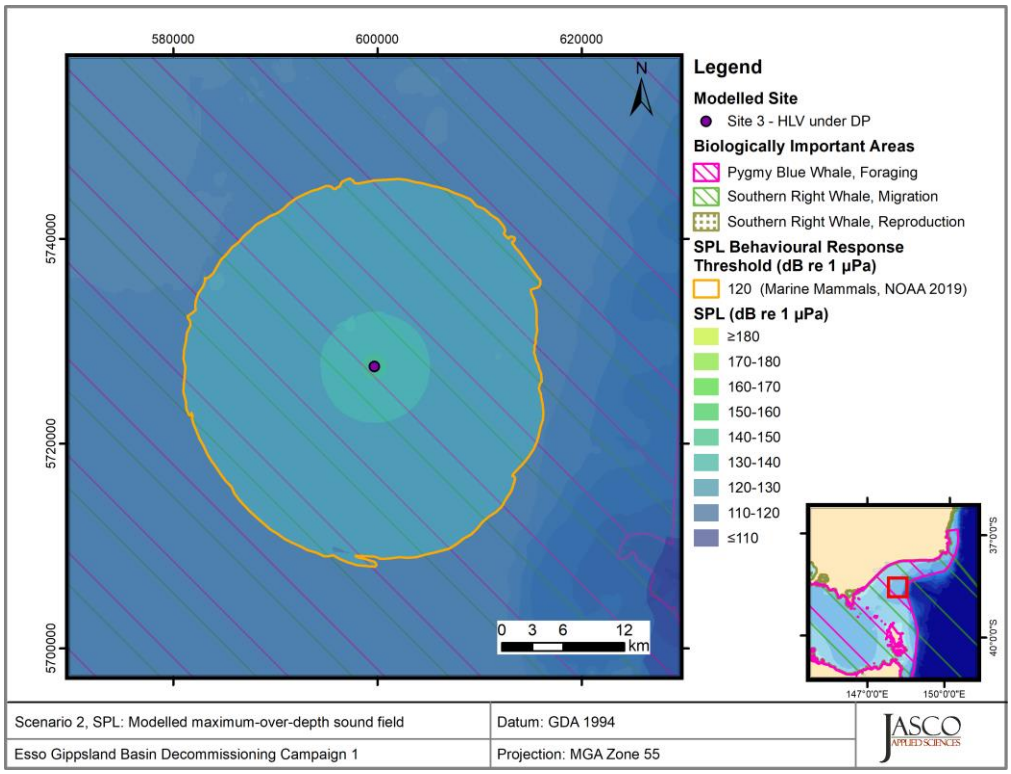

Figure 11. *Scenario 2, HLV at Kingfish A, SPL*: Sound level contour map showing the unweighted maximum-over-depth sound field in 10 dB steps, and the isopleths for behavioural response threshold for marine mammals.

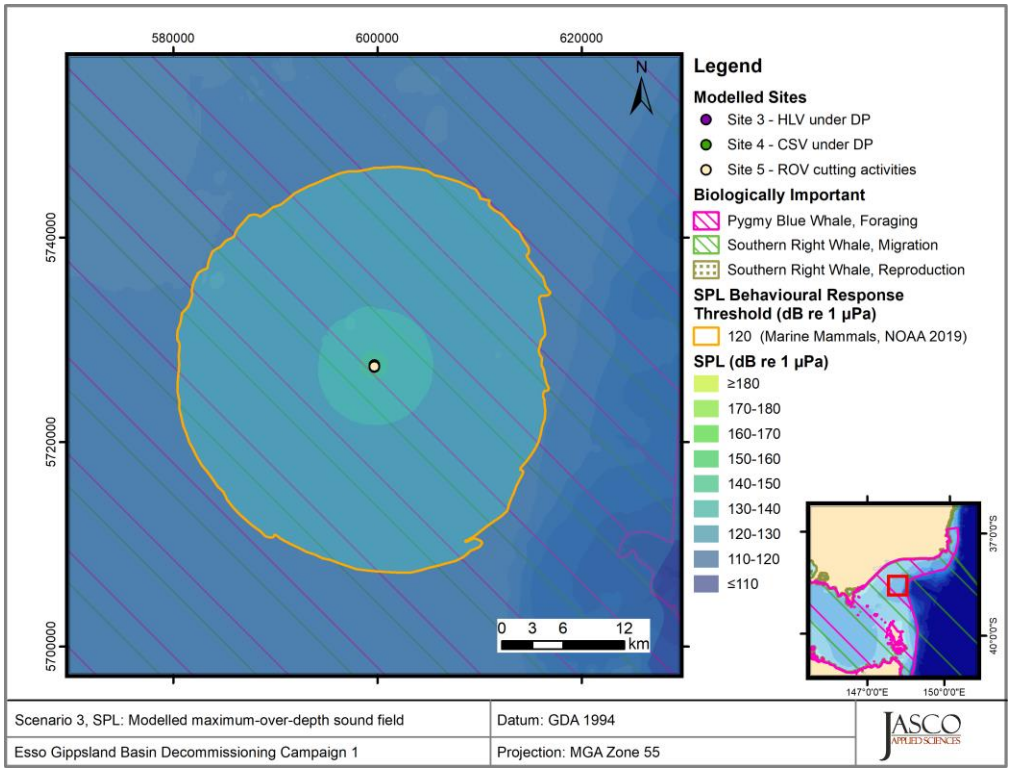

Figure 12. *Scenario 3, HLV, CSV and ROV cutter at Kingfish A, SPL*: Sound level contour map showing the unweighted maximum-over-depth sound field in 10 dB steps, and the isopleths for behavioural response threshold for marine mammals.

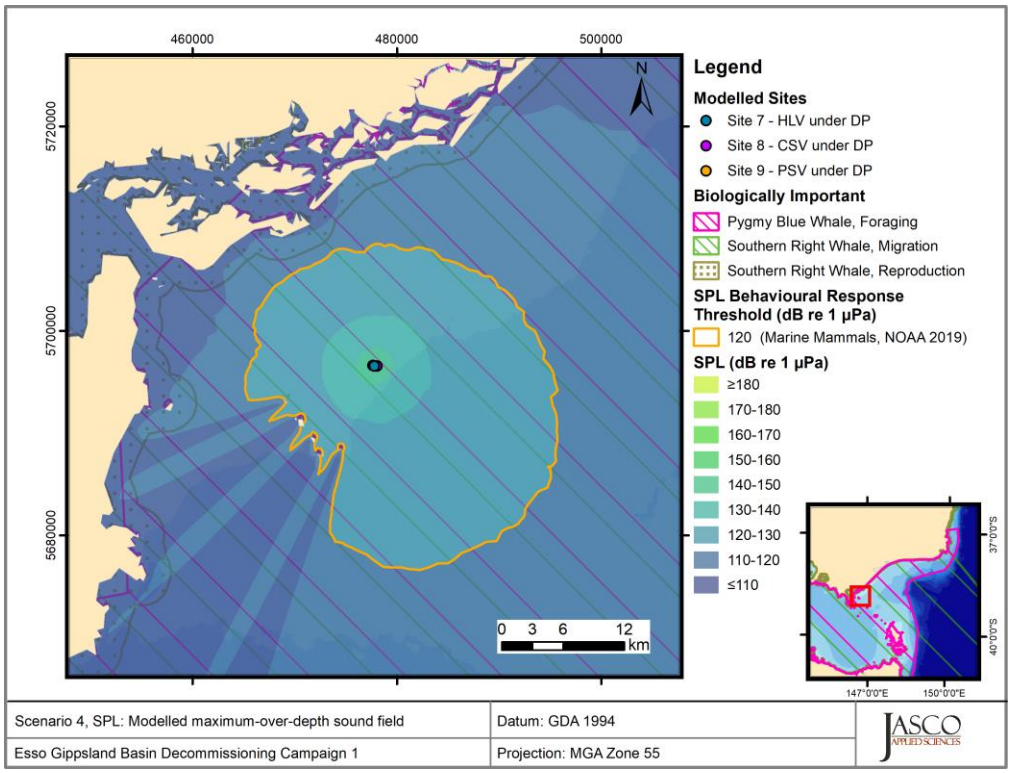

Figure 13. *Scenario 4, HLV, CSV and PSV at Transfer Location A, SPL*: Sound level contour map showing the unweighted maximum-over-depth sound field in 10 dB steps, and the isopleths for behavioural response threshold for marine mammals.

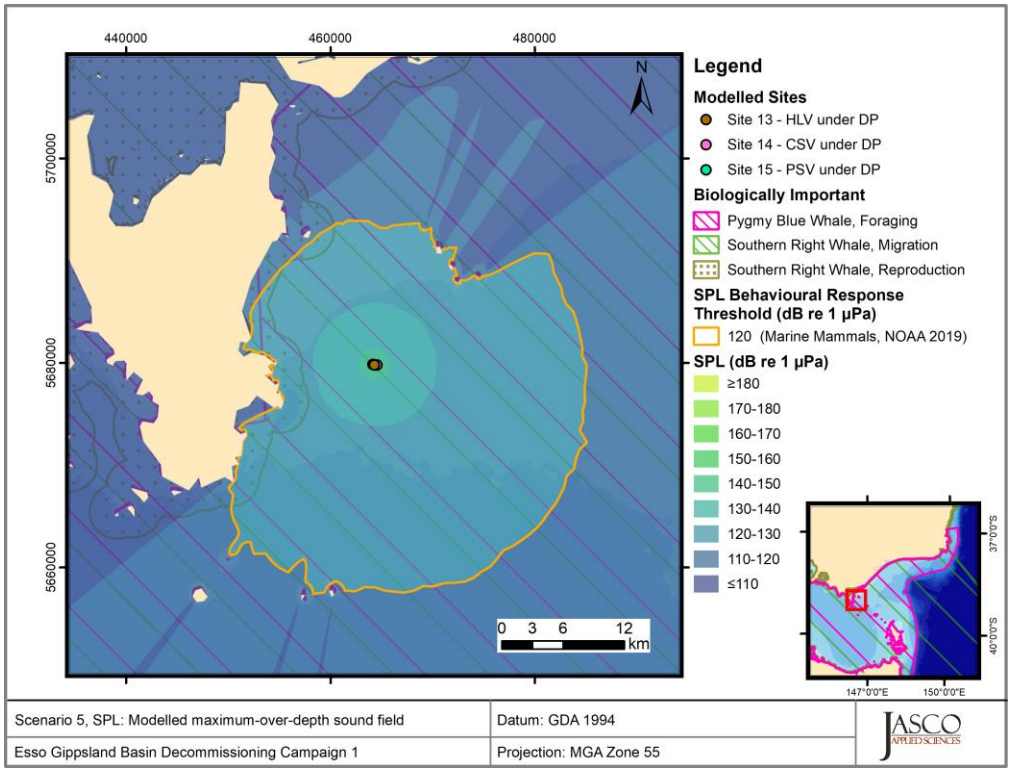

Figure 14. *Scenario 5, HLV, CSV and PSV at Transfer Location B, SPL*: Sound level contour map showing the unweighted maximum-over-depth sound field in 10 dB steps, and the isopleths for behavioural response threshold for marine mammals.

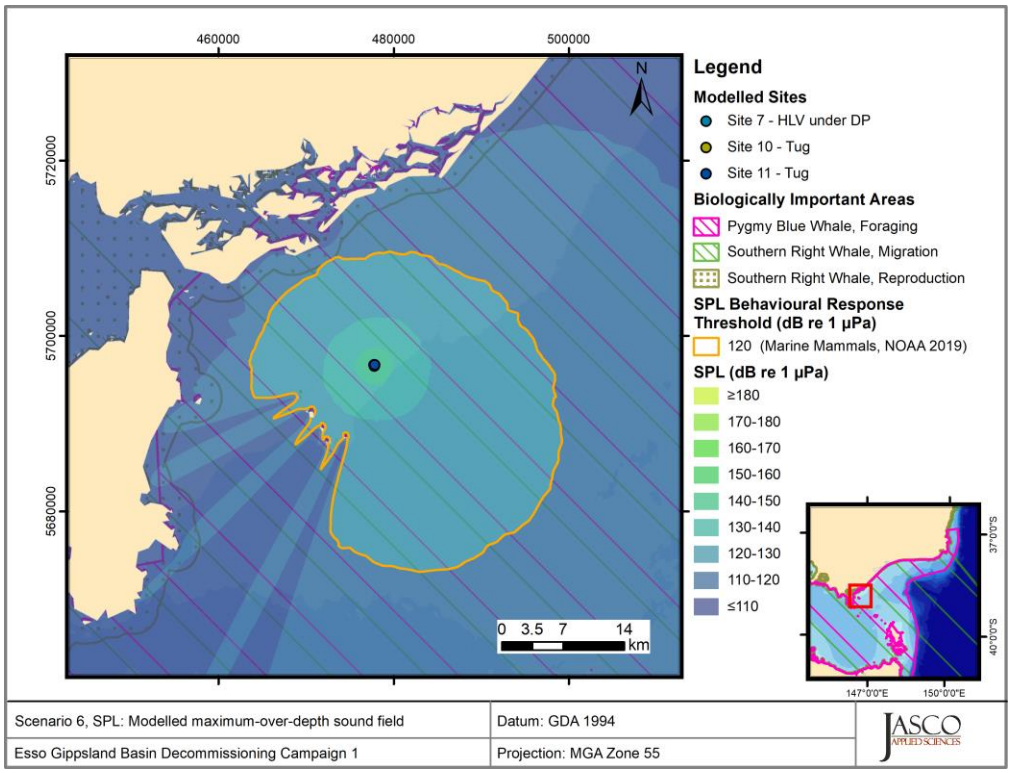

Figure 15. *Scenario 6, HLV and Tug/Towed Barge at Transfer Location A, SPL*: Sound level contour map showing the unweighted maximum-over-depth sound field in 10 dB steps, and the isopleths for behavioural response threshold for marine mammals.

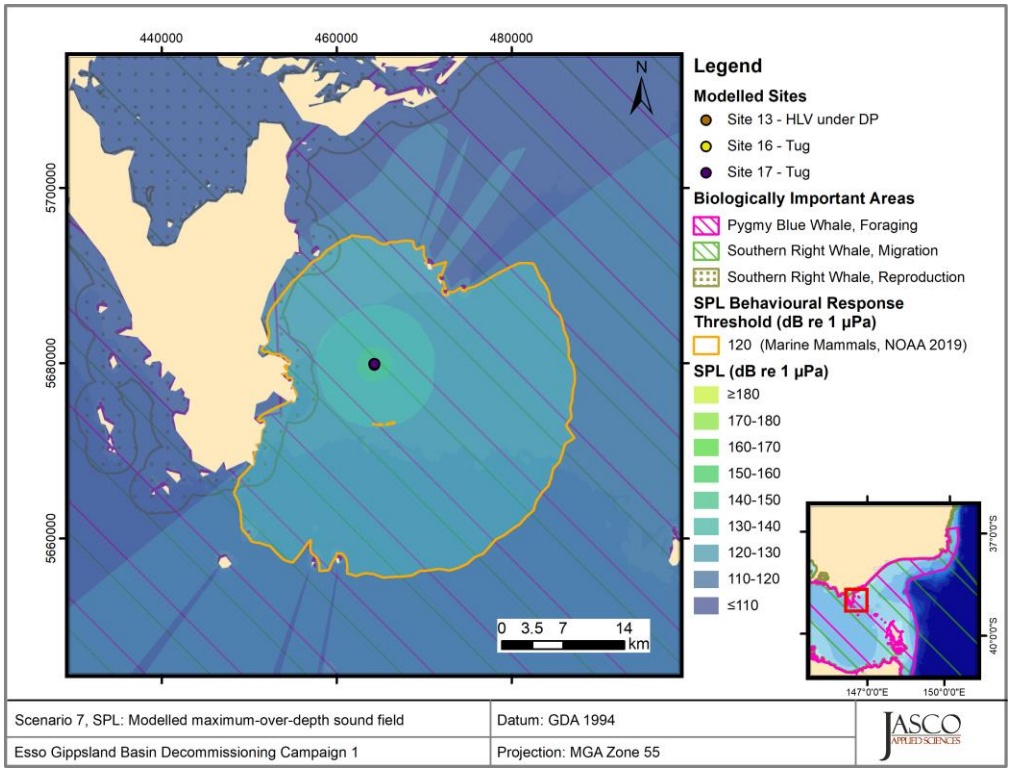

Figure 16. *Scenario 7, HLV and Tug/Towed Barge at Transfer Location B, SPL*: Sound level contour map showing the unweighted maximum-over-depth sound field in 10 dB steps, and the isopleths for behavioural response threshold for marine mammals.

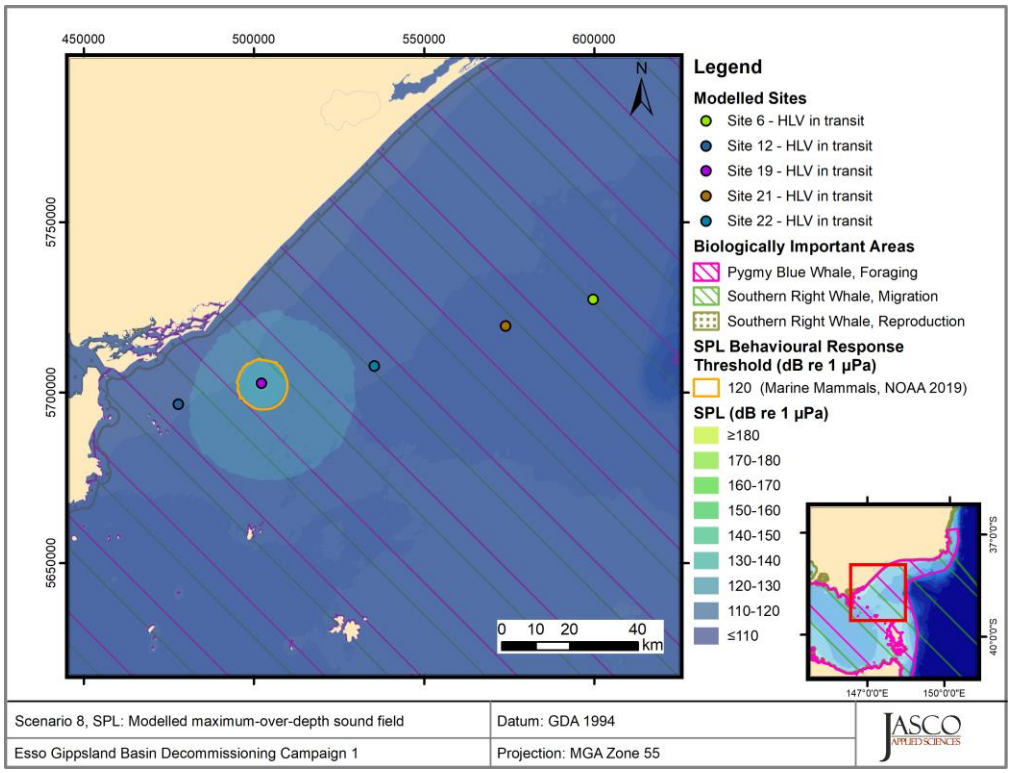

Figure 17. *Scenario 8, HLV in transit from Kingfish A to Transfer Location A, SPL*: Sound level contour map showing the unweighted maximum-over-depth sound field in 10 dB steps, and the isopleths for behavioural response threshold for marine mammals.

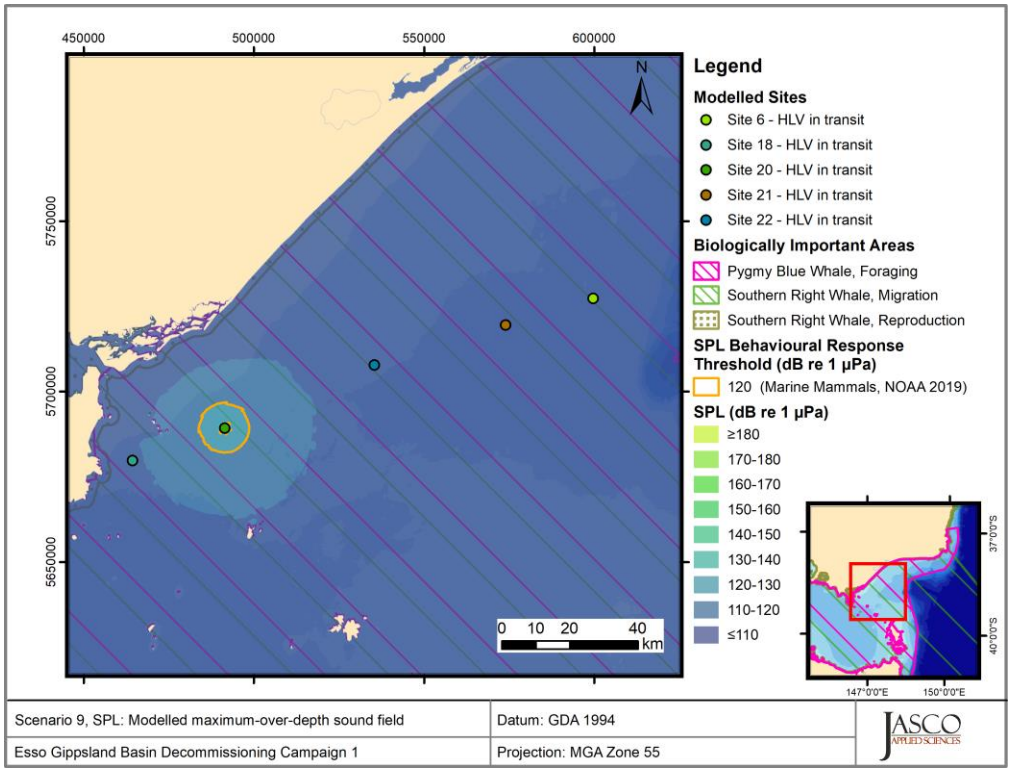

Figure 18. *Scenario 9, HLV in transit from Kingfish A to Transfer Location B, SPL*: Sound level contour map showing the unweighted maximum-over-depth sound field in 10 dB steps, and the isopleths for behavioural response threshold for marine mammals.

4.2.2. Accumulated SEL_{24h} Sound level Contour Maps

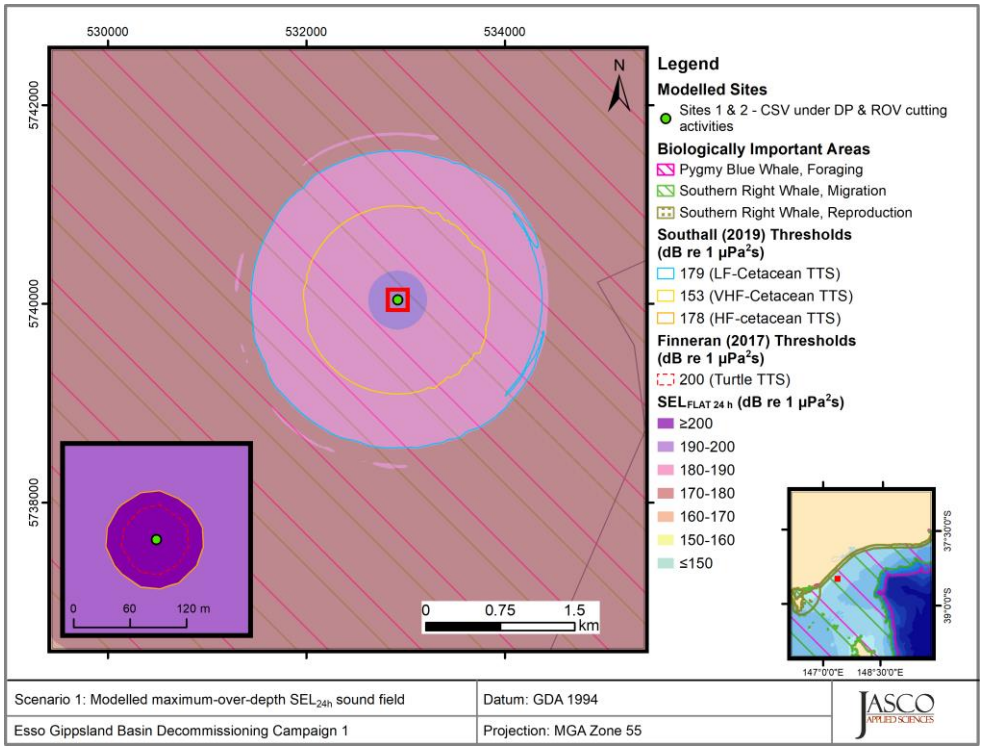

Figure 19. *Scenario 1, CSV and ROV cutter at Dolphin, accumulated SEL_{24h}*: Sound level contour map showing maximum-over-depth SEL_{24h} results (unweighted/flat), along with frequency weighted isopleths for TTS in low, high, and very-high-frequency cetaceans, and turtles. Thresholds omitted here were not reached or not long enough to display graphically.

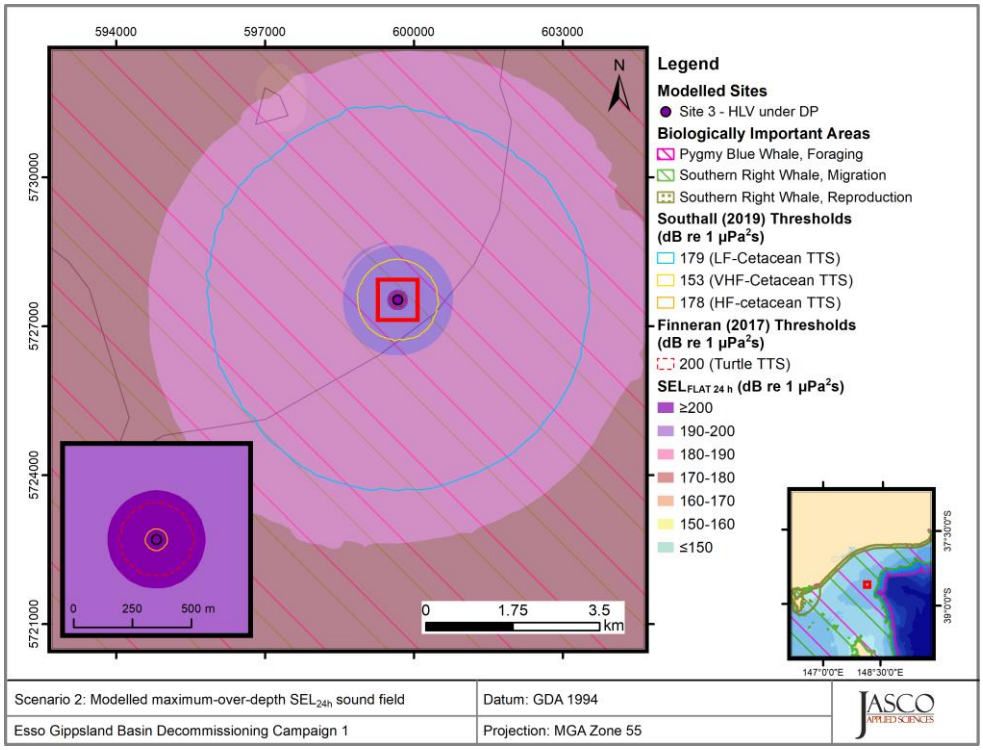

Figure 20. *Scenario 2, HLV at Kingfish A, accumulated SEL$_{24h}$*: Sound level contour map showing maximum-over-depth SEL$_{24h}$ results (unweighted/flat), along with frequency weighted isopleths for TTS in low, high, and very-high-frequency cetaceans, and turtles. Thresholds omitted here were not reached or not long enough to display graphically.

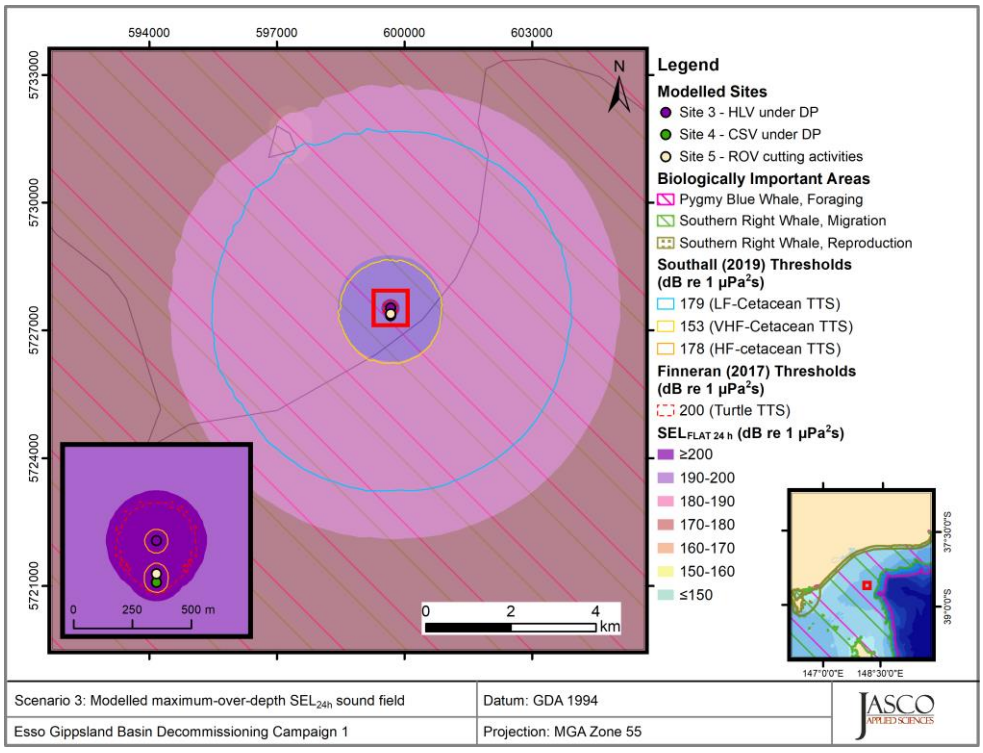

Figure 21. *Scenario 3, HLV, CSV and ROV cutter at Kingfish A, accumulated SEL$_{24h}$*: Sound level contour map showing maximum-over-depth SEL$_{24h}$ results (unweighted/flat), along with frequency weighted isopleths for TTS in low, high, and very-high-frequency cetaceans, and turtles. Thresholds omitted here were not reached or not long enough to display graphically.

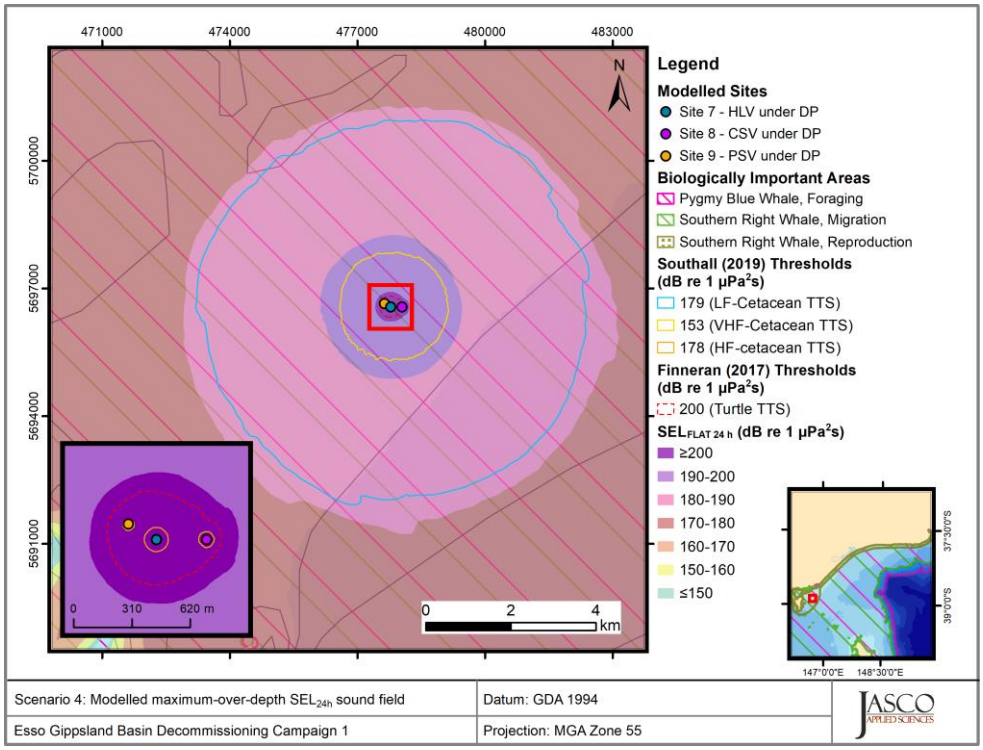

Figure 22. *Scenario 4, HLV, CSV and PSV at Transfer Location A, accumulated SEL_{24h}*: Sound level contour map showing maximum-over-depth SEL_{24h} results (unweighted/flat), along with frequency weighted isopleths for TTS in low, high, and very-high-frequency cetaceans, and turtles. Thresholds omitted here were not reached or not long enough to display graphically.

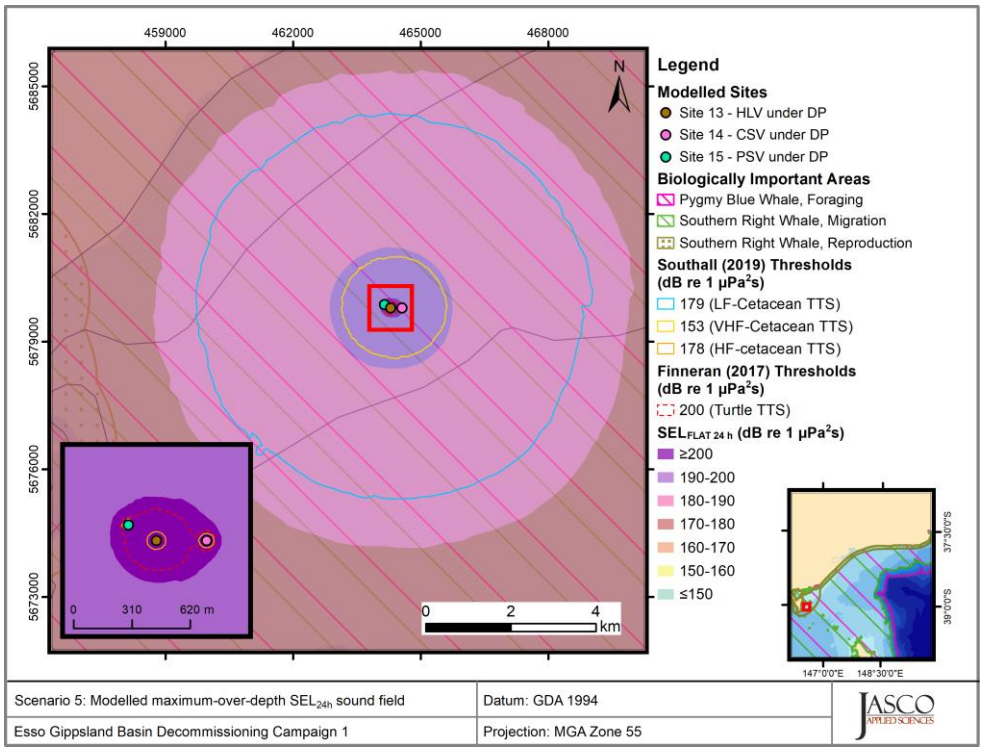

Figure 23. *Scenario 5, HLV, CSV and PSV at Transfer Location B, accumulated SEL_{24h}*: Sound level contour map showing maximum-over-depth SEL_{24h} results (unweighted/flat), along with frequency weighted isopleths for TTS in low, high, and very-high-frequency cetaceans, and turtles. Thresholds omitted here were not reached or not long enough to display graphically.

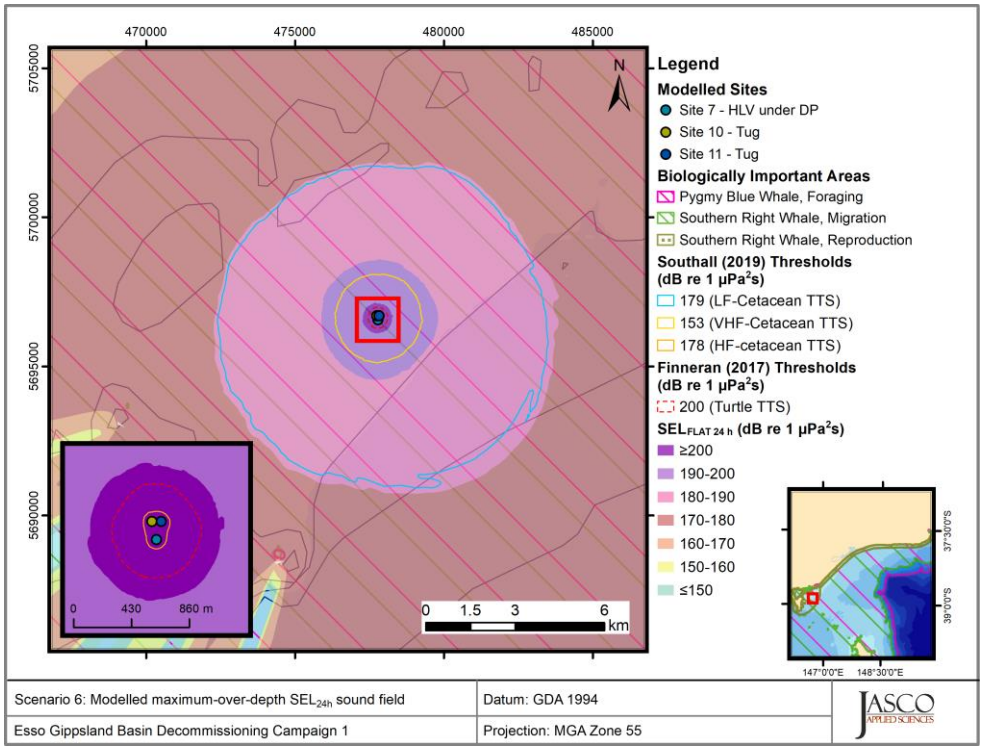

Figure 24. *Scenario 6, HLV and Tug/Towed Barge at Transfer Location A, accumulated SEL$_{24h}$*: Sound level contour map showing maximum-over-depth SEL$_{24h}$ results (unweighted/flat), along with frequency weighted isopleths for TTS in low, high, and very-high-frequency cetaceans, and turtles. Thresholds omitted here were not reached or not long enough to display graphically.

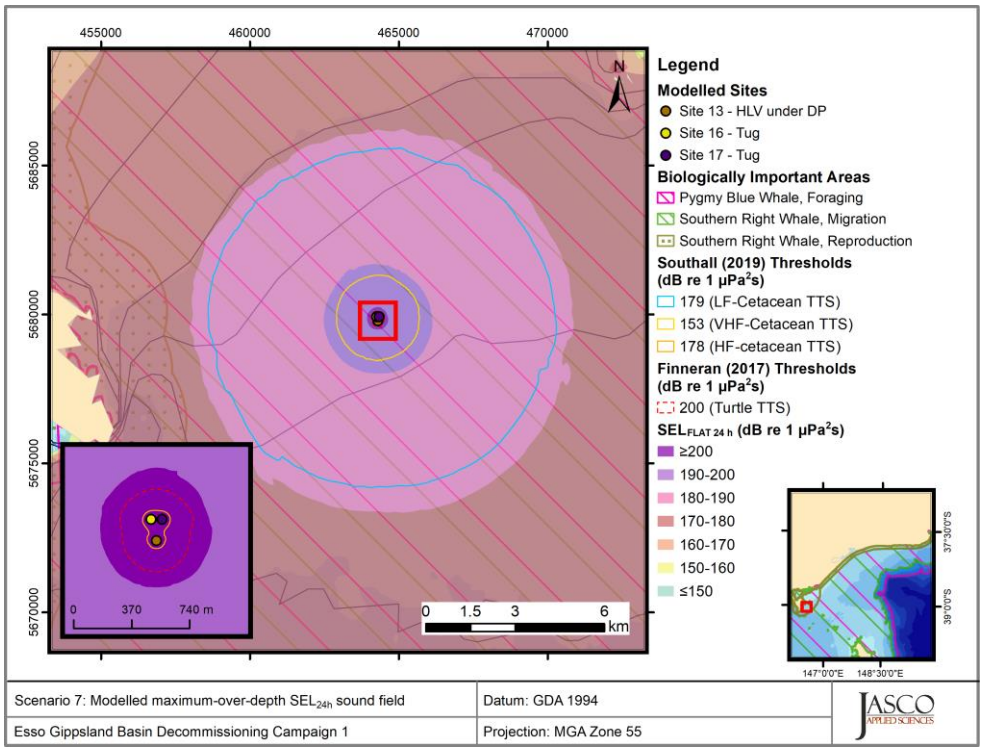

Figure 25. *Scenario 7, HLV and Tug/Towed Barge at Transfer Location B, accumulated SEL$_{24h}$*: Sound level contour map showing maximum-over-depth SEL$_{24h}$ results (unweighted/flat), along with frequency weighted isopleths for TTS in low, high, and very-high-frequency cetaceans, and turtles. Thresholds omitted here were not reached or not long enough to display graphically.

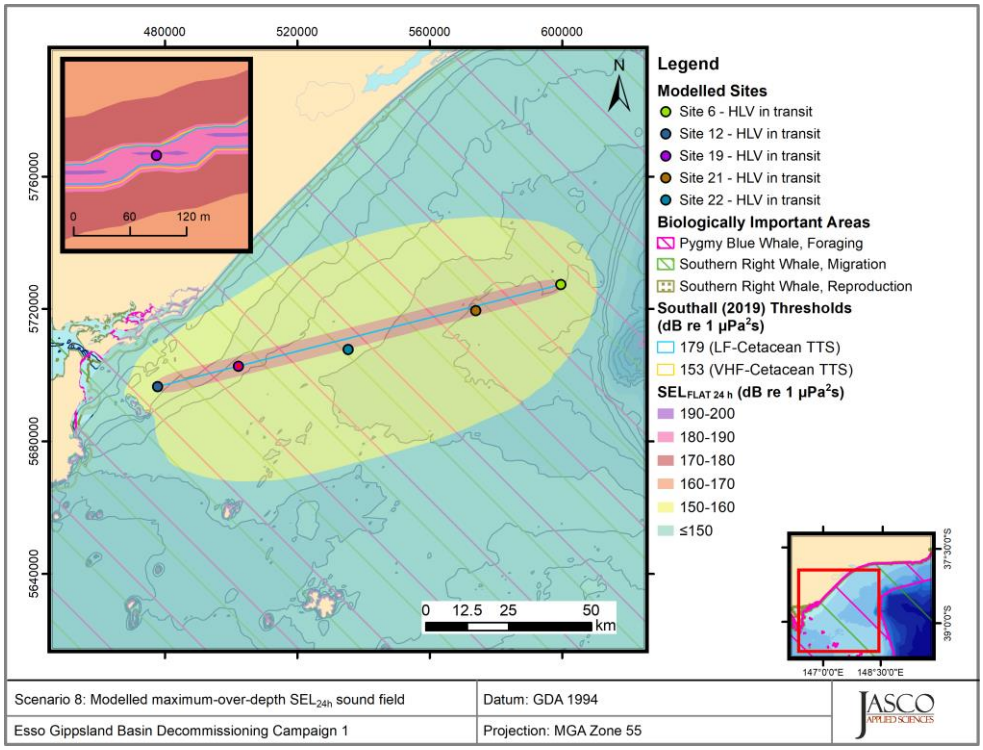

Figure 26. *Scenario 8, HLV in transit from Kingfish A to Transfer Location A, accumulated SEL_{24h}*: Sound level contour map showing maximum-over-depth SEL_{24h} results (unweighted/flat), along with frequency weighted isopleths for TTS in low and very-high-frequency cetaceans. Thresholds omitted here were not reached or not long enough to display graphically.

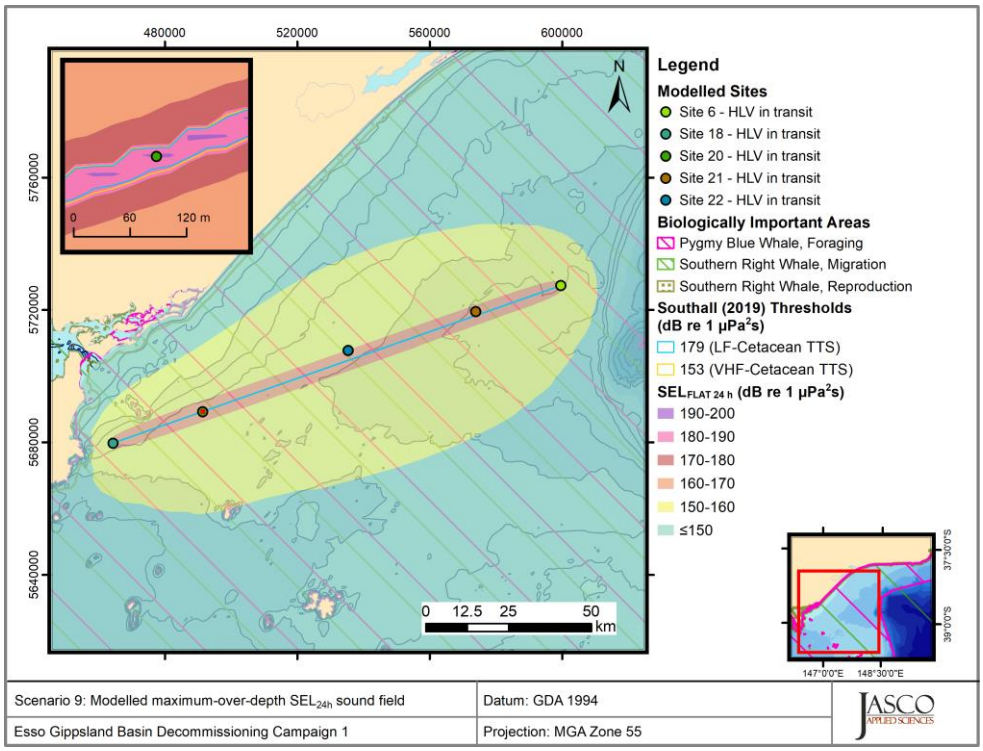

Figure 27. *Scenario 9, HLV in transit from Kingfish A to Transfer Location B, accumulated SEL_{24h}*: Sound level contour map showing maximum-over-depth SEL_{24h} results (unweighted/flat), along with frequency weighted isopleths for TTS in low and very-high-frequency cetaceans. Thresholds omitted here were not reached or not long enough to display graphically.

5. Discussion

The sound speed profile was derived from data from the U.S. Naval Oceanographic Office's Generalized Digital Environmental Model V 3.0 (GDEM; Teague et al. 1990, Carnes 2009). An analysis of monthly sound speed profiles was conducted to select the month corresponding to the longest sound propagation, to allow for operational flexibility and conservative estimation of distances. It was determined that June was the most conducive to sound propagation and likely the most conservative choice over the entire year. The final profile consisted of a combination of three representative profiles within the modelled area to capture the propagation effects associated with shallow and deep-water regimes (Appendix B.1.2).

The June sound speed profile was primarily upward refracting between the sea surface and 90 m water depth. The upward refracting sound speed profile has the potential trap frequencies above 219.6 Hz based on the thickness of this layer (Jensen et al. 2011), which corresponds to a significant portion of the source spectra detailed in Section 3.1, which can further enhance large distances to isopleths and criteria compared to other months.

The modelled scenarios were in water depths ranging from 25.2 to 74.3 m.

The Dolphin facility is located on the continental shelf about 20 km offshore the Gippsland coastline, and the bathymetry varies gradually, becoming deeper at distances further offshore. The isopleth contours corresponding to PTS and TTS thresholds and behavioural response threshold generally manifested as axially symmetric sound field footprints. The Kingfish A facility is nearer the continental slope where the bathymetry becomes deeper quickly, heading south-east. The influence of the bathymetry on sound propagation results in isopleth ranges that are shorter offshore and longer towards the coast.

The two transfer locations are located near the coast east of Wilsons Promontory, surrounded by sparse archipelagos. The irregular bathymetry in this area causes a large degree of asymmetry in the isopleth contours, with certain radials being impeded by the islands surrounding the transfer locations.

In the transit scenarios, the vessels travelled from Kingfish A to one of the two transfer locations, with Transfer Location B being the farthest one from Kingfish A. The isopleth contours corresponding to PTS and TTS thresholds are within about 25 m of the vessel paths. Compared to the stationary scenarios, these sound field contours have a much shorter range, as the vessel is travelling fast enough that very little loud sound is accumulated at any point near the vessel paths. There is little variation in radii as the bathymetry changes very gradually across the greater-than-120 km paths, from 69.5 m at Dolphin to 25.8 m at Transfer Location A and 47.3 m at Transfer Location B. This can be seen in Figure 26 and Figure 27. The behavioural response threshold has a comparatively longer range, consistently propagating up to 10 km, with the sound contour also remaining generally symmetrical. This can be seen in Figure 17 and Figure 18.

For the results tables presented in Section 4.1, where a dash is used in place of a horizontal distance, these thresholds may or may not be reached. Due to the discretely sampled 20 m calculation grids of the modelled sound fields, distances to these levels could not be estimated for practicable computational purposes. It is likely that SPL isopleths could be reached at distances between the source and the modelled horizontal resolution (20 m); however, distances to injurious accumulated SEL thresholds may not be reached at any range greater than the source due the species-specific frequency weighing functions. Additionally, if close-to-source radii are comparable to the dimensions of the modelled vessel (especially the HLV, which is many times larger than the modelling resolution) then they may only be reached within the dimensions of the vessel, if at all.

5.1. Conclusion

The tables presented below summarise the maximum horizontal distances to criteria and thresholds over all scenarios considered in this study. Results for individual scenarios can be found in Section 4.1. The distances presented below are related to sound level contours presented in Section 4.2. Appendix B.3 gives a detailed interpretation of how distances are related to contours, particularly in the context of R_{max}. These tabulated values can be interpreted as being the longest possible distance from an activity to where a criterion and/or threshold may be reached; however, they should be considered together with the sound field footprints in Section 4.2, as the contours may not be symmetric around a source or activity.

For the criteria associated with SPL metrics (e.g. marine mammal behavioural response), they are associated with an average instantaneous acoustic received level from a source and do not depend on an accumulation period.

On the other hand, SEL_{24h} is a cumulative metric that reflects the dosimetric impact of noise levels within a 24-hour accumulation time. The distances and contours based on this metric assume that an animal is consistently exposed to such noise levels at a fixed position. The corresponding SEL_{24h} distances represent an unlikely worst-case scenario. More realistically, marine mammals (as well as fish and turtles) would not stay in the same location for 24 hours. Therefore, a reported radius for SEL_{24h} criteria does not mean that marine fauna travelling within this radius of the noise source will be injured, but rather that an animal could be exposed to the sound level associated with impairment if it remained in that location for 24 hours.

Marine Mammals

Table 14 summarises the maximum horizontal distances to behavioural (unweighted SPL) and physiological effects (PTS and TTS) thresholds across all modelled scenarios.

Table 14. Summary of maximum (R_{max}) horizontal distances (in km) from the respective scenario centres to the behavioural response threshold, temporary threshold shift (TTS) and permanent threshold shift (PTS) for marine mammals. The maximum within each scenario type is reported here.

Hearing group	Modelled distance to effect threshold (R_{max})								
	Behavioural response[a] (km)	TTS[b] (km)	PTS[b] (km)	Behavioural response[a] (km)	TTS[b] (km)	PTS[b] (km)	Behavioural response[a] (km)	TTS[b] (km)	PTS[b] (km)
	Facilities Scenarios (1-3)			Transfer Scenarios (4-7)			Transit Scenarios (8-9)		
Low-frequency (LF) cetaceans	20.6	4.45	0.24	25.1	6.08	0.41	9.23	0.02	–
High-frequency (HF) cetaceans		0.06	0.03		0.15	0.02		–	–
Very High-frequency (VHF) cetaceans		1.24	0.15		1.53	0.17		0.02	–
Phocids		0.58	0.03		1.57	0.06		–	–
Otariid Seals		0.03	–		0.12	–		–	–

Noise exposure criteria: [a] NOAA (2019) and [b] Southall et al. (2019)
A dash indicates the level was not reached within the limits of the modelled resolution (20 m).

Sea turtles

The threshold criteria from Finneran et al. (2017) was used to assess PTS and TTS for sea turtles. PTS is predicted to occur within 0.02 km at the farthest. TTS is predicted to occur between 0.04 and 0.28 km in the facilities scenarios (scenarios 1-3), between 0.27 and 0.38 km in the transfer scenarios (scenarios 4-7), and not occur within the modelling resolution in the transit scenarios (scenarios 8-9).

Fish

The 12 h threshold for TTS for fish with a swim bladder involved in hearing (158 dB re 1 µPa (Popper et al. 2014)) was reached between ranges of 20 m and 190 m across all of the modelled scenarios. The 48 h threshold for recoverable injury for fish with a swim bladder involved in hearing (170 dB re 1 µPa (Popper et al. 2014)) was reached at a range of 20 m across all of the modelled scenarios.

Glossary

Unless otherwise stated in an entry, these definitions are consistent with ISO 18405 (2017).

Light blue text indicates related terms that might be in this glossary. Dark blue text indicates clickable links to related terms in this glossary

1/3-octave

One third of an octave. A 1/3-octave is approximately equal to one decidecade (1/3 oct ≈ 1.003 ddec).

1/3-octave-band

Frequency band whose bandwidth is one 1/3 octave. The bandwidth of a 1/3-octave-band increases with increasing centre frequency.

absorption

The conversion of sound energy to heat energy. Specifically, the reduction of sound pressure amplitude due to particle motion energy converting to heat in the propagation medium.

Acoustic impedance

The ratio of the sound pressure in a medium to the volume flow rate of the medium through a specified surface due to the sound wave. It is a measure of how well sound propagates through a particular medium.

acoustic noise

Sound that interferes with an acoustic process.

ambient sound

Sound that would be present in the absence of a specified activity (ISO 18405:2017). It is usually a composite of sound from many sources near and far, e.g., shipping vessels, seismic activity, precipitation, sea ice movement, wave action, and biological activity.

attenuation

The gradual loss of acoustic energy from absorption and scattering as sound propagates through a medium. Attenuation depends on frequency—higher frequency sounds are attenuated faster than lower frequency sounds.

audiogram

A graph or table of hearing threshold as a function of frequency that describes the hearing sensitivity of an animal over its hearing range.

auditory frequency weighting

The process of applying an auditory frequency-weighting function. An example for marine mammals are the auditory frequency-weighting functions published by Southall et al. (2007).

auditory frequency-weighting function

Frequency-weighting function describing a compensatory approach accounting for a species' (or functional hearing group's) frequency-specific hearing sensitivity.

azimuth

A horizontal angle relative to a reference direction, which is often magnetic north or the direction of travel. In navigation it is also known as bearing.

background noise

Combination of ambient sound, acoustic self-noise, and, where applicable, sonar reverberation (ISO 18405:2017) that is detected, measured, or recorded with a signal.

bandwidth

A range within a continuous band of frequencies. Unit: hertz (Hz).

broadband level

The total level measured over a specified frequency range. If the frequency range is unspecified, the term refers to the entire measured frequency range.

cavitation

A rapid formation and collapse of vapor cavities (i.e., bubbles or voids) in water, most often caused by a rapid change in pressure. Fast-spinning vessel propellers typically cause cavitation, which creates a lot of noise.

cetacean

Member of the order Cetacea. Cetaceans are aquatic mammals and include whales, dolphins, and porpoises.

compressional wave

A mechanical vibration wave in which the direction of particle motion is parallel to the direction of propagation. Also called a longitudinal wave. In seismology/geophysics, it's called a primary wave or P-wave. Shear waves in the seabed can be converted to compressional waves in water at the water-seabed interface.

conductivity-temperature-depth (CTD)

Measurement data of the ocean's conductivity, temperature, and depth; used to compute sound speed profiles and salinity.

continuous sound

A sound whose sound pressure level remains above the background noise during the observation period and may gradually vary in intensity with time, e.g., sound from a marine vessel.

decade

Logarithmic frequency interval whose upper bound is ten times larger than its lower bound (ISO 80000-3:2006). For example, one decade up from 1000 Hz is 10,000 Hz, and one decade down is 100 Hz.

decibel (dB)

Unit of level used to express the ratio of one value of a power quantity to another on a logarithmic scale. Especially suited to quantify variables with a large dynamic range.

decidecade

One tenth of a decade. Approximately equal to one third of an octave (1 ddec ≈ 0.3322 oct), and for this reason sometimes referred to as a 1/3 octave.

decidecade band

Frequency band whose bandwidth is one decidecade. The bandwidth of a decidecade band increases with increasing centre frequency.

delphinid

Member of the family of oceanic dolphins (Delphinidae), composed of approximately 35 extant species, including dolphins, porpoises, and killer whales.

energy source level

A property of a sound source equal to the sound exposure level measured in the far field plus the propagation loss from the acoustic centre of the source to the receiver position. Unit: decibel (dB). Reference value: 1 μPa^2 m^2 s.

energy spectral density

Ratio of energy (time-integrated square of a specified field variable) to bandwidth in a specified frequency band from f_1 to f_2. In equation form, the energy spectral density E_f is given by: $E_f = 2\int_{f_1}^{f_2} |X(f)|^2 \, \mathrm{d}f / (f_2 - f_1)$ where $X(f)$ is the Fourier transform of the field variable $x(t)$: $X(f) = \int_{-\infty}^{+\infty} x(t) \exp(-2\pi i f t) \, \mathrm{d}t$.

The field variable $x(t)$ is a scalar quantity, such as sound pressure. It can also be the magnitude or a specified component of a vector quantity such as sound particle displacement, velocity, or acceleration. The unit of energy spectral density depends on the nature of x, as follows:

- If x = sound pressure: Pa^2 s/Hz
- If x = sound particle displacement: m^2 s/Hz
- If x = sound particle velocity: (m/s)^2 s/Hz
- If x = sound particle acceleration: (m/s^2)^2 s/Hz

The factor of two on the right side of the equation for E_f is needed to express a spectrum that is symmetric about f = 0, in terms of positive frequencies only. See entry 3.1.3.9 of ISO 18405 (2017).

energy spectral density level

The level ($L_{E,f}$) of the energy spectral density (E_f) in a stated frequency band and time window. Defined as: $L_{E,f} = 10\log_{10}(E_f/E_{f,0})$. Unit: decibel (dB). As with energy spectral density, energy spectral density level can be expressed in terms of various field variables (e.g., sound pressure, sound particle displacement). The reference value ($E_{f,0}$) for energy spectral density level depends on the nature of the field variable.

energy spectral density source level

A property of a sound source equal to the energy spectral density level of the sound pressure measured in the far field plus the propagation loss from the acoustic centre of the source to the receiver position. Unit: decibel (dB). Reference value: 1 μPa^2 m^2 s/Hz.

ensonified

Exposed to sound.

equal-loudness-level contour

Curve that shows, as a function of frequency, the sound pressure level required to produce a given loudness for a listener having normal hearing, listening to a specified kind of sound in a specified manner (ANSI S1.1-2013).

far field

The zone where, to an observer, sound originating from an array of sources (or a spatially distributed source) appears to radiate from a single point.

Fourier transform, Fourier synthesis

A mathematical technique which, although it has varied applications, is referenced in a physical data acquisition context as a method used in the process of deriving a spectrum estimate from time-series data (or the reverse process, termed the inverse Fourier transform). A computationally efficient numerical algorithm for computing the Fourier transform is known as the fast Fourier transform (FFT).

frequency

The rate of oscillation of a periodic function measured in cycles per unit time. The reciprocal of the period. Unit: hertz (Hz). Symbol: *f*. 1 Hz is equal to 1 cycle per second.

frequency weighting

The process of applying a frequency-weighting function.

frequency-weighting function

The squared magnitude of the sound pressure transfer function (ISO 18405:2017). For sound of a given frequency, the frequency-weighting function is the ratio of output power to input power of a specified filter, sometimes expressed in decibels. Examples include the following:

- *Auditory frequency-weighting function*: compensatory frequency-weighting function accounting for a species' (or functional hearing group's) frequency-specific hearing sensitivity.
- *System frequency-weighting function*: frequency-weighting function describing the sensitivity of an acoustic recording system, which typically consists of a hydrophone, one or more amplifiers, and an analog-to-digital converter.

functional hearing group

Category of animal species when classified according to their hearing sensitivity, hearing anatomy, and susceptibility to sound. For marine mammals, initial groupings were proposed by Southall et al. (2007), and revised groupings are developed as new research/data becomes available. Revised groupings proposed by Southall et al. (2019) include low-frequency cetaceans, high-frequency cetaceans, very high-frequency cetaceans, phocid carnivores in water, other carnivores in water, and sirenians. Example hearing groups for fish include species for which the swim bladder is involved in hearing, species for which the swim bladder is not involved in hearing, and species without a swim bladder (Popper et al. 2014). See also auditory frequency-weighting functions, which are often applied to these groups.

geoacoustic

Relating to the acoustic properties of the seabed.

hearing threshold

For a given species or functional hearing group, the sound level for a given signal that is barely audible (i.e., that would be barely audible for a given individual in the presence of specified background noise during a specific percentage of experimental trials).

hertz (Hz)

Unit of frequency defined as one cycle per second. Often expressed in multiples such as kilohertz (1 kHz = 1000 Hz).

high-frequency (HF) cetaceans

See functional hearing group. The mid- and high-frequency cetaceans groups proposed by Southall et al. (2007) were renamed high- and very-high-frequency cetaceans, respectively, by Southall et al. (2019).

hydrophone

An underwater sound pressure transducer. A passive electronic device for recording or listening to underwater sound.

hydrostatic pressure

The pressure at any given depth in a static liquid that is the result of the weight of the liquid acting on a unit area at that depth, plus any pressure acting on the surface of the liquid. Unit: pascal (Pa).

impulsive sound

Qualitative term meaning sounds that are typically transient, brief (less than 1 s), broadband, with rapid rise time and rapid decay. They can occur in repetition or as a single event. Sources of impulsive sound include, among others, explosives, seismic airguns, and impact pile drivers.

isopleth

A line drawn on a map through all points having the same value of some specified quantity (e.g., sound pressure level isopleth).

knot (kn)

Unit of vessel speed equal to 1 nautical mile per hour.

level

A measure of a quantity expressed as the logarithm of the ratio of the quantity to a specified reference value of that quantity. For example, a value of sound pressure level with reference to 1 μPa^2 can be written in the form *x* dB re 1 μPa^2.

low-frequency (LF) cetaceans

See functional hearing group.

masking

Obscuring of sounds of interest by other sounds at similar frequencies.

median

The 50th percentile of a statistical distribution.

mid-frequency (MF) cetaceans

See functional hearing group. The mid-frequency cetaceans group proposed by Southall et al. (2007) was renamed high-frequency cetaceans by Southall et al. (2019).

monopole source level (MSL)

A source level that has been calculated using an acoustic model that accounts for the effect of the sea-surface and seabed on sound propagation, assuming a point source (monopole). Often used to quantify source levels of vessels or industrial operations from measurements. See also radiated noise level.

M-weighting

A set of auditory frequency-weighting functions proposed by Southall et al. (2007).

mysticete

Member of the Mysticeti, a suborder of cetaceans. Also known as baleen whales, mysticetes have baleen plates (rather than teeth) that they use to filter food from water (or from sediment as for grey

whales). This group includes rorquals (Balaenopteridae, such as blue, fin, humpback, and minke whales), right and bowhead whales (Balaenidae), and grey whales (*Eschrichtius robustus*).

non-impulsive sound

Sound that is not an impulsive sound. Not necessarily a continuous sound.

octave

The interval between a sound and another sound with double or half the frequency. For example, one octave above 200 Hz is 400 Hz, and one octave below 200 Hz is 100 Hz.

odontocete

Member of Odontoceti, a suborder of cetaceans. These whales, dolphins, and porpoises have teeth (rather than baleen plates). Their skulls are mostly asymmetric, an adaptation for their echolocation. This group includes sperm whales, killer whales, belugas, narwhals, dolphins, and porpoises.

otariid

Member of the family Otariidae, one of the three groupings of pinnipeds (along with phocids and walrus). These eared seals, commonly called fur seals and sea lions, are adapted to semi-aquatic life; they use their large fore flippers for propulsion underwater and can walk on all four limbs on land.

otariid pinnipeds underwater (OW)

See functional hearing group.

other marine carnivores in water (OCW)

See functional hearing group.

parabolic equation method

A computationally efficient solution to the acoustic wave equation that is used to model propagation loss. The parabolic equation approximation omits effects of backscattered sound (which are negligible for most ocean-acoustic propagation problems), simplifying the computation of propagation loss.

particle acceleration, particle displacement, particle motion, particle velocity

See sound particle acceleration, sound particle displacement, sound particle motion, and sound particle velocity.

peak sound pressure level (PK), zero-to-peak sound pressure level

The level (L_{pk}) of the squared maximum magnitude of the sound pressure (p_{pk}^2) in a stated frequency band and time window. Defined as $L_{pk} = 10\log_{10}(p_{\mathrm{pk}}^2/p_0^2) = 20\log_{10}(p_{\mathrm{pk}}/p_0)$. Unit: decibel (dB). Reference value (p_0^2) for sound in water: 1 µPa^2.

percentile level

The sound level not exceeded *N* % of the time during a specified time interval. The *N*th percentile level is equal to the (100−*N*) % exceedance level.

permanent threshold shift (PTS)

An irreversible loss of hearing sensitivity caused by excessive noise exposure. Considered auditory injury. Compare with temporary threshold shift.

phocid

Member of the family Phocidae, one of the three groupings of pinnipeds (along with otariids and walrus). These true/earless seals are more adapted to in-water life than are otariids, which have more terrestrial adaptations. Phocids use their hind flippers to propel themselves underwater.

phocid pinnipeds underwater (PW), phocid carnivores in water (PCW)

See functional hearing group.

pinniped

Member of the superfamily Pinnipedia, which is composed of phocids (true seals or earless seals), otariids (eared seals or fur seals and sea lions), and walrus.

point source

A source that radiates sound as if from a single point.

power spectral density

Generic term, formally defined as power in a unit frequency band. Unit: watt per hertz (W/Hz). The term is sometimes loosely used to refer to the spectral density of other parameters such as squared sound pressure. Ratio of energy spectral density, E_f, to time duration, Δt, in a specified temporal observation window. In equation form, the power spectral density P_f is given by $P_f = E_f / \Delta t$. Power spectral density can be expressed in terms of various field variables (e.g., sound pressure, sound particle displacement).

power spectral density level

The level ($L_{P,f}$) of the power spectral density (P_f) in a stated frequency band and time window. Defined as: $L_{P,f} = 10\log_{10}(P_f / P_{f,0})$. Unit: decibel (dB).

As with power spectral density, power spectral density level can be expressed in terms of various field variables (e.g., sound pressure, sound particle displacement). The reference value ($P_{f,0}$) for power spectral density level depends on the nature of the field variable.

power spectral density source level

A property of a sound source equal to the power spectral density level of the sound pressure measured in the far field plus the propagation loss from the acoustic centre of the source to the receiver position. Unit: decibel (dB). Reference value: 1 $\mu Pa^2\,m^2/Hz$.

propagation loss (PL)

Difference between a source level (SL) and the level at a specified location, $PL(x) = SL - L(x)$. Unit: decibel (dB). See also transmission loss.

radiated noise level (RNL)

A source level that has been calculated assuming sound pressure decays geometrically with distance from the source, with no influence of the sea-surface or seabed. Often used to quantify source levels of vessels or industrial operations from measurements. See also monopole source level.

received level

The level of a given field variable measured (or that would be measured) at a given location.

reference value

Standard value of a quantity used for calculating underwater sound level. The reference value depends on the quantity for which the level is being calculated:

Quantity	Reference value
Sound pressure	p_0^2 = 1 μPa² or p_0 = 1 μPa
Sound exposure	E_0 = 1 μPa² s
Sound particle displacement	δ_0^2 = 1 pm²
Sound particle velocity	u_0^2 = 1 nm²/s²
Sound particle acceleration	a_0^2 = 1 μm²/s⁴

shear wave

A mechanical vibration wave in which the direction of particle motion is perpendicular to the direction of propagation. Also called a secondary wave or S-wave. Shear waves propagate only in solid media, such as sediments or rock. Shear waves in the seabed can be converted to compressional waves in water at the water-seabed interface.

sound

A time-varying disturbance in the pressure, stress, or material displacement of a medium propagated by local compression and expansion of the medium. In common meaning, a form of energy that propagates through media (e.g., water, air, ground) as pressure waves.

sound exposure

Time integral of squared sound pressure over a stated time interval in a stated frequency band. The time interval can be a specified time duration (e.g., 24 h) or from start to end of a specified event (e.g., a pile strike, an airgun pulse, a construction operation). Unit: pascal squared second (Pa² s). Symbol: E.

sound exposure level (SEL)

The level (L_E) of the sound exposure (E) in a stated frequency band and time window: $L_E = 10\log_{10}(E/E_0)$ (ISO 18405:2017). Unit: decibel (dB). Reference value (E_0) for sound in water: 1 μPa² s.

sound exposure spectral density

Distribution as a function of frequency of the time-integrated squared sound pressure per unit bandwidth of a sound having a continuous spectrum (ISO 18405:2017). Unit: pascal squared second per hertz (Pa² s/Hz).

sound field

Region containing sound waves.

sound intensity

Product of the sound pressure and the sound particle velocity (ISO 18405:2017). The magnitude of the sound intensity is the sound energy flowing through a unit area perpendicular to the direction of propagation per unit time. Unit: watt per meter squared (W/m²). Symbol: I.

sound particle acceleration

The rate of change of sound particle velocity. Unit: meter per second squared (m/s²). Symbol: a.

sound particle motion

Movement caused by the action of sound of the smallest volume of a medium that represents its mean physical properties. Important for determining effects of underwater noise on fishes and invertebrates because their hearing organs sense particle motion rather than sound pressure.

sound particle displacement

Displacement of a material element caused by the action of sound, where a material element is the smallest element of the medium that represents the medium's mean density (ISO 18405:2017). Unit: meter (m). Symbol: δ.

sound particle velocity

The velocity of a particle in a material moving back and forth in the direction of the pressure wave. Unit: meter per second (m/s). Symbol: u.

sound pressure

The contribution to total pressure caused by the action of sound (ISO 18405:2017). Unit: pascal (Pa). Symbol: p.

sound pressure level (SPL), rms sound pressure level

The level (L_p) of the time-mean-square sound pressure (p_{rms}^2) in a stated frequency band and time window: $L_p = 10\log_{10}(p_{\mathrm{rms}}^2/p_0^2) = 20\log_{10}(p_{\mathrm{rms}}/p_0)$, where rms is the abbreviation for root-mean-square. Unit: decibel (dB). Reference value (p_0^2) for sound in water: 1 μPa^2. SPL can also be expressed in terms of the root-mean-square (rms) with a reference value of p_0 = 1 μPa. The two definitions are equivalent.

sound speed profile

The speed of sound in the water column as a function of depth below the water surface.

source level (SL)

A property of a sound source equal to the sound pressure level measured in the far field plus the propagation loss from the acoustic centre of the source to the receiver position. Unit: decibel (dB). Reference value: 1 μPa^2 m^2.

spectrum

Distribution of acoustic signal content over frequency, where the signal's content is represented by its power, energy, mean-square sound pressure, or sound exposure.

surface duct

The upper portion of a water column within which the gradient of the sound speed profile causes sound to refract upward and therefore reflect repeatedly off the surface resulting in relatively long-range sound propagation with little loss.

temporary threshold shift (TTS)

Reversible loss of hearing sensitivity caused by noise exposure. Compare with permanent threshold shift.

thermocline

A depth interval near the ocean surface that experiences larger temperature gradients than the layers above and below it due to warming or cooling by heat conduction from the atmosphere and by warming from the sun.

transmission loss (TL)

The difference between a specified level at one location and that at a different location: TL(x_1,x_2) = $L(x_1) - L(x_{2)}$ (ISO 18405:2017). Unit: decibel (dB). See also propagation loss.

unweighted

Term indicating that no frequency-weighting function is applied.

very high-frequency (VHF) cetaceans

See functional hearing group.

wavelength

Distance over which a wave completes one cycle of oscillation. Unit: meter (m). Symbol: λ.

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Appendix A. Acoustic Metrics

This section describes in detail the acoustic metrics, impact criteria, and frequency weighting relevant to the modelling study.

A.1. Pressure Related Acoustic Metrics

Underwater sound pressure amplitude is measured in decibels (dB) relative to a fixed reference pressure of p_0 = 1 µPa. Because the perceived loudness of sound, especially pulsed sound such as from seismic airguns, pile driving, and sonar, is not generally proportional to the instantaneous acoustic pressure, several sound level metrics are commonly used to evaluate sound and its effects on marine life. Here we provide specific definitions of relevant metrics used in the accompanying report. Where possible, we follow International Organization for Standardization definitions and symbols for sound metrics (e.g., ISO 2017, ANSI S1.1-2013).

The sound pressure level (SPL or L_p; dB re 1 µPa) is the root-mean-square (rms) pressure level in a stated frequency band over a specified time window (T; s). It is important to note that SPL always refers to an rms pressure level and therefore not instantaneous pressure:

$$L_p = 10 \log_{10} \left(\frac{1}{T} \int_T g(t)\, p^2(t)\, dt / p_0^2 \right) \text{ dB} \tag{A-1}$$

where $g(t)$ is an optional time weighting function. In many cases, the start time of the integration is marched forward in small time steps to produce a time-varying SPL function.

The sound exposure level (SEL or L_E; dB re 1 µPa^2·s) is the time-integral of the squared acoustic pressure over a duration (T):

$$L_E = 10 \log_{10} \left(\int_T p^2(t)\, dt / T_0 p_0^2 \right) \text{ dB} \tag{A-2}$$

where T_0 is a reference time interval of 1 s. SEL continues to increase with time when non-zero pressure signals are present. It is a dose-type measurement, so the integration time applied must be carefully considered for its relevance to impact to the exposed recipients.

SEL can be calculated over a fixed duration, such as the time of a single event or a period with multiple acoustic events. When applied to pulsed sounds, SEL can be calculated by summing the SEL of the N individual events. For a fixed duration, the square pressure is integrated over the duration of interest. For multiple events, the SEL can be computed by summing (in linear units) the SEL of the N individual events:

$$L_{E,N} = 10 \log_{10} \left(\sum_{i=1}^{N} 10^{\frac{L_{E,i}}{10}} \right) \text{ dB}\,. \tag{A-3}$$

If applied, the frequency weighting of an acoustic event should be specified, as in the case of weighted SEL (e.g., $L_{E,LFC,24h}$; Appendix A.4). The use of fast, slow, or impulse exponential-time-averaging or other time-related characteristics should also be specified.

A.2. Decidecade Band Analysis

The distribution of a sound's power with frequency is described by the sound's spectrum. The sound spectrum can be split into a series of adjacent frequency bands. Splitting a spectrum into 1 Hz wide bands, called passbands, yields the power spectral density of the sound. This splitting of the spectrum into passbands of a constant width of 1 Hz, however, does not represent how animals perceive sound.

Because animals perceive exponential increases in frequency rather than linear increases, analysing a sound spectrum with passbands that increase exponentially in size better approximates real-world scenarios. In underwater acoustics, a spectrum is commonly split into decidecade bands, which are one tenth of a decade wide. A decidecade is sometimes referred to as a "1/3 octave" because one tenth of a decade is approximately equal to one third of an octave. Each decade represents a factor 10 in sound frequency. Each octave represents a factor 2 in sound frequency. The centre frequency of the ith band, $f_c(i)$, is defined as:

$$f_c(i) = 10^{\frac{i}{10}} \text{ kHz} \tag{A-4}$$

and the low (f_{lo}) and high (f_{hi}) frequency limits of the ith decade band are defined as:

$$f_{lo,i} = 10^{\frac{-1}{20}} f_c(i) \quad \text{and} \quad f_{hi,i} = 10^{\frac{1}{20}} f_c(i). \tag{A-5}$$

The decidecade bands become wider with increasing frequency, and on a logarithmic scale the bands appear equally spaced (Figure A-1). The acoustic modelling spans from band 10 (f_c (10) = 10 Hz) to band 44 ($f_c(44)$ = 25 kHz).

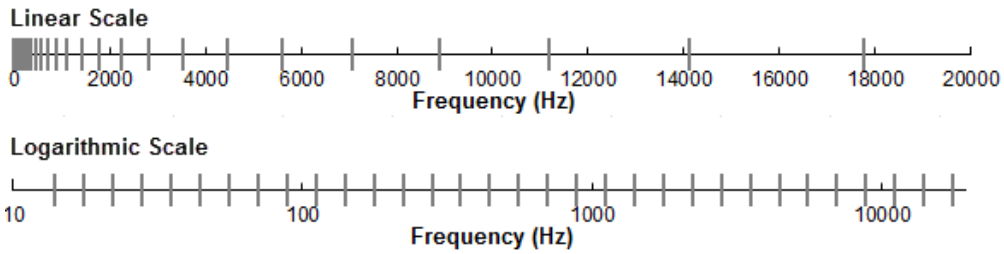


Figure A-1. Decidecade frequency bands (vertical lines) shown on a linear frequency scale and a logarithmic scale.

The sound pressure level in the ith band ($L_{p,i}$) is computed from the spectrum $S(f)$ between $f_{lo,i}$ and $f_{hi,i}$:

$$L_{p,i} = 10\, log_{10} \int_{f_{lo,i}}^{f_{hi,i}} S(f)\, df \text{ dB}. \tag{A-6}$$

Summing the sound pressure level of all the bands yields the broadband sound pressure level:

$$\text{Broadband SPL} = 10 \log_{10} \sum_i 10^{\frac{L_{p,i}}{10}} \text{ dB}. \tag{A-7}$$

Figure A-2 shows an example of how the decidecade band sound pressure levels compare to the sound pressure spectral density levels of an ambient sound signal. Because the decidecade bands are wider than 1 Hz, the decidecade band SPL is higher than the spectral levels at higher frequencies. Acoustic modelling of decidecade bands requires less computation time than 1 Hz bands and still resolves the frequency-dependence of the sound source and the propagation environment.

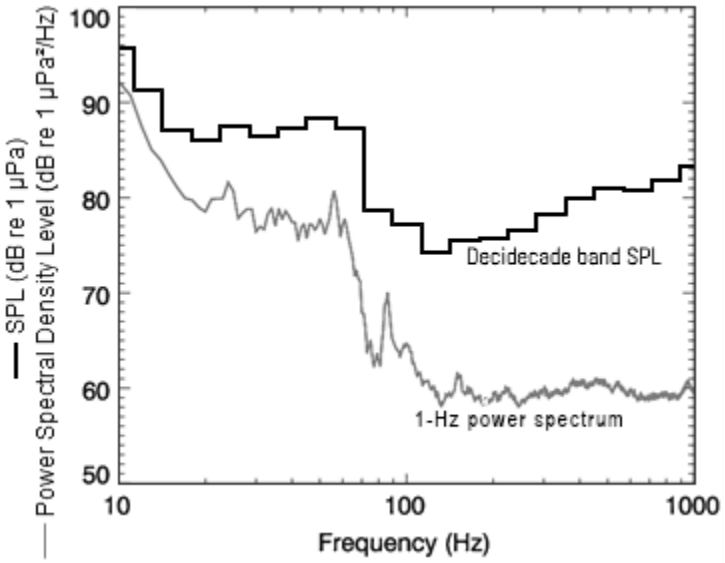


Figure A-2. Sound pressure spectral density levels and the corresponding decidecade band sound pressure levels of example ambient noise shown on a logarithmic frequency scale.Because the decidecade bands are wider with increasing frequency, the decidecade band SPL is higher than the power spectrum.

A.3. Marine Mammal Noise Effect Criteria

It has been long recognised that marine mammals can be adversely affected by underwater anthropogenic noise. For example, Payne and Webb (1971) suggest that communication distances of fin whales are reduced by shipping sounds. Subsequently, similar concerns arose regarding effects of other underwater noise sources and the possibility that impulsive sources—primarily airguns used in seismic surveys—could cause auditory injury. This led to a series of workshops held in the late 1990s, conducted to address acoustic mitigation requirements for seismic surveys and other underwater noise sources (NMFS 1998, ONR 1998, Nedwell and Turnpenny 1998, HESS 1999, Ellison and Stein 1999). In the years since these early workshops, a variety of thresholds have been proposed for auditory injury, impairment, and disturbance. The following sections summarise the recent development of thresholds; however, this field remains an active research topic.

A.3.1. Injury and Hearing Sensitivity Changes

In recognition of shortcomings of the SPL-only based auditory injury criteria, in 2005 NMFS sponsored the Noise Criteria Group to review literature on marine mammal hearing to propose new noise exposure criteria. Some members of this expert group published a landmark paper (Southall et al. 2007) that suggested assessment methods similar to those applied for humans. The resulting recommendations introduced dual auditory injury criteria for impulsive sounds that included peak pressure level thresholds and SEL_{24h} thresholds, where the subscripted 24h refers to the accumulation period for calculating SEL. The peak pressure level criterion is not frequency weighted whereas SEL_{24h} is frequency weighted according to one of four marine mammal species hearing groups: low-, mid- and high-frequency cetaceans (LF, MF, and HF cetaceans, respectively) and Pinnipeds in Water (PINN). These weighting functions are referred to as M-weighting filters (analogous to the A-weighting filter for humans; see Appendix A.4). The SEL_{24h} thresholds were obtained by extrapolating measurements of onset levels of Temporary Threshold Shift (TTS) in belugas by the amount of TTS required to produce Permanent Threshold Shift (PTS) in chinchillas. The Southall et al. (2007) recommendations do not specify an exchange rate, which suggests that the thresholds are the same regardless of the duration of exposure (i.e., it implies a 3 dB exchange rate).

Wood et al. (2012) refined Southall et al.'s (2007) thresholds, suggesting lower PTS and TTS values for LF and HF cetaceans while retaining the filter shapes. Their revised thresholds were based on TTS-onset levels in harbour porpoises from Lucke et al. (2009), which led to a revised impulsive sound PTS threshold for HF cetaceans of 179 dB re 1 $\mu Pa^2 \cdot s$. Because there were no data available for baleen whales, Wood et al. (2012) based their recommendations for LF cetaceans on results obtained from MF cetacean studies. In particular they referenced the Finneran and Schlundt (2010) research, which found mid-frequency cetaceans are more sensitive to non-impulsive sound exposure than Southall et al. (2007) assumed. Wood et al. (2012) thus recommended a more conservative TTS-onset level for LF cetaceans of 192 dB re 1 $\mu Pa^2 \cdot s$.

As of present, a definitive approach is still not apparent. There is consensus in the research community that an SEL-based method is preferable, either separately or in addition to an SPL-based approach to assess the potential for injuries. In August 2016, after substantial public and expert input into three draft versions and based largely on the above-mentioned literature (NOAA 2013, 2015, 2016), NMFS finalised technical guidance for assessing the effect of anthropogenic sound on marine mammal hearing (NMFS 2016). The guidance describes auditory injury criteria with new thresholds and frequency weighting functions for the five hearing groups described by Finneran and Jenkins (2012). The latest revision to this work was published in 2018 (NMFS 2018). Southall et al. (2019) revisited the interim criteria published in 2007. All noise exposure criteria in NMFS (2018) and Southall et al. (2019) are identical (for impulsive and non-impulsive sounds); however, the mid-frequency cetaceans from NMFS (2018) are classified as high-frequency cetaceans in Southall et al. (2019), and high-frequency cetaceans from NMFS (2018) are classified as very-high-frequency cetaceans in Southall et al. (2019).

A.3.2. Behavioural Response

Numerous studies on marine mammal behavioural responses to sound exposure have not resulted in consensus in the scientific community regarding the appropriate metric for assessing behavioural reactions. However, it is recognised that the context in which the sound is received affects the nature and extent of responses to a stimulus (Southall et al. 2007, Ellison and Frankel 2012, Southall et al. 2016).

NMFS currently uses a step function (all-or-none) threshold of 120 dB re 1 µPa SPL (unweighted) for non-impulsive sounds to assess and regulate noise-induced behavioural impacts on marine mammals (NOAA 2019). The 120 dB re 1 µPa threshold is associated with continuous sources and was derived based on studies examining behavioural responses to drilling and dredging (NOAA 2018), referring to Malme et al. (1983), Malme et al. (1984), and Malme et al. (1986), which were considered in Southall et al. (2007). Malme et al. (1986) found that playback of drillship noise did not produce clear evidence of disturbance or avoidance for levels below 110 dB re 1 µPa (SPL), possible avoidance occurred for exposure levels approaching 119 dB re 1 µPa. Malme et al. (1984) determined that measurable reactions usually consisted of rather subtle short-term changes in speed and/or heading of the whale(s) under observation. It has been shown that both received level and proximity of the sound source is a contributing factor in eliciting behavioural reactions in humpback whales (Dunlop et al. 2017, Dunlop et al. 2018).

A.4. Marine Mammal Frequency Weighting

The potential for noise to affect animals depends on how well the animals can hear it. Noises are less likely to disturb or injure an animal if they are at frequencies that the animal cannot hear well. An exception occurs when the sound pressure is so high that it can physically injure an animal by non-auditory means (i.e., barotrauma). For sound levels below such extremes, the importance of sound

components at particular frequencies can be scaled by frequency weighting relevant to an animal's sensitivity to those frequencies (Nedwell and Turnpenny 1998, Nedwell et al. 2007).

A.4.1. Marine Mammal Frequency Weighting Functions

In 2015, a US Navy technical report by Finneran (2015) recommended new auditory weighting functions. The overall shape of the auditory weighting functions is similar to human A-weighting functions, which follows the sensitivity of the human ear at low sound levels. The new frequency-weighting function is expressed as:

$$G(f) = K + 10\log_{10}\left[\left(\frac{(f/f_{lo})^{2a}}{\left[1+(f/f_{lo})^{2}\right]^{a}\left[1+(f/f_{hi})^{2}\right]^{b}}\right)\right]. \quad \text{(A-8)}$$

Finneran (2015) proposed five functional hearing groups for marine mammals in water: low-, mid- and high-frequency cetaceans (LF, MF, and HF cetaceans, respectively), phocid pinnipeds, and otariid pinnipeds. The parameters for these frequency-weighting functions were further modified the following year (Finneran 2016) and were adopted in NOAA's technical guidance that assesses acoustic impacts on marine mammals (NMFS 2018), and in the latest guidance by Southall (2019). The updates did not affect the content related to either the definitions of frequency-weighting functions or the threshold values, however, the terminology for mid- and high-frequency cetaceans was changed to high- and very high-frequency cetaceans. Table A-1. lists the frequency-weighting parameters for each hearing group relevant to this assessment, and Figure A-3 shows the resulting frequency-weighting curves.

Table A-1. Parameters for the auditory weighting functions used in this project as recommended by Southall et al. (2019).

Hearing group	a	b	flo (Hz)	fhi (Hz)	C (dB)
Low-frequency cetaceans (baleen whales)	1.0	2	200	19,000	0.13
High-frequency cetaceans (most dolphins, plus sperm, beaked, and bottlenose whales)	1.6	2	8,800	110,000	1.20
Very-high-frequency cetaceans (true porpoises, *Kogia*, river dolphins, *Cephalorhynchus* spp., *Lagenorhynchus cruciger* and *L. australis*)	1.8	2	12,000	140,000	1.36
Phocid Seals in water	1.0	2	1,900	30,000	0.75
Otariid Seals in water	2.0	2	940	25,000	0.64

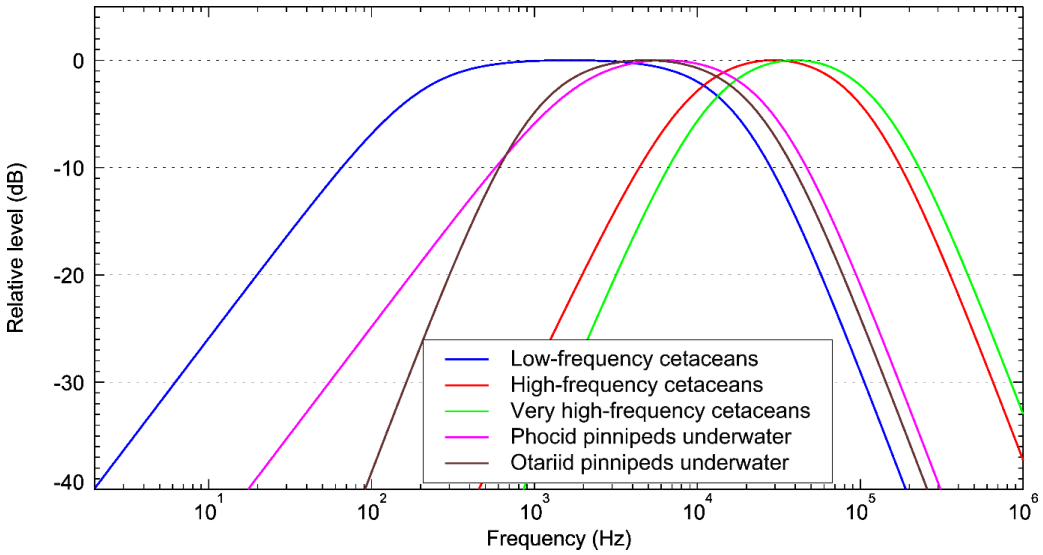


Figure A-3. Auditory weighting functions for functional marine mammal hearing groups used in this project as recommended by Southall et al. (2019).

Appendix B. Methods and Parameters

B.1. Environmental Parameters

B.1.1. Bathymetry

Bathymetry throughout the modelled area was extracted from the High-resolution depth model for the Bass Strait (Beaman 2022), a 0.0003 arc-degree (about 30 m) grid rendered for the Bass Strait. Bathymetry data were re-gridded and combined onto a Map Grid of Australia (MGA) coordinate projection (Zone 55) with a regular grid spacing of 200 × 200 m (Figure B-1).

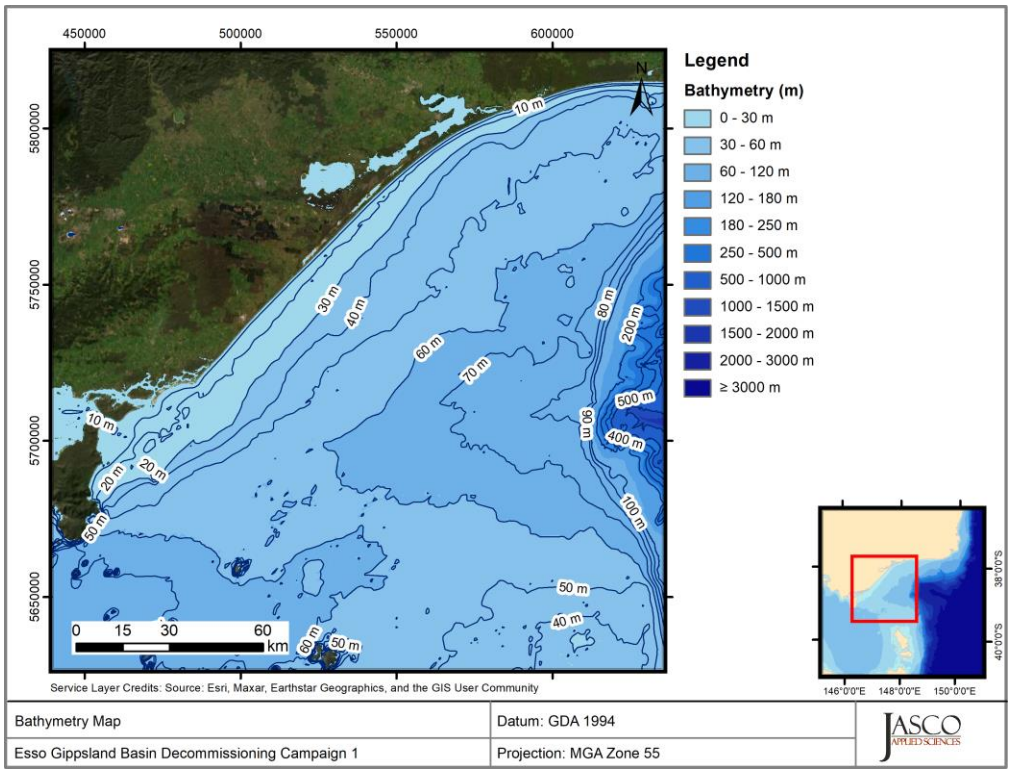


Figure B-1. Bathymetry in the modelled area.

B.1.2. Sound Speed Profile

The sound speed profile in the area was derived from temperature and salinity profiles from the U.S. Naval Oceanographic Office's Generalized Digital Environmental Model V 3.0 (GDEM; Teague et al. 1990, Carnes 2009). GDEM provides an ocean climatology of temperature and salinity for the world's oceans on a latitude-longitude grid with 0.25° resolution, with a temporal resolution of one month, based on global historical observations from the U.S. Navy's Master Oceanographic Observational Data Set (MOODS). The climatology profiles include 78 fixed depth points to a maximum depth of 6800 m (where the ocean is that deep). The GDEM temperature-salinity profiles were converted to sound speed profiles according to Coppens (1981).

Mean monthly sound speed profiles were derived from the GDEM profiles in the locality of the modelled sites. Following a sensitivity analysis, the June sound speed profile was found to be most favourable to longer-range sound propagation. As such, June was selected for sound propagation

modelling to ensure precautionary estimates of distances to received sound level thresholds. Figure B-2 shows the resulting profile, which was used as input to the sound propagation modelling.

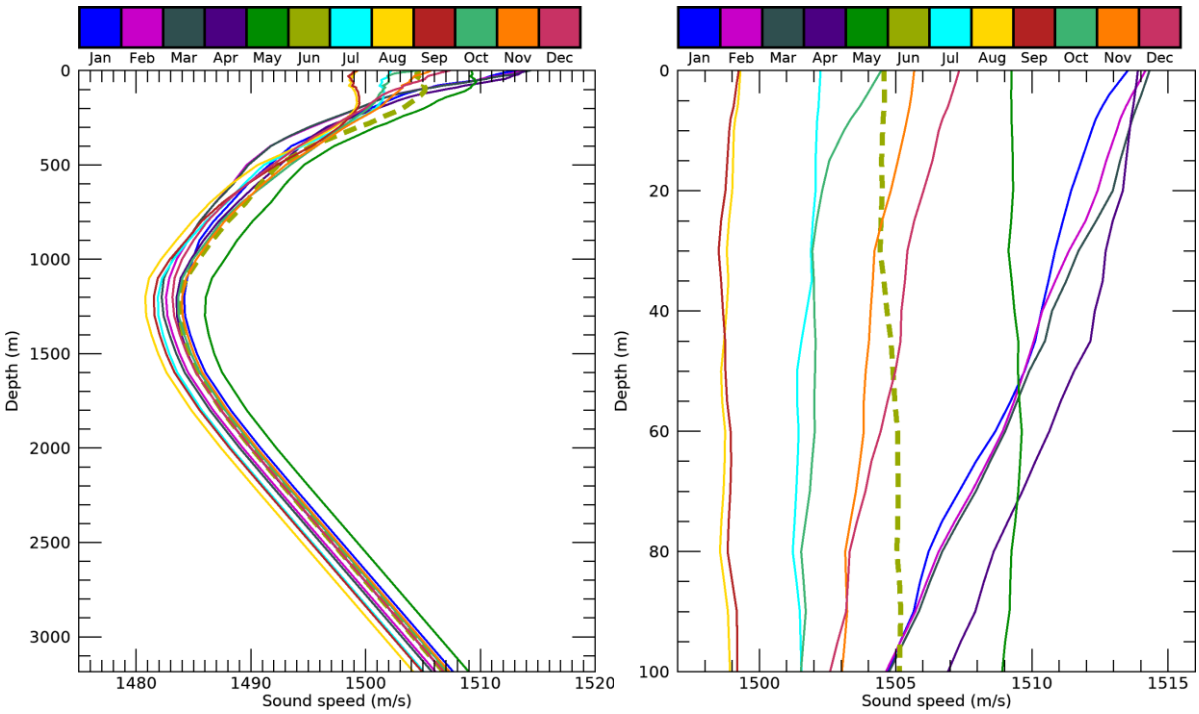


Figure B-2. Sound speed profiles for all months, with the applied month (June) displayed as a dotted line: full profile (left) and top 100 m (right) Profiles are calculated from temperature and salinity profiles from Generalized Digital Environmental Model V 3.0 (GDEM; Teague et al. 1990, Carnes 2009).

B.1.3. Geoacoustics

The propagation model used in this considered two geoacoustic profiles within the modelling area. These profiles determine how sound is reflected from the seabed, as well as how it is transmitted, reflected, and absorbed into the seabed. The modelled geoacoustics are based on a study by Mitchell et al. (2007), which conducted geological studies of the area via borehole analysis. The borehole nearest to the Dolphin facility is Barracouta-1 (Mitchell et al. 2007). The geology here consists of unconsolidated sediment (alternating fine to medium-fine quartz-carbonate sand) underlain by marl. For sediment layers, representative grain sizes and porosities were used in the grain-shearing model proposed by Buckingham (2005) to estimate the geoacoustic parameters as input to sound propagation models. The marl and limestone parameters are estimate based on Duncan et al. (2013).

The borehole nearest Kingfish A is Kingfish B (Mitchell et al. 2007). The geology here consists of a shallow layer of unconsolidated sediment (alternating coarse shelly quartz-carbonate sand and muddy fine quartz-carbonate sand) underlain by limestone. For sediment layers, representative grain sizes and porosities were used in the grain-shearing model proposed by Buckingham (2005) to estimate the geoacoustic parameters required by the sound propagation models.

Table B-1 presents the Barracouta-1 geoacoustic profile, and Table B-2 presents the Kingfish B geoacoustic profile. For the transfer locations and transit sites, due to the proximity of the Barracouta-1 borehole to these sites (Mitchell et al. 2007) the same data as shown in Table B-1 were used.

Table B-1. Geoacoustic profile for Barracouta Facility modelled site. Each parameter varies linearly within the stated range.

Depth below seafloor (m)	Predicted lithology	Density (g/cm³)	Compressional wave		Shear wave	
			Speed (m/s)	Attenuation (dB/λ)	Speed (m/s)	Attenuation (dB/λ)
0-4	Fine quartz-carbonate sand	2.06	1625-1763	0.08-0.62	357	3.65
4-8	Medium-fine quartz-carbonate sand	2.07	1790-1844	0.69-0.86		
8-10	Fine quartz-carbonate sand	2.06	1810-1828	0.78-0.84		
10-15	Medium-fine quartz-carbonate sand	2.07	1865-1908	0.92-1.05		
15-38	Fine to medium-fine quartz-carbonate sand	2.06	1886-2008	1.00-1.31		
38-40	Medium-fine quartz-carbonate sand intermixed with limestone	2.07	2039-2048	1.37-1.39		
40-68	Micaceous, carbonaceous muddy fine quartz-carbonate sand	2.06	1987-2076	1.27-1.47		
68-90	Medium-fine quartz-carbonate sand	2.07	2151-2216	1.60-1.72		
90-102	Muddy fine quartz-carbonate sand	2.06	2132-2159	1.58-1.63		
> 102	Marl	2.7	2600	0.5		

Table B-2. Geoacoustic profile for Kingfish B Facility modelled site. Each parameter varies linearly within the stated range.

Depth below seafloor (m)	Predicted lithology	Density (g/cm³)	Compressional wave		Shear wave	
			Speed (m/s)	Attenuation (dB/λ)	Speed (m/s)	Attenuation (dB/λ)
0-3	Coarse shelly quartz-carbonate sand	2.08	1637-1859	0.06-0.87	357	3.65
3-10	Fine quartz-carbonate sand	2.06	1747-1828	0.57-0.83		
10-13	Coarse shelly quartz-carbonate sand	2.08	2000-2042	1.25-1.35		
> 13	Limestone	2.7	2600	0.5		

B.2. Sound Propagation Models

B.2.1. Propagation Loss

The propagation of sound through the environment was modelled by predicting the acoustic propagation loss—a measure, in decibels, of the decrease in sound level between a source and a receiver some distance away. Geometric spreading of acoustic waves is the predominant way by which propagation loss occurs. Propagation loss also happens when the sound is absorbed and scattered by the seawater, and absorbed scattered, and reflected at the water surface and within the seabed. Propagation loss depends on the acoustic properties of the ocean and seabed; its value changes with frequency.

If the acoustic energy source level (ESL), expressed in dB re 1 $\mu Pa^2 \cdot s\ m^2$, and propagation loss (PL), in units of dB, at a given frequency are known, then the received level (RL) at a receiver location can be calculated in dB re 1 $\mu Pa^2 \cdot s$ by:

$$RL = SL - PL. \quad \text{(B-1)}$$

B.2.2. MONM-BELLHOP

Long-range sound fields were computed using JASCO's Marine Operations Noise Model (MONM). While other models may be more accurate for steep-angle propagation in high-shear environment, MONM is well suited for effective longer-range estimation. This model computes sound propagation at frequencies of 10 Hz to 1.6 kHz via a wide-angle parabolic equation solution to the acoustic wave equation (Collins 1993) based on a version of the U.S. Naval Research Laboratory's Range-dependent Acoustic Model (RAM), which has been modified to account for a solid seabed (Zhang and Tindle 1995). MONM computes sound propagation at frequencies > 1.6 kHz via the BELLHOP Gaussian beam acoustic ray-trace model (Porter and Liu 1994).

The parabolic equation method has been extensively benchmarked and is widely employed in the underwater acoustics community (Collins et al. 1996). MONM accounts for the additional reflection loss at the seabed, which results from partial conversion of incident compressional waves to shear waves at the seabed and sub-bottom interfaces, and it includes wave attenuations in all layers. MONM incorporates the following site-specific environmental properties: a bathymetric grid of the modelled area, underwater sound speed as a function of depth, and a geoacoustic profile based on the overall stratified composition of the seafloor.

MONM computes acoustic fields in three dimensions by modelling propagation loss within two-dimensional (2-D) vertical planes aligned along radials covering a 360° swath from the source, an approach commonly referred to as N×2-D. These vertical radial planes are separated by an angular step size of $\Delta\theta$, yielding N = 360°/$\Delta\theta$ number of planes (Figure B-3).

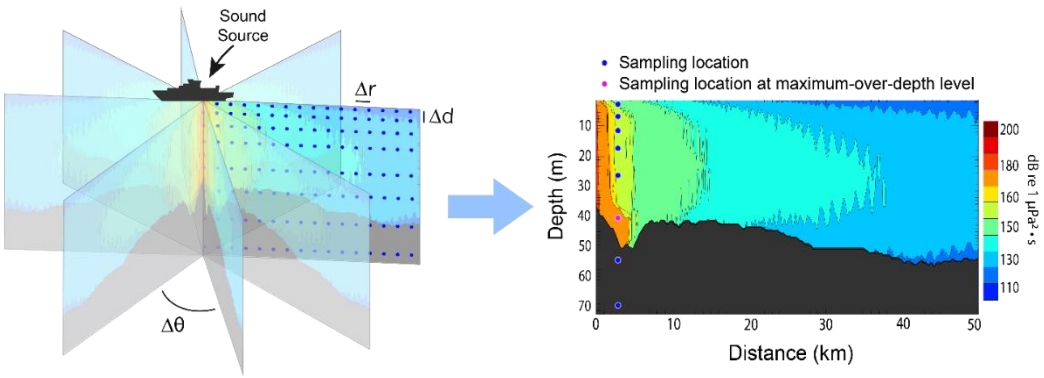


Figure B-3. The N×2-D and maximum-over-depth modelling approach used by MONM.

MONM treats frequency dependence by computing acoustic propagation loss at the centre frequencies of decidecade bands. Sufficiently many decidecade frequency-bands, starting at 10 Hz, are modelled to include most of the acoustic energy emitted by the source. At each centre frequency, the propagation loss is modelled within each of the N vertical planes as a function of depth and range from the source. The decidecade received per-second SEL are computed by subtracting the band propagation loss values from the directional source level in that frequency band. Composite broadband received per-second SEL are then computed by summing the received decidecade levels.

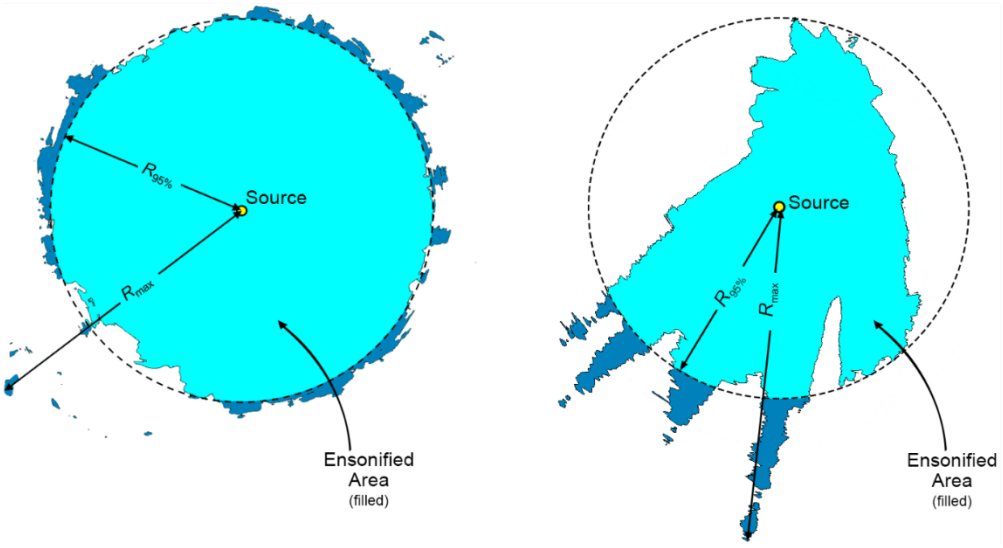
The received 1-s SEL sound field within each vertical radial plane is sampled at various ranges from the source, generally with a fixed radial step size. At each sampling range along the surface, the sound field is sampled at various depths, with the step size between samples increasing with depth below the surface. The step sizes are chosen to provide increased coverage near the depth of the source and at depths of interest in terms of the sound speed profile. For areas with deep water, sampling is not performed at depths beyond those reachable by marine mammals. The received per-second SEL at a surface sampling location is taken as the maximum value that occurs over all

samples within the water column, i.e., the maximum-over-depth received per-second SEL. These maximum-over-depth per-second SEL are presented as colour contours around the source.

B.3. Estimating Range to Thresholds Levels

Sound level contours were calculated based on the underwater sound fields predicted by the propagation models, sampled by taking the maximum value over all modelled depths above the sea floor for each location in the modelled region. The predicted distances to specific levels were computed from these contours. Two distances relative to the source are reported for each sound level: 1) R_{max}, the maximum range to the given sound level over all azimuths, and 2) $R_{95\%}$, the range to the given sound level after the 5% farthest points were excluded (see examples in Figure B-4).

The $R_{95\%}$ is used because sound field footprints are often irregular in shape. In some cases, a sound level contour might have small protrusions or anomalous isolated fringes. This is demonstrated in the image in Figure B-4(a). In cases such as this, where relatively few points are excluded in any given direction, R_{max} can misrepresent the area of the region exposed to such effects, and $R_{95\%}$ is considered more representative. In strongly asymmetric cases such as shown in Figure B-4(b), on the other hand, $R_{95\%}$ neglects to account for significant protrusions in the footprint. In such cases R_{max} might better represent the region of effect in specific directions. Cases such as this are usually associated with bathymetric features affecting propagation. The difference between R_{max} and $R_{95\%}$ depends on the source directivity and the non-uniformity of the acoustic environment.



(a) (b)

Figure B-4. Sample areas ensonified to an arbitrary sound level with R_{max} and $R_{95\%}$ ranges shown for two different scenarios. (a) Largely symmetric sound level contour with small protrusions. (b) Strongly asymmetric sound level contour with long protrusions. Light blue indicates the ensonified areas bounded by $R_{95\%}$; darker blue indicates the areas outside this boundary which determine R_{max}.

B.4. Estimating Sound Fields from Moving Vessels

During vessel transit, new sound energy is constantly being introduced to the environment. The noise footprint for the transiting vessels considered in this report were estimated by modelling the 1-s maximum over depth SEL footprints for the vessel at one location, and by translating and summing these footprints along the vessel transit routes. The vessel locations along the tracks were spaced uniformly, with an approximate step of $\Delta s \approx 5$ m for this study.

The SEL sound field at any given point along the path is dependent upon the duration of exposure, which with a fixed footprint spacing depends upon the speed of the vessel during each segment of the transit. The 1-s SEL footprint at each vessel location (i) were therefore scaled based on the speed of the vessel following:

$$\mathrm{SEL}_i = \mathrm{SEL}_{1s} + 10\log_{10}\left(\frac{\Delta s}{v}\right), \quad \text{(B-2)}$$

where v represents the vessel speed in m/s.

The cumulative SEL_{24h} field over the transit period can be calculated using the formulae in Appendix A.1. This method acceptably reflects large-scale sound propagation features, primarily dependent on water depth, which dominate the cumulative field and is thus considered to provide a meaningful estimate of the SEL_{24h} field for moving vessels.

B.5. Model Validation Information

Predictions from JASCO's propagation models (MONM, FWRAM, and VSTACK) have been validated against experimental data from a number of underwater acoustic measurement programs conducted by JASCO globally, including the United States and Canadian Arctic, Canadian and southern United States waters, Greenland, Russia and Australia (Hannay and Racca 2005, Aerts et al. 2008, Funk et al. 2008, Ireland et al. 2009, O'Neill et al. 2010, Warner et al. 2010, Racca et al. 2012a, Racca et al. 2012b, Matthews and MacGillivray 2013, Martin et al. 2015, Racca et al. 2015, Martin et al. 2017a, Martin et al. 2017b, Warner et al. 2017, MacGillivray 2018, McPherson et al. 2018, McPherson and Martin 2018).

In addition, JASCO has conducted measurement programs associated with a significant number of anthropogenic activities that have included internal validation of the modelling (including McCrodan et al. 2011, Austin and Warner 2012, McPherson and Warner 2012, Austin and Bailey 2013, Austin et al. 2013, Zykov and MacDonnell 2013, Austin 2014, Austin et al. 2015, Austin and Li 2016, Martin and Popper 2016, Austin et al. 2018, Beach Energy Limited 2020).