



ENVIRONMENT PLAN

APPENDICES

PRION 3D MARINE SEISMIC SURVEY
(T/RL2, T/RL4, T/RL5)

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Appendix 1

Assessment of Prion 3DMSS against the
management aims of marine park
management plans

Assessment of the Prion MSS against the aims of marine park management plans**COMMONWEALTH**

1a South-east Commonwealth Marine Reserves Network

VICTORIAN RESERVES (west to east)

1b Great Otway National Park

1c Phillip Island Nature Park

1d Bunurong-Kilcunda-Harmers Parks

1e Cape Liptrap Coastal Park

1f Wilsons Promontory (three marine) Parks

1g Corner Inlet Marine National Park

1h Cape Conran Coastal Park

1i Point Hicks Marine National Park

1j Croajingolong National Park

1k Cape Howe Marine National Park

TASMANIAN RESERVES (west to east)

1l Arthur-Pieman Conservation Area

1m Small Bass Strait Island Reserves

1n Kent Group National Park

Assessment of the Prion MSS against the stated management strategies and actions of the South-east Commonwealth Marine Reserves Network Management Plan 2013-2023 (DNP, 2013)

The following information summarises the risk to the parks from the spill scenario.

AMPs:	Apollo	Beagle	East Gippsland	Flinders	Franklin	Zeehan
280 m³ surface release of MDO over 6 hours						
Sea surface:	No contact.	1% probability of low exposure.	No contact.	No contact.	No contact.	No contact.
Entrained hydrocarbons:	2.5% probability of low exposure at 0-10 m below sea surface.	17% probability of low exposure and 3% probability of high exposure at 0-10 m below sea surface.	2.5% probability of low exposure at 0-10 m below sea surface.	0.5% probability of low exposure at 0-10 m below sea surface.	6% probability of low exposure and 1% probability of high exposure at 0-10 m below sea surface.	0.5% probability of low exposure at 0-10 m below sea surface.
Dissolved hydrocarbons:	No contact.	1% probability of low exposure at 0-10 m below sea surface.	No contact.	No contact.	0.5% probability of low exposure at 0-10 m below sea surface.	No contact.
Shoreline contact:	N/A (AMPs are in Commonwealth waters)					

The table on the following page provides an assessment of routine and non-routine operations against the stated management strategies and actions of the South-east Commonwealth Marine Reserves Network Management Plan 2013-2023.

Management Strategy	Assessment of impacts of routine activities against management aims	Assessment of impacts of Level 2 or 3 hydrocarbon spill against objectives
Improve knowledge and understanding of the conservation values of the Marine Reserves Network and of the pressures on those values		
As part of a national-scale program for Commonwealth marine reserves, develop and implement a South-east Commonwealth Marine Reserves Network Research and Monitoring strategy that contribute to increased understanding of the values of the reserves and provides for ongoing reporting of their condition	No impacts.	No impacts.
Develop and implement a framework for the long-term scientific monitoring of changes in key conservation values protected by the Commonwealth marine reserves and on the pressures on those values.	No impacts.	No impacts.
Adopt standards and protocols for managing biophysical and ecological data collected within Commonwealth Marine Reserves.	No impacts.	No impacts.
Collaborate, including through developing partnerships, with national research facilities, science and academic institutions and, as appropriate, marine reserve users, to deliver on strategic information needs and to inform research programs and government and industry investment in marine research.	No impacts.	No impacts.
Minimise impacts of activities through effective assessment of proposals, decision-making and management of reserve-specific issues		
Establish in consultation with relevant stakeholders, efficient, effective and transparent processes for assessment, decision-making and authorisation of activities, and implement within the marine reserves network.	No impacts.	No impacts.
When the interests of a person or group are likely to be affected by a decision under this Management Plan, the Director will: a) as far as practicable consult them in a timely and appropriate way; b) provide an opportunity to comment on the proposed decision and associated actions; c) take any comments into account; d) give reasonable notice before decisions are taken or implemented (except in cases of emergency); and e) provide reasons for decisions.	No impacts.	No impacts.
Comply with Division 14.3 of the EPBC Regulations in relation to reconsideration of decisions about permits.	No impacts.	No impacts.
Reconsider a decision about a class approval when requested by a person whose interests are affected by the decision. A request for reconsideration must be made and considered in the same manner as provided by Division 14.3 of the EPBC Regulations. Subject to the Administrative Appeals Tribunal Act 1975, a person who has requested a reconsideration may apply to the Administrative Appeals Tribunal for review of the reconsideration.	No impacts.	No impact.
Consider further use of class approvals where there is a sound case for effectively assessing and efficiently approving users that carry out a class of activities in a uniform way.	No impacts.	No impact.

Identify reserve specific issues and develop, implement and evaluate management responses where appropriate.	No impacts.	No impact.
Protect the conservation values of the Marine Reserves Network through management of environmental incidents		
Establish systems for timely reporting of, and assisting with responses to, environmental incidents.	No impacts.	No impacts.
Collaborate with responsible agencies and assist with responding to environmental incidents that threaten the values of the marine reserves network.	No impacts.	The OPEP takes into accounts risks to the open ocean and prioritises actions to reduce the spread and extent of oil on the sea surface.
Maintain effective liaison and partnerships with relevant environmental incident response agencies and organisations.	No impacts.	No impact.
Identify and assess potential incidents that may threaten conservation values of the Reserves and implement if feasible approaches to reduce the likelihood or consequence of such incidents.	No impacts.	No impact.
Facilitate compliance with this Management Plan through education and enforcement		
Implement reliable methods for monitoring compliance with this Plan.	No impacts.	No impact.
Develop, maintain and disseminate appropriate information to assist users of the marine reserves network to comply with the provisions of this Plan.	No impacts.	No impact.
Consult with users of the network to identify opportunities to improve the effectiveness and efficiency of compliance measures.	No impacts.	No impact.
Implement a risk-based annual compliance plan.	No impacts.	No impact.
Establish a reporting system that supports users and visitors of the marine reserves network to report suspected non-compliant activity.	No impacts.	No impact.
Build effective working partnerships and agreements with Commonwealth and state government agencies for the delivery of compliance services.	No impacts.	No impact.
Investigate and monitor suspected non-compliant activity and, where appropriate, take enforcement action.	No impacts.	No impact.
Support initiatives and programs which promote best practice standards that guide use, and minimise impacts on the marine environment	No impacts.	No impact.
Promote community understanding of, and stakeholder participation in, the management of the Marine Reserves Network		

Develop and implement a communication and education plan that increases community understanding of the importance of the marine reserves network and meets reserve-specific needs for communication about the values protected and management arrangements and requirements.	No impacts.	No impact.
Maintain effective working relationships with user groups to facilitate the exchange of knowledge, understanding and participation in the management of the marine reserves network.	No impacts.	No impact.
Within the first 12 months of the Plan's operation, establish consultative structures (e.g., committees) to guide and participate in the management of the marine reserves network.	No impacts.	No impact.
Support involvement of Indigenous people in management of Commonwealth Marine Reserves		
Drawing on the significant body of knowledge built as part of sea country planning and similar initiatives across Australia, and in consultation with relevant representative organisations, consolidate and communicate information about cultural values protected in the South-east Commonwealth Marine Reserves Network.	No impacts.	No impact.
Identify, and where feasible support, opportunities for Indigenous people to engage in the management of sea country in Commonwealth marine reserves, for example through the delivery of critical management services, such as monitoring surveillance, compliance and research.	No impacts.	No impact.
Build effective partnerships with Indigenous communities and organisations that have an interest in the marine reserves network.	No impacts.	No impact.
Comply with the requirements of the Native Title Act 1993.	No impacts.	No impact.
Evaluate and report on the effectiveness of this Management Plan through monitoring and review		
Within the first twelve months of the Plan's operation, design and initiate a program to measure and monitor progress on Actions and outcomes.	No impacts.	No impact.
Report annually on the South-east Commonwealth Marine Reserves Network in the Director of National Parks annual report.	No impacts.	No impact.
Evaluate and report on the implementation of the Management Plan before its expiry. The report will consider: a. An assessment of the existing measures to protect the South-east Commonwealth Marine Reserves Network; b. Progress of the strategies and actions towards achieving the stated outcomes; c. options for improving management of the marine reserves network.	No impacts.	No impact.

The table on the following page provides an assessment of the Prion MSS routine and non-routine operations against the IUCN objectives outlined in the Australian IUCN Reserve Management Principles for Commonwealth Marine Protected Areas (Environment Australia, 2002).

Zonation of each AMP based on IUCN categories

	IUCN Ia	IUCN Ib	IUCN II	IUCN III	IUCN IV	IUCN V	IUCN VI
Apollo	-	-	-	-	-	-	
Zeehan	-	-	-	-	-	-	
Franklin	-	-	-	-	-	-	
Boags	-	-	-	-	-	-	
Beagle	-	-	-	-	-	-	
Flinders	-	-		-	-	-	
East Gippsland	-	-	-	-	-	-	

Note: Only Category IUCN II and VI AMPs are relevant to the Prion MSS. As such, only the Category IUCN II and VI management principles are assessed.

Category	IUCN 1994 category description	IUCN 1994 primary objective	Australian IUCN reserve management principles (Schedule 8 of the EPBC Regulations 2000)	Predicted consequences from routine activities or a worst-case hydrocarbon spill
IUCN II National Park: Protected Area managed mainly for ecosystem conservation and recreation	Natural area of land and/or sea, designated to (a) protect the ecological integrity of one or more ecosystems for this and future generations, (b) exclude exploitation or	To protect natural biodiversity along with its underlying ecological structure and supporting environmental processes, and to promote education and recreation.	The reserve or zone should be protected and managed to preserve its natural condition according to the following principles: Natural and scenic areas of national and international significance should be protected for spiritual, scientific, educational, recreational or tourist purposes. <hr/> Representative examples of physiographic regions, biotic communities, genetic	Routine discharges from the survey vessel will not impact on the AMP. The AMP may only be impacted in the event of a Level 3 hydrocarbon spill. Response strategies outlined in the OPEP aim to protect the AMP from the risks of hydrocarbons. An assessment of the risk of a hydrocarbon spill on sensitivities in the region is presented in the EP.

Category	IUCN 1994 category description	IUCN 1994 primary objective	Australian IUCN reserve management principles (Schedule 8 of the EPBC Regulations 2000)	Predicted consequences from routine activities or a worst-case hydrocarbon spill
	<p>occupation inimical to the purposes of designation of the area, and</p> <p>(c) provide a foundation for spiritual, scientific, educational, recreational and visitor opportunities, all of which must be environmentally and culturally compatible.</p>		<p>resources, and native species should be perpetuated in as natural a state as possible to provide ecological stability and diversity.</p>	
			<p>Visitor use should be managed for inspirational, educational, cultural and recreational purposes at a level that will maintain the reserve or zone in a natural or near-natural state.</p>	<p>Routine discharges from the survey vessel will not impact on the AMP.</p> <p>The AMP may only be impacted in the event of a Level 3 hydrocarbon spill. Response strategies outlined in the OPEP aim to protect the AMP from the risks of hydrocarbons.</p> <p>An assessment of the risk of a hydrocarbon spill on sensitivities in the region is presented in the EP.</p>
			<p>Management should seek to ensure that exploitation or occupation inconsistent with these principles does not occur.</p>	<p>Routine discharges from the survey vessel will not impact on the AMP.</p>
			<p>Respect should be maintained for the ecological, geomorphologic, sacred and aesthetic attributes for which the reserve or zone was assigned to this category.</p>	<p>The AMP may only be impacted in the event of a Level 3 hydrocarbon spill. Response strategies outlined in the OPEP aim to protect the AMP from the risks of hydrocarbons.</p> <p>An assessment of the risk of a hydrocarbon spill on sensitivities in the region is presented in the EP.</p>
			<p>The needs of indigenous people should be taken into account, including subsistence resource use, to the extent that they do not conflict with these principles.</p>	<p>Routine discharges from the survey vessel will not impact on the AMP.</p> <p>The AMP may only be impacted in the event of a Level 3 hydrocarbon spill. Response strategies outlined in the OPEP aim to protect the AMP from the risks of hydrocarbons.</p>
			<p>The aspirations of traditional owners of land within the reserve or zone, their</p>	

Category	IUCN 1994 category description	IUCN 1994 primary objective	Australian IUCN reserve management principles (Schedule 8 of the EPBC Regulations 2000)	Predicted consequences from routine activities or a worst-case hydrocarbon spill
IUCN VI	Area containing predominantly unmodified natural systems, managed to ensure long term protection and maintenance of biological diversity, while providing at the same time a sustainable flow of natural products and services to meet community needs.	To protect natural ecosystems and use natural resources sustainably, when conservation and sustainable use can be mutually beneficial.	<p>The reserve or zone should be managed mainly for the sustainable use of natural ecosystems based on the following principles:</p> <p>The biological diversity and other natural values of the reserve or zone should be protected and maintained in the long term.</p> <p>Management practices should be applied to ensure ecologically sustainable use of the reserve or zone.</p> <p>Management of the reserve or zone should contribute to regional and national development to the extent that this is consistent with these principles.</p>	<p>An assessment of the risk of a hydrocarbon spill on sensitivities in the region is presented in the EP.</p> <p>Routine discharges from the survey vessel will not impact on the AMPs.</p> <p>The AMPs may only be impacted in the event of a Level 3 hydrocarbon spill. Response strategies outlined in the OPEP aim to protect the AMPs from the risks of hydrocarbons.</p> <p>An assessment of the risk of a hydrocarbon spill on sensitivities in the region is presented in the EP.</p> <p>Routine discharges from the survey vessel will not impact on the management practices of the AMPs.</p> <p>Routine discharges from the survey vessel will have no influence on management of the zones within the AMP.</p>

Assessment of the Prion MSS against the stated aims of the Great Otway National Park Management Plan
(Parks Victoria, 2007)

The following information summarises the risk to the park from the spill scenario.

280 m ³ surface release of MDO over 6 hours	
Sea surface:	No contact.
Dissolved hydrocarbons:	No contact.
Entrained hydrocarbons:	0.5% probability of low exposure at 0-10 m below sea surface.
Shoreline contact:	No contact.

The table on the following pages provides an assessment of routine and non-routine operations against the management aims of the park.

Management Aims	Assessment of impacts of routine activities against management aims	Assessment of impacts of Level 2 or 3 hydrocarbon spill against objectives
4.1 Climate change and resilience planning		
Increase park manager and community understanding of climate change, its consequences and resilience planning.	No impacts.	No impacts.
Develop and implement management strategies to build ecosystem and species resilience to climate change.	No impacts.	No impacts.
4.2 Landscape		
Protect, enhance and restore landscape values in the parks and minimise impacts of management or visitor activities on landscape values.	No impacts.	The OPEP takes into accounts risks to the open ocean and prioritises actions to reduce the spread and extent of oil on the sea surface.
Encourage neighbouring developments and activities to have minimal adverse impact on landscape values.	No impacts.	No impacts.
4.3 Geological and geomorphological features		
Protect significant and fragile geological and geomorphological values.	No impacts.	No impacts.
4.4 Rivers, catchments, groundwater and coasts		
Protect, enhance and restore natural, social and resource values associated with rivers, catchments, groundwater and coasts.	No impacts.	The OPEP takes into accounts risks to the open ocean and prioritises actions to reduce the spread and extent of oil towards the shoreline.
Improve the condition of high-value streams that are not in good condition.	No impacts.	No impacts.
4.5 Vegetation		
Protect, enhance and restore indigenous flora species and communities.	No impacts.	No impacts.
Where possible, allow natural processes that shape floral biodiversity to continue with minimal interference.	No impacts.	No impacts.
Increase knowledge of flora species and communities, and threatening processes to improve management effectiveness.	No impacts.	No impacts.

4.6 Fauna		
Protect indigenous fauna and habitats from threatening processes where possible.	No impacts.	No impacts.
Where possible, allow natural processes that shape faunal biodiversity to continue with minimal interference.	No impacts.	No impacts.
Increase knowledge of fauna and threatening processes to improve management effectiveness.	No impacts.	No impacts.
4.7 Fire Management		
Protect human life, property and public assets as far as practicable from the deleterious consequences of wildlife.	No impacts.	No impacts.
Investigate, evaluate and where appropriate implement fire regimes and strategies to reduce the potential for the development of landscape scale fires and also maintain the environmental integrity of the landscape.	No impacts.	No impacts.
In partnership with other agencies and the community, undertake effective fire prevention, preparedness, response and recovery activities.	No impacts.	No impacts.
4.8 Pest Plants and Animals, and Diseases		
Eradicate or prevent the establishment of new or emerging pest plants, animals and diseases.	The EP contains control measures aimed to minimise the risk of introducing marine pests to Victorian waters.	No impacts.
Control and where possible eradicate pest plants, animals and diseases from the parks, giving priority to areas with priority species and communities or areas in good condition.	No impacts.	No impacts.
Improve the effectiveness of pest and disease management by increasing the knowledge of pest species and treatment methods through research, record-keeping and monitoring.	No impacts.	No impacts.
5.1 Aboriginal and cultural heritage		
Recognise and respect the cultural connections that Traditional Owners and other Aboriginal people have with Country within the parks.	No impacts.	No impacts.
Provide and maintain opportunities for Aboriginal cultural connections and practices within the parks.	No impacts.	No impacts.
Work together with the Traditional Owners to protect and enhance Aboriginal cultural heritage.	No impacts.	No impacts.

5.2 Historic heritage		
Protect, conserve and present places with significant historic (non-indigenous) cultural heritage values in accordance with applicable legislation, strategies and charters.	No impacts.	No impacts.
Increase visitor and local community involvement, understanding and appreciation of Otway historic heritage, including sustainable provision of access, presentation, interpretation and promotion of selected sites.	No impacts.	No impacts.
5.3 Social values		
Understand the social values of the parks, and enhance and protect places, landscapes, features and character that contribute to social values.	No impacts.	No impacts.
6.1 Tourism and recreation directions		
Provide and enhance a sustainable range of tourism and recreation opportunities and products within the parks. Contribute to the region's tourism and recreation opportunities and profile.	No impacts.	No impacts.
Provide high quality, memorable, authentic and educational experiences for visitors that capitalise on the Otways unique attributes, to generate an understanding and appreciation of park values, and meet or exceed visitor expectations.	No impacts.	No impacts.
Increase opportunities for participation of commercial and community partners in the provision of tourism and recreation experiences, particularly the Aboriginal community.	No impacts.	No impacts.
Ensure that tourism and recreation activities and infrastructure are conducted and managed in a way that respects natural settings, conservation requirements, and cultural sensitivities.	No impacts.	No impacts.
6.2 Information, interpretation and education		
Promote and encourage visitors' safe and sustainable discovery, enjoyment, understanding and appreciation of the parks natural and cultural values.	No impacts.	No impacts.
6.3 Motor vehicle access		
Provide and maintain a sustainable network of roads for a variety of uses, including general access for recreation, tourism and transit, and access for park management activities, fire suppression and authorised resource extraction.	No impacts.	No impacts.
Provide opportunities for people to enjoy car and motorcycle touring, four-wheel driving and trail bike riding experiences within the parks, where this is sustainable and compatible with the protection of other park values.	No impacts.	No impacts.
Minimise impacts of the road network on natural, cultural and resource values of the parks.	No impacts.	No impacts.

Encourage responsible vehicle use to minimise damage to the road network and the environment, and minimise conflict between park users and with neighbours.	No impacts.	No impacts.
6.4 Visitor sites and services		
Provide a system of designated visitor sites and services for sustainable recreation, education and enjoyment of experiences in the parks, and as nodes for access to park features and recreation areas.	No impacts.	No impacts.
Minimise conflicts between parks users and impact on park values from visitor facilities.	No impacts.	No impacts.
6.5 Bushwalking		
Provide opportunities for visitors (including disabled and low mobility visitors) to enjoy a diverse range of bushwalking experiences in the parks by accessing a sustainable network of walking tracks of various lengths, standards, and degrees of challenge.	No impacts.	No impacts.
Minimise impacts of the track network and bushwalking activities on park values and on other park users, and minimise excessive safety risks. Encourage responsible bushwalking behaviour.	No impacts.	No impacts.
6.6 Camping		
Provide a sustainable range of opportunities for people to enjoy camping experiences in the parks, and utilise camping areas as a base for recreation activities.	No impacts.	No impacts.
Minimise impacts on park values and conflicts between park users from camping.		
6.7 Cycling		
Provide opportunities for people to enjoy cycling experiences in the parks, including mountain biking and bicycle touring, where this is sustainable and compatible with the protection of other park values.	No impacts.	No impacts.
Minimise conflicts with other park users and impacts on park values from cycling activities.	No impacts.	No impacts.
6.8 Companion dogs		
Provide opportunities for people to enjoy experiences with dogs in the parks where this is sustainable and compatible with the protection of other park values.	No impacts.	No impacts.
Minimise impacts on park values and conflicts with other park users from dogs.	No impacts.	No impacts.

6.9 Horse riding

Provide opportunities for enjoyable and diverse nature-based horse riding experiences in the parks, including trail riding and camping with horses, where this is sustainable and compatible with the protection of other park values.

No impacts.

No impacts.

Minimise impacts on park values and conflicts with other park users from horse riding activities.

No impacts.

No impacts.

6.10 Recreational fishing

Provide high quality opportunities for recreational fishing in and adjacent to the parks, where this is sustainable and compatible with the protection of park values.

No impacts.

No impacts.

Maintain recreational fishing access while protecting environmental and cultural values.

No impacts.

No impacts.

Minimise conflicts with other park users and impacts on park values from fishing.

No impacts.

No impacts.

6.11 Recreational hunting

Provide opportunities for enjoyable recreational hunting experiences in Otway Forest Park, where compatible with the protection of other park values and visitor safety.

No impacts.

No impacts.

Minimise conflicts with other parks users and impacts on park values from recreational hunting.

No impacts.

No impacts.

6.12 Fossicking and prospecting

Provide opportunities for gemstone fossicking at Wreck Beach in Great Otway National Park, and fossicking and prospecting in all areas of Otway Forest Park.

No impacts.

No impacts.

6.13 Boating and other water sports

Provide opportunities for enjoyable water sports including boating, swimming and surfing in and adjacent to the parks, where this is sustainable and compatible with the protection of park values.

No impacts.

No impacts.

Minimise conflicts with other park users and impacts on park values from boating, swimming and other water sports.

No impacts.

No impacts.

6.14 Recreational aircraft

Permit opportunities for hang-gliding and paragliding activities in the parks, where this is sustainable and compatible with the protection of park values and does not significantly impact on the enjoyment of other park visitors.	No impacts.	No impacts.
Provide appropriate access by powered aircraft for scenic over-flights of the parks, where this is sustainable and compatible with the protection of park values and does not significantly impact on the enjoyment of other park visitors.	No impacts.	No impacts.
Minimise conflicts with other park users and impacts on park values from air sports and aircraft.	No impacts.	No impacts.
6.15 Events and commercial activities		
Allow and manage appropriate events and functions and minimise impacts on park values.	No impacts.	No impacts.
Provide for appropriate commercial businesses to operate within the parks.	No impacts.	No impacts.
Ensure commercial operators are licensed to conduct their business within the parks.	No impacts.	No impacts.
6.16 Public safety		
Promote awareness of recreation risks, responsibility for considering risks, and adherence to safe practices to park users.	No impacts.	No impacts.
Identify public safety risks and implement risk management strategies.	No impacts.	No impacts.
Plan for and respond appropriately to public safety incidents and emergencies.	No impacts.	No impacts.
7.1 Firewood harvesting		
Allow firewood harvesting for commercial and personal use from the Otway Forest Park in accordance with relevant legislation, codes of practice, procedures and prescriptions.	No impacts.	No impacts.
Minimise the impacts of harvesting firewood on the natural, cultural and recreational values of the Otway Forest Park.	No impacts.	No impacts.

7.2 Minor forest produce harvesting		
Allow minor forest produce harvesting in Otway Forest Park in alignment with relevant legislation, codes of practice, procedures and prescriptions.	No impacts.	No impacts.
Minimise the impacts of minor forest produce harvesting on the natural, cultural and recreational values of Otway Forest Park.	No impacts.	No impacts.
8.1 Public utilities infrastructure		
Manage authorised public utilities infrastructure within the parks through formal consents, leases, licences, permits and agreements in accordance with relevant legislation, and to minimise impacts on park values.	No impacts.	No impacts.
8.2 Private occupancies		
Manage authorised occupancies to allow for specified uses while minimising their impacts on park values.	No impacts.	No impacts.
Resolve unauthorised occupancies by removal or authorisation.	No impacts.	No impacts.
8.3 Cape Otway Lightstation		
Provide for the ongoing commercial operation of the Cape Otway Lightstation Tourist and Heritage precinct.	No impacts.	No impacts.
Provide for the ongoing operation of marine navigation and weather recording instruments.	No impacts.	No impacts.
8.4 Designated and Special Water Supply Catchment Areas		
Minimise impacts on water quality and yield in water supply catchment areas from fire, recreation, extraction and management activities.	No impacts.	No impacts.
Manage Designated Water Supply Catchments as closed catchments.	No impacts.	No impacts.

Protect the public health of communities that depend on water supply catchments, through minimising threats to water quality and yield within water supply catchment areas.	No impacts.	No impacts.
8.5 Grazing		
Permit low-intensity grazing in cleared areas of Otway Forest Park where it is pre-existing and consistent with conservation and recreation objectives.	No impacts.	No impacts.
Phase out grazing in Great Otway National Park.	No impacts.	No impacts.
8.6 Apiculture		
Provide for apiculture in Otway Forest Park while minimising impacts on other park values.	No impacts.	No impacts.
Do not allow apiculture in Great Otway National Park.	No impacts.	No impacts.
8.7 Commercial fishing		
Provide for existing commercial eel fishing entitlements in Great Otway National Park.	No impacts.	No impacts.
8.8 Earth resources		
Ensure that earth resources activities are conducted in accordance with the relevant legislation and that park values are adequately protected.	No impacts.	No impacts.
8.9 Occasional uses		
Allow authorised occasional uses and minimise their impacts on park values.	No impacts.	No impacts.
8.10 Park boundaries and adjacent uses		
Coordinate management activities with those of park neighbours where these are complementary to the protection of park values.	No impacts.	No impacts.

Work with park neighbours to address issues of pest plant and animal control.	No impacts.	No impacts.
Provide access through the parks to neighbouring properties for authorized uses such as timber carting where that access does not impact on park values.	No impacts.	No impacts.
Provide reasonable rights of access to freehold land abutting or surrounded by the Great Otway National Park and minimise the impacts on park values.	No impacts.	No impacts.
9.1 Community awareness		
Increase the community's awareness and understanding of the parks' values and management activities.	No impacts.	No impacts.
9.2 Traditional Owner partnerships		
Build collaborative relationships to engage Traditional Owners in the parks' planning and management.	No impacts.	No impacts.
Improve opportunities for Aboriginal participation in the parks' management.	No impacts.	No impacts.
9.3 Community participation		
Build a sense of shared ownership and custodianship for the parks among community groups and individuals.	No impacts.	No impacts.
Support and encourage people to actively assist in implementing the plan and managing the parks.	No impacts.	No impacts.
9.4 Agency partnerships		
Enhance park management by collaborating with other agencies to ensure they consider park values in planning and implementing activities that relate to the parks.	No impacts.	No impacts.
Contribute to cooperative programs and activities undertaken by other agencies where these complement management of the parks.	No impacts.	No impacts.

Assessment of the Prion MSS against the stated aims of the Phillip Island Nature Parks Management Plan
(Phillip Island Nature Parks, 2018)

The following information summarises the risk to the park from the spill scenario.

280 m ³ surface release of MDO over 6 hours	
Sea surface:	No contact.
Entrained hydrocarbons:	0.5% probability of low exposure at 0-10 m below sea surface.
Dissolved hydrocarbons:	No contact.
Shoreline contact:	No contact.

The table on the following pages provides an assessment of routine and non-routine operations against the management aims of the park.

Management Aims	Assessment of impacts of routine activities against management aims	Assessment of impacts of Level 2 or 3 hydrocarbon spill against objectives
1. Conservation Excellence		
Building resilience in little penguin, seabird and Australian fur seal populations through research-led conservation programs.	No impact.	No impact.
Investing in habitat restoration and developing innovative wildlife protection solutions.	No impact.	No impact.
Enhancing Phillip Island as a safe haven for wildlife through identifying and controlling threats.	No impact.	No impact.
Engaging young people in conservation challenges through education at schools and across all Nature Parks sites.	No impact.	No impact.
Establish a Research Centre to increase awareness of our programs and create new opportunities.	No impact.	No impact.
Revolutionise oiled wildlife rehabilitation practices through the live application of magnetic cleaning technology.	No impact.	No impact.
Work with key partners to develop a plan for the management of native threatened wildlife with priority given to the strategic re-introduction of species to Phillip Island.	No impact.	No impact.
Utilise our research to influence marine and fisheries policy.	No impact.	No impact.
Implement conservation campaigns that inspire our visitors and community to take action.	No impact.	No impact.
Strengthen partnerships with key conservation and scientific organisations to influence global seabird conservation efforts.	No impact.	No impact.
Develop an understanding of the Caring for Country practices of Aboriginal and Torres Strait Islander Peoples and establish partnerships to help integrate these practices on Phillip Island.	No impact.	No impact.
Work with Parks Victoria and other key agencies to help establish Victorian Island Arks.	No impact.	No impact.
Partner with Bass Coast Shire Council and our community to eliminate the impact of cats on native fauna.	No impact.	No impact.
2. Extraordinary Visitor Experiences		
Partnering with organisations to deliver new and engaging experiences that meet our conservation objectives.	No impact.	No impact.

Building a Penguin Parade visitor centre that represents a world class ecotourism attraction.	No impact.	No impact.
Maintaining market leadership as an International Tourism destination.	No impact.	No impact.
Managing and interpreting the natural and cultural history of Nature Parks sites.	No impact.	No impact.
Develop more intimate and tailored tourism experiences that meet the changing needs of our visitors.	No impact.	No impact.
Establish penguin viewing experiences that complement the new world class Penguin Parade visitor centre.	No impact.	No impact.
Enhance the daytime use of the Summerland Peninsula and its spectacular coastline through the creation and promotion of walking and cycling experiences that improve access for all. (Summerland Peninsula Infrastructure and Procurement Master Plan).	No impact.	No impact.
Work with Traditional Custodians and the Aboriginal and Torres Strait Islander Community to develop and deliver authentic cultural experiences.	No impact.	No impact.
Create new and diverse volunteer opportunities to double volunteer participation across the Nature Parks.	No impact.	No impact.
Strengthen our visitors' connection with the natural environment to influence behaviour change and improve environmental outcomes.	No impact.	No impact.
Plan for the future of the Koala Reserve and its valued wildlife to provide more diverse and engaging experiences that complement our conservation values.	No impact.	No impact.
Increase visitation to Churchill Island through new visitor experiences and events that showcase the heritage precinct.	No impact.	No impact.
Advocate for increased accommodation options on Phillip Island to grow overnight group visitation and visitor yield.	No impact.	No impact.
3. Community Partnerships		
Developing respectful partnerships with Phillip Island's Traditional Custodians and wider Aboriginal and Torres Strait Islander Community	No impact.	No impact.
Enabling opportunities for community engagement such as the Community and Environment Advisory Committee and Community Open Day.	No impact.	No impact.
Investing in quality infrastructure at beach access areas that is sympathetic to the surrounding environment and promotes access for all.	No impact.	No impact.
Establish a new site to make the Nature Parks more visible and accessible to our community.	No impact.	No impact.

Utilise new technology to connect with the local community to deliver on our clear conservation, ecotourism and reconciliation objectives	No impact.	No impact.
Partner with Bass Coast Shire Council and Destination Phillip Island to implement the Phillip Island and San Remo Visitor Economy Strategy and foster a collaborative approach to environmental and tourism planning.	No impact.	No impact.
Collaborate with our community and key partners to establish Phillip Island as an accredited ecotourism destination (Global Sustainable Tourism Certification program).	No impact.	No impact.
Promote how to live with wildlife throughout our community to build a greater affiliation with nature.	No impact.	No impact.
Work with key partners to improve walking and cycling links on Phillip Island which will enhance the Island's liveability and people's connection with nature.	No impact.	No impact.
4. Sustainable Future		
Maintaining financial stability through growth in premium visitor experiences and improved visitation throughout shoulder periods.	No impact.	No impact.
Driving visitors to Phillip Island through its promotion as a must see wildlife destination to key international and domestic markets.	No impact.	No impact.
Align our commercial activities to our renewed commitment to environmental sustainability whilst maintaining overall financial return.	No impact.	No impact.
Commit to becoming a carbon neutral organisation by 2030.	No impact.	No impact.
Transition all sites to be waste and water neutral.	No impact.	No impact.
Improve the Nature Parks' sustainability credentials by expanding our Ecotourism Accreditation and seeking to join a carbon neutral accreditation program.	No impact.	No impact.
Build funding support for our conservation outcomes through philanthropic and corporate partnerships, grants and other funding opportunities.	No impact.	No impact.
5. Agile Organisation, Inspired People		
Fostering a safe and inclusive culture for all of our team, volunteers, contractors, community and visitors.	No impact.	No impact.
Developing our passionate, empowered and valued team.	No impact.	No impact.
Strengthen our global networks to enhance innovation in product development and conservation.	No impact.	No impact.

Embed a deep respect and understanding of Aboriginal and Torres Strait Islander Peoples' cultural values and protocols across our organisation.	No impact.	No impact.
Review our values to align with the organisation's conservation and sustainability ambitions.	No impact.	No impact.
Create collaborative work spaces for our team that encourage interaction and allow everyone to move easily across all sites.	No impact.	No impact.
Use technology to ensure business efficiencies, improve environmental outcomes and build collaboration.	No impact.	No impact.

**Assessment of the Prion MSS against the stated aims of the Bunurong Marine National Park, Bunurong Marine Park and Kilcunda-Harmers Haven Coastal Reserve
Management Plan
(Parks Victoria, 2006)**

The following information summarises the risk to the park from the spill scenario.

Parks:	Bunurong Marine National Park	Bunurong Marine Park	Kilcunda-Harmers Haven Coastal Reserve
280 m ³ surface release of MDO over 6 Hours			
Sea surface:	No contact.	No contact.	No contact.
Dissolved hydrocarbons:	No contact.	No contact.	No contact.
Entrained hydrocarbons:	1% probability of low exposure to entrained hydrocarbons 0-10 m below sea surface.	1% probability of low exposure to entrained hydrocarbons 0-10 m below sea surface.	0.5% probability of low exposure to entrained hydrocarbons 0-10 m below sea surface.
Shoreline contact:	No contact.	No contact.	No contact.

The table on the following pages provides an assessment of routine and non-routine operations against the management aims of the parks.

Management Aims	Assessment of impacts of routine activities against management aims	Assessment of impacts of Level 2 or 3 hydrocarbon spill against objectives
4.1 Landscape and seascape		
Preserve and protect the landscape and seascape values of the planning area, particularly the natural character and places of high scenic quality and areas of significance to the indigenous community.	No impacts.	No impacts.
Minimise the impact of developments and management activities on the planning area's landscape values.	No impacts.	No impacts.
4.2 Geological and geomorphological features		
Protect geological and geomorphological features of the planning area and minimise impacts from management activities and visitor use.	No impacts.	No impacts.
Allow natural geological and geomorphological processes to continue with minimal human interference.	No impacts.	No impacts.
Provide opportunities for appropriate research into, appreciation of, and education about the geological and geomorphological features of the planning area.	No impacts.	No impacts.
4.3 Catchment and water quality		
Ensure the integration of future planning and management between the planning area and adjacent catchment.	No impacts.	No impacts.
Maintain a high quality of water within the planning area and surrounding waters to ensure that natural biological and physical processes can occur.	No impacts.	The OPEP takes into accounts risks to the open ocean and prioritises actions to reduce the spread and extent of oil on the sea surface.
Minimise impacts of threatening processes from catchment-sourced activities.	No impacts.	No impact.
4.4 Hydrodynamics		
Allow natural hydrodynamic processes to continue without human interference.	No impacts.	No impacts.
Minimise impacts on planning area values from human-induced changes to local hydrodynamic processes.	No impacts.	No impacts.
4.5 Marine habitats and communities		
Protect marine ecological communities and indigenous flora and fauna, particularly threatened species.	No impacts.	The OPEP takes into accounts risks to the open ocean and prioritises actions to reduce the spread and extent of oil on the sea surface.

Increase knowledge of marine ecological communities, flora and fauna to aid management, protection and appreciation.	No impacts.	No impacts.
Increase knowledge of key threatening processes to marine ecological communities, flora and fauna, to limit impacts.	No impacts.	No impacts.
4.6 Marine pests		
Minimise the risk of introduction of marine pests by human activities, and their subsequent establishment in the planning area.	The EP contains control measures aimed to minimise the risk of introducing marine pests to Victorian waters.	No impacts.
Establish arrangements for the detection of new incursions within the planning area in support of Victorian marine pest management arrangements.	No impacts.	No impacts.
Implement national or Victoria-wide control arrangements as they relate to the planning area.	No impacts.	No impacts.
4.7 Terrestrial flora		
Maintain the floristic structure and diversity of vegetation communities, and protect them from threatening processes.	No impacts.	No impacts.
Increase knowledge of the planning area's vegetation communities and species, particularly its threatened species, to aid management, protection and appreciation.	No impacts.	No impacts.
4.8 Terrestrial fauna		
Protect and preserve indigenous fauna and faunal habitats from visitor use and management activities, and maintain genetic diversity.	No impacts.	No impacts.
Increase knowledge of the planning area's fauna species and habitats, particularly threatened species, to aid management, protection and appreciation.	No impacts.	No impacts.
4.9 Terrestrial pests		
Control, and where possible eradicate, non-indigenous plants, animals and diseases.	No impacts.	No impacts.
Minimise the potential for the introduction and spread of pest plants and animals and diseases.	No impacts.	No impacts.
Minimise the impact of control programs on native flora and fauna species.	No impacts.	No impacts.
Restore native vegetation in areas where weeds have been controlled or eradicated.	No impacts.	No impacts.
4.10 Soil conservation		

Prevent and control soil degradation, and rehabilitate areas affected by soil degradation caused by visitor and management activities.	No impacts.	No impacts.
4.11 Fire management		
Protect planning area values from the deleterious effects of wildfire or inappropriate fire regimes.	No impacts.	No impacts.
Cooperate with relevant agencies and land managers in the protection of human life, neighbouring properties and assets.	No impacts.	No impacts.
5.1 Indigenous cultural heritage		
Protect Indigenous cultural heritage, including places and objects, from interference or damaging activities.	No impacts.	No impacts.
Nurture Indigenous cultural lore relating to the planning area.	No impacts.	No impacts.
5.2 Maritime and other cultural heritage		
Conserve places and values of historic and cultural significance within the planning area.	No impacts.	No impacts.
Increase learning about and appreciation of the historic heritage of the planning area.	No impacts.	No impacts.
6.1 Information, interpretation and education		
Promote and encourage visitors' discovery, enjoyment and appreciation of the planning area's natural and cultural values in a safe and appropriate manner through information, interpretation and education.	No impacts.	No impacts.
Encourage public support for parks and management practices.	No impacts.	No impacts.
Provide opportunities to learn about and understand the cultural and spiritual significance of the planning area to the Indigenous community.	No impacts.	No impacts.
6.2 Access		
Provide and maintain appropriate access to the planning area for visitor use and management purposes.	No impacts.	No impacts.
Minimise the impact of access on natural and cultural values of the planning area.	No impacts.	No impacts.
6.3 Visitor site activities		
Establish and maintain visitor facilities that enhance visitor enjoyment and are consistent with the protection of planning area values.	No impacts.	No impacts.
6.4 Recreational boating and associated facilities		

Provide opportunities for recreational boating and appropriate surface water sports while protecting natural and cultural values.	No impacts.	No impacts.
Promote safe boating and water safety within the planning area.	No impacts.	No impacts.
6.5 Diving and snorkelling		
Provide opportunities for diving and snorkelling in the planning area while protecting natural and cultural values.	No impacts.	No impacts.
6.6 Swimming, surfing and shore-based activities		
Provide opportunities for appropriate shore-based recreation within the planning area, while minimising impacts on the natural and cultural values.	No impacts.	The OPEP takes into accounts risks to the shoreline and prioritises actions to reduce the spread and extent of oil towards the shoreline.
6.7 Dog walking		
Provide opportunities for dog walking in appropriate areas of the planning area, while protecting park and reserve values and the experience of visitors.	No impacts.	No impacts.
6.8 Horse riding		
Minimise conflicts with recreational activities, threats to visitor safety and natural values within the planning area.	No impacts.	No impacts.
6.9 Hang gliding		
Protect visitors and values in the planning area from impacts of hang gliding and paragliding within the planning area.	No impacts.	No impacts.
6.10 Recreational fishing		
Provide opportunities for sustainable recreational fishing while minimising impacts to natural and cultural values.	No impacts.	No impacts.
6.11 Tourism services		
Provide opportunities for and encourage provision of external tourism services while minimising impacts on natural and cultural values of the planning area.	No impacts.	No impacts.
6.12 Public Safety		
Promote visitor safety and awareness of safety issues and risks within the planning area associated with access and use.	No impacts.	No impacts.
Promote and observe safe practices and cooperate with emergency services.	No impacts.	No impacts.

7.1 Authorised uses		
Manage authorised uses in accordance with relevant legislation, and minimise their impact on the planning area's values.	No impacts.	No impacts.
7.2 Occasional uses		
Manage uses and permitted activities in accordance with relevant legislation, and minimise their impacts on the planning area's values.	No impacts.	No impacts.
7.3 Boundaries and adjacent uses		
Minimise impacts on planning area values from adjacent uses and developments.	No impacts.	No impacts.
Ensure the integration of management with adjoining land and waters in accordance with principles for ecologically sustainable development.	No impacts.	No impacts.
Effectively communicate the location of Marine National Park and other planning area boundaries.	No impacts.	No impacts.
8.1 Community awareness		
Build a shared sense of ownership and custodianship for the planning area among community groups and individuals.	No impacts.	No impacts.
Increase community awareness and understanding of the values and management activities of the planning area.	No impacts.	No impacts.
8.2 Community participation		
Support and encourage community groups and volunteers to assist actively in the area's management by participating and by contributing their knowledge and skills.	No impacts.	No impacts.
Encourage tertiary students to undertake volunteer work experience and research that is consistent with aims for the planning area.	No impacts.	No impacts.
Inform, enrich and strengthen the planning area's management with the community's traditions and customs, especially Traditional Owner's cultural lore.	No impacts.	No impacts.
8.3 Agency partnerships		
Enhance management by collaborating with other agencies to ensure that they give appropriate consideration to natural and cultural values in planning and implementing activities that relate to the planning area.	No impacts.	No impacts.

**Assessment of the Prion MSS against the stated aims of the Cape Liptrap Coastal Park Management Plan
(Parks Victoria, 2003)**

The following information summarises the risk to the park from the spill scenario.

280 m ³ surface release of MDO over 6 Hours	
Sea surface:	No contact.
Dissolved hydrocarbons:	No contact.
Entrained hydrocarbons:	0.5% probability of low exposure to entrained hydrocarbons at 0-10 m below sea surface.
Shoreline contact:	No contact.

The table on the following pages provide an assessment of routine and non-routine operations against the management aims of the park.

Management Aims	Assessment of impacts of routine activities against management aims	Assessment of impacts of Level 2 or 3 hydrocarbon spill against objectives
4.1 Geological and landform features		
Manage sites of geological and geomorphological significance to allow public access and interpretation.	No impact.	No impact.
4.2 Rivers and Catchments		
Maintain water quality in the park's catchments.	No impact.	No impact.
4.3 Vegetation		
Manage ecosystems to ensure the protection of indigenous flora species and vegetation communities, particularly significant species and communities.	No impact.	No impact.
Improve knowledge about the conservation of natural values with minimal disturbance to the environment.	No impact.	No impact.
4.4 Fauna		
Ensure the preservation and protection of indigenous fauna.	No impact.	No impact.
Manage park ecosystems to provide for the long-term protection and preservation of significant communities, habitats and species.	No impact.	No impact.
Improve knowledge about the conservation of fauna and their habitat requirements.	No impact.	No impact.
4.5 Landscape		
Minimise the visual intrusions on natural landscape within the park, especially from major viewing points.	No impact.	No impact.
Where possible, remove or shield undesirable visual intrusions.	No impact.	No impact.
4.6 Fire Management		
Protect life, property and park values from damage by fire.	No impact.	No impact.
Suppress wildfires in a manner appropriate to seasonal conditions, with the objective of minimising impacts on park values.	No impact.	No impact.
Sustain the vigour, diversity and successional development of the park's plant and animal communities by ecological burning on the basis of current and future knowledge.	No impact.	No impact.
4.7 Pest plants and animals		

Eradicate or control pest plant and animal species using methods that minimise disturbance to natural systems and park values.	No impact.	No impact.
Restore native vegetation to areas where weeds have been removed.	No impact.	No impact.
4.8 Soil Conservation		
Prevent and control soil degradation caused by visitor and management activities	No impact.	No impact.
Rehabilitate sites where unnatural soil degradation has occurred.	No impact.	No impact.
Protect important economic, cultural and natural assets from soil erosion.	No impact.	No impact.
4.9 Aboriginal Cultural Heritage		
Preserve and protect features of Aboriginal cultural and archaeological significance.	No impact.	No impact.
Provide opportunities for people to learn about and understand the park's Aboriginal cultural values.	No impact.	No impact.
4.10 Post-settlement Cultural Heritage		
Preserve and protect features of cultural, archaeological and historical significance.	No impact.	No impact.
Provide opportunities for people to learn about and understand the park's historic and cultural values.	No impact.	No impact.
5.1 Information, interpretation and education		
Encourage visitors' discovery, enjoyment and appreciation of the park's natural and cultural values.	No impact.	No impact.
Orientate visitors in relation to park features.	No impact.	No impact.
Inform visitors of appropriate behaviour during their park visit.	No impact.	No impact.
Provide high-quality interpretive and educational opportunities to promote an understanding and appreciation of the park's values.	No impact.	No impact.
5.2 Access		
Maintain roads and tracks to standards consistent with management aims.	No impact.	No impact.
5.3 Day Visits		
Establish and maintain day visitor facilities that enhance visitor enjoyment of the park and are consistent with protecting park values.	No impact.	No impact.

Improve visitor facilities and raise the profile of the park as a day visitor destination.	No impact.	No impact.
5.4 Camping		
Provide opportunities for a range of camping experiences while minimising impacts on park values.	No impact.	No impact.
5.5 Boating		
Support the Walkerville Foreshore Committee of Management in providing basic boat launching facilities at Walkerville North.	No impact.	No impact.
5.6 Fishing		
Provide opportunities for recreational fishing while minimising the impacts on park values.	No impact.	No impact.
5.7 Bushwalking		
Provide a variety of high-quality walking opportunities within the park, while minimising impacts on park values.	No impact.	No impact.
5.8 Horse Riding		
Provide opportunities for horse riding while minimising this activity's adverse environmental effects and conflicts with other users.	No impact.	No impact.
5.9 Cycling		
Provide access for cycling, and at the same time minimise the environmental impact of cycling and the conflict with other recreational activities.	No impact.	No impact.
5.10 Dogs		
Provide for dogs in certain areas of the park, consistent with protecting park values and the experience of visitors.	No impact.	No impact.
5.11 Hang-gliding and Paragliding		

Provide opportunities for hang-gliding and paragliding while minimising the impact on park values and other uses.	No impact.	No impact.
5.12 Fossicking		
Provide an opportunity for gemstone collecting in the park, while ensuring that the impact on environmental values and other visitors is minimised.	No impact.	No impact.
5.13 Commercial Services		
Provide opportunities for commercial tourism and the touring public while minimising environmental impacts and effects on other visitors.	No impact.	No impact.
5.14 Public Safety		
Promote safe visitor use of the park.	No impact.	No impact.
Ensure that park management has adequate capacity to respond to emergency situations.	No impact.	No impact.
6.1 Friends and Volunteers		
Provide opportunities for and encourage the participation of groups and volunteers in protection, conservation and maintenance projects to enhance the management of the park.	No impact.	No impact.
Provide opportunities for and encourage tertiary students to undertake volunteer work experience and research consistent with park management aims.	No impact.	No impact.
6.2 Community Awareness and Park Neighbours		
Increase community awareness of park management activities, including prescribed burning, pest plant and animal control and visitor management activities.	No impact.	No impact.
Encourage conservation and sound land management practices on private land adjacent to the park.	No impact.	No impact.
7.1 Authorised Uses		

Manage public utilities and authorised uses in accordance with the National Parks Act, to minimise their impacts on the parks natural and scenic values.	No impact.	No impact.
Protect water quality in the park and provide for appropriate use of water resources.	No impact.	No impact.
7.2 Boundaries and Adjacent Uses		
Accurately define park boundaries on the ground.	No impact.	No impact.
Ensure adequate planning controls for adjoining land developments are in place.	No impact.	No impact.
Co-operate with adjacent landowners to protect both private and park areas from fire, pests and other hazards.	No impact.	No impact.

Assessment of the Prion MSS against the stated aims of the Wilsons Promontory Marine National Park, Marine Park and Marine Reserve Management Plan (Parks Victoria, 2006).

The following information summarises the risk to the parks from the spill scenario.

280 m ³ surface release of MDO over 6 Hours	
Sea surface:	No contact.
Dissolved hydrocarbons:	No contact.
Entrained hydrocarbons:	2% probability of low exposure to entrained hydrocarbons at 0-10 m below sea surface.
Shoreline contact:	No contact.

The table on the following pages provides an assessment of routine and non-routine operations against the management aims of the parks.

Management Aims	Assessment of impacts of routine activities against management aims	Assessment of impacts of Level 2 or 3 hydrocarbon spill against objectives
4.1 Geological and geomorphological features		
Identify geological and geomorphological features of the planning area and protect them from potentially damaging human activities	No impacts.	No impacts.
Allow natural geological and geomorphological processes to continue without human interference.	No impacts.	No impacts.
Provide opportunities for appropriate research into, appreciation of, and education about geological and geomorphological features.	No impacts.	No impacts.
4.2 Catchment and water quality		
Ensure the integration of future planning and management for the planning area and adjacent catchment.	No impacts.	No impacts.
Maintain a high quality of water within the planning area and surrounding waters to ensure that natural biological and physical processes can occur.	No impacts.	The OPEP takes into accounts risks to the open ocean and prioritises actions to reduce the spread and extent of oil on the sea surface.
Minimise the impacts on water quality within the planning area from activities within the catchment.	No impacts.	
4.3 Hydrodynamics		
Allow natural hydrodynamic processes to continue without human interference.	No impacts.	No impacts.
Minimise impacts on planning area values from human-induced changes to local hydrodynamic processes.	No impacts.	No impacts.
4.4 Habitats and communities		
Protect marine ecological communities and indigenous flora and fauna, particularly threatened species.	No impacts.	The OPEP takes into accounts risks to the open ocean and prioritises actions to reduce the spread and extent of oil on the sea surface.
Increase knowledge of marine ecological communities, flora and fauna to aid management, protection and appreciation.	No impacts.	No impacts.
Increase knowledge of key threatening processes to marine ecological communities, flora and fauna, to limit impacts.	No impacts.	No impacts.
4.5 Landscape and seascape		

Preserve and protect the landscape and seascape values of the park, including the natural character, aesthetic qualities and values of significance to Indigenous communities.	No impacts.	No impacts.
Minimise the visual impact of developments and management activities, including those adjacent to the park.	No impacts.	No impacts.
4.6 Marine pests		
Minimise the risk of introduction of marine pests by human activities, and their subsequent establishment in the planning area.	The EP contains control measures aimed to minimise the risk of introducing marine pests to Victorian waters	No impacts.
Establish arrangements for the detection of new incursions within the planning area in support of Victorian marine pest management arrangements.	No impacts.	No impacts.
Implement national or Victoria-wide control arrangements as they relate to the planning area.	No impacts.	No impacts.
5.1 Indigenous cultural heritage		
Protect Indigenous cultural heritage from interference or damaging activities.	No impacts.	No impacts.
Nurture Indigenous cultural lore relating to the planning area.	No impacts.	No impacts.
5.2 Maritime and other cultural heritage		
Conserve and protect places and values of historic significance associated with maritime exploration, commercial exploitation, coastal trading and navigation	No impacts.	No impacts.
Encourage learning and understanding about the historic heritage of the planning area, particularly as they relate to the historic theme 'Shipping along the Coast'.	No impacts.	No impacts.
6.1 Information, interpretation and education		
Promote and encourage visitors' discovery, enjoyment and appreciation of the natural and cultural values of the planning area in a safe and appropriate manner through information, education and interpretation.	No impacts.	No impacts.
Encourage public support for the planning area and management practices.	No impacts.	No impacts.
Provide opportunities to learn about and understand the cultural and spiritual significance of the planning area to the Traditional Owners.	No impacts.	No impacts.
Promote an awareness of past European cultural activities in the park.	No impacts.	No impacts.
6.2 Access		

Provide for the use and enjoyment of the planning area.	No impacts.	No impacts.
Minimise the impact of access on natural and cultural values of the planning area	No impacts.	No impacts.
6.3 Recreational boating and surface water sports		
Provide opportunities for recreational boating and appropriate surface water sports while protecting natural and cultural values	No impacts.	No impacts.
Promote safe boating and water safety within the planning area.	No impacts.	No impacts.
Provide opportunities for marine mammal observation while ensuring their long-term protection.	No impacts.	No impacts.
6.4 Diving and snorkelling		
Provide opportunities for diving and snorkelling in the planning area while protecting natural and cultural values.	No impacts.	No impacts.
6.5 Swimming and shore-based activities		
Provide for appropriate shore-based activities while protecting natural and cultural values.	No impacts.	The OPEP takes into accounts risks to the shoreline and prioritises actions to reduce the spread and extent of oil towards the shoreline.
6.6 Recreational fishing		
Provide opportunities for sustainable recreational fishing while minimising impacts on the marine park and marine reserve.	No impacts.	No impacts.
6.7 Tourism services		
Encourage the provision of appropriate tourism services to improve the quality and range of recreational experiences available to visitors.	No impacts.	No impacts.
Ensure that licensed tour operators recognise and respect the natural and cultural values of the planning area, including Indigenous cultural heritage values.	No impacts.	No impacts.
6.8 Aircraft		
Monitor and minimise the impact of fixed wing aircraft and helicopters on the natural values of the planning area.	No impacts.	No impacts.
6.9 Public Safety		
Promote visitor safety and awareness of safety issues and risks within the planning area associated with access and use.	No impacts.	No impacts.
Promote and observe safe practices, and cooperate with emergency services.	No impacts.	No impacts.

7.1 Authorised uses		
Manage authorised uses and permitted activities in accordance with the National Parks Act, and minimise their impact on park values.	No impacts.	No impacts.
7.2 Boundaries and adjacent uses		
Ensure the integration of management of the planning area with adjoining land and waters in accordance with principles for ecologically sustainable development.	No impacts.	No impacts.
Ensure that necessary boundaries are clearly identifiable.	No impacts.	No impacts.
Minimise confusion by simplifying land tenure in the planning area.	No impacts.	No impacts.
8.1 Community awareness		
Build a shared sense of ownership and custodianship for the planning area in community groups and individuals.	No impacts.	No impacts.
Increase the community's awareness and understanding of the planning area's values, management activities and catchment impacts.	No impacts.	No impacts.
8.2 Community participation		
Support and encourage the active participation of community groups and volunteers in protection, conservation and monitoring projects to enhance management of the planning area.	No impacts.	No impacts.
Provide opportunities for, and encourage, tertiary students to undertake volunteer work experience and research consistent with aims for the planning area.	No impacts.	No impacts.
Inform, enrich and strengthen the planning area's management with the community's tradition and customs, especially the Traditional Owner's cultural lore.	No impacts.	No impacts.
8.3 Agency partnerships		
Enhance management of the planning area by collaborating with other agencies to ensure that they give appropriate consideration to park values in planning and implementing activities that relate to the planning area.	No impacts.	No impacts.

**Assessment of the Prion MSS against the stated aims of the Corner Inlet Marine National Park Management Plan
(Parks Victoria, 2005)**

The following information summarises the risk to the park from the spill scenario.

280 m ³ surface release of MDO over 6 hours	
Sea surface:	No contact.
Dissolved hydrocarbons:	No contact.
Entrained hydrocarbons:	0.5% probability of low exposure at 0-10 m below sea surface.
Shoreline contact:	No contact.

The table on the following pages provide an assessment of routine and non-routine operations against the management aims of the park.

Management Aims	Assessment of impacts of routine and non-routine activities against management aims	Assessment of impacts of MDO spill against objectives
4.1 Geological and geomorphological features		
Protect geological and geomorphological features of the park from potentially damaging human activities.	No impacts.	No impacts.
Allow natural geological and geomorphological processes to continue without human interference.	No impacts.	No impacts.
Provide opportunities for appropriate research on geological and landform features.	No impacts.	No impacts.
4.2 Catchment and water quality		
Maintain a high quality of water within the park and surrounding waters to ensure that natural biological and physical processes can occur.	No impacts.	The OPEP takes into accounts risks to the open ocean and prioritises actions to reduce the spread and extent of oil on the sea surface.
Minimise the impacts on water quality from activities in the catchment.	No impacts.	No impacts.
4.3 Hydrodynamics		
Allow natural hydrodynamic processes to continue without human interference.	No impacts.	No impacts.
Minimise impacts on park values from human-induced changes to local hydrodynamic processes.	No impacts.	No impacts.
4.4 Habitats and communities		
Protect marine ecological communities and indigenous flora and fauna.	No impacts.	The OPEP takes into accounts risks to the open ocean and prioritises actions to reduce the spread and extent of oil on the sea surface.
Increase knowledge of marine ecological communities, flora and fauna, to aid management, protection and appreciation.	No impacts.	No impacts.
Increase knowledge of key threatening processes for marine ecological communities, flora and fauna.	No impacts.	No impacts.
4.5 Landscape and seascape		

Management Aims	Assessment of impacts of routine and non-routine activities against management aims	Assessment of impacts of MDO spill against objectives
Preserve and protect the landscape and seascape values of the park, including the natural character and aesthetic qualities.	No impacts.	The OPEP takes into accounts risks to the open ocean and prioritises actions to reduce the spread and extent of oil on the sea surface.
Minimise the visual impact of developments and management activities within and adjacent to the park.	No impacts.	No impacts.
4.6 Marine pests		
Minimise the risk of introduction by human activities, and subsequent establishment of, marine pests in the park.	The EP contains control measures aimed to minimise the risk of introducing marine pests to Victorian waters.	No impacts.
Establish arrangements for the detection of new incursions within the park in support of Victorian marine pest management arrangements.	No impacts.	No impacts.
Implement national or Victoria-wide control arrangements as they relate to the park.	No impacts.	No impacts.
5.1 Indigenous cultural heritage		
Protect Indigenous cultural heritage from interference or damaging activities.	No impacts.	No impacts.
Nurture Indigenous cultural lore relating to the park.	No impacts.	No impacts.
5.2 Maritime and other cultural heritage		
Provide opportunities for people to learn about and understand the historic heritage of the park.	No impacts.	No impacts.
6.1 Information, interpretation and education		
Promote and encourage visitors' discovery, enjoyment and appreciation of the park's natural and cultural values in a safe and appropriate manner through information, education and interpretation.	No impacts.	No impacts.
Encourage public support for parks and park management practices.	No impacts.	No impacts.
Promote an awareness of Indigenous and non-Indigenous culture.	No impacts.	No impacts.
6.2 Access		
Provide and maintain appropriate access to the park for visitor use and management purposes.	No impacts.	No impacts.

Management Aims	Assessment of impacts of routine and non-routine activities against management aims	Assessment of impacts of MDO spill against objectives
Minimise the impact of access on the park's natural and cultural values.	No impacts.	No impacts.
6.3 Recreational boating and surface water sports		
Provide for a range of recreational boating activities and surface water sports that are compatible with the protection of natural, cultural and other recreational values.	No impacts.	No impacts.
Promote safe boating and water safety within the parks.	No impacts.	No impacts.
6.4 Diving and snorkelling		
Provide opportunities for diving and snorkelling in the park that are consistent with the protection of natural and cultural values.	No impacts.	No impacts.
6.5 Swimming and shore-based activities		
Provide for appropriate shore-based activities that are consistent with the protection of park values and the adjacent Wilderness Zone within Wilsons Promontory National Park.	No impacts.	No impacts.
6.6 Tourism services		
Encourage the provision of appropriate tourism services to enhance the quality and range of recreational experiences in the park and minimise impacts on park values.	No impacts.	No impacts.
6.7 Public safety		
Promote visitor safety and awareness of safety issues and risks within the park associated with access and use.	No impacts.	No impacts.
Promote and observe safe practices, and cooperate with emergency services.	No impacts.	No impacts.
7.1 Authorised uses		
Manage authorised uses and permitted activities consistent with legislation, and minimise their impact on park values.	No impacts.	No impacts.
7.2 Boundaries and adjacent uses		
Ensure that boundaries are clearly identifiable from land and sea.	No impacts.	No impacts.
Minimise impacts from adjacent uses on park values.	No impacts.	No impacts.
8.1 Community awareness		
Increase the community's awareness and understanding of the park's values and management activities.	No impacts.	No impacts.

Management Aims	Assessment of impacts of routine and non-routine activities against management aims	Assessment of impacts of MDO spill against objectives
Build a sense of shared ownership and custodianship for the park among community groups and individuals.	No impacts.	No impacts.
8.2 Community participation		
Support and encourage the active participation of Friends groups and volunteers in protection, conservation and monitoring projects to enhance management of the park.	No impacts.	No impacts.
Provide opportunities for, and encourage tertiary students to undertake volunteer work experience and research that is consistent with aims for the park.	No impacts.	No impacts.
Inform, enrich and strengthen the park's management with the community's tradition, especially relevant Indigenous cultural lore.	No impacts.	No impacts.
8.3 Agency partnerships		
Enhance park management by collaborating with other agencies to ensure that they give appropriate consideration to park values in planning and implementing activities that relate to the park.	No impacts.	No impacts.

**Assessment of the Prion MSS against the stated aims of the Point Hicks Marine National Park Management Plan
(Parks Victoria, 2006)**

The following information summarises the risk to the park from the spill scenario.

280 m ³ surface release of MDO over 6 Hours	
Sea surface:	No contact.
Dissolved hydrocarbons:	No contact.
Entrained hydrocarbons:	2.5% probability of low exposure to entrained hydrocarbons 0-10 m below sea surface.
Shoreline contact:	No contact.

The table on the following pages provides an assessment of routine and non-routine operations against the management aims of the park.

Management Aims	Assessment of impacts of routine activities against management aims	Assessment of impacts of Level 2 or 3 hydrocarbon spill against objectives
4.1 Geological and geomorphological features		
Allow natural geological and geomorphological processes to continue without human interference.	No impacts.	No impacts.
Provide opportunities for appropriate research, appreciation and education in relation to geological and geomorphological features.	No impacts.	No impacts.
4.2 Catchment and water quality		
Ensure the integration of planning and management for the park, Croajingolong National Park, Point Hicks Lighthouse Reserve and nearby public and freehold land.	No impacts.	No impacts.
Maintain a high quality of water within the park and surrounding waters to ensure that natural biological and physical processes can occur.	No impacts.	The OPEP takes into accounts risks to the open ocean and prioritises actions to reduce the spread and extent of oil on the sea surface.
Minimise impacts of threatening processes from activities in the catchment.	No impacts.	No impacts.
4.3 Hydrodynamics		
Minimise impacts on park values from human-induced changes to local hydrodynamic processes.	No impacts.	No impacts.
4.4 Habitats and communities		
Protect marine ecological communities and indigenous flora and fauna, and allow natural processes to continue.	No impacts.	The OPEP takes into accounts risks to the open ocean and prioritises actions to reduce the spread and extent of oil on the sea surface.
Improve knowledge of marine ecological communities, flora and fauna and threatening processes to aid management, protection and appreciation.	No impacts.	No impacts.
4.5 Landscape and seascape		
Avoid any development on the coastal side of dunes and contain new works to inland inlets and rivers to ensure that the coastline retains its rugged non-developed wilderness character.	No impacts.	No impacts.
This area is of outstanding scenic quality and requires special landscape protection to ensure that development does not impact on landscape values.	No impacts.	No impacts.

Preserve and protect landscape and seascape values of the park, including the natural character, aesthetic qualities and values of significance to Indigenous communities.	No impacts.	No impacts.
Minimise the visual impact of developments and management activities, including those adjacent to the park.	No impacts.	No impacts.
4.6 Marine pests		
Minimise the risk of introduction of marine pests by human activities, and their subsequent establishment in the park.	The EP contains control measures aimed to minimise the risk of introducing marine pests to Victorian waters.	No impacts.
Establish arrangements for the detection of new incursions within the park in support of Victorian marine pest management arrangements.	No impacts.	No impacts.
Implement national or Victoria-wide control arrangements as they relate to the park.	No impacts.	No impacts.
5.1 Indigenous cultural heritage		
Protect Indigenous cultural heritage from interference or damaging activities.	No impacts.	No impacts.
Nurture Indigenous cultural lore relating to the park.	No impacts.	No impacts.
5.2 Maritime and other cultural heritage		
Conserve places of historic and cultural significance.	No impacts.	No impacts.
Encourage learning about and understanding of the historic heritage of the park.	No impacts.	No impacts.
6.1 Information, interpretation and education		
Promote and encourage visitors to discover, enjoy and appreciate the park's natural and cultural values in a safe and appropriate manner through information, interpretation and education.	No impacts.	No impacts.
Encourage public support for the park and park management practices.	No impacts.	No impacts.
Foster relevant collaborative education projects with other organisations or groups delivering environmental education in the East Gippsland area.	No impacts.	No impacts.
Provide opportunities for people to learn about and understand the cultural and spiritual significance of the park to Indigenous people.	No impacts.	No impacts.
6.2 Access		

Provide for the use and enjoyment of the park by visitors, while protecting the park's natural and cultural values.	No impacts.	No impacts.
6.3 Recreational boating and surface water sports		
Allow for a range of recreational boating activities, surface water sports and marine mammal observation while protecting natural, cultural and other recreational values.	No impacts.	No impacts.
Promote safe boating and water safety within the park.	No impacts.	No impacts.
6.4 Diving and snorkelling		
Provide opportunities for diving and snorkelling in the park while protecting natural and cultural values.	No impacts.	No impacts.
6.5 Swimming and shore-based activities		
Provide for appropriate shore-based activities while minimising impacts to sensitive natural and cultural values within the park and the adjacent Croajingolong National Park and Point Hicks Lighthouse Reserve.	No impacts.	No impacts.
6.6 Other activities		
Monitor and minimise the impact of helicopters and aircraft on natural and cultural values.	No impacts.	No impacts.
Minimise impacts of dogs on the natural and cultural values of the park.	No impacts.	No impacts.
6.7 Tourism services		
Encourage the provision of appropriate tourism services, while minimising impacts on the natural and cultural values of the park.	No impacts.	No impacts.
6.8 Public safety		
Promote visitor safety and awareness of safety issues and risks within the park.	No impacts.	No impacts.
Promote and observe safe practices, and cooperate with emergency services.	No impacts.	No impacts.
7.1 Authorised uses		
Manage authorised uses and permitted activities in accordance with the National Parks Act, and minimise their impact on park values.	No impacts.	No impacts.
7.2 Boundaries and adjacent uses		

Ensure the integration of management with adjoining land and waters, consistent with the protection of remote and wilderness values.	No impacts.	No impacts.
Effectively communicate the location of park boundaries.	No impacts.	No impacts.
8.1 Community awareness		
Increase the community's awareness and understanding of the park's values and management activities.	No impacts.	No impacts.
Build a sense of shared ownership and custodianship for the park among community groups and individuals.	No impacts.	No impacts.
8.2 Community participation		
Support and encourage the active participation of community groups and volunteers in protection, conservation and monitoring projects to enhance management of the park.	No impacts.	No impacts.
8.3 Agency partnerships		
Enhance park management by collaborating with other agencies to ensure that they give appropriate consideration to park values in planning and implementing activities that may relate to the park.	No impacts.	No impacts.

**Assessment of the Prion MSS against the stated aims of the Cape Howe Marine National Park Management Plan
(Parks Victoria, 2006)**

The following information summarises the risk to the park from the spill scenario.

280 m ³ surface release of MDO over 6 Hours	
Sea surface:	No contact.
Dissolved hydrocarbons:	No contact
Entrained hydrocarbons:	0.5% probability of low exposure to entrained hydrocarbons 0-10 m below sea.
Shoreline contact:	No contact.

The table on the following pages provides an assessment of routine and non-routine operations against the management aims of the park.

Management Aims	Assessment of impacts of routine activities against management aims	Assessment of impacts of Level 2 or 3 hydrocarbon spill against objectives
4.1 Geological and geomorphological features		
Allow natural geological and geomorphological processes to continue without human interference.	No impacts.	No impacts.
Provide opportunities for appropriate research, appreciation of, and education about geological and landform features.	No impacts.	No impacts.
4.2 Catchment and water quality		
Ensure the integration of planning and management for the park and adjacent Croajingolong National Park and nearby public and private land.	No impacts.	No impacts.
Maintain a high quality of water within the park and surrounding waters to ensure that natural biological and physical processes can occur.	No impacts.	The OPEP takes into account risks to the open ocean and prioritises actions to reduce the spread and extent of oil on the sea surface.
Minimise impacts of threatening processes from activities in the catchment.	No impacts.	No impacts.
4.3 Hydrodynamics		
Minimise impacts on park values from human-induced changes to local hydrodynamic processes.	No impacts.	No impacts.
4.4 Habitats and communities		
Protect marine ecological communities and indigenous flora and fauna, and allow natural processes to continue.	No impacts.	The OPEP takes into account risks to the open ocean and prioritises actions to reduce the spread and extent of oil on the sea surface.
Improve knowledge of marine ecological communities, flora and fauna and threatening processes to aid management, protection and appreciation.	No impacts.	No impacts.
4.5 Landscape and seascape		
Preserve and protect landscape and seascape values of the park, including the natural character, aesthetic qualities and values of significance to Indigenous communities.	No impacts.	No impacts.
Minimise the visual impact of developments and management activities, including those adjacent to the park.	No impacts.	No impacts.

4.6 Marine pests		
Minimise the risk of introduction of marine pests by human activities, and their subsequent establishment in the park.	The EP contains control measures aimed to minimise the risk of introducing marine pests to Victorian waters.	No impacts.
Establish arrangements for the detection of new incursions within the park in support of Victorian marine pest management arrangements.	No impacts.	No impacts.
Implement national or Victoria-wide control arrangements as they relate to the park.	No impacts.	No impacts.
5.1 Indigenous cultural heritage		
Protect Indigenous cultural heritage from interference or damaging activities.	No impacts.	No impacts.
Nurture Indigenous cultural lore relating to the park.	No impacts.	No impacts.
5.2 Maritime and other cultural heritage		
Conserve places of historic and cultural significance.	No impacts.	No impacts.
Encourage learning about and understanding of the historic heritage of the park.	No impacts.	No impacts.
6.1 Information, interpretation and education		
Promote and encourage visitors to discover, enjoy and appreciate the park's natural and cultural values in a safe and appropriate manner through information, interpretation and education.	No impacts.	No impacts.
Encourage public support for the park and park management practices.	No impacts.	No impacts.
Foster relevant collaborative education projects with other organisations or groups delivering environmental education in the East Gippsland area.	No impacts.	No impacts.
Provide opportunities for people to learn about and understand the cultural and spiritual significance of the park to Indigenous people.	No impacts.	No impacts.
6.2 Access		
Provide for the use and enjoyment of the park by visitors, while protecting the park's natural and cultural values.	No impacts.	No impacts.
6.3 Recreational boating and surface water sports		

Allow for a range of recreational boating activities, surface water sports and marine mammal viewing while protecting natural, cultural and recreational values.	No impacts.	No impacts.
Promote safe boating and water safety within the park.	No impacts.	No impacts.
6.4 Diving and snorkelling		
Provide opportunities for diving and snorkelling in the park, while protecting natural and cultural values.	No impacts.	No impacts.
6.5 Swimming and shore-based activities		
Provide for appropriate shore-based activities while minimising impacts to sensitive natural and cultural values within the park and the adjacent Cape Howe Wilderness Zone of Croajingolong National Park.	No impacts.	No impacts.
6.6 Other activities		
Monitor and minimise the impact of helicopters and aircraft on natural and cultural values.	No impacts.	No impacts.
Minimise impacts of dogs on the natural and cultural values of the park.	No impacts.	No impacts.
6.7 Tourism services		
Encourage the provision of appropriate tourism services, while minimising impacts on the natural and cultural values of the park.	No impacts.	No impacts.
6.8 Public safety		
Promote visitor safety and awareness of safety issues and risks within the park.	No impacts.	No impacts.
Promote and observe safe practices, and cooperate with emergency services.	No impacts.	No impacts.
7.1 Authorised uses		
Manage authorised uses and permitted activities in accordance with the National Parks Act, and minimise their impact on park values.	No impacts.	No impacts.
7.2 Boundaries and adjacent uses		
Ensure the integration of management with adjoining land and waters, consistent with the protection of remote and wilderness values.	No impacts.	No impacts.

Effectively communicate the location of park boundaries.	No impacts.	No impacts.
8.1 Community awareness		
Increase the community's awareness and understanding of the park's values and management activities.	No impacts.	No impacts.
Build a sense of shared ownership and custodianship for the park among community groups and individuals.	No impacts.	No impacts.
8.2 Community participation		
Support and encourage the active participation of community groups and volunteers in protection, conservation and monitoring projects to enhance management of the park.	No impacts.	No impacts.
8.3 Agency partnerships		
Enhance park management by collaborating with other agencies to ensure that they give appropriate consideration to park values in planning and implementing activities that may relate to the park.	No impacts.	No impacts.

**Assessment of the Prion MSS against the stated aims of the Croajingolong National Park Management Plan
(Parks Victoria, 1996)**

The following information summarises the risk to the park from the spill scenario.

280 m ³ surface release of MDO over 6 Hours	
Sea surface:	No contact.
Dissolved hydrocarbons:	No contact.
Entrained hydrocarbons:	1.5% probability of low exposure to entrained hydrocarbons 0-10 m below sea surface.
Shoreline contact:	No contact.

The table on the following pages provide an assessment of routine and non-routine operations against the management aims of the park.

Management Aims	Assessment of impacts of routine activities against management aims	Assessment of impacts of Level 2 or 3 hydrocarbon spill against objectives
3.1 Geological and landform features		
Protect areas of geological and geomorphological interest.	No impacts.	No impacts.
Provide opportunities for appropriate research, appreciation and education of geological and geomorphological sites and processes.	No impacts.	No impacts.
Maintain the functioning of natural aquatic ecosystems in inlets throughout the Park.	No impacts.	No impacts.
3.2 Rivers and catchments		
Protect and maintain the integrity of catchments within the Park.	No impacts.	The OPEP takes into accounts risks to the open ocean and prioritises actions to reduce the spread and extent of oil on the sea surface.
Protect and enhance the conservation and recreation values of all rivers in the Park.	No impacts.	No impacts.
3.3 Vegetation		
Protect native plant communities in their natural condition, and maintain genetic diversity.	No impacts.	No impacts.
Enhance the long-term survival prospects of threatened or significant plant species or communities.	No impacts.	No impacts.
3.4 Fauna		
Protect native animal communities, and maintain genetic diversity.	No impacts.	No impacts.
Enhance the long-term survival prospects of threatened or significant faunal species and populations.	No impacts.	No impacts.
3.5 Landscape		
Protect and enhance landscape values.	No impacts.	No impacts.
3.6 Cultural heritage		
Identify, protect, and where appropriate interpret, Koori sites.	No impacts.	No impacts.

Promote further investigations into Koori history and culture	No impacts.	No impacts.
Encourage Koori involvement in the management of sites within the Park.	No impacts.	No impacts.
Identify and conserve sites and artefacts of European historical interest and significance.	No impacts.	No impacts.
Improve knowledge and understanding of history in the Park and the effects of past land use.	No impacts.	No impacts.
4.1 Fire management		
Protect life, property and Park values from injury by fire.	No impacts.	No impacts.
Minimise the adverse effects of fires and fire suppression methods.	No impacts.	No impacts.
Maintain fire regimes appropriate to the conservation of native flora and fauna.	No impacts.	No impacts.
4.2 Pest plants and animal, and diseases		
Control, and where possible eradicate, pest plants and animals in the Park.	The EP contains control measures aimed to minimise the risk of introducing marine pests to Victorian waters.	No impacts.
Minimise the impact of control programs on native flora and fauna.	No impacts.	No impacts.
Protect the Park from threats and diseases, in particular Cinnamon Fungus.	No impacts.	No impacts.
5.1 Park visitors		
Provide for visitors in accordance with the above overview of future management for visitors.	No impacts.	No impacts.
5.2.1 Vehicle access		
Provide and maintain an access network for visitor enjoyment, management purposes and private property access	No impacts.	No impacts.
Minimise the impact of vehicle and track management on the Park's natural and cultural values.	No impacts.	No impacts.
5.2.2 Day visits		

Establish and maintain high standard but low-key day visitor facilities which enhance visitor enjoyment and are consistent with protecting Park values.	No impacts.	No impacts.
5.2.3 Camping		
Provide opportunities for a variety of camping experiences in keeping with the Park's unspoilt and remote character while minimising impacts on Park values.	No impacts.	No impacts.
5.2.4. Bushwalking		
Provide a range of opportunities for walking, while minimising impacts on Park values.	No impacts.	No impacts.
Promote the walking track network as a significant nature-based opportunity within the Park	No impacts.	No impacts.
5.2.5 Fishing		
Provide opportunities for fishing including bait collection and intertidal collecting, where it is consistent with the protection of Park values.	No impacts.	No impacts.
5.2.6 Boating		
Provide opportunities for boating in the Park, where appropriate.	No impacts.	No impacts.
5.2.7 Jetties		
Provide for appropriate boating access to and use of Park inlets and waterways.	No impacts.	No impacts.
5.2.8 Canoeing and sea kayaking		
Provide for the use of Park inlets and waterways for canoeing and kayaking.	No impacts.	No impacts.
5.2.9 Other activities		
Provide for a range of other recreational activities, as appropriate.	No impacts.	No impacts.
5.3 Visitor information, interpretation and education		
Enhance visitor appreciation and visitors enjoyment of the natural and cultural features of the Park, and the value of national parks generally.	No impacts.	No impacts.
Increase public awareness of management activities including fuel reduction burning, pest plant and animal control, the conservation of threatened species, natural and cultural features and the impacts of people on the Park.	No impacts.	No impacts.

5.4 Commercial tourism operations		
Provide for tourism activities based on the Park's remote and unspoilt character - its distinctive quality and competitive advantage.	No impacts.	No impacts.
Provide opportunities for sustainable, high quality adventure and nature-based experiences.	No impacts.	No impacts.
Support and complement broader tourism opportunities and activities in the region.	No impacts.	No impacts.
5.5 Public safety		
Promote and encourage safe practices among visitors and staff.	No impacts.	No impacts.
6.1 Friends and volunteers		
Assist volunteer groups to undertake appropriate management tasks in the Park.	No impacts.	No impacts.
6.2 Community awareness and Park neighbours		
Increase public awareness of management activities, including fuel reduction burning, pest plant and animal control, and the conservation of threatened species.	No impacts.	No impacts.
Encourage conservation and sound land management practices on private land adjoining the Park.	No impacts.	No impacts.
7.1.1 Commercial fishing		
Phase commercial fishing out of the Tamboon Inlet in accordance with the government-approved LCC recommendation.	No impacts.	No impacts.
7.1.2 Apiculture		
Allow apiculture in the Park in accordance with LCC recommendations and NRE guidelines.	No impacts.	No impacts.
7.1.3 Gravel extraction		

Minimise the environmental and visual impacts of gravel extraction operations.	No impacts.	No impacts.
Provide material for road maintenance in the Park where this has only minimal impact on the Park	No impacts.	No impacts.
7.1.4 Public utilities		
Minimise the impact of public utilities on the Park.	No impacts.	No impacts.
Ensure appropriate use and licensing of existing and any proposed new public utilities in the Park.	No impacts.	No impacts.
7.1.5 Training exercises		
Allow appropriate training exercises by the Defence Forces, Emergency Services and other groups.	No impacts.	No impacts.
7.1.6 Pollution and water quality		
Reduce pollution in the Park from point source discharges and recreational use.	No impacts.	No impacts.
Ensure an effective oil and chemical spill response.	No impacts.	The OPEP takes into accounts risks to the open ocean and prioritises actions to reduce the spread and extent of oil on the sea surface.
7.2 Boundaries and adjacent land use		
Enhance the collective values and cooperative management of the Park, the proposed Cape Conran Coastal Park and Nadgee Nature Reserve (NSW).	No impacts.	No impacts.
Minimise impacts on Park values from surrounding land use, including timber harvesting in adjacent State forest	No impacts.	No impacts.

**Assessment of the Prion MSS against the stated aims of the Cape Howe Marine National Park Management Plan
(Parks Victoria, 2006)**

The following information summarises the risk to the park from the spill scenario.

280 m ³ surface release of MDO over 6 Hours	
Sea surface:	No contact.
Dissolved hydrocarbons:	No contact
Entrained hydrocarbons:	0.5% probability of low exposure to entrained hydrocarbons 0-10 m below sea.
Shoreline contact:	No contact.

The table on the following pages provides an assessment of routine and non-routine operations against the management aims of the park.

Management Aims	Assessment of impacts of routine activities against management aims	Assessment of impacts of Level 2 or 3 hydrocarbon spill against objectives
4.1 Geological and geomorphological features		
Allow natural geological and geomorphological processes to continue without human interference.	No impacts.	No impacts.
Provide opportunities for appropriate research, appreciation of, and education about geological and landform features.	No impacts.	No impacts.
4.2 Catchment and water quality		
Ensure the integration of planning and management for the park and adjacent Croajingolong National Park and nearby public and private land.	No impacts.	No impacts.
Maintain a high quality of water within the park and surrounding waters to ensure that natural biological and physical processes can occur.	No impacts.	The OPEP takes into account risks to the open ocean and prioritises actions to reduce the spread and extent of oil on the sea surface.
Minimise impacts of threatening processes from activities in the catchment.	No impacts.	No impacts.
4.3 Hydrodynamics		
Minimise impacts on park values from human-induced changes to local hydrodynamic processes.	No impacts.	No impacts.
4.4 Habitats and communities		
Protect marine ecological communities and indigenous flora and fauna, and allow natural processes to continue.	No impacts.	The OPEP takes into account risks to the open ocean and prioritises actions to reduce the spread and extent of oil on the sea surface.
Improve knowledge of marine ecological communities, flora and fauna and threatening processes to aid management, protection and appreciation.	No impacts.	No impacts.
4.5 Landscape and seascape		
Preserve and protect landscape and seascape values of the park, including the natural character, aesthetic qualities and values of significance to Indigenous communities.	No impacts.	No impacts.
Minimise the visual impact of developments and management activities, including those adjacent to the park.	No impacts.	No impacts.

4.6 Marine pests		
Minimise the risk of introduction of marine pests by human activities, and their subsequent establishment in the park.	The EP contains control measures aimed to minimise the risk of introducing marine pests to Victorian waters.	No impacts.
Establish arrangements for the detection of new incursions within the park in support of Victorian marine pest management arrangements.	No impacts.	No impacts.
Implement national or Victoria-wide control arrangements as they relate to the park.	No impacts.	No impacts.
5.1 Indigenous cultural heritage		
Protect Indigenous cultural heritage from interference or damaging activities.	No impacts.	No impacts.
Nurture Indigenous cultural lore relating to the park.	No impacts.	No impacts.
5.2 Maritime and other cultural heritage		
Conserve places of historic and cultural significance.	No impacts.	No impacts.
Encourage learning about and understanding of the historic heritage of the park.	No impacts.	No impacts.
6.1 Information, interpretation and education		
Promote and encourage visitors to discover, enjoy and appreciate the park's natural and cultural values in a safe and appropriate manner through information, interpretation and education.	No impacts.	No impacts.
Encourage public support for the park and park management practices.	No impacts.	No impacts.
Foster relevant collaborative education projects with other organisations or groups delivering environmental education in the East Gippsland area.	No impacts.	No impacts.
Provide opportunities for people to learn about and understand the cultural and spiritual significance of the park to Indigenous people.	No impacts.	No impacts.
6.2 Access		
Provide for the use and enjoyment of the park by visitors, while protecting the park's natural and cultural values.	No impacts.	No impacts.
6.3 Recreational boating and surface water sports		

Allow for a range of recreational boating activities, surface water sports and marine mammal viewing while protecting natural, cultural and recreational values.	No impacts.	No impacts.
Promote safe boating and water safety within the park.	No impacts.	No impacts.
6.4 Diving and snorkelling		
Provide opportunities for diving and snorkelling in the park, while protecting natural and cultural values.	No impacts.	No impacts.
6.5 Swimming and shore-based activities		
Provide for appropriate shore-based activities while minimising impacts to sensitive natural and cultural values within the park and the adjacent Cape Howe Wilderness Zone of Croajingolong National Park.	No impacts.	No impacts.
6.6 Other activities		
Monitor and minimise the impact of helicopters and aircraft on natural and cultural values.	No impacts.	No impacts.
Minimise impacts of dogs on the natural and cultural values of the park.	No impacts.	No impacts.
6.7 Tourism services		
Encourage the provision of appropriate tourism services, while minimising impacts on the natural and cultural values of the park.	No impacts.	No impacts.
6.8 Public safety		
Promote visitor safety and awareness of safety issues and risks within the park.	No impacts.	No impacts.
Promote and observe safe practices, and cooperate with emergency services.	No impacts.	No impacts.
7.1 Authorised uses		
Manage authorised uses and permitted activities in accordance with the National Parks Act, and minimise their impact on park values.	No impacts.	No impacts.
7.2 Boundaries and adjacent uses		
Ensure the integration of management with adjoining land and waters, consistent with the protection of remote and wilderness values.	No impacts.	No impacts.

Effectively communicate the location of park boundaries.	No impacts.	No impacts.
8.1 Community awareness		
Increase the community's awareness and understanding of the park's values and management activities.	No impacts.	No impacts.
Build a sense of shared ownership and custodianship for the park among community groups and individuals.	No impacts.	No impacts.
8.2 Community participation		
Support and encourage the active participation of community groups and volunteers in protection, conservation and monitoring projects to enhance management of the park.	No impacts.	No impacts.
8.3 Agency partnerships		
Enhance park management by collaborating with other agencies to ensure that they give appropriate consideration to park values in planning and implementing activities that may relate to the park.	No impacts.	No impacts.

**Assessment of the Prion MSS against the stated aims of the Arthur-Pieman Conservation Area Management Plan
(Parks and Wildlife Service, 2002)**

The following information summarises the risk to the park from the spill scenario.

280 m ³ surface release of MDO over 6 Hours	
Sea surface:	No contact.
Dissolved hydrocarbons:	1% probability of low exposure at 0-10 m below sea surface.
Entrained hydrocarbons:	4.5% probability of low exposure at 0-10 m below sea surface.
Shoreline contact:	No contact.

The table on the following pages provides an assessment of routine and non-routine operations against the management aims of the park.

Management Aims	Assessment of impacts of routine activities against management aims	Assessment of impacts of Level 2 or 3 hydrocarbon spill against objectives
3.2 Geodiversity		
Preserve and maintain geodiversity.	No impacts.	No impacts.
Preserve and maintain significant geoconservation sites.	No impacts.	No impacts.
Maintain the natural rates and magnitudes of change in earth processes.	No impacts.	No impacts.
Minimise harmful impacts on geoconservation sites.	No impacts.	No impacts.
3.3 Landscape and wilderness		
Sustain naturalness and a lack of recent human disturbance.	No impacts.	No impacts.
Preserve a sense of tranquillity for visitors.	No impacts.	No impacts.
Maintain the perception of isolation from settlement and human activities.	No impacts.	No impacts.
Retain the character of the reserve as a living landscape much as it is today.	No impacts.	No impacts.
3.4 Water quality		
Maintain or enhance aquatic ecosystems.	No impacts.	The OPEP takes into accounts risks to the open ocean and prioritises actions to reduce the spread and extent of oil on the sea surface.
Maintain or enhance recreational water quality.	No impacts.	No impacts.
3.5 Aboriginal values		
Identify and record sites and landscapes of Aboriginal heritage.	No impacts.	No impacts.
Protect and conserve Aboriginal heritage.	No impacts.	No impacts.
Where possible enlist the assistance of the wider community in collaboration with Aboriginal groups to assist in properly managing and protecting the sites.	No impacts.	No impacts.

Interpret Aboriginal heritage to assist in educating the wider community about the importance of the Aboriginal sites along the coast.	No impacts.	No impacts.
Facilitate and enrich Aboriginal community use of the area, its resources and its educational opportunities.	No impacts.	No impacts.
3.6 Historical heritage		
Identify and record historic heritage sites in the reserve.	No impacts.	The OPEP takes into accounts risks to the open ocean and prioritises actions to reduce the spread and extent of oil on the sea surface.
Protect and conserve all remaining significant heritage fabric and features.	No impacts.	No impacts.
Consult with the community on management changes.	No impacts.	No impacts.
Maintain the integrity and authenticity of structural and other historic remains and movable heritage.	No impacts.	No impacts.
Present and interpret historic heritage.	No impacts.	No impacts.
Exclude intrusive development and activity.	No impacts.	No impacts.
3.7 Flora		
Conserve and maintain natural diversity and natural ecosystems.	The EP contains control measures aimed to minimise the risk of introducing marine pests to Tasmanian waters.	No impacts.
Conserve and protect threatened flora species.	No impacts.	No impacts.
Conserve and protect plant communities of high conservation value.	No impacts.	No impacts.
Maintain natural processes.	No impacts.	No impacts.
Minimise harmful impacts on reserve vegetation.	No impacts.	No impacts.
Prevent, contain or eradicate weeds threatening native vegetation.	No impacts.	No impacts.
3.8 Fauna		

Ensure threatened fauna species are protected.	No impacts.	No impacts.
Maintain viable populations of indigenous species of fauna throughout their natural range..	No impacts.	No impacts.
Maintain the diversity of natural habitats of indigenous fauna.	No impacts.	No impacts.
Eradicate introduced species where this is feasible and warranted by the damage being caused.	No impacts.	No impacts.
Control and manage introduced species where eradication is not possible or warranted.	The EP contains control measures aimed to minimise the risk of introducing marine pests to Tasmanian waters.	
4.1 Fire Management		
To protect people from wildfires.	No impacts.	No impacts.
To protect buildings, facilities and visitor, belongings from wildfires.	No impacts.	No impacts.
To prevent wildfires burning onto neighbouring properties.	No impacts.	No impacts.
To protect those natural and cultural assets that will be damaged by wildfire.	No impacts.	No impacts.
Maintain peat soils.	No impacts.	No impacts.
Maintain the diversity of plant and animal communities.	No impacts.	No impacts.
4.2 <i>Phytophthora</i> protection		
Limit the spread of <i>Phytophthora cinnamomi</i> in the reserve	No impacts.	No impacts.
Educate the community in <i>Phytophthora</i> prevention hygiene measures	No impacts.	No impacts.
4.3 Reserve boundaries		
Provide, where possible, for ecological boundaries.	No impacts.	No impacts.
Provide boundaries that are clearly justifiable from a management perspective.	No impacts.	No impacts.
Simplify and clarify boundaries.	No impacts.	No impacts.
4.4 Assessing and approving development		

To ensure that decisions related to proposed developments or activities reflect the management objectives of this plan.	No impacts.	No impacts.
To ensure that sound processes exist for the assessment of potential impacts of proposed developments and activities (including scientific and management activities).	No impacts.	No impacts.
5.1 Stock adjustment		
Clear demonstration of sustainability	No impacts.	No impacts.
Protection of natural and cultural heritage sites and landscapes	No impacts.	No impacts.
Financial neutrality for the Crown	No impacts.	No impacts.
Protection for the Crown from any liability under the provisions of the Animal Welfare Act	No impacts.	No impacts.
Presentation, where appropriate, of traditional practices for the benefit of visitors and the local community	No impacts.	No impacts.
5.2 Electricity generation potential		
Allow for wind resource investigation subject to appropriate conditions to protect the environment.	No impacts.	No impacts.
Any further development of the wind resource will be subject to the preparation of a full environmental impact assessment process that includes community review.	No impacts.	No impacts.
5.3 Mineral resources		
To ensure that exploration or any subsequent extraction and rehabilitation are undertaken in accordance with best practice to provide maximum environmental protection.	No impacts.	No impacts.
5.4 Leases and licences		
Allow for a range of activities while protecting and conserving natural and cultural values.	No impacts.	No impacts.
5.5 Commercial fishing infrastructure		
To develop protocols and codes of conduct with and for commercial fishers which identify best practice in environmental management of shore-based activities, and which reward compliance.	No impacts.	No impacts.
To minimise any adverse impacts commercial fishing infrastructure may have on the conservation area.	No impacts.	No impacts.

To develop ways of interpreting the social and economic contribution of those commercial fishers based in the Arthur-Pieman Conservation Area, with particular reference to the growing tourism market.	No impacts.	No impacts.
5.6 Development works including visitor services		
Provide for development or resource utilisation in identified locations;	No impacts.	No impacts.
Minimise their impacts on conservation area values;	No impacts.	No impacts.
Protect and conserve tourism and recreational values;	No impacts.	No impacts.
Foster public confidence in developments and resource utilisation;	No impacts.	No impacts.
Ensure that all developments or works are ecologically sustainable.	No impacts.	No impacts.
6.1 Camping		
Provide for the unique recreational experiences provided by camping in the APCA in such a way as to minimise the impact on social, environmental and cultural values;	No impacts.	No impacts.
Work with the local community and the community of users to address the environmental impacts of free-range camping	No impacts.	No impacts.
6.2 Shacks		
Conform with the conclusions of the shack categorisation process being undertaken by the Department of Primary Industries, Water and Environment.	No impacts.	No impacts.
6.3 On-road access		
Define a set of roads that will be used by the public and that can be maintained;	No impacts.	No impacts.
Develop protocols for management of roads in keeping with the Reserve Management Code of Practice (under development)	No impacts.	No impacts.
Develop information for visitors and locals on appropriate use of roads	No impacts.	No impacts.
Develop partnerships with users providing for management of roads and tracks	No impacts.	No impacts.
6.4 Vehicles used off-road		
Provide for responsible, low-impact experiences within the reserve	No impacts.	No impacts.

Recognise the contribution to responsible use that can be made by clubs	No impacts.	No impacts.
Develop a system that is enforceable	No impacts.	No impacts.
Minimise conflicts with other recreational activities	No impacts.	No impacts.
Minimise conflicts with conservation of the natural and cultural values of the conservation area	No impacts.	No impacts.
6.5 Walking		
Identify and, subject to resources, develop and promote walking opportunities in the Arthur–Pieman which enable visitors to appreciate the special natural and cultural values of the area	No impacts.	No impacts.
Provide relevant information about settings and develop protocols between different recreational groups so that recreational users can make informed choices about the location and character of the recreational experience they seek	No impacts.	No impacts.
6.6 Family pets		
Permit dogs into parts of the conservation area under conditions that ensure they create minimal disturbance to wildlife and visitors.	No impacts.	No impacts.
6.7 Hunting		
Continue to allow sustainable hunting in parts of the conservation area.	No impacts.	No impacts.
6.8 Horse access		
Provide for controlled horse riding in the conservation area so as to minimise environmental damage and conflicts with other users.	No impacts.	No impacts.
6.9 Air access		
Allow the continued use of Balfour airstrip and to control other aircraft landings by permit.	No impacts.	No impacts.
6.10 Tourism		
Facilitate development of the regional economy through encouraging tourism based on and consistent with the maintenance of reserve values.	No impacts.	No impacts.
6.11 Interpretation and education		
Concentrate on developing a partnership with the Aboriginal community to develop strategies for revealing the richness of the Aboriginal heritage values in the reserve	No impacts.	No impacts.

Reveal through interpretation the richness of wilderness and National Estate values	No impacts.	No impacts.
Reveal through interpretation some of the richness of the European history of the area, particularly the association of the area with cattle grazing	No impacts.	No impacts.
Inform visitors of minimal impact practices and approaches to minimise adverse impact on other users	No impacts.	No impacts.
Interpret the geomorphic and biological diversity of the region	No impacts.	No impacts.
6.12 Enterprise unit		
Initiate an enterprise unit based on the implementation of a userpays system for the provision of common services in the Arthur– Pieman region and to oversee subsequent financial management.	No impacts.	No impacts.
Provide upgraded and enhanced visitor facilities through revenues generated	No impacts.	No impacts.
7.1 Community support		
Develop community appreciation of and support for reserve values;	No impacts.	No impacts.
Promote a positive image of the reserve and its benefit to the community	No impacts.	No impacts.
Involve the local and broader community in reserve management partnerships	No impacts.	No impacts.
7.2 Working with neighbours		
Take account of concerns of neighbours in managing the conservation area.	No impacts.	No impacts.
Encourage conservation and sound land management practices on lands adjoining the conservation area.	No impacts.	No impacts.
Co-ordinate protective works between the conservation area and surrounding land.	No impacts.	No impacts.
7.3 Management options & community involvement		
To achieve an appropriate level of public involvement in management of the conservation area consistent with the principles outlined above.	No impacts.	No impacts.
To achieve community ownership through involvement in policy development, planning and on ground management.	No impacts.	No impacts.
To increase the efficiency of management by encouraging community groups to take responsibility for managing their particular activities in the conservation area.	No impacts.	No impacts.

8.1 Monitoring and research

Improve the inventory and understanding of natural features and processes;	No impacts.	No impacts.
Improve the inventory and understanding of cultural features;	No impacts.	No impacts.
Use the reserve as a scientific reference area;	No impacts.	No impacts.
Encourage socio-anthropological studies to understand the significance of the APCA to the north-west and Tasmanian community;	No impacts.	No impacts.
Monitor the natural rates and magnitudes of change;	No impacts.	No impacts.
Improve knowledge and understanding of visitor behaviour in the reserve;	No impacts.	No impacts.
Assess impacts of and long term cumulative changes caused by development or use of the reserve;	No impacts.	No impacts.
Assess and improve management of the reserve.	No impacts.	No impacts.

**Assessment of the Prion MSS against the stated objectives of the Small Bass Strait Island Reserves Management Plan
(Parks and Wildlife Service, 2000)**

The following Nature Reserves are assessed under the Management Plan:

- West Moncoeur Island;
- Rodondo Island; and
- Albatross Island.

The following information summarises the risk to the parks from the spill scenario.

	West Moncoeur	Rodondo Island	Albatross Island
280 m³ surface release of MDO over 6 Hours			
Sea surface:	No contact	No contact	0.5% probability of low exposure at the sea surface.
Dissolved hydrocarbons:	No contact	No contact	2% probability of low exposure and 0.5% probability of moderate exposure to dissolved hydrocarbons 0-10 m below sea surface.
Entrained hydrocarbons:	7% probability of low exposure to entrained hydrocarbons 0-10 m below sea surface.	4% probability of low exposure to entrained hydrocarbons 0-10 m below sea surface.	8.5% probability of low exposure and 3.5% probability of high exposure to entrained hydrocarbons 0-10 m below sea surface.
Shoreline contact:	No contact	No contact	1% probability of low exposure to shoreline loading.

The table on the following pages provide an assessment of routine and non-routine operations against the management objectives of the Plan.

Management Objectives	Assessment of impacts of routine activities against management aims	Assessment of impacts of Level 2 or 3 hydrocarbon spill against objectives
Conserve natural biological diversity	No impacts.	No impacts.
Conserve geological diversity	No impacts.	No impacts.
Preserve the quality of water and protect catchments	No impacts.	The OPEP takes into account risks to the shoreline and prioritises actions to reduce the spread and extent of oil towards the shoreline.
Conserve sites or areas of cultural significance	No impacts.	No impacts.
Encourage education based on the purposes of reservation and the natural or cultural values of the nature reserve or both	No impacts.	No impacts.
Encourage research, particularly that which furthers the purposes of reservation	No impacts.	No impacts.
Protect the nature reserve against, and rehabilitate the nature reserve following, adverse impacts such as those of fire, introduced species, diseases and soil erosion on the nature reserve's natural and cultural values and on assets within and adjacent to the nature reserve	The EP contains control measures aimed to minimise the risk of introducing marine pests to Tasmanian waters.	No impacts.
Encourage cooperative management programs with Aboriginal people in areas of significance to them in a manner consistent with the purposes of reservation and the other management	No impacts.	No impacts.

Assessment of the Prion MSS against the stated aims of the Kent Group National Park (Terrestrial Portion) Management Plan
(Parks and Wildlife Service Tasmania, 2005)

The following information summarises the risk to the park from the spill scenario.

280 m ³ surface release of MDO over 6 Hours	
Sea surface:	0.5% probability of low exposure at the sea surface.
Dissolved hydrocarbons:	0.5% probability of low exposure at 0-10 m below sea surface.
Entrained hydrocarbons:	12.5% probability of low exposure and 0.5% probability of high exposure at 0-10 m below sea surface.
Shoreline contact:	1% probability of low exposure and 1% probability of moderate exposure to shoreline loading.

The table on the following pages provide an assessment of routine and non-routine operations against the management aims of the park.

Management Aims	Assessment of impacts of routine activities against management aims	Assessment of impacts of Level 2 or 3 hydrocarbon spill against objectives
2.1 Geodiversity		
Preserve and maintain sites of geoconservation significance and geodiversity.	No impacts.	No impacts.
2.2 Natural and Cultural Landscape Values		
Preserve a sense of a simple, lonely and isolated settlement focussed on the task of maritime safety.	No impacts.	No impacts.
2.4 Flora		
Conserve and maintain natural diversity and natural ecosystems.	No impacts.	No impacts.
2.5 Fauna		
Protect threatened fauna species and their habitat.	No impacts.	No impacts.
2.6 Aboriginal Heritage		
In cooperation with the Aboriginal community, protect and conserve Aboriginal heritage.	No impacts.	No impacts.
2.7 Historic Heritage		
Conserve the Deal Island Lightstation, protecting and conserving its conservation significance, with controlled adaption to encourage tenancy and viability.	No impacts.	No impacts.
Present and interpret historic heritage.	No impacts.	No impacts.
3.1 Fire Management		
Protect the historic assets.	No impacts.	No impacts.
3.2 Rehabilitation		
Prevent erosion and rehabilitate badly damaged areas.	No impacts.	No impacts.

3.3 Weeds and Diseases

Control or eradicate weed species.

No impacts.

No impacts.

3.4 Introduced Fauna

Eradicate introduced species where this is feasible and warranted by the damage being caused.

No impacts.

No impacts.

6.1 Management of the National Park

Ensure any co-management partnership struck with the Crown is being conducted in a way that is consistent with this plan and the broader public interest.

No impacts.

No impacts.

Appendix 2

Assessment of Prion 3DMSS against the management aims of threatened species' management plans

Assessment of the Prion MSS against the aims of threatened species' management plans**BIRDS**

2a Albatross and petrels

2b Soft-plumaged petrel

2c Blue petrel

2d Gould's petrel

2e Australian painted snipe

2f Bar-tailed godwit (northern Siberian)

2h Curlew sandpiper

2i Eastern curlew

2j Fairy prion

2k Fairy tern

2l Great knot

2m Greater sand plover

2n Hooded plover

2o Lesser sand plover

2p Orange-bellied parrot

2q Red knot

2r Swift parrot

2s Australasian bittern

MAMMALS

2t Blue whale

2u Humpback whale

2v Southern right whale

2w Fin whale

2x Sei whale

2y Australian sea-lion

2z Sub-Antarctic fur seal

2za Southern elephant seal

FISH

2zb Grey nurse shark (eastern population)

2zc Black rockcod

2zd Whale shark

2ze Three handfish

2ze Australian grayling

2zf Dwarf galaxias

2zg Great white shark

REPTILES

2zh Marine turtles

Assessment of the Prion MSS against the stated aims of the National Recovery Plan for Threatened Albatrosses and Giant Petrels 2011-2016
(DSEWPC, 2011)

The following table provides an assessment of routine and non-routine operations against the management aims of the plan.

Criteria to measure performance of the Plan against the objective	Assessment of impacts of routine activities against management aims	Assessment of impacts of Level 2 or 3 hydrocarbon spill against objectives
Specific Objectives		
Research and monitoring of the biology, ecology and population dynamics of albatrosses and giant petrels breeding within Australian jurisdiction is sufficient to understand conservation status and to implement effective and efficient conservation measures.	No impacts.	No impacts.
Land-based threats to the survival and breeding success of albatrosses and giant petrels breeding within areas under Australian jurisdiction are quantified and reduced.	No impacts.	No impacts.
Marine-based threats to the survival and breeding success of albatrosses and giant petrels foraging in waters under Australian jurisdiction are quantified and reduced.	No impacts.	The OPEP takes into account risks to marine bird species and prioritises actions to reduce the spread and extent of oil on the sea surface.
Fishers are educated and public awareness is raised on the threats to albatrosses and giant petrels.	No impacts.	No impacts.
Substantial involvement in the promotion and development of improved and, ultimately, favourable conservation status of albatrosses and giant petrels globally in international conservation and fishing fora is maintained.	No impacts.	No impacts.
Actions to achieve specific objectives		
Research and monitoring of the biology, ecology and population dynamics of albatrosses and giant petrels breeding within Australian jurisdiction is sufficient to understand conservation status and to implement effective and efficient conservation measures.	No impacts.	No impacts.
Quantify and reduce land-based threats to the survival and breeding parameters of albatrosses and giant petrels breeding within areas under Australian jurisdiction.	No impacts.	No impacts.
Quantify and reduce marine-based threats to the survival and breeding parameters of albatrosses and giant petrels foraging in waters under Australian jurisdiction.	No impacts.	The OPEP takes into account risks to marine bird species and prioritises actions to reduce the spread and extent of oil on the sea surface.
Educate fishers and promote public awareness of the threats to albatrosses and giant-petrels.	No impacts.	No impacts.
Achieve substantial progress towards global conservation of albatrosses and giant petrels in international conservation and fishing fora.	No impacts.	No impacts.

Assessment of the Prion MSS against the stated aims of the Approved Conservation Advice for the Soft-plumaged petrel (*Pterodroma mollis*) (TSSC, 2015)

The following table provides an assessment of routine and non-routine operations against the management aims of the plan.

Stated management aims	Assessment of impacts of routine activities against management aims	Assessment of impacts of Level 2 or 3 hydrocarbon spill against objectives
Conservation and Management Actions		
Continue to manage Maatsuyker and Macquarie Island in such a way that human disturbance is minimised.	No impacts.	No impacts.
Continue strict quarantine management practices for Maatsuyker and Macquarie Island to reduce the risk of any invasive species (re)establishing on the islands.	No impacts.	No impacts.
Survey and Monitoring Priorities		
Continue to monitor population numbers on Maatsuyker Island.	No impacts.	No impacts.
Include monitoring for soft-plumaged petrels in monitoring programs occurring on Macquarie Island to detect any breeding occurrences.	No impacts.	No impacts.

**Assessment of the Prion MSS against the stated aims of the Approved Conservation Advice for the Blue Petrel (*Halobaena caerulea*).
(TSSC, 2015)**

The following table provides an assessment of routine and non-routine operations against the management aims of the plan.

Stated management aims	Assessment of impacts of routine activities against management aims	Assessment of impacts of Level 2 or 3 hydrocarbon spill against objectives
Conservation and Management Actions		
Continue to manage Macquarie Island and its surrounds in such a way that human disturbance is minimised.	No impacts.	No impacts.
Continue strict quarantine management practices for Macquarie Island to reduce the risk of any invasive species (re)establishing on the island.	No impacts.	No impacts.
Survey and Monitoring Priorities		
Continue monitoring the species, and if decreases become evident in the population, identify potential causes and adapt management actions as required.	No impacts.	No impacts.
Include monitoring for blue petrels in monitoring programs occurring on Macquarie Island to detect any future breeding occurrences	No impacts.	No impacts.
Information and Research Priorities		
Monitor breeding population size and success on Macquarie Island offshore rock stacks.	No impacts.	No impacts.

**Assessment of the Prion MSS against the stated aims of the Gould's Petrel (*Pterodroma leucoptera leucoptera*) Recovery Plan
(DEC, 2006)**

The following table provides an assessment of routine and non-routine operations against the management aims of the plan.

Stated objectives of the recovery plan	Assessment of impacts of routine activities against management aims	Assessment of impacts of Level 2 or 3 hydrocarbon spill against objectives
To identify and manage the threats operating at sites where the subspecies occur.	No impacts.	No impacts.
To establish and maintain a translocated second colony at Boondelbah Island.	No impacts.	No impacts.
To raise awareness of the subspecies with the local community and involve volunteers in the recovery program.	No impacts.	No impacts.
To promote research and continue monitoring that will assist with the management of the subspecies.	No impacts.	No impacts.
To co-ordinate recovery actions through a recovery team and annual reporting on Recovery Plan implementation.	No impacts.	No impacts.

Assessment of the Prion MSS against the stated aims of the Conservation Advice for the Australian painted-snipe (*Rostratula australis*) (DSEWPC, 2013)

The following table provides an assessment of routine and non-routine operations against the management aims of the conservation advice.

Regional Priority Actions	Assessment of impacts of routine activities against management aims	Assessment of impacts of Level 2 or 3 hydrocarbon spill against objectives
Habitat Loss, Disturbance and Modification		
Develop management guidelines for breeding and non-breeding habitat.	No impacts.	No impacts.
Monitor the progress of recovery, including the effectiveness of management actions and the need to adapt them if necessary.	No impacts.	No impacts.
Ensure there is no disturbance in areas where the species is known to breed, excluding necessary actions to manage the conservation of the species.	No impacts.	The OPEP takes into account beaches of importance to coastal bird species and prioritises those for protection and where necessary, beach clean-up and oiled wildlife response.
Control access routes to suitably constrain public access to existing and future breeding sites on public land.	No impacts.	No impacts.
Suitably control and manage access on private land and other land tenure.	No impacts.	No impacts.
Minimise adverse impacts from land use at known sites.	No impacts.	No impacts.
Manage any changes to hydrology that may result in changes to water table levels, run-off, salinity, algal blooms, sedimentation or pollution.	No impacts.	No impacts.
Manage any disruptions to water flows.	No impacts.	No impacts.
Investigate formal conservation arrangements, management agreements and covenants on private land, and for crown and private land investigate/secure inclusion in reserve tenure if possible.	No impacts.	No impacts.
Manage any other known, potential or emerging threats including inappropriate fire regimes and coastal port/infrastructure development.	No impacts.	No impacts.
Invasive Weeds		

Regional Priority Actions	Assessment of impacts of routine activities against management aims	Assessment of impacts of Level 2 or 3 hydrocarbon spill against objectives
Implement the Parkinsonia (<i>Parkinsonia aculeata</i>) Strategic Plan (Commonwealth of Australia, 2000) for the control of this species within the range of the Australian painted snipe.	No impacts.	No impacts.
Identify and remove weeds in wetland areas that could become a threat to the Australian painted snipe, using appropriate methods.	No impacts.	No impacts.
Ensure chemicals or other mechanisms used to eradicate weeds do not have a significant adverse impact on the Australian painted snipe	No impacts.	No impacts.
Trampling, Browsing or Grazing		
Develop and implement a stock management plan for roadside verges and travelling stock routes which include swamps, marshes or wetlands.	No impacts.	No impacts.
If livestock grazing occurs in known Australian painted snips habitats, ensure land owners/managers use an appropriate management regime and density that does not detrimentally affect Australian painted snipe nesting.	No impacts.	No impacts.
If appropriate, manage total grazing pressure at important breeding sites through exclusion fencing or other barriers.	No impacts.	No impacts.
Animal Predation or Competition		
Implement the national threat abatement plans for the European red fox (DEWHA, 2008a) and feral cats (DEWHA, 2008b) to control the adverse impacts of foxes (<i>Vulpes vulpes</i>) and cats (<i>Felis catus</i>) in the species' range.	No impacts.	No impacts.
Continue baiting to control population numbers of feral animals.	No impacts.	No impacts.
Fire		
Develop and implement a suitable fire management strategy for the habitat of the Australian painted snipe.	No impacts.	No impacts.
Conservation Information		
Raise awareness of the Australian painted snipe within the local community and the importance of reporting observations to BirdLife Australia, using fact sheets and/or brochures.	No impacts.	No impacts.
Advertise and encourage use of Australian painted snipe survey techniques and survey forms (Birds Australia, 2012).	No impacts.	No impacts.

Regional Priority Actions	Assessment of impacts of routine activities against management aims	Assessment of impacts of Level 2 or 3 hydrocarbon spill against objectives
Organise field days with industry and interest groups to raise awareness and share information on the species. These groups may include natural resource management groups, catchment management authorities, Indigenous groups, conservation organisations, local and state governments, and private landholders.	No impacts.	No impacts.
Engage with private landholders and land managers responsible for the land on which populations occur and encourage these key stakeholders to contribute to the implementation of conservation management actions.	No impacts.	No impacts.
Raise awareness of banded individuals (see BirdLife Australia, 2012) to increase the likelihood of re-sighting and reporting.	No impacts.	No impacts.
Facilitate the exchange of information between interested parties, including sightings, research and management approaches.	No impacts.	No impacts.

Assessment of the Prion MSS against the stated aims of the Conservation Advice for the Bar-tailed godwit (northern Siberian) (*Limosa lapponica menzbieri*) (TSSC, 2016)

The following table provides an assessment of routine and non-routine operations against the management aims of the conservation advice.

Conservation Actions	Assessment of impacts of routine activities against management aims	Assessment of impacts of Level 2 or 3 hydrocarbon spill against objectives
Conservation and Management Actions		
Work with governments along the East Asian – Australasian Flyway to prevent destruction of key breeding and migratory staging sites.	No impacts.	No impacts.
Protect important habitat in Australia.	No impacts.	The OPEP takes into account beaches of importance to coastal bird species and prioritises action to control the spread and extent of hydrocarbons.
Support initiatives to improve habitat management at key sites.	No impacts.	No impacts.
Maintain and improve protection of roosting and feeding sites in Australia.	No impacts.	The OPEP takes into account beaches of importance to coastal bird species and prioritises action to control the spread and extent of hydrocarbons.
Advocate for the creation and restoration of foraging and roosting sites.	No impacts.	No impacts.
Incorporate requirements for bar-tailed godwit (northern Siberian) into coastal planning and management.	No impacts.	The OPEP takes into account beaches of importance to coastal bird species and prioritises action to control the spread and extent of hydrocarbons.
Manage important sites to identify, control and reduce the spread of invasive species.	The EP puts in place control measures to reduce the risk of biofouling and introduction of invasive marine species.	No impacts.
Manage disturbance at important sites which are subject to anthropogenic disturbance when bar-tailed godwit (northern Siberian) are present – e.g. discourage or prohibit vehicle access, horse riding and dogs on beaches, implement temporary site closures.	No impacts.	The OPEP takes into account beaches of importance to coastal bird species and prioritises action to control the spread and extent of hydrocarbons.

Conservation Actions	Assessment of impacts of routine activities against management aims	Assessment of impacts of Level 2 or 3 hydrocarbon spill against objectives
Survey and Monitoring Priorities		
Enhance existing migratory shorebird population monitoring programmes, particularly to improve coverage across northern Australia.	No impacts.	No impacts.
Monitor the progress of recovery, including the effectiveness of management actions and the need to adapt them if necessary.	No impacts.	No impacts.
Information and Research Priorities		
Undertake work to more precisely assess bar-tailed godwit (northern Siberian) life history, population size, distribution and ecological requirements particularly across northern Australia.	No impacts.	No impacts.
Improve knowledge about dependence of bar-tailed godwit (northern Siberian) on key migratory staging sites, and non-breeding sites to the in south-east Asia.	No impacts.	No impacts.
Improve knowledge about threatening processes including the impacts of disturbance and hunting.	No impacts.	No impacts.

Assessment of the Prion MSS against the stated aims of the Conservation Advice for the Curlew sandpiper (*Calidris ferruginea*) (DoE, 2016)

The following table provides an assessment of routine and non-routine operations against the management aims of this conservation advice.

Conservation Actions	Assessment of impacts of routine activities against management aims	Assessment of impacts of Level 2 or 3 hydrocarbon spill against objectives
International Objectives		
Achieve a stable or increasing population.	No impacts.	No impacts.
Maintain and enhance important habitat.	No impacts.	No impacts.
Disturbance at key roosting and feeding sites reduced.	No impacts.	The OPEP takes into account beaches of importance to coastal bird species and prioritises action to control the spread and extent of hydrocarbons.
Australian Objectives		
Achieve a stable or increasing population.	No impacts.	No impacts.
Maintain and enhance important habitat.	No impacts.	No impacts.
Disturbance at key roosting and feeding sites reduced.	No impacts.	The OPEP takes into account beaches of importance to coastal bird species and prioritises action to control the spread and extent of hydrocarbons.
Raise awareness of curlew sandpiper within the local community.	No impacts.	No impacts.
Conservation and Management Actions		
Work with governments along the East Asian – Australasian Flyway to prevent destruction of key migratory staging sites.	No impacts.	No impacts.
Support initiatives to protect and manage key staging sites of curlew sandpiper.	No impacts.	No impacts.
Manage important sites to identify, control and reduce the spread of invasive species.	No impacts.	No impacts.
Monitor the progress of recovery, including the effectiveness of management actions and the need to adapt them if necessary.	No impacts.	No impacts.

Conservation Actions	Assessment of impacts of routine activities against management aims	Assessment of impacts of Level 2 or 3 hydrocarbon spill against objectives
Maintain and improve protection of roosting and feeding sites in Australia.	No impacts.	The OPEP takes into account beaches of importance to coastal bird species and prioritises action to control the spread and extent of hydrocarbons.
Incorporate requirements for curlew sandpiper into coastal planning and management.	No impacts.	
Manage disturbance at important sites when curlew sandpipers are present – e.g. discourage or prohibit vehicle access, horse riding and dogs on beaches, implement temporary beach closures.	No impacts.	
Monitoring Priorities		
Enhance existing migratory shorebird population monitoring programmes, particularly to improve coverage across northern Australia.	No impacts.	No impacts.
Information and Research Priorities		
More precisely assess curlew sandpiper population size, distribution and ecological requirements particularly across northern Australia.	No impacts.	No impacts.
Improve knowledge about dependence of curlew sandpiper on key migratory staging sites, and wintering sites to the north of Australia.	No impacts.	No impacts.
Improve knowledge about threatening processes including the impacts of disturbance.	No impacts.	No impacts.

Assessment of the Prion MSS against the stated aims of the Conservation Advice for the Eastern curlew (*Numenius madagascariensis*)
(DoE, 2015)

The following table provides an assessment of routine and non-routine operations against the primary conservation objectives of the advice.

Primary Conservation Objectives	Assessment of impacts of routine activities against management aims	Assessment of impacts of Level 2 or 3 hydrocarbon spill against objectives
International Objectives		
Achieve a stable or increasing population.	No impacts.	No impacts.
Maintain and enhance important habitat.	No impacts.	No impacts.
Reduce disturbance at key roosting and feeding sites.	No impacts.	No impacts.
Australian Objectives		
Achieve a stable or increasing population.	No impacts.	The OPEP takes into account beaches of importance to coastal bird species and prioritises action to control the spread and extent of hydrocarbons.
Maintain and enhance important habitat.	No impacts.	
Reduce disturbance at key roosting and feeding sites.	No impacts.	
Raise awareness of eastern curlew within the local community.	No impacts.	No impacts.
Conservation and Management Actions		
Work with governments along the East Asian – Australasian Flyway to prevent destruction of key migratory staging sites.	No impacts.	No impacts.
Develop and implement an International Single Species Action Plan for eastern curlew with all range states.	No impacts.	No impacts.
Support initiatives to improve habitat management at key sites.	No impacts.	No impacts.
Maintain and improve protection of roosting and feeding sites in Australia.	No impacts.	The OPEP takes into account beaches of importance to coastal bird species and prioritises action to control the spread and extent of hydrocarbons.
Incorporate requirements for eastern curlews into coastal planning and management.	No impacts.	No impacts.

Primary Conservation Objectives	Assessment of impacts of routine activities against management aims	Assessment of impacts of Level 2 or 3 hydrocarbon spill against objectives
Manage important sites to identify, control and reduce the spread of invasive species.	No impacts.	No impacts.
Manage disturbance at important sites when eastern curlews are present – e.g. discourage or prohibit vehicle access, horse riding and dogs on beaches, implement temporary site closures.	No impacts.	No impacts.
Monitor the progress of recovery, including the effectiveness of management actions and the need to adapt them if necessary.	No impacts.	No impacts.
Monitoring Priorities		
Enhance existing migratory shorebird population monitoring programmes, particularly to improve coverage across northern Australia	No impacts.	No impacts.
Information and Research Priorities		
More precisely assess eastern curlew life history, population size, distribution and ecological requirements particularly across northern Australia.	No impacts.	No impacts.
Improve knowledge about dependence of eastern curlew on key migratory staging sites, and wintering sites to the north of Australia.	No impacts.	No impacts.
Improve knowledge about threatening processes including the impacts of disturbance and hunting.	No impacts.	No impacts.

Assessment of the Prion MSS against the stated aims of the Conservation Advice for the southern fairy prion (*Pachyptila tutur subantarctica*) (TSSC, 2015)

The following table provides an assessment of routine and non-routine operations against the management aims of this conservation advice.

Conservations Actions	Assessment of impacts of routine activities against management aims	Assessment of impacts of Level 2 or 3 hydrocarbon spill against objectives
Conservation and Management Actions		
Continue to manage Macquarie Island and its surrounds in such a way that human disturbance is minimised.	No impacts.	No impacts.
Continue strict quarantine management practices for Macquarie Island and surrounding rock stacks to reduce the risk of any invasive species (re)establishing on the island.	No impacts.	No impacts.
Survey and Monitoring Priorities		
Continue to monitor the species, and if decreases become evident in the population, identify potential causes and adapt management actions as required.	No impacts.	No impacts.
Information and Research Priorities		
Continue to monitor breeding population size and success on Macquarie Island offshore rock stacks, including Bishop and Clerk Islands.	No impacts.	No impacts.

Assessment of the Prion MSS against the stated aims of the Conservation Advice for the Australian fairy tern (*Sternula nereis nereis*) (DSEWPC, 2011)

The following table provides an assessment of routine and non-routine operations against the management aims of the conservation advice.

Primary Conservation Objectives	Assessment of impacts of routine activities against management aims	Assessment of impacts of Level 2 or 3 hydrocarbon spill against objectives
Regional Priority Actions		
Habitat Loss, Disturbance and Modification		
Monitor the progress of recovery (using a variety of methods such as survey and banding programs, video surveillance of breeding colonies and maintaining a central breeding and sightings database), including the effectiveness of management actions and the need to adapt them if necessary.	Location of fairy tern populations within the EMBA are identified within the EP.	Location of fairy tern populations within the EMBA are identified within the EP.
Identify populations of high conservation priority.	No impacts.	No impacts.
Manage any changes to hydrology that may result in changes to tide levels, increase salinity or pollution.	No impacts.	No impacts.
Manage any disruptions to water flows in wetland areas such as the Coorong in South Australia.	No impacts.	No impacts.
Introduce recreational codes of conduct and license commercial tourism operations utilising the subspecies' habitat.	No impacts.	No impacts.
Animal Predation or Competition		
Develop and implement a management plan for the control or eradication of foxes, dogs, cats and Black Rats where the species is found.	No impacts.	No impacts.
Establish programs to discourage gulls (such as Silver Gulls) competing with Fairy Terns. Examples of activities could include: education programs to raise awareness of the problems of feeding gulls and; minimising night time lighting from oil and gas rigs near the subspecies' habitat to reduce night time feeding opportunities for Silver Gulls.	No impacts.	No impacts.
Local Priority Actions		
Habitat Loss, Disturbance and Modification		
Use nest protection measures to safeguard nests from extreme weather/tides, including sandbagging and nest relocation.	No impacts.	No impacts.
Control access routes to suitably constrain public access to known sites on public and private land.	No impacts.	

Primary Conservation Objectives	Assessment of impacts of routine activities against management aims	Assessment of impacts of Level 2 or 3 hydrocarbon spill against objectives
Reduce disturbance during the breeding season from human recreation such as the use of off road vehicles and predation by domestic dogs, using signage and/ or fencing where appropriate. The use of signage can restrict access to the site as well as raise awareness of the sites ecological importance.	No impacts.	The OPEP takes into account beaches of importance to coastal bird species and prioritises action to control the spread and extent of hydrocarbons.
Ensure appropriate oil-spill contingency plans are in place for the subspecies' breeding sites which are vulnerable to oil spills, such as the breeding colonies in Victoria.	No impacts.	
Weed Control		
Remove weeds which could become a threat to the Fairy Tern, using appropriate methods outside the breeding season.	No impacts.	No impacts.
Manage sites to prevent introduction of invasive weeds, which could become a threat to the Fairy Tern, using appropriate methods.	No impacts.	No impacts.
Animal Predation		
Control introduced pests such as foxes, dogs, cats and Black Rats, using a variety of methods such as trapping and 1080 baiting.	No impacts.	No impacts.

Assessment of the Prion MSS against the stated aims of the Conservation Advice for the Great knot (*Calidris tenuirostris*) (TSSC, 2016)

The following table provides an assessment of routine and non-routine operations against the conservation actions of the conservation advice.

Conservation Actions	Assessment of impacts of routine activities against management aims	Assessment of impacts of Level 2 or 3 hydrocarbon spill against objectives
Conservation and Management Actions		
Work with governments along the East Asian – Australasian Flyway to prevent destruction of key breeding and migratory staging sites.	No impacts.	No impacts.
Protect important habitat in Australia.	No impacts.	The OPEP takes into account beaches of importance to coastal bird species and prioritises action to control the spread and extent of hydrocarbons.
Support initiatives to improve habitat management at key sites.	No impacts.	No impacts.
Maintain and improve protection of roosting and feeding sites in Australia.	No impacts.	The OPEP takes into account beaches of importance to coastal bird species and prioritises action to control the spread and extent of hydrocarbons.
Advocate for the creation and restoration of foraging and roosting sites.	No impacts.	No impacts.
Incorporate requirements for great knot into coastal planning and management.	No impacts.	No impacts.
Manage important sites to identify, control and reduce the spread of invasive species.	The EP puts in place control measures to reduce the risk of biofouling and introduction of invasive marine species.	No impacts.
Manage disturbance at important sites which are subject to anthropogenic disturbance when great knots are present – e.g. discourage or prohibit vehicle access, horse riding and dogs on beaches, implement temporary site closures.	No impacts.	The OPEP takes into account beaches of importance to coastal bird species and prioritises action to control the spread and extent of hydrocarbons.
Survey and Monitoring Priorities		

Conservation Actions	Assessment of impacts of routine activities against management aims	Assessment of impacts of Level 2 or 3 hydrocarbon spill against objectives
Enhance existing migratory shorebird population monitoring programmes, particularly to improve coverage across northern Australia.	No impacts.	No impacts.
Monitor the progress of recovery, including the effectiveness of management actions and the need to adapt them if necessary.	No impacts.	No impacts.
Information and Research Priorities		
Undertake work to more precisely assess great knot life history, population size, distribution and ecological requirements particularly across northern Australia.	No impacts.	No impacts.
Improve knowledge about dependence of great knot on key migratory staging sites, and non-breeding sites to the in south-east Asia.	No impacts.	No impacts.
Improve knowledge about threatening processes including the impacts of disturbance and hunting.	No impacts.	No impacts.

Assessment of the Prion MSS against the stated aims of the Conservation Advice for the greater sand plover (*Charadrius leschenaultii*) (TSSC, 2016)

The following table provides an assessment of routine and non-routine operations against the conservation actions of the conservation advice.

Conservation Actions	Assessment of impacts of routine activities against management aims	Assessment of impacts of Level 2 or 3 hydrocarbon spill against objectives
Conservation and Management Actions		
Work with governments along the East Asian – Australasian Flyway to prevent destruction of key breeding and migratory staging sites.	No impacts.	No impacts.
Protect important habitat in Australia.	No impacts.	The OPEP takes into account beaches of importance to coastal bird species and prioritises action to control the spread and extent of hydrocarbons.
Support initiatives to improve habitat management at key sites.	No impacts.	No impacts.
Maintain and improve protection of roosting and feeding sites in Australia.	No impacts.	The OPEP takes into account beaches of importance to coastal bird species and prioritises action to control the spread and extent of hydrocarbons.
Advocate for the creation and restoration of foraging and roosting sites.	No impacts.	No impacts.
Incorporate requirements for greater sand plover into coastal planning and management.	No impacts.	The OPEP takes into account beaches of importance to coastal bird species and prioritises action to control the spread and extent of hydrocarbons.
Manage important sites to identify, control and reduce the spread of invasive species.	The EP puts in place control measures to reduce the risk of biofouling and introduction of invasive marine species.	No impacts.
Manage disturbance at important sites which are subject to anthropogenic disturbance when greater sand plovers are present – e.g. discourage or prohibit vehicle access, horse riding and dogs on beaches, implement temporary site closures.	No impacts.	The OPEP takes into account beaches of importance to coastal bird species and prioritises action to control the spread and extent of hydrocarbons.

Conservation Actions	Assessment of impacts of routine activities against management aims	Assessment of impacts of Level 2 or 3 hydrocarbon spill against objectives
Survey and Monitoring Priorities		
Enhance existing migratory shorebird population monitoring programmes, particularly to improve coverage across northern Australia.	No impacts.	No impacts.
Monitor the progress of recovery, including the effectiveness of management actions and the need to adapt them if necessary.	No impacts.	No impacts.
Information and Research Priorities		
Undertake work to more precisely assess greater sand plover life history, population size, distribution and ecological requirements particularly across northern Australia.	No impacts.	No impacts.
Improve knowledge about dependence of greater sand plover on key migratory staging sites, and non-breeding sites to the in south-east Asia.	No impacts.	No impacts.
Improve knowledge about threatening processes including the impacts of disturbance and hunting.	No impacts.	No impacts.

Assessment of the Prion MSS against the stated aims of the Conservation Advice for the hooded plover (*Thinornis rubricollis rubricollis*) (DoE, 2014)

The following table provides an assessment of routine and non-routine operations against the recovery and impact avoidance guidance of this conservation advice.

Recovery and Impact avoidance guidance	Assessment of impacts of routine activities against management aims	Assessment of impacts of Level 2 or 3 hydrocarbon spill against objectives
Primary Conservation Objectives		
1. Achieve stable numbers of adults in the population, and maintain a stable number of occupied and active breeding territories.	No impacts.	No impacts.
2. Improve breeding success, namely increase fledgling rates (which is a combination of improving egg and chick survival rates), via: a. reducing the destruction of nests and chicks, and the disturbance of breeding pairs, by human and human-related activities. b. reducing predation by feral animals and overabundant native predators.	No impacts.	No impacts.
3. Maintain, enhance and restore habitat, and integrate the subspecies' needs into coastal planning.	No impacts.	No impacts.
Information and Research Priorities		
1. Determine demographic trends including population size, breeding success, and status and trends in breeding populations.	No impacts.	No impacts.
2. Determine levels of nest predation and breeding success, in areas with and without predator and stock control programs.	No impacts.	No impacts.
3. Identify the causes of chick mortality, and factors which may mediate chick survival rates.	No impacts.	No impacts.
4. Identify habitat availability and risk of habitat loss due to weed invasion, rising sea levels and dune morphology changes, via: a) incorporating coastal weed mapping data into a single data set. b) utilising SmartLine for all population assessments; this maps coastal geomorphology and can indicate areas of coasts which are vulnerable to erosion and other weather/climate impacts. c) integrating coastal weed, geomorphology and hooded plover (eastern) nesting territory data, in order to provide an assessment of threats from invasive weeds and erosion.	No impacts.	No impacts.

Recovery and Impact avoidance guidance	Assessment of impacts of routine activities against management aims	Assessment of impacts of Level 2 or 3 hydrocarbon spill against objectives
5. For each breeding site/beach, assess the relative impacts of different threats and the likelihood of threat management measures being successful, so that beaches can be prioritised for management.	No impacts.	The OPEP takes into account beaches of importance to coastal bird species and prioritises action to control the spread and extent of hydrocarbons.
6. Monitor the breeding and abundance of hooded plovers on an ongoing basis, ensuring that survey methods and data reporting are standardised as much as possible.	No impacts.	No impacts.
7. Undertake a population viability analysis to set breeding success targets for recovery programs.	No impacts.	No impacts.
Management Actions Required		
1. Manage the use of (and access to) key beaches for recreation when plovers are breeding – e.g. discourage or prohibit vehicle access, horse riding and dogs from beaches; implement temporary beach closures; erect fencing to prevent people entering.	No impacts.	No impacts.
2. Adequately police beaches to ensure compliance with regulations, especially those relating to dog walking, and undertake a review of existing regulations to assess whether there is room for improvement.	No impacts.	No impacts.
3. Educate the public in research, monitoring, management and advocacy efforts.	No impacts.	No impacts.
4. Incorporate requirements for the hooded plover into coastal planning and management, and erosion control activities, including: a) limiting levels of urban development within the coastal zone. b) adopting evidence-based best practice. c) consulting with relevant state and local government departments, research organisations, and community organisations.	No impacts.	No impacts.
5. Construct fencing to prevent livestock entering beaches.	No impacts.	No impacts.
6. Implement predator control programs for invasive species where necessary.	No impacts.	No impacts.
7. Evaluate the efficacy of management techniques such as the use of chick shelters, predator controls, mechanisms to alter human behaviour on beaches, habitat restoration and maintenance, and identify areas for improvement.	No impacts.	No impacts.
8. Further develop methods for reducing or controlling rates of colonisation by invasive plants and rehabilitating dunes colonised by invasive plants, and establish trials to recover habitat degraded by marram grass (<i>Ammophila arenaria</i>).	No impacts.	No impacts.

Recovery and Impact avoidance guidance	Assessment of impacts of routine activities against management aims	Assessment of impacts of Level 2 or 3 hydrocarbon spill against objectives
9. Prepare oil spill response plans to ensure effective rehabilitation of oiled birds.	No impacts.	The OPEP takes into account beaches of importance to coastal bird species and prioritises action to control the spread and extent of hydrocarbons.
10. Reduce in-shore marine debris, including educating fishers and the public to properly dispose of fishing lines.	No impacts.	No impacts.
11. As a last resort, investigate control options for native predators such as ravens, magpies, currawongs and silver gulls, if their impacts are threatening a population and human activities cannot be sufficiently reduced to mitigate their impacts.	No impacts.	No impacts.

Assessment of the Prion MSS against the stated aims of the Conservation Advice for the Lesser Sand Plover (*Charadrius mongolus*) (TSSC, 2016)

The following table provides an assessment of routine and non-routine operations against the conservation actions of this conservation advice.

Conservation Actions	Assessment of impacts of routine activities against management aims	Assessment of impacts of Level 2 or 3 hydrocarbon spill against objectives
Conservation and Management Actions		
Work with governments along the East Asian – Australasian Flyway to prevent destruction of key breeding and migratory staging sites.	No impacts.	No impacts.
Protect important habitat in Australia.	No impacts.	The OPEP takes into account beaches of importance to coastal bird species and prioritises action to control the spread and extent of hydrocarbons.
Support initiatives to improve habitat management at key sites.	No impacts.	No impacts.
Maintain and improve protection of roosting and feeding sites in Australia.	No impacts.	The OPEP takes into account beaches of importance to coastal bird species and prioritises action to control the spread and extent of hydrocarbons.
Advocate for the creation and restoration of foraging and roosting sites.	No impacts.	No impacts.
Incorporate requirements for lesser sand plover into coastal planning and management.	No impacts.	The OPEP takes into account beaches of importance to coastal bird species and prioritises action to control the spread and extent of hydrocarbons.
Manage important sites to identify, control and reduce the spread of invasive species.	The EP puts in place control measures to reduce the risk of biofouling and introduction of invasive marine species.	No impacts.
Manage disturbance at important sites which are subject to anthropogenic disturbance when lesser sand plovers are present – e.g. discourage or prohibit vehicle access, horse riding and dogs on beaches, implement temporary site closures.	No impacts.	The OPEP takes into account beaches of importance to coastal bird species and prioritises action to control the spread and extent of hydrocarbons.
Survey and Monitoring Priorities		

Conservation Actions	Assessment of impacts of routine activities against management aims	Assessment of impacts of Level 2 or 3 hydrocarbon spill against objectives
Enhance existing migratory shorebird population monitoring programmes, particularly to improve coverage across northern Australia.	No impacts.	No impacts.
Monitor the progress of recovery, including the effectiveness of management actions and the need to adapt them if necessary.	No impacts.	No impacts.
Information and Research Priorities		
Undertake work to more precisely assess lesser sand plover life history, population size, distribution and ecological requirements particularly across northern Australia.	No impacts.	No impacts.
Improve knowledge about dependence of greater sand plover on key migratory staging sites, and non-breeding sites to the in south-east Asia.	No impacts.	No impacts.
Improve knowledge about threatening processes including the impacts of disturbance and hunting.	No impacts.	No impacts.

Assessment of the Prion MSS against the stated aims of the National Recovery Plan for the Orange-bellied Parrot (*Neophema chrysogaster*) (DELWP, 2016)

The following table provides an assessment of routine and non-routine operations against the primary conservation objectives of the plan.

Primary Conservation Objectives	Assessment of impacts of routine activities against management aims	Assessment of impacts of Level 2 or 3 hydrocarbon spill against objectives
To achieve a stable or increasing population in the wild within five years.		
Increase breeding output in the wild.	No impacts.	No impacts.
Increase survival in the wild.	No impacts.	No impacts.
Maintain wild behaviours.	No impacts.	No impacts.
To increase the capacity of the captive population, both to support future releases of captive-bred birds to the wild and to provide a secure long-term insurance population.		
Increase the size of the captive population as quickly as possible.	No impacts.	No impacts.
Manage genetics of the captive population.	No impacts.	No impacts.
Manage the wild and captive populations as a metapopulation.	No impacts.	No impacts.
To protect and enhance habitat to maintain, and support growth of, the wild population.		
Maintain the extent of habitat throughout the breeding and non-breeding range.	No impacts.	No impacts.
Increase the extent of high quality of habitat throughout the breeding and nonbreeding range.	No impacts.	No impacts.
To ensure effective adaptive implementation of the plan.		
Obtain and analyse key information required to measure and improve implementation to achieve the primary objectives.	No impacts.	No impacts.
Employ sound procedures for managing, reviewing and reporting on progress to ensure effective adaptive management.	No impacts.	No impacts.
Secure delivery partners and sufficient funding to ensure very high and high priority actions are implemented.	No impacts.	No impacts.
Foster and maintain relationships with key individuals, organisations and the broader community.	No impacts.	No impacts.

Assessment of the Prion MSS against the stated aims of the Conservation Advice for the Red Knot (*Calidris canutus*) (TSSC, 2016)

The following table provides an assessment of routine and non-routine operations against the conservation actions of the conservation advice.

Conservation Actions	Assessment of impacts of routine activities against management aims	Assessment of impacts of Level 2 or 3 hydrocarbon spill against objectives
Conservation and Management Actions		
Work with governments along the East Asian – Australasian Flyway to prevent destruction of key migratory staging sites.	No impacts.	No impacts.
Protect important habitat in Australia.	No impacts.	No impacts.
Support initiatives to improve habitat management at key sites.	No impacts.	No impacts.
Maintain and improve protection of roosting and feeding sites in Australia.	No impacts.	The OPEP takes into account beaches of importance to coastal bird species and prioritises action to control the spread and extent of hydrocarbons.
Incorporate requirements for red knot into coastal planning and management.	No impacts.	
Advocate for the creation and restoration of foraging and roosting sites in Australia.	No impacts.	No impacts.
Manage important sites to identify, control and reduce the spread of invasive species.	No impacts.	No impacts.
Manage disturbance at important sites which are subject to anthropogenic disturbance when red knot are present – e.g. discourage or prohibit vehicle access, horse riding and dogs on beaches, implement temporary site closures.	No impacts.	No impacts.
Survey and Monitoring Priorities		
Enhance existing migratory shorebird population monitoring programmes, particularly to improve coverage across northern Australia	No impacts.	No impacts.
Monitor the progress of recovery, including the effectiveness of management actions and the need to adapt them if necessary.	No impacts.	No impacts.
Information and Research Priorities		

Conservation Actions	Assessment of impacts of routine activities against management aims	Assessment of impacts of Level 2 or 3 hydrocarbon spill against objectives
Undertake work to more precisely assess red knot life history, population size, distribution and ecological requirements.	No impacts.	No impacts.
Improve knowledge about dependence of red knot on key migratory staging sites, and nonbreeding sites in south-east Asia.	No impacts.	No impacts.
Improve knowledge about threatening processes including the impacts of disturbance and hunting.	No impacts.	No impacts.

Assessment of the Prion MSS against the stated aims of the Conservation Advice for the Swift Parrot (*Lathamus discolor*) (TSSC, 2016)

The following table provides an assessment of routine and non-routine operations against the conservation objectives of the conservation advice.

Primary Conservation Objectives	Assessment of impacts of routine activities against management aims	Assessment of impacts of Level 2 or 3 hydrocarbon spill against objectives
Conservation and Management Priorities		
Review and update management prescriptions for swift parrots for use in the Forest Practices System and Local Government land use planning and approvals processes across the breeding and non-breeding range of swift parrots.	No impacts.	No impacts.
Revise and update forestry prescriptions to reflect the most recent habitat information available in Victoria and New South Wales.	No impacts.	No impacts.
Develop and implement strategies to reduce predation from sugar gliders when circumstances require.	No impacts.	No impacts.
Consider installing nesting boxes suitable for swift parrots in areas of low sugar glider predation to enhance swift parrot breeding success	No impacts.	No impacts.
Continue to raise public awareness of the risks of collisions and how these can be minimised, targeting known high risk areas such as the greater Hobart, Melbourne and Western Sydney areas, and the central coast region of New South Wales (Wyang, Gosford, Lake Macquarie and Penrith Local Government areas).	No impacts.	No impacts.
Encourage and support the protection, conservation management and restoration of swift parrot nesting and foraging habitat through agreements with landowners, incentive programs and community projects.	No impacts.	No impacts.
Develop and implement a Disease Risk Assessment for swift parrots.	No impacts.	No impacts.
Survey and Monitoring Priorities		
Develop an effective population monitoring program.	No impacts.	No impacts.
Undertake monitoring of breeding locations on an annual basis to develop a better understanding of breeding success; the extent and number of important breeding areas; and the relative importance of non-aggregated breeding behaviour.	No impacts.	No impacts.
Establish a process for the coordination of volunteer surveys throughout breeding habitats to complement the existing mainland monitoring program.	No impacts.	No impacts.
Maintain coordination of the existing long-term volunteer monitoring throughout mainland habitats.	No impacts.	No impacts.

Primary Conservation Objectives	Assessment of impacts of routine activities against management aims	Assessment of impacts of Level 2 or 3 hydrocarbon spill against objectives
Information and Research Priorities		
Prioritise conservation actions across the species range.	No impacts.	No impacts.
Identify and map movement patterns and foraging and nesting habitat throughout the breeding range.	No impacts.	No impacts.
Establish habitat phenology data collection in existing research and monitoring studies, analyse findings and incorporate into the recovery program.	No impacts.	No impacts.
Establish and maintain a database for all reported injuries and deaths.	No impacts.	No impacts.
Monitor the incidence of competition from aggressive honeyeaters, as well as introduced birds and invertebrates, for nesting and foraging resources.	No impacts.	No impacts.
Undertake research on breeding success, survival and mortality, as well as genetic structure, to provide insight into currently unknown population regulation parameters.	No impacts.	No impacts.
Update the PVA using data obtained from the above research to provide a greater understanding of the dynamics and long-term viability of the population.	No impacts.	No impacts.
Investigate the potential impact of climate change on the swift parrot and its habitat.	No impacts.	No impacts.

Assessment of the Prion MSS against the stated aims of the Approved Conservation Advice for the Australasian Bittern (*Botaurus poiciloptilus*) (TSSC, 2019)

The following table provides an assessment of routine and non-routine operations against the management aims of the plan.

Stated management aims	Assessment of impacts of routine activities against management aims	Assessment of impacts of Level 2 or 3 hydrocarbon spill against objectives
Conservation and Management Priorities		
Collate all recent location data to establish a list of priority sites for monitoring and for protection and management. Such a list should be updated as new sites are created or found and as knowledge is improved.	No impacts.	No impacts.
Work with key water managers (e.g., Australian, state and local government, water corporations, irrigators) to ensure adequate water flows into known Australasian Bittern habitat, both natural and artificial (e.g., rice paddies, urban ponds etc).	No impacts.	No impacts.
Ensure environmental water allocations are targeted to sustain Australasian bittern habitat and known populations.	No impacts.	No impacts.
Prevent further vegetation clearance in wetlands, ponds and associated marshy areas known to support Australasian Bitterns	No impacts.	No impacts.
Where appropriate, develop new wetlands with suitable habitats for Australasian Bitterns.	No impacts.	No impacts.
Where possible, create suitable habitats for Australasian Bitterns in existing wetlands.	No impacts.	No impacts.
Where appropriate, develop incentives for rice growers to manage crops with a sufficient period of inundation to facilitate successful breeding before harvest.	No impacts.	No impacts.
Consideration given to strategic land purchases to aid in the protection and better management of Australasian Bittern habitat.	No impacts.	No impacts.
Monitor and manage agricultural and urban runoff into wetlands known to support Australasian Bitterns in order to maintain water quality.	No impacts.	No impacts.
Fence wetlands to exclude grazing animals.	No impacts.	No impacts.
Develop and implement a management strategy for wetlands where Australasian Bitterns occur, with a focus on ensuring appropriate diversity and density of reeds and rushes. Management strategy may include measures such as controlled burns, slashing when the wetland is dry and/or flooding to limit reed re-growth. Management strategy should be informed by research targeted at better understanding optimal habitat conditions.	No impacts.	No impacts.

Stated management aims	Assessment of impacts of routine activities against management aims	Assessment of impacts of Level 2 or 3 hydrocarbon spill against objectives
Ensure adequate water volume and quality at urban and peri-urban wetlands where Australasian Bitterns have been detected.	No impacts.	No impacts.
Investigate opportunities to encourage state and local government and private landholders to undertake conservation of wetlands on their properties for the benefit of Australasian Bitterns.	No impacts.	No impacts.
Survey and Monitoring Priorities		
Agree on standard monitoring protocols that can be applied across the Australasian Bitterns' range.	No impacts.	No impacts.
Undertake regular and systematic monitoring at identified priority sites on an annual basis.	No impacts.	No impacts.
Using information from monitoring program, identify population trends across the Australasian Bitterns' range.	No impacts.	No impacts.
Investigate the use of predictive modelling to improve estimates of the number of mature individuals and to predict population trends and distribution	No impacts.	No impacts.
Information and Research Priorities		
Research to determine critical habitat values being targeted by Australasian Bitterns, with differentiation of needs during different parts of the breeding cycle. Factors such as water quality, salinity, vegetation composition and fire history should be investigated.	No impacts.	No impacts.
Determine prey availability in Australasian Bitterns habitat and identify methods for improving prey availability in order to improve the species breeding success.	No impacts.	No impacts.
Undertake genetic analyses to determine Australasian Bittern population structure. If population structuring occurs, this information should be used to inform management strategies.	No impacts.	No impacts.
Assess the relative importance for Australasian Bitterns occupancy and breeding success of: <ul style="list-style-type: none"> - introduced predators, - mortality associated with fixed structures, such as fence lines and towers, - grazing by introduced herbivores, - fire regimes. 	No impacts.	No impacts.
Ensure processes to allow outcomes of research to influence ongoing management and monitoring programs, and to influence the development of new actions where required.	No impacts.	No impacts.
Stakeholder Engagement and Governance		

Stated management aims	Assessment of impacts of routine activities against management aims	Assessment of impacts of Level 2 or 3 hydrocarbon spill against objectives
Develop broad promotional material to raise awareness about the Australasian Bittern, its status and the importance of protecting vegetated freshwater wetlands, and share this material with conservation groups and the general public.	No impacts.	No impacts.
Develop targeted fact sheets for landholders to increase awareness of the Australasian Bittern, including advice regarding improved wetland management for the species, and provide an avenue for reporting sightings.	No impacts.	No impacts.
Engage with private landholders, agricultural producers and public land managers responsible for land on which Australasian Bittern populations occur, and encourage them to contribute to the implementation of conservation management actions.	No impacts.	No impacts.
Promote the important ecosystem functions of wetlands, and their aesthetic and recreational values, to increase the interest of conservation groups and general public in their protection and restoration.	No impacts.	No impacts.

Assessment of the Prion MSS against the stated aims of the Conservation Management Plan for the Blue Whale (*Balaenoptera musculus*) 2015-2025 (DSEWPC, 2011)

The following table provides an assessment of routine and non-routine operations against the conservation objectives of the plan.

Primary Conservation Objectives	Assessment of impacts of routine activities against management aims	Assessment of impacts of Level 2 or 3 hydrocarbon spill against objectives
Interim Recovery Objectives		
The conservation status of blue whale populations is assessed using cost effective and robust methodology.	No impacts.	No impacts.
The spatial and temporal distribution, identification of biologically important areas, and population structure of blue whales in Australian waters is described.	No impacts.	No impacts.
Current levels of legal and management protection for blue whales are maintained or improved and an appropriate adaptive management regime is in place.	No impacts.	No impacts.
Anthropogenic threats are demonstrably minimised.	No impacts.	No impacts.
Assess and Address Threats		
Maintain and improve existing legal and management protection.	No impacts.	No impacts.
Assess and addressing anthropogenic noise.	EPBC Act Policy 2.1 requirements will be implemented during the survey.	No impacts.
Understand impacts of climate variability and change.	No impacts.	No impacts.
Minimise vessel collisions.	Vessel collision guidelines are implemented.	Vessel collision guidelines will be implemented.
Enable and Measure Recovery		
Measure and monitor population recovery.	No impacts.	No impacts.
Investigate population structure.	No impacts.	No impacts.
Describe spatial and temporal distribution and define biologically important habitat.	No impacts.	No impacts.

Assessment of the Prion MSS against the stated aims of the Conservation Advice for the Humpback Whale (*Megaptera novaeangliae*) (TSSC, 2015)

The following table provides an assessment of routine and non-routine operations against the conservation and management actions of the conservation advice.

Conservation and Management Actions	Assessment of impacts of routine activities against management aims	Assessment of impacts of Level 2 or 3 hydrocarbon spill against objectives
Maintain and improve existing legal and management protection		
Continue or improve existing legislative management actions under the EPBC Act, including the Australian Whale Sanctuary provisions.	No impacts.	No impacts.
Australia should maintain its position on promoting high levels of protection for humpback whales in all relevant international agreements including the IWC, Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES), Convention on the Conservation of Migratory Species of Wild Animals (CMS), fisheries related agreements, and the Antarctic Treaty Consultative Meetings (ATCM).	No impacts.	No impacts.
Understanding impacts of climate variability and change		
Continue to meet Australia's international commitments to reduce greenhouse gas emissions and regulate the krill fishery in Antarctica.	No impacts.	No impacts.
Assessing and addressing anthropogenic noise; shipping, industrial and seismic surveys		
All seismic surveys must be undertaken consistently with the EPBC Act Policy Statement 2.1 – Interaction between offshore seismic exploration and whales. Should a survey be undertaken in or near a calving, resting, foraging area, or a confined migratory pathway then Part B. Additional Management Procedures must also be applied.	EPBC Act Policy 2.1 requirements will be implemented during the survey.	No impacts.
For actions involving acoustic impacts (example pile driving, explosives) on humpback whale calving, resting, feeding areas, or confined migratory pathways site specific acoustic modelling should be undertaken (including cumulative noise impacts).	EPBC Act Policy 2.1 requirements will be implemented during the survey.	No impacts.
Should acoustic impacts on humpback calving, resting, foraging areas, or confined migratory pathways be identified a noise management plan should be developed.		No impacts.
Addressing infrastructure and coastal development impacts		
Environmental assessment processes must ensure that existing information about coastal habitat requirements of humpback whales, environmental suitability of coastal locations, historic high use and emerging areas are taken into consideration.	No impacts.	No impacts.

Conservation and Management Actions	Assessment of impacts of routine activities against management aims	Assessment of impacts of Level 2 or 3 hydrocarbon spill against objectives
Environmental assessment and approval processes must ensure that the impacts of coastal development on humpback whales are addressed and minimised. Mitigation and management measures for the construction stage and the ongoing operational impacts are to be included in any plans of management. Significant residual impacts must be offset.	No impacts.	No impacts.
Reducing commercial fishing entanglements		
Commonwealth and state governments with the pot and set net fishing industries to develop and implement codes of conduct to minimise interactions between commercial fishers and humpback whales.	No impacts.	No impacts.
Investigate alternative fishing techniques and technologies to reduce the risk of entanglement.	No impacts.	No impacts.
Minimising vessel collisions		
Develop a national vessel strike strategy that investigates the risk of vessel strikes on humpback whales and also identifies potential mitigation measures to reduce the risk of collision.	No impacts.	No impacts.
Maximise the likelihood that all vessel strike incidents are reported in the National Ship Strike Database. All cetaceans are protected in Commonwealth waters and, the EPBC Act requires that all collisions with whales in Commonwealth waters are reported. Vessel collisions can be submitted to the National Ship Strike Database at https://data.marinemammals.gov.au/report/shipstrike	No impacts.	No impacts.
Ensure the risk of vessel strike on humpback whales is considered when assessing actions that increase vessel traffic in areas where humpback whales occur and, if required appropriate mitigation measures are implemented to reduce the risk of vessel strike.	No impacts.	No impacts.
Enhance education programs to inform vessel operators of best practice behaviours and regulations for interacting with humpback whales.	No impacts.	No impacts.
Measuring and monitoring population recovery		
Continue long-term monitoring of east and west coast populations at appropriate multi-annual intervals to quantify rates of population increase, abundance, migratory interchange and population structure	No impacts.	No impacts.
Information and research priorities		
Assess impacts of increasing anthropogenic threats and undertake a risk assessment to determine the increased exposure of these expanding populations to entanglement, ship strike and acoustic noise.	No impacts.	No impacts.

Conservation and Management Actions	Assessment of impacts of routine activities against management aims	Assessment of impacts of Level 2 or 3 hydrocarbon spill against objectives
Expand genetic analyses to better define population structure and extent of interchange between subpopulations. In particular the genetic structure of the east coast population and interchange with Pacific humpback whale populations.	No impacts.	No impacts.
Assess the impact of whale watching on humpback whales detailing the benefits and negatives of human interactions and the potential for cumulative impacts on the species as they migrate along the coast.	No impacts.	No impacts.

Assessment of the Prion MSS against the stated aims of the Conservation Management Plan for the Southern Right Whale (*Eubalaena australis*) 2011-2021 (DSEWPC, 2012)

The following table provides an assessment of routine and non-routine operations against the primary conservation objectives of the plan.

Primary Conservation Objectives	Assessment of impacts of routine activities against management aims	Assessment of impacts of Level 2 or 3 hydrocarbon spill against objectives
Interim Recovery Objectives		
Demonstrate that the number of southern right whales occurring off south-west Australia (nominally south-west Australian population) is increasing at or near the maximum biological rate.	No impacts.	No impacts.
Demonstrate that the number of southern right whales occurring off south-east Australia (nominally south-east Australian population) is showing signs of increase.	No impacts.	No impacts.
The nature and degree of difference between the south-eastern and south-western Australian populations of southern right whales is clearly understood.	No impacts.	No impacts.
Current levels of legal and management protection for southern right whales are maintained or improved and an appropriate adaptive management regime is in place.	No impacts.	No impacts.
Anthropogenic threats are demonstrably minimised.	No impacts.	No impacts.
Assess and Address Threats		
Maintain and improve existing legal and management protection.	No impacts.	No impacts.
Assess and address anthropogenic noise (shipping, industrial and seismic).	EPBC Act Policy 2.1 requirements will be implemented during the survey.	No impacts.
Reduce commercial fishing entanglements.	No impacts.	No impacts.
Impacts of climate variability and change.	No impacts.	No impacts.
Address vessel collisions.	Vessel collision guidelines are implemented.	Vessel collision guidelines will be implemented.
Address infrastructure and coastal development impacts.	No impacts.	No impacts.

Primary Conservation Objectives	Assessment of impacts of routine activities against management aims	Assessment of impacts of Level 2 or 3 hydrocarbon spill against objectives
Measure Recovery		
Measure and monitor population recovery	No impacts.	No impacts.
Investigate the two-population model	No impacts.	No impacts.
Understand offshore distribution and migration	No impacts.	No impacts.
Characterise behaviour and movements	No impacts.	No impacts.

Assessment of the Prion MSS against the stated aims of the Approved Conservation Advice for the Fin Whale (*Balaenoptera physalus*) (TSSC, 2015)

The following table provides an assessment of routine and non-routine operations against the management aims of the plan.

Stated management aims	Assessment of impacts of routine activities against management aims	Assessment of impacts of Level 2 or 3 hydrocarbon spill against objectives
Conservation and Management Actions		
Continue or improve existing legislative management actions under the Environment Protection and Biodiversity Act 1999, including the Australian Whale Sanctuary provisions.	No impacts.	No impacts.
Australia should maintain its position on promoting high levels of protection for Fin whales in all relevant international agreements including the International Whaling Commission (IWC), Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES), Convention on the Conservation of Migratory Species of Wild Animals (CMS), fisheries related agreements, and the Antarctic Treaty Consultative Meetings (ATCM).	No impacts.	No impacts.
Continue to meet Australia's international commitments to reduce greenhouse gas emissions and regulate the krill fishery in Antarctica.	No impacts.	No impacts.
Once the spatial and temporal distribution (including biologically important areas) of fin whales is further defined an assessment of the impacts of increasing anthropogenic noise (including from seismic surveys, port expansion, and coastal development) should be undertaken on this species.	EPBC Act Policy 2.1 requirements will be implemented during the survey.	No impacts.
If required, additional management measures should be developed and implemented to ensure the ongoing recovery of Fin whales.	No impacts.	No impacts.
Develop a national vessel strike strategy that investigates the risk of vessel strikes on Fin Whales and also identifies potential mitigation measures.	No impacts.	No impacts.
Ensure all vessel strike incidents are reported in the National Vessel Strike Database.	Vessel collision guidelines are implemented.	Vessel collision guidelines are implemented.
Information and Research Priorities		
Determine population abundance, trends and population structure for Fin whales, and establish a long-term monitoring program in Australian waters.	No impacts.	No impacts.
Describe the spatial and temporal distribution of Fin Whales and further define biologically important areas (feeding and breeding), and migratory routes within Australian and Antarctic waters.	No impacts.	No impacts.

Assessment of the Prion MSS against the stated aims of the Approved Conservation Advice for the Sei Whale (*Balaenoptera borealis*) (TSSC, 2015)

The following table provides an assessment of routine and non-routine operations against the management aims of the plan.

Management aims	Assessment of impacts of routine activities against management aims	Assessment of impacts of Level 2 or 3 hydrocarbon spill against objectives
Conservation and Management Actions		
Continue or improve existing legislative management actions under the Environment Protection and Biodiversity Act 1999, including the Australian Whale Sanctuary provisions.	No impacts.	No impacts.
Australia should maintain its position on promoting high levels of protection for sei whales in all relevant international agreements including the International Whaling Commission (IWC), Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES), Convention on the Conservation of Migratory Species of Wild Animals (CMS), fisheries related agreements, and the Antarctic Treaty Consultative Meetings (ATCM).	No impacts.	No impacts.
Continue to meet Australia's international commitments to reduce greenhouse gas emissions and regulate the krill fishery in Antarctica.	No impacts.	No impacts.
Once the spatial and temporal distribution (including biologically important areas) of sei whales is further defined an assessment of the impacts of increasing anthropogenic noise (including from seismic surveys, port expansion, and coastal development) should be undertaken on this species.	EPBC Act Policy 2.1 requirements will be implemented during the survey.	No impacts.
If required, additional management measures should be developed and implemented to ensure the ongoing recovery of sei whales.	No impacts.	No impacts.
Develop a national vessel strike strategy that investigates the risk of vessel strikes on Sei Whales and also identifies potential mitigation measures.	No impacts.	No impacts.
Ensure all vessel strike incidents are reported in the National Vessel Strike Database.	Vessel collision guidelines are implemented.	Vessel collision guidelines are implemented.
Information and Research Priorities		
Determine population abundance, trends and population structure for sei whales, and establish a long-term monitoring program in Australian waters.	No impacts.	No impacts.
Describe the spatial and temporal distribution of Sei Whales and further define biologically important areas (feeding and breeding), and migratory routes within Australian and Antarctic waters.	No impacts.	No impacts.

Assessment of the Prion MSS against the stated aims of the Recovery Plan for the Australian Sea-lion (*Neophoca cinerea*) (TSSC, 2016)

The following table provides an assessment of routine and non-routine operations against the conservation actions of the conservation advice.

Conservation Actions	Assessment of impacts of routine activities against management aims	Assessment of impacts of Level 2 or 3 hydrocarbon spill against objectives
<p>Implement appropriate management measures (monitoring, management response, compliance and review), such that incidental bycatch in the gillnet sector of the following commercial fisheries does not threaten any colony or sub-population of Australian sea lion:</p> <ul style="list-style-type: none"> • The Gillnet, Hook and Trap sector of the SESSF. • The South Australian Marine Scalefish Fishery. • The West Coast Demersal Gillnet and Demersal Longline (interim) Managed Fishery. • The Joint Authority Southern Demersal Gillnet and Demersal Longline Managed Fishery. 	No impacts.	No impacts.
<p>Implement appropriate management measures (monitoring, management response, compliance and review) in the South Australian Rock Lobster Fishery and Western Australian Rock Lobster Fishery such that incidental bycatch does not threaten any colony or sub-population of Australian sea lion.</p>	No impacts.	No impacts.
<p>Implement management controls in other fisheries (commercial, recreational and Indigenous) that have impacts on Australian sea lions by:</p> <ul style="list-style-type: none"> • Identifying any impacting fisheries. • Implementing mitigation strategies for impacts on Australian sea lions in those fisheries where necessary. 	No impacts.	No impacts.
<p>Monitor the cumulative impact of fisheries on Australian sea lions including:</p> <ul style="list-style-type: none"> • bycatch • prey depletion • restriction in habitat availability • entanglement in active (not discarded) fishing gear. 	No impacts.	No impacts.

Conservation Actions	Assessment of impacts of routine activities against management aims	Assessment of impacts of Level 2 or 3 hydrocarbon spill against objectives
Identify the sources of marine debris having an impact on Australian sea lion populations	No impacts.	No impacts.
Assess the impacts of marine debris on Australian sea lion populations	The EP contains control measures aimed to minimise the risk of pollution and litter to waters.	No impacts.
Develop and implement measures to mitigate the impacts of marine debris on Australian sea lion populations, noting the linkages with the Threat Abatement Plan for the Impact of Marine Debris on Vertebrate Marine Life.	The EP contains control measures aimed to minimise the risk of pollution and litter to waters.	No impacts.
Investigate the nature, extent and consequence of interactions between Australian sea lions and aquaculture activities and mitigate any impacts (e.g. restrictions in habitat availability).	No impacts.	No impacts.
<p>Improve the understanding of—and where necessary mitigate—the threat posed to Australian sea lion populations by illegal killings, vessel strike, pollution and oil spills. Actions to include:</p> <ul style="list-style-type: none"> • Develop protocols for collection of biological samples and ensure that a portion of each sample (including those already collected) is centrally archived. • Collect data on direct killings and confirmed vessel strikes. • Implement jurisdictional oil spill response strategies as required. 	No impacts.	The OPEP takes into account beaches of importance to coastal bird species and prioritises action to control the spread and extent of hydrocarbons.
<p>Improve understanding of the threat and importance of health related factors to Australian sea lion populations by:</p> <ul style="list-style-type: none"> • developing protocols for collection of biological samples and ensuring that a portion of each sample (including those already collected) is centrally archived • undertaking research to better understand pup mortality due to disease and the variance between seasons and colonies • undertaking research on the effect of providing a broad spectrum treatment to kill parasites and whether this affects pup mortality • analysing the impacts of the bioaccumulation of toxins on the health of Australian sea lions. 	No impacts.	No impacts.
Develop and implement measures to mitigate the impact of any significant factors affecting the health of Australian sea lion populations.	No impacts.	No impacts.

Conservation Actions	Assessment of impacts of routine activities against management aims	Assessment of impacts of Level 2 or 3 hydrocarbon spill against objectives
Monitor and mitigate cumulative impacts of human interactions on Australian sea lion colonies.	No impacts.	No impacts.
Develop and provide information for tourists and tourism operators to promote an understanding of Australian sea lion conservation issues and to emphasise the importance of minimising disturbance of Australian sea lion colonies during visits.	No impacts.	No impacts.
<p>Develop and apply a quantitative framework to assess the population status and potential recovery of the Australian sea lion across its range.</p> <ul style="list-style-type: none"> Ensure sufficient and effective abundance and distribution monitoring is in place to adequately understand population size and trends at representative sites across the range of the Australian sea lion, including at the fringes of the species' range. 	No impacts.	No impacts.
Assess and facilitate the continuation of population demographic surveys at Seal Bay in South Australia.	No impacts.	No impacts.
<p>Improve the information base on behavioural ecology, trophic interactions and foraging ecology — particularly in areas important to the survival of the species — and at scales relevant to human activities that can be managed. Actions include:</p> <ul style="list-style-type: none"> improve knowledge of foraging range at a colony level to help determine the spatial overlap with commercial fisheries better determine the key ecological characteristics of preferred foraging sites determine the drivers for variance in pup production and mortality across seasons (including apparent seasonal cycles) undertake dive and tracking studies in Western Australia to help determine specific foraging patterns and requirements. 	No impacts.	No impacts.
<p>Improve the information base on population structures of the Australian sea lion. This should include finer scale structuring, utilising genetic techniques and morphological studies, where data of such scale might improve practical management options. Actions include:</p> <ul style="list-style-type: none"> opportunistically undertaking further research on population structure. Using genetic techniques on current and opportunistically gathered biological material to determine the extent of male and female dispersal 	No impacts.	No impacts.

Conservation Actions	Assessment of impacts of routine activities against management aims	Assessment of impacts of Level 2 or 3 hydrocarbon spill against objectives
<ul style="list-style-type: none"> using genetic and morphological data to determine any sub-speciation of Australian sea lion populations throughout their range. 		
<p>Improve understanding of juvenile dispersal and foraging behaviours by:</p> <ul style="list-style-type: none"> undertaking research on juvenile (2–4 year olds) dispersal and foraging patterns assessing dive depths of juveniles, with a focus on assessing the need to include Australian sea lion exclusion spikes on pots in deep water (> 20 m). 	No impacts.	No impacts.
<p>Assess the indirect impacts of fishing on Australian sea lion populations by conducting research. Research should include:</p> <ul style="list-style-type: none"> determining the impact of fishing on prey species of Australian sea lions assessing the impact of fishing gear on preferred habitat of Australian sea lions. 	No impacts.	No impacts.
<p>Provide advice, education and support to fishers, community members, local governments and regional natural resource management organisations by measures including:</p> <ul style="list-style-type: none"> ensuring that the Recovery Plan for the Australian Sea Lion is publicly available in electronic format ensuring online information regarding the recovery plan is relevant and up-to-date promoting the recovery plan to target groups, such as commercial and recreational fishers and tour group operators conducting presentations and workshops, where appropriate involving community groups and tour operators in research and monitoring programs, where practical. 	No impacts.	No impacts.
<p>Consult relevant Indigenous organisations within the species' range regarding the implementation of the Recovery Plan for the Australian Sea Lion.</p>	No impacts.	No impacts.

Assessment of the Prion MSS against the stated aims of the Conservation Advice for the Southern Elephant Seal (*Mirounga leonina*) (DoEE, 2017).

The following table provides an assessment of routine and non-routine operations against the management targets of the advice.

Conservation management targets	Assessment of impacts of routine activities against management aims	Assessment of impacts of Level 2 or 3 hydrocarbon spill against objectives
Continue high levels of protection for the southern elephant seal in important breeding, foraging and haul-out sites. Ensure Macquarie Island/Heard Island management plans include reference to monitoring and protection for the species.	No impacts.	No impacts.
Continue, and where necessary adapt, management actions to reduce disturbance and pollution/marine debris impacts on southern elephant seals and their important breeding, foraging and resting habitats	No impacts.	No impacts.
Improve data collection and reporting of fisheries interactions (including entanglements) throughout the southern elephant seals' foraging ranges. This could incorporate improving species identification; expanding data collected by observers (photos/samples from mortalities); utilising deep sea observation systems (e.g. cameras) to observe underwater interactions.	No impacts.	No impacts.
Continue long-term population and demographic monitoring at Macquarie Island, and prioritise surveys of the population at Heard Island, to better quantify current abundance, pup production, movements and population trends	No impacts.	No impacts.
Expand surveys to better define distribution patterns and movements of individuals between breeding colonies and key foraging areas and potential dispersal to Antarctica and other subantarctic islands	No impacts.	No impacts.
Investigate new survey technologies (e.g. use of drones) that may provide an opportunity to increase knowledge of population data on remote islands (taking into account local weather conditions).	No impacts.	No impacts.
Improve knowledge of climate and oceanographic variability, including El Niño events, that affect southern elephant seal foraging and reproductive success.	No impacts.	No impacts.
Improve understanding of the potential risks of fisheries interactions with the species. Including analysis of logbook data and any reported interactions between Macquarie Island/Heard Island fisheries and southern elephant seals.	No impacts.	No impacts.
Assess the impacts of disturbance, pollution and associated risks of disease on the health status of southern elephant seals.	No impacts.	No impacts.
Analysis of the occurrence and characteristics of marine debris (including micro-plastics) on remote sub-Antarctic islands and associated impacts on southern elephant seals.	No impacts.	No impacts.
Assess the effectiveness of fisheries management and monitoring in reducing potential impacts of fisheries on southern elephant seals.	No impacts.	No impacts.

Expand research to better understand key foraging areas for southern elephant seals and changes resulting from climate and oceanographic variability and El Niño events.	No impacts.	No impacts.
Improve understanding of diet and foraging ecology, and improve understanding of life history parameters controlling population growth and determine generation time for the Heard Island population of southern elephant seals.	No impacts.	No impacts.
Investigate the efficacy of using remote survey techniques such as satellite imagery for census counts on remote islands.	No impacts.	No impacts.

Assessment of the Prion MSS against the stated aims of the Conservation Advice for the Subantarctic Fur Seal (*Arctocephalus tropicalis*) (DoEE, 2017).

The following table provides an assessment of routine and non-routine operations against the management targets of the advice.

Conservation management targets	Assessment of impacts of routine activities against management aims	Assessment of impacts of Level 2 or 3 hydrocarbon spill against objectives
Continue high levels of protection for subantarctic fur-seals in important breeding, foraging and haul-out sites. Ensure Macquarie Island/Heard Island management and fisheries management plans include reference to seal monitoring and protection.	No impacts.	No impacts.
Continue, and where necessary adapt, management actions to reduce disturbance and pollution/marine debris impacts on subantarctic fur-seals and their important breeding, resting and foraging habitats.	No impacts.	No impacts.
Improve data collection and reporting of fisheries interactions throughout the seals' foraging ranges. Including improving species identification; expanding data collected by observers (photos/samples from mortalities); utilising deep sea observation systems (e.g. cameras) to observe underwater interactions.	No impacts.	No impacts.
Resume long-term annual monitoring at Macquarie Island, and prioritise surveys of the population at Heard Island, to better quantify abundance, pup production and population trends, movements, hybridisation rates and population structure.	No impacts.	No impacts.
Expand surveys to better define the finescale distribution and breeding interactions among species, population and annual pup abundance, and movements of individuals.	No impacts.	No impacts.
Investigate new survey technologies (e.g. use of drones) that may provide an opportunity to increase knowledge of population data on remote islands (taking into account local weather conditions).	No impacts.	No impacts.
Improve understanding of the potential for climate and oceanographic change, and associated seawater temperature rises, to affect fur-seal food resources and reproductive success.	No impacts.	No impacts.
Improve understanding of the potential risks of fisheries interactions, and potential prey depletion to affect the recovery and growth rates of populations. This should include analysis of logbook data and any reported interactions between Macquarie Island/Heard Island fisheries and seals.	No impacts.	No impacts.
Assess the impacts of disturbance, pollution and associated risks of disease on the health status of subantarctic fur-seals.	No impacts.	No impacts.
Analyse the occurrence and characteristics of marine debris (including micro-plastics) on remote sub-Antarctic islands and associated impacts on seal species.	No impacts.	No impacts.
Assess the effectiveness of fisheries closures near colonies and other management actions in reducing potential impacts of fisheries on these fur-seals.	No impacts.	No impacts.

Expand genetic research to monitor changes in hybridisation rates and gene flow through immigration, in order to identify the extent to which populations might be partially maintained by extralimital populations.	No impacts.	No impacts.
Improve understanding of diet, foraging ecology, and life history parameters (including predation on pup cohort) controlling population growth, and determine the generation length for Australian populations.	No impacts.	No impacts.
Expand research to better understand key foraging habitats for subantarctic fur-seals and potential changes resulting from increased sea surface temperatures.	No impacts.	No impacts.
Investigate the efficacy of using remote survey techniques such as satellite imagery for census counts on remote islands.	No impacts.	No impacts.

Assessment of the Prion MSS against the stated management actions of the Recovery Plan for the Grey Nurse Shark (*Carcharias taurus*) (DoE, 2014)

The following table provides an assessment of routine and non-routine operations against the conservation actions of the plan.

Management Objectives	Assessment of impacts of routine activities against management aims	Assessment of impacts of Level 2 or 3 hydrocarbon spill against objectives
1. Develop and apply quantitative monitoring of the population status (distribution and abundance) and potential recovery of the grey nurse shark in Australian waters.		
Monitor and re-survey grey nurse shark populations to assess population trends and dynamics, including estimates of population growth and mortality.	No impact.	No impact.
Develop monitoring protocols and establish a national database to record data collected on grey nurse sharks, to assist with population monitoring.	No impact.	No impact.
Evaluate the use of and develop new population models, using reliable data sets as they are collected, to reassess changes in extinction risks.	No impact.	No impact.
2. Quantify and reduce the impact of commercial fishing on the grey nurse shark through incidental (accidental and/or illegal) take, throughout its range.		
Monitor the bycatch and mortality of grey nurse sharks in relevant fisheries (all interactions are recorded) and report annually to DoE.	No impact.	No impact.
Ensure that fisheries management plans/ strategies or other documentation reviewed for accreditation under the EPBC Act contain actions consistent with the recovery of the grey nurse shark (where relevant), including reduction of bycatch and recording of all interactions.	No impact.	No impact.
Conduct research to quantify post-release mortality rates of grey nurse sharks caught incidentally in commercial fisheries.	No impact.	No impact.
Ensure appropriate controls are implemented in important habitat sites to reduce the risk of grey nurse shark interaction with commercial fishing gear.	No impact.	No impact.
Identify and classify commercial fishing gear that has, or could potentially, interact with grey nurse sharks to inform the development of management arrangements to mitigate interactions.	No impact.	No impact.
3. Quantify and reduce the impact of recreational fishing on the grey nurse shark through incidental (accidental and/or illegal) take, throughout its range.		
Develop mechanisms and protocols that facilitate reporting by recreational fishers of interactions with grey nurse sharks. Mechanisms chosen should foster the understanding that any reported interaction will be received without prejudice.	No impact.	No impact.

Management Objectives	Assessment of impacts of routine activities against management aims	Assessment of impacts of Level 2 or 3 hydrocarbon spill against objectives
Encourage recreational fishers (and spear fishers) to utilise the sighting program to report and provide, where possible, photographic evidence of sightings and interactions with grey nurse sharks. Requested information from fishers should include estimated number, size and weight of sharks, as well as site location and depth.	No impact.	No impact.
Undertake research into grey nurse shark interactions with recreational fishing gear/ methods to inform the development of risk mitigation strategies such as spatial, temporal or methods-based restrictions.	No impact.	No impact.
Quantify (through monitoring, reports and, where necessary, estimations of grey nurse shark bycatch) mortality and non-lethal interactions in recreational fishing sectors and report annually to DoE.	No impact.	No impact.
4. Where practicable, minimise the impact of shark control activities on the grey nurse shark.		
Shark control programs to continue to report catches annually to the state governments.	No impact.	No impact.
Maintain review processes by state governments of the effect of shark control programs on the grey nurse shark.	No impact.	No impact.
Continue to evaluate alternatives to shark meshing/drumlining, where bycatch levels are high, including the use of non-lethal methods or alternate strategies.	No impact.	No impact.
Establish and implement uniform minimum standards for the continued biological, pathological, genetic, toxicological and other post-mortem data recording and sampling of grey nurse sharks caught in shark control programs, using well established protocols. Develop a national database to collect this information (link to action 4.1).	No impact.	No impact.
Develop a photo-tagging program for grey nurse sharks caught and released in shark control programs, in conjunction with existing programs.	No impact.	No impact.
5. Investigate and manage the impact of ecotourism on the grey nurse shark.		
Review and assess the effectiveness of voluntary and regulated diving arrangements, in relation to viewing grey nurse sharks in their natural habitat, to ensure associated impacts continue to be minimised. Promote a consistent approach, where possible, among sites and across jurisdictions.	No impact.	No impact.
Ensure that any new, non-scuba diving related tourist operations aimed at viewing grey nurse sharks have effective management arrangements to minimise impacts.	No impact.	No impact.
6. Manage the impact of aquarium collection on the grey nurse shark.		

Management Objectives	Assessment of impacts of routine activities against management aims	Assessment of impacts of Level 2 or 3 hydrocarbon spill against objectives
Moratorium on the removal of grey nurse sharks from the wild.	No impact.	No impact.
Ensure consistent management protocols are developed and put in place for all existing captive grey nurse shark programs to ensure individuals are appropriately managed. Determine whether it is feasible and appropriate for management protocols to enable captive breeding and investigate survivorship in captivity, to maintain a sustainable captive population without further collection from the wild.	No impact.	No impact.
Develop and contribute to conservation-oriented education programs in those commercial aquaria with captive grey nurse sharks on display.	No impact.	No impact.
7. Improve understanding of the threat of pollution and disease to the grey nurse shark.		
Review and assess the potential threat of introduced species, pathogens and pollutants. Work undertaken under this action should be linked to action 4.4 on grey nurse shark post-mortem data recording and sampling.	No impact.	No impact.
8. Continue to identify and protect habitat critical to the survival of the grey nurse shark and reduce the impact of threatening processes in these areas.		
Continue research to locate habitat critical to the survival of the grey nurse shark, including pupping, nursery and foraging areas.	No impact.	No impact.
Review the level and spatial extent of protection measures at key aggregation sites to ensure appropriate levels of protection, and a consistent approach to the designation and implementation of protective measures, are applied.	No impact.	No impact.
Use Biologically Important Areas (BIA) to help inform the development of appropriate conservation measures, including through the application of advice in the marine bioregional plans on the types of actions which are likely to have a significant impact on the species and updating such conservation measures as new information becomes available.	No impact.	No impact.
Update and refine information on existing biologically important areas (BIAs) identified as part of the marine bioregional plans, and seek to identify new BIAs as information from research and other processes becomes available.	No impact.	No impact.
Monitor grey nurse shark occupancy and utilisation of key aggregation sites.	No impact.	No impact.
9. Continue to develop and implement research programs to support the conservation of the grey nurse shark.		

Management Objectives	Assessment of impacts of routine activities against management aims	Assessment of impacts of Level 2 or 3 hydrocarbon spill against objectives
Collect, analyse and disseminate age, growth, reproduction, survival, mortality and diet information to further improve understanding of the population dynamics and habitat requirements of the grey nurse shark.	No impact.	No impact.
Continue to collect and analyse biological material for toxicology research and genetic analysis (for example to determine the stock structure, inbreeding depression, population boundaries and abundance), improve coordination of reporting and sampling programs and coordinate the collation of results and the storage of collected genetic, biological and toxicological material (Link to Action 7.1).	No impact.	No impact.
Examine habitat use, ontogeny and regional connectivity across life history stages through the use of tagging technologies, including acoustic listening station networks, satellite tagging and photo identification.	No impact.	No impact.
10. Promote community education and awareness in relation to grey nurse shark conservation and management.		
Update DoE's grey nurse shark recovery plan web page to reflect the most current information on the grey nurse shark. Ensure the web page is presented in a form that is easily understood by the public and is linked to the relevant website(s) of other jurisdictions with an interest in conservation of grey nurse sharks.	No impact.	No impact.
Strengthen awareness of, and encourage compliance with, the requirement to report grey nurse shark bycatch and mortality in commercial fisheries and recreational and charter fishing operations.	No impact.	No impact.
Assess and evaluate effectiveness of prior or current education and awareness programs to identify alternative methods or improve efficacy.	No impact.	No impact.
Encourage community involvement in collaborative research, monitoring and education.	No impact.	No impact.

Assessment of the Prion MSS against the stated management actions of the Approved Conservation Advice for the Black rockcod (*Epinephelus daemeli*) (DSEWPC, 2012)

The following table provides an assessment of routine and non-routine operations against the conservation actions of the plan.

Management Objectives	Assessment of impacts of routine activities against management aims	Assessment of impacts of Level 2 or 3 hydrocarbon spill against objectives
Research Priorities		
Research into the reproductive biology of black cod.	No impact.	No impact.
Research into the ecology and movements of larval and juvenile black cod.	No impact.	No impact.
Coordinated regular assessments of numbers and trends in black cod populations along the NSW coastline, including surveys for juveniles in areas where adult black cod are currently absent.	No impact.	No impact.
Further research into the relative impacts of by-catch of black cod by commercial fishers and recreational line fishers, including release of specimens suffering barotrauma.	No impact.	No impact.
Research into the extent of illegal fishing, particularly spearfishing.	No impact.	No impact.
Collection and analysis of more samples to confirm genetic connectivity between black cod populations along the NSW coastline and Elizabeth and Middleton Reefs.	No impact.	No impact.
Conservation and Recovery		
Monitor known black cod populations to identify key threats.	No impact.	No impact.
Monitor the progress of recovery in black cod numbers, including the effectiveness of management actions and the need to adapt them if necessary.	No impact.	No impact.
Increase enforcement of fishing regulations.	No impact.	No impact.
Increase monitoring of Marine Protected Areas where black cod occur.	No impact.	No impact.

Management Objectives	Assessment of impacts of routine activities against management aims	Assessment of impacts of Level 2 or 3 hydrocarbon spill against objectives
Consider a complete closure to fishing in the Elizabeth and Middleton Reefs Marine National Nature Reserve to protect the high conservation value black cod populations that occurs there.	No impact.	No impact.
Implement protocols that ensure that illegally caught black cod that are seized by authorities, and are not releasable, are utilised for research into the species' biology, particularly age and sexual maturity.	No impact.	No impact.
Erect information signs, with colour illustrations of black cod and information on how to release fish, in locations where incidental captures of juvenile or adult black cod regularly occur.	No impact.	No impact.
Conservation Information		
Raise awareness of black cod within the local community and particularly fishing groups.	No impact.	No impact.

Assessment of the Prion MSS against the stated management actions of the Approved Conservation Advice for the Whale Shark (*Rhincodon typus*) (TSSC, 2015)

The following table provides an assessment of routine and non-routine operations against the conservation actions of the plan.

Management Action	Assessment of impacts of routine activities against management aims	Assessment of impacts of Level 2 or 3 hydrocarbon spill against objectives
Conservation and Management Actions		
Minimise offshore developments and transit time of large vessels in areas close to marine features likely to correlate with whale shark aggregations (Ningaloo Reef, Christmas Island and the Coral Sea) and along the northward migration route that follows the northern Western Australian coastline along the 200 m isobath (as set out in the Conservation Values Atlas, DoE, 2014).	No impacts.	No impacts.
Management of all domestic tourism industry interactions with whale sharks in accordance with the Western Australian 'Whale Shark Management with particular reference to Ningaloo Reef' Wildlife Management Program No. 57.	No impacts.	No impacts.
Continued advocacy of threat mitigation actions for whale sharks in international fora including, but not limited to, regional fishery management organisations.	No impacts.	No impacts.
Support for the development of eco-tourism industries in areas where traditional hunting of whale sharks occurs.	No impacts.	No impacts.
Survey and Monitoring Priorities		
Monitoring of the Ningaloo Reef, Christmas Island and Coral Sea aggregations, and collation and dissemination of data to support analysis of population trajectory.	No impacts.	No impacts.
Habitat critical to the survival of whale sharks in waters off Christmas Island further assessed and mapped.	No impacts.	No impacts.
Further research on migration routes for whale sharks from Ningaloo Reef to Christmas Island.	No impacts.	No impacts.
Information and Research Priorities		
Develop greater scientific certainty around migration, habitat use, emerging threats, and population trends in Australian waters.	No impacts.	No impacts.
Assess the impacts of offshore installations and associated environmental changes (light spill, chronic noise, changed water temperature, localised nutrient levels) on whale sharks and mitigation options for these impacts.	No impacts.	No impacts.

Management Action	Assessment of impacts of routine activities against management aims	Assessment of impacts of Level 2 or 3 hydrocarbon spill against objectives
Conduct further research into the impacts of boat strike on whale sharks to determine the significance of the threat. Consider possible mitigation actions (collision avoidance systems) if required.	No impacts.	No impacts.
Assess environmental variables that determine whale shark presence. These can then be used to provide advice to shipping to help avoid boat strike.	No impacts.	No impacts.
Consider the implications of climate change on whale shark distribution in Australian waters (possibly through the Range Extension Database Mapping Project [REDMAP]).	No impacts.	No impacts.

**Assessment of the Prion MSS against the stated aims of the Recovery Plan for Three Handfish Species
(DoE, 2015).**

The following table provides an assessment of routine and non-routine operations against the management targets of the advice.

Conservation management targets	Assessment of impacts of routine activities against management aims	Assessment of impacts of Level 2 or 3 hydrocarbon spill against objectives
Improve knowledge of spotted handfish spawning triggers.	No impacts.	No impacts.
Consider options for improving the spawning success of red and Ziebell's handfish.	No impacts.	No impacts.
Assess the effects of artificial spawning habitat on spotted handfish reproductive output.	No impacts.	No impacts.
Design and implement a long-term artificial spawning habitat program and deploy artificial spawning habitat at additional sites to increase the spawning success of spotted handfish.	No impacts.	No impacts.
Develop appropriate decision support tools and species-specific referral guidelines for coastal/marine developments.	No impacts.	No impacts.
Assess red and Ziebell's handfish for listing under the <i>Tasmanian Threatened Species Protection Act</i>	No impacts.	No impacts.
Design and implement a program to reduce the impacts of traditional boat moorings on spotted handfish habitat.	No impacts.	No impacts.
Conduct a public awareness campaign on environmental impacts of traditional boat moorings.	No impacts.	No impacts.
Develop Population Response Models for all handfish species.	No impacts.	No impacts.
Design a conservation breeding strategy for spotted handfish.	No impacts.	No impacts.
Implement the conservation breeding strategy for spotted handfish.	No impacts.	No impacts.
Build a photographic database to identify individual fish observed for all handfish species.	No impacts.	No impacts.
Increase understanding of population dynamics (pop size, age/size classes, dispersal rate) for all handfish species.	No impacts.	No impacts.

Conduct surveys within the known, likely and historical ranges of all handfish species to improve knowledge of the current distribution of each species.	No impacts.	No impacts.
Design an ongoing monitoring program for all handfish species.	No impacts.	No impacts.
Conduct regular, ongoing monitoring to determine population trends, at all known and newly identified sites, for all handfish species.	No impacts.	No impacts.
Develop methods for assessing habitat integrity for all handfish species	No impacts.	No impacts.
Map available habitat and identify threats to habitat for all handfish species.	No impacts.	No impacts.
Improve understanding of potential threats impacting upon survival of all handfish species.	No impacts.	No impacts.
Consider options for improving habitat quality, mitigating key threats, or increasing protection within known habitat for all handfish species.	No impacts.	No impacts.
Support current work to improve water quality in the Derwent Estuary.	No impacts.	No impacts.
Encourage future investigation into potential control options for invasive Northern Pacific seastars (<i>A. amurensis</i>).	No impacts.	No impacts.
Develop and implement a broad strategy to raise awareness and educate the general public about conservation for all handfish species.	No impacts.	No impacts.
Develop and implement a targeted strategy to promote the use of citizen science in relation to conservation for all handfish species.	No impacts.	No impacts.

Assessment of the Prion MSS against the stated management actions of the National Recovery Plan for the Australian Grayling (*Prototroctes maraena*) (TSSC, 2015)

The following table provides an assessment of routine and non-routine operations against the conservation actions of the plan.

Management Action	Assessment of impacts of routine activities against management aims	Assessment of impacts of Level 2 or 3 hydrocarbon spill against objectives
Identify important populations of Australian grayling.	No impacts.	No impacts.
Protect and restore habitat for Australian grayling.	No impacts.	No impacts.
Investigate important life history attributes to acquire targeted information for management.	No impacts.	No impacts.
Investigate and manage threats to populations and habitats.	No impacts.	No impacts.
Increase awareness of Australian grayling conservation with resource managers and the public.	No impacts.	No impacts.

Assessment of the Prion MSS against the stated aims of the National Recovery Plan for the Dwarf Galaxias (*Galaxiella pusilla*) (DSE, 2010)

The following table provides an assessment of routine and non-routine operations against the management aims of the plan.

Primary conservation objectives of the National Recovery Plan	Assessment of impacts of routine activities against management aims	Assessment of impacts of Level 2 or 3 hydrocarbon spill against objectives
Determine the distribution and abundance of the Dwarf Galaxias.	No impacts.	No impacts.
Determine the genetic and taxonomic status of Dwarf Galaxias populations.	No impacts.	No impacts.
Determine Dwarf Galaxias habitat characteristics and requirements.	No impacts.	No impacts.
Identify and manage potentially threatening processes impacting on Dwarf galaxias conservation.	No impacts.	No impacts.
Protect key populations across the range of the Dwarf galaxias.	No impacts.	No impacts.
Determine population trends at key sights.	No impacts.	No impacts.
Investigate key aspects of biology and ecology of the Dwarf galaxias.	No impacts.	No impacts.
Establish a captive breeding population of Dwarf galaxias.	No impacts.	No impacts.
Establish new populations of Dwarf galaxias.	No impacts.	No impacts.
Increase awareness and involvement.	No impacts.	No impacts.

Assessment of the Prion MSS against the stated aims of the National Recovery Plan for the White Shark (*Carcharodon carcharias*) (DSEWPC, 2013)

The following table provides an assessment of routine and non-routine operations against the primary conservation objectives of the plan.

Conservation and Management Objectives	Assessment of impacts of routine activities against management aims	Assessment of impacts of Level 2 or 3 hydrocarbon spill against objectives
Develop and apply quantitative measures to assess population trends and any recovery of the white shark in Australian waters and monitor population trends.	No impacts.	No impacts.
Quantify and minimise the impact of commercial fishing, including aquaculture, on the white shark through incidental (illegal and/or accidental) take, throughout its range in Australian waters.	No impacts.	No impacts.
Quantify and minimise the impact of recreational fishing on the white shark through incidental (illegal and/or accidental) take, throughout its range in Australian waters.	No impacts.	No impacts.
Where practicable, minimise the impact of shark control activities on the white shark.	No impacts.	No impacts.
Investigate and manage (and where necessary reduce) the impact of tourism on the white shark.	No impacts.	No impacts.
Quantify and minimise the impact of international trade in white shark products through implementation of CITES provisions.	No impacts.	No impacts.
Continue to identify and protect habitat critical to the survival of the white shark and minimise the impact of threatening processes within these areas.	No impacts.	
Continue to develop and implement relevant research programs to support the conservation of the white shark.	No impacts.	No impacts.
Promote community education and awareness in relation to white shark conservation and management.	No impacts.	No impacts.
Encourage the development of regional partnerships to enhance the conservation and management of the white shark across national and international jurisdictions.	No impacts.	No impacts.

**Assessment of the Prion MSS against the stated aims of the Recovery Plan for Marine Turtles in Australia
(DoEE, 2017).**

The following table provides an assessment of routine and non-routine operations against the management targets of the plan.

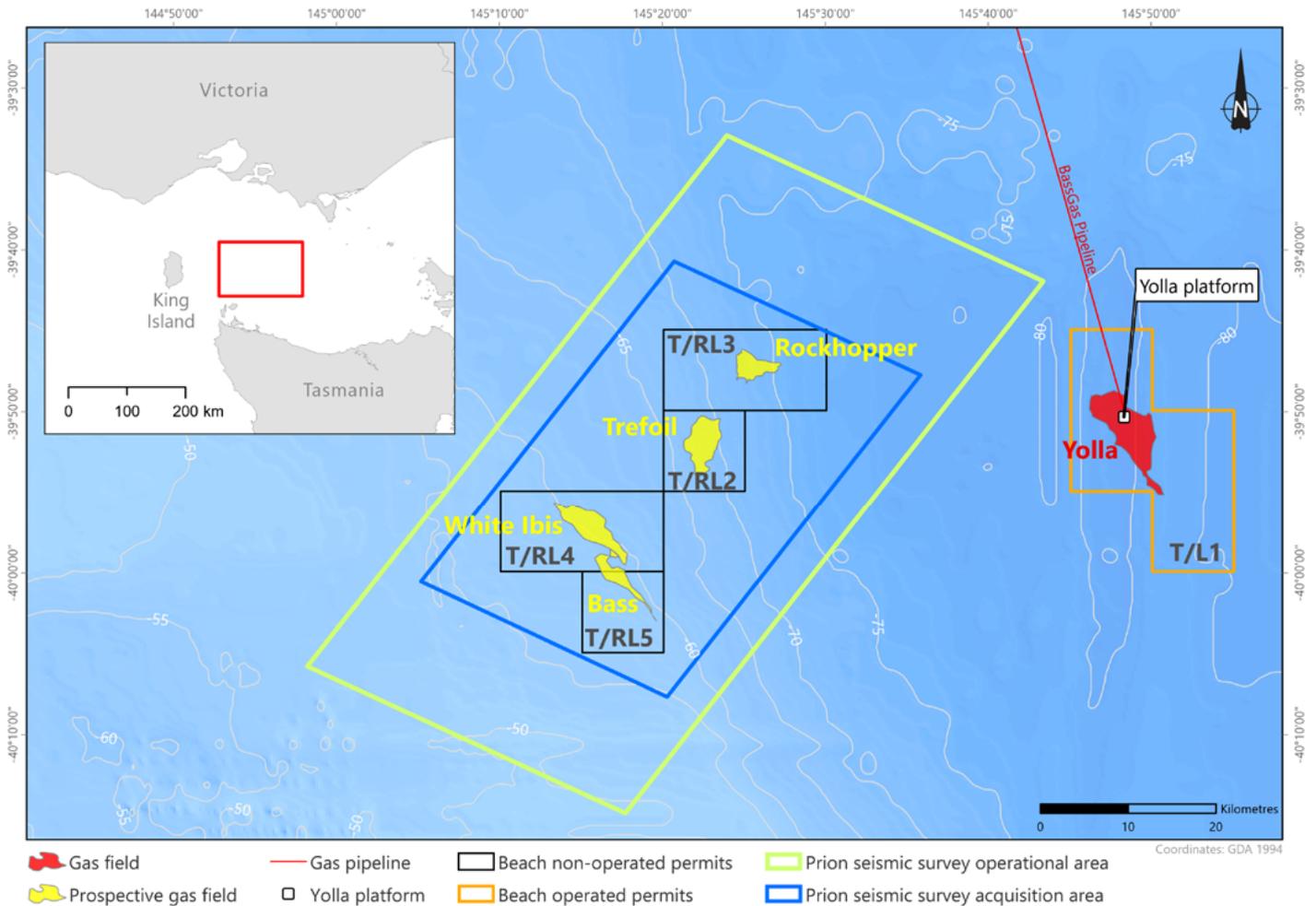
Conservation management targets	Assessment of impacts of routine activities against management aims	Assessment of impacts of Level 2 or 3 hydrocarbon spill against objectives
Domestic and international legislation and other agreements that support the recovery of Australian marine turtles are maintained, and, where possible, strengthened.	No impacts.	No impacts.
Robust scientific information is available and used to support decision making.	No impacts.	No impacts.
The sustainable management of marine turtles by Aboriginal and Torres Strait Islander communities and ranger groups to maintain long-term cultural, spiritual and economic associations with marine turtles is supported.	No impacts.	No impacts.
The capacity of programs throughout northern Australia to conduct effective monitoring, management and research of marine turtles at nesting beaches and feeding grounds is maintained and increased.	No impacts.	No impacts.
Robust and adaptive management regimes that lead to a reduction in anthropogenic threats to marine turtles and their habitats are in place.	No impacts.	No impacts.
Threat mitigation strategies are supported by high quality information.	No impacts.	No impacts.
Effective monitoring programs are implemented and maintained at index beaches and foraging areas for each of the six species.	No impacts.	No impacts.
Measures of success identified for each stock are achieved within the life of the plan.	No impacts.	No impacts.

Appendix 3

Project information flyers

Prion Seismic Survey

Project Summary



Project Summary | February 2020

PROJECT

Beach Energy is planning to undertake a three-dimensional (3D) marine seismic survey (the Prion Survey) to enable assessment of the natural gas reservoirs in Commonwealth offshore retention licenses T/RL2, T/RL3, T/RL4 and T/RL5. This project will operate under an Environment Plan (EP) that must be accepted by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA).

LOCATION

The proposed Prion Survey is in the offshore Bass Basin in Commonwealth waters, approximately 73 km east of King Island, 57 km north of Stanley in Tasmania and 105 km south of Wonthaggi in Victoria at their closest points.

TIMING

The survey will take around 50 days, subject to weather. It is expected to be completed between October 2020 and December 2021, with timing to be confirmed after consultation with stakeholders, receipt of regulatory approvals, and confirmation of vessel availability.

HOW

A seismic survey vessel, about 90 m long, will tow an acoustic source and hydrophone receivers on 12 streamers 8 km long. The acoustic source will transmit sound waves into the geological structures beneath the seabed, which reflect to the hydrophone receivers. Geophysicists will analyse the recorded data and create a 3D map of the subsea structures to identify potential natural gas reservoirs.

About Beach

Founded in 1961, Beach is headquartered in Adelaide Australia. With a proud track record for safety and environmental performance, Beach operates onshore and offshore hydrocarbon facilities across Australia and New Zealand.

Beach operates natural gas processing plants in Port Campbell and Lang Lang, supplying approximately 20% of Victoria's gas needs. Beach is the operating partner of the BassGas project which includes the Lang Lang gas plant, Yolla platform, pipelines and existing production permits. BassGas is a joint venture between Beach Energy, Mitsui and Prize Petroleum International Pte Ltd.

Questions and Answers

What approvals are required?

Beach must submit an EP to NOPSEMA for acceptance under the *Commonwealth Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009*.

What's in an Environment Plan?

The EP must include a description of the existing environment and the proposed activity, an evaluation of the impacts and risks associated with the activities, environmental performance outcomes and standards, implementation strategy, and reporting requirements.

What about impacts on marine life?

The EP will include a detailed description of marine fauna present in the survey area at various times of the year. It will identify impact risks associated with the survey and avoidance, mitigation and management measures, such as the use of marine mammal observers during operations, along with shut-down procedures. An assessment of underwater sound levels will be undertaken by acoustic scientists. Impacts will be minimised by using the lowest acoustic source possible for the project requirements and avoiding areas at certain times, based on whether sound sensitive species may be present. For example, the size of the survey area has already been reduced to exclude scallop beds east of King Island.

How will you ensure that you operate safely?

Safety takes precedence in everything we do. Our values define us, guide our actions and our decisions. Beach has over 50 years' experience in the oil and gas industry and our marine exploration team have extensive local and international experience in conducting these types of surveys. We have stringent procedures for assessing, selecting and managing specialist contractors to carry out our marine activities to ensure they will keep our operations safe and operate in accordance with Australian Maritime Standards, regulated by the Australian Maritime Safety Authority (AMSA).

Will an exclusion zone be required?

Yes, a temporary exclusion zone will operate. A Notice to Mariners will be issued requesting that vessels do not approach closer than 5 km (2 nm) of the survey vessel and towed equipment. The survey vessel will be accompanied by a support vessel, which will communicate with other vessels.

Why are you surveying this area?

Natural gas from the Bass Basin has been supplying the east coast gas market for many years. Beach holds several permits in this area near its existing Yolla platform, which directs raw gas to the Lang Lang Gas Plant for processing and supply to Victorian homes and businesses. Beach is required to carry out exploration activities in the retention licenses in accordance with requirements set out by the National Offshore Petroleum Titles Administrator (NOPTA). The survey results will be assessed to plan for the next stage of development, which includes drilling gas wells to connect to the existing Yolla platform and pipeline.

Why do you do seismic surveys before drilling?

3D seismic data enables our geophysicists to develop a detailed map of the subsea geological structures that is used to identify correct drilling locations. The data is used to create high-resolution 3D images of the subsea geology, which is used by our drilling engineers to design the necessary drilling methodology that ensures safely drilling to target locations.

Why is the survey area bigger than the permit areas?

Seismic surveys extend several kilometers outside the permit boundary in order to collect the data required to accurately create an image of the deep targets directly beneath Beach's permit zones. The survey operational area also incorporates the turning circles for the vessel, which are needed for the 8 km long towed streamers.

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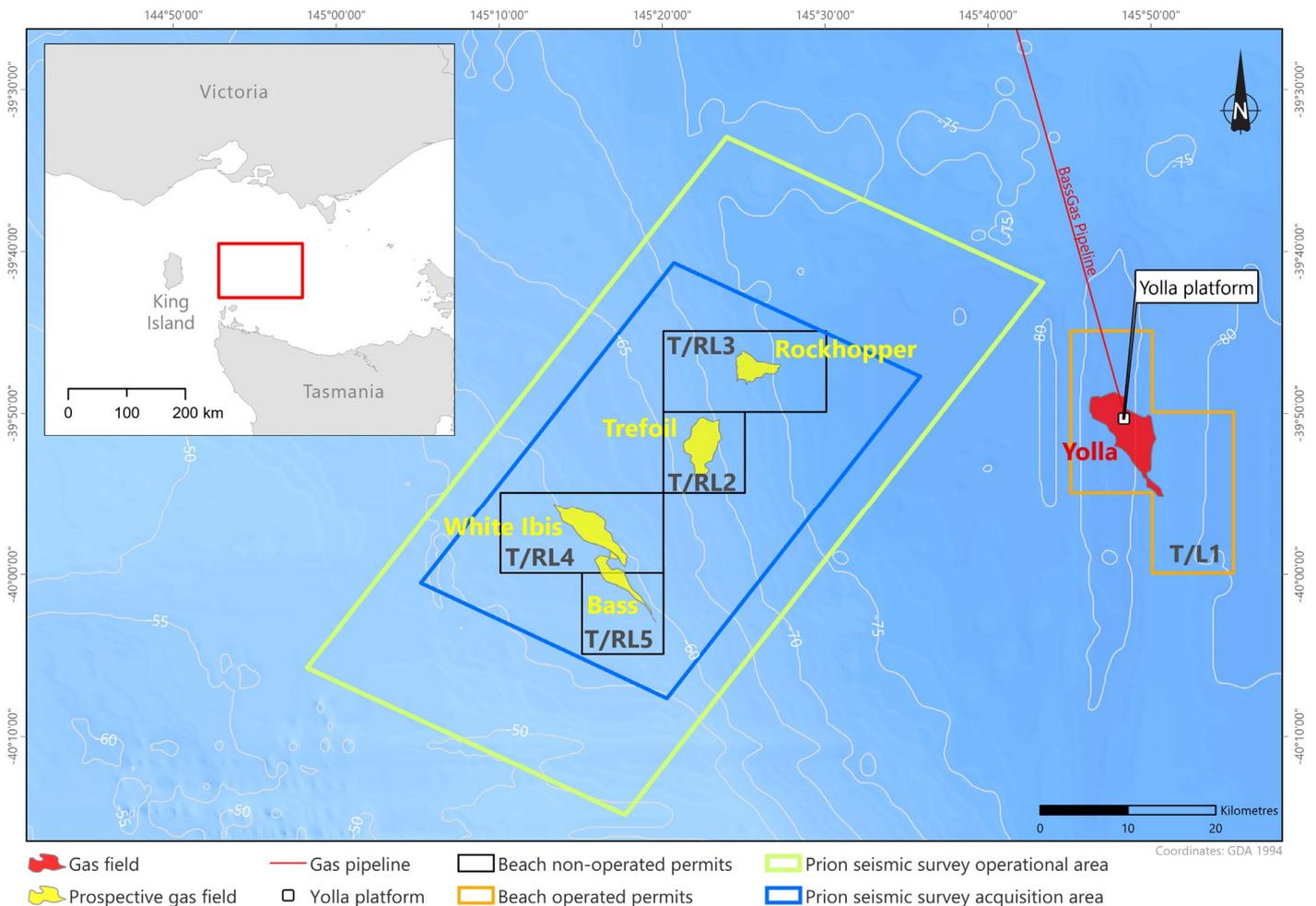
Want to know more, visit:

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Prion Seismic Survey

Project Summary



Project Summary | July 2020

PROJECT

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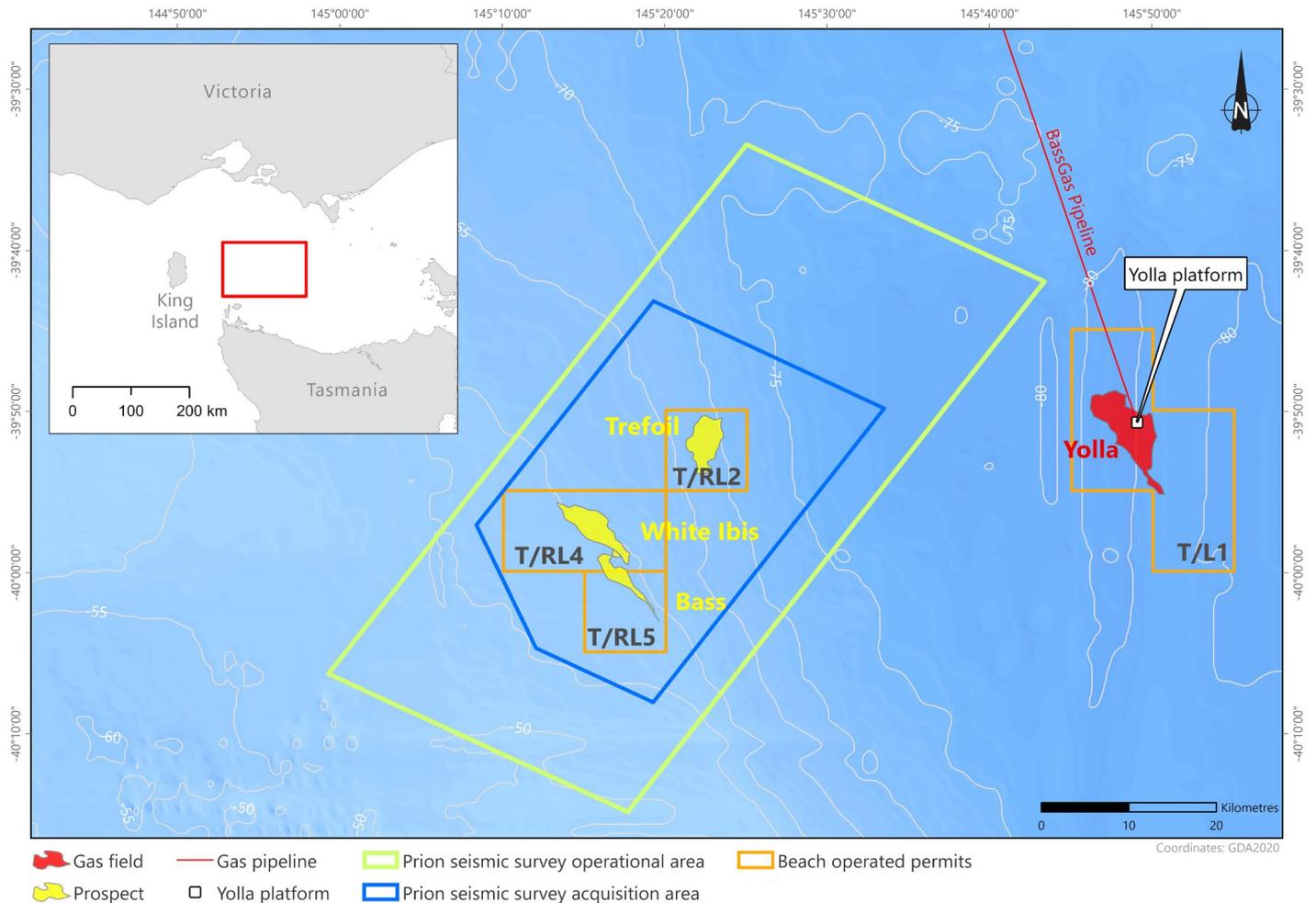
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Prion Marine Seismic Survey

Project Summary



Project Summary | December 2020

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Appendix 4

Stakeholder communications

(provided to NOPSEMA separately as sensitive information under Regulation 9(8) of the OPGGS(E))

Appendix 5

EPBC Act Protected Matters Search (PMST)
Tool results



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.

Information on the coverage of this report and qualifications on data supporting this report are contained in the caveat at the end of the report.

Information is available about [Environment Assessments](#) and the EPBC Act including significance guidelines, forms and application process details.

Report created: 12/03/20 15:54:26

[Summary](#)

[Details](#)

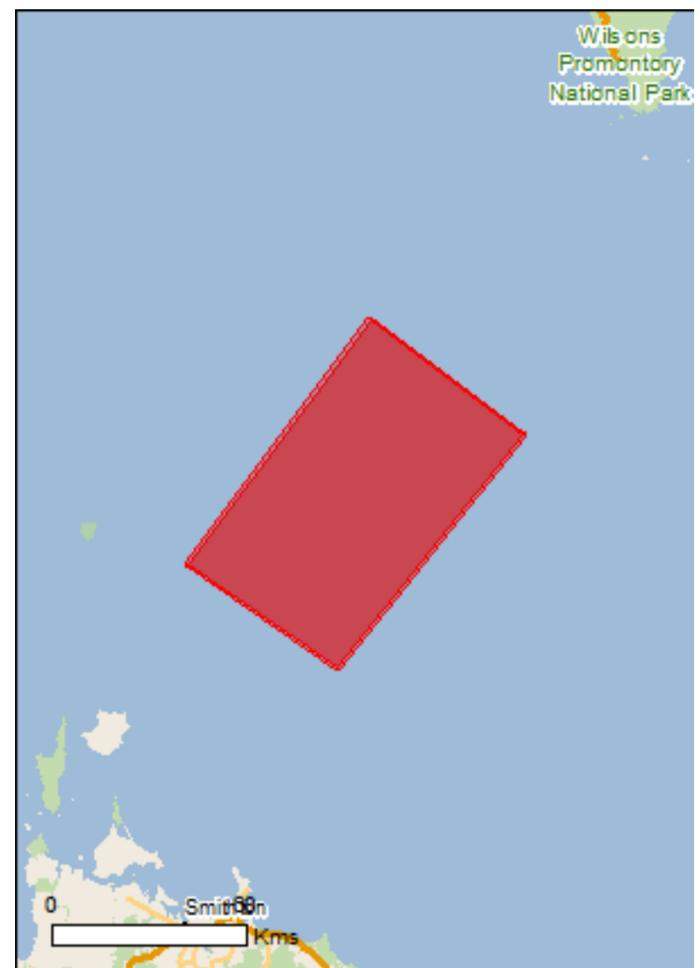
[Matters of NES](#)

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

[Extra Information](#)

[Caveat](#)

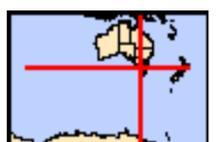
[Acknowledgements](#)



This map may contain data which are ©Commonwealth of Australia (Geoscience Australia), ©PSMA 2010

[Coordinates](#)

[Buffer: 1.0Km](#)



Summary

Matters of National Environmental 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:	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	1
Listed Threatened Ecological Communities:	None
Listed Threatened Species:	35
Listed Migratory Species:	36

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 <http://www.environment.gov.au/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 Land:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	45
Whales and Other Cetaceans:	14
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have nominated.

State and Territory Reserves:	None
Regional Forest Agreements:	None
Invasive Species:	None
Nationally Important Wetlands:	None
Key Ecological Features (Marine)	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 the Commonwealth Marine Area but which has, may have or is likely to have a significant impact on the environment in the Commonwealth Marine Area. Generally the Commonwealth Marine Area stretches from three nautical miles to two hundred nautical miles from the coast.

Name

EEZ and Territorial Sea

Marine Regions

[\[Resource Information \]](#)

If you are planning to undertake action in an area in or close to the Commonwealth Marine Area, and a marine bioregional plan has been prepared for the Commonwealth Marine Area in that area, the marine bioregional plan may inform your decision as to whether to refer your proposed action under the EPBC Act.

Name

[South-east](#)

Listed Threatened Species

[\[Resource Information \]](#)

Name	Status	Type of Presence
Birds		
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea antipodensis gibsoni Gibson's Albatross [82270]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
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

Name	Status	Type of Presence area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area
Neophema chrysogaster Orange-bellied Parrot [747]	Critically Endangered	Migration route likely to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Pachyptila turtur subantarctica Fairy Prion (southern) [64445]	Vulnerable	Species or species habitat may occur within area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat likely to occur within area
Pterodroma leucoptera leucoptera Gould's Petrel, Australian Gould's Petrel [26033]	Endangered	Species or species habitat may occur within area
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Species or species habitat may occur within area
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 cauta cauta Shy Albatross [82345]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche cauta steadi White-capped Albatross [82344]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche chrysostoma Grey-headed Albatross [66491]	Endangered	Species or species habitat may occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Mammals		
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

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
Eubalaena australis Southern Right Whale [40]	Endangered	Species or species habitat known to occur within area
Megaptera novaeangliae Humpback Whale [38]	Vulnerable	Species or species habitat known to occur within area
Reptiles		
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat likely to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat likely to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat likely to occur within area
Sharks		
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area
Listed Migratory Species		[Resource Information]
* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.		
Name	Threatened	Type of Presence
Migratory Marine Birds		
Ardenna carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Foraging, feeding or related behaviour likely to occur within area
Ardenna grisea Sooty Shearwater [82651]		Species or species habitat 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	Foraging, feeding or related behaviour likely to occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area

Name	Threatened	Type of Presence
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
Thalassarche cauta Shy Albatross [89224]	Vulnerable*	Foraging, feeding or related behaviour likely to occur within area
Thalassarche chrysostoma Grey-headed Albatross [66491]	Endangered	Species or species habitat may occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable*	Foraging, feeding or related behaviour likely to occur within area
Migratory Marine Species		
Balaena glacialis australis Southern Right Whale [75529]	Endangered*	Species or species habitat known to occur within area
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat likely to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Caperea marginata Pygmy Right Whale [39]		Foraging, feeding or related behaviour may occur within area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat likely to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat likely to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat likely to occur within area
Isurus oxyrinchus Shortfin Mako, Mako Shark [79073]		Species or species habitat likely to occur within area

Name	Threatened	Type of Presence
Lagenorhynchus obscurus Dusky Dolphin [43]		Species or species habitat may occur within area
Lamna nasus Porbeagle, Mackerel Shark [83288]		Species or species habitat likely to occur within area
Megaptera novaeangliae Humpback Whale [38]	Vulnerable	Species or species habitat known to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat likely to occur within area
Migratory Wetlands Species		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area

Other Matters Protected by the EPBC Act

Listed Marine Species	[Resource Information]	
* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.		
Name	Threatened	Type of Presence
Birds		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area

Name	Threatened	Type of Presence
Catharacta skua Great Skua [59472]		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 gibsoni Gibson's Albatross [64466]	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	Foraging, feeding or related behaviour likely to occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area
Neophema chrysogaster Orange-bellied Parrot [747]	Critically Endangered	Migration route likely to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Pachyptila turtur 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 mollis Soft-plumaged Petrel [1036]	Vulnerable	Species or species habitat may occur within area
Puffinus carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [1043]		Foraging, feeding or related behaviour likely to occur within area
Puffinus griseus Sooty Shearwater [1024]		Species or species habitat may occur within area
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Species or species habitat may occur within area
Thalassarche cauta Shy Albatross [89224]	Vulnerable*	Foraging, feeding or related behaviour likely to occur within area
Thalassarche chrysostoma Grey-headed Albatross [66491]	Endangered	Species or species

Name	Threatened	Type of Presence
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	habitat may occur within area 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 sp. nov. Pacific Albatross [66511]	Vulnerable*	Species or species habitat may occur within area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable*	Foraging, feeding or related behaviour likely 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 minotaur Bullneck Seahorse [66705]		Species or species habitat may occur within area
Kimblaeus bassensis Trawl Pipefish, Bass Strait Pipefish [66247]		Species or species habitat may occur within area
Maroubra perserrata Sawtooth Pipefish [66252]		Species or species habitat may occur within area
Notiocampus ruber Red Pipefish [66265]		Species or species habitat may occur within area
Phycodurus eques Leafy Seadragon [66267]		Species or species habitat may occur within area
Phyllopteryx taeniolatus Common Seadragon, Weedy Seadragon [66268]		Species or species habitat may occur within area
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
Vanacampus phillipi Port Phillip Pipefish [66284]		Species or species habitat may occur within area
Mammals		
Arctocephalus forsteri Long-nosed Fur-seal, New Zealand Fur-seal [20]		Species or species habitat may occur within area

Name	Threatened	Type of Presence
Arctocephalus pusillus Australian Fur-seal, Australo-African Fur-seal [21]		Species or species habitat may occur within area
Reptiles		
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat likely to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat likely to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat likely to occur within area
Whales and other Cetaceans		[Resource Information]
Name	Status	Type of Presence
Mammals		
Balaenoptera acutorostrata Minke Whale [33]		Species or species habitat may occur within area
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat likely to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Caperea marginata Pygmy Right Whale [39]		Foraging, feeding or related behaviour may occur within area
Delphinus delphis Common Dophin, 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
Grampus griseus Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area
Lagenorhynchus obscurus Dusky Dolphin [43]		Species or species habitat may occur within area
Megaptera novaeangliae Humpback Whale [38]	Vulnerable	Species or species habitat known to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat likely to occur within area
Pseudorca crassidens False Killer Whale [48]		Species or species habitat likely to occur within area

Name	Status	Type of Presence
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area

Extra Information

Caveat

The information presented in this report has been provided by a range of data sources as acknowledged at the end of the report.

This report is designed to assist in identifying the locations of places which may be relevant in determining obligations under the Environment Protection and Biodiversity Conservation Act 1999. It holds mapped locations of World and National Heritage properties, Wetlands of International and National Importance, Commonwealth and State/Territory reserves, listed threatened, migratory and marine species and listed threatened ecological communities. Mapping of Commonwealth land is not complete at this stage. Maps have been collated from a range of sources at various resolutions.

Not all species listed under the EPBC Act have been mapped (see below) and therefore a report is a general guide only. Where available data supports mapping, the type of presence that can be determined from the data is indicated in general terms. People using this information in making a referral may need to consider the qualifications below and may need to seek and consider other information sources.

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.

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

Where very little information is available for 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 reliable distribution mapping methods are used to update these distributions as time permits.

Only selected species covered by the following provisions of the EPBC Act have been mapped:

- migratory and
- marine

The following species and ecological communities have not been mapped and do not appear in reports produced from this database:

- threatened species listed as extinct or considered as vagrants
- some species and ecological communities that have only recently been listed
- some terrestrial species that overfly the Commonwealth marine area
- migratory species that are very widespread, vagrant, or only occur in small numbers

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

- non-threatened seabirds which have only been mapped for recorded breeding sites
- seals which have only been mapped for breeding sites near the Australian continent

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

Coordinates

-40.082223 145.128696,-39.57177 145.628574,-39.812704 146.046055,-40.296235 145.535191,-40.082223 145.128696,-40.082223 145.128696

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](#)
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- [-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.



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.

Information on the coverage of this report and qualifications on data supporting this report are contained in the caveat at the end of the report.

Information is available about [Environment Assessments](#) and the EPBC Act including significance guidelines, forms and application process details.

Report created: 28/05/20 09:32:36

[Summary](#)

[Details](#)

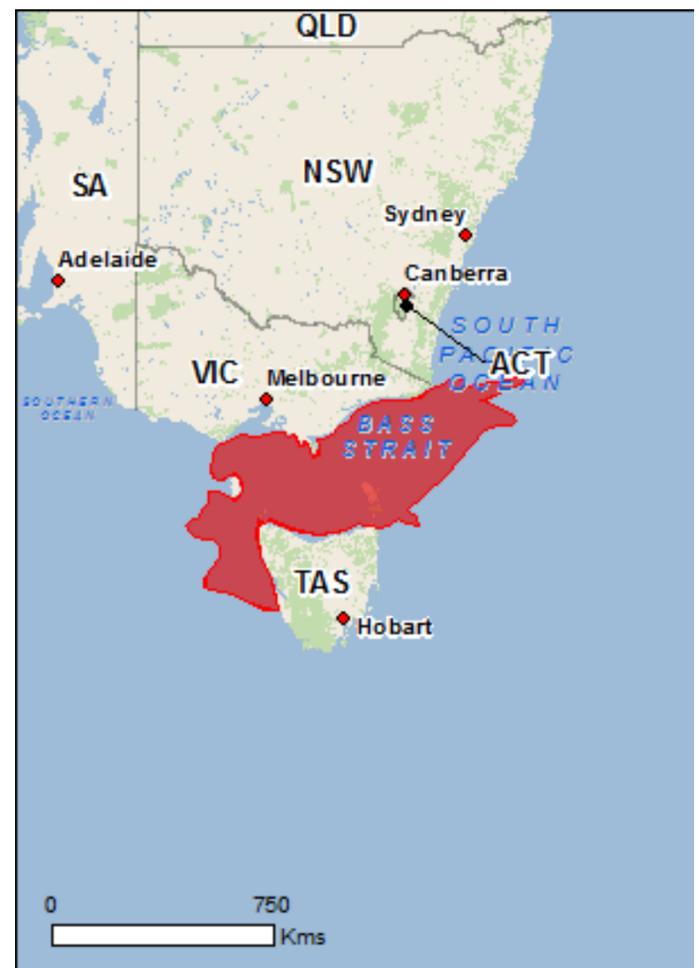
[Matters of NES](#)

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

[Extra Information](#)

[Caveat](#)

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[Coordinates](#)

[Buffer: 1.0Km](#)



Summary

Matters of National Environmental 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:	2
Wetlands of International Importance:	7
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	1
Listed Threatened Ecological Communities:	6
Listed Threatened Species:	109
Listed Migratory Species:	78

Other Matters Protected by the EPBC Act

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

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at <http://www.environment.gov.au/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 Land:	1
Commonwealth Heritage Places:	4
Listed Marine Species:	123
Whales and Other Cetaceans:	32
Critical Habitats:	1
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	8

Extra Information

This part of the report provides information that may also be relevant to the area you have nominated.

State and Territory Reserves:	143
Regional Forest Agreements:	4
Invasive Species:	47
Nationally Important Wetlands:	19
Key Ecological Features (Marine)	3

Details

Matters of National Environmental Significance

National Heritage Properties		[Resource Information]
Name	State	Status
Indigenous		
Western Tasmania Aboriginal Cultural Landscape	TAS	Listed place
Historic		
Great Ocean Road and Scenic Environs	VIC	Listed place

Wetlands of International Importance (Ramsar)		[Resource Information]
Name	Proximity	
Corner inlet	Within Ramsar site	
East coast cape barren island lagoons	Within Ramsar site	
Gippsland lakes	Within 10km of Ramsar	
Lavinia	Within Ramsar site	
Little waterhouse lake	Within 10km of Ramsar	
Logan lagoon	Within Ramsar site	
Western port	Within 10km of Ramsar	

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 the Commonwealth Marine Area but which has, may have or is likely to have a significant impact on the environment in the Commonwealth Marine Area. Generally the Commonwealth Marine Area stretches from three nautical miles to two hundred nautical miles from the coast.

Name
EEZ and Territorial Sea

Marine Regions [\[Resource Information \]](#)

If you are planning to undertake action in an area in or close to the Commonwealth Marine Area, and a marine bioregional plan has been prepared for the Commonwealth Marine Area in that area, the marine bioregional plan may inform your decision as to whether to refer your proposed action under the EPBC Act.

Name
South-east

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.

Name	Status	Type of Presence
Alpine Sphagnum Bogs and Associated Fens	Endangered	Community may occur within area
Giant Kelp Marine Forests of South East Australia	Endangered	Community may occur within area
Lowland Native Grasslands of Tasmania	Critically Endangered	Community likely to occur within area
Natural Damp Grassland of the Victorian Coastal Plains	Critically Endangered	Community may occur within area
Subtropical and Temperate Coastal Saltmarsh	Vulnerable	Community likely to occur within area
Tasmanian Forests and Woodlands dominated by black gum or Brookers gum (<i>Eucalyptus ovata</i> / <i>E. brookeriana</i>)	Critically Endangered	Community likely to occur within area

Listed Threatened Species [\[Resource Information \]](#)

Name	Status	Type of Presence
Birds		
Acanthiza pusilla archibaldi	Endangered	Species or species

Name	Status	Type of Presence
(King Island) [59430]		habitat likely to occur within area
Acanthornis magna greeniana King Island Scrubtit, Scrubtit (King Island) [82329]	Critically Endangered	Species or species habitat may occur within area
Anthochaera phrygia Regent Honeyeater [82338]	Critically Endangered	Species or species habitat likely to occur within area
Aquila audax fleayi Tasmanian Wedge-tailed Eagle, Wedge-tailed Eagle (Tasmanian) [64435]	Endangered	Breeding likely to occur within area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat known to occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Calidris tenuirostris Great Knot [862]	Critically Endangered	Roosting known to occur within area
Ceyx azureus diemenensis Tasmanian Azure Kingfisher [25977]	Endangered	Species or species habitat likely to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Roosting known to occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area
Dasyornis brachypterus Eastern Bristlebird [533]	Endangered	Species or species habitat known to occur within area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea antipodensis gibsoni Gibson's Albatross [82270]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to occur within area
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
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur

Name	Status	Type of Presence within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat known to occur within area
Limosa lapponica baueri Bar-tailed Godwit (baueri), Western Alaskan Bar-tailed Godwit [86380]	Vulnerable	Species or species habitat known to occur within area
Limosa lapponica menzbieri Northern Siberian Bar-tailed Godwit, Bar-tailed Godwit (menzbieri) [86432]	Critically Endangered	Species or species habitat may occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area
Neophema chrysogaster Orange-bellied Parrot [747]	Critically Endangered	Migration route known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
Pachyptila turtur subantarctica Fairy Prion (southern) [64445]	Vulnerable	Species or species habitat known to occur within area
Pardalotus quadragintus Forty-spotted Pardalote [418]	Endangered	Species or species habitat known to occur within area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat likely to occur within area
Platycercus caledonicus brownii Green Rosella (King Island) [67041]	Vulnerable	Species or species habitat likely to occur within area
Pterodroma leucoptera leucoptera Gould's Petrel, Australian Gould's Petrel [26033]	Endangered	Species or species habitat may occur within area
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Species or species habitat may occur within area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area
Sternula nereis nereis Australian Fairy Tern [82950]	Vulnerable	Species or species habitat known to occur within area
Strepera fuliginosa colei Black Currawong (King Island) [67113]	Vulnerable	Breeding likely to occur within area
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche bulleri platei Northern Buller's Albatross, Pacific Albatross [82273]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche cauta cauta Shy Albatross [82345]	Vulnerable	Breeding known to occur

Name	Status	Type of Presence within area
Thalassarche cauta steadi White-capped Albatross [82344]	Vulnerable	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 likely to occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thinornis rubricollis rubricollis Hooded Plover (eastern) [66726]	Vulnerable	Species or species habitat known to occur within area
Tyto novaehollandiae castanops (Tasmanian population) Masked Owl (Tasmanian) [67051]	Vulnerable	Breeding known to occur within area
Crustaceans		
Astacopsis gouldi Giant Freshwater Crayfish, Tasmanian Giant Freshwater Lobster [64415]	Vulnerable	Species or species habitat may occur within area
Engaeus martigener Furneaux Burrowing Crayfish [67220]	Endangered	Species or species habitat known to occur within area
Fish		
Epinephelus daemeli Black Rockcod, Black Cod, Saddled Rockcod [68449]	Vulnerable	Species or species habitat may occur within area
Galaxiella pusilla Eastern Dwarf Galaxias, Dwarf Galaxias [56790]	Vulnerable	Species or species habitat known to occur within area
Prototroctes maraena Australian Grayling [26179]	Vulnerable	Species or species habitat likely to occur within area
Thymichthys politus Red Handfish [83756]	Critically Endangered	Species or species habitat may occur within area
Frogs		
Litoria aurea Green and Golden Bell Frog [1870]	Vulnerable	Species or species habitat likely to occur within area
Litoria raniformis Growling Grass Frog, Southern Bell Frog, Green and Golden Frog, Warty Swamp Frog, Golden Bell Frog [1828]	Vulnerable	Species or species habitat known to occur within area
Insects		
Oreisplanus munionga larana Marrawah Skipper, Alpine Sedge Skipper, Alpine Skipper [77747]	Vulnerable	Species or species habitat known to occur within area

Name	Status	Type of Presence
Mammals		
Antechinus minimus maritimus Swamp Antechinus (mainland) [83086]	Vulnerable	Species or species habitat likely to occur within area
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Foraging, feeding or related behaviour known to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Dasyurus maculatus maculatus (SE mainland population) Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat likely to occur within area
Dasyurus maculatus maculatus (Tasmanian population) Spotted-tail Quoll, Spot-tailed Quoll, Tiger Quoll (Tasmanian population) [75183]	Vulnerable	Species or species habitat known to occur within area
Eubalaena australis Southern Right Whale [40]	Endangered	Species or species habitat known to occur within area
Isoodon obesulus obesulus Southern Brown Bandicoot (eastern), Southern Brown Bandicoot (south-eastern) [68050]	Endangered	Species or species habitat known to occur within area
Mastacomys fuscus mordicus Broad-toothed Rat (mainland), Tooarrana [87617]	Vulnerable	Species or species habitat likely to occur within area
Megaptera novaeangliae Humpback Whale [38]	Vulnerable	Species or species habitat known to occur within area
Miniopterus orianae bassanii Southern Bent-wing Bat [87645]	Critically Endangered	Species or species habitat likely to occur within area
Perameles gunnii gunnii Eastern Barred Bandicoot (Tasmania) [66651]	Vulnerable	Species or species habitat likely to occur within area
Petauroides volans Greater Glider [254]	Vulnerable	Species or species habitat likely to occur within area
Potorous longipes Long-footed Potoroo [217]	Endangered	Species or species habitat may occur within area
Potorous tridactylus tridactylus Long-nosed Potoroo (SE Mainland) [66645]	Vulnerable	Species or species habitat likely to occur within area
Pseudomys fumeus Smoky Mouse, Konoom [88]	Endangered	Species or species habitat may occur within area
Pseudomys novaehollandiae New Holland Mouse, Pookila [96]	Vulnerable	Species or species habitat known to occur within area
Pteropus poliocephalus Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour known to occur within area

Name	Status	Type of Presence
Sarcophilus harrisii Tasmanian Devil [299]	Endangered	Species or species habitat likely to occur within area
Plants		
Amphibromus fluitans River Swamp Wallaby-grass, Floating Swamp Wallaby-grass [19215]	Vulnerable	Species or species habitat may occur within area
Caladenia caudata Tailed Spider-orchid [17067]	Vulnerable	Species or species habitat known to occur within area
Caladenia dienema Windswept Spider-orchid [64858]	Endangered	Species or species habitat known to occur within area
Caladenia orientalis Eastern Spider Orchid [83410]	Endangered	Species or species habitat likely to occur within area
Caladenia tessellata Thick-lipped Spider-orchid, Daddy Long-legs [2119]	Vulnerable	Species or species habitat likely to occur within area
Cassinia rugata Wrinkled Cassinia, Wrinkled Dollybush [21885]	Vulnerable	Species or species habitat may occur within area
Corunastylis brachystachya Short-spiked Midge-orchid [76410]	Endangered	Species or species habitat known to occur within area
Cryptostylis hunteriana Leafless Tongue-orchid [19533]	Vulnerable	Species or species habitat likely to occur within area
Diuris lanceolata Snake Orchid [10231]	Endangered	Species or species habitat known to occur within area
Glycine latrobeana Clover Glycine, Purple Clover [13910]	Vulnerable	Species or species habitat known to occur within area
Hypolepis distans Scrambling Ground-fern [2148]	Endangered	Species or species habitat likely to occur within area
Prasophyllum apoxychilum Tapered Leek-orchid [64947]	Endangered	Species or species habitat may occur within area
Prasophyllum atratum Three Hummock Leek-orchid [82677]	Critically Endangered	Species or species habitat known to occur within area
Prasophyllum favonium Western Leek-orchid [64949]	Critically Endangered	Species or species habitat likely to occur within area
Prasophyllum frenchii Maroon Leek-orchid, Slaty Leek-orchid, Stout Leek-orchid, French's Leek-orchid, Swamp Leek-orchid [9704]	Endangered	Species or species habitat likely to occur within area
Prasophyllum pulchellum Pretty Leek-orchid [64953]	Critically Endangered	Species or species habitat likely to occur within area
Prasophyllum secutum Northern Leek-orchid [64954]	Endangered	Species or species habitat likely to occur within area

Name	Status	Type of Presence
Prasophyllum spicatum Dense Leek-orchid [55146]	Vulnerable	Species or species habitat likely to occur within area
Pterostylis chlorogramma Green-striped Greenhood [56510]	Vulnerable	Species or species habitat likely to occur within area
Pterostylis cucullata Leafy Greenhood [15459]	Vulnerable	Species or species habitat known to occur within area
Pterostylis rubenachii Arthur River Greenhood [64536]	Endangered	Species or species habitat known to occur within area
Pterostylis ziegeleri Grassland Greenhood, Cape Portland Greenhood [64971]	Vulnerable	Species or species habitat likely to occur within area
Senecio psilocarpus Swamp Fireweed, Smooth-fruited Groundsel [64976]	Vulnerable	Species or species habitat known to occur within area
Thelymitra jonesii Sky-blue Sun-orchid [76352]	Endangered	Species or species habitat known to occur within area
Thelymitra matthewsii Spiral Sun-orchid [4168]	Vulnerable	Species or species habitat may occur within area
Xanthorrhoea arenaria Sand Grasstree [21603]	Vulnerable	Species or species habitat may occur within area
Xerochrysum palustre Swamp Everlasting, Swamp Paper Daisy [76215]	Vulnerable	Species or species habitat likely to occur within area
Reptiles		
Caretta caretta Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Sharks		
Carcharias taurus (east coast population) Grey Nurse Shark (east coast population) [68751]	Critically Endangered	Species or species habitat may occur within area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Breeding known to occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
Listed Migratory Species		[Resource Information]
* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.		
Name	Threatened	Type of Presence

Name	Threatened	Type of Presence
Migratory Marine Birds		
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardenna carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Foraging, feeding or related behaviour likely to occur within area
Ardenna grisea Sooty Shearwater [82651]		Species or species habitat likely to occur within area
Ardenna tenuirostris Short-tailed Shearwater [82652]		Breeding known to occur within area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Hydroprogne caspia Caspian Tern [808]		Breeding known to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area
Phoebastria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat likely to occur within area
Sternula albifrons Little Tern [82849]		Species or species habitat may occur within area
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche cauta Shy Albatross [89224]	Vulnerable*	Breeding known to occur within area
Thalassarche chrysostoma Grey-headed Albatross [66491]	Endangered	Species or species habitat may occur within area
Thalassarche eremita Chatham Albatross [64457]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely

Name	Threatened	Type of Presence
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	to occur within area Foraging, feeding or related behaviour likely to occur within area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable*	Foraging, feeding or related behaviour likely to occur within area
Migratory Marine Species		
Balaena glacialis australis Southern Right Whale [75529]	Endangered*	Species or species habitat known to occur within area
Balaenoptera bonaerensis Antarctic Minke Whale, Dark-shoulder Minke Whale [67812]		Species or species habitat likely to occur within area
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Foraging, feeding or related behaviour known to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Caperea marginata Pygmy Right Whale [39]		Foraging, feeding or related behaviour likely to occur within area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Breeding known to occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Isurus oxyrinchus Shortfin Mako, Mako Shark [79073]		Species or species habitat likely to occur within area
Lagenorhynchus obscurus Dusky Dolphin [43]		Species or species habitat likely to occur within area
Lamna nasus Porbeagle, Mackerel Shark [83288]		Species or species habitat likely to occur within area
Manta birostris Giant Manta Ray, Chevron Manta Ray, Pacific Manta Ray, Pelagic Manta Ray, Oceanic Manta Ray [84995]		Species or species habitat may occur within area

Name	Threatened	Type of Presence
Megaptera novaeangliae Humpback Whale [38]	Vulnerable	Species or species habitat known to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat likely to occur within area
Physeter macrocephalus Sperm Whale [59]		Species or species habitat may occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
Migratory Terrestrial Species		
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area
Monarcha trivirgatus Spectacled Monarch [610]		Species or species habitat known to occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat known to occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area
Migratory Wetlands Species		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area
Arenaria interpres Ruddy Turnstone [872]		Roosting known to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Roosting known to occur within area
Calidris alba Sanderling [875]		Roosting known to occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat known to occur within area
Calidris ruficollis Red-necked Stint [860]		Roosting known to occur within area
Calidris tenuirostris Great Knot [862]	Critically Endangered	Roosting known to occur within area

Name	Threatened	Type of Presence
Charadrius bicinctus Double-banded Plover [895]		Roosting known to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Roosting known to occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Roosting known to occur within area
Gallinago megala Swinhoe's Snipe [864]		Roosting likely to occur within area
Gallinago stenura Pin-tailed Snipe [841]		Roosting likely to occur within area
Limnodromus semipalmatus Asian Dowitcher [843]		Roosting known to occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Limosa limosa Black-tailed Godwit [845]		Roosting known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
Numenius minutus Little Curlew, Little Whimbrel [848]		Roosting known to occur within area
Numenius phaeopus Whimbrel [849]		Roosting known to occur within area
Pandion haliaetus Osprey [952]		Species or species habitat known to occur within area
Philomachus pugnax Ruff (Reeve) [850]		Roosting known to occur within area
Pluvialis fulva Pacific Golden Plover [25545]		Roosting known to occur within area
Pluvialis squatarola Grey Plover [865]		Roosting known to occur within area
Thalasseus bergii Crested Tern [83000]		Breeding known to occur within area
Tringa brevipes Grey-tailed Tattler [851]		Roosting known to occur within area
Tringa glareola Wood Sandpiper [829]		Roosting known to occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat known to occur within area
Tringa stagnatilis Marsh Sandpiper, Little Greenshank [833]		Roosting known to occur within area
Xenus cinereus Terek Sandpiper [59300]		Roosting known to occur within area

Other Matters Protected by the EPBC Act

Commonwealth Land

[\[Resource Information \]](#)

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.

Name

Commonwealth Land -

Commonwealth Heritage Places

[\[Resource Information \]](#)

Name	State	Status
Historic		
Cape Wickham Lighthouse	TAS	Listed place
Gabo Island Lighthouse	VIC	Listed place
Goose Island Lighthouse	TAS	Listed place
Swan Island Lighthouse	TAS	Listed place

Listed Marine Species

[\[Resource Information \]](#)

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Birds		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardea alba Great Egret, White Egret [59541]		Breeding known to occur within area
Ardea ibis Cattle Egret [59542]		Species or species habitat may occur within area
Arenaria interpres Ruddy Turnstone [872]		Roosting known to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Roosting known to occur within area
Calidris alba Sanderling [875]		Roosting known to occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat known to occur within area
Calidris ruficollis Red-necked Stint [860]		Roosting known to occur within area
Calidris tenuirostris Great Knot [862]	Critically Endangered	Roosting known to occur within area
Catharacta skua Great Skua [59472]		Species or species habitat may occur within area
Charadrius bicinctus Double-banded Plover [895]		Roosting known to occur within area

Name	Threatened	Type of Presence
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Roosting known to occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area
Charadrius ruficapillus Red-capped Plover [881]		Roosting known to occur within area
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 gibsoni Gibson's Albatross [64466]	Vulnerable*	Foraging, feeding or related behaviour likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Eudyptula minor Little Penguin [1085]		Breeding known to occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Roosting known to occur within area
Gallinago megala Swinhoe's Snipe [864]		Roosting likely to occur within area
Gallinago stenura Pin-tailed Snipe [841]		Roosting likely to occur within area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Breeding known to occur within area
Halobaena caerulea Blue Petrel [1059]	Vulnerable	Species or species habitat may occur within area
Heteroscelus brevipes Grey-tailed Tattler [59311]		Roosting known to occur within area
Himantopus himantopus Pied Stilt, Black-winged Stilt [870]		Roosting known to occur within area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area
Larus dominicanus Kelp Gull [809]		Breeding known to occur within area
Larus novaehollandiae Silver Gull [810]		Breeding known to occur within area
Larus pacificus Pacific Gull [811]		Breeding known to occur within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat known to occur within area

Name	Threatened	Type of Presence
Limnodromus semipalmatus Asian Dowitcher [843]		Roosting known to occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Limosa limosa Black-tailed Godwit [845]		Roosting known to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area
Monarcha trivirgatus Spectacled Monarch [610]		Species or species habitat known to occur within area
Morus serrator Australasian Gannet [1020]		Breeding known to occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat known to occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area
Neophema chrysogaster Orange-bellied Parrot [747]	Critically Endangered	Migration route known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
Numenius minutus Little Curlew, Little Whimbrel [848]		Roosting known to occur within area
Numenius phaeopus Whimbrel [849]		Roosting known to occur within area
Pachyptila turtur Fairy Prion [1066]		Species or species habitat known to occur within area
Pandion haliaetus Osprey [952]		Species or species habitat known to occur within area
Pelagodroma marina White-faced Storm-Petrel [1016]		Breeding known to occur within area
Pelecanoides urinatrix Common Diving-Petrel [1018]		Breeding known to occur within area
Phalacrocorax fuscescens Black-faced Cormorant [59660]		Breeding known to occur within area

Name	Threatened	Type of Presence
Philomachus pugnax Ruff (Reeve) [850]		Roosting known to occur within area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat likely to occur within area
Pluvialis fulva Pacific Golden Plover [25545]		Roosting known to occur within area
Pluvialis squatarola Grey Plover [865]		Roosting known to occur within area
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Species or species habitat may occur within area
Puffinus carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [1043]		Foraging, feeding or related behaviour likely to occur within area
Puffinus griseus Sooty Shearwater [1024]		Species or species habitat likely to occur within area
Puffinus tenuirostris Short-tailed Shearwater [1029]		Breeding known to occur within area
Recurvirostra novaehollandiae Red-necked Avocet [871]		Roosting known to occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area
Rostratula benghalensis (sensu lato) Painted Snipe [889]	Endangered*	Species or species habitat likely to occur within area
Sterna albifrons Little Tern [813]		Species or species habitat may occur within area
Sterna bergii Crested Tern [816]		Breeding known to occur within area
Sterna caspia Caspian Tern [59467]		Breeding known to occur within area
Sterna fuscata Sooty Tern [794]		Breeding known to occur within area
Sterna nereis Fairy Tern [796]		Breeding known to occur within area
Sterna striata White-fronted Tern [799]		Breeding known to occur within area
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche cauta Shy Albatross [89224]	Vulnerable*	Breeding known to occur within area
Thalassarche chrysostoma Grey-headed Albatross [66491]	Endangered	Species or species habitat may occur within area
Thalassarche eremita Chatham Albatross [64457]	Endangered	Foraging, feeding or related behaviour likely to occur within area

Name	Threatened	Type of Presence
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 sp. nov. Pacific Albatross [66511]	Vulnerable*	Foraging, feeding or related behaviour likely to occur within area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable*	Foraging, feeding or related behaviour likely to occur within area
Thinornis rubricollis Hooded Plover [59510]		Species or species habitat known to occur within area
Thinornis rubricollis rubricollis Hooded Plover (eastern) [66726]	Vulnerable	Species or species habitat known to occur within area
Tringa glareola Wood Sandpiper [829]		Roosting known to occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat known to occur within area
Tringa stagnatilis Marsh Sandpiper, Little Greenshank [833]		Roosting known to occur within area
Xenus cinereus Terek Sandpiper [59300]		Roosting known to occur within area
Fish		
Heraldia nocturna Upside-down Pipefish, Eastern Upside-down Pipefish, Eastern Upside-down Pipefish [66227]		Species or species habitat may occur within area
Hippocampus abdominalis Big-belly Seahorse, Eastern Potbelly Seahorse, New Zealand Potbelly Seahorse [66233]		Species or species habitat may occur within area
Hippocampus breviceps Short-head Seahorse, Short-snouted Seahorse [66235]		Species or species habitat may occur within area
Hippocampus minotaur Bullneck Seahorse [66705]		Species or species habitat may occur within area
Histiogamphelus briggsii Crested Pipefish, Briggs' Crested Pipefish, Briggs' Pipefish [66242]		Species or species habitat may occur within area
Histiogamphelus cristatus Rhino Pipefish, Macleay's Crested Pipefish, Ring-back Pipefish [66243]		Species or species habitat may occur within area
Hypselognathus rostratus Knifesnout Pipefish, Knife-snouted Pipefish [66245]		Species or species habitat may occur within area
Kaupus costatus Deepbody Pipefish, Deep-bodied Pipefish [66246]		Species or species habitat may occur within

Name	Threatened	Type of Presence area
Kimblaeus bassensis Trawl Pipefish, Bass Strait Pipefish [66247]		Species or species habitat may occur within area
Leptoichthys fistularius Brushtail Pipefish [66248]		Species or species habitat may occur within area
Lissocampus caudalis Australian Smooth Pipefish, Smooth Pipefish [66249]		Species or species habitat may occur within area
Lissocampus runa Javelin Pipefish [66251]		Species or species habitat may occur within area
Maroubra perserrata Sawtooth Pipefish [66252]		Species or species habitat may occur within area
Mitotichthys mollisoni Mollison's Pipefish [66260]		Species or species habitat may occur within area
Mitotichthys semistriatus Halfbanded Pipefish [66261]		Species or species habitat may occur within area
Mitotichthys tuckeri Tucker's Pipefish [66262]		Species or species habitat may occur within area
Notiocampus ruber Red Pipefish [66265]		Species or species habitat may occur within area
Phycodurus eques Leafy Seadragon [66267]		Species or species habitat may occur within area
Phyllopteryx taeniolatus Common Seadragon, Weedy Seadragon [66268]		Species or species habitat may occur within area
Pugnaso curtirostris Pugnose Pipefish, Pug-nosed Pipefish [66269]		Species or species habitat may occur within area
Solegnathus robustus Robust Pipehorse, Robust Spiny Pipehorse [66274]		Species or species habitat may occur within area
Solegnathus spinosissimus Spiny Pipehorse, Australian Spiny Pipehorse [66275]		Species or species habitat may occur within area
Stigmatopora argus Spotted Pipefish, Gulf Pipefish, Peacock Pipefish [66276]		Species or species habitat may occur within area
Stigmatopora nigra Widebody Pipefish, Wide-bodied Pipefish, Black Pipefish [66277]		Species or species habitat may occur within area
Stipecampus cristatus Ringback Pipefish, Ring-backed Pipefish [66278]		Species or species habitat may occur within area
Syngnathoides biaculeatus Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]		Species or species habitat may occur within area

Name	Threatened	Type of Presence
Urocampus carinirostris Hairy Pipefish [66282]		Species or species habitat may occur within area
Vanacampus margaritifer Mother-of-pearl Pipefish [66283]		Species or species habitat may occur within area
Vanacampus phillipi Port Phillip Pipefish [66284]		Species or species habitat may occur within area
Vanacampus poecilolaemus Longsnout Pipefish, Australian Long-snout Pipefish, Long-snouted Pipefish [66285]		Species or species habitat may occur within area
Mammals		
Arctocephalus forsteri Long-nosed Fur-seal, New Zealand Fur-seal [20]		Species or species habitat may occur within area
Arctocephalus pusillus Australian Fur-seal, Australo-African Fur-seal [21]		Breeding known to occur within area
Reptiles		
Caretta caretta Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Whales and other Cetaceans		
[Resource Information]		
Name	Status	Type of Presence
Mammals		
Balaenoptera acutorostrata Minke Whale [33]		Species or species habitat may occur within area
Balaenoptera bonaerensis Antarctic Minke Whale, Dark-shoulder Minke Whale [67812]		Species or species habitat likely to occur within area
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Foraging, feeding or related behaviour known to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Berardius arnuxii Arnoux's Beaked Whale [70]		Species or species habitat may occur within area

Name	Status	Type of Presence
Caperea marginata Pygmy Right Whale [39]		Foraging, feeding or related behaviour likely to occur within area
Delphinus delphis Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
Eubalaena australis Southern Right Whale [40]	Endangered	Species or species habitat known to occur within area
Globicephala macrorhynchus Short-finned Pilot Whale [62]		Species or species habitat may occur within area
Globicephala melas Long-finned Pilot Whale [59282]		Species or species habitat may occur within area
Grampus griseus Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area
Hyperoodon planifrons Southern Bottlenose Whale [71]		Species or species habitat may occur within area
Kogia breviceps Pygmy Sperm Whale [57]		Species or species habitat may occur within area
Kogia simus Dwarf Sperm Whale [58]		Species or species habitat may occur within area
Lagenorhynchus obscurus Dusky Dolphin [43]		Species or species habitat likely to occur within area
Lissodelphis peronii Southern Right Whale Dolphin [44]		Species or species habitat may occur within area
Megaptera novaeangliae Humpback Whale [38]	Vulnerable	Species or species habitat known to occur within area
Mesoplodon bowdoini Andrew's Beaked Whale [73]		Species or species habitat may occur within area
Mesoplodon densirostris Blainville's Beaked Whale, Dense-beaked Whale [74]		Species or species habitat may occur within area
Mesoplodon grayi Gray's Beaked Whale, Scamperdown Whale [75]		Species or species habitat may occur within area
Mesoplodon hectori Hector's Beaked Whale [76]		Species or species habitat may occur within area
Mesoplodon layardii Strap-toothed Beaked Whale, Strap-toothed Whale, Layard's Beaked Whale [25556]		Species or species habitat may occur within area
Mesoplodon mirus True's Beaked Whale [54]		Species or species habitat may occur within area

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

Critical Habitats [\[Resource Information \]](#)

Name	Type of Presence
Thalassarche cauta (Shy Albatross) - Albatross Island, The Mewstone, Pedra Branca	Listed Critical Habitat

Australian Marine Parks [\[Resource Information \]](#)

Name	Label
Apollo	Multiple Use Zone (IUCN VI)
Beagle	Multiple Use Zone (IUCN VI)
Boags	Multiple Use Zone (IUCN VI)
East Gippsland	Multiple Use Zone (IUCN VI)
Flinders	Marine National Park Zone (IUCN II)
Flinders	Multiple Use Zone (IUCN VI)
Franklin	Multiple Use Zone (IUCN VI)
Zeehan	Special Purpose Zone (IUCN VI)

Extra Information

State and Territory Reserves [\[Resource Information \]](#)

Name	State
Albatross Island	TAS
Anderson Islands	TAS
Anser Island	VIC
Arthur-Pieman	TAS
Babel Island	TAS
Badger Corner	TAS
Badger Island	TAS
Bass Pyramid	TAS
Battery Island	TAS
Big Green Island	TAS
Big Silver	TAS
Bird Island	TAS
Black Pyramid Rock	TAS
Blyth Point	TAS
Boat Harbour Road	TAS
Boxen Island	TAS
Briggs Islet	TAS
Brougham Sugarloaf	TAS
Bun Beetons Point	TAS
Cape Liptrap Coastal Park	VIC

Name	State
Cape Portland	TAS
Cape Portland	TAS
Cape Wickham	TAS
Cape Wickham	TAS
Cat Island	TAS
Chalky Island	TAS
Cone Islet	TAS
Councillor Island	TAS
Craggy Island	TAS
Croajingolong	VIC
Curtis Island	TAS
Darling Range	TAS
Devils Tower	TAS
Disappointment Bay	TAS
Doughboy Island	TAS
East Kangaroo Island	TAS
East Moncoeur Island	TAS
Egg Beach	TAS
Emita	TAS
Entrance Point	VIC
Foochow	TAS
Forsyth Island	TAS
Foster Islands	TAS
Fotheringate Bay	TAS
Four Mile Beach	TAS
Goose Island	TAS
Great Dog Island	TAS
Great Otway	VIC
Gull Island	TAS
Harbour Islets	TAS
Henderson Islets	TAS
Hogan Group	TAS
Holts Point	TAS
Hunter Island	TAS
Isabella Island	TAS
Jacksons Cove	TAS
Kangaroo Island	TAS
Killiecrankie	TAS
Kings Run	TAS
Kings Run #2	TAS
Lackrana	TAS
Lands End	TAS
Lavinia	TAS
Lighthouse Point	TAS
Lime Pit Road	TAS
Little Chalky Island	TAS
Little Dog Island	TAS
Little Green Island	TAS
Little Island	TAS
Little Silver	TAS
Little Swan Island	TAS
Little Trefoil	TAS
Logan Lagoon	TAS
Logan Lagoon	TAS
Logans Lagoon	TAS
Long Island	TAS
Low Islets	TAS
Low Point	TAS
Lughrata	TAS
Marshall Beach	TAS
Memana	TAS
Mile Island	TAS
Mount Tanner	TAS
Mt Chappell Island	TAS
Mulligans Hill	TAS
Mulligans Hill	TAS

Name	State
Musselroe Bay	TAS
Nares Rocks	TAS
Neds Reef	TAS
Night Island	TAS
Ninth Island	TAS
North East Islet	TAS
North East River	TAS
Oyster Rocks	TAS
Palana Beach	TAS
Pasco Group	TAS
Passage Island	TAS
Patriarchs	TAS
Patriarchs	TAS
Penguin Islet	TAS
Petrel Islands	TAS
Prime Seal Island	TAS
Ram Island	TAS
Rame Head	VIC
Reedy Lagoon	TAS
Reid Rocks	TAS
Rodondo Island	TAS
Roydon Island	TAS
Seacrow Islet	TAS
Seal Islands W.R.	VIC
Sellars Lagoon	TAS
Sentinel Island	TAS
Settlement Point	TAS
Shag Lagoon	TAS
Sister Islands	TAS
Slaves Bay	TAS
South Pats River	TAS
Southern Wilsons Promontory	VIC
Spike Island	TAS
Stack Island	TAS
Stokes Point	TAS
Storehouse Island	TAS
Strzelecki	TAS
Sugarloaf Rock	TAS
Summer Camp	TAS
Sydney Cove	TAS
The Dock	TAS
The Doughboys	TAS
The Dutchman	TAS
Three Hummock Island	TAS
Trousers Point Beach	TAS
Vansittart Island	TAS
West Moncoeur Island	TAS
West Point	TAS
White Beach	TAS
Wilsons Promontory	VIC
Wilsons Promontory	VIC
Wilsons Promontory Islands	VIC
Wingaroo	TAS
Wright Rock	TAS
Wybalenna Island	TAS
Youngs Creek	TAS
lungatalanana	TAS

Regional Forest Agreements [\[Resource Information \]](#)

Note that all areas with completed RFAs have been included.

Name	State
East Gippsland RFA	Victoria
Gippsland RFA	Victoria
Tasmania RFA	Tasmania
West Victoria RFA	Victoria

Invasive Species

[[Resource Information](#)]

Weeds reported here are the 20 species of national significance (WoNS), along with other introduced plants that are considered by the States and Territories to pose a particularly significant threat to biodiversity. The following feral animals are reported: Goat, Red Fox, Cat, Rabbit, Pig, Water Buffalo and Cane Toad. Maps from Landscape Health Project, National Land and Water Resources Audit, 2001.

Name	Status	Type of Presence
Birds		
Acridotheres tristis Common Myna, Indian Myna [387]		Species or species habitat likely to occur within area
Alauda arvensis Skylark [656]		Species or species habitat likely to occur within area
Anas platyrhynchos Mallard [974]		Species or species habitat likely to occur within area
Callipepla californica California Quail [59451]		Species or species habitat likely to occur within area
Carduelis carduelis European Goldfinch [403]		Species or species habitat likely to occur within area
Carduelis chloris European Greenfinch [404]		Species or species habitat likely to occur within area
Columba livia Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
Gallus gallus Red Junglefowl, Feral Chicken, Domestic Fowl [917]		Species or species habitat likely to occur within area
Meleagris gallopavo Wild Turkey [64380]		Species or species habitat likely to occur within area
Passer domesticus House Sparrow [405]		Species or species habitat likely to occur within area
Passer montanus Eurasian Tree Sparrow [406]		Species or species habitat likely to occur within area
Pavo cristatus Indian Peafowl, Peacock [919]		Species or species habitat likely to occur within area
Phasianus colchicus Common Pheasant [920]		Species or species habitat likely to occur within area
Streptopelia chinensis Spotted Turtle-Dove [780]		Species or species habitat likely to occur within area
Sturnus vulgaris Common Starling [389]		Species or species habitat likely to occur within area
Turdus merula Common Blackbird, Eurasian Blackbird [596]		Species or species habitat likely to occur within area

Name	Status	Type of Presence
Turdus philomelos Song Thrush [597]		Species or species habitat likely to occur within area
Mammals		
Bos taurus Domestic Cattle [16]		Species or species habitat likely to occur within area
Canis lupus familiaris Domestic Dog [82654]		Species or species habitat likely to occur within area
Capra hircus Goat [2]		Species or species habitat likely to occur within area
Equus caballus Horse [5]		Species or species habitat likely to occur within area
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Feral deer Feral deer species in Australia [85733]		Species or species habitat likely to occur within area
Lepus capensis Brown Hare [127]		Species or species habitat likely to occur within area
Mus musculus House Mouse [120]		Species or species habitat likely to occur within area
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
Rattus norvegicus Brown Rat, Norway Rat [83]		Species or species habitat likely to occur within area
Rattus rattus Black Rat, Ship Rat [84]		Species or species habitat likely to occur within area
Sus scrofa Pig [6]		Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area
Plants		
Anredera cordifolia Madeira Vine, Jalap, Lamb's-tail, Mignonette Vine, Anredera, Gulf Madeiravine, Heartleaf Madeiravine, Potato Vine [2643]		Species or species habitat likely to occur within area
Asparagus asparagoides Bridal Creeper, Bridal Veil Creeper, Smilax, Florist's Smilax, Smilax Asparagus [22473]		Species or species habitat likely to occur within area
Asparagus scandens Asparagus Fern, Climbing Asparagus Fern [23255]		Species or species habitat likely to occur within area
Carrichtera annua Ward's Weed [9511]		Species or species habitat may occur within

Name	Status	Type of Presence area
Chrysanthemoides monilifera Bitou Bush, Boneseed [18983]		Species or species habitat may occur within area
Chrysanthemoides monilifera subsp. monilifera Boneseed [16905]		Species or species habitat likely to occur within area
Cytisus scoparius Broom, English Broom, Scotch Broom, Common Broom, Scottish Broom, Spanish Broom [5934]		Species or species habitat likely to occur within area
Genista monspessulana Montpellier Broom, Cape Broom, Canary Broom, Common Broom, French Broom, Soft Broom [20126]		Species or species habitat likely to occur within area
Genista sp. X Genista monspessulana Broom [67538]		Species or species habitat may occur within area
Lycium ferocissimum African Boxthorn, Boxthorn [19235]		Species or species habitat likely to occur within area
Nassella neesiana Chilean Needle grass [67699]		Species or species habitat likely to occur within area
Nassella trichotoma Serrated Tussock, Yass River Tussock, Yass Tussock, Nassella Tussock (NZ) [18884]		Species or species habitat likely to occur within area
Olea europaea Olive, Common Olive [9160]		Species or species habitat may occur within area
Pinus radiata Radiata Pine Monterey Pine, Insignis Pine, Wilding Pine [20780]		Species or species habitat may occur within area
Rubus fruticosus aggregate Blackberry, European Blackberry [68406]		Species or species habitat likely to occur within area
Salix spp. except S.babylonica, S.x calodendron & S.x reichardtii Willows except Weeping Willow, Pussy Willow and Sterile Pussy Willow [68497]		Species or species habitat likely to occur within area
Ulex europaeus Gorse, Furze [7693]		Species or species habitat likely to occur within area

Nationally Important Wetlands [[Resource Information](#)]

Name	State
Corner Inlet	VIC
Fergusons Lagoon	TAS
Flyover Lagoon 1	TAS
Flyover Lagoon 2	TAS
Hogans Lagoon	TAS
Little Thirsty Lagoon	TAS
Logan Lagoon	TAS
Sellars Lagoon	TAS
Stans Lagoon	TAS
Syndicate Lagoon	TAS
Thompsons Lagoon	TAS
Unnamed Wetland	TAS

Name	State
Unnamed Wetland	TAS

Key Ecological Features (Marine) [\[Resource Information \]](#)

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

Name	Region
Big Horseshoe Canyon	South-east
Upwelling East of Eden	South-east
West Tasmania Canyons	South-east

Caveat

The information presented in this report has been provided by a range of data sources as acknowledged at the end of the report.

This report is designed to assist in identifying the locations of places which may be relevant in determining obligations under the Environment Protection and Biodiversity Conservation Act 1999. It holds mapped locations of World and National Heritage properties, Wetlands of International and National Importance, Commonwealth and State/Territory reserves, listed threatened, migratory and marine species and listed threatened ecological communities. Mapping of Commonwealth land is not complete at this stage. Maps have been collated from a range of sources at various resolutions.

Not all species listed under the EPBC Act have been mapped (see below) and therefore a report is a general guide only. Where available data supports mapping, the type of presence that can be determined from the data is indicated in general terms. People using this information in making a referral may need to consider the qualifications below and may need to seek and consider other information sources.

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.

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

Where very little information is available for 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 reliable distribution mapping methods are used to update these distributions as time permits.

Only selected species covered by the following provisions of the EPBC Act have been mapped:

- migratory and
- marine

The following species and ecological communities have not been mapped and do not appear in reports produced from this database:

- threatened species listed as extinct or considered as vagrants
- some species and ecological communities that have only recently been listed
- some terrestrial species that overfly the Commonwealth marine area
- migratory species that are very widespread, vagrant, or only occur in small numbers

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

- non-threatened seabirds which have only been mapped for recorded breeding sites
- seals which have only been mapped for breeding sites near the Australian continent

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

Coordinates

-38.863965 143.536885,-38.863965 143.536885,-38.67552 144.168599,-38.688384 144.536641,-38.636913 144.998067,-38.585405 145.146382,-38.585405 145.470479,-38.684096 145.54189,-38.692672 145.635274,-38.666942 145.739644,-38.838297 145.887959,-38.93664 145.887959,-38.902449 146.014302,-38.838297 146.019795,-38.838297 146.074727,-38.885348 146.179097,-38.975085 146.239522,-39.171255 146.316426,-39.154218 146.470235,-38.906724 146.51418,-38.769805 146.437276,-38.769805 146.602071,-38.649784 146.909688,-38.452171 147.129414,-38.383308 147.327168,-38.081264 147.645772,-37.986077 147.854512,-37.899436 148.074239,-37.838727 148.535664,-37.83005 149.161885,-37.760598 149.623311,-37.56927 149.843038,-37.464701 150.260518,-37.307574 150.579121,-37.34252 150.897725,-37.53443 150.985616,-37.290095 152.622579,-37.403635 152.743428,-37.83005 151.469014,-38.150414 152.336934,-38.30576 152.501729,-38.417748 152.358907,-38.443567 151.941426,-38.555341 151.523946,-38.932367 151.095479,-39.22234 150.743916,-39.595828 150.337422,-40.101901 149.645284,-40.395385 149.172871,-40.579209 149.44753,-40.754208 149.502461,-40.704255 149.194844,-40.620917 148.931172,-40.77917 148.612569,-40.829067 148.348897,-40.745885 148.085225,-40.745885 147.876485,-40.72091 147.766621,-40.878926 147.305196,-40.986825 146.536153,-40.837379 145.712178,-40.629256 144.998067,-40.704255 144.833272,-40.629256 144.679463,-40.970236 144.613545,-41.433133 144.734395,-41.761767 144.943135,-41.974481 145.074971,-42.381557 145.184834,-42.664949 145.239766,-42.632627 144.844258,-42.519365 144.44875,-42.349087 144.009297,-42.235311 143.602803,-42.219041 143.196309,-42.145772 143.0425,-41.99898 143.0425,-41.909106 143.097432,-41.507221 143.481954,-41.23515 143.49294,-41.077986 143.295186,-41.061421 143.097432,-41.036565 142.734883,-40.912144 142.592061,-40.77917 142.460225,-40.620917 142.690938,-40.595896 142.822774,-40.370279 142.987569,-40.244609 143.119405,-40.068279 143.152364,-40.000985 143.174336,-39.984151 143.427022,-40.051462 143.646748,-40.143905 143.82253,-40.169095 143.943379,-40.093497 144.130147,-39.9252 144.163106,-39.764933 144.141133,-39.638143 144.097188,-39.578895 143.954366,-39.604293 143.82253,-39.655062 143.668721,-39.731146 143.58083,-39.705794 143.481954,-39.655062 143.317159,-39.468727 143.218282,-39.256376 143.251241,-39.094558 143.306172,-38.92382 143.416036,-38.863965 143.536885

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](#)
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- [-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](#)

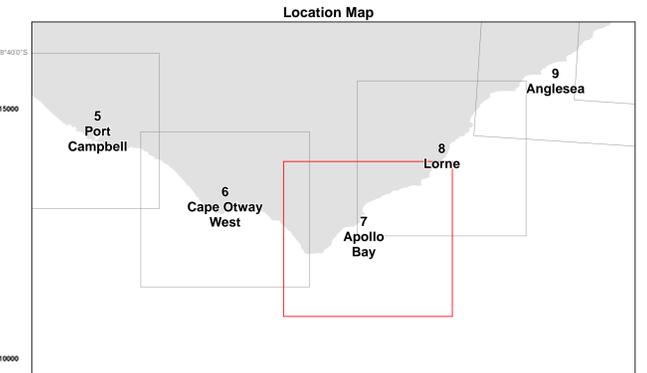
The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

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

Appendix 6

Victorian Oil Spill Response Atlas (OSRA)
maps

07 Apollo Bay Oil Spill Response Atlas Map



Legend

- Fire Station
- Lifesaving Club
- Police Station
- Estuarine Fish Habitats
- Australian Fur Seal Colonies
- Little Penguin colonies
- Hooded Plover
- Shorebird Roosting Sites
- Common Bent-wing Bat
- Shorebird Habitats
- ESTA Emergency Markers
- Boat Launch
- Boat Ramp
- Boat Slipway
- Boat Mooring
- BOM Observation Station
- Victoria - 3nm Boundary
- Coastal Protection Structure
- Shipwrecks
- x International, National Significance
- x Regional, State, Unknown Significance
- Bathymetry
- Watercourse
- Roads
- Other Roads
- Tracks
- Walking Path
- Marine National Park/Sanctuary
- Inter-tidal Vegetation
- Saltmarsh
- Corangamite Marine Substrate
- Reef
- Reef - patchy
- Rock platform
- Sand beach
- Sediment
- Shoreline Habitat Type
- Artificial Shoreline
- Intertidal Shore Platform
- Mixed Sand Beach/Shore Platform
- Sand Beach
- Coastal Types
- Intertidal Shore Platform
- Mixed Sand Beach/Shore Platform
- Sand Beach
- Sand Dunes
- Steep Shoreline (rocky cliffs/embankments)
- Subtidal Rocky Reef
- Subtidal Sandy Substrate
- LiDAR Substrates
- Reef
- Reef/Sediment
- Sediment
- Water Body
- Swamp
- Parks and Reserves

Southern Right Whales migrate and breed along the Victorian coast from May to October. Whales with calves occasionally visit the nearshore areas of this region.

Little Penguins regularly feed in the marine waters of this region, particularly within 15 km of the coast.

Abalone inhabit subtidal rocky reefs throughout this region, primarily at depths of 1-10 m and to a lesser extent up to depths of about 25 m. The main spawning period for Abalone is in December with episodic minor spawning occurring throughout the year.

Southern Rock Lobsters are also found throughout this region occupying similar reef habitat to Abalone, preferring nearshore reefs up to depths of 20-50 m. The breeding cycle for Rock Lobsters begins in Autumn with females releasing their eggs in October-November which hatch into a planktonic form and larvae are carried offshore by ocean currents. After about 12 months, the juvenile lobsters return to the inshore areas and settle on reefs between March and September, peaking in July. Commercial fishing of Southern Rock Lobsters by licensed fishers using lobster pots occurs throughout the region.

This map is not intended to be used for navigation.
For navigation maps, refer to Australian Navigation Chart:
Name: Cape Otway to Cape Schanck (Image: A0000788.tif)

Note: Symbols on the map for biological resources (bird and mammal species) are indicative of the resource being in the general vicinity only

Scale 1:50,000



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Acknowledgement
This map was produced with support from the Department of Environment and Primary Industries, the National Plan for Maritime Environmental Emergencies.

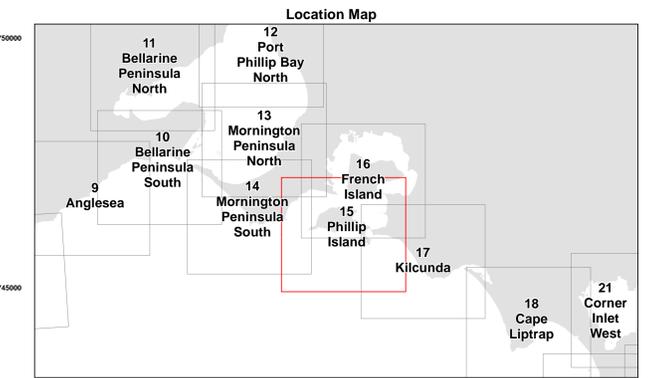
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Map Grid of Australia
GDA 1994 MGA Zone 54
Projection: Transverse Mercator (UTM)
Datum: GDA 1994 (AHQ)

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Emergency Risk and Resilience Division
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Ph: 03 8392 6505



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15 Phillip Island Oil Spill Response Map

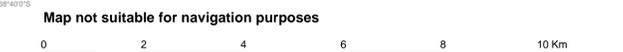


Legend

- Helipads
- Airports and Airfields
- Potential ICC Locations
- Fire Station
- Lifesaving Club
- Police Station
- SES Unit
- Estuarine Fish Habitats
- Australian Fur Seal Colonies
- Little Penguin Colonies
- Dolphin Habitat
- Hooded Plover Habitat
- Shorebird Roosting Sites
- Tern Nesting Sites
- Aquaculture License Sites
- Coastal Bird Habitat
- River Entrance - Continuously Open
- River Entrance - Intermittently Open
- Beach Emergency Signs
- ESTA Emergency Markers
- Boat Launch
- Boat Ramp
- Boat Slipway
- Boat Mooring
- Breakwater
- Pier, Jetty, Wharf
- BOM Observation Station
- Navigation Aids
- Coastal Ramsar Sites in Victoria
- Victoria - 3nm Boundary
- Oil/Gas Pipeline
- Geological Sites
 - International, National Significance
 - Regional, State, Unknown Significance
 - Western Port Bathymetry 25k
- Highway
- Other Roads
- Tracks
- Walking Path
- Watercourse
- Aquaculture Reserve
- Marine Mammals Protected Area
- Marine Special Management Area
- Marine National Park/Sanctuary
- Aquatic Vegetation
 - Amphibolis
 - Macroalgae
 - Other Seagrass
- Inter-tidal Vegetation
 - Saltmarsh
 - Mangrove
- Western Port Rhodolith Beds
- Shoreline Habitat Type
 - Artificial Shoreline
 - Cobble/Shingle Beach
 - Intertidal Mud-Sand Flat
 - Intertidal Shore Platform
 - Mangroves
 - Mixed Cobble/Shingle Beach/Shore Platform
 - Mixed Sand Beach/Shore Platform
 - Sand Beach
- Coastal Types
 - Cobble/Shingle Beach
 - Intertidal Mud-Sand Flat
 - Intertidal Sand Flat
 - Intertidal Shore Platform
 - Sand Beach
 - Sand Dunes
 - Steep Shoreline (rocky cliffs/embankments)
 - Subtidal Rocky Reef
 - Subtidal Sandy Substrate
 - Water Body
 - Swamp
 - Sewage Pond
 - Tree Cover
 - Parks and Reserves
 - LiDAR Substrates
 - Reef
 - Reef/Sediment
 - Sediment

Hydrographic Charts for this area include:
Western Port (Image: A000150.tif)

Note: Symbols on the map for biological resources (bird and mammal species) are indicative of the resource being in the general vicinity only



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Scale
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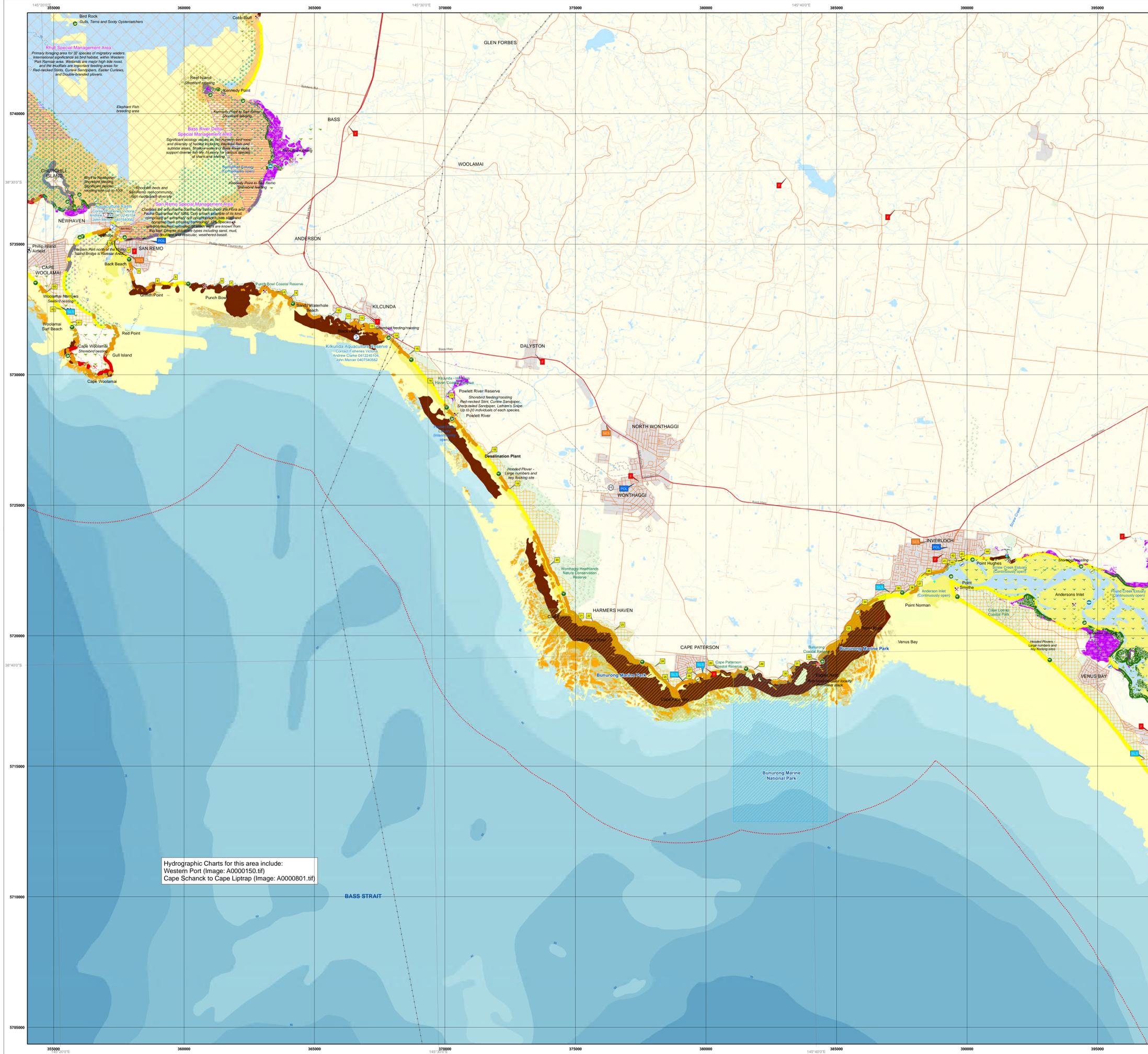
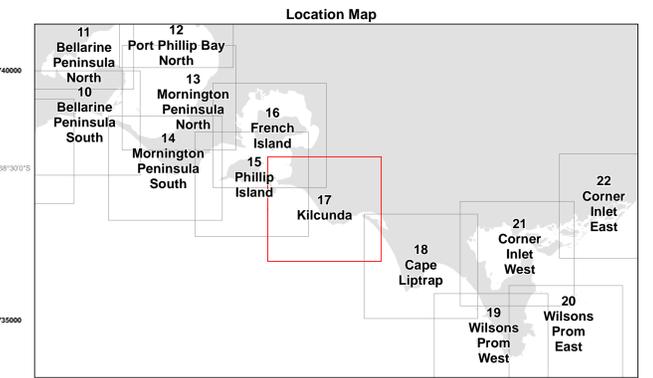
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17 Kilcunda Oil Spill Response Map



Hydrographic Charts for this area include:
 Western Port (Image: A0000150.tif)
 Cape Schanck to Cape Liptrap (Image: A0000801.tif)

Legend

<ul style="list-style-type: none"> ⊕ Helipads ✈ Airports and Airfields 🚒 Fire Station 🚑 Lifesaving Club 🚓 Police Station 🚒 SES Unit 🐟 Estuarine Fish Habitats 🐦 Hooded Plover Habitat 🐦 Shorebird Roosting Sites 🏠 Aquaculture License Sites 🌿 Coastal Bird Habitat 🌊 River Entrance - Continuously Open 🌊 River Entrance - Intermittently Open 🚧 Beach Emergency Signs 🚢 ESTA Emergency Markers 🚤 Boat Launch 🚤 Boat Ramp 🚤 Boat Mooring 🛡 Breakwater 🚢 Pier, Jetty, Wharf 🚓 BOM Observation Station 🌿 Coastal Ramsar Sites in Victoria 📏 Victoria - 3nm Boundary 🛡 Oil/Gas Pipeline 🌐 Geological Sites <ul style="list-style-type: none"> ✖ International, National Significance ✖ Regional, State, Unknown Significance ⋯ Western Port Bathymetry 25k 	<ul style="list-style-type: none"> 🛣 Highway 🛤 Other Roads 🛤 Tracks 🚶 Walking Path 🚣 Watercourse 🌊 Marine Special Management Area 🌊 Marine National Park/Sanctuary 🌊 Other Marine Park 🌿 Aquatic Vegetation <ul style="list-style-type: none"> 🌿 Amphibolis 🌿 Macroalgae 🌿 Other Seagrass 🌿 Inter-tidal Vegetation <ul style="list-style-type: none"> 🌿 Saltmarsh 🌿 Mangrove 🌿 Western Port Rhodolith Beds 🌊 Shoreline Habitat Type <ul style="list-style-type: none"> 🌊 Cobble/Shingle Beach 🌊 Intertidal Mud-Sand Flat 🌊 Intertidal Shore Platform 🌊 Mangroves 🌊 Mixed Cobble/Shingle Beach/Shore Platform 🌊 Mixed Sand Beach/Shore Platform 🌊 Sand Beach 🌊 Coastal Types <ul style="list-style-type: none"> 🌊 Cobble/Shingle Beach 🌊 Intertidal Mud-Sand Flat 🌊 Intertidal Sand Flat 🌊 Intertidal Shore Platform 🌊 Sand Beach 🌊 Sand Dunes 🌊 Steep Shoreline (rocky cliffs/embankments) 🌊 Subtidal Rocky Reef 🌊 Subtidal Sandy Substrate 🌊 Water Body <ul style="list-style-type: none"> 🌊 Swamp 🌊 Tree Cover 🌊 Parks and Reserves 🌊 LIDAR Substrates <ul style="list-style-type: none"> 🌊 Reef 🌊 Reef/Sediment 🌊 Sediment
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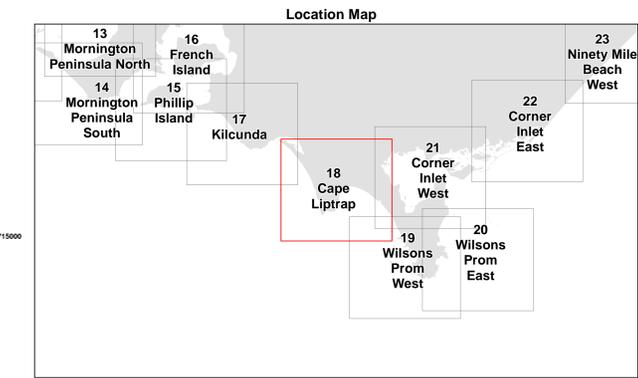
Note: Symbols on the map for biological resources (bird and mammal species) are indicative of the resource being in the general vicinity only



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18 Cape Liptrap Oil Spill Response Map



- ### Legend
- ⊙ Helipads
 - 🔥 Fire Station
 - 🏠 Lifesaving Club
 - 👮 Police Station
 - 🚒 SES Unit
 - 🐟 Estuarine Fish Habitats
 - 🐧 Little Penguin Colonies
 - 🐦 Hooded Plover Habitat
 - 🐦 Shorebird Roosting Sites
 - 🦇 Common Bent-wing Bat Roost
 - 🌿 Coastal Bird Habitat
 - 🌊 River Entrance - Continuously Open
 - 🌊 River Entrance - Intermittently Open
 - 🚤 Boat Launch
 - 🚤 Boat Ramp
 - 🛡 Breakwater
 - 🛤 Pier, Jetty, Wharf
 - 📍 BOM Observation Station
 - 📍 Coastal Ramsar Sites in Victoria
 - 📍 Victoria - 3nm Boundary
- 🛣 Highway
 - 🛤 Other Roads
 - 🛤 Tracks
 - 🚶 Walking Path
 - 🌊 Watercourse
 - 🌊 Marine National Park/Sanctuary
 - 🌿 Aquatic Vegetation
 - 🌿 Macroalgae
 - 🌿 Other Seagrass
 - 🌿 Inter-tidal Vegetation
 - 🌿 Saltmarsh
 - 🌿 Mangrove
 - 🌊 Shoreline Habitat Type
 - 🌊 Intertidal Mud-Sand Flat
 - 🌊 Intertidal Shore Platform
 - 🌿 Mangroves
 - 🌊 Mixed Cobble/Shingle Beach/Shore Platform
 - 🌊 Mixed Sand Beach/Shore Platform
 - 🌊 Sand Beach
- 🏖 Coastal Types
 - 🏖 Cobble/Shingle Beach
 - 🏖 Intertidal Mud-Sand Flat
 - 🏖 Intertidal Sand Flat
 - 🏖 Intertidal Shore Platform
 - 🏖 Sand Beach
 - 🏖 Sand Dunes
 - 🏖 Steep Shoreline (rocky cliffs/embankments)
 - 🏖 Subtidal Rocky Reef
 - 🏖 Subtidal Sandy Substrate
 - 🌊 Water Body
 - 🌊 Swamp
 - 🏠 Sewage Pond
 - 🌿 Tree Cover
 - 🌿 Parks and Reserves
- 📍 Geological Sites
 - 📍 International, National Significance
 - 📍 Regional, State, Unknown Significance
- 🏖 LiDAR Substrates
 - 🏖 Reef
 - 🏖 Reef/Sediment
 - 🏖 Sediment

Hydrographic Charts for this area include:
 Cape Schanck to Cape Liptrap (Image: A0000801.tif)
 Cape Liptrap to Clifty Island (Image: A0000802.tif)

Note: Symbols on the map for biological resources (bird and mammal species) are indicative of the resource being in the general vicinity only

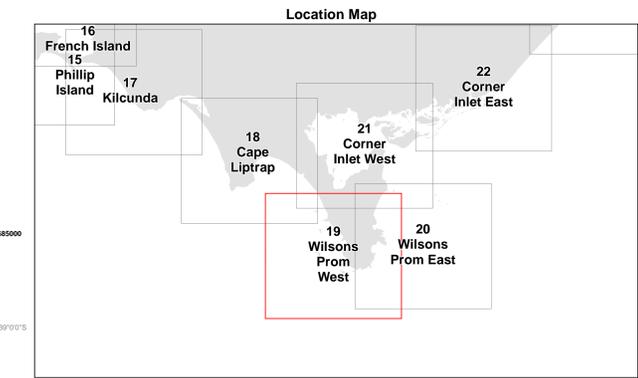


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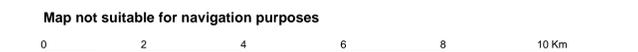
19 Wilsons Prom West Oil Spill Response Map



- ### Legend
- ① Helipads
 - Potential ICC Locations
 - Estuarine Fish Habitats
 - Australian Fur Seal Colonies
 - NZ Fur Seal Colonies
 - Little Penguin Colonies
 - Hooded Plover Habitat
 - Common Bent-wing Bat Roost
 - Short-tailed Shearwater
 - Coastal Bird Habitat
 - River Entrance - Continuously Open
 - River Entrance - Intermittently Open
 - Boat Launch
 - BOM Observation Station
 - Tasmania - 3nm Boundary
 - Victoria - 3nm Boundary
 - Geological Sites
 - International, National Significance
 - Regional, State, Unknown Significance
 - Other Roads
 - Tracks
 - Walking Path
 - Watercourse
 - ▨ Marine Mammals Protected Area
 - ▨ Commonwealth Marine Reserve
 - ▨ Marine National Park/Sanctuary
 - ▨ Shoreline Habitat Type
 - ▨ Intertidal Shore Platform
 - ▨ Mixed Sand Beach/Shore Platform
 - ▨ Sand Beach
 - ▨ Water Body
 - ▨ Swamp
 - ▨ Tree Cover
 - ▨ Parks and Reserves
 - ▨ LIDAR Substrates
 - ▨ Reef
 - ▨ Reef/Sediment
 - ▨ Sediment

Hydrographic Charts for this area include:
Cape Liptrap to Clifty Island (Image: A0000802.tif)

Note: Symbols on the map for biological resources (bird and mammal species) are indicative of the resource being in the general vicinity only



Scale 1:50,000

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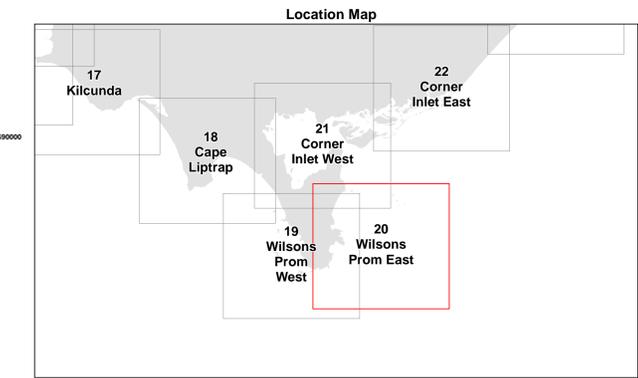
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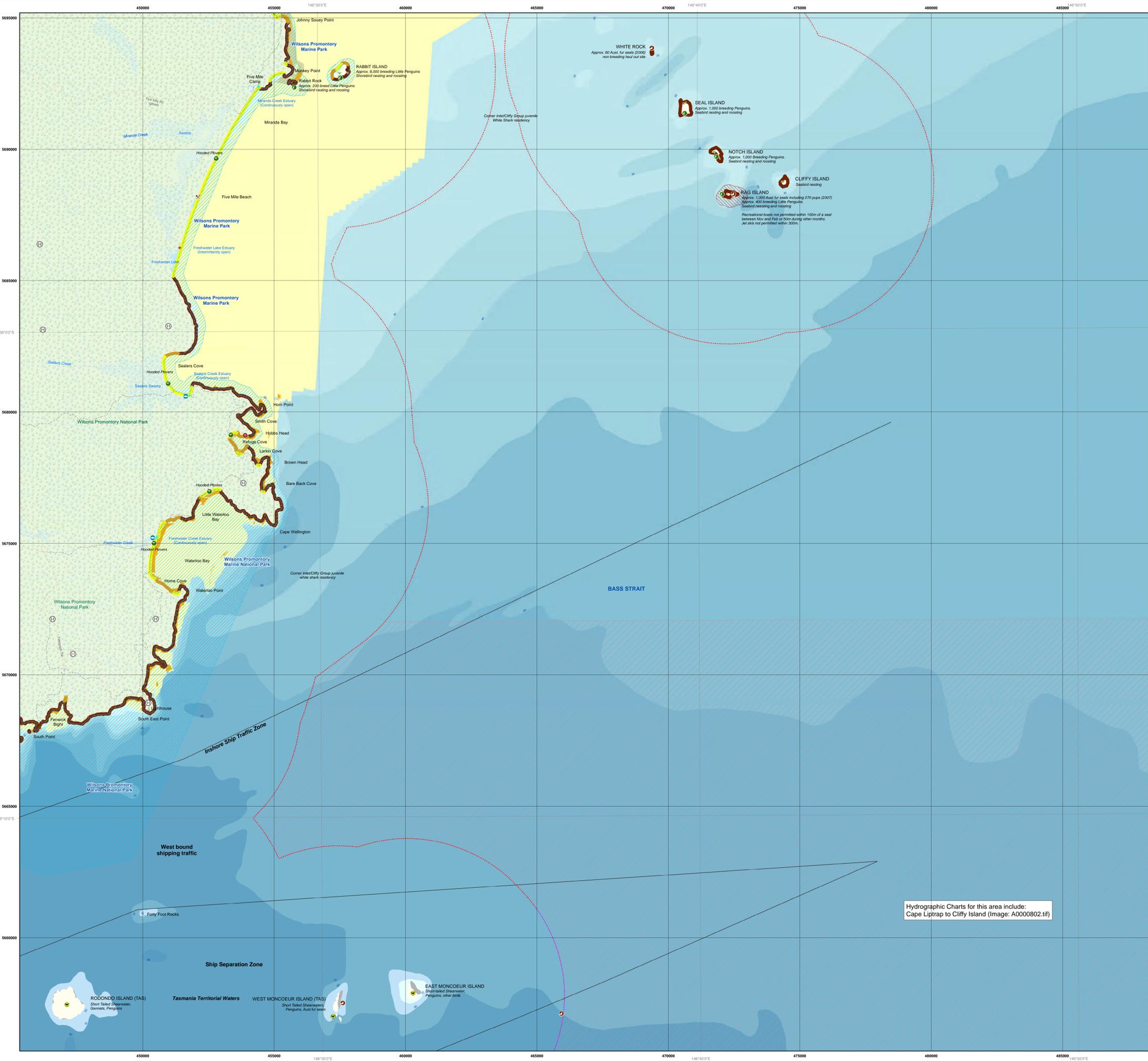
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20 Wilsons Prom East Oil Spill Response Map



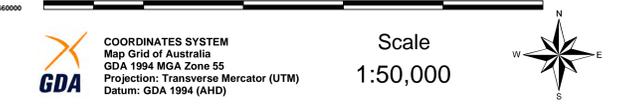
- ### Legend
- ① Helipads
 - Estuarine Fish Habitats
 - Australian Fur Seal Colonies
 - Little Penguin Colonies
 - Hooded Plover Habitat
 - Common Bent-wing Bat Roost
 - Short-tailed Shearwater
 - Coastal Bird Habitat
 - River Entrance - Continuously Open
 - River Entrance - Intermittently Open
 - BOM Observation Station
 - Tasmania - 3nm Boundary
 - Victoria - 3nm Boundary
 - Geological Sites
 - Regional, State, Unknown Significance
 - Tracks
 - Walking Path
 - Watercourse
 - Marine Mammals Protected Area
 - Commonwealth Marine Reserve
 - Marine National Park/Sanctuary
 - Inter-tidal Vegetation
 - Saltmarsh
 - Shoreline Habitat Type
 - Intertidal Shore Platform
 - Mixed Sand Beach/Shore Platform
 - Sand Beach
 - Water Body
 - Swamp
 - Tree Cover
 - Parks and Reserves
 - LiDAR Substrates
 - Reef
 - Reef/Sediment
 - Sediment



Hydrographic Charts for this area include:
Cape Liptrap to Clifty Island (Image: A0000802.tif)

Note: Symbols on the map for biological resources (bird and mammal species) are indicative of the resource being in the general vicinity only

Map not suitable for navigation purposes



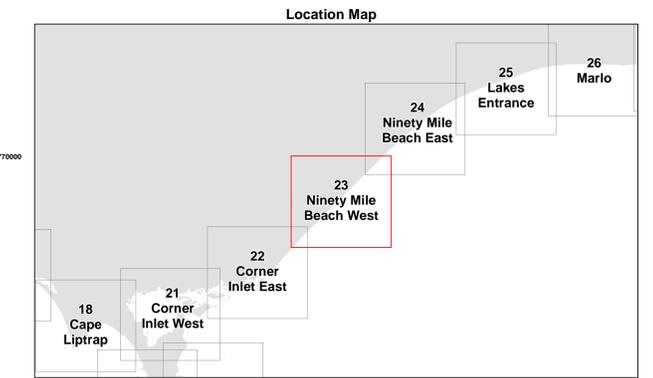
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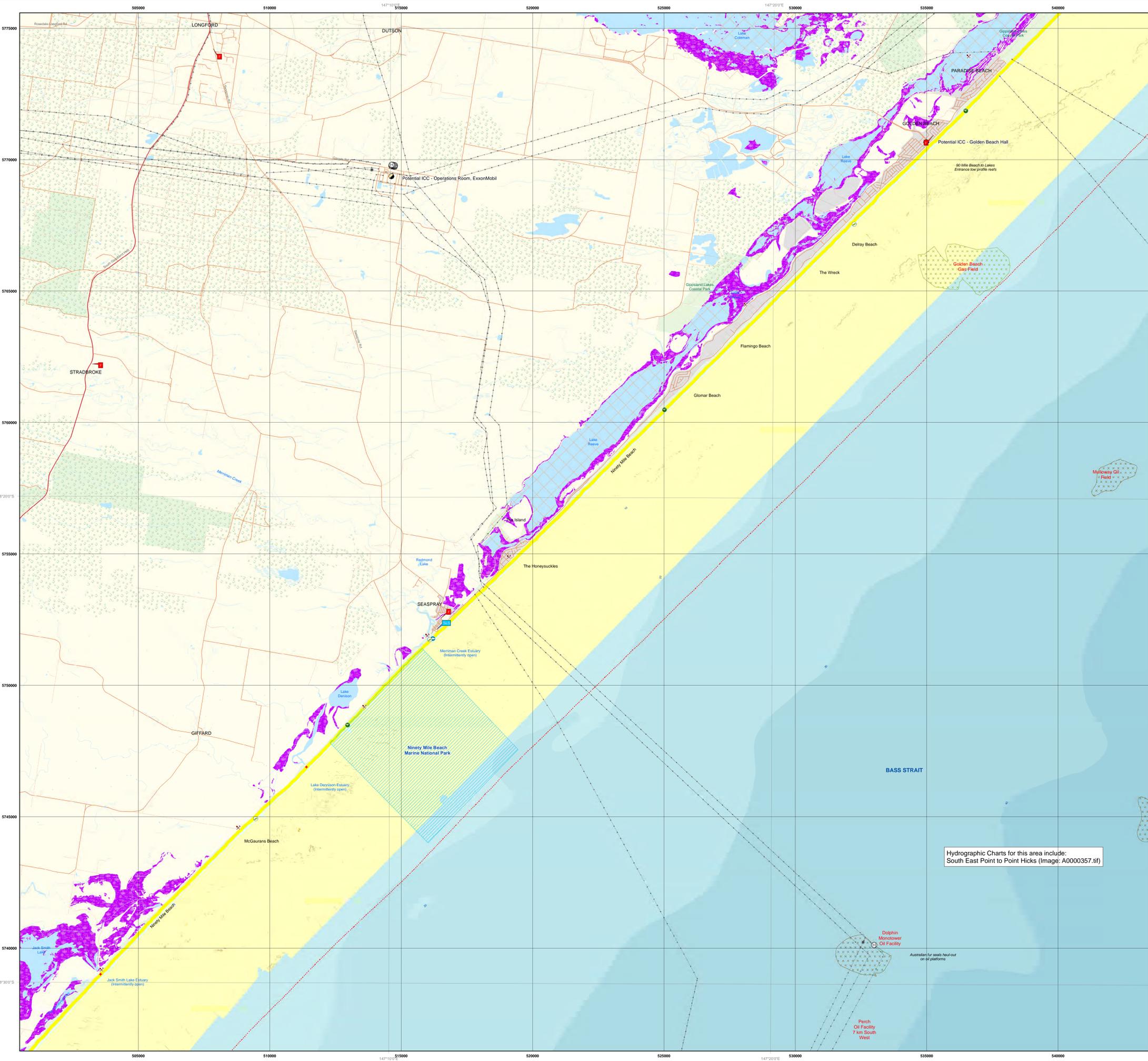
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23 Ninety Mile Beach West Oil Spill Response Map



- ### Legend
- | | |
|---|----------------------------------|
| ① Helipads | — Highway |
| ● Potential ICC Locations | — Other Roads |
| ■ Fire Station | — Tracks |
| 🏠 Lifesaving Club | — Walking Path |
| 🐟 Estuarine Fish Habitats | — Watercourse |
| 🐦 Hooded Plover Habitat | 🌊 Marine National Park/Sanctuary |
| 🌊 River Entrance - Intermittently Open | 🌿 Inter-tidal Vegetation |
| 🚤 Boat Launch | 🌿 Saltmarsh |
| — Pier, Jetty, Wharf | 🌿 Shoreline Habitat Type |
| 🌿 Coastal Ramsar Sites in Victoria | 🟡 Sand Beach |
| ⋯ Victoria - 3nm Boundary | 🌊 Water Body |
| ★ Oil/Gas Facility | 🌿 Swamp |
| — Oil/Gas Pipeline | 🌿 Tree Cover |
| 📍 Geological Sites | 🌿 Parks and Reserves |
| ✕ Regional, State, Unknown Significance | 🌿 Offshore Gas Field |
| | 🌿 Offshore Oil Field |
| | 📊 LiDAR Substrates |
| | 🟠 Reef |
| | 🟤 Reef/Sediment |
| | 🟡 Sediment |



Hydrographic Charts for this area include:
South East Point to Point Hicks (Image: A0000357.tif)

Note: Symbols on the map for biological resources (bird and mammal species) are indicative of the resource being in the general vicinity only

Map not suitable for navigation purposes

0 2 4 6 8 10 Km

Scale 1:50,000

COORDINATES SYSTEM
Map Grid of Australia
GDA 1994 MGA Zone 55
Projection: Transverse Mercator (UTM)
Datum: GDA 1994 (AH)

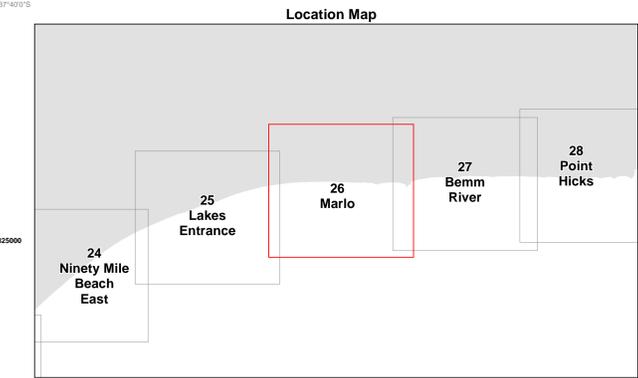
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26 Marlo Oil Spill Response Map

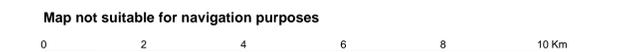


Legend

- Helipads
- Airports and Airfields
- Potential ICC Locations
- Fire Station
- Police Station
- SES Unit
- Estuarine Fish Habitats
- Hooded Plover Habitat
- Shorebird Roosting Sites
- Tern Nesting Sites
- Coastal Bird Habitat
- River Entrance - Intermittently Open
- Boat Launch
- Boat Ramp
- Breakwater
- Pier, Jetty, Wharf
- BOM Observation Station
- Victoria - 3nm Boundary
- Oil/Gas Facility
- Oil/Gas Pipeline
- Geological Sites
- International, National Significance
- Regional, State, Unknown Significance
- Highway
- Other Roads
- Tracks
- Walking Path
- Watercourse
- Inter-tidal Vegetation
- Saltmarsh
- Shoreline Habitat Type
- Intertidal Shore Platform
- Mixed Sand Beach/Shore Platform
- Sand Beach
- East Gippsland Marine Substrate
- Reef
- Reef - patchy
- Rock platform
- Sand beach
- Sediment
- Water Body
- Swamp
- Sewage Pond
- Tree Cover
- Parks and Reserves
- Offshore Gas Field
- LiDAR Substrates
- Reef
- Reef/Sediment
- Sediment

Hydrographic Charts for this area include:
South East Point to Point Hicks (Image: A0000357.tif)

Note: Symbols on the map for biological resources (bird and mammal species) are indicative of the resource being in the general vicinity only



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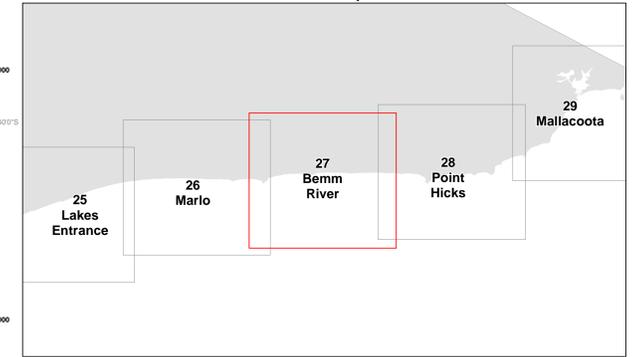
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27 Bemm River Oil Spill Response Map

Location Map



Legend

- Fire Station
- Estuarine Fish Habitats
- Hooded Plover Habitat
- Shorebird Roosting Sites
- Tern Nesting Sites
- ▼ Coastal Bird Habitat
- + River Entrance - Continuously Open
- + River Entrance - Intermittently Open
- ⊕ Boat Launch
- ⊕ Boat Ramp
- Breakwater
- Pier, Jetty, Wharf
- + BOM Observation Station
- ⋯ Victoria - 3nm Boundary
- Oil/Gas Pipeline
- Geological Sites**
- × International, National Significance
- × Regional, State, Unknown Significance
- Highway
- Other Roads
- Tracks
- Walking Path
- Watercourse
- ▨ Marine National Park/Sanctuary
- ▨ Aquatic Vegetation
- ▨ Macroalgae
- ▨ Other Seagrass
- ▨ Submerged Aquatic Vegetation
- Shoreline Habitat Type**
- Intertidal Shore Platform
- Mixed Sand Beach/Shore Platform
- Sand Beach
- East Gippsland Marine Substrate
- ▨ Reef
- ▨ Reef - patchy
- ▨ Rock platform
- ▨ Sand beach
- ▨ Sediment
- ▨ Water Body
- ▨ Swamp
- ▨ Tree Cover
- ▨ Parks and Reserves
- LIDAR Substrates**
- ▨ Reef
- ▨ Reef/Sediment
- ▨ Sediment

Hydrographic Charts for this area include:
 South East Point to Point Hicks (Image: A0000357.tif)
 Point Hicks to Cape Howe (Image: A0000805.tif)

Note: Symbols on the map for biological resources (bird and mammal species) are indicative of the resource being in the general vicinity only

Map not suitable for navigation purposes



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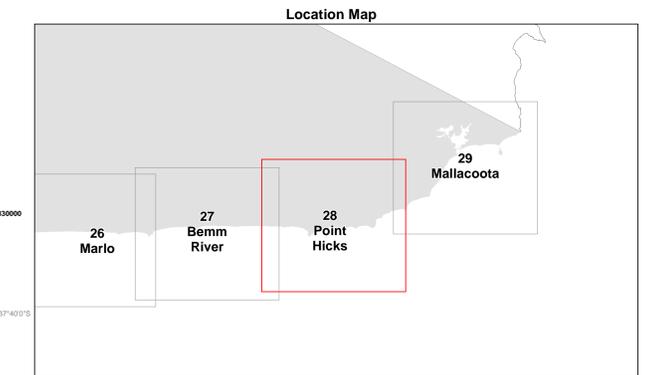
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28 Point Hicks Oil Spill Response Map



Legend

- | | |
|---------------------------------------|---------------------------------|
| Estuarine Fish Habitats | Other Roads |
| Australian Fur Seal Colonies | Tracks |
| NZ Fur Seal Colonies | Walking Path |
| Little Penguin Colonies | Watercourse |
| Hooded Plover Habitat | Marine Mammals Protected Area |
| Shorebird Roosting Sites | Marine Special Management Area |
| Tern Nesting Sites | Marine National Park/Sanctuary |
| Coastal Bird Habitat | Aquatic Vegetation |
| River Entrance - Continuously Open | Other Seagrass |
| River Entrance - Intermittently Open | Shoreline Habitat Type |
| Boat Launch | Intertidal Shore Platform |
| Pier, Jetty, Wharf | Mixed Sand Beach/Shore Platform |
| BOM Observation Station | Sand Beach |
| Victoria - 3nm Boundary | East Gippsland Marine Substrate |
| Geological Sites | Reef |
| Regional, State, Unknown Significance | Reef - patchy |
| | Rock platform |
| | Sand beach |
| | Sediment |
| | Water Body |
| | Swamp |
| | Tree Cover |
| | Parks and Reserves |
| | LiDAR Substrates |
| | Reef |
| | Reef/Sediment |
| | Sediment |

THE SKERRIES
Approx. 11,500 Australian fur seals including approx. 3,000 pups, and approx. 300 NZ fur seals including 70 pups (2002).
Breeding site for Crested Tern and nesting site for Black-faced Shear.
One of four breeding sites in Victoria for Australia fur seals.
Breeding season mid-Oct to late Dec.
Recreational boats not permitted within 100m of a seal between Nov and Feb or 50m during other months. Jet skis not permitted within 300m.

Hydrographic Charts for this area include:
Point Hicks to Cape Howe (Image: A0000805.tif)

Note: Symbols on the map for biological resources (bird and mammal species) are indicative of the resource being in the general vicinity only

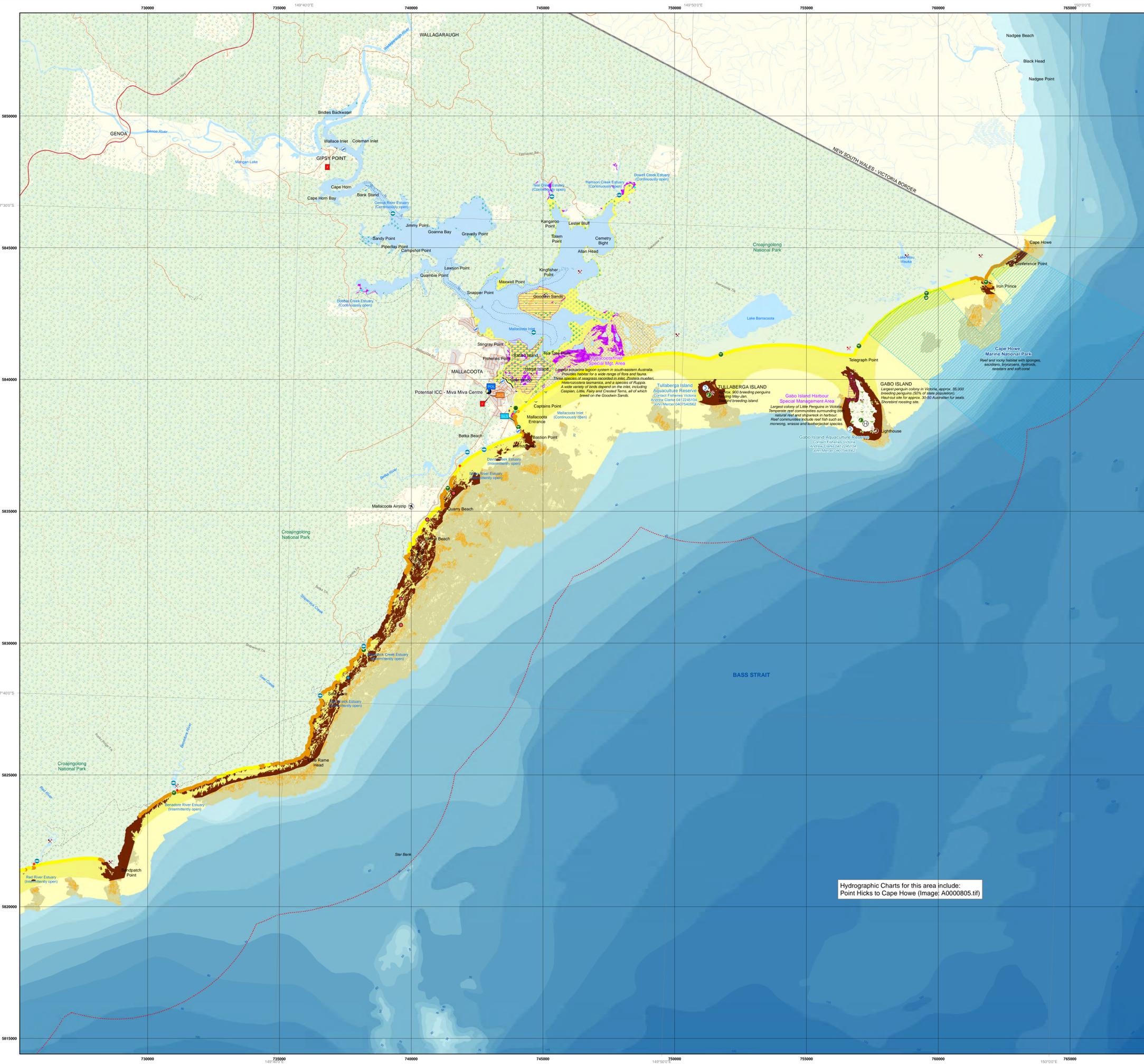
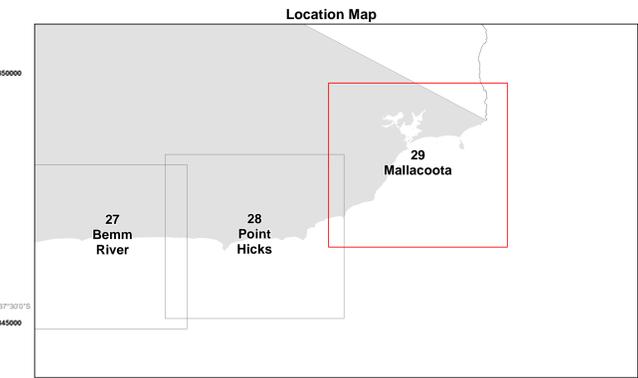
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29 Mallacoota Oil Spill Response Map

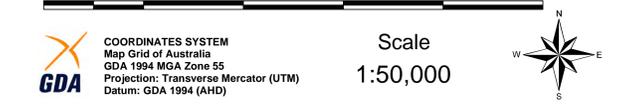


- ### Legend
- ① Helipads
 - ✈ Airports and Airfields
 - ⦿ Potential ICC Locations
 - 🔥 Fire Station
 - 🚒 Lifesaving Club
 - 👮 Police Station
 - 🚒 SES Unit
 - 🐟 Estuarine Fish Habitats
 - 🐧 Australian Fur Seal Colonies
 - 🐧 Little Penguin Colonies
 - 🐧 Hooded Plover Habitat
 - 🐧 Shorebird Roosting Sites
 - 🐧 Tern Nesting Sites
 - 🐧 Common Bent-wing Bat Roost
 - 🐧 Eastern Horseshoe Bat Roost
 - 🐟 Aquaculture License Sites
 - 🐦 Coastal Bird Habitat
 - 🌊 River Entrance - Continuously Open
 - 🌊 River Entrance - Intermittently Open
 - 🚤 Boat Launch
 - 🚤 Boat Ramp
 - 🚤 Boat Mooring
 - 🛡 Breakwater
 - 🛡 Pier, Jetty, Wharf
 - 📍 BOM Observation Station
 - 🔴 Victoria - 3nm Boundary
 - 📍 Geological Sites
 - ✖ International, National Significance
 - ✖ Regional, State, Unknown Significance
 - 🛣 Highway
 - 🛤 Other Roads
 - 🛤 Tracks
 - 🚶 Walking Path
 - 🚶 Watercourse
 - 🌿 Marine Special Management Area
 - 🌿 Marine National Park/Sanctuary
 - 🌿 Aquatic Vegetation
 - 🌿 Other Seagrass
 - 🌿 Submerged Aquatic Vegetation
 - 🌿 Inter-tidal Vegetation
 - 🌿 Saltmarsh
 - 🌿 Shoreline Habitat Type
 - 🌿 Intertidal Shore Platform
 - 🌿 Mixed Sand Beach/Shore Platform
 - 🌿 Sand Beach
 - 🌿 Sand Dunes
 - 🌿 Subtidal Sandy Substrate
 - 🌿 East Gippsland Marine Substrate
 - 🌿 Reef
 - 🌿 Reef - patchy
 - 🌿 Rock platform
 - 🌿 Sand beach
 - 🌿 Sand flat/Rock platform
 - 🌿 Sediment
 - 🌿 Water Body
 - 🌿 Swamp
 - 🌿 Sewage Pond
 - 🌿 Tree Cover
 - 🌿 Parks and Reserves
 - 🌿 LiDAR Substrates
 - 🌿 Reef
 - 🌿 Reef/Sediment
 - 🌿 Sediment

Hydrographic Charts for this area include:
Point Hicks to Cape Howe (Image: A000805.tif)

Note: Symbols on the map for biological resources (bird and mammal species) are indicative of the resource being in the general vicinity only

Map not suitable for navigation purposes



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Appendix 7

Atlas of Living Australia (ALA) search tool
results

Atlas of Living Australia (ALA) records for the Prion MSS survey area

Scientific Name	Common Name	Conservation Status (Cth)
Shorebirds		
<i>Chroicocephalus novaehollandiae</i>	Silver Gull	
<i>Hydroprogne caspia</i>	Caspian Tern	
<i>Larus (Larus) dominicanus</i>	Kelp Gull	
<i>Larus (Larus) pacificus</i>	Pacific Gull	
<i>Phalacrocorax (Phalacrocorax) carbo</i>	Great Cormorant	
<i>Thalasseus bergii</i>	Crested Tern	
<i>Threskiornis spinicollis</i>	Straw-Necked Ibis	
Seabirds		
<i>Ardenna grisea</i>	Sooty Shearwater	
<i>Ardenna tenuirostris</i>	Short-Tailed Shearwater	
<i>Catharacta skua</i>	Great Skua	
<i>Daption capense</i>	Cape Petrel	
<i>Diomedea exulans</i>	Wandering Albatross	EPBC Act Threatened Species
<i>Eudyptula minor</i>	Little Penguin	
<i>Haematopus longirostris</i>	Pied Oystercatcher	
<i>Macronectes giganteus</i>	Southern Giant-Petrel	EPBC Act Threatened Species
<i>Macronectes halli</i>	Northern Giant-Petrel	EPBC Act Threatened Species
<i>Morus serrator</i>	Australasian Gannet	
<i>Pachyptila turtur</i>	Fairy Prion	
<i>Puffinus (Puffinus) gavia</i>	Fluttering Shearwater	
<i>Puffinus griseus</i>	Sooty shearwater	
<i>Puffinus tenuirostris</i>	short-tailed shearwater	
<i>Stercorarius parasiticus</i>	Arctic Jaeger	
<i>Stercorarius pomarinus</i>	Pomarine Jaeger	
<i>Thalassarche cauta</i>	Shy Albatross	
<i>Thalassarche chlororhynchos</i>	Yellow-Nosed Albatross	
<i>Thalassarche melanophris</i>	Black-Browed Albatross	EPBC Act Threatened Species
<i>Thalassarche steadi</i>	White-Capped Albatross	EPBC Act Threatened Species
Fish		
<i>Alabes bathys</i>	Deepwater Shore-Eel	
<i>Allomycterus pilatus</i>	Australian Burrfish	
<i>Anacanthus barbatus</i>	Bearded Leatherjacket	
<i>Aracana aurita</i>	Shaw's Cowfish	
<i>Argentina australiae</i>	Silverside	
<i>Brachionichthys australis</i>	Australian Handfish	
<i>Caesioperca lepidoptera</i>	Butterfly Perch	
<i>Callorhinchus milii</i>	Elephantfish	
<i>Capropygia unistriata</i>	Spiny Boxfish	
<i>Centroberyx lineatus</i>	Swallowtail	
<i>Chelidonichthys kumu</i>	Red Gurnard	
<i>Chrysophrys auratus</i>	Snapper	
<i>Cyttus australis</i>	Silver Dory	
<i>Cyttus traversi</i>	King Dory	
<i>Dentiraja australis</i>	Sydney Skate	
<i>Dentiraja cerva</i>	Whitespotted Skate	
<i>Dentiraja lemprieri</i>	Thornback Skate	
<i>Diodon nichthemerus</i>	Globefish	
<i>Emmelichthys nitidus</i>	Redbait	
<i>Eubalichthys mosaicus</i>	Mosaic Leatherjacket	
<i>Galeorhinus galeus</i>	School Shark	EPBC Act Threatened Species
<i>Genypterus blacodes</i>	Pink Ling	
<i>Helicolenus percoides</i>	Reef Ocean Perch	

<i>Heterodontus portusjacksoni</i>	Port Jackson Shark	
<i>Irolita waitii</i>	Southern Round Skate	
<i>Kathetostoma laeue</i>	Common Stargazer	
<i>Kimblaeus bassensis</i>	Trawl Pipefish	
<i>Lepidotrigla modesta</i>	Cocky Gurnard	
<i>Lepidotrigla mulhali</i>	Roundsnout Gurnard	
<i>Lepidotrigla vanessa</i>	Butterfly Gurnard	
<i>Meuschenia freycineti</i>	Sixspine Leatherjacket	
<i>Meuschenia scaber</i>	Velvet Leatherjacket	
<i>Mustelus antarcticus</i>	Gummy Shark	
<i>Narcine tasmaniensis</i>	Tasmanian Numbfish	
<i>Nemadactylus macroptera</i>	Jackass Morwong	
<i>Neosebastes occidentalis</i>	Orangebanded Gurnard Perch	
<i>Neosebastes pandus</i>	Bighead Gurnard Perch	
<i>Neosebastes thetidis</i>	Thetis Fish	
<i>Notorynchus cepedianus</i>	Broadnose Shark	
<i>Orectolobus maculatus</i>	Spotted Wobbegong	
<i>Parapercis allporti</i>	Barred Grubfish	
<i>Parascyllium ferrugineum</i>	Rusty Carpetshark	
<i>Paristiopterus labiosus</i>	Giant Boarfish	
<i>Pentaceropsis recurvirostris</i>	Longsnout Boarfish	
<i>Platycephalus bassensis</i>	Southern Sand Flathead	
<i>Platycephalus richardsoni</i>	Tiger Flathead	
<i>Pristiophorus cirratus</i>	Common Sawshark	
<i>Pristiophorus nudipinnis</i>	Southern Sawshark	
<i>Pseudocaranx georgianus</i>	Silver Trevally	
<i>Pseudophycis bachus</i>	Red Cod	
<i>Pterygotrigla polyommata</i>	Latchet	
<i>Rhombosolea tapirina</i>	Greenback Flounder	
<i>Scorpaena papillosa</i>	Southern Red Scorpionfish	
<i>Seriola brama</i>	Blue Warehou	EPBC Act Threatened Species
<i>Seriola punctata</i>	Silver Warehou	
<i>Solegnathus spinosissimus</i>	Spiny Pipehorse	
<i>Sphoeroides pachygaster</i>	Balloonfish	
<i>Spiniraja whitleyi</i>	Melbourne Skate	
<i>Squalus acanthias</i>	Whitespotted Dogfish	
<i>Squalus megalops</i>	Spikey Dogfish	
<i>Squatina australis</i>	Australian Angelshark	
<i>Thyrsites atun</i>	Barracouta	
<i>Torpedo macneilli</i>	Short-Tail Torpedo Ray	
<i>Trachurus declivis</i>	Common Jack Mackerel	
<i>Trachurus novaezelandiae</i>	Yellowtail Scad	
<i>Upeneus torres</i>	Japanese Goatfish	
<i>Urolophus bucculentus</i>	Sandyback Stingaree	
<i>Urolophus cruciatus</i>	Banded Stingaree	
<i>Urolophus viridis</i>	Greenback Stingaree	
<i>Zeus faber</i>	John Dory	
Cephalopods		
<i>Nototodarus gouldi</i>	Gould's Squid	
<i>Octopus pallidus</i>	Pale Octopus	
<i>Sepia hedleyi</i>	King Cuttlefish	
Echinoderms		
<i>Nectria ocellata</i>		
<i>Ophiocentrus pilosus</i>		
<i>Ophiomyxa australis</i>	Brittlestar	
<i>Ophiothrix (Ophiothrix) caespitosa</i>		
<i>Ophiura (Ophiura) kinbergi</i>		

Molluscs		
Alaginella geminata		
Amalda petterdi		
Amphithalamus (Amphithalamus) pyramis		
Asperdaphne (Asperdaphne) esperanza		
Ataxocerithium serotinum	Square-Mouthed Creeper	
Australaria australasia	Tulip Shell	
Brookula crebresculpta		
Bulla quoyii		
Calliostoma (Fautor) legrandi		
Colpospira (Colpospira) sinuata		
Condylocardia notoaustralis		
Crassitoniella erratica		
Cuna concentrica		
Cuna delta		
Cyclochlamys favus		
Cystiscus angasi	Angas's Margin Shell	
Dentimitrella menkeana	Menke's Dove Shell	
Fusinus (Propefusus) pyrulatus	Waved Spindle	
Gazameda gunnii	Gunn's Screw Shell	
Guraleus cuspis		
Lepoderma chiestos		
Leucotina micra		
Liotella annulata		
Liotella petalifera		
Mesoginella strangei		
Microcarina surgerea		
Mimachlamys asperrima	Doughboy Scallop	
Mitromorpha paucilirata		
Musculus (Modiolarca) cumingianus	Three-Area Mussel	
Myadora rotundata		
Nassarius (Niotha) pauperatus	Poor Dog Whelk	
Penion maximus	Whelk	
Pratulum thetidis	Thetis Cockle	
Propeleda (Propeleda) ensicula	Ensicula Elongate Nut Shell	
Purpurocardia bimaculata		
Pusillina (Haurakia) angulata		
Pusillina (Haurakia) discrepans		
Putilla porcellana		
Rissoina (Rissoina) rhyllensis		
Scheltemaia bassensis		
Siphonochelus (Siphonochelus) syringianus	Piped Cyphonochelus	
Socienna apicicostata		
Socienna trisculpta		
Splendrillia nenia		
Spondylus tenellus	Scarlet Thorny Oyster	
Sukashitrochus atkinsoni	Atkinson Slit Shell	
Talochlamys pulleineana		
Tawera gallinula	Feathered Venerid	
Zemira australis	Australian Zemira	
Crustaceans		
Actaea peronii	Thorn-Legged Crab	
Alpheopsis trispinosa		
Andaniotes wallaroo		
Araphura pygmothymos		
Arhaphuroides stabastris		
Austrarcturella brychia		

Austrarcturella hirsuta		
Austrarcturella oculata		
Austrodromidia octodentata	Bristled Sponge Crab	
Chlorotocella spinicaudus	Slender-Beaked Shrimp	
Cilicæa hystrix		
Dayus makrokolosus		
Dayus pharocheradus		
Dicoides areolata		
Dimorphostylis inauspicata		
Ebalia crassipes	Semi-Smooth Pebble Crab	
Ebalia tuberculosa	Nut-Crab	
Endevoura mirabilis		
Gadila spreta		
Halearcturus serrulatus		
Heteroserolis tuberculata		
Hippomedon geelongi		
Jasus edwardsii	Southern Rock Lobster	
Leptanthura boweni		
Leptocheila (Leptocheila) sydneyensis	Sydney Comb Shrimp	
Litogynodiastylis echinata		
Litogynodiastylis trachyphasis		
Mysidella australiana		
Natatolana pellucida		
Neastacilla attenuata		
Notomithrax minor	Small Decorator Crab	
Oxinasphaera bisubula		
Paranchialina angusta		
Paratanais malignus		
Paratanais vetinari		
Paratanytarsus kathleenae		
Phylladorhynchus pusillus	Little Craylet	
Pilumnus acer	Long-Spined Hairy Crab	
Pilumnus tomentosus	Common Hairy Crab	
Pseudopetalophthalmus australis		
Remexudes toompani		
Rochinia mosaica	Little Thornback Crab	
Serolina granulata		
Siriella australis		
Siriella bassi		
Sophrosyne rodondo		
Tryphosella fortescue		
Annelids		
Ceratonereis singularis		
Neanthes kerguelensis		
Paraprionospio coora		
Pectinaria antipoda		
Pista violacea		
Pomatoceros taeniata		
Prionospio dubia		
Prionospio kulin		
Salmacina australis		
Serpula jukesii		
Sphaerephesia hutchingsae		
Spiophanes japonicum		
Terebellides kowinka		
Trichobranchus gooreekis		
Bryozoa		

Fenestrulina candida		
Reteporella porcellana		
Triphyllozoon floribundum		
Ascidians		
Cnemidocarpa radicata		
Polycarpa molguloides		
Polycarpa obscura		
Pyura stolonifera	Cunjevoi	

Atlas of Living Australia (ALA) records for the Prion MSS EMBA

Scientific Name	Common Name	Conservation Status (Cth)
ANNELIDA		
Polychaeta		
Aglaophamus australiensis		
Aglaophamus gippslandicus		
Aglaophamus profundus		
Alitta succinea		
Amaeana trilobata		
Amphicorina brevicollaris		
Amphiglena magna		
Amphiglena mediterranea		
Amphinome rostrata		
Aonides oxycephala		
Aphrodita australis	Southern Sea Mouse	
Aphrodita kulmaris		
Aphrodita talpa		
Arichlidon hanneloreae		
Aricidea fauveli		
Armandia intermedia		
Augenerilepidonotus dictyolepis		
Australonereis ehlersi	Squirt Worm	
Baffinia biseriata		
Barantolla lepte		
Bhawania multisetosa		
Boccardia polybranchia		
Boccardiella limnicola		
Branchiomma nigromaculata		
Ceratocephale pacifica		
Ceratocephale setosa		
Ceratonereis australis		
Ceratonereis mirabilis		
Ceratonereis perkinsi		
Ceratonereis singularis		
Chaetozone setosa		
Clavadoce dorsolobata		
Dipolydora giardi		
Dorvillea australiensis		
Ephesiella australiensis		
Epidiopatra hupferiana		
Erinaceusyllis horrockensis		
Eteone tingara		
Euchone limnicola		
Euchone pallida		
Euchone variabilis		
Eulalia microphylla		
Eumida fuscolutata		
Eunice antennata		
Eunice australis		
Eunice bassensis		
Eunice laticeps		
Eunice laticeps		
Eunoe etheridgei		
Euphione squamosa		
Eupolymnia koorangia	Medusa Tube Worm	
Eusyllis kupfferi		
Euthalenessa fimbriata		
Euthalenessa microceras		

Exogone annamurrayae		
Exogone brevi antennata		
Exogone fustifera		
Exogone heterosetosa		
Exogone patriciae		
Exogone wilsoni		
Galeolaria caespitosa	Intertidal Tube Worm	
Glycera americana		
Glycera bassensis		
Glycera lapidum		
Glycera onomichiensis		
Glycera tessellata		
Goniadella revizee		
Goniadella tasmanensis		
Goniadides falcigera		
Grubeulepis kurnai		
Harmothoe charlottae		
Harmothoe dictyophora		
Harmothoe phillipensis		
Hauchiella tribullata		
Hesionella splendida		
Hesionura australiensis		
Hirsutonuphis intermedia		
Hyalinoecia tubicola		
Hyboscolex dicranochaetus		
Hydroides brachyacantha		
Hyperhalosydna striata		
Idanthyrus australiensis		
Idanthyrus pennatus		
Laetmonice producta		
Laetmonice yarramba		
Lanassa exelysis		
Lanice bidewa		
Lanicides tribranchiata		
Lanicola lobata		
Laonice bassensis		
Leitoscoloplos bifurcatus		
Leodamas cylindrifera		
Leodamas dendrocirris		
Leodamas fimbriatus		
Leodamas johnstonei		
Leodamas ohlini		
Lepidonotus bowerbankii		
Lepidonotus carinulatus		
Lepidonotus glaucus		
Lepidonotus jacksoni		
Lepidonotus melanogrammus	Dark-Marked Scale Worm	
Lepidonotus purpureus		
Leptoecia vivipara		
Longicarpus modestus		
Lumbrineris coccinea		
Lumbrineris setosa		
Lygdamis giardi		
Lysilla jennacubinae		
Macrochaeta australiensis		
Magelona dakini		
Marphysa bifurcata		
Mediomastus australiensis		
Micronereis halei		
Mooreonuphis wilsoni		
Naineris australis		

Neanthes bassi		
Neanthes biseriata		
Neanthes cricognatha		
Neanthes flindersi		
Neanthes isolata		
Neanthes kerguelensis		
Neanthes tasmani		
Neanthes vaalii		
Nematonereis unicornis		
Neovermilia globula		
Nephtys inornata		
Nephtys longipes		
Nereis apalie		
Nereis bifida		
Nereis cockburnensis		
Nereis denhamensis		
Nereis heirissonensis		
Nereis jacksoni		
Nereis maxillodentata		
Nicolea amnis		
Nicon maculata		
Nothria abyssia		
Nothria otsuchiensis		
Odontosyllis polycera		
Oenone fulgida		
Olganereis edmondsi		
Onuphis aucklandensis		
Onuphis holobranchiata		
Orbinia hartmanae		
Orbinia papillosa		
Owenia australis		
Owenia bassensis		
Palola siciliensis		
Paradiopatra imajimai		
Paradiopatra longicappa		
Paradiopatra piccola		
Paradiopatra spinosa		
Paradiopatra variabilis		
Paralepidonotus ampulliferus		
Paraprionospio coora		
Pectinaria antipoda		
Perinereis amblyodonta		
Perinereis vallata		
Perinereis variodentata		
Phyllodoce duplex		
Phyllodoce longipes		
Phylo felix		
Pista australis		
Pista violacea		
Platynereis antipoda		
Polycirrus octoseta		
Polycirrus paucidens		
Polycirrus porcata		
Polycirrus tessellatus		
Polygordius kiarama		
Polyophthalmus pictus		
Pomatoceros taeniata		
Potaspina australiensis		
Prionospio aucklandica		
Prionospio cirrifera		
Prionospio coorilla		

Prionospio dubia		
Prionospio kirrae		
Prionospio kulin		
Prionospio multipinnulata		
Prionospio nirripa		
Prionospio pilkena		
Prionospio tatura		
Prionospio wambiri		
Prionospio yuriei		
Prosphaerosyllis longipapillata		
Protocirrineris chrysoderma		
Rhamphobranchium (Minibranchium) fractum		
Romanchella quadricostalis		
Sabellastarte australiensis		
Sabellastarte indica	Southern Fan Worm	
Salmacina australis		
Scalibregma inflatum		
Schistomeringos loveni		
Scolecopsis victoriensis		
Scoloplos cylindrifera		
Scoloplos dayi		
Scoloplos normalis		
Scoloplos novaehollandiae		
Scoloplos simplex		
Serpula hartmanae		
Serpula jukesii		
Simplisetia aequisetis	Squirt Worm	
Sphaerephesia hutchingsae		
Sphaerodoropsis fauchaldi		
Sphaerodoropsis heteropapillata		
Sphaerodoropsis megatuberculata		
Sphaerosyllis hystrix		
Sphaerosyllis multipapillata		
Spio blakei		
Spio blakei		
Spiophanes bombyx		
Spiophanes japonicum		
Spiophanes wigleyi		
Spiophanes wigleyi		
Spirobranchus kraussii		
Spirobranchus latiscapus		
Spirobranchus latiscapus		
Spirobranchus polytrema		
Spirobranchus taeniatus		
Streptosyllis biarticulata		
Synelmis knoxi		
Terebella pappus		
Terebella tantabiddycreekensis		
Terebellides kowinka		
Terebellides mundora		
Terebellides narribri		
Terebellides stroemii		
Terebellides woolawa		
Thelepus boja		
Thelepus brevicauda		
Thelepus extensus		
Thelepus plagiostoma		
Thormora argus		
Trichobanchus bunnabus		
Trichobanchus goreekis		
Trypanosyllis aeolis		

Trypanosyllis zebra		
Oligochaeta		
Anisochaeta tasmanica		
Hirudinida		
Austrobdella bilobata		
Priscabdella hickmani		
Stibarobdella leucothela		
Stibarobdella loricata		
Stibarobdella tasmanica		
ARTHROPODA		
Branchiopoda		
Alona inreticulata		
Eulimnadia rivolensis		
Evadne nordmanni		
Evadne spinifera		
Lepidurus apus		
Lynceus macleayanus		
Penilia avirostris		
Podon intermedius		
Pseudevadne tergestina		
Malacostraca		
Abyssarcturella panope		
Abyssianira bathyalis		
Acanthephyra eximia		
Acanthephyra pelagica		
Acanthephyra quadrispinosa		
Acanthomunna bettongia		
Acanthomunna lagorchestes		
Acanthomunna macropus		
Acanthomunna potorous		
Acanthonotozomopsis duplocoxa		
Accalathura gigas		
Achaeus curvirostris		
Acinoprosceles vermes		
Actaea peronii	Thorn-Legged Crab	
Actaecia pallida		
Actaecia thomsoni		
Acutigebia simsoni	Sand-Borer	
Aega angustata		
Aega cyclops		
Aega monophthalma		
Aega serripes		
Aegaeon lacazei		
Aegapheles alazon		
Aegapheles alozon		
Aegapheles birubi		
Aegapheles trulla		
Aegapheles warna		
Aegiochus coroo		
Aenigmathura lactanea		
Aetiopedes gracilis		
Agathotanais spinipoda		
Alainopasiphaea australis		
Allodiastylis acanthodes		
Allodiastylis hirtipes		
Allodiastylis johnstoni		

Allodiastylis tenuipes		
Allosergestes pectinatus		
Allosergestes sargassi		
Alope orientalis	Bald Shrimp	
Alpheopsis trispinosa		
Alpheus australosulcatus		
Alpheus euphrosyne	Nymph Snapping Shrimp	
Alpheus hailstonei		
Alpheus novaezealandiae	New Zealand Pistol Prawn	
Alpheus parasocialis		
Alpheus socialis	Smooth Pistol Prawn	
Alpheus villosus	Hairy Pistol Prawn	
Amakusanthura correa		
Amakusanthura olearia		
Amarinus lacustris	Fresh-Water Spider Crab	
Amarinus laevis		
Amarinus paralacustris		
Amaryllis carrascoi		
Amaryllis kamata		
Amaryllis keablei		
Amaryllis macrophthalma		
Amaryllis olinda		
Ambicholestes (Ambicholestes) poorei		
Ambicholestes (Australolestes) berentsae		
Ambicholestes (Australolestes) thetis		
Ampelisca australis		
Ampelisca bidura		
Ampelisca calooma		
Ampelisca dimboola		
Ampelisca euroa		
Ampelisca jingera		
Ampelisca tilpa		
Ampelisca toora		
Amphoroidea angustata		
Ampithoe ngana		
Anamixis tangaroa		
Anamixis yarrega		
Anchistylis similis		
Anchistylis waitei		
Andaniexis elinae		
Andaniotes abyssorum		
Andaniotes corpulentus		
Andaniotes wallaroo		
Antarctus mawsoni		
Antatelson cuneatum		
Anthomuda chorizema		
Antiplotanais actuarius		
Aora adpressa		
Aora mortoni		
Apanthura drosera		
Apanthura isotoma		
Apanthura mirbelia		
Apanthura styphelia		
Apanthura xanthorrhoea		
Apanthuropsis richea		
Apocuma australiense		
Apocuma poorei		
Apseudes abditospina		
Apseudes atuini		
Apseudes poorei		
Apseudes quasimodo		

<i>Apseudopsis tuski</i>		
<i>Araleptochelia macrostonyx</i>		
<i>Araphura doutagalla</i>		
<i>Araphura pygmothymos</i>		
<i>Araphura yarra</i>		
<i>Araphuroides batmania</i>		
<i>Archaeobemlos philacanthus</i>		
<i>Arcitalitrus bassianus</i>		
<i>Arcitalitrus sylvaticus</i>		
<i>Arhaphuroides stabastris</i>		
<i>Aristaeomorpha foliacea</i>	Red Prawn	
<i>Aristaeopsis edwardsiana</i>	Giant Scarlet Prawn	
<i>Aristeus mabahissae</i>	Shiny Pink-Striped Prawn	
<i>Aristeus virillis</i>	Pink Striped Prawn	
<i>Aristias eden</i>		
<i>Aristias gomoni</i>		
<i>Aristias otway</i>		
<i>Aristias poorei</i>		
<i>Armadillidium vulgare</i>		
<i>Ascionana bassiana</i>		
<i>Ascionana curvifrons</i>		
<i>Ascionana latirima</i>		
<i>Ascionana minuta</i>		
<i>Athelges ankistron</i>		
<i>Ausatelson kolle</i>		
<i>Australomysis acuta</i>		
<i>Australomysis incisa</i>		
<i>Austrarcturella brychia</i>		
<i>Austrarcturella callosa</i>		
<i>Austrarcturella cava</i>		
<i>Austrarcturella hirsuta</i>		
<i>Austrarcturella inornata</i>		
<i>Austrarcturella macrokola</i>		
<i>Austrarcturella oculata</i>		
<i>Austrarcturella sexspinosa</i>		
<i>Austrarcturella spinipes</i>		
<i>Austrasphaera berentsae</i>		
<i>Austrochaetilia capeli</i>		
<i>Austrodromidia australis</i>	Southern Sponge Crab	
<i>Austrodromidia insignis</i>	Adorned Sponge Crab	
<i>Austrodromidia octodentata</i>	Bristled Sponge Crab	
<i>Austrogammarus smithi</i>		
<i>Austrolamprops sulcatus</i>		
<i>Austroleptostylis recalvastra</i>		
<i>Austroleucon adiazetos</i>		
<i>Austroleucon dolosolevis</i>		
<i>Austroleucon levis</i>		
<i>Austromaera mastersii</i>		
<i>Austropenaeus nitidus</i>		
<i>Austropheonoides mundoe</i>		
<i>Austrosquilla osculans</i>	Slender Mantis-Shrimp	
<i>Austrotheres holothuriensis</i>	Striped Sea Crab	
<i>Axiogynodiastylis reticulata</i>		
<i>Axiogynodiastylis rochfordi</i>		
<i>Axiopsis tsushimaensis</i>		
<i>Bamarooka bathycephala</i>		
<i>Bamarooka endota</i>		
<i>Bascestus melmackenziae</i>		
<i>Basserolis franklinae</i>		
<i>Basserolis kimblae</i>		
<i>Bassoleptochelia verro</i>		

Bathycopea typhlops		
Bathygnathia cardiocondyla		
Bathynomus kapala		
Bathypaguroopsis yaldwyni		
Bathypoma enigma		
Bathytanais bathybrotos		
Bathytanais fragilis		
Bathytanais parageios		
Bellidilia laevis	Smooth Pebble Crab	
Bellidilia undecimspinosa	Large Pebble Crab	
Bellorchestia marmorata		
Bellorchestia pravidactyla		
Belura pillara		
Bemlos dolichomanus		
Bemlos gilgi		
Bemlos strigilis		
Bemlos tris		
Benthosphaera arkoola		
Biffarius limosus		
Bircenna fulva		
Birubius babaneekus		
Birubius batei		
Birubius cartoo		
Birubius gambodeni		
Birubius heislarsi		
Birubius kareus		
Birubius karobrani		
Birubius kokorus		
Birubius lowannus		
Birubius maamus		
Birubius maldus		
Birubius mayamayi		
Birubius muldarpus		
Birubius munggai		
Birubius myallus		
Birubius panamunus		
Birubius quearus		
Birubius vulgaru		
Birubius yandus		
Birubius yorlunus		
Booralana bathynella		
Booranus tikeri		
Booranus wangoorus		
Booranus weemus		
Brachynotus spinosus	Little Shore Crab	
Brachyscelus cruscolum		
Bregmotypta pavicula		
Brolgus millinus		
Brolgus tattersalli		
Brucerolis nowra		
Brucerolis victoriensis		
Bruzelia australis		
Bullowanthura pambula		
Bumeralius buchalius		
Bunakenia labanticheiros		
Byblis mildura		
Byblis tinamba		
Bythiopagurus macrocolus		
Caecognathia branchyponera		
Caecognathia diacamma		
Caecognathia dolichoderus		

<i>Caecognathia gnamptogenys</i>		
<i>Caecognathia huberia</i>		
<i>Caecognathia leptanilla</i>		
<i>Caecognathia trachymesopus</i>		
<i>Calcinus dapsiles</i>		
<i>Campylaspis aspera</i>		
<i>Campylaspis australiensis</i>		
<i>Campylaspis hirsuta</i>		
<i>Campylaspis latidactyla</i>		
<i>Campylaspis minor</i>		
<i>Campylaspis roscida</i>		
<i>Campylaspis sculpta</i>		
<i>Campylaspis thetidis</i>		
<i>Campylaspis thompsoni</i>		
<i>Campylaspis uniplicata</i>		
<i>Campylaspis unisulcata</i>		
<i>Campylonotus rathbunae</i>	Sabre Prawn	
<i>Caprella danilevskii</i>		
<i>Caprella edgari</i>		
<i>Caprella equilibra</i>		
<i>Caprellina longicollis</i>		
<i>Carcinus maenas</i>	European Green Crab	
<i>Cassinella incisa</i>		
<i>Cedrosella cito</i>		
<i>Cephaloecetes enigmaticus</i>		
<i>Cephalophoxoides bassi</i>		
<i>Cephalophoxoides burleus</i>		
<i>Cephalophoxoides kukathus</i>		
<i>Cephalophoxoides rupullus</i>		
<i>Ceradocus circe</i>		
<i>Ceradocus ramsayi</i>		
<i>Ceradocus rubromaculatus</i>		
<i>Ceradocus sellickensis</i>		
<i>Ceradocus serratus</i>		
<i>Ceratocephalus grayanus</i>		
<i>Ceratothoa banksii</i>		
<i>Ceratothoa imbricata</i>		
<i>Cerceis ovata</i>		
<i>Cerceis tridentata</i>		
<i>Chaceon bicolor</i>	Eastern Crystal Crab	
<i>Cheirimedon adentatus</i>		
<i>Cheirimedon chevreuxi</i>		
<i>Cheirimedon danai</i>		
<i>Cheirimedon gurjanovae</i>		
<i>Cheirimedon hendrycki</i>		
<i>Cheirimedon norna</i>		
<i>Cheirimedon posidonia</i>		
<i>Cheirimedon rodondo</i>		
<i>Cheirimedon thirroul</i>		
<i>Cheirimedon truncatus</i>		
<i>Cheirimedon velia</i>		
<i>Cheiriphotis australiae</i>		
<i>Cheirocratus bassi</i>		
<i>Cheirocratus praedens</i>		
<i>Cherax destructor</i>	Yabby	
<i>Chlorotocella spinicaudus</i>	Slender-Beaked Shrimp	
<i>Chlorotocus novaezealandiae</i>		
<i>Cilicaea crassicaudata</i>		
<i>Cilicaea curtispina</i>		
<i>Cilicaea hystrix</i>		
<i>Cilicaeopsis granulata</i>		

Cimmerius bacescui		
Cirolana australiense		
Cirolana similis		
Clepidocrella colliboi		
Clepidocrella ira		
Collettea cylindratoides		
Conicostoma karta		
Contrarimesus franklinae		
Crenarctus crenatus		
Cruranthura furneauxi		
Cruranthura peroni		
Cryptodromia incisa		
Cubaris sulcifrons		
Cubaris tamarensis		
Cyathura hakea		
Cyclaspis australis		
Cyclaspis bovis		
Cyclaspis clarki		
Cyclaspis globosa		
Cyclaspis mjoebergi		
Cyclaspis munda		
Cyclaspis pinguis		
Cyclaspis pura		
Cyclaspis sabulosa		
Cyclaspis tribulis		
Cyclaspis usitata		
Cyclograpsus audouinii	Smooth Shore Crab	
Cyclograpsus granulatus		
Cymadusa drummondiae		
Cymadusa elegantis		
Cymodoce gaimardii		
Cymodopsis crassa		
Cymonomus delli		
Cymonomus espinosus		
Cymonomus soela		
Cyphocaris anonyx		
Cyphocaris nesoi		
Cyproidea ornata		
Cyrtomaia maccullochi	Slender-Handed Spider Crab	
Dagnaudus petterdi	Antlered Crab	
Dardanus arrosor	Striated Hermit Crab	
Dayus acanthus		
Dayus makrokolosus		
Dayus pharocheradus		
Dendrotion onychogalea		
Dendrotion peradorcus		
Dendrotion petrogale		
Dendrotion thylogale		
Deosergestes corniculum		
Deosergestes disjunctus		
Deosergestes seminudus		
Deto marina		
Diastylopsis senta		
Diclidocella yackatoon		
Dicoides areolata		
Dicoides brevidactylum		
Dicoides fletti		
Dicoides micron		
Dicoides minusculus		
Dicoides occidentalis		
Dicoides verminaris		

<i>Dimorphostylis colefaxi</i>		
<i>Dimorphostylis cottoni</i>		
<i>Dimorphostylis inauspicata</i>		
<i>Dimorphostylis subaculeata</i>		
<i>Dimorphostylis tasmanica</i>		
<i>Discias brownae</i>		
<i>Distosquilla miles</i>	Martial Mantis-Shrimp	
<i>Dodecas decacentrum</i>		
<i>Dodecas tasmaniensis</i>		
<i>Dorhynchus ramusculus</i>	Slender Spider Crab	
<i>Drummondia corinellae</i>		
<i>Drummondia marlo</i>		
<i>Drummondia tridentata</i>		
<i>Dulichchiella australis</i>		
<i>Dumea latipes</i>	Velvet Crab	
<i>Ebalia crassipes</i>	Semi-Smooth Pebble Crab	
<i>Ebalia dentifrons</i>		
<i>Ebalia intermedia</i>	Smooth Pebble Crab	
<i>Ebalia tuberculosa</i>	Nut-Crab	
<i>Echinodillo cavaticus</i>	Flinders Island Cave Slater	
<i>Echinolatus bullatus</i>		
<i>Echinolatus poorei</i>		
<i>Echinomunna horrida</i>		
<i>Echinopleura cephalomagna</i>		
<i>Eiconaxius mallacoota</i>		
<i>Elaphognathia froygattella</i>		
<i>Elpeddo kaikai</i>		
<i>Elthusa raynaudii</i>		
<i>Endevoura inusitata</i>		
<i>Endevoura mirabilis</i>		
<i>Endevoura prodigium</i>		
<i>Engaeus australis</i>		
<i>Engaeus cunicularius</i>		
<i>Engaeus fossor</i>		
<i>Engaeus lengana</i>		
<i>Engaeus martigener</i>		
<i>Ensayara laetum</i>		
<i>Eogynodiastylis aganaktikos</i>		
<i>Eogynodiastylis paeminosa</i>		
<i>Eorchestia rupestris</i>		
<i>Epikopais poorei</i>		
<i>Epikopais waringa</i>		
<i>Epipedonana profunda</i>		
<i>Eplumula australiensis</i>		
<i>Epulaega nodosa</i>		
<i>Erichthonius tacitus</i>		
<i>Eualus pectiniformis</i>		
<i>Euastacus kershawi</i>		
<i>Euastacus neodiversus</i>	South Gippsland Spiny Cray	
<i>Euastacus yarraensis</i>		
<i>Euidotea bakeri</i>		
<i>Euidotea danai</i>		
<i>Euidotea halei</i>		
<i>Euidotea peronii</i>		
<i>Eupasiphae gilesii</i>		
<i>Euphausia lucens</i>		
<i>Euphausia similis</i>		
<i>Euphausia spinifera</i>		
<i>Eupilumnus laciniatus</i>		
<i>Eupronoe minuta</i>		
<i>Eurydice acuticauda</i>		

Eurydice binda		
Eurythenes obesus		
Eurythenes thurstoni		
Eusergestes antarcticus		
Eusergestes arcticus		
Eusiroides monoculoides		
Eusirus antarcticus		
Exampithoe halei		
Exocerceis nasuta		
Exoediceroides maculosus		
Figorella angulosa		
Figorella formosa		
Figorella tasmanica		
Fultodromia spinifera		
Gabophilias kerstinae		
Gabophilias olono		
Galacantha rostrata		
Galathea australiensis	Striated Craylet	
Galathella bassiana		
Gammarella berringar		
Gammaropsis (Gammaropsis) persetosus		
Gammaropsis (Gammaropsis) thomsoni		
Gardinerosergia kensleyi		
Gastroptychus sternoornatus		
Gejavis corsotos		
Gennadas bouvieri		
Gennadas capensis		
Gennadas gilchristi		
Gennadas kempi		
Gennadas propinquus		
Gennadas scutatus		
Gennadas tinayrei		
Geocharax tasmanicus		
Gephyrocuma pala		
Gibbagnathia europalothrix		
Gitanopsis difficilis		
Globosolembos lunatus		
Glorandaniotes sandroi		
Glyphocrangon assimilis		
Glyphocrangon dimorpha		
Glyphocrangon kapala		
Glyphocuma dentatum		
Glyphocuma inaequalis		
Glyphocuma serventyi		
Gnathia calamitosa		
Gnathia calmani		
Gnathia camponotus		
Gnathia epopostruma		
Gnathia mystrium		
Gnathia notostigma		
Gnathia prolasius		
Gnathia stigmacos		
Gnathiphimedia sexdentata		
Gnathophausia ingens		
Gondogeneia microdeuteropa		
Gonodactylus smithii		
Goreopagurus poorei		
Grandidierella insulae		
Guernea (Guernea) endota		
Guinusia chabrus	Cleft-Fronted Shore Crab	
Gynodiastylis anasillos		

Gynodiastylis carinirostris		
Gynodiastylis dikondyla		
Gynodiastylis dilatata		
Gynodiastylis hartmeyerii		
Gynodiastylis insolitaseta		
Gynodiastylis lata		
Gynodiastylis megasiphon		
Gynodiastylis multicarinata		
Gynodiastylis polita		
Gynodiastylis pygmaeoinsolitaseta		
Gynodiastylis robusta		
Gynodiastylis sierra		
Gynodiastylis similis		
Gynodiastylis strumosa		
Gynodiastylis subtilis		
Gynodiastylis truncatifrons		
Hadrosquilla edgari		
Hadrosquilla perpasta	Plump Mantis-Shrimp	
Halearcturus serrulatus		
Halicarcinus ovatus	Three-Pronged Flat Spider Crab	
Haliophasma blandfordia		
Haliophasma canale		
Haliophasma cribense		
Haliophasma cycneum		
Haliophasma pinnatum		
Haliophasma profunda		
Haliophasma swainsonia		
Haliophasma yarra		
Haliporoides sibogae	Royal Red Prawn	
Hamatipeda sima		
Hamimaera hamigera		
Haplocheira barbimana		
Haplodendron buzwilsoni		
Haploops oonah		
Haplostylus dakini		
Haplostylus indicus		
Haplostylus robustus		
Helograpsus haswellianus	Haswell's Shore Crab	
Hemiaegina minuta		
Hemilamprops diversus		
Hemilamprops latus		
Hemilamprops pellucidus		
Hemisquilla australiensis		
Hemityphis tenuimanus		
Hermesorchestia alastairi		
Heterocarpus sibogae	White Carid Prawn	
Heteromysis (Heteromysis) tasmanica		
Heteropilumnus fimbriatus	Bearded Crab	
Heteroserolis australiensis		
Heteroserolis elongata		
Heteroserolis longicaudata		
Heteroserolis pallida		
Heteroserolis tuberculata		
Hippolyte australiensis	Southern Weed Shrimp	
Hippolyte caradina		
Hippomedon geelongi		
Hippomedon rodericki		
Hippomedon tourville		
Hircella inermis		
Hirondellea diamantina		
Hirondellea endeavour		

Hirondellea franklin		
Hirondellea kapala		
Hoho carteta		
Homola orientalis		
Hymenodora gracilis		
Hymenosoma hodgkini		
Ianthopsis franklinae		
Ianthopsis kimblae		
Ianthopsis vanhoeffeni		
Ibacus alticrenatus	Whitetail Bug	
Ibacus brucei	Honey Bug	
Ibacus novemdentatus	Western Balmain Bug	
Ibacus peronii	Balmain Bug	
Ichnopus caritus		
Icilius australis		
Icilius danae		
Icilius punctatus		
Inconnivus billibunteri		
Indoapseudes macabre		
Iolanthe drygalskii		
Iphimedia discreta		
Iphinoe pellucida		
Ischnomesus justii		
Ischnomesus tasmanensis		
Jasus edwardsii	Southern Rock Lobster	
Joeropsis bicarinata		
Kalliapseudes obtusifrons		
Kapalana maia		
Keratroides rex		
Keratroides vulgaris		
Kerguelenia euroka		
Kerguelenia kanowna		
Kerguelenica petrescui		
Kontiloleucon australiensis		
Koremasphaera colonus		
Koroga megalops		
Kulgaphoxus borralus		
Labraxeuodes heliodiscus		
Lamarckdromia globosa	Fringed Sponge Crab	
Laphystiopsis zomerysis		
Latigammaropsis atlantica		
Latreutes compressus	Green Prawn	
Leipsuropus parasiticus		
Leontocaris amplexipes		
Lepidepcrella nellae		
Lepidepcreoides bassi		
Lepidepcreoides xenopus		
Lepidepcreum baudini		
Lepidepcreum flindersi		
Lepidepcreum tourville		
Leptanthura boweni		
Leptanthura diemenensis		
Leptanthura flindersi		
Leptanthura kapala		
Leptanthura murrayi		
Leptochela (Leptochela) robusta		
Leptochela (Leptochela) sydniensis	Sydney Comb Shrimp	
Leptochelia billambi		
Leptochelia occipita		
Leptocuma intermedia		
Leptocuma pulleini		

<i>Leptocuma vicarium</i>		
<i>Leptograpsodes octodentatus</i>	Burrowing Shore Crab	
<i>Leptograpsus variegatus</i>		
<i>Leptomithrax gaimardii</i>	Great Spider Crab	
<i>Leptomithrax sternocostulatus</i>	Ribbed Spider Crab	
<i>Leptomithrax tuberculatus</i>		
<i>Leptomithrax waitei</i>		
<i>Lestrigonus schizogeneios</i>		
<i>Leucothoe assimilis</i>		
<i>Leucothoe commensalis</i>		
<i>Leucothoe diemenensis</i>		
<i>Leucothoe gooweera</i>		
<i>Leucothoe spinicarpa</i>		
<i>Leucothoe tarte</i>		
<i>Levinebalia maria</i>		
<i>Ligia (Nesoligia) australiensis</i>		
<i>Liljeborgia aequabilis</i>		
<i>Liljeborgia dubia</i>		
<i>Limnoporeia kalduke</i>		
<i>Limnoporeia kingi</i>		
<i>Limnoporeia maranowe</i>		
<i>Limnoporeia ungamale</i>		
<i>Limnoporeia wakkine</i>		
<i>Limnoporeia woorake</i>		
<i>Limnoria glaucinosa</i>		
<i>Limnoria quadripunctata</i>		
<i>Limnoria rugosissima</i>		
<i>Limnoria torquisa</i>		
<i>Linguimaera everardensis</i>		
<i>Linguimaera garitima</i>		
<i>Linguimaera kellissa</i>		
<i>Linguimaera leo</i>		
<i>Linguimaera tias</i>		
<i>Liocarcinus corrugatus</i>		
<i>Liocarcinus strigilis</i>	Dwarf Swimmer Crab	
<i>Lipkius holthuisi</i>		
<i>Lissosabinea arthuri</i>		
<i>Lissosabinea lynseyae</i>		
<i>Lithodes australiensis</i>	Spiny King Crab	
<i>Lithodes longispina</i>		
<i>Litocheira bispinosa</i>	Two-Spined Slender-Clawed Crab	
<i>Litognodiastylis alata</i>		
<i>Litognodiastylis ambigua</i>		
<i>Litognodiastylis brevipes</i>		
<i>Litognodiastylis charadra</i>		
<i>Litognodiastylis concava</i>		
<i>Litognodiastylis crenagloba</i>		
<i>Litognodiastylis echinata</i>		
<i>Litognodiastylis gongyla</i>		
<i>Litognodiastylis lewtonae</i>		
<i>Litognodiastylis lumacaudata</i>		
<i>Litognodiastylis margarita</i>		
<i>Litognodiastylis microornata</i>		
<i>Litognodiastylis munda</i>		
<i>Litognodiastylis mutabilis</i>		
<i>Litognodiastylis ornata</i>		
<i>Litognodiastylis poorei</i>		
<i>Litognodiastylis pseudomargarita</i>		
<i>Litognodiastylis quadricristata</i>		
<i>Litognodiastylis roscida</i>		
<i>Litognodiastylis serrata</i>		

Litogynodiastylis trachyphasis		
Litogynodiastylis tumida		
Litogynodiastylis turgida		
Lomis hirta	Hairy Stone Crab	
Lophopagurus (Lophopagurus) nanus	Dwarf Hermit Crab	
Lophopagurus lacertosus		
Lucifer typus		
Lycaea pulex		
Lycaea vincentii		
Lyreidus tridentatus	Frog Crab	
Lysianella lui		
Lysmata morelandi		
Macrolabrum haikung		
Macrolabrum sarda		
Macrolabrum tangaroa		
Maeraceterus bramblensis		
Mallacoota diemenensis		
Mallacoota penelope		
Mallacoota subcarinata		
Mariaplax granulifera		
Maricoccus brucei		
Marmachus fortunae		
Matong matong		
Megametope rotundifrons	Smooth-Forehead Crab	
Melicertus plebejus	Eastern King Prawn	
Melita festiva		
Melita matilda		
Melita plumulosa		
Memana sarda		
Meningodora vesca		
Merhippolyte chacei		
Merocryptus lambriformis		
Meromonakantha anarsios		
Mesanthura astelia		
Mesanthura libertia		
Mesanthura moroea		
Mesanthura romulea		
Mesanthura stypantra		
Metaceradocus micramphopus		
Metacirolana japonica		
Metacrangon poorei		
Metacrangon spinidorsalis		
Metacyphocaris helgae		
Metadromia wilsoni		
Metapenaeus bennettiae	Greentail Prawn	
Metapenaeus macleayi	Eastern School Prawn	
Metaprotella haswelliana		
Metaprotella novaehollandiae		
Metapseudes wilsoni		
Metopoides pollex		
Micippa spinosa	Spiny Flat-Beaked Crab	
Microhalimus deflexifrons		
Micropagurus acantholepis	Tiny Hermit Crab	
Mictyris longicarpus		
Mictyris platycheles		
Mirandotanais vorax		
Misceolamprobs concavus		
Monocorophium acherusicum		
Monodgnathia colobostruma		
Moolapheonoides poontee		
Munida chydrea		

Munida endeavourae		
Munida gregaria		
Munida haswelli	Long-Armed Craylet	
Munida isos		
Munida microps		
Munidopsis comarge		
Munidopsis subsquamosa		
Munna hentyi		
Mursia curtispina		
Mysidella australiana		
Nagada uwedoe		
Nannastacus gibbosus		
Nannastacus inflatus		
Nasutoplax rostratus	Beaked Flat Spider Crab	
Natanolana bulba		
Natanolana kahiba		
Natanolana laewilla		
Natanolana longispina		
Natanolana matong		
Natanolana nammuldi		
Natanolana pellucida		
Natanolana thurar		
Natanolana valida		
Natanolana vieta		
Natanolana woodjonesi		
Natanolana wowine		
Nauticaris marionis		
Naxia aries	Ramshorn Crab	
Naxia aurita	Golden Decorator Crab	
Naxia tumida	Little Decorator Crab	
Neastacilla attenuata		
Neastacilla coonabooloo		
Neastacilla deducta		
Neastacilla inaequispinosa		
Neastacilla kanowna		
Neastacilla macilenta		
Neastacilla monoseta		
Neastacilla sheardi		
Neastacilla yuriel		
Nebaliella declivatas		
Nectocarcinus integrifrons	Rough Rock Crab	
Nectocarcinus tuberculatus	Velvet Crab	
Nematobranchion sexspinosum		
Nematocarcinus longirostris		
Nematocarcinus productus		
Nematocarcinus sigmoideus		
Nematoscelis megalops		
Nematoscelis microps		
Neocirolana obesa		
Neohyssura bilara		
Neolithodes bronwynae		
Neolithodes flindersi		
Neopilumnoplax nieli		
Neorchestia plicibrancha		
Neotanais noelietaiti		
Nerocila orbigny		
Normanion whoi		
Notomithrax minor	Small Decorator Crab	
Notomithrax ursus		
Notopais minya		
Notorchestia australis		

Notorchestia quadrimana		
Notostomus auriculatus		
Nototropis homochir		
Nuuanu mokari		
Nyctiphanes australis		
Ochlesis innocens		
Ochlesis morgani		
Ocosingo yatala		
Oecidiobranthus nowrae		
Oediceroides ornatus		
Oncopagurus indicus		
Oplophorus novaezeelandiae		
Oplophorus spinosus		
Orchestiella neambulans		
Ovalipes australiensis	Common Sand Crab	
Ovalipes molleri		
Oxinasphaera aylostera		
Oxinasphaera bispinosa		
Oxinasphaera bisubula		
Oxinasphaera parodia		
Oxinasphaera tuberculosa		
Oxycephalus clausi		
Ozagathus watharongus		
Ozius deplanatus		
Pachygrapsus laevimanus		
Pachynus denticulatum		
Pachynus obsolescens		
Pagurapseudes kimbla		
Pagurapseudes spinipes		
Pagurapseudes victoriae		
Paguristes aciculus		
Paguristes brevirostris	Southern Hermit Crab	
Paguristes frontalis	Common Hermit Crab	
Paguristes longisetosus		
Paguristes pugil	Boxer Hermit Crab	
Paguristes squamosus		
Paguristes tuberculatus	Friendly Hermit Crab	
Pagurixus handrecki		
Pagurixus jerviense		
Pagurus investigatoris		
Pakistanapseudes bassi		
Pakistanapseudes lucifer		
Pakistanapseudes perulpa		
Pakistanapseudes taylorae		
Palaemon intermedius	Striped Shrimp	
Palaemon serenus	Rock-Pool Shrimp	
Panathura baudini		
Panathura hicksi		
Panulirus ornatus	Ornate Rock Lobster	
Paracalliope australis		
Paracalliope lowryi		
Paracalliope vicinus		
Paracaprella alata		
Paracassidina anasilla		
Paracassidina bamarook		
Paracassidina pectinata		
Paracassidina petala		
Parachevreuxiella justii		
Paracorophium excavatum		
Paracrangon australis		
Paradesmosoma australis		

Paradeutella echinata		
Paradexamine churinga		
Paradexamine dandaloo		
Paradexamine echuca		
Paradexamine frinsdorfi		
Paradexamine lanacoura		
Paradexamine linga		
Paradexamine moorhousei		
Paradexamine pacifica		
Paradexamine quarallia		
Paradexamine thadalee		
Paradicoides acanthommatus		
Paradicoides megadactylus		
Paradoxapseudes attenuata		
Paradoxapseudes bassoprofundo		
Paradoxapseudes larakia		
Paradoxapseudes paneacis		
Parafilitanais vadosus		
Paragathotanaais wurundjeri		
Paragiopagurus diogenes		
Paragrapsus gaimardii	Common Shore Crab	
Paragrapsus quadridentatus		
Paralamprops poorei		
Paralomis echidna		
Paralysianopsis pomona		
Paramesopodopsis rufa		
Paranchialina angusta		
Paranthura ciliata		
Paranthura grevillea		
Paranthura kunzea		
Paranthura telopea		
Paraorides unistilus		
Parapagurus bouvieri		
Parapagurus furici		
Parapagurus latimanus		
Parapagurus richeri		
Parapasiphae sulcatifrons		
Paraphronima crassipes		
Paraplatysympus echinolowryi		
Parapontophilus junceus		
Paraproto spinosa		
Paraproto tasmaniensis		
Parapseudes blandowskii		
Parasergestes armatus		
Parasergestes stimulator		
Parastacilla torus		
Paratanais malignus		
Paratanais tanyherpes		
Paratanais vetinari		
Parathelges aniculi		
Paratya australiensis	Australian Paratya	
Paratyphis promontorii		
Paratyphlotanaais colouros		
Parawaldeckia pulchra		
Parawaldeckia stebbingi		
Parawaldeckia stephenseni		
Parawaldeckia yamba		
Pareasmopus poorei		
Pareasmopus sowpigenis		
Parexoediceros pirloti		
Parharpinia villosa		

Paridotea collingei		
Paridotea munda		
Paridotea simplex		
Parschisturella martrudan		
Parschisturella medora		
Pasiphaea barnardi		
Pasiphaea berentsae		
Pasiphaea kapala		
Pedinura flindersia		
Pedinura mokari		
Pentaceration bassiana		
Pentaceration bovicornis		
Pentaceration globopleonis		
Pentaceration lancifera		
Pentaceration magna		
Pentaceration megalomos		
Pentaceration omalos		
Pentaceration simplex		
Pentaceration spinosissima		
Pentacheles laevis		
Pentacheles obscurus		
Pentacheles validus		
Peraeospinosus tanytrix		
Pereionotus thomsoni		
Petalidium foliaceum		
Petrarctus demani		
Petrocheles australiensis	Spiny Porcelain Crab	
Petrolisthes elongatus		
Philocheras obliquus		
Philocheras poorei		
Philocheras victoriensis		
Photis brevicaudata		
Photis dolichommata		
Photosella charlotteae		
Photosella miersi		
Phronima atlantica		
Phronima sedentaria		
Phrosina semilunata		
Phylladorhynchus pusillus	Little Craylet	
Picrocuma poecilotum		
Pilumnopeus serratifrons	Smooth-Handed Crab	
Pilumnus acer	Long-Spined Hairy Crab	
Pilumnus etheridgei		
Pilumnus kingstoni	Downy Crab	
Pilumnus monilifera	Bearded Hairy Crab	
Pilumnus rufopunctatus	Red-Spotted Hairy Crab	
Pilumnus tomentosus	Common Hairy Crab	
Pinnotheres hickmani		
Plagusia chabrus		
Plakarthrium australiense		
Planes major		
Platyischnopus mam		
Platyischnopus mirabilis		
Platynympha longicaudata		
Platyscelus ovoides		
Platyscelus serratulus		
Plesionika alcocki		
Plesionika edwardsii		
Plesionika grahami		
Plesionika martia		
Plymphiloscia ulverstonensis		

Podocerus akanthius		
Podocerus dentatus		
Podocerus hystrix		
Podocerus manawatu		
Podocerus oliphant		
Podocerus tamoshanta		
Podocerus wanganui		
Podoprioides akantha		
Politolana dasyprion		
Polycheria antarctica		
Pomacuma australiae		
Porcellanopagurus tridentatus		
Porcellio scaber		
Portunus pelagicus	Asian Sand Crab	
Portunus sanguinolentus	Three-Spotted Crab	
Primno latreillei		
Prismatopus goldsboroughi		
Prismatopus longispinus		
Prismatopus spatulifer		
Procampylaspis bispinosa		
Procampylaspis sordida		
Procyphocaris indurata		
Projasus parkeri	Deepwater Rock Lobster	
Propagurus deprofundis		
Propagurus haigae		
Protaustrotroides victoriae		
Protohyale rubra		
Protolenbos murrarum		
Pseudambasia lochi		
Pseudambasia sheardi		
Pseudidothea hoplites		
Pseudo vanhoeffeni		
Pseudoarchaeocuma bacescui		
Pseudobathytanais gibberosus		
Pseudocarcinus gigas	Giant Crab	
Pseudolana concinna		
Pseudomesus satanus		
Pseudomma australe		
Pseudopaguristes laurentae		
Pseudopetalophthalmus australis		
Pseudopleonexes justii		
Pseudosphaeroma campbellense		
Pseudowhiteleggia typica		
Pseudozimmeriana problema		
Pugiodactylus syntomos		
Pycnoplax meridionalis		
Pycnoplax victoriensis		
Pylocheles mortensenii		
Quadrimaera viridis		
Quantanthurus erica		
Quasimodia barnardi		
Quasimodia enna		
Ranina ranina	Spanner Crab	
Remexudes toompani		
Rhinoecetes albomaculosus		
Rhinoecetes coclearis		
Rhinoecetes dinoceros		
Rhinoecetes meridianus		
Rhinoecetes robustus		
Rhopalophthalmus dakini		
Rhynchocinetes australis		

Rhynchocinetes balssi		
Rhynchocinetes enigma		
Rhynchocinetes serratus	Hinged-Beaked Prawn	
Rochinia fultoni		
Rochinia mosaica	Little Thornback Crab	
Sagmariasus verreauxi	Eastern Rock Lobster	
Saltipedis floccus		
Saltipedis nugoris		
Sandrothoe distans		
Scaphoeropsis kimblae		
Scaphoeropsis multicarinata		
Scherocumella clavata		
Scherocumella nichollsi		
Scherocumella sheardi		
Schisturella rosa		
Scylla serrata	Giant Mud Crab	
Seba typica		
Sergestes atlanticus		
Sergia japonica		
Sergia laminata		
Sergia potens		
Sergia prehensilis		
Sergia scintillans		
Serolina acaste		
Serolina clarella		
Serolina delaria		
Serolina eugeniae		
Serolina granularia		
Serolina minuta		
Serolina nepea		
Sheardella kapala		
Sheardia antennata		
Shoemakerella barnardi		
Sicafodia stylos		
Sicyonia australiensis		
Similipedia diarris		
Siriella australis		
Siriella bassi		
Siriella halei		
Siriella vincenti		
Sophrrosyne integricauda		
Sophrrosyne peartae		
Sophrrosyne rodondo		
Spiculonana bathyalis		
Stegidotea pinnata		
Stegidotea scabra		
Stegocephaloides gunnae		
Stegocephaloides tori		
Stegocephaloides tucki		
Stegosoladidus complex		
Stenetrium armatum		
Stenothoe aucklandicus		
Stenothoe miersi		
Stephonyx pirloti		
Stereomastis aculeata		
Stereomastis suhmi		
Stereomastis surda		
Stimdromia lamellata		
Stimdromia lateralis	Ridged Sponge Crab	
Strigopagurus elongatus		
Strigopagurus strigimanus	Red Hermit Crab	

Stylocheiron abbreviatum		
Stylomesus sarsi		
Stylopandalus richardi		
Styloptocuma granulosum		
Styloptocuma nodosum		
Sympagurus burkenroadi	Commensal Hermit Crab	
Sympagurus dimorphus		
Sympagurus papposus		
Synalpheus tumidomanus		
Syndexamine runde		
Synidotea grisea		
Syrrhoe semiserrata		
Syrrhoe serrima		
Systellaspis debilis		
Talorchestia diemenensis		
Tanaissus giraffa		
Tasmanoplax latifrons	Southern Sentinel Crab	
Tasmanorchestia annulata		
Tasmarcturus erinae		
Tasmarcturus lewisi		
Tasmarcturus simplicissimus		
Tenagomysis australis		
Tenagomysis tasmaniae		
Teratomaia richardsoni		
Tethygeneia megalophthalma		
Tethygeneia nalgo		
Tethygeneia waminda		
Tethygonium quadricuspis		
Tetradeion quatro		
Thalamita picta		
Thaumastognathia orectognathus		
Themisto australis		
Themisto gaudichaudii		
Thrombasia saros		
Thrombasia umina		
Thysanoessa gregaria		
Thysanopoda obtusifrons		
Tickalerus birubi		
Tipimegus dinjerrus		
Tipimegus kangulun		
Tipimegus thalerus		
Tomituka doowi		
Tottungus tungus		
Transorchestia marlo		
Trichopeltarion wardi		
Trizocheles spinosus		
Trypaea australiensis	Australian Ghost Shrimp	
Tryphosella betka		
Tryphosella camela		
Tryphosella cooee		
Tryphosella fortescue		
Tryphosella rodondo		
Tryphosella sorell		
Tryphosites colmani		
Tryphosites psittacus		
Tuldarus barinius		
Tuldarus cangellus		
Tumulosternum longimanus		
Tymolus similis		
Typhlotanais herthio		
Ulaakanthura lara		

Ulakanthura marlee		
Ulakanthura namoo		
Ulladulla selje		
Unyapheonoides dabber		
Urohaustorius merkanius		
Urohaustorius metungi		
Urohaustorius parnggius		
Urohaustorius perkeus		
Urohaustorius pulcus		
Urohaustorius wingaro		
Uromunna brevicornis		
Uromunna humei		
Uromunna phillipi		
Urophoxus pinguis		
Uroptychus australis		
Uroptychus babai		
Uroptychus calcar		
Uroptychus flindersi		
Uroptychus gracilimanus		
Uroptychus latus		
Uroptychus litosus		
Uroptychus nigricapillis		
Uroptychus patulus		
Uroptychus raymondi		
Uroptychus subsolanus		
Urothoides kurrawa		
Urothoides mabingi		
Urothoides makoo		
Urothoides mammarta		
Urothoides odernae		
Urothoides tondea		
Urothoides waminoa		
Vaunthompsonia nana		
Ventojassa helenae		
Vibilia armata		
Vibilia stebbingi		
Victometopa rorida		
Victoriasquilla poorei		
Waiteolana rugosa		
Waldeckia australiensis		
Waldeckia dempseyae		
Waldeckia kroyeri		
Waldeckia nitens		
Waldeckia tangaroa		
Wallametopa cabon		
Warragaia rintouli		
Whiteleggia multicarinata		
Whiteleggia stephensoni		
Whoia victoriensis		
Wonga wonga		
Xenocheira fasciata		
Xenosella coxospinosa		
Yammacoona kunarella		
Yarra unguiserra		
Zenocuma rugosum		
Zimmeriana lasiodactyla		
Zimmeriana longirostris		
Zimmeriana vibrissa		
Zobracho canguro		
Zuzara venosa		

Maxillopoda		
Acanthocanthopsis quadrata		
Acartia (Acanthacartia) tonsa		
Acartia (Acartia) danae		
Acartia (Acartia) negligens		
Acartia (Acartiura) clausi		
Acartia (Acartiura) tranteri		
Acartia (Odontacartia) pacifica		
Acartia simplex		
Acrocalanus gibber		
Acrocalanus gracilis		
Altiverruca navicula		
Amigdoscalpellum costellatum		
Arcoscalpellum pertosum		
Artotrogus haikungae		
Artotrogus sardae		
Austrobalanus imperator		
Austromegabalanus nigrescens		
Austrominius modestus		
Balanus trigonus		
Bathylasma alearum		
Bestiolina similis		
Calanoides carinatus		
Calanopia elliptica		
Calanus australis		
Calocalanus pavo		
Calocalanus plumulosus		
Calocalanus styliremis		
Candacia bipinnata		
Candacia bradyi		
Candacia catula		
Candacia discaudata		
Candacia ethiopica		
Candacia tenuimana		
Candacia truncata		
Canthocalanus pauper		
Catomerus polymerus		
Centropages australiensis		
Centropages bradyi		
Centropages calaninus		
Centropages furcatus		
Centropages gracilis		
Centropages orsinii		
Chaetolepas calcitergum		
Chamaesipho tasmanica	Honeycomb Barnacle	
Chiridius gracilis		
Chthamalus antennatus		
Clausocalanus arcuicornis		
Clausocalanus farrani		
Clausocalanus furcatus		
Clausocalanus ingens		
Clausocalanus jobei		
Clausocalanus parapergens		
Clausocalanus pergens		
Clytemnestra scutellata		
Copilia hendorffi		
Copilia mirabilis		
Copilia quadrata		
Coronula diadema		
Coronula reginae		
Corycaeus clausi		

Corycaeus concinna		
Corycaeus crassiusculus		
Corycaeus furcifer		
Corycaeus limbatus		
Corycaeus speciosus		
Cosmocalanus darwinii		
Ctenocalanus vanus		
Cymbasoma marioeduardoi		
Ditrichocorycaeus andrewsi		
Ditrichocorycaeus anglicus		
Ditrichocorycaeus asiaticus		
Ditrichocorycaeus lubbocki		
Ditrichocorycaeus tenuis		
Dosima fascicularis		
Entomolepis hamondi		
Epopella simplex		
Eucalanus elongatus		
Eucalanus hyalinus		
Euchaeta indica		
Euchaeta marina		
Euchaeta rimana		
Euchirella rostromagna		
Euterpina acutifrons		
Farranula gibbula		
Farranula rostrata		
Gladioferens (Gladioferens) pectinatus		
Glyptelasma carinatum		
Glyptelasma hamatum		
Glyptelasma orientale		
Glyptotrogus tangaroae		
Haloptilus oxycephalus		
Heterorhabdus papilliger		
Ibla quadrivalvis		
Idioibla pygmaea		
Labidocera acuta		
Labidocera cervi		
Labidocera kroyeri		
Labidocera minuta		
Labidocera tasmanica		
Lepas (Anatifa) anatifera		
Lepas (Anatifa) australis		
Lucicutia flavicornis		
Macrosetella gracilis		
Maemonstrilla ohtsukai		
Mecynocera clausi		
Megabalanus tintinnabulum		
Mesocalanus tenuicornis		
Metridia lucens		
Microsetella norvegica		
Microsetella rosea		
Monstrillopsis hastata		
Murramia poorei		
Nannocalanus minor		
Neocalanus gracilis		
Neocalanus tonsus		
Octolasmis indubia		
Oithona atlantica		
Oithona decipens		
Oithona longispina		
Oithona nana		
Oithona plumifera		

Oithona setigera		
Oithona similis		
Oithona simplex		
Oncaea clevei		
Oncaea media		
Oncaea mediterranea		
Oncaea venusta		
Onychocorycaeus agilis		
Onychocorycaeus catus		
Onychocorycaeus giesbrechti		
Onychocorycaeus latus		
Onychocorycaeus pacificus		
Onychocorycaeus pumilis		
Oxynaspis celata		
Pachylasma scutistriata		
Paracalanus aculeatus		
Paracalanus indicus		
Paraeuchaeta acuta		
Paralepas dannevigii		
Pareucalanus langae		
Parvocalanus crassirostris		
Planoscalpellum planum		
Pleuromamma abdominalis		
Pleuromamma borealis		
Pleuromamma gracilis		
Pleuromamma piseki		
Pleuromamma quadrangulata		
Pleuromamma xiphias		
Pontellina plumata		
Porcellidium pulchrum		
Rhincalanus cornutus		
Rhincalanus nasutus		
Sapphirina angusta		
Sapphirina nigromaculata		
Sapphirina opalina		
Sapphirina ovatolanceolata		
Sapphirina scarlata		
Sapphirina stellata		
Scolecithrix danae		
Smilium peroni		
Solidobalanus auricoma		
Subeucalanus crassus		
Subeucalanus longiceps		
Subeucalanus pileatus		
Subeucalanus subcrassus		
Sulcanus conflictus		
Tardotrogus challengeri		
Temora discaudata		
Temora turbinata		
Tesseropora rosea		
Tetraclitella purpurascens		
Tortanus barbatus		
Tracheliastes chimaerae		
Triconia conifera		
Undinula vulgaris		
Verum novaezealandiae		
Waddycephalus superbus		
Waginella axotremata		
Weltneria aapta		
Weltneria hirsuta		

Ostracoda		
Alphasarsiella altrix		
Alternochelata lizardensis		
Archasterope altrix		
Archasterope verax		
Asteropterygion magnum		
Azygocypridina lowryi		
Bathyleberis babax		
Chelicopia pertinex		
Cymbicopia cervix		
Cypridinodes favus		
Euphilomedes ferox		
Eusarsiella edax		
Eusarsiella fallomagna		
Eusarsiella iayx		
Harbansus felix		
Harbansus tenax		
Homasterope trebax		
Isocypridina fallax		
Leuroleberis mackenziei		
Macrocypridina castanea		
Metavargula calix		
Metavargula procax		
Paradoloria fax		
Paradoloria mordax		
Paradoloria tryx		
Parasterope lux		
Parasterope physinx		
Parasterope sequax		
Philomedes pseudolofthousae		
Philomedes ptyx		
Philomedes sphinx		
Philomedes thorax		
Ponticythereis militaris		
Pseudodoloria plax		
Pterocypridina excreta		
Sarsiella magna		
Skogsbergia vivax		
Skogsbergiella senex		
Spinacopia rex		
Spinacopia syrinx		
Thaumatocochlea pix		
Vargula dentata		
Vargula fugax		
Vargula hex		
Vargula matrix		
Vargula psydrax		
Vargula stranx		
Vargula trifax		
Vargula tubulata		
Vargula vix		
Xandarasterope storthynx		
Xandarasterope trux		
Xenoleberis bex		
Ostracoda		
Achelia shepherdii		
Achelia variabilis		
Ammothea (Ammothea) australiensis		
Anoplodactylus tubiferus		
Anoplodactylus typhloides		

Anoropallene valida		
Ascorhynchus cooki		
Ascorhynchus longicollis		
Austrodecus staplesi		
Callipallene micracantha		
Callipallene micrantha		
Callipallene novaezealandiae		
Colossendeis colossea		
Colossendeis macerrima		
Colossendeis spicula		
Colossendeis tasmanica		
Meridionale ambigua		
Meridionale dubia		
Meridionale inflata		
Nymphon aequidigitatum		
Nymphon bunyipi		
Nymphon novaehollandiae		
Nymphon singulare		
Oropallene minor		
Pallenopsis gippslandiae		
Parapallene australiensis		
Parapallene avida		
Propallene cyathus		
Pseudopallene reflexa		
Pycnogonum aurilineatum		
Pycnogonum carinatum		
Pycnogonum occa		
Pycnogonum tuberculatum		
Stylopallene cheilorhynchus		
Stylopallene tubirostris		
BRACHIOPODA		
Rhynchonellata		
Anakinetica cumingii		
Argyrotheca mayi		
Aulites brazieri		
Campages furcifera		
Cancellothyris hedleyi		
Cryptopora gnomon		
Eohemithiris columnus		
Jaffaia jaffaensis		
Magadinella mineuri		
Magellania flavescens		
Megerlina lamarckiana		
Parakinetica stewarti		
Pirothyris vercoi		
BRYOZOA		
GYMNOLAEMATA		
Adeona cellulosa		
Adeona grisea		
Adeonellopsis foliacea		
Adeonellopsis parvipuncta		
Adeonellopsis portmarina		
Aetea anguina		
Amastigia texta		
Amathia convoluta		
Amathia crispa		
Amathia wilsoni		

Arachnopusia ajax		
Beania magellanica		
Biflustra perfragilis		
Bracebridgia pyriformis		
Bugula dentata		
Bugula neritina		
Bugula robusta		
Bugula serrata		
Bugularia dissimilis		
Bugulella gracilis		
Caberea boryi		
Caberea dichotoma		
Caberea glabra		
Caberea lata		
Calpidium ornatum		
Calpidium ponderosum		
Calyptotheca anceps		
Calyptotheca inclusa		
Calyptotheca triangula		
Calyptotheca variolosa		
Canda arachnoides		
Canda filifera		
Carbasea pisciformis		
Catenicella elegans		
Caulibugula annulata		
Cellaria australis		
Cellaria rigida		
Cellaria tenuirostris		
Celleporaria hastigera		
Celleporina platalea		
Claviporella imperforata		
Conescharellina biarmata		
Conescharellina cognata		
Conescharellina obscura		
Conescharellina pustulosa		
Corbulella corbula		
Corbulipora tubulifera		
Cornucopina grandis		
Cornucopina tuba		
Cornuticella cornuta		
Costaticella hastata		
Cribricellina cribraria		
Cribricellina rufa		
Crucescharellina australis		
Didymosella larvalis		
Didymozoum simplex		
Dimetopia cornuta		
Electra angulata		
Electra pilosa		
Emballotheca quadrata		
Escharina acuminata		
Escharoides excavata		
Euthyroides episcopalis		
Farciminaria simplex		
Fenestulina candida		
Figularia speciosa		
Flabellopora umbonata		
Gregarinidra serrata		
Hiantopora ferox		
Hincksinoflustra denticulata		
Idictyum phoeniceum	Pink Lace Bryozoan	

Lekythopora hystrix		
Licornia cyclostoma		
Lunularia capulus		
Margaretta barbata		
Membranipora membranacea		
Menipea roborata		
Metroperiella triangula		
Microporella ciliata		
Orthoscuticella margaritacea		
Orthoscuticella ventricosa		
Orthoscuticella wilsoni		
Otionellina auricula		
Otionellina minuta		
Paracribricellina cribraria		
Parastichopora vanna		
Parmularia macneilli		
Parmularia obliqua		
Phonicosia circinata		
Porina gracilis		
Pterocella vesiculosa		
Reteporella aurantiaca		
Reteporella fissa		
Reteporella granulata		
Reteporella porcellana		
Reteporellina babelensis		
Retiflustra cornea		
Retiflustra reticulum		
Scalicella crystallina		
Schizomavella lata		
Schizoporella errata		
Scrupocaberea ornithorhynchus		
Scuticella plagiostoma		
Selenaria exasperans		
Selenaria parapunctata		
Selenaria varians		
Selenariopsis gabrieli		
Smittoidea maunganuiensis		
Sphaeropora oliva		
Steginoporella truncata		
Tetraplaria wilsoni		
Triphylozoon floribundum		
Triphylozoon moniliferum	Lace Bryozoan	
Triphylozoon munitum		
Tubiporella magnirostris		
Urceolipora lucida		
Watersipora subtorquata		
Stenolaemata		
Crisia acropora		
Hornera foliacea		
Hornera ramosa		
Hornera robusta		
CHORDATA		
Actinopterygii		
Abalistes stellatus	Starry Triggerfish	
Acanthaluteres spilomelanurus	Bridled Leatherjacket	
Acanthaluteres vittiger	Toothbrush Leatherjacket	
Acanthistius cinctus	Yellowbanded Wirrah	
Acanthistius ocellatus	Eastern Wirrah	

<i>Acanthocybium solandri</i>	Wahoo	
<i>Acanthopagrus australis</i>	Yellowfin Bream	
<i>Acanthopagrus butcheri</i>	Black Bream	
<i>Acanthopagrus pacificus</i>	Pikey Bream	
<i>Achoerodus gouldii</i>	Western Blue Groper	
<i>Achoerodus viridis</i>	Eastern Blue Groper	
<i>Aetapcus maculatus</i>	Warty Prowfish	
<i>Afurcagobius tamarensis</i>	Tamar Goby	
<i>Alabes bathys</i>	Deepwater Shore-Eel	
<i>Alabes dorsalis</i>	Common Shore Eel	
<i>Alabes hoesei</i>	Dwarf Shore Eel	
<i>Alabes obtusirostris</i>	Pugnose Shore Eel	
<i>Alabes parvula</i>	Pygmy Shore Eel	
<i>Alabes scotti</i>	Scott's Shore Eel	
<i>Aldrichetta forsteri</i>	Yelloweye Mullet	
<i>Alepisaurus rostratus</i>	Longnose Lancetfish	
<i>Alepocephalus antipodius</i>	Antipodean Slickhead	
<i>Alepocephalus australis</i>	Smallscale Slickhead	
<i>Alloctytus niger</i>	Black Oreodory	
<i>Alloctytus verrucosus</i>	Warty Oreodory	
<i>Allomycterus pilatus</i>	Australian Burrfish	
<i>Ambassis jacksoniensis</i>	Port Jackson Glassfish	
<i>Ammotretis lituratus</i>	Spotted Flounder	
<i>Ammotretis macrolepis</i>	Largescale Flounder	
<i>Ammotretis rostratus</i>	Longsnout Flounder	
<i>Anacanthus barbatus</i>	Bearded Leatherjacket	
<i>Anguilla australis</i>	Southern Shortfin Eel	
<i>Anguilla reinhardtii</i>	Longfin Eel	
<i>Anoplocapros inermis</i>	Eastern Smooth Boxfish	
<i>Anoplocapros lenticularis</i>	Whitebarred Boxfish	
<i>Anoplogaster cornuta</i>	Fangtooth	
<i>Antigonia rhomboidea</i>	Rhomboid Deepsea Boarfish	
<i>Antigonia rubicunda</i>	Rosy Deepsea Boarfish	
<i>Antimora rostrata</i>	Violet Cod	
<i>Antipodocottus elegans</i>	Dwarf Sculpin	
<i>Aplodactylus arctidens</i>	Marblefish	
<i>Aplodactylus lophodon</i>	Rock Cale	
<i>Apopterygion alta</i>	Tasselled Threefin	
<i>Aracana aurita</i>	Shaw's Cowfish	
<i>Aracana ornata</i>	Ornate Cowfish	
<i>Arenigobius bifrenatus</i>	Bridled Goby	
<i>Arenigobius frenatus</i>	Halfbridled Goby	
<i>Argentina australiae</i>	Silverside	
<i>Argentina elongata</i>		
<i>Argyrolepecus aculeatus</i>	Lovely Hatchetfish	
<i>Argyrolepecus gigas</i>	Giant Hatchetfish	
<i>Argyrolepecus hemigymnus</i>	Halfnaked Hatchetfish	
<i>Argyrolepecus sladeni</i>	Lowcrest Hatchetfish	
<i>Argyrosomus japonicus</i>	Mulloway	
<i>Ariosoma anago</i>	Darkfin Conger	
<i>Ariosoma mauritianum</i>	Blunt-Tooth Conger	
<i>Ariosoma scheelei</i>	Tropical Conger	
<i>Arnoglossus bassensis</i>	Bass Strait Flounder	
<i>Arnoglossus muelleri</i>	Mueller's Flounder	
<i>Arothron firmamentum</i>	Starry Toadfish	
<i>Arrhamphus sclerolepis</i>	Snubnose Garfish	
<i>Arripis georgianus</i>	Australian Herring	
<i>Arripis trutta</i>	Eastern Australian Salmon	
<i>Arripis truttaceus</i>	Western Australian Salmon	
<i>Aspasmogaster liorhynchus</i>	Smoothsnout Clingfish	
<i>Aspasmogaster tasmaniensis</i>	Tasmanian Clingfish	

<i>Asquamiceps hjorti</i>	Barethroat Slickhead	
<i>Asthenomacurus victoris</i>	Victory Whiptail	
<i>Astronesthes bilobatus</i>	Twinlobe Snaggletooth	
<i>Astronesthes bouleengeri</i>	Boulenger's Snaggletooth	
<i>Astronesthes indicus</i>	Black Snaggletooth	
<i>Astronesthes niger</i>		
<i>Ateleopus japonicus</i>	Pacific Jellynose Fish	
<i>Atherinason hepsetoides</i>	Smallscale Hardyhead	
<i>Atherinosoma microstoma</i>	Smallmouth Hardyhead	
<i>Atypichthys strigatus</i>	Mado	
<i>Auxis thazard</i>	Frigate Mackerel	
<i>Avocettina acuticeps</i>	Southern Snipe Eel	
<i>Avocettina infans</i>	Avocet Snipe Eel	
<i>Azygopus pinnifasciatus</i>	Banded-Fin Flounder	
<i>Barbourisia rufa</i>	Redvelvet Whalefish	
<i>Bassanago bulbiceps</i>	Swollenhead Conger	
<i>Bassanago hirsutus</i>	Deepsea Conger	
<i>Bathygadus cottoides</i>	Codhead Rat Tail	
<i>Bathygadus furvescens</i>	Blackfin Rat Tail	
<i>Bathygobius cocosensis</i>	Cocos Frillgoby	
<i>Bathylagichthys kobylianskyi</i>		
<i>Bathylagus antarcticus</i>	Antarctic Deepsea Smelt	
<i>Bathypterois filiferus</i>		
<i>Bathypterois grallator</i>	Tripod Spiderfish	
<i>Bathysauropsis gracilis</i>	Black Deepsea Lizardfish	
<i>Bathysaurus ferox</i>	Deepsea Lizardfish	
<i>Bathyroconger vicinus</i>	Large-tooth Conger	
<i>Benthalbella infans</i>	Childish Pearleye	
<i>Benthodesmus elongatus</i>	Slender Frostfish	
<i>Benthoosema fibulatum</i>	Spinycheek Lanternfish	
<i>Benthoosema suborbitale</i>	Dimple Lanternfish	
<i>Beryx decadactylus</i>	Imperador	
<i>Beryx splendens</i>	Alfonsino	
<i>Bodianus flavifrons</i>	Masked Pigfish	
<i>Bodianus flavipinnis</i>	Yellowfin Pigfish	
<i>Bodianus vulpinus</i>	Western Pigfish	
<i>Bolinichthys nikolayi</i>	Nikolay's Lanternfish	
<i>Bolinichthys supralateralis</i>	Stubby Lanternfish	
<i>Borostomias antarcticus</i>	Antarctic Snaggletooth	
<i>Bovichtus angustifrons</i>	Dragonet	
<i>Bovichtus variegatus</i>		
<i>Brachaluteres jacksonianus</i>	Southern Pygmy Leatherjacket	
<i>Brachionichthys australis</i>	Australian Handfish	
<i>Brachionichthys hirsutus</i>	Spotted Handfish	EPBC Act Threatened Species
<i>Brachiopsilus dossenus</i>	Humpback Handfish	
<i>Brachiopsilus ziebelli</i>	Actaeon Handfish	EPBC Act Threatened Species
<i>Brachirus nigra</i>	Black Sole	
<i>Brachynectes fasciatus</i>	Barred Threefin	
<i>Brama australis</i>	Southern Ray's Bream	
<i>Brama brama</i>	Ray's Bream	
<i>Branchiostegus australiensis</i>	Australian Tilefish	
<i>Branchiostegus wardi</i>	Pink Tilefish	
<i>Bregmaceros maclellandi</i>	Unicorn Codlet	
<i>Brotulotaenia crassa</i>	Violet Cusk	
<i>Caelorinchus acanthiger</i>		
<i>Caelorinchus aspercephalus</i>		
<i>Caelorinchus matamua</i>		
<i>Caelorinchus parvifasciatus</i>		
<i>Caesioperca lepidoptera</i>	Butterfly Perch	
<i>Caesioperca rasor</i>	Barber Perch	
<i>Callanthias allporti</i>	Rosy Perch	

Callanthias australis	Splendid Perch	
Callogobius depressus	Flathead Goby	
Callogobius mucosus	Sculptured Goby	
Caprodon longimanus	Longfin Perch	
Capropygia unistriata	Spiny Boxfish	
Carassius auratus	Goldfish	
Caristius meridionalis		
Centriscoops humerosus	Banded Bellowsfish	
Centroberyx affinis	Redfish	
Centroberyx australis	Yelloweye Redfish	
Centroberyx gerrardi	Bight Redfish	
Centroberyx lineatus	Swallowtail	
Centrobranchus nigroocellatus	Roundnose Lanternfish	
Centrolophus niger	Rudderfish	
Centropogon australis	Eastern Fortescue	
Cephalopholis cyanostigma	Bluespotted Rockcod	
Cepola australis	Australian Bandfish	
Ceratias tentaculatus	Southern Seadevil	
Ceratoscopelus warmingii	Warming's Lanternfish	
Cetonurus globiceps	Globehead Whiptail	
Cetoscarus ocellatus	Bicolour Parrotfish	
Chaetodon auriga	Threadfin Butterflyfish	
Chaetodon guentheri	Gunther's Butterflyfish	
Champsodon nudivittis	Nakedband Gaper	
Chanos chanos	Milkfish	
Chascanopsetta lugubris	Pelican Flounder	
Chauliodus sloani	Sloane's Viperfish	
Chaunax breviradius	Tassled Coffinfish	
Chaunax endeavouri	Furry Coffinfish	
Chaunax penicillatus	Pencil Coffinfish	
Chaunax reticulatus	Netted Frogmouth	
Cheilodactylus fuscus	Red Morwong	
Cheilodactylus nigripes	Magpie Perch	
Cheilodactylus spectabilis	Banded Morwong	
Cheilopogon abei	Abe's Flyingfish	
Chelidonichthys kumu	Red Gurnard	
Chiasmodon microcephalus	Black Swallower	
Chiasmodon niger		
Chironemus georgianus	Western Kelpfish	
Chironemus marmoratus	Eastern Kelpfish	
Choerodon cauteroma	Bluespotted Tuskfish	
Chromis hypsilepis	Onespot Puller	
Chrysiptera rollandi	Bluehead Demoiselle	
Chrysophrys auratus	Snapper	
Cnidoglanis macrocephalus	Estuary Cobbler	
Cochleoceps bassensis	Broadhead Clingfish	
Coelophrys brevipes	Balloon Seabat	
Coelorinchus acanthiger	Spottyface Whiptail	
Coelorinchus amydrozosterus	Faintbanded Whiptail	
Coelorinchus australis	Southern Whiptail	
Coelorinchus fasciatus	Banded Whiptail	
Coelorinchus gormani	Little Whiptail	
Coelorinchus innotabilis	Notable Whiptail	
Coelorinchus kaiyomaru	Kaiyomaru Whiptail	
Coelorinchus kermadecus	Kermadec Whiptail	
Coelorinchus lasti	Roughsnout Whiptail	
Coelorinchus matamua	Blueband Whiptail	
Coelorinchus maurofasciatus	Falseband Whiptail	
Coelorinchus mirus	Gargoyle Fish	
Coelorinchus trachycarus	Rough-Head Whiptail	
Conger verreauxi	Southern Conger	

Conger wilsoni	Eastern Conger	
Contusus breviceaudus	Prickly Toadfish	
Contusus richei	Barred Toadfish	
Cookeolus japonicus	Longfin Bigeye	
Coryphaena hippurus	Mahi Mahi	
Coryphaenoides armatus	Cosmopolitan Rattail	
Coryphaenoides dossenus	Humpback Whiptail	
Coryphaenoides fernandezianus	Fernandez Whiptail	
Coryphaenoides filicauda	Humphead Whiptail	
Coryphaenoides mcmillani	Mcmillan's Whiptail	
Coryphaenoides murrayi	Abyssal Whiptail	
Coryphaenoides rudis	Bighead Whiptail	
Coryphaenoides serrulatus	Serrulate Whiptail	
Coryphaenoides striaturus	Striate Whiptail	
Coryphaenoides subserrulatus	Longray Whiptail	
Crapatalus munroi	Pink Sandfish	
Creedia haswelli	Slender Sandburrer	
Creocele cardinalis	Broad Clingfish	
Cristiceps argyropleura	Silverside Weedfish	
Cristiceps aurantiacus	Yellow Crested Weedfish	
Cristiceps australis	Southern Crested Weedfish	
Cryptopsaras couesii	Triplewart Seadevil	
Cubiceps caeruleus	Blue Cubehead	
Cubiceps whiteleggii	Coastal Cubehead	
Cyclothone alba	Pale Bristlemouth	
Cyclothone braueri	Brauer's Bristlemouth	
Cyclothone microdon	Smalltooth Bristlemouth	
Cyclothone pallida	Tanned Bristlemouth	
Cyclothone pseudopallida	Slender Bristlemouth	
Cyprinus carpio	European Carp	
Cyttopsis rosea	Rosy Dory	
Cyttus australis	Silver Dory	
Cyttus novaezealandiae	New Zealand Dory	
Cyttus traversi	King Dory	
Dactylophora nigricans	Dusky Morwong	
Dannevigia tusca	Tusk	
Decapterus russelli	Indian Scad	
Derichthys serpentinus	Deepwater Neck Eel	
Diaphus danae	Dana Lanternfish	
Diaphus effulgens	Headlight Lanternfish	
Diaphus fragilis	Fragile Lanternfish	
Diaphus hudsoni	Hudson's Lanternfish	
Diaphus kapalae	Kapala Lanternfish	
Diaphus luetkeni	Luetken's Lanternfish	
Diaphus meadi	Mead's Lanternfish	
Diaphus metopoclampus	Bluntnose Lanternfish	
Diaphus mollis	Soft Lanternfish	
Diaphus ostenfeldi	Ostenfeld's Lanternfish	
Diaphus parri	Parr's Lanternfish	
Diaphus termophilus	Warmwater Lanternfish	
Diastobranchus capensis	Basketwork Eel	
Dicotylichthys punctulatus	Threebar Porcupinefish	
Dinolestes lewini	Longfin Pike	
Diodon hystrix	Spotted Porcupinefish	
Diodon nichthemerus	Globefish	
Diogenichthys atlanticus	Atlantic Lanternfish	
Diplophos rebaini	Rebains' Portholefish	
Diretmichthys parini	Black Spinyfin	
Diretmus argenteus	Discfish	
Dotalabrus aurantiacus	Castelnau's Wrasse	
Dysalotus alcocki		

<i>Dysalotus oligoscolus</i>	Smooth Swallower	
<i>Ebinania australiae</i>	Macquarie Blobfish	
<i>Echinophryne crassispina</i>	Prickly Anglerfish	
<i>Echinophryne mitchellii</i>	Spinycoat Anglerfish	
<i>Echinophryne reynoldsi</i>	Sponge Anglerfish	
<i>Echiodon cryomargarites</i>		
<i>Echiodon rendahli</i>	Messmate Fish	
<i>Eeyorius hutchinsi</i>	Finetooth Beardie	
<i>Electrona carlsbergi</i>	Carlsberg's Lanternfish	
<i>Electrona risso</i>	Risso's Lanternfish	
<i>Electrona subaspera</i>	Rough Lanternfish	
<i>Emmelichthys nitidus</i>	Redbait	
<i>Engraulis australis</i>	Australian Anchovy	
<i>Enigmapercis reducta</i>	Broad Duckbill	
<i>Enneapterygius atrogulare</i>	Ringscale Threefin	
<i>Enneapterygius rufopileus</i>	Blackcheek Threefin	
<i>Enoplosus armatus</i>	Old Wife	
<i>Eocallionymus papilio</i>	Painted Stinkfish	
<i>Epigonus denticulatus</i>	White Deepsea Cardinalfish	
<i>Epigonus lenimen</i>	Bigeye Deepsea Cardinalfish	
<i>Epigonus robustus</i>	Robust Deepsea Cardinalfish	
<i>Epigonus telescopus</i>	Black Deepsea Cardinalfish	
<i>Eubalichthys bucephalus</i>	Black Reef Leatherjacket	
<i>Eubalichthys gunnii</i>	Gunn's Leatherjacket	
<i>Eubalichthys mosaicus</i>	Mosaic Leatherjacket	
<i>Euclichthys polynemus</i>	Eucla Cod	
<i>Eupetrichthys angustipes</i>	Snakeskin Wrasse	
<i>Eurypharynx pelecanooides</i>	Pelican Eel	
<i>Eustomias enbarbatus</i>	Barbate Dragonfish	
<i>Euthynnus affinis</i>	Mackerel Tuna	
<i>Eviota melasma</i>	Headspot Eviota	
<i>Favonigobius lateralis</i>	Southern Longfin Goby	
<i>Filicampus tigris</i>	Tiger Pipefish	
<i>Fistularia commersonii</i>	Smooth Flutemouth	
<i>Foetorepus calauropomus</i>	Common Stinkfish	
<i>Foetorepus phasis</i>	Longray Stinkfish	
<i>Gadomus aoteanus</i>	Filamentous Rat Tail	
<i>Gadopsis bispinosus</i>	Twospine Blackfish	
<i>Gadopsis marmoratus</i>	River Blackfish	
<i>Gaidropsarus novaezelandiae</i>		
<i>Galaxias auratus</i>	Golden Galaxias	EPBC Act Threatened Species
<i>Galaxias brevipinnis</i>	Climbing Galaxias	
<i>Galaxias maculatus</i>	Common Galaxias	
<i>Galaxias olidus</i>	Mountain Galaxias	
<i>Galaxias ornatus</i>	Ornate Galaxias	
<i>Galaxias parvus</i>	Swamp Galaxias	EPBC Act Threatened Species
<i>Galaxias truttaceus</i>	Trout Galaxias	
<i>Galaxiella pusilla</i>	Eastern Dwarf Galaxias	EPBC Act Threatened Species
<i>Gambusia dominicensis</i>	Dominican Gambusia	
<i>Gambusia holbrooki</i>	Eastern Gambusia	
<i>Genypterus blacodes</i>	Pink Ling	
<i>Genypterus tigerinus</i>	Rock Ling	
<i>Gephyroberyx darwinii</i>	Darwin's Roughy	
<i>Gerres erythrorus</i>	Short Silverbidy	
<i>Gerres subfasciatus</i>	Common Silverbidy	
<i>Gigantactis paxtoni</i>	Paxton's Whipnose	
<i>Girella elevata</i>	Rock Blackfish	
<i>Girella tricuspidata</i>	Luderick	
<i>Girella zebra</i>	Zebrafish	
<i>Glaucosoma scapulare</i>	Pearl Perch	
<i>Glyptauchen panduratus</i>	Goblinfish	

<i>Gnathanacanthus goetzei</i>	Red Velvetfish	
<i>Gnathophis habenatus</i>		
<i>Gnathophis longicauda</i>	Little Conger	
<i>Gnathophis macroporis</i>	Largepore Conger	
<i>Gnathophis nasutus</i>	Bignose Conger	
<i>Gnathophis umbrellabia</i>	Umbrella Conger	
<i>Gobiomorphus australis</i>	Striped Gudgeon	
<i>Gobiopterus semivestitus</i>	Glassgoby	
<i>Gonorynchus greyi</i>	Beaked Salmon	
<i>Grammicolepis brachiusculus</i>	Thorny Tinseltail	
<i>Guttigadus globiceps</i>	Fathead Cod	
<i>Guttigadus kongi</i>	Austral Cod	
<i>Gymnapistes marmoratus</i>	Soldier	
<i>Gymnoscopelus bolini</i>		
<i>Gymnoscopelus piabilis</i>	Southern Blacktip Lanternfish	
<i>Gymnothorax obesus</i>	Speckled Moray	
<i>Gymnothorax prasinus</i>	Green Moray	
<i>Halargyreus johnsonii</i>	Slender Cod	
<i>Halletta semifasciata</i>	Blue Weed Whiting	
<i>Halietaea brevicauda</i>	Shortfin Seabat	
<i>Halietaea stellata</i>	Starry Seabat	
<i>Halosauropsis macrochir</i>	Black Halosaur	
<i>Halosaurus pectoralis</i>	Australian Halosaur	
<i>Haplomacrourus nudirostris</i>	Nakedsnout Whiptail	
<i>Haplophryne mollis</i>	Soft Leafvent Angler	
<i>Helicolenus barathri</i>	Bigeye Ocean Perch	
<i>Helicolenus percoides</i>	Reef Ocean Perch	
<i>Hemiramphus far</i>	Blackbarred Garfish	
<i>Herklotsichthys castelnaui</i>	Southern Herring	
<i>Heteroclinus adelaidae</i>	Adelaide Weedfish	
<i>Heteroclinus eckloniae</i>	Kelp Weedfish	
<i>Heteroclinus heptaeolus</i>	Ogilby's Weedfish	
<i>Heteroclinus johnstoni</i>	Johnston's Weedfish	
<i>Heteroclinus kuiteri</i>	Kuiter's Weedfish	
<i>Heteroclinus macrophthalmus</i>	Large-Eye Weedfish	
<i>Heteroclinus nasutus</i>	Largenose Weedfish	
<i>Heteroclinus perspicillatus</i>	Common Weedfish	
<i>Heteroclinus puellarum</i>	Little Weedfish	
<i>Heteroclinus roseus</i>	Rosy Weedfish	
<i>Heteroclinus tristis</i>	Longnose Weedfish	
<i>Heteroclinus whiteleggii</i>	Banded Weedfish	
<i>Heteroclinus wilsoni</i>	Wilson's Weedfish	
<i>Heteroscarus acroptilus</i>	Rainbow Cale	
<i>Himantolophus appellii</i>	Prickly Footballfish	
<i>Himantolophus stewarti</i>		
<i>Hime curtirostris</i>	Shortsnout Threadsail	
<i>Hippocampus abdominalis</i>	Bigbelly Seahorse	
<i>Hippocampus breviceps</i>	Shorthead Seahorse	
<i>Hippocampus minotaur</i>	Bullneck Seahorse	
<i>Histiobranchus australis</i>	Southern Cut-Throat Eel	
<i>Holtbyrnia laticauda</i>	Tusked Tubeshoulder	
<i>Hoplichthys citrinus</i>	Lemon Ghost Flathead	
<i>Hoplichthys haswelli</i>	Deepsea Flathead	
<i>Hoplostethus atlanticus</i>	Orange Roughy	EPBC Act Threatened Species
<i>Hoplostethus mediterraneus</i>	Blacktip Sawbelly	
<i>Hoplostethus melanopeza</i>	New Zealand Giant Sawbelly	
<i>Howella brodiei</i>	Southern Pelagic Bass	
<i>Howella sherborni</i>	Sherborn's Pelagic Bass	
<i>Hygophum hanseni</i>	Hansen's Lanternfish	
<i>Hygophum hygomii</i>	Hygom's Lanternfish	
<i>Hygophum proximum</i>	Firefly Lanternfish	

<i>Hymenogadus gracilis</i>	Delicate Whiptail	
<i>Hyperlophus vittatus</i>	Sandy Sprat	
<i>Hyperoglyphe antarctica</i>	Blue-Eye Trevalla	
<i>Hypoplectrodes annulatus</i>	Blackbanded Seaperch	
<i>Hypoplectrodes cardinalis</i>	Red Seaperch	
<i>Hypoplectrodes maccullochi</i>	Halfbanded Seaperch	
<i>Hypoplectrodes nigroruber</i>	Banded Seaperch	
<i>Hyporhamphus melanochir</i>	Southern Garfish	
<i>Hyporhamphus regularis</i>	River Garfish	
<i>Hyporthodus septemfasciatus</i>	Convict Grouper	
<i>Hypsognathus rostratus</i>	Knifesnout Pipefish	
<i>Ichthyscopus spinosus</i>	Spiny Stargazer	
<i>Idiacanthus atlanticus</i>	Common Black Dragonfish	
<i>Idiacanthus fasciola</i>	Serpent Black Dragonfish	
<i>Idioloophorhynchus andriashevi</i>	Pineapple Whiptail	
<i>Ilyophis blachei</i>		
<i>Ilyophis brunneus</i>	Muddy Arrowtooth Eel	
<i>Iso rothophilus</i>	Surf Sardine	
<i>Istiompax indica</i>	Black Marlin	
<i>Kajikia audax</i>	Striped Marlin	
<i>Kathetostoma canaster</i>	Speckled Stargazer	
<i>Kathetostoma laeve</i>	Common Stargazer	
<i>Kathetostoma nigrofasciatum</i>	Deepwater Stargazer	
<i>Katsuwonus pelamis</i>	Skipjack Tuna	
<i>Kaupus costatus</i>	Deepbody Pipefish	
<i>Kestratherina esox</i>	Pikehead Hardyhead	
<i>Kimblaeus bassensis</i>	Trawl Pipefish	
<i>Kopua kuiteri</i>	Deepwater Clingfish	
<i>Kuiterichthys furcipilis</i>	Rough Anglerfish	
<i>Kuronezumia bubonis</i>	Bulbous Whiptail	
<i>Kuronezumia leonis</i>	Snubnose Whiptail	
<i>Kyphosus sydneyanus</i>	Silver Drummer	
<i>Lactoria cornuta</i>	Longhorn Cowfish	
<i>Lactoria diaphana</i>	Roundbelly Cowfish	
<i>Lactoria fornasini</i>	Thornback Cowfish	
<i>Lagocephalus inermis</i>	Smooth Golden Toadfish	
<i>Lagocephalus lagocephalus</i>	Ocean Puffer	
<i>Lagocephalus spadiceus</i>	Brownback Toadfish	
<i>Lampadena notialis</i>	Notal Lanternfish	
<i>Lampanyctodes hectoris</i>	Hector's Lanternfish	
<i>Lampanyctus alatus</i>	Winged Lanternfish	
<i>Lampanyctus australis</i>	Austral Lanternfish	
<i>Lampanyctus festivus</i>	Festive Lanternfish	
<i>Lampanyctus intricarius</i>	Intricate Lanternfish	
<i>Lampanyctus lepidolychnus</i>	Mermaid Lanternfish	
<i>Lampanyctus macdonaldi</i>	Macdonald's Lanternfish	
<i>Lampanyctus nobilis</i>	Noble Lanternfish	
<i>Lampanyctus pusillus</i>	Pygmy Lanternfish	
<i>Lampanyctus tenuiformis</i>		
<i>Lampichthys procerus</i>	Blackhead Lanternfish	
<i>Lampris guttatus</i>		
<i>Latridopsis forsteri</i>	Bastard Trumpeter	
<i>Latris lineata</i>	Striped Trumpeter	
<i>Latropiscis purpurissatus</i>	Sergeant Baker	
<i>Lepidion inosimae</i>	Giant Cod	
<i>Lepidion microcephalus</i>	Smallhead Cod	
<i>Lepidion schmidti</i>	Schmidt's Cod	
<i>Lepidoblennius haplodactylus</i>	Eastern Jumping Blenny	
<i>Lepidocybium flavobrunneum</i>	Escolar	
<i>Lepidoperca pulchella</i>	Eastern Orange Perch	
<i>Lepidoperca tasmanica</i>	Tasmanian Perch	

<i>Lepidopus caudatus</i>	Frostfish	
<i>Lepidorhynchus denticulatus</i>	Toothed Whiptail	
<i>Lepidotrigla modesta</i>	Cocky Gurnard	
<i>Lepidotrigla mulhalli</i>	Roundsnout Gurnard	
<i>Lepidotrigla papilio</i>	Spiny Gurnard	
<i>Lepidotrigla vanessa</i>	Butterfly Gurnard	
<i>Leptatherina presbyteroides</i>	Silver Fish	
<i>Leptoichthys fistularius</i>	Brushtail Pipefish	
<i>Lestidiops jayakari</i>	Pacific Barracudina	
<i>Lesueurina platycephala</i>	Flathead Sandfish	
<i>Lissocampus runa</i>	Javelin Pipefish	
<i>Liza argentea</i>	Goldspot Mullet	
<i>Lobianchia dofleini</i>	Doflein's Lanternfish	
<i>Lobianchia gemellarii</i>	Gemellar's Lanternfish	
<i>Lophiodes endoi</i>	Endo's Anglerfish	
<i>Lophiodes mutilus</i>	Smooth Goosefish	
<i>Lophonectes gallus</i>	Crested Flounder	
<i>Lophotus capellei</i>		
<i>Lophotus guntheri</i>	Crested Bandfish	
<i>Lotella rhacina</i>	Largetooth Beardie	
<i>Lucigadus nigromaculatus</i>	Blackspot Whiptail	
<i>Luciosudis normani</i>	Norman's Waryfish	
<i>Lumiconger arafura</i>	Luminous Conger	
<i>Lutjanus argentimaculatus</i>	Mangrove Jack	
<i>Lutjanus semicinctus</i>	Blackbanded Snapper	
<i>Luvarus imperialis</i>	Louvar	
<i>Macquaria australasica</i>	Macquarie Perch	EPBC Act Threatened Species
<i>Macquaria colonorum</i>	Estuary Perch	
<i>Macquaria novemaculeata</i>	Australian Bass	
<i>Macroparalepis macrogeneion</i>	Longfin Barracudina	
<i>Macroramphosus gracilis</i>	Little Bellowsfish	
<i>Macroramphosus scolopax</i>	Common Bellowsfish	
<i>Macrorhamphosodes uradoi</i>	Common Trumpetsnout	
<i>Macrourus carinatus</i>	Ridgescale Whiptail	
<i>Macruronus novaezelandiae</i>	Blue Grenadier	
<i>Magnisudis prionosa</i>	Duckbill Barracudina	
<i>Malacocephalus laevis</i>	Smooth Whiptail	
<i>Malacosteus australis</i>	Southern Stoplight Loosejaw	
<i>Malacosteus niger</i>	Black Loosejaw	
<i>Maulisia acuticeps</i>	Sharpsnout Tubeshoulder	
<i>Maurolucus australis</i>	Pennant Pearlside	
<i>Maxillcosta meridianus</i>	Southern Gurnard Perch	
<i>Maxillcosta whitleyi</i>	Whitley's Gurnard Perch	
<i>Melamphaes longivelis</i>	Eyebrow Bigscale	
<i>Melamphaes suborbitalis</i>	Shoulderspine Bigscale	
<i>Melanocetus johnsonii</i>	Humpback Blackdevil	
<i>Melanolagus bericoides</i>	Bigscale Deepsea Smelt	
<i>Melanonus gracilis</i>	Pelagic Cod	
<i>Melanonus zugmayeri</i>	Arrowtail Cod	
<i>Melanostigma gelatinosum</i>	Limp Eelpout	
<i>Melanostigma vitiazi</i>		
<i>Melanostomias niger</i>	Fangtooth Dragonfish	
<i>Merluccius australis</i>	Southern Hake	
<i>Mesovagus antipodum</i>	Black Whiptail	
<i>Metelectrona herwigi</i>	Herwig Lanternfish	
<i>Metelectrona ventralis</i>	Flaccid Lanternfish	
<i>Meuschenia australis</i>	Brownstriped Leatherjacket	
<i>Meuschenia flavolineata</i>	Yellowstriped Leatherjacket	
<i>Meuschenia freycineti</i>	Sixspine Leatherjacket	
<i>Meuschenia galii</i>	Bluelined Leatherjacket	
<i>Meuschenia hippocrepis</i>	Horseshoe Leatherjacket	

Meuschenia scaber	Velvet Leatherjacket	
Meuschenia trachylepis	Yellowfin Leatherjacket	
Meuschenia venusta	Stars-And-Stripes Leatherjacket	
Microstoma microstoma		
Mitotichthys semistriatus	Halfbanded Pipefish	
Mola mola	Ocean Sunfish	
Monacanthus chinensis	Fanbelly Leatherjacket	
Monodactylus argenteus	Diamondfish	
Monopterus albus	Belut	
Mora moro	Ribaldo	
Mugil cephalus	Sea Mullet	
Muraenesox bagio	Common Pike Eel	
Muraenolepis orangiensis	Patagonian Moray Cod	
Myctophum asperum	Prickly Lanternfish	
Myctophum nitidulum	Pearly-Spotted Lanternfish	
Myctophum phengodes	Bright Lanternfish	
Myxus elongatus	Sand Mullet	
Nannobranchium achirus	Cripplefin Lanternfish	
Nannobranchium atrum	Dusky Lanternfish	
Nannoperca australis	Southern Pygmy Perch	
Naucrates ductor	Pilotfish	
Nelusetta ayraud	Ocean Jacket	
Nelusetta ayraudi		
Nemadactylus douglasii	Grey Morwong	
Nemadactylus macroptera	Jackass Morwong	
Nemadactylus valenciennesi	Blue Morwong	
Nematops macrochirus	Longfin Righteye Flounder	
Nemichthys curvirostris	Boxer Snipe Eel	
Neoachirosetta milfordi	Armless Deepsea Flounder	
Neobythites pallidus	Pale Cusk	
Neocaristius heemstrai		
Neochanna cleaveri	Tasmanian Mudfish	
Neocyttus rhomboidalis	Spikey Oreodory	
Neoodax balteatus	Little Weed Whiting	
Neopataecus waterhousii	Whiskered Prowfish	
Neoscopelus macrolepidotus	Largescale Neoscopelid	
Neoscopelus microchir	Shortfin Neoscopelid	
Neosebastes bougainvillii	Gulf Gurnard Perch	
Neosebastes nigropunctatus	Blackspotted Gurnard Perch	
Neosebastes occidentalis	Orangebanded Gurnard Perch	
Neosebastes pandus	Bighead Gurnard Perch	
Neosebastes scorpaenoides	Common Gurnard Perch	
Neosebastes thetidis	Thetis Fish	
Nesogobius hinsbyi	Hinsby's Goby	
Nesogobius maccullochi	Girdled Goby	
Nesogobius pulchellus	Sailfin Goby	
Nessorhamphus ingolfianus	Ingolf Duckbill Eel	
Nezumia coheni	Cohen's Whiptail	
Nezumia kapala	Kapala Whiptail	
Nezumia namatahi	Namatahi Whiptail	
Nezumia soela	Soela Whiptail	
Normichthys yahganorum	Tubeshoulder	
Notacanthus chemnitzii	Cosmopolitan Spineback	
Notacanthus sexspinis	Southern Spineback	
Notolabrus fucicola	Purple Wrasse	
Notolabrus gymnogenis	Crimsonband Wrasse	
Notolabrus parilus	Brownspotted Wrasse	
Notolabrus tetricus	Bluethroat Wrasse	
Notolychnus valdiviae	Topside Lanternfish	
Notophycis marginata	Forkbeard Cod	
Notopogon lilliei	Crested Bellowsfish	

Notopogon xenosoma	Orange Bellowsfish	
Notoscopelus caudispinosus	Spinetail Lanternfish	
Notoscopelus resplendens	Patchwork Lanternfish	
Odontomacurus murrayi	Largefang Whiptail	
Olisthops cyanomelas	Herring Cale	
Omegophora armilla	Ringed Toadfish	
Oncorhynchus mykiss	Rainbow Trout	
Oneirodes krefftii	Krefft's Dreamer	
Oneirodes placionema		
Oneirodes sabex	Rough Dreamer	
Ophiclinus gracilis	Blackback Snake Blenny	
Ophiclinus ningulus	Variable Snake Blenny	
Ophidion muraenolepis	Blackedge Cusk	
Ophisurus serpens	Serpent Eel	
Ophthalmolepis lineolata	Southern Maori Wrasse	
Oplegnathus woodwardi	Knifejaw	
Opostomias micripnus	Obese Dragonfish	
Optivus agastos	Violet Roughy	
Optivus elongatus		
Oreosoma atlanticum	Oxeye Oreodory	
Ostracoberyx paxtoni	Spinycheek Seabass	
Otolithes ruber	Silver Teraglin	
Parablennius intermedius	Horned Blenny	
Parablennius tasmanianus	Tasmanian Blenny	
Parabrotula plagiophthalmus	False Cusk	
Paradiplospinus antarcticus	Slender Escolar	
Paragalaxias dissimilis	Shannon Galaxias	EPBC Act Threatened Species
Paraliparis anthracinus	Coalskin Snailfish	
Paraliparis ater	Sooty Snailfish	
Paraliparis atrolabiatus	Darklip Snailfish	
Paraliparis auriculatus	Smallcheek Snailfish	
Paraliparis brunneus	Brown Snailfish	
Paraliparis costatus	Black Ribbed Snailfish	
Paraliparis delphis	Dolphin Snailfish	
Paraliparis gomoni	Squarechin Snailfish	
Paraliparis impariporus	Unipore Snailfish	
Paraliparis labiatus	Biglip Snailfish	
Paraliparis obtusirostris	Bluntsnout Snailfish	
Paraliparis piceus	Tarred Snailfish	
Paraliparis plagiosomus	Sharkmouth Snailfish	
Paramonacanthus filicauda	Threadfin Leatherjacket	
Parapercis allporti	Barred Grubfish	
Parapercis binivirgata	Redbanded Grubfish	
Parapercis ramsayi	Spotted Grubfish	
Paraplagusia bilineata	Lemon Tongue Sole	
Paraplesiops alisonae	Alison's Blue Devil	
Paraplesiops meleagris	Southern Blue Devil	
Parapriacanthus elongatus	Elongate Bullseye	
Paratrachichthys macleayi	Sandpaper Fish	
Paratrachichthys trailli		
Paraulopus nigripinnis	Blacktip Cucumberfish	
Parequula melbournensis	Silverbelly	
Parika scaber		
Paristiopterus gallipavo	Yellowspotted Boarfish	
Paristiopterus labiosus	Giant Boarfish	
Parma microlepis	White-Ear	
Parma unifasciata	Girdled Scalyfin	
Parma victoriae	Scalyfin	
Parupeneus chrysopleuron	Rosy Goatfish	
Parupeneus spilurus	Blacksaddle Goatfish	
Parvicrepis parvipinnis	Smallfin Clingfish	

<i>Pegasus lancifer</i>	Sculptured Seamothe	
<i>Pelates quadrilineatus</i>	Fourline Striped Grunter	
<i>Pempheris affinis</i>	Blacktip Bullseye	
<i>Pempheris compressa</i>	Smallscale Bullseye	
<i>Pempheris multiradiata</i>	Bigscale Bullseye	
<i>Pentaceropsis recurvirostris</i>	Longsnout Boarfish	
<i>Pentaceros decacanthus</i>	Bigspine Boarfish	
<i>Perca fluviatilis</i>	Redfin	
<i>Peristedion liorhynchus</i>	Slender Armour Gurnard	
<i>Peristedion picturatum</i>	Robust Armour Gurnard	
<i>Persparsia kopua</i>	Spangled Tubeshoulder	
<i>Pezichthys amplispinus</i>	Cockatoo Handfish	
<i>Pezichthys compressus</i>	Narrowbody Handfish	
<i>Pezichthys eltanini</i>	Eltanin Handfish	
<i>Phenacoscorpius adenensis</i>	Toothed No-Line Scorpionfish	
<i>Philypnodon grandiceps</i>	Flathead Gudgeon	
<i>Philypnodon macrostomus</i>	Dwarf Flathead Gudgeon	
<i>Phosichthys argenteus</i>	Silver Lightfish	
<i>Photichthys argenteus</i>		
<i>Photonectes braueri</i>	Brauer's Dragonfish	
<i>Photostylus pycnopterus</i>	Starry Slickhead	
<i>Phyllophryne scortea</i>	Whitespotted Anglerfish	
<i>Phyllopteryx taeniolatus</i>	Common Seadragon	
<i>Physiculus luminosa</i>	Luminous Cod	
<i>Pictilabrus laticlavus</i>	Senator Wrasse	
<i>Plagiogeneion macrolepis</i>	Bigscale Rubyfish	
<i>Plagiogeneion rubiginosum</i>	Cosmopolitan Rubyfish	
<i>Platyberyx andriashevi</i>		
<i>Platycephalus aurimaculatus</i>	Toothy Flathead	
<i>Platycephalus bassensis</i>	Southern Sand Flathead	
<i>Platycephalus caeruleopunctatus</i>	Bluespotted Flathead	
<i>Platycephalus conatus</i>	Deepwater Flathead	
<i>Platycephalus endrachtensis</i>	Northern Sand Flathead	
<i>Platycephalus fuscus</i>	Dusky Flathead	
<i>Platycephalus grandispinis</i>	Longspine Flathead	
<i>Platycephalus laevigatus</i>	Rock Flathead	
<i>Platycephalus marmoratus</i>	Marbled Flathead	
<i>Platycephalus richardsoni</i>	Tiger Flathead	
<i>Platycephalus speculator</i>	Southern Bluespotted Flathead	
<i>Plectorhinchus gibbosus</i>	Brown Sweetlips	
<i>Plectranthias maculicauda</i>	Spot-Tail Perchlet	
<i>Pleuroscopus pseudodorsalis</i>	Scaled Stargazer	
<i>Polyacanthonotus challengeri</i>	Longnose Tapirfish	
<i>Polyipnus aquavitus</i>	Aquavit Hatchetfish	
<i>Polyipnus ruggeri</i>	Rugby Hatchetfish	
<i>Polyipnus tridentifer</i>	Threespine Hatchetfish	
<i>Polyipnus triphanos</i>	Threelight Hatchetfish	
<i>Polymetme corythaeola</i>	Rendezvous Fish	
<i>Polymetme illustris</i>	Brilliant Lightfish	
<i>Polymixia busakhini</i>	Busakhin's Beardfish	
<i>Polyprion americanus</i>	Bass Groper	
<i>Polyprion oxygeneios</i>	Hapuku	
<i>Pomatomus saltatrix</i>	Tailor	
<i>Poromitra atlantica</i>	Crested Bigscale	
<i>Priacanthus macracanthus</i>	Spotted Bigeye	
<i>Protomyctophum normani</i>	Norman's Lanternfish	
<i>Protomyctophum parallelum</i>	Parallel Lanternfish	
<i>Prototroctes maraena</i>	Australian Grayling	EPBC Act Threatened Species
<i>Psednos nataliae</i>	Darkgill Snailfish	
<i>Psednos whitleyi</i>	Bigcheek Snailfish	
<i>Psenes pellucidus</i>	Blackrag	

<i>Psenopsis humerosa</i>	Blackspot Butterfish	
<i>Pseudaphritis urvillii</i>	Congolli	
<i>Pseudocaranx dentex</i>	Silver Trevally	
<i>Pseudocaranx georgianus</i>	Silver Trevally	
<i>Pseudocaranx wrighti</i>	Skipjack Trevally	
<i>Pseudocyttus maculatus</i>	Smooth Oreodory	
<i>Pseudogobius olorum</i>	Bluespot Goby	
<i>Pseudogobius poecilosoma</i>	Northern Fatnose Goby	
<i>Pseudolabrus biserialis</i>	Redband Wrasse	
<i>Pseudolabrus luculentus</i>	Luculent Wrasse	
<i>Pseudolabrus miles</i>		
<i>Pseudolabrus rubicundus</i>	Rosy Wrasse	
<i>Pseudopentaceros richardsoni</i>	Pelagic Armourhead	
<i>Pseudophycis bachus</i>	Red Cod	
<i>Pseudophycis barbata</i>	Bearded Rock Cod	
<i>Pseudophycis breviuscula</i>	Bastard Red Cod	
<i>Pseudorhombus arsius</i>	Large-tooth Flounder	
<i>Pseudorhombus jenynsii</i>	Small-tooth Flounder	
<i>Pseudorhombus tenuirastrum</i>	Slender Flounder	
<i>Pseudoscopelus altipinnis</i>		
<i>Psychrolutes marcidus</i>	Smooth-Head Blobfish	
<i>Pterycombus petersii</i>	Prickly Fanfish	
<i>Pterygotrigla andertoni</i>	Painted Latchet	
<i>Pterygotrigla elicryste</i>	Dwarf Gurnard	
<i>Pterygotrigla polyommata</i>	Latchet	
<i>Rachycentron canadum</i>	Cobia	
<i>Ratabulus diversidens</i>	Freespine Flathead	
<i>Redigobius macrostoma</i>	Largemouth Goby	
<i>Regalecus glesne</i>	Oarfish	
<i>Repomucenus calcaratus</i>	Spotted Dragonet	
<i>Retropinna semoni</i>	Australian Smelt	
<i>Rexea antefurcata</i>	Longfin Gemfish	
<i>Rexea solandri</i>	Gemfish	
<i>Rhombosolea tapirina</i>	Greenback Flounder	
<i>Rhycherus filamentosus</i>	Tasselled Anglerfish	
<i>Rogadius patriciae</i>	Blackbanded Flathead	
<i>Rondeletia loricata</i>	Common Redmouth Whalefish	
<i>Rosenblattia robusta</i>	Stout Cardinalfish	
<i>Rouleina attrita</i>	Softskin Slickhead	
<i>Rouleina eucla</i>	Eucla Slickhead	
<i>Rouleina squamilatera</i>	Sparkling Slickhead	
<i>Ruvettus pretiosus</i>	Oilfish	
<i>Salmo salar</i>	Atlantic Salmon	
<i>Salmo trutta</i>	Brown Trout	
<i>Sarda australis</i>	Australian Bonito	
<i>Sardinops sagax</i>	Australian Sardine	
<i>Saurida filamentosa</i>	Threadfin Saury	
<i>Saurida wanieso</i>	Wanieso Saury	
<i>Schedophilus huttoni</i>	New Zealand Ruffe	
<i>Schedophilus labyrinthicus</i>	Ocean Blue-Eye Trevalla	
<i>Schedophilus maculatus</i>	Raft-Fish	
<i>Scobinichthys granulatus</i>	Rough Leatherjacket	
<i>Scolecenchelys australis</i>	Shortfin Worm Eel	
<i>Scolecenchelys breviceps</i>	Shorthead Worm Eel	
<i>Scolecenchelys castlei</i>	Deepwater Big-Eye Worm Eel	
<i>Scolecenchelys laticaudata</i>	Redfin Worm Eel	
<i>Scomber australasicus</i>	Blue Mackerel	
<i>Scomberesox saurus</i>	King Gar	
<i>Scomberoides lysan</i>	Lesser Queenfish	
<i>Scomberomorus commerson</i>	Spanish Mackerel	
<i>Scomberomorus munroi</i>	Spotted Mackerel	

Symbolophorus boops	Spotfin Lanternfish	
Symbolophorus evermanni	Evermann's Lanternfish	
Symptericthys moultoni	Moulton's Handfish	
Synagrops japonicus	Glowbelly Seabass	
Synaphobranchus affinis	Grey Cut-Throat Eel	
Synaphobranchus brevidorsalis	Shortfin Cut-Throat Eel	
Taaningichthys bathyphilus	Deepwater Lanternfish	
Talismania longifilis	Longtail Slickhead	
Taratretis derwentensis	Derwent Flounder	
Tasmanogobius gloveri	Glover's Tasmangoby	
Tasmanogobius lasti	Scary's Tasmangoby	
Tetractenos glaber	Smooth Toadfish	
Tetragonurus atlanticus	Bigeye Squaretail	
Tetragonurus cuvieri	Smalleye Squaretail	
Thalasseleotris adela	Cryptic Sea Gudgeon	
Thamnaconus degeni	Bluefin Leatherjacket	
Thunnus alalunga	Albacore	
Thunnus albacares	Yellowfin Tuna	
Thunnus maccoyii	Southern Bluefin Tuna	EPBC Act Threatened Species
Thunnus obesus	Bigeye Tuna	
Thymichthys verrucosus	Warty Handfish	
Thyrsites atun	Barracouta	
Tilodon sexfasciatus	Moonlighter	
Tinca tinca	Tench	
Torquigener pleurogramma	Weeping Toadfish	
Trachichthys australis	Southern Roughy	
Trachinops caudimaculatus	Southern Hulafish	
Trachinops taeniatus	Eastern Hulafish	
Trachipterus jacksonensis	Southern Ribbonfish	
Trachonurus gagates	Velvet Whiptail	
Trachurus declivis	Common Jack Mackerel	
Trachurus murphyi	Peruvian Jack Mackerel	
Trachurus novaezelandiae	Yellowtail Scad	
Trachyrincus longirostris	Unicorn Whiptail	
Trachyscorpia carnomagula	Deepsea Scorpionfish	
Trachyscorpia eschmeyeri	Deepsea Ocean Perch	
Trachystoma petardi	Pinkeye Mullet	
Trianectes bucephalus	Bighead Threefin	
Trichiurus lepturus	Largehead Hairtail	
Trigonolampa miriceps	Threelight Dragonfish	
Trinorfolkia clarkei	Clark's Threefin	
Trinorfolkia incisa	Notched Threefin	
Triphoturus nigrescens	Vagabond Lanternfish	
Tripteroptychys gilchristi	Chiseltooth Grenadier Cod	
Tripteroptychys svetovidovi	Brown Grenadier Cod	
Tubbia stewarti	Seamount Rudderfish	
Tubbia tasmanica	Tasmanian Rudderfish	
Tylosurus gaviatoides	Stout Longtom	
Upeneichthys lineatus	Bluestriped Goatfish	
Upeneichthys vlamingii	Bluespotted Goatfish	
Upeneus torres	Japanese Goatfish	
Upeneus tragula	Bartail Goatfish	
Uranoscopus cognatus	Yellowtail Stargazer	
Urocampus carinirostris	Hairy Pipefish	
Valenciennellus tripunctulatus	Constellationfish	
Vanacampus phillipi	Port Phillip Pipefish	
Vanacampus poecilolaemus	Longsnout Pipefish	
Vanacampus vercoi	Verco's Pipefish	
Ventrifossa johnboborum	Snoutscale Whiptail	
Verilus anomalus	Threespine Cardinalfish	
Vincentia conspersa	Southern Cardinalfish	

<i>Vincentia novaehollandiae</i>	Eastern Gobbleguts	
<i>Vincentia punctata</i>	Orange Cardinalfish	
<i>Vinciguerria attenuata</i>	Slender Lightfish	
<i>Vinciguerria nimbaria</i>	Narooma Lightfish	
<i>Winteria telescopa</i>	Binocular Fish	
<i>Xenocephalus armatus</i>	Bulldog Stargazer	
<i>Xenodermichthys copei</i>	Bluntnout Slickhead	
<i>Xenolepidichthys dalgleishi</i>	Spotted Tinsel fish	
<i>Xiphias setifer</i>	Hairtail Blenny	
<i>Xiphias gladius</i>	Swordfish	
<i>Zanclistius elevatus</i>	Blackspot Boarfish	
<i>Zebrias scalaris</i>	Manyband Sole	
<i>Zenion japonicum</i>	Japanese Dory	
<i>Zenopsis nebulosa</i>	Mirror Dory	
<i>Zeus faber</i>	John Dory	
Appendicularia		
<i>Fritillaria borealis</i>		
<i>Fritillaria pellucida</i>		
<i>Oikopleura fusiformis</i>		
<i>Oikopleura longicauda</i>		
Asciacea		
<i>Adagnesia venusta</i>		
<i>Aplidium amorphatum</i>		
<i>Aplidium clivosum</i>		
<i>Aplidium coniferum</i>		
<i>Aplidium depressum</i>		
<i>Aplidium distaplium</i>		
<i>Aplidium laticum</i>		
<i>Aplidium pronum</i>		
<i>Aplidium robustum</i>		
<i>Ascidia challengerii</i>		
<i>Ascidia gemmata</i>		
<i>Ascidia latesiphonica</i>		
<i>Ascidia scaevola</i>		
<i>Ascidia sydneyensis</i>		
<i>Ascidia thompsoni</i>		
<i>Ascidella aspersa</i>		
<i>Botrylloides anceps</i>		
<i>Botrylloides leachii</i>		
<i>Botrylloides perspicuus</i>		
<i>Botryllus schlosseri</i>	Sea Daisies	
<i>Botryllus stewartensis</i>		
<i>Brevicollus tuberatus</i>		
<i>Clavelina australis</i>		
<i>Clavelina cylindrica</i>		
<i>Clavelina simplex</i>		
<i>Cnemidocarpa aculeata</i>		
<i>Cnemidocarpa completa</i>		
<i>Cnemidocarpa longata</i>		
<i>Cnemidocarpa pedata</i>		
<i>Cnemidocarpa radicata</i>		
<i>Cnemidocarpa tripartita</i>		
<i>Corella eumyota</i>		
<i>Ctenyura tortuosa</i>		
<i>Cystodytes dellachiajei</i>		
<i>Didemnum augusti</i>		
<i>Didemnum candidum</i>		
<i>Didemnum fragum</i>		
<i>Didemnum lambitum</i>		

Didemnum mantile		
Didemnum moseleyi		
Didemnum patulum		
Diplosoma listerianum		
Diplosoma velatum		
Distaplia australiensis		
Distaplia florida		
Distaplia retinaculata		
Dumus areniferus		
Eucoelium orientalis		
Eudistoma globosum		
Eudistoma sabulosum		
Eugyra millimetra		
Eugyra molguloides		
Halocynthia dumosa		
Hartmeyeria formosa		
Herdmania fimbriae		
Herdmania grandis		
Herdmania momus		
Hypodistoma mirabile		
Leptoclinides exiguus		
Leptoclinides seminudus		
Lissoclinum tasmanense		
Microcosmus exasperatus		
Microcosmus helleri		
Microcosmus planus		
Microcosmus propinquus		
Microcosmus stoloniferus		
Microgastra granosa		
Molgula ficus		
Molgula malvinensis		
Molgula mollis		
Molgula mortenseni		
Molgula rima		
Molgula sabulosa		
Oculinaria australis		
Pareugyrioides exigua		
Phallusia obesa		
Plurella elongata		
Polyandrocarpa lapidosa		
Polycarpa chinensis		
Polycarpa flava		
Polycarpa molguloides		
Polycarpa obscura		
Polycarpa pedunculata		
Polycarpa pegasis		
Polycarpa pigmentata		
Polycarpa plenovata		
Polycarpa procera		
Polycarpa rigida		
Polycarpa thelyphanes		
Polycarpa tinctor		
Polycarpa viridis		
Polycitor giganteus		
Polycitor obeliscus		
Polyclinum fungosum		
Polyclinum incrustatum		
Polyclinum marsupiale		
Polyclinum orbitum		
Polysyncraton gratum		
Polysyncraton papyrus		

Polysyncraton reticulum		
Polysyncraton scorteum		
Polysyncraton tasmanense		
Polysyncraton tegetum		
Pycnoclavella arenosa		
Pyura abrasata		
Pyura arenosa		
Pyura australis	Sea Tulips	
Pyura elongata		
Pyura fissa		
Pyura gangelion		
Pyura gibbosa		
Pyura irregularis		
Pyura littoralis		
Pyura molguloides		
Pyura ostreophila		
Pyura praeputialis	Cunjuvoi	
Pyura spinifera		
Pyura spinosa		
Pyura stolonifera	Cunjevoi	
Pyura tasmanensis		
Rhopalaea meridionalis		
Ritterella pedunculata		
Sigillina fantasiana		
Sigillina grandissima		
Sigillina nigra		
Stolonica australis		
Stolonica diptycha		
Styela plicata		
Sycozoa cerebriformis		
Sycozoa murrayi		
Sycozoa pedunculata		
Sycozoa pulchra		
Sycozoa sigillinoides		
Synoicum bowerbanki		
Synoicum citrum		
Synoicum obscurum		
Synoicum prunum		
Trididemnum amiculum		
Trididemnum cristatum		
Trididemnum savignii		
Trididemnum titanium		
Aves		
Acanthagenys rufogularis	Spiny-Cheeked Honeyeater	
Acanthiza (Acanthiza) apicalis	Inland Thornbill	
Acanthiza (Acanthiza) ewingii	Tasmanian Thornbill	
Acanthiza (Acanthiza) katherina	Mountain Thornbill	
Acanthiza (Acanthiza) pusilla	Brown Thornbill	
Acanthiza (Geobasileus) chrysorrhoa	Yellow-Rumped Thornbill	
Acanthiza (Geobasileus) reguloides	Buff-Rumped Thornbill	
Acanthiza (Subacanthiza) lineata	Striated Thornbill	
Acanthiza (Subacanthiza) nana	Yellow Thornbill	
Acanthorhynchus tenuirostris	Eastern Spinebill	
Acanthornis magna	Scrubtit	
Accipiter (Leucospiza) fasciatus	Brown Goshawk	
Accipiter (Leucospiza) novaehollandiae	Grey Goshawk	
Accipiter (Paraspizias) cirrocephalus	Collared Sparrowhawk	
Acridotheres tristis	Common Myna	
Acrocephalus (Acrocephalus) australis	Australian Reed Warbler	
Actitis hypoleucos	Common Sandpiper	

<i>Aegotheles (Aegotheles) cristatus</i>	Australian Owlet-Nightjar	
<i>Alauda arvensis</i>	Eurasian Skylark	
<i>Alectoris chukar</i>	Chukor	
<i>Alisterus scapularis</i>	Australian King-Parrot	
<i>Anas (Anas) platyrhynchos</i>	Mallard	
<i>Anas (Anas) superciliosa</i>	Pacific Black Duck	
<i>Anas (Nettion) castanea</i>	Chestnut Teal	
<i>Anas (Nettion) gracilis</i>	Grey Teal	
<i>Anas (Spatula) rhynchotis</i>	Australasian Shoveler	
<i>Anhinga novaehollandiae</i>	Australasian Darter	
<i>Anous stolidus</i>	Common Noddy	
<i>Anser anser</i>		
<i>Anseranas semipalmata</i>	Magpie Goose	
<i>Anthochaera (Anellobia) chrysoptera</i>	Little Wattlebird	
<i>Anthochaera (Anellobia) lunulata</i>	Western Wattlebird	
<i>Anthochaera (Anthochaera) carunculata</i>	Red Wattlebird	
<i>Anthochaera (Anthochaera) paradoxa</i>	Yellow Wattlebird	
<i>Anthochaera (Xanthomyza) phrygia</i>	Regent Honeyeater	EPBC Act Threatened Species
<i>Anthus (Anthus) novaeseelandiae</i>	Australian Pipit	
<i>Aphelocephala leucopsis</i>	Southern Whiteface	
<i>Aptenodytes patagonicus</i>	King Penguin	
<i>Apus (Apus) pacificus</i>	Fork-Tailed Swift	
<i>Aquila (Uroaetus) audax</i>	Wedge-Tailed Eagle	
<i>Ardea (Ardea) pacifica</i>	White-Necked Heron	
<i>Ardea (Bubulcus) ibis</i>	Cattle Egret	
<i>Ardea (Casmerodius) modesta</i>	Eastern Great Egret	
<i>Ardea (Mesophoyx) intermedia</i>	Intermediate Egret	
<i>Ardea alba</i>	Baluun	
<i>Ardenna bulleri</i>	Buller's Shearwater	
<i>Ardenna carneipes</i>	Flesh-Footed Shearwater	
<i>Ardenna grisea</i>	Sooty Shearwater	
<i>Ardenna pacifica</i>	Wedge-Tailed Shearwater	
<i>Ardenna tenuirostris</i>	Short-Tailed Shearwater	
<i>Ardeotis australis</i>	Australian Bustard	
<i>Arenaria interpres</i>	Turnstone	
<i>Artamus (Angroyan) cyanopterus</i>	Dusky Woodswallow	
<i>Artamus (Artamus) leucorhynchus</i>	White-Breasted Woodswallow	
<i>Artamus (Campbellornis) personatus</i>	Masked Woodswallow	
<i>Artamus (Campbellornis) superciliosus</i>	White-Browed Woodswallow	
<i>Aythya (Nyroca) australis</i>	Hardhead	
<i>Biziura lobata</i>	Musk Duck	
<i>Botaurus poiciloptilus</i>	Australasian Bittern	EPBC Act Threatened Species
<i>Burhinus (Burhinus) grallarius</i>	Bush Stone-Curlew	
<i>Butorides striatus</i>	Striated Heron	
<i>Cacatua (Cacatua) galerita</i>	Sulphur-Crested Cockatoo	
<i>Cacatua (Licmetis) sanguinea</i>	Little Corella	
<i>Cacatua (Licmetis) tenuirostris</i>	Long-Billed Corella	
<i>Cacomantis (Cacomantis) variolosus</i>	Brush Cuckoo	
<i>Cacomantis (Vidgenia) flabelliformis</i>	Fan-Tailed Cuckoo	
<i>Cacomantis (Vidgenia) pallidus</i>	Pallid Cuckoo	
<i>Calamanthus fuliginosus</i>	Striated Fieldwren	
<i>Calamanthus pyrrhopygius</i>	Chestnut-Rumped Heathwren	
<i>Calidris (Calidris) canutus</i>	Red Knot	EPBC Act Threatened Species
<i>Calidris (Calidris) tenuirostris</i>	Great Knot	EPBC Act Threatened Species
<i>Calidris (Crocethia) alba</i>	Sanderling	
<i>Calidris (Ereunetes) ruficollis</i>	Red-Necked Stint	
<i>Calidris (Erolia) acuminata</i>	Sharp-Tailed Sandpiper	
<i>Calidris (Erolia) ferruginea</i>	Curlew Sandpiper	EPBC Act Threatened Species
<i>Caligavis chrysops</i>	Yellow-Faced Honeyeater	
<i>Callipepla (Lophortyx) californica</i>	California Quail	
<i>Callocephalon fimbriatum</i>	Gang-Gang Cockatoo	

Calonectris leucomelas	Streaked Shearwater	
Calyptorhynchus (Calyptorhynchus) banksii	Red-Tailed Black Cockatoo	
Calyptorhynchus (Calyptorhynchus) lathami	Glossy Black-Cockatoo	
Calyptorhynchus (Zanda) baudinii	Long-Billed Black-Cockatoo	EPBC Act Threatened Species
Calyptorhynchus (Zanda) funereus	Yellow-Tailed Black-Cockatoo	
Carduelis carduelis	Goldfinch	
Carduelis chloris	Greenfinch	
Catharacta skua	Great Skua	
Cereopsis novaehollandiae	Cape Barren Goose	
Ceyx azureus	Azure Kingfisher	
Chalcites basalis	Horsfield's Bronze-Cuckoo	
Chalcites lucidus	Shining Bronze-Cuckoo	
Chalcophaps indica	Emerald Dove	
Charadrius (Charadrius) bicinctus	Double-Banded Plover	
Charadrius (Charadrius) leschenaultii	Greater Sand Plover	EPBC Act Threatened Species
Charadrius (Charadrius) mongolus	Lesser Sand Plover	EPBC Act Threatened Species
Charadrius (Charadrius) ruficapillus	Red-Capped Dotterel	
Charadrius (Eupoda) veredus	Oriental Plover	
Charadrius hiaticula	Ringed Plover	
Chenonetta jubata	Australian Wood Duck	
Cheramoeca leucosterna	White-Backed Swallow	
Chlidonias (Chlidonias) leucopterus	White-Winged Black Tern	
Chlidonias (Pelodes) hybrida	Whiskered Tern	
Chloris chloris	European Greenfinch	
Chroicocephalus novaehollandiae	Silver Gull	
Chrysococcyx lucidus	Shining Cuckoo	
Chthonicola sagittata	Speckled Warbler	
Cincloramphus (Cincloramphus) cruralis	Brown Songlark	
Cincloramphus (Maclennania) mathewsi	Rufous Songlark	
Cinclosoma (Cinclosoma) punctatum	Spotted Quail-Thrush	
Cinclosoma (Samuela) castaneothorax	Chestnut-Breasted Quail-Thrush	
Circus approximans	Swamp Harrier	
Circus assimilis	Spotted Harrier	
Cisticola (Cisticola) exilis	Golden-Headed Cisticola	
Cladorhynchus leucocephalus	Banded Stilt	
Climacteris (Climacteris) picumnus	Brown Treecreeper	
Climacteris (Climacterobates) erythroptus	Red-Browed Treecreeper	
Colluricincla (Colluricincla) harmonica	Grey Shrike-Thrush	
Columba (Columba) livia	Rock Dove	
Columba (Janthoenas) leucomela	White-Headed Pigeon	
Coracina (Coracina) novaehollandiae	Black-Faced Cuckoo-Shrike	
Coracina (Coracina) papuensis	White-Bellied Cuckoo-Shrike	
Coracina (Edolisoma) tenuirostris	Cicadabird	
Corcorax melanorhamphos	White-Winged Chough	
Cormobates leucophaea	White-Throated Treecreeper	
Corvus coronoides	Australian Raven	
Corvus mellori	Little Raven	
Corvus tasmanicus	Forest Raven	
Coturnix (Coturnix) pectoralis	Stubble Quail	
Coturnix (Synoicus) ypsilophora	Brown Quail	
Coturnix novaezelandiae	New Zealand Quail	
Cracticus torquatus	Grey Butcherbird	
Cygnus (Chenopsis) atratus	Black Swan	
Cygnus (Cygnus) olor	Mute Swan	
Dacelo (Dacelo) novaeguineae	Kookaburra	
Daphoenositta (Neositta) chrysoptera	Varied Sittella	
Daption capense	Cape Petrel	
Dasyornis (Dasyornis) brachypterus	Eastern Bristlebird	EPBC Act Threatened Species
Dasyornis (Maccoyornis) broadbenti	Rufous Bristlebird	
Dendrocygna (Leptotarsis) eytoni	Plumed Whistling-Duck	
Dicaeum (Dicaeum) hirundinaceum	Mistletoebird	

<i>Dicrurus bracteatus</i>	Spangled Drongo	
<i>Diomedea epomophora</i>	Southern Royal Albatross	EPBC Act Threatened Species
<i>Diomedea exulans</i>	Wandering Albatross	EPBC Act Threatened Species
<i>Diomedea sanfordi</i>	Northern Royal Albatross	EPBC Act Threatened Species
<i>Dromaius ater</i>	King Island Emu	
<i>Dromaius novaehollandiae</i>	Emu	
<i>Egretta alba</i>	Great Egret	
<i>Egretta garzetta</i>	Little Egret	
<i>Egretta novaehollandiae</i>	White-Faced Heron	
<i>Egretta sacra</i>	Eastern Reef Egret	
<i>Elanus axillaris</i>	Black-Shouldered Kite	
<i>Elanus scriptus</i>	Letter-Winged Kite	
<i>Elseyornis melanops</i>	Black-Fronted Dotterel	
<i>Eolophus roseicapilla</i>	Galah	
<i>Eopsaltria (Eopsaltria) australis</i>	Eastern Yellow Robin	
<i>Epthianura (Epthianura) albifrons</i>	White-Fronted Chat	
<i>Epthianura (Parepthianura) tricolor</i>	Crimson Chat	
<i>Erythronyctes alba</i>	Red-Kneed Dotterel	
<i>Esacus magnirostris</i>	Beach Stone-Curlew	
<i>Eudynamis orientalis</i>	Pacific Koel	
<i>Eudyptes chrysocome</i>	Rockhopper Penguin	
<i>Eudyptes chrysolophus</i>	Macaroni Penguin	
<i>Eudyptes pachyrhynchus</i>	Fiordland Penguin	
<i>Eudyptes sclateri</i>	Erect-Crested Penguin	
<i>Eudyptula minor</i>	Little Penguin	
<i>Eurostopodus (Eurostopodus) mystacalis</i>	White-Throated Nightjar	
<i>Eurystomus orientalis</i>	Eastern Broad-Billed Roller	
<i>Excalfactoria chinensis</i>	King Quail	
<i>Falco (Falco) longipennis</i>	Australian Hobby	
<i>Falco (Hierofalco) hypoleucos</i>	Grey Falcon	
<i>Falco (Hierofalco) peregrinus</i>	Peregrine Falcon	
<i>Falco (Hierofalco) subniger</i>	Black Falcon	
<i>Falco (Ieracidea) berigora</i>	Brown Falcon	
<i>Falco (Tinnunculus) cenchroides</i>	Nankeen Kestrel	
<i>Falcunculus frontatus</i>	Crested Shrike-Tit	
<i>Fregata minor</i>	Great Frigatebird	
<i>Fregetta grallaria</i>	White-Bellied Storm-Petrel	
<i>Fregetta tropica</i>	Black-Bellied Storm-Petrel	
<i>Fulica atra</i>	Eurasian Coot	
<i>Fulmarus glacialis</i>	Southern Fulmar	
<i>Gallinago (Gallinago) hardwickii</i>	Latham's Snipe	
<i>Gallinula (Gallinula) tenebrosa</i>	Dusky Moorhen	
<i>Gallirallus australis</i>	Weka	
<i>Gallirallus philippensis</i>		
<i>Gallus gallus</i>	Red Junglefowl	
<i>Garrodia nereis</i>	Grey-Backed Storm-Petrel	
<i>Gavicalis virescens</i>	Singing Honeyeater	
<i>Gelochelidon nilotica</i>	Gull-Billed Tern	
<i>Geopelia cuneata</i>	Diamond Dove	
<i>Geopelia striata</i>	Peaceful Dove	
<i>Gerygone fusca</i>	Western Gerygone	
<i>Gerygone mouki</i>	Brown Gerygone	
<i>Gerygone olivacea</i>	White-Throated Gerygone	
<i>Glareola (Glareola) maldivarum</i>	Oriental Pratincole	
<i>Gliciphila melanops</i>	Tawny-Crowned Honeyeater	
<i>Glossopsitta concinna</i>	Musk Lorikeet	
<i>Grallina cyanoleuca</i>	Magpie-Lark	
<i>Grus (Mathewsia) rubicunda</i>	Brolga	
<i>Gymnorhina tibicen</i>	Australian Magpie	
<i>Haematopus fuliginosus</i>	Sooty Oystercatcher	
<i>Haematopus longirostris</i>	Pied Oystercatcher	

<i>Haliaeetus (Pontoaetus) leucogaster</i>	White-Bellied Sea-Eagle	
<i>Haliastur sphenurus</i>	Whistling Kite	
<i>Halobaena caerulea</i>	Blue Petrel	EPBC Act Threatened Species
<i>Hieraaetus (Hieraaetus) morphnoides</i>	Little Eagle	
<i>Himantopus himantopus</i>	Pied Stilt	
<i>Hirundapus caudacutus</i>	White-Throated Needletail	
<i>Hirundapus caudacutus</i>	White-Throated Needletail	EPBC Act Threatened Species
<i>Hirundo (Hirundo) neoxena</i>	Welcome Swallow	
<i>Hydroprogne caspia</i>	Caspian Tern	
<i>Hypotaenidia philippensis</i>	Buff-Banded Rail	
<i>Ixobrychus flavicollis</i>	Black Bittern	
<i>Lalage (Lalage) sueurii</i>	White-Winged Triller	
<i>Larus (Larus) dominicanus</i>	Kelp Gull	
<i>Larus (Larus) pacificus</i>	Pacific Gull	
<i>Lathamus discolor</i>	Swift Parrot	EPBC Act Threatened Species
<i>Leucosarcia melanoleuca</i>	Wonga Pigeon	
<i>Lewinia pectoralis</i>	Lewin's Rail	
<i>Lichenostomus melanops</i>	Yellow-Tufted Honeyeater	
<i>Limicola falcinellus</i>	Broad-Billed Sandpiper	
<i>Limosa lapponica</i>	Bar-Tailed Godwit	
<i>Limosa limosa</i>	Black-Tailed Godwit	
<i>Lophoictinia isura</i>	Square-Tailed Kite	
<i>Lopholaimus antarcticus</i>	Topknot Pigeon	
<i>Lugensa brevirostris</i>	Kerguelen Petrel	
<i>Macronectes giganteus</i>	Southern Giant-Petrel	EPBC Act Threatened Species
<i>Macronectes halli</i>	Northern Giant-Petrel	EPBC Act Threatened Species
<i>Malacorhynchus membranaceus</i>	Pink-Eared Duck	
<i>Malurus (Leggeornis) lamberti</i>	Variegated Fairy-Wren	
<i>Malurus (Malurus) coronatus</i>	Purple-Crowned Fairy-Wren	
<i>Malurus (Malurus) cyaneus</i>	Superb Fairy-Wren	
<i>Malurus (Malurus) splendens</i>	Splendid Fairy-Wren	
<i>Manorina (Manorina) melanophrys</i>	Bell Miner	
<i>Manorina (Myzantha) melanocephala</i>	Noisy Miner	
<i>Megalurus gramineus</i>	Little Grassbird	
<i>Megalurus timoriensis</i>	Tawny Grassbird	
<i>Melanodryas (Amaurodryas) vittata</i>	Dusky Robin	
<i>Melanodryas (Melanodryas) cucullata</i>	Hooded Robin	
<i>Meleagris gallopavo</i>	Wild Turkey	
<i>Meliphaga (Meliphaga) lewinii</i>	Lewin's Honeyeater	
<i>Melithreptus (Eidopsarus) brevirostris</i>	Brown-Headed Honeyeater	
<i>Melithreptus (Eidopsarus) gularis</i>	Black-Chinned Honeyeater	
<i>Melithreptus (Eidopsarus) validirostris</i>	Strong-Billed Honeyeater	
<i>Melithreptus (Melithreptus) affinis</i>	Black-Headed Honeyeater	
<i>Melithreptus (Melithreptus) lunatus</i>	White-Naped Honeyeater	
<i>Melopsittacus undulatus</i>	Budgerigar	
<i>Menura (Menura) novaehollandiae</i>	Superb Lyrebird	
<i>Merops (Merops) ornatus</i>	Rainbow Bee-Eater	
<i>Microcarbo melanoleucos</i>	Little Pied Cormorant	
<i>Microeca (Microeca) fascinans</i>	Jacky Winter	
<i>Milvus migrans</i>	Black Kite	
<i>Mirafr (Mirafr) javanica</i>	Horsfield's Bushlark	
<i>Monarcha (Monarcha) melanopsis</i>	Black-Faced Monarch	
<i>Morus serrator</i>	Australasian Gannet	
<i>Motacilla (Budytes) flava</i>	Yellow Wagtail	
<i>Myiagra (Myiagra) cyanoleuca</i>	Satin Flycatcher	
<i>Myiagra (Myiagra) rubecula</i>	Leaden Flycatcher	
<i>Myiagra (Seisura) inquieta</i>	Restless Flycatcher	
<i>Myzomela (Myzomela) sanguinolenta</i>	Scarlet Honeyeater	
<i>Neochmia (Aegintha) temporalis</i>	Red-Browed Finch	
<i>Neophema (Neonanodes) chrysogaster</i>	Orange-Bellied Parrot	EPBC Act Threatened Species
<i>Neophema (Neonanodes) chrysostoma</i>	Blue-Winged Parrot	

Neophema (Neophema) pulchella	Turquoise Parrot	
Nesoptilotis flavicollis	Yellow-Throated Honeyeater	
Nesoptilotis leucotis	White-Eared Honeyeater	
Ninox (Hieracoglaux) connivens	Barking Owl	
Ninox (Ninox) novaeseelandiae	Southern Boobook	
Ninox (Rhabdoglaux) strenua	Powerful Owl	
Numenius (Mesoscolopax) minutus	Little Curlew	
Numenius (Numenius) madagascariensis	Eastern Curlew	EPBC Act Threatened Species
Numenius (Phaeopus) phaeopus	Whimbrel	
Numida meleagris	Helmeted Guineafowl	
Nycticorax caledonicus	Nankeen Night-Heron	
Nymphicus hollandicus	Cockatiel	
Oceanites oceanicus	Wilson's Storm-Petrel	
Ocyphaps lophotes	Crested Pigeon	
Onychoprion fuscata	Sooty Tern	
Oreoica gutturalis	Crested Bellbird	
Oriolus (Mimeta) sagittatus	Olive-Backed Oriole	
Oxyura australis	Blue-Billed Duck	
Pachycephala (Alisterornis) rufiventris	Rufous Whistler	
Pachycephala (Pachycephala) pectoralis	Golden Whistler	
Pachycephala (Timixos) olivacea	Olive Whistler	
Pachyptila belcheri	Slender-Billed Prion	
Pachyptila belcheri	Slender-Billed Prion	
Pachyptila crassirostris	Fulmar Prion	
Pachyptila desolata	Antarctic Prion	
Pachyptila salvini	Salvin's Prion	
Pachyptila turtur	Fairy Prion	
Pachyptila vittata	Broad-Billed Prion	
Pandion cristatus	Eastern Osprey	
Pandion haliaetus	Osprey	
Pardalotus (Pardalotinus) striatus	Striated Pardalote	
Pardalotus (Pardalotus) punctatus	Spotted Pardalote	
Pardalotus (Pardalotus) quadragintus	Forty-Spotted Pardalote	EPBC Act Threatened Species
Parvipsitta porphyrocephala	Purple-Crowned Lorikeet	
Parvipsitta pusilla	Little Lorikeet	
Passer (Passer) domesticus	House Sparrow	
Passer (Passer) montanus	Eurasian Tree Sparrow	
Pavo cristatus	Indian Peafowl	
Pedionomus torquatus	Plains-Wanderer	EPBC Act Threatened Species
Pelagodroma marina	White-Faced Storm-Petrel	
Pelecanoides urinatrix	Common Diving-Petrel	
Pelecanus conspicillatus	Australian Pelican	
Petrochelidon (Hylochelidon) nigricans	Tree Martin	
Petrochelidon (Petrochelidon) ariel	Fairy Martin	
Petroica (Erythrodryas) rodinogaster	Pink Robin	
Petroica (Erythrodryas) rosea	Rose Robin	
Petroica (Littlera) phoenicea	Flame Robin	
Petroica (Petroica) boodang	Scarlet Robin	
Petroica (Petroica) goodenovii	Red-Capped Robin	
Petroica (Petroica) multicolor	Pacific Robin	EPBC Act Threatened Species
Pezoporus wallicus	Eastern Ground Parrot	
Phaethon lepturus	White-Tailed Tropicbird	
Phaethon rubricauda	Red-Tailed Tropicbird	
Phalacrocorax (Anacarro) fuscescens	Black-Faced Cormorant	
Phalacrocorax (Phalacrocorax) carbo	Great Cormorant	
Phalacrocorax (Phalacrocorax) sulcirostris	Little Black Cormorant	
Phalacrocorax (Phalacrocorax) varius	Pied Cormorant	
Phalacrocorax melanoleucos	Birribangga	
Phalacrocorax melanoleucos	Little Pied Cormorant	
Phaps (Phaps) chalcoptera	Common Bronzewing	
Phaps (Phaps) elegans	Brush Bronzewing	

Phasianus colchicus	Common Pheasant	
Philemon (Microphilemon) citreogularis	Little Friarbird	
Philemon (Tropidorhynchus) corniculatus	Noisy Friarbird	
Phoebastria fusca	Sooty Albatross	EPBC Act Threatened Species
Phoebastria palpebrata	Light-Mantled Sooty Albatross	
Phylidonyris (Meliornis) niger	White-Cheeked Honeyeater	
Phylidonyris (Meliornis) novaehollandiae	New Holland Honeyeater	
Phylidonyris (Phylidonyris) pyrrhoptera	Crescent Honeyeater	
Platalea (Platalea) regia	Royal Spoonbill	
Platalea (Platibis) flavipes	Yellow-Billed Spoonbill	
Platycercus (Platycercus) caledonicus	Green Rosella	
Platycercus (Platycercus) elegans	Crimson Rosella	
Platycercus (Violania) eximius	Eastern Rosella	
Plectorhyncha lanceolata	Striped Honeyeater	
Plegadis falcinellus	Glossy Ibis	
Pluvialis dominica		
Pluvialis fulva	Pacific Golden Plover	
Pluvialis squatarola	Grey Plover	
Podargus strigoides	Tawny Frogmouth	
Podiceps cristatus	Great Crested Grebe	
Poliiocephalus poliocephalus	Hoary-Headed Grebe	
Polytelis alexandrae	Princess Parrot	EPBC Act Threatened Species
Pomatostomus (Pomatostomus) temporalis	Grey-Crowned Babbler	
Porphyrio (Porphyrio) porphyrio	Purple Swamphen	
Porzana (Porzana) fluminea	Australian Spotted Crake	
Porzana (Porzana) pusilla	Baillon's Crake	
Porzana (Porzana) tabuensis	Spotless Crake	
Procellaria (Adamastor) cinerea	Grey Petrel	
Procellaria (Procellaria) aequinoctialis	White-Chinned Petrel	
Procellaria (Procellaria) parkinsoni	Black Petrel	
Procellaria (Procellaria) westlandica	Westland Petrel	
Procelsterna cerulea	Grey Ternlet	
Psephotus (Psephotus) haematonotus	Red-Rumped Parrot	
Psophodes (Psophodes) olivaceus	Eastern Whipbird	
Pterodroma (Aestrelata) cervicalis	White-Necked Petrel	
Pterodroma (Cookilaria) leucoptera	Gould's Petrel	
Pterodroma (Cookilaria) nigripennis	Black-Winged Petrel	
Pterodroma (Pterodroma) lessonii	White-Headed Petrel	
Pterodroma (Pterodroma) macroptera	Great-Winged Petrel	
Pterodroma (Pterodroma) solandri	Providence Petrel	
Pterodroma barau	Barau's Petrel	
Pterodroma inexpectata	Mottled Petrel	
Pterodroma mollis	Soft-Plumaged Petrel	EPBC Act Threatened Species
Ptilinopus (Ptilinopus) regina	Rose-Crowned Fruit-Dove	
Ptilinopus (Ptilinopus) superbus	Superb Fruit-Dove	
Ptilonorhynchus violaceus	Satin Bowerbird	
Ptilotula fusca	Fuscous Honeyeater	
Ptilotula ornata	Yellow-Plumed Honeyeater	
Ptilotula penicillata	White-Plumed Honeyeater	
Puffinus (Puffinus) assimilis	Little Shearwater	
Puffinus (Puffinus) gavia	Fluttering Shearwater	
Puffinus (Puffinus) huttoni	Hutton's Shearwater	
Puffinus griseus		
Puffinus tenuirostris		
Pycnoptilus floccosus	Pilotbird	
Pygoscelis antarcticus	Chinstrap Penguin	
Recurvirostra novaehollandiae	Red-Necked Avocet	
Rhipidura (Howeavis) rufifrons	Rufous Fantail	
Rhipidura (Rhipidura) albiscapa	Grey Fantail	
Rhipidura (Rhipidura) fuliginosa	Grey Fantail	
Rhipidura (Sauloprocta) leucophrys	Willie Wagtail	

<i>Rostratula australis</i>	Australian Painted Snipe	EPBC Act Threatened Species
<i>Scenopoeetes dentirostris</i>	Tooth-Billed Bowerbird	
<i>Scythrops novaehollandiae</i>	Channel-Billed Cuckoo	
<i>Sericornis (Arfakornis) magnirostra</i>	Large-Billed Scrubwren	
<i>Sericornis (Sericornis) frontalis</i>	White-Browed Scrubwren	
<i>Sericornis (Sericornis) humilis</i>	Tasmanian Scrubwren	
<i>Smicronis brevis</i>	Weebill	
<i>Sphecotheres vieilloti</i>	Australasian Figbird	
<i>Spheniscus magellanicus</i>	Magellanic Penguin	
<i>Stagonopleura (Stagonopleura) guttata</i>	Diamond Firetail	
<i>Stagonopleura (Zonaeginthus) bella</i>	Beautiful Firetail	
<i>Stercorarius antarcticus</i>	Brown Skua	
<i>Stercorarius longicaudus</i>	Long-Tailed Jaeger	
<i>Stercorarius maccormicki</i>	South Polar Skua	
<i>Stercorarius parasiticus</i>	Arctic Jaeger	
<i>Stercorarius pomarinus</i>	Pomarine Jaeger	
<i>Sterna (Sterna) hirundo</i>	Common Tern	
<i>Sterna (Sterna) paradisaea</i>	Arctic Tern	
<i>Sterna (Sterna) striata</i>	White-Fronted Tern	
<i>Sterna nereis</i>	Fairy Tern	
<i>Sternula albifrons</i>	Little Tern	
<i>Sternula nereis</i>	Fairy Tern	
<i>Stictonetta naevosa</i>	Freckled Duck	
<i>Stipiturus malachurus</i>	Southern Emu-Wren	
<i>Strepera (Neostrepera) versicolor</i>	Grey Currawong	
<i>Strepera (Strepera) fuliginosa</i>	Black Currawong	
<i>Strepera (Strepera) graculina</i>	Pied Currawong	
<i>Streptopelia (Spilopelia) chinensis</i>	Spotted Turtle-Dove	
<i>Sturnus (Sturnus) vulgaris</i>	Starling	
<i>Tachybaptus novaehollandiae</i>	Australasian Grebe	
<i>Tadorna (Casarca) tadornoides</i>	Australian Shelduck	
<i>Taeniopygia guttata</i>	Zebra Finch	
<i>Thalassarche bulleri</i>	Buller's Albatross	EPBC Act Threatened Species
<i>Thalassarche carteri</i>	Indian Yellow-Nosed Albatross	EPBC Act Threatened Species
<i>Thalassarche cauta</i>	Shy Albatross	
<i>Thalassarche chlororhynchos</i>	Yellow-Nosed Albatross	
<i>Thalassarche chrysostoma</i>	Grey-Headed Albatross	EPBC Act Threatened Species
<i>Thalassarche impavida</i>	Campbell Albatross	
<i>Thalassarche impavida</i>	Campbell Albatross	EPBC Act Threatened Species
<i>Thalassarche melanophris</i>	Black-Browed Albatross	EPBC Act Threatened Species
<i>Thalassarche salvini</i>	Salvin's Albatross	EPBC Act Threatened Species
<i>Thalassarche steadi</i>	White-Capped Albatross	EPBC Act Threatened Species
<i>Thalasseus bergii</i>	Crested Tern	
<i>Thalassoica antarctica</i>	Antarctic Petrel	
<i>Thinornis cucullatus</i>	Hooded Plover	
<i>Threskiornis moluccus</i>	Australian White Ibis	
<i>Threskiornis spinicollis</i>	Straw-Necked Ibis	
<i>Todiramphus (Todiramphus) sanctus</i>	Sacred Kingfisher	
<i>Tribonyx mortierii</i>	Tasmanian Native-Hen	
<i>Tribonyx ventralis</i>	Black-Tailed Native-Hen	
<i>Trichoglossus chlorolepidotus</i>	Scaly-Breasted Lorikeet	
<i>Trichoglossus haematodus</i>	Rainbow Lorikeet	
<i>Tringa (Glottis) nebularia</i>	Greenshank	
<i>Tringa (Heteroscelus) brevipes</i>	Grey-Tailed Tattler	
<i>Tringa (Heteroscelus) incana</i>	Wandering Tattler	
<i>Tringa (Rhyacophilus) glareola</i>	Wood Sandpiper	
<i>Tringa (Rhyacophilus) stagnatilis</i>	Marsh Sandpiper	
<i>Turdus merula</i>	Blackbird	
<i>Turdus philomelos</i>	Song Thrush	
<i>Turnix (Alphaturnia) velox</i>	Little Button-Quail	
<i>Turnix (Austroturnix) varius</i>	Painted Button-Quail	

<i>Tyto (Megastrix) novaehollandiae</i>	Masked Owl	
<i>Tyto (Megastrix) tenebricosa</i>	Sooty Owl	
<i>Tyto (Tyto) javanica</i>	Eastern Barn Owl	
<i>Tyto alba</i>	Barn Owl	
<i>Vanellus (Lobipluvia) miles</i>	Masked Lapwing	
<i>Vanellus (Lobivanellus) tricolor</i>	Banded Lapwing	
<i>Xenus cinereus</i>	Terek Sandpiper	
<i>Zoothera (Zoothera) lunulata</i>	Bassian Thrush	
<i>Zosterops lateralis</i>	Silvereye	
Chondrichthyes		
<i>Alopias vulpinus</i>	Thresher Shark	
<i>Amblyraja hyperborea</i>	Boreal Skate	
<i>Apristurus ampliceps</i>	Roughskin Catshark	
<i>Apristurus australis</i>	Pinocchio Catshark	
<i>Apristurus melanoasper</i>	Fleshynose Catshark	
<i>Apristurus pinguis</i>	Bulldog Catshark	
<i>Apristurus platyrhynchus</i>	Bigfin Catshark	
<i>Apristurus sinensis</i>	Freckled Catshark	
<i>Aptychotrema vincentiana</i>	Western Shovelnose Ray	
<i>Asymbolus analis</i>	Grey Spotted Catshark	
<i>Asymbolus pallidus</i>	Pale Spotted Catshark	
<i>Asymbolus parvus</i>	Dwarf Catshark	
<i>Asymbolus rubiginosus</i>	Orange Spotted Catshark	
<i>Asymbolus submaculatus</i>	Variegated Catshark	
<i>Asymbolus vincenti</i>	Gulf Catshark	
<i>Bathytoshia brevicaudata</i>	Smooth Stingray	
<i>Bathytoshia lata</i>	Black Stingray	
<i>Callorhynchus milii</i>	Elephantfish	
<i>Carcharhinus brachyurus</i>	Bronze Whaler	
<i>Carcharhinus limbatus</i>	Common Blacktip Shark	
<i>Carcharhinus longimanus</i>	Oceanic Whitetip Shark	
<i>Carcharhinus obscurus</i>	Dusky Whaler	
<i>Carcharias taurus</i>	Greynurse Shark	
<i>Carcharodon carcharias</i>	White Shark	EPBC Act Threatened Species
<i>Centrophorus granulosus</i>	Gulper Shark	
<i>Centrophorus harrissoni</i>	Harrisson's Dogfish	EPBC Act Threatened Species
<i>Centrophorus moluccensis</i>	Endeavour Dogfish	
<i>Centrophorus squamosus</i>	Leafscale Gulper Shark	
<i>Centrophorus zeehaani</i>	Southern Dogfish	EPBC Act Threatened Species
<i>Centroscyllium kamoharai</i>	Bareskin Dogfish	
<i>Centroscymnus coelolepis</i>	Portuguese Dogfish	
<i>Centroscymnus owstonii</i>	Owston's Dogfish	
<i>Centroselachus crepidater</i>	Golden Dogfish	
<i>Cephaloscyllium albiginnum</i>	Whitefin Swellhark	
<i>Cephaloscyllium laticeps</i>	Draughtboard Shark	
<i>Cephaloscyllium variegatum</i>	Northern Draughtboard Shark	
<i>Chimaera fulva</i>	Southern Chimaera	
<i>Chimaera lignaria</i>	Giant Chimaera	
<i>Chimaera macrospina</i>	Longspine Chimaera	
<i>Chimaera ogilbyi</i>	Ogilby's Ghostshark	
<i>Chlamydoselachus anguineus</i>	Frill Shark	
<i>Cirrhigaleus australis</i>	Mandarin Shark	
<i>Dalatias licha</i>	Black Shark	
<i>Deania calceus</i>	Brier Shark	
<i>Deania quadrispinosa</i>	Longsnout Dogfish	
<i>Dentiraja australis</i>	Sydney Skate	
<i>Dentiraja cerva</i>	Whitespotted Skate	
<i>Dentiraja confusa</i>	Longnose Skate	
<i>Dentiraja lemprieri</i>	Thornback Skate	
<i>Dentiraja polyommata</i>	Argus Skate	

Dipturus acrobelus	Deepwater Skate	
Dipturus canutus	Grey Skate	
Dipturus grahami	Graham's Skate	
Dipturus gudgeri	Bight Skate	
Echinorhinus cookei	Prickly Shark	
Etmopterus baxteri	Southern Lanternshark	
Etmopterus bigelowi	Smooth Lanternshark	
Etmopterus granulosus	Southern Lanternshark	
Etmopterus lucifer	Blackbelly Lanternshark	
Etmopterus pusillus	Slender Lanternshark	
Etmopterus unicolor	Bristled Lanternshark	
Figaro boardmani	Sawtail Catshark	
Furgaleus macki	Whiskery Shark	
Galeocerdo cuvier	Tiger Shark	
Galeorhinus galeus	School Shark	EPBC Act Threatened Species
Harriotta haeckeli	Smallspine Spookfish	
Harriotta raleighana	Bigspine Spookfish	
Heptranchias perlo	Sharpnose Sevengill Shark	
Heterodontus portusjacksoni	Port Jackson Shark	
Hydrolagus homonycteris	Black Whitefin	
Hydrolagus trolii	Abyssal Whitefin	
Irolita waitii	Southern Round Skate	
Isurus oxyrinchus	Shortfin Mako	
Lamna nasus	Porbeagle	
Mitsukurina owstoni	Goblin Shark	
Mustelus antarcticus	Gummy Shark	
Myliobatis tenuicaudatus	Southern Eagle Ray	
Narcine tasmaniensis	Tasmanian Numbfish	
Narcinops tasmaniensis	Tasmanian Numbfish	
Negaprion acutidens	Lemon Shark	
Notoraja azurea	Blue Skate	
Notorynchus cepedianus	Broadnose Shark	
Odontaspis ferox	Sandtiger Shark	
Orectolobus maculatus	Spotted Wobbegong	
Oxynotus brunienensis	Prickly Dogfish	
Parascyllium collare	Collar Carpetshark	
Parascyllium ferrugineum	Rusty Carpetshark	
Parascyllium variolatum	Varied Carpetshark	
Pavoraja alleni	Allen's Skate	
Pavoraja nitida	Peacock Skate	
Prionace glauca	Blue Shark	
Pristiophorus cirratus	Common Sawshark	
Pristiophorus nudipinnis	Southern Sawshark	
Proscymnodon plunketi	Plunket's Dogfish	
Rajella challengerii	Challenger Skate	
Rhinobatos sainsburyi	Goldeneye Shovelnose Ray	
Rhinochimaera pacifica	Pacific Spookfish	
Sphyrna lewini	Scalloped Hammerhead	EPBC Act Threatened Species
Sphyrna zygaena	Smooth Hammerhead	
Spiniraja whitleyi	Melbourne Skate	
Squalus acanthias	Whitespotted Dogfish	
Squalus chloroculus	Greeneye Spurdog	
Squalus megalops	Spikey Dogfish	
Squalus mitsukurii		
Squalus montalbani	Philippine Spurdog	
Squatina albipunctata	Eastern Angelshark	
Squatina australis	Australian Angelshark	
Tetronarce nobiliana	Short-Tail Torpedo Ray	
Torpedo macneilli	Short-Tail Torpedo Ray	
Trygonoptera imitata	Eastern Shovelnose Stingaree	
Trygonoptera mucosa	Western Shovelnose Stingaree	

Trygonoptera testacea	Common Stingaree	
Trygonorrhina dumerilii	Southern Fiddler Ray	
Trygonorrhina fasciata	Eastern Fiddler Ray	
Urolophus bucculentus	Sandyback Stingaree	
Urolophus cruciatus	Banded Stingaree	
Urolophus gigas	Spotted Stingaree	
Urolophus kapalensis	Kapala Stingaree	
Urolophus paucimaculatus	Sparsely-Spotted Stingaree	
Urolophus piperatus	Coral Sea Stingaree	
Urolophus sufflavus	Yellowback Stingaree	
Urolophus viridis	Greenback Stingaree	
Mammalia		
Acrobates pygmaeus	Feathertail Glider	
Antechinus agilis	Agile Antechinus	
Antechinus flavipes	Yellow-Footed Antechinus	
Antechinus mimetes		
Antechinus minimus	Swamp Antechinus	
Antechinus stuartii	Brown Antechinus	
Antechinus swainsonii	Dusky Antechinus	
Arctocephalus forsteri	New Zealand Fur-Seal	
Arctocephalus gazella	Antarctic Fur-Seal	
Arctocephalus pusillus	Australian Fur-Seal	
Arctocephalus tropicalis	Subantarctic Fur-Seal	EPBC Act Threatened Species
Austronomus australis	White-Striped Freetail-Bat	
Axis porcinus	Hog Deer	
Balaenoptera acutorostrata	Minke Whale	
Balaenoptera bonaerensis	Antarctic Minke Whale	
Balaenoptera borealis	Sei Whale	EPBC Act Threatened Species
Balaenoptera musculus	Blue Whale	EPBC Act Threatened Species
Balaenoptera physalus	Fin Whale	EPBC Act Threatened Species
Bos (Bos) taurus	European Cattle	
Canis familiaris	Dingo	
Canis lupus		
Caperea marginata	Pygmy Right Whale	
Capra hircus	Goat	
Cercartetus lepidus	Little Pygmy-Possum	
Cercartetus nanus	Eastern Pygmy-Possum	
Cervus unicolor	Sambar	
Chalinolobus gouldii	Gould's Wattled Bat	
Chalinolobus morio	Chocolate Wattled Bat	
Dasyurus maculatus	Bindjulang	
Dasyurus viverrinus	Luaner	EPBC Act Threatened Species
Delphinus delphis	Common Dolphin	
Equus (Equus) caballus	Horse	
Eubalaena australis	Southern Right Whale	EPBC Act Threatened Species
Falsistrellus tasmaniensis	Eastern False Pipistrelle	
Felis catus	Cat	
Globicephala melas	Long-Finned Pilot Whale	
Hydromys chrysogaster	Water-Rat	
Hydrurga leptonyx	Leopard Seal	
Isodon obesulus	Southern Brown Bandicoot	
Kogia breviceps	Pygmy Sperm Whale	
Lepus capensis	Brown Hare	
Macropus giganteus	Eastern Grey Kangaroo	
Macropus rufogriseus		
Mastacomys fuscus	Broad-Toothed Rat	
Megaptera novaeangliae	Humpback Whale	EPBC Act Threatened Species
Mesoplodon bowdoini	Andrews' Beaked Whale	
Mesoplodon densirostris	Blainville's Beaked Whale	
Mesoplodon grayi	Gray's Beaked Whale	

Mesoplodon layardii	Strap-Toothed Beaked Whale	
Mirounga leonina	Southern Elephant Seal	EPBC Act Threatened Species
Mus musculus	House Mouse	
Myotis macropus	Southern Myotis	
Neophoca cinerea	Australian Sea-Lion	EPBC Act Threatened Species
Notamacropus rufogriseus	Red-Necked Wallaby	
Nyctophilus geoffroyi	Lesser Long-Eared Bat	
Nyctophilus gouldi	Gould's Long-Eared Bat	
Nyctophilus sherrini	Tasmanian Long-Eared Bat	
Orcinus orca	Killer Whale	
Ornithorhynchus anatinus	Platypus	
Oryctolagus cuniculus	Rabbit	
Ovis aries	Dhimba	
Perameles nasuta		
Petaurus australis	Yellow-Bellied Glider	South Australia : Conservation Status
Petaurus australis	Yellow-Bellied Glider	
Petaurus breviceps	Sugar Glider	
Phascogale tapoatafa	Brush-Tailed Phascogale	
Phascolarctos cinereus	Koala	
Physeter macrocephalus	Sperm Whale	
Potorous tridactylus	Long-Nosed Potoroo	
Pseudocheirus peregrinus	Common Ringtail Possum	
Pseudomys fumeus	Konoom	EPBC Act Threatened Species
Pseudomys novaehollandiae	New Holland Mouse	
Pseudorca crassidens	False Killer Whale	
Pteropus alecto	Black Flying-Fox	
Pteropus poliocephalus	Grey-Headed Flying-Fox	EPBC Act Threatened Species
Rattus fuscipes	Bush Rat	
Rattus lutreolus	Swamp Rat	
Rattus norvegicus	Brown Rat	
Rattus rattus	Black Rat	
Saccolaimus flaviventris	Yellow-Bellied Sheath-tail-Bat	
Sarcophilus harrisii	Tasmanian Devil	EPBC Act Threatened Species
Sminthopsis leucopus	White-Footed Dunnart	
Sus scrofa	Pig	
Tachyglossus aculeatus	Short-Beaked Echidna	
Tasmacetus shepherdi	Tasman Beaked Whale	
Thylogale billardieri	Tasmanian Pademelon	
Trichosurus cunninghami	Mountain Brushtail Possum	
Trichosurus vulpecula	Common Brushtail Possum	
Tursiops truncatus	Bottlenose Dolphin	
Vespadelus darlingtoni	Large Forest Bat	
Vespadelus regulus	Southern Forest Bat	
Vespadelus vulturnus	Little Forest Bat	
Vombatus ursinus	Bare-Nosed Wombat	
Vulpes vulpes	Fox	
Wallabia bicolor	Swamp Wallaby	
Ziphius cavirostris	Cuvier's Beaked Whale	
Reptilia		
Acritoscincus duperreyi	Eastern Three-Lined Skink	
Acritoscincus trilineatus	Western Three-Lined Skink	
Amphibolurus muricatus	Jacky Lizard	
Anepischetosia maccoyi	Highlands Forest-Skink	
Austrelaps ramsayi	Highland Copperhead	
Austrelaps superbus	Lowland Copperhead	
Caretta caretta	Loggerhead Turtle	EPBC Act Threatened Species
Carinascincus coventryi	Southern Forest Cool-Skink	
Carinascincus metallicus	Metallic Cool-Skink	
Carinascincus ocellatus	Ocellated Skink	
Carinascincus pretiosus	Agile Cool-Skink	

<i>Chelodina (Chelodina) longicollis</i>	Eastern Long-Necked Turtle	
<i>Chelonia mydas</i>	Green Turtle	EPBC Act Threatened Species
<i>Christinus marmoratus</i>	Marbled Gecko	
<i>Crocodylus porosus</i>	Saltwater Crocodile	
<i>Cyclodomorphus michaeli</i>	Mainland She-Oak Skink	
<i>Dermochelys coriacea</i>	Leathery Turtle	EPBC Act Threatened Species
<i>Drysdalia coronoides</i>	White-Lipped Snake	
<i>Egernia saxatilis</i>	Black Rock Skink	
<i>Eretmochelys imbricata</i>	Hawksbill Turtle	EPBC Act Threatened Species
<i>Eulamprus heatwolei</i>	Yellow-Bellied Water-Skink	
<i>Eulamprus quoyii</i>	Eastern Water-Skink	
<i>Eulamprus tympanum</i>	Southern Water-Skink	
<i>Hydrophis platurus</i>		
<i>Intellagama lesueurii</i>	Water Dragon	
<i>Lampropholis delicata</i>	Dark-Flecked Garden Sunskink	
<i>Lampropholis guichenoti</i>	Pale-Flecked Garden Sunskink	
<i>Lerista bougainvillii</i>	South-Eastern Slider	
<i>Liopholis whitii</i>	White's Skink	
<i>Lissolepis coventryi</i>	Eastern Mourning Skink	
<i>Morelia spilota</i>	Carpet Python	
<i>Notechis scutatus</i>	Tiger Snake	
<i>Pseudechis porphyriacus</i>	Red-Bellied Black Snake	
<i>Pseudemoia entrecasteauxii</i>	Tussock Cool-Skink	
<i>Pseudemoia pagenstecheri</i>	Tussock Skink	
<i>Pseudemoia rawlinsoni</i>	Swampland Cool-Skink	
<i>Pseudemoia spenceri</i>	Trunk-Climbing Cool-Skink	
<i>Pseudonaja textilis</i>	Eastern Brown Snake	
<i>Pygopus lepidopodus</i>	Common Scaly-Foot	
<i>Rankinia diemensis</i>	Mountain Dragon	
<i>Saproscincus mustelinus</i>	Weasel Skink	
<i>Tiliqua nigrolutea</i>	Blotched Blue-Tongue	
<i>Tiliqua scincoides</i>	Eastern Blue-Tongue	
<i>Varanus varius</i>	Lace Monitor	
Thaliacea		
<i>Thalia democratica</i>		
<i>Salpa fusiformis</i>		
<i>Ihlea magalhanica</i>		
<i>Soestia zonaria</i>		
<i>Pyrosoma atlanticum</i>		
<i>Thetys vagina</i>		
<i>Doliolum denticulatum</i>		
CNIDARIA		
Anthozoa		
<i>Actinauge verrilli</i>		
<i>Actinia tenebrosa</i>	Waratah Anemone	
<i>Annisia sprightly</i>		
<i>Anthemiphyllia dentata</i>		
<i>Anthemiphyllia macrolobata</i>		
<i>Anthopleura aureoradiata</i>		
<i>Anthothoe albocincta</i>		
<i>Astrangia atrata</i>		
<i>Aulactinia veratra</i>		
<i>Aulocyathus recidivus</i>		
<i>Balanophyllia (Balanophyllia) bairdiana</i>	Coral	
<i>Capnea georgiana</i>		
<i>Carijoa smithi</i>		
<i>Caryophyllia (Caryophyllia) diomedeeae</i>		
<i>Caryophyllia (Caryophyllia) planilamellata</i>		

Caryophyllia (Caryophyllia) profunda		
Corallimorphus profundus		
Crispatrochus inornatus	Solitary Coral	
Culicia australiensis		
Culicia hoffmeisteri		
Culicia rubeola		
Deltocyathus magnificus		
Desmophyllum dianthus		
Distichoptilum gracile	Saw-Tooth Sea Pen	
Drifa erecta		
Drifa gaboensis		
Drifa johnstonei		
Dunocyathus parasiticus		
Enallopsammia rostrata		
Epiactis australiensis		
Epizoanthus sabulosum		
Erythropodium hicksoni		
Flabellum (Flabellum) australe	Freeliving Solitary Corals	
Flabellum (Flabellum) pavoninum		
Flabellum (Flabellum) transversale		
Flabellum (Ulocyathus) deludens		
Flabellum (Ulocyathus) hoffmeisteri		
Flabellum (Ulocyathus) tuthilli		
Flabellum japonicum		
Fungiacyathus (Bathyactis) turbinolioides		
Funiculina quadrangularis		
Gyrophyllum sibogae		
Holcotrochus crenulatus		
Holcotrochus scriptus		
Homophyllia australis	Button Coral	
Isanemonia australis		
Jasminis zebra		
Letepsammia formosissima		
Madrepora oculata		
Mopsella zimmeri		
Notophyllia etheridgi		
Notophyllia recta		
Oulactis muscosa		
Phlyctenactis tuberculosa	Wandering Anemone	
Phlyctenanthus australis	Mulberry Anemone	
Placotrochides scaphula		
Platytrochus hastatus		
Plesiastrea versipora		
Primnoella australasiae	Seawhip	
Pteronisis echinaxis		
Pteronisis incerta		
Pteronisis oliganema		
Pteronisis plumacea		
Pteronisis whiteleggei		
Rhizotrochus tuberculatus		
Sarcoptilus grandis		
Solenosmilia variabilis		
Sphaerokodis flabellum		
Sphaerokodis tenuis		
Sphenopus arenaceus		
Sphenopus marsupialis		
Stenocyathus vermiformis	Worm Coral	
Stephanocyathus (Stephanocyathus) platypus		
Zignis repens		
Hydrozoa		

Acryptolaria arboriformis		
Aglaophenia divaricata		
Aglaophenia tasmanica		
Aglaura hemistoma		
Amphisbetia minima		
Amphisbetia operculata		
Antennella singulata		
Botrynema brucei		
Colobonema sericeum		
Cunina octonaria		
Dictyocladium reticulatum		
Ectopleura crocea		
Eudendrium aylingae		
Eudendrium balei		
Eudendrium generale		
Eudendrium terranova		
Gymnangium furcatum		
Gymnangium superbum		
Halecium delicatulum		
Halicornopsis elegans		
Haliscera conica		
Halitrephes valdiviae		
Halopteris campanula		
Halopteris glutinosa		
Hebella scandens		
Hydrodendron armatum		
Lytocarpia tenuissima		
Nemertesia procumbens		
Orthopyxis integra		
Pantachogon haeckelii		
Persa incolorata		
Pycnotheca mirabilis		
Ralpharia magnifica		
Sertularella gayi		
Sertularia geminata		
Sertularia tenuis		
Sertularia unguiculata		
Solanderia fusca		
Solmissus marshalli		
Stephanohelia praecipua		
Symplectoscyphus subdichotomus		
Veleva veleva	By-The-Wind Sailor	
Scyphozoa		
Atolla wyvillei		
Aurelia aurita	Moon Jellyfish	
Aurelia coerulea		
Chrysaora pentastoma		
Cyanea annaskala		
Pelagia noctiluca	Mauve Stinger	
Siphonophora		
Dendrogramma enigmatica		
Physalia physalis		
Dendrogramma discoides		
Physalia utriculus	Bluebottle	
ECHINODERMATA		
Asterozoa		
Allostichaster palmula		

Allostichaster polyplax		
Allostichaster regularis		
Anasterias directa		
Aquilonastra scobinata	Seastar	
Asterias amurensis	Northern Pacific Seastar	
Asterodiscides truncatus	Seastar	
Astromesites compactus		
Astrostole scabra	Seven-Arm Seastar	
Bathybiaster loripes		
Benthopecten munidae		
Benthopecten pikei		
Bollonaster pectinatus		
Brisingenes anchista		
Ceramaster patagonicus		
Chaetaster moorei	Seastar	
Cheiraster monopedicellaris		
Cheiraster richardsoni		
Cheiraster subtuberculatus		
Cheiraster triplacanthus		
Coronaster volsellatus		
Coscinasterias calamaria		
Coscinasterias muricata	Eleven-Arm Seastar	
Cosmasterias dyscrita		
Crossaster japonicus		
Crossaster multispinus		
Ctenodiscus orientalis	Starfish	
Dipsacaster magnificus		
Echinaster arcystatus		
Echinaster colemani	Coleman's Seastar	
Fromia polypora		
Henricia compacta		
Henricia obesa		
Hippasteria trojana		
Hymenaster carnosus		
Hymenaster pullatus		
Luidia australiae		
Luidia neozelanica		
Luidia prionota		
Mediaster arcuatus	Seastar	
Mediaster australiensis	Starfish	
Meridiastra atyphoida		
Meridiastra calcar	Eight-Arm Seastar	
Meridiastra fissura		
Meridiastra gunnii		
Meridiastra medius	Seastar	
Meridiastra nigranota		
Meridiastra oriens		
Milteliphaster spinosus	Seastar	
Nectria macrobrachia		
Nectria multispina		
Nectria ocellata		
Nectria ocellifera	Seastar	
Nectria pedicelligera	Seastar	
Nectria saoria		
Nectriaster monacanthus	Starfish	
Novodinia australis	Seastar	
Nymphaster moebii		
Odontaster benhami	Seastar	
Odontaster penicillatus	Starfish	
Odontohenricia endeavouri		
Paranepanthia grandis		

Parvulastra exigua		
Pectinaster mimicus		
Pentagonaster duebeni		
Perissasterias monacantha		
Perissasterias polyacantha	Starfish	
Petricia vernicina		
Plectaster decanus		
Plutonaster complexus		
Plutonaster fragilis		
Plutonaster jonathani		
Plutonaster knoxi		
Porcellanaster ceruleus		
Pseudarchaster abernethyi		
Pseudarchaster boardmani		
Pseudarchaster garricki		
Pseudarchaster jordani		
Pseudonepanthia trougtoni	Seastar	
Pseudophidiaster rhyus	Starfish	
Psilaster acuminatus		
Pteraster affinis		
Pteraster bathamae		
Pteraster tetracanthus	Starfish	
Radiaster gracilis		
Sclerasterias dubia		
Smilasterias irregularis		
Smilasterias multipara		
Solaster subarcuatus	Seastar	
Solaster torulatus		
Tethyaster tangaroae		
Tosia australis		
Tosia magnifica	Magnificent Biscuit Seastar	
Tosia neossia		
Uniophora granifera	Rough Seastar	
Uniophora nuda		
Zoroaster macracantha		
Zoroaster singletoni		
Zoroaster spinulosus		
Crinoidea		
Antedon incommoda		
Antedon loveni		
Aporometra paedophora		
Austrometra thetidis		
Bathycrinus australis		
Cenolia benhami		
Cenolia spanoschistum		
Cenolia tasmaniae		
Cenolia trichoptera		
Comanthus trichoptera		
Comatulella brachiolata		
Cosmiometra dasybrachia		
Endoxocrinus sibogae		
Euantedon paucicirra		
Metacrinus cyaneus		
Metacrinus levii		
Nanometra johnstoni		
Oxycomanthus plectrophorum		
Phrynocrinus nudus	Stalked Crinoid	
Ptilometra australis		
Ptilometra macronema	Crinoid	
Thalassometra gracilis		

Thalassometra villosa		
Echinoidea		
Amblypneustes elevatus		
Amblypneustes formosus	Sea Urchin	
Amblypneustes grandis		
Amblypneustes ovum		
Amblypneustes pallidus		
Araeosoma thetidis		
Brissopsis oldhami		
Brissus agassizii		
Caenopedina otagoensis		
Centrostephanus rogersii	Longspined Sea Urchin	
Clypeaster australasiae		
Clypeaster virescens		
Dermechinus horridus	Sea Urchin	
Echinocardium cordatum		
Echinocyamus platytatus		
Echinus multidentatus		
Eupatagus valenciennesii		
Fibularia nutriens		
Fibularia plateia		
Goniocidaris impressa		
Goniocidaris parasol	Sea Urchin	
Goniocidaris sibogae		
Goniocidaris tubaria	Sea Urchin	
Heliocidaris bajulus		
Heliocidaris erythrogramma	Shortspined Sea Urchin	
Heterobrissus gigas	Heart Urchin	
Histocidaris australiae		
Histocidaris elegans		
Holopneustes inflatus		
Holopneustes porosissimus	Red-Spined Sea Urchin	
Holopneustes purpurascens	Sea Urchin	
Linopneustes brachypetalus	Heart Urchin	
Lovenia elongata		
Maretia planulata		
Microcyphus annulatus		
Microcyphus compsus		
Microcyphus zigzag	Sea Urchin	
Moira lethe	Heart Urchin	
Pachycentrotus australiae		
Paramaretia peloria		
Peronella peronii		
Phormosoma bursarium		
Phyllacanthus irregularis		
Phyllacanthus parvispinus		
Protenaster australis	Heart Urchin	
Pseudechinus albocinctus		
Pseudechinus notius		
Spatangus luetkeni		
Spatangus lutkeni		
Spatangus paucituberculatus	Heart Urchin	
Stylocidaris conferta	Sea Urchin	
Temnopleurus michaelsoni		
Holothuroidea		
Actinopyga mauritiana	Surf Redfish (Sea Cucumber)	
Amperima furcata		
Amphicyclus mortenseni		
Apsolidium handrecki	Sea Cucumber	

Archedota lapidea		
Australostichopus mollis	Brownmottled Sea Cucumber	
Bathyplores moseleyi		
Bathyplores natans		
Bathyplores sulcatus		
Ceto cuvieria	Curvier's Sea Cucumber	
Chiridota gigas		
Cucuvitrum rowei		
Deima validum		
Echinocucumis ampla		
Echinocucumis hispida		
Elpidia theeli		
Hedingia albicans	Holothurian	
Laetmogone fimbriata		
Laetmogone maculata		
Laetmogone violacea	Holothurian	
Leptosynapta dolabrifera		
Lipotrapeza vestiens		
Massinium vimsi		
Mesothuria regularia		
Molpadia andamanensis		
Molpadia antarctica		
Molpadia musculus		
Molpadiodemas involutus		
Neoamphicyclus altoffi		
Neoamphicyclus lividus		
Neoamphicyclus materiae		
Neoamphicyclus mutans	Sea Cucumber	
Pannychia moseleyi		
Peniagone vitrea		
Pentocnus bursatus	Sea Cucumber	
Phyllophorus kungi		
Plesiocolochirus ignava		
Protankyra rigida		
Prototrochus burni		
Prototrochus staplesi		
Pseudostichopus hyalegerus		
Pseudostichopus mollis		
Pseudostichopus peripatus		
Psolidiella hickmani		
Psolidiella nigra	Sea Cucumber	
Psolidium oloughlini		
Psolus steuarti		
Rowedota allani		
Rowedota epiphyka		
Rowedota shepherdii	Sea Cucumber	
Scoliorhapis theeli		
Squamocnus aureoruber		
Staurothyone inconspicua		
Synallactes challengerii	Holothurian	
Taeniogyrus papillis		
Taeniogyrus roebucki		
Taeniogyrus tantulus		
Thyone joshuai		
Thyone tourvillei		
Thyonidiella kungi		
Trachythyone candida	Holothurian	
Zygothuria lactea		
Holothuroidea		
Amphiophiura distincta		

Amphiophiura turgida		
Amphiophiura urbana		
Amphioplus (Amphichilus) ochroleuca		
Amphioplus pegasus		
Amphipholis squamata	Brooding Brittle Star	
Amphistigma minuta		
Amphiura (Amphiura) constricta		
Amphiura (Amphiura) dolia		
Amphiura (Amphiura) elandiformis		
Amphiura (Amphiura) latisquama		
Amphiura (Amphiura) magellanica		
Amphiura (Amphiura) poecila		
Asteronyx loveni		
Asteroporpa (Asteroporpa) australiensis		
Asteroschema salix		
Astrobrachion constrictum		
Astrodia tenuispina		
Astrosierra amblyconus		
Astrothorax waitei	Ophiuroid	
Astrothrombus rugosus		
Bathypectinura heros		
Clarkcoma australis		
Clarkcoma bollonsi		
Clarkcoma canaliculata		
Conocladus australis	Southern Basketstar	
Gorgonocephalus dolichodactylus		
Gorgonocephalus pustulatum		
Haplophiura gymnopora		
Ophiacantha alternata		
Ophiacantha brachygnatha		
Ophiacantha clavigera		
Ophiacantha fidelis		
Ophiacantha heterotyla		
Ophiacantha rosea	Ophiuroid	
Ophiacantha shepherdi		
Ophiacantha sollicita		
Ophiacantha yaldwyni	Ophiuroid	
Ophiactis abyssicola		
Ophiactis amator		
Ophiactis hirta		
Ophiactis perplexa		
Ophiactis plana	Ophiuroid	
Ophiactis profundus		
Ophiactis resiliens		
Ophiactis savignyi		
Ophiactis tricolor		
Ophiarachnella ramsayi		
Ophiernus vallincola		
Ophiobyrsa rudis		
Ophiocamax applicatus		
Ophiocentrus pilosus		
Ophiochiton fastigatus		
Ophiochiton lentus		
Ophiocreas oedipus		
Ophiocreas sibogae		
Ophiocrossota multispina		
Ophiocten cryptum		
Ophiocten hastatum	Ophiuroid	
Ophioleuce regulare	Brittlestar	
Ophiolimna antarctica		
Ophiomastus tegulitius		

Ophiomisidium flabellum		
Ophiomisidium irene		
Ophiomitrella conferta	Brittlestar	
Ophiomusa incerta		
Ophiomusium incertum		
Ophiomusium lymani		
Ophiomyces grandis		
Ophiomyxa australis	Brittlestar	
Ophionereis novaezelandiae		
Ophionereis schayeri		
Ophiopeza cylindrica		
Ophiophthalmus relictus		
Ophioplax lamellosa		
Ophiopleura inermis		
Ophioplinthaca plicata		
Ophioplinthaca rudis		
Ophioplinthus accomodata		
Ophioplinthus inornata		
Ophioplocus bispinosus		
Ophiopristis axiologus		
Ophiopsammus angusta		
Ophiopsammus assimilis		
Ophiothrix (Ophiothrix) aristulata		
Ophiothrix (Ophiothrix) caespitosa		
Ophiothrix (Placophiothrix) spongicola		
Ophiozonella bispinosa		
Ophiozonella depressa		
Ophiozonella media		
Ophiura (Ophiura) flagellata	Ophiuroid	
Ophiura (Ophiura) kinbergi		
Ophiura (Ophiura) ooplax		
Ophiura (Ophiura) palliata		
Ophiura (Ophiura) spinicantha		
Ophiura (Ophiuroglypha) irrorata		
Ophiura (Ophiuroglypha) jejuna		
Ophiura (Ophiuroglypha) rugosa		
Ophiura (Ophiuroglypha) verrucosa		
Ophiura fluctuans		
Ophiuraster symmetricus		
Ophiurothamnus clausa		
MOLLUSCA		
Aplacophora		
Chaetoderma usitatum		
Claviderma australe		
Falcidens chistos		
Falcidens lipuros		
Lepoderma chistos		
Notomenia clavigera		
Scheltemaia bassensis		
Scheltemaia mimus		
Tegulaherpia tasmanica		
Bivalvia		
Abra exigua	Small Semele	
Abra profundorum		
Acar squamosa		
Acrosterigma cygnorum	Oblique Southern Cockle	
Amygdalum lineum		
Amygdalum striatum	Translucent Mussel	

Anadara (Anadara) trapezia	Sydney Cockle	
Anapella cycladea		
Anomia trigonopsis	Jingle Shell	
Arca reticulata	Reticulated Ark	
Arcuatula senhousia	Asian Mussel	
Arthritica semen		
Atactodea cuneata	Round Wedge Shell	
Atactodea erycinaea		
Atrina (Atrina) tasmanica	Tasmanian Razor Shell	
Austrocardiella trifoliata		
Austromactra rufescens	Reddish Mactra	
Bankia neztalia		
Barbatia (Abarbatia) parvivillosa		
Barbatia (Barbatia) pistachia	Banded Ark	
Barbatia (Cucullaearca) foliata	Clothed Ark	
Barnea (Anchomasa) obturamentum	Tongue-Shaped Angel's Wing	
Barnea (Barnea) australasiae		
Bassina (Bassina) pachyphylla	Faint-Frilled Venus Shell	
Bassina (Callanaitis) disjecta	Wedding Cake Venus	
Basterotia subalata		
Bathyarca (Microcuculaea) perversidens	Little Cowl Shell	
Bathycardita raouli		
Borniola radiata		
Brachidontes crebristriatus		
Brachidontes erosus	Beaked Mussel	
Brachidontes rostratus	Beaked Mussel	
Cadella semen		
Cadella semitorta		
Callista (Striacallista) diemenensis	Tasmanian Venus	
Cardiolucina crassilirata	Densely Striated Lucina	
Cardita aviculina		
Cardita crassicosta	Thick-Ribbed Cardita	
Cardita variegata		
Carditella jaffaensis		
Carditellopsis elegantula	Elegant Carditella	
Cavatidens omissus		
Centrocardita rosulenta		
Chama ruderalis		
Channelaxinus adelaideanus		
Channelaxinus benthicola		
Chioneryx cardioides	Much-Striated Venus	
Cibotocola lunata	Shell-Clinging Mussel	
Circomphalus disjecta	Wedding-Cake Cockle	
Cleidothaerus albidus	White Cleidothaerus	
Condylocardia cometa		
Condylocardia limaiformis		
Condylocardia notoaustralis		
Condylocardia pectinata		
Condylocardia rectangularis		
Condylocuna projecta		
Corbula (Serracorbula) verconis		
Corbula (Varicorbula) gibba		
Corbula smithiana		
Corbula tunicata	Swollen Little Basket Shell	
Cosa fimbriata		
Cosa pectinata		
Cosa pharetra		
Cosa tatei		
Crassostrea gigas	Pacific Oyster	
Cratis cuboides		
Ctena tatei		

<i>Cucurbitula tasmanica</i>	One-Sided Gaper	
<i>Cuna concentrica</i>		
<i>Cuna delta</i>		
<i>Cuna navicula</i>		
<i>Cunanax compressa</i>		
<i>Cunanax crassidentata</i>		
<i>Cunanax subradiata</i>		
<i>Cuspidaria angasi</i>		
<i>Cuspidaria erma</i>		
<i>Cuspidaria exarata</i>	Spout-Like Cuspidaria	
<i>Cuspidaria halei</i>		
<i>Cuspidaria latesulcata</i>		
<i>Cuspidaria nobilis</i>		
<i>Cyamiomactra balaustina</i>		
<i>Cyamium communis</i>		
<i>Cyclocardia calva</i>		
<i>Cyclocardia delicata</i>		
<i>Cylochlamys favus</i>		
<i>Cyclopecten kapalae</i>		
<i>Delectopecten fosterianus</i>		
<i>Destacar metella</i>		
<i>Dianadema multangularis</i>	Multi-Angled Tube Shell	
<i>Diplodonta (Zemysina) tasmanica</i>	Tasmanian Globe Shell	
<i>Divalucina cumingi</i>	V-Marked Lucina	
<i>Donax (Plebidonax) deltoides</i>	Pipi	
<i>Dosinia (Asa) caerulea</i>	Surf Clam	
<i>Dosinia (Bonartemis) victoriae</i>		
<i>Dosinia (Dosinella) grata</i>		
<i>Dosinia crocea</i>		
<i>Electroma papilionacea</i>		
<i>Electroma virens</i>		
<i>Ennucula astricta</i>	Astricta Nut Shell	
<i>Ennucula dilecta</i>		
<i>Ennucula obliqua</i>	Subdilecta Nut Shell	
<i>Epicodakia consettiana</i>		
<i>Epicodakia perobliqua</i>		
<i>Equichlamys bifrons</i>	Queen Scallop	
<i>Escalima murrayi</i>		
<i>Eucrassatella kingicola</i>	King Island Crassatella	
<i>Eumarcia fumigata</i>	Shining Venus Shell	
<i>Exosiperna scapha</i>	Little Boat Mussel	
<i>Felaniella (Zemysia) globularis</i>	Inflated Globe Shell	
<i>Fulvia (Fulvia) tenuicostata</i>	Common Southern Cockle	
<i>Gaimardia rostellata</i>		
<i>Gaimardia tasmanica</i>		
<i>Gari (Gari) modesta</i>	Modest Sunshine Shell	
<i>Gari (Psammobia) kenyoniana</i>	Kenyon's Sunset Shell	
<i>Gari (Psammobia) livida</i>	Purple Sunset Shell	
<i>Gibbomodiola albicostus</i>	Narrow Horse Mussel	
<i>Glycymeris (Glycymeris) grayana</i>	Shiny Dog Cockle	
<i>Glycymeris (Glycymeris) radians</i>	Common Dog Cockle	
<i>Glycymeris (Glycymeris) striatularis</i>	Striated Dog Cockle	
<i>Glycymeris (Tucetilla) mayi</i>		
<i>Gomphina undulosa</i>	Waved Venus	
<i>Gouldiopa australis</i>		
<i>Gregariella barbata</i>	Hairy Three-Area Mussel	
<i>Haliris accessa</i>		
<i>Hiatella arctica</i>		
<i>Hiatella australis</i>	Australian Rock-Borer	
<i>Hiatula alba</i>		
<i>Hiatula biradiata</i>	Double-Rayed Sunset Clam	

<i>Humphreyia strangei</i>	Strange's Watering-Pot Shell	
<i>Huntydora australica</i>		
<i>Irus (Irus) carditoides</i>	White Irus	
<i>Irus (Irus) crenatus</i>	Boring Venus Shell	
<i>Irus (Irus) cumingii</i>		
<i>Irus (Notirus) exoticus</i>		
<i>Irus (Notirus) interstriatus</i>	Shining Boring Venerid	
<i>Jolya arata</i>	Mussel	
<i>Katelysia peronii</i>	Sand Cockle	
<i>Katelysia rhytiphora</i>	Ridged Venus	
<i>Katelysia scalarina</i>	Sand Cockle	
<i>Kellia rotunda</i>		
<i>Kelliella tasmanensis</i>		
<i>Kyrina rubiginosa</i>		
<i>Lamellileda typica</i>		
<i>Lasaea australis</i>	Australian Lasaea	
<i>Lasaea colmani</i>		
<i>Lasaea purpurata</i>		
<i>Laternula (Laternula) creccina</i>	Creccina Lantern Shell	
<i>Laternula (Laternula) gracilis</i>		
<i>Laternula (Laternula) tasmanica</i>		
<i>Ledella curtior</i>		
<i>Ledella inopinata</i>		
<i>Ledella miliacea</i>	Minute Elongated Nut Shell	
<i>Lepton australis</i>		
<i>Lepton trigonale</i>	Triangular Lepton	
<i>Lima (Lima) nimbifer</i>		
<i>Lima (Lima) vulgaris</i>	File Shell	
<i>Limaria (Platilimaria) orientalis</i>	Oriental File Shell	
<i>Limatula (Stabilima) strangei</i>	Strange's File Shell	
<i>Limatula powelli</i>		
<i>Limea (Gemellima) austrina</i>		
<i>Limea (Gemellima) parvula</i>		
<i>Limopsis (Glycilima) penelevis</i>		
<i>Limopsis (Senectidens) eucosmus</i>		
<i>Limopsis (Versipella) soboles</i>		
<i>Limopsis (Versipella) tenisoni</i>	Tenison's False Dog Cockle	
<i>Lissarca picta</i>		
<i>Lissarca rhomboidalis</i>	Rhomboid Lissarca	
<i>Lissarca rubricata</i>		
<i>Lucinoma euclia</i>		
<i>Lutraria rhynchaena</i>	Otter's Shell	
<i>Lyrodus pedicellatus</i>		
<i>Macomona deltoidalis</i>	Triangular Tellin	
<i>Mactra (Mactra) australis</i>	Southern Trough Shell	
<i>Mactra (Mactra) pura</i>	Pure Trough Shell	
<i>Mactra (Mactra) pusilla</i>	Little Trough Shell	
<i>Mactra (Nannomactra) jacksonensis</i>	Jackson's Trough Shell	
<i>Mactrotoma antecedens</i>	Oval-Shaped Trough Shell	
<i>Magallana gigas</i>	Pacific Oyster	
<i>Melliteryx acupuncta</i>	Punctured Lepton	
<i>Mendicula memorata</i>		
<i>Merisca margaritina</i>		
<i>Mesopeplum fenestratum</i>	Windowed Fan Shell	
<i>Micropolia ovalis</i>		
<i>Mimachlamys asperima</i>	Doughboy Scallop	
<i>Modiolatus victoriae</i>	Victoria's Horse Mussel	
<i>Modiolus areolatus</i>	Broad Horse Mussel	
<i>Modiolus peronianus</i>		
<i>Monia (Monia) zelandica</i>	Saddle Oyster Jingle Shell	
<i>Monia (Tenuimonio) deliciosa</i>		

Musculium (Sphaerinova) quirindi		
Musculium (Sphaerinova) tasmanicum		
Musculus (Modiolarca) cumingianus	Three-Area Mussel	
Musculus (Modiolarca) impactus		
Musculus (Musculus) alganus		
Musculus (Musculus) nanus	Three Area Mussel	
Myadora albida		
Myadora antipodum		
Myadora brevis		
Myadora complexa		
Myadora pandoriformis		
Myadora rotundata		
Myadora royana		
Myadoropsis elongata		
Myllita (Myllita) auriculata		
Myllita (Myllita) deshayesi	Deshayes' Myllita	
Myllita (Myllita) tasmanica	Tasmanian Myllita	
Myochama anomioides		
Myochama anomoides		
Myochama tasmanica		
Myrtea botanica		
Myrtea mayi	May's Lucina	
Mysella angasiana		
Mysella anomola		
Mysella concentrica		
Mysella donaciformis		
Mysella dromanaensis		
Mysella lactea		
Mysella ovata		
Mytilus edulis		
Mytilus galloprovincialis	Blue Mussel	
Mytilus planulatus	Edible Mussel	
Nausitora dunlopei		
Nemocardium bechei		
Neolepton antipodum		
Neolepton planiliratum		
Neotrigonia gemma		
Neotrigonia margaritacea	Common Brooch Shell	
Notocallista disrupta	Disrupta Venus Shell	
Notocallista kingii	Strawberry Cockle	
Notochlamys hexactes		
Notomyrtea botanica		
Notopaphia grisea		
Nucula (Nucula) beachportensis		
Nucula (Nucula) mayi		
Nucula (Nucula) pusilla	Hedley's Nut Shell	
Nuculana (Nuculana) fulgida		
Nuculana (Nuculana) ramsayi		
Numella adamsi		
Numella jacksonensis		
Numella jacksoniensis		
Ostrea angasi	Native Oyster	
Ovacuna atkinsoni	Atkinson's Cuna	
Panacca tasmanica		
Pandora aversa		
Panopea australis	Australian Gaper	
Paphies (Amesodesma) elongata	Elongate Little Wedge Shell or Shining Wedge Shell	
Parvamussium thetidis	Thetis Saucer Scallop	
Pecten fumatus	Commercial Scallop	
Perrierina (Legrandina) bernardi		
Pharaonella perna		

<i>Philobrya crenatulifera</i>		
<i>Philobrya rubra</i>		
<i>Phragmorisma watsoni</i>		
<i>Pinctada sugillata</i>		
<i>Pinna bicolor</i>	Common Razor Clam	
<i>Pisidium (Euglesa) etheridgei</i>		
<i>Pisidium (Euglesa) tasmanicum</i>		
<i>Placamen placidum</i>	Placid Frilled Venus	
<i>Planostrea pestigris</i>	Palm-Footed Oyster	
<i>Pododesmus zelandicus</i>		
<i>Poroleda spathula</i>	Spathula Nut Shell	
<i>Poromya illevis</i>		
<i>Poromya undosa</i>		
<i>Pratulium thetidis</i>	Thetis Cockle	
<i>Pronucula covra</i>		
<i>Pronucula decorosa</i>	Decorated Nut Shell	
<i>Propeamussium maorium</i>		
<i>Propeamussium meridionale</i>		
<i>Propecuna obliquissima</i>		
<i>Propeleda (Propeleda) ensicula</i>	Ensicula Elongate Nut Shell	
<i>Pseudamussium challengerii</i>		
<i>Pseudarcopagia botanica</i>		
<i>Pseudarcopagia victoriae</i>	Decussated Tellen	
<i>Pulvinites exempla</i>		
<i>Purpurocardia amabilis</i>		
<i>Purpurocardia bimaculata</i>		
<i>Purpurocardia cavatica</i>		
<i>Purpurocardia purpurata</i>		
<i>Reloncavia mactroides</i>		
<i>Rhinoclama alta</i>		
<i>Rhinoclama tasmanica</i>		
<i>Saccella crassa</i>	Crassa Elongated Shell	
<i>Saccella dohrni</i>	Dohrn's Elegant Nut Shell	
<i>Saccostrea cucullata</i>		
<i>Salaputium fulvidum</i>	Rose Crassatella	
<i>Saltoquina particula</i>		
<i>Samacar strabo</i>		
<i>Scaechlamys livida</i>	Scaly Scallop or Fan-Shell	
<i>Scintillula solida</i>		
<i>Semelangulus tenuiliratus</i>	Fine-Ridged Tellen	
<i>Sempallium aktinos</i>	Shagreened Fan Shell	
<i>Solamen recens</i>	Boat Mussel	
<i>Solamen spectabilis</i>		
<i>Solemya (Austrosolemya) australis</i>	The Solemya	
<i>Solemya (Solemyarina) velesiana</i>	Little Solemya	
<i>Solen vaginoides</i>	Chinaman's Fingernail	
<i>Spinospella deshayesiana</i>		
<i>Spisula trigonella</i>	Trigonal Mactra	
<i>Spondylus tenellus</i>	Scarlet Thorny Oyster	
<i>Sunetta (Sunemeroe) vaginalis</i>		
<i>Talabrica aurora</i>	Rayed Crassatella	
<i>Talochlamys pulleineana</i>		
<i>Tawera gallinula</i>	Feathered Venerid	
<i>Tawera lagopus</i>	Feather Cockle	
<i>Tawera marionae</i>		
<i>Tellinides margaritinus</i>		
<i>Tellinota albinella</i>	Little White Tellen	
<i>Theora lubrica</i>		
<i>Thracia (Eximiothracia) lincolnensis</i>		
<i>Thracia (Eximiothracia) myodoroides</i>		
<i>Thracia (Eximiothracia) speciosa</i>	Beautiful Thracia	

Thracidora arenosa		
Thraciopsis peroniana		
Trichomya hirsuta	Hairy Mussel	
Tucetona flabellata	Fan-Like Dog Cockle	
Tucetona gealei	Nodulose Dog Cockle	
Varotoga cryptozoica		
Venerupis (Paphirus) anomala	Little Bean Tapes	
Venerupis (Ruditapes) galactites	Milky Tapes	
Veprichlamys perillustris		
Verticordia tasmanica		
Vimentum dilectum		
Vulsella ovata	Sponge Fingerclam	
Vulsella vulsella	Sponge Fingerclam	
Wallucina assimilis		
Warrana cessens		
Warrana comma		
Warrana dielasma		
Warrana edentata		
Warrana lunata		
Warrana pellucida		
Xenostrobus inconstans	Variable Brown Mussel	
Xenostrobus pulex	Little Black Horse Mussel	
Xenostrobus securis	Little Brown Mussel	
Zenatina victoriae	Victorian Trough Shell	
Zygochlamys delicatula		
Cephalopoda		
Abraliopsis gilchristi		
Ancistrocheirus lesueuri	Sharpear Enope Squid	
Architeuthis dux	Giant Squid	
Argonauta argo	Greater Argonaut	
Argonauta nodosus	Tuberculated Argonaut	
Austrorossia australis		
Bathothauma lyromma		
Brachioteuthis riisei	Common Arm Squid	
Callistoctopus bunurong	Southern White-Spot Octopus	
Chiroteuthis imperator		
Chiroteuthis picteti		
Chiroteuthis veranyi		
Cranchia scabra		
Cycloteuthis sirventi		
Enoploteuthis galaxias		
Eucleoteuthis luminosa		
Euprymna tasmanica	Southern Dumpling Squid	
Grimpella thaumastocheir	Velvet Octopus	
Hapalochlaena maculosa	Southern Blue-Ringed Octopus	
Helicocranchia pfefferi		
Heteroteuthis (Stephanoteuthis) serventyi		
Histioteuthis atlantica		
Histioteuthis bonnellii		
Histioteuthis eltaninae		
Histioteuthis meleagroteuthis		
Histioteuthis miranda		
Leachia pacificus		
Lycoteuthis lorigera		
Macroctopus maorum	Maori Octopus	
Megalocranchia abyssicola		
Moroteuthis ingens		
Neorossia leptodons		
Nototodarus gouldi	Gould's Squid	
Octopus australis	Southern Octopus	

<i>Octopus berrima</i>	Southern Keeled Octopus	
<i>Octopus maorum</i>	Maori Octopus	
<i>Octopus pallidus</i>	Pale Octopus	
<i>Octopus superciliosus</i>	Friiled Pygmy Octopus	
<i>Octopus tetricus</i>	Gloomy Octopus	
<i>Octopus warringa</i>	Club Pygmy Octopus	
<i>Ocythoe tuberculata</i>	Football Octopus	
<i>Ommastrephes bartramii</i>	Red Ocean Squid	
<i>Onychoteuthis aequimanus</i>		
<i>Onychoteuthis banksii</i>		
<i>Onykia robsoni</i>		
<i>Opisthoteuthis persephone</i>		
<i>Opisthoteuthis pluto</i>		
<i>Pinnoctopus cordiformis</i>		
<i>Pterygioteuthis gemmata</i>		
<i>Pterygioteuthis giardi</i>		
<i>Pyroteuthis margaritifera</i>		
<i>Sandalops melancholicus</i>		
<i>Sepia apama</i>	Giant Cuttlefish	
<i>Sepia braggi</i>	Bragg's Cuttlefish	
<i>Sepia cultrata</i>	Knifebone Cuttlefish	
<i>Sepia hedleyi</i>	King Cuttlefish	
<i>Sepia novaehollandiae</i>		
<i>Sepiadarium austrinum</i>	Southern Bottletail Squid	
<i>Sepioteuthis australis</i>	Southern Calamari	
<i>Spirula spirula</i>	Rams-Horn Squid	
<i>Teuthowenia pellucida</i>		
<i>Thysanoteuthis rhombus</i>		
<i>Todarodes filippovae</i>	Southern Ocean Arrow Squid	
<i>Uroteuthis (Aestuariolus) noctiluca</i>	Luminous Bay Squid	
<i>Vampyroteuthis infernalis</i>	Vampire Squid	
<i>Xiphoteuthis notoides</i>	Southern Pygmy Squid	
Gastropoda		
<i>Aclophoropsis festiva</i>		
<i>Aclophoropsis maculosa</i>	Splashed Sinistral Creeper	
<i>Acremodontina translucida</i>		
<i>Acteon fructuosus</i>		
<i>Acteon retusus</i>		
<i>Actinocyclus actinochilus</i>		
<i>Adamnestia arachis</i>		
<i>Adelphotectonica reevei</i>	Reeve's Sundial	
<i>Aegires exeches</i>		
<i>Aesopus cassandra</i>		
<i>Aesopus jaffaensis</i>		
<i>Aesopus pallidulus</i>		
<i>Aesopus plurisulcatus</i>		
<i>Aesopus solidus</i>		
<i>Afrolittorina acutispira</i>	Periwinkle	
<i>Afrolittorina praetermissa</i>	Checked Australwink	
<i>Agatha australis</i>		
<i>Agatha manifesta</i>		
<i>Agatha petterdi</i>		
<i>Agnewia tritoniformis</i>	Common Small Purple	
<i>Alaba monile</i>		
<i>Alaba pulchra</i>		
<i>Alaginella gatliffi</i>		
<i>Alaginella geminata</i>		
<i>Alaginella malina</i>		
<i>Alaginella ochracea</i>		
<i>Alaginella vercoi</i>		

Alcyna kingensis		
Allocharopa tarravillensis		
Alvania (Alvania) fasciata		
Alvania (Alvania) hedleyi		
Alvania (Alvania) strangei		
Alvania (Linemera) filocincta		
Alvania (Linemera) sculptilis		
Alvania (Linemera) suprasculpta		
Alvania (Linemera) thouinensis		
Alvania (Linemera) verconiana		
Amalda edithae	Edith's Ancilla	
Amalda fusiformis		
Amalda marginata	Marginate Ancilla	
Amalda monilifera	Necklace Ancilla	
Amalda oblonga		
Amalda petterdi		
Amblychilepas crucis		
Amblychilepas javanicensis	Javan Keyhole Limpet	
Amblychilepas nigrita	Calloused Keyhole Limpet	
Amblychilepas oblonga	Oblong Keyhole Limpet	
Amoria undulata	Wavy Volute	
Amphithalamus (Amphithalamus) incidata		
Amphithalamus (Amphithalamus) jacksoni		
Amphithalamus (Amphithalamus) obesus		
Amphithalamus (Amphithalamus) pyramis		
Anabathron (Anabathron) contabulatum		
Anabathron (Anabathron) lene		
Anabathron (Scrobs) luteofuscus		
Anabathron (Scrobs) pluteus		
Anachis atkinsoni		
Anachis beachportensis		
Anachis cominellaeformis		
Anatoma australis		
Anatoma gunteri	Gunther's Split Shell	
Anatoma tobeyoides		
Anatrophon sarmentosus		
Angaria australis	The Southern Delphinula	
Anoglypta launcestonensis		
Antephalium adcocki		
Antephalium semigranosum	Half-Grained Helmet	
Antisabia erma		
Antisabia foliacea		
Aphelodoris greeni		
Aphelodoris rossquicki		
Aphelodoris varia		
Apicalia brazieri	Brazier's Stilifer	
Apicalia tryoni		
Apispiralia albocincta		
Aplysia juliana		
Aplysia parvula		
Aplysia sydneyensis		
Aplysiopsis formosa		
Archidoris wellingtonensis		
Archimediella occidua		
Archiminolia oleacea	Shining Top Shell	
Architectonica perspectiva	Perspective Sundial	
Argalista fugitiva		
Argalista kingensis		
Argalista rosea		
Argobuccinum pustulosum		
Argobuccinum tumidum		

Arion ater		
Arion intermedius	Hedgehog Slug	
Ascorhis tasmanica		
Asperdaphne (Asperdaphne) desalesii		
Asperdaphne (Asperdaphne) esperanza		
Asperdaphne (Asperdaphne) tasmanica		
Asperdaphne (Asperdaphne) legrandi		
Astele rubiginosa		
Astele subcarinatum	Subcarinate Astele	
Astelena scitulum	Elegant Top Shell	
Asteracmea crebristriata	Fine Ridged Limpet	
Asteracmea illibrata	Plain Limpet	
Asteracmea stowae	Stow's Limpet	
Astralium aureum	Golden Small Star	
Astralium squamiferum	Scaly Star Shell	
Astralium tentoriformis	Tent Star Shell	
Astralium tentoriiforme		
Atagema albata		
Ataxocerithium applenum		
Ataxocerithium serotinum	Square-Mouthed Creeper	
Attenuata archensis		
Attenuata integella		
Attenuata praetornatilis		
Attenuata schoutanica		
Attenuata wilsonensis		
Australiae ornata		
Australaria australasia	Tulip Shell	
Australaria fusiformis		
Austrocarina recta		
Austrocochlea brevis		
Austrocochlea constricta	Torr's Southern Periwinkle	
Austrocochlea porcata		
Austrocylichna exigua		
Austrodrillia beraudiana		
Austrodrillia saxea		
Austroginella formicula		
Austroginella johnstoni	Johnston's Margin Shell	
Austroginella muscaria	Fly-Like Margin Shell	
Austroginella praetermissa		
Austroginella tasmanica	Tasmanian Margin Shell	
Austroharpa (Palamharpa) exquisita	Exquisite Harp	
Austroliotia australis	Southern Wheel Shell	
Austroliotia botanica		
Austroliotia densilineata	Close Lined Austroliotia	
Austroliotia scalaris		
Austroliotia subquadrata	The Squared Munditia	
Austrolittorina unifasciata	Periwinkle	
Austromitra analogica		
Austromitra arnoldi		
Austromitra bellapicta		
Austromitra legrandi		
Austromitra retrocurvata		
Austromitra schomburgki		
Austromitra scita		
Austromitra tasmanica		
Austropeplea lessoni		
Austropeplea tomentosa		
Austropusilla (Austropusilla) hilum		
Austropyrgus conicus		
Austropyrgus foris		
Austropyrgus gunnii		

Austropyrgus latus		
Austropyrgus macaulayi		
Austropyrgus nitidus		
Austropyrgus ora		
Austropyrgus otwayensis		
Austropyrgus rectoides		
Austropyrgus solitarius		
Austropyrgus turbatus		
Austrorhytida lamproides	Keeled Carnivorous Snail	
Austrorissopsis consobrina		
Austrorissopsis maccoyi		
Austrosassia parkinsonia		
Austrotriton bassi		
Austrotriton mimetica		
Austrotriton subdistortus		
Austroturris steira		
Babelomurex (Babelomurex) lischkeanus	Southern Pagoda	
Badepigrus badia		
Badepigrus pupoideus		
Balanetta baylii		
Bankivia fasciata	Banded or Silver Kelp	
Bathytoma (Micantapex) agnata		
Bathytoma (Micantapex) profundis		
Bathytoma hecatorguia		
Batillaria australis	Australian Mud Whelk	
Beddomeia acheronensis		
Beddomeia launcestonensis	Hydrobiid Snail (Cataract Gorge)	
Bedeva baileyana	Bailey's Dog Winkle	
Bedeva flindersi	Smooth Emozamia	
Bedeva paivae		
Bedeva vinosa	Wine-Coloured Purple	
Belaterricula dissimilis		
Bellastraea aurea		
Belloliva leucozona	White-Zoned Rice Shell	
Belloliva triticea	Wheat-Grain Shell	
Belomitra challengerii		
Bembicium auratum	Gold-Mouthed Top Shell	
Bembicium melanostomum	Common Conniwink	
Bembicium nanum	Striped-Mouth Conniwink	
Bembicium vittatum		
Benthofoascis biconica		
Benthofoascis sarcinula		
Benthoxystus columnarius	Column Trophon	
Benthoxystus petterdi		
Berthelina typica		
Berthella medietas		
Berthella serenitas		
Botelloides bassianus		
Botelloides sulcatus		
Bouchettriphora pallida		
Brookula angeli		
Brookula crebresculpta		
Brookula denselaminata		
Brookula finesia		
Brookula nepeanensis		
Buccipagoda kengrahami		
Buccipagoda ponderi		
Bulla quoyii		
Bullina lineata		
Burnaia helicochorda		
Cabestana spengleri	Spengler's Triton	

<i>Cabestana tabulata</i>	Waterhouse's Triton	
<i>Cacozeliana granarium</i>		
<i>Cacozeliana icarus</i>		
<i>Caecum (Caecum) amputatum</i>		
<i>Caldukia affinis</i>		
<i>Calliostoma (Fautor) allporti</i>	Allport Top Shell	
<i>Calliostoma (Fautor) armillatum</i>	Jewelled Top Shell	
<i>Calliostoma (Fautor) hedleyi</i>	Hedley's Top Shell	
<i>Calliostoma (Fautor) legrandi</i>		
<i>Calliostoma (Fautor) zietzi</i>	Zietz Top Shell	
<i>Callodix solida</i>		
<i>Calthalotia fragum</i>	Comtesse's Top Shell	
<i>Calyptrea calyptraeformis</i>	Shelf Limpet	
<i>Candidula intersecta</i>		
<i>Cantharidella picturata</i>		
<i>Cantharidella tiberiana</i>		
<i>Capulus danieli</i>		
<i>Capulus devotus</i>	Devout Cap Shell	
<i>Capulus sycophanta</i>		
<i>Capulus violaceus</i>	Violet Cap Shell	
<i>Carinastele niceteria</i>		
<i>Caryodes dufresnii</i>		
<i>Cassis fimbriata</i>	Fimbriate Helmet	
<i>Cavolinia inflexa</i>		
<i>Cavolinia tridentata</i>		
<i>Cavolinia uncinata</i>		
<i>Cellana solida</i>	Solid Patellid Limpet	
<i>Cellana tramoserica</i>	Common Limpet	
<i>Ceratosoma amoenum</i>		
<i>Ceratosoma brevicaudatum</i>	Short-Tailed Nudibranch	
<i>Charisma arenacea</i>	Sandy Charisma	
<i>Charisma compacta</i>		
<i>Charisma josephi</i>	Joseph's Charisma	
<i>Charonia lampas</i>	Red Triton Shell	
<i>Chicoreus (Triplex) damicornis</i>	Long-Horned Murex	
<i>Chicoreus (Triplex) denudatus</i>	FronDED Murex	
<i>Chloritobadistes victoriae</i>		
<i>Chlorodiloma adelaidae</i>	Adelaide Periwinkle	
<i>Chlorodiloma odontis</i>	Meshed Periwinkle	
<i>Chromodoris ambigua</i>		
<i>Chromodoris cf. tasmaniensis</i>		
<i>Chromodoris epicuria</i>		
<i>Chromodoris tasmaniensis</i>		
<i>Chromodoris tinctoria</i>		
<i>Chrysallida mayii</i>		
<i>Cinctiuga diaphana</i>		
<i>Cingulina spina</i>		
<i>Circulus cinguliferus</i>		
<i>Circulus harriettae</i>		
<i>Cirsonella carinata</i>		
<i>Cirsonella reflecta</i>		
<i>Cirsonella weldii</i>	Stout Shiny Liotia	
<i>Cirsotrema martyr</i>		
<i>Clanculus albanensis</i>	Yellow Top Shell	
<i>Clanculus aloysii</i>		
<i>Clanculus brunneus</i>		
<i>Clanculus dunkeri</i>	Top Shell	
<i>Clanculus flagellatus</i>		
<i>Clanculus floridus</i>	Florid Clanculus	
<i>Clanculus limbatus</i>	Keeled Clanculus	
<i>Clanculus maugeri</i>	Mauger's Clanculus Shell	

Clanculus philippi	The Besprinkled Clanculus	
Clanculus plebejus	Clanculus	
Clanculus ringens	The Ringent Clanculus	
Clanculus undatoides		
Clanculus undatus		
Clio pyramidata		
Cocculinella coercita		
Coenaculum minutulum		
Colpospira (Acutospira) accisa		
Colpospira (Acutospira) atkinsoni		
Colpospira (Acutospira) smithiana		
Colpospira (Acutospira) yarramundi		
Colpospira (Colpospira) curialis		
Colpospira (Colpospira) decoramen		
Colpospira (Colpospira) runcinata		
Colpospira (Colpospira) sinuata		
Colpospira (Colpospira) translucida		
Colpospira (Colpospira) wollumbi		
Colpospira (Ctenocolpus) australis		
Colpospira (Ctenocolpus) guillaumei		
Colpospira (Platycolpus) circumligata		
Colpospira (Platycolpus) quadrata	Quadrate Screw Shell	
Colsymnola decolorata		
Columbarium hedleyi	Hedley's Columbaria	
Columbarium spinicinctum	Spindle Pagoda	
Cominella (Cominella) eburnea	Ribbed Cominella	
Cominella (Cominella) lineolata	Lineated Cominella	
Cominella filicea		
Conasprella (Parviconus) rutila	Fiery-Red Cone	
Conuber conicus	Conical Sand Snail	
Conuber melastomus		
Conuber sordidus	Sordid Moon Snail	
Conus (Austroconus) clarus	Segrave'sp. Cone	
Conus (Dendroconus) figulinus	Clay Cone	
Conus (Floraconus) anemone	Rawhide Cone	
Conus (Gastridium) geographus	The Geographer Cone	
Conus (Virroconus) coronatus	The Crowned Cone	
Coralliophila nodosa		
Coralliophila sertata		
Coralliophila wilsoni		
Cornu aspersum		
Corolla ovata		
Cosmetalepas concatenatus	Pitted Keyhole Limpet	
Costatophora granifera		
Coxiella (Coxiella) striata		
Crassitoniella erratica		
Crassitoniella flammea		
Cratena lineata		
Crepidula immersa	Southern Slipper Limpet	
Creseis virgula		
Crossea concinna		
Cryptassimineia buccinoides		
Cryptassimineia tasmanica		
Cumia adjuncta		
Cumia bednalli	Bednall's Colubraria	
Cumia mestayerae	Whelk	
Cumia schoutanicus		
Cupidoliva nympha	Nymph Rice Shell	
Curveulima cornuta		
Curveulima indiscreta		
Cuvierina columnella		

Cycloscala hyalina		
Cylichna thetidis		
Cylichnatys campanula		
Cylindriscala distincta		
Cymatiella columnaria		
Cymatiella eburnea	The Ivory Triton	
Cymatiella sexcostata		
Cymatiella verrucosa	Little Southern Triton	
Cymbiola magnifica	Magnificent Volute	
Cypraeerato angistoma		
Cystiscus alternans		
Cystiscus angasi	Angas's Margin Shell	
Cystiscus connectans		
Cystiscus cratericula		
Cystiscus cymbalum		
Cystiscus freycineti		
Cystiscus halli		
Cystiscus minutissima	Minute Margin Shell	
Cystiscus multidentatus		
Cystiscus obesulus		
Cystiscus subauriculata		
Cystopelta petterdi		
Danilia telebathia	Thick Lip Top Shell	
Daphnella (Daphnella) botanica	Botanic Turrid	
Dendrodoris nigra		
Dendropoma nucleocostatum		
Dentherona (Kannaropa) subrugosa		
Dentimargo allporti		
Dentimargo dentiens		
Dentimargo gabrieli		
Dentimargo jaffa		
Dentimargo kemblensis	Orange Banded Margin Shell	
Dentimargo lodderae		
Dentimargo mayii	May's Margin Shell	
Dentimitrella australis	Australian Dove Shell	
Dentimitrella austrina		
Dentimitrella axiaerata		
Dentimitrella intexta		
Dentimitrella leucostoma		
Dentimitrella lincolnensis	Port Lincoln Dove Shell	
Dentimitrella menkeana	Menke's Dove Shell	
Dentimitrella semiconvexa	Semiconvexa Dove Shell	
Dentimitrella tayloriana		
Dentimitrella tenuis	Russet-Brown Dove Shell	
Dermomurex (Dermomurex) goldsteini	Goldstein's Trophon	
Deroceras reticulatum	Grey Field Slug	
Diacavolinia longirostris		
Diacria trispinosa		
Diala megapicalis		
Diala suturalis		
Diaphana brazieri		
Diaphana tasmanica		
Dicathais orbita	The Interwoven Purpura	
Diloma concamerata	Wavy Top	
Diodora lineata	Latticed Keyhole Limpet	
Dolabrifera brazieri		
Dolabrifera dolabrifera		
Dolicholatirus spicieri	Sapphire Spindle Shell	
Dolicrossea labiata		
Domiporta strangei		
Doriopsilla carneola		

Doris cameroni		
Doto ostenta		
Duplicaria kieneri		
Duplicaria ustulata	Scorched Auger	
Eatoniella (Albosabula) pellucida		
Eatoniella (Eatoniella) atrella		
Eatoniella (Eatoniella) atropurpurea		
Eatoniella (Eatoniella) depressa		
Eatoniella (Eatoniella) exigua		
Eatoniella (Eatoniella) fulva		
Eatoniella (Eatoniella) galbinia		
Eatoniella (Eatoniella) melanochroma		
Eatoniella (Eatoniella) puniceolinea		
Eatoniella (Eatoniella) shepherdi		
Eatonina (Eatonina) condita		
Eatonina (Eatonina) hutchingsae		
Echinolittorina (Granulittorina) australis	West Australian Noddiwink	
Echinopsale breviceratae		
Edentellina typica		
Ellatrivia merces	Common Southern Bean Cowry	
Elsothera funerea	Grim Reaper Pinwheel Snail	
Elsothera sericatula	Chocolate-Streaked Pinwheel Snail	
Elysia coodgensis		
Elysia furvacauda		
Elysia maoria		
Emarginula (Emarginula) bajula	The Beloved Emarginula	
Emarginula (Emarginula) candida	Shining-White Emarginula	
Emarginula (Emarginula) curvamen		
Emarginula (Emarginula) gabensis		
Emarginula (Emarginula) incisura		
Emarginula (Emarginula) superba		
Emarginula dilecta		
Emozamia licina	Southern Trophon	
Enatimene simplex		
Enixotrophon carduelis		
Enixotrophon lochi		
Enixotrophon obtuseliratus		
Enixotrophon plicilaminatus		
Enixotrophon venustus		
Eoacmaea calamus		
Epideira candida		
Epideira gabensis		
Epideira hedleyi	Striated Turrid	
Epideira jaffaensis		
Epideira philipineri		
Epideira quoyi		
Epideira schoutanica		
Epideira torquata		
Epideira tuberculata		
Epidirella xanthophaes		
Epigrus columnaria		
Epigrus cylindracea		
Epigrus dissimilis		
Epitonium (Epitonium) bellicosum		
Epitonium (Hyaloscala) jukesiana		
Epitonium (Lamelliscala) minorum		
Epitonium (Mazescala) thrasys		
Epitonium (Parviscala) coretum		
Ercolania margaritae		
Ericusa fulgetrum	Lightening Volute	
Ericusa papillosa	Papillose Volute	

<i>Ericusa sowerbyi</i>	Sowerby's Volute	
<i>Ethminolia probabilis</i>		
<i>Ethminolia vitiliginea</i>	Depressed Top Shell	
<i>Etrema (Etrema) bicolor</i>		
<i>Etrema (Etrema) denseplicata</i>		
<i>Etrema (Etrema) levicosta</i>		
<i>Eucithara pagoda</i>		
<i>Eudaronia jaffaensis</i>		
<i>Eudolium bairdii</i>		
<i>Eudolium pyriforme</i>		
<i>Eulima acutissima</i>		
<i>Eulima augur</i>		
<i>Eulima broadbentae</i>		
<i>Eulima joshuana</i>		
<i>Eulima kilcundae</i>		
<i>Eulima lodderae</i>		
<i>Eulima petterdi</i>		
<i>Eunaticina umbilicata</i>		
<i>Euplica bidentata</i>		
<i>Eurytrochus strangei</i>	Strange's Little Top Shell	
<i>Euterebra assecla</i>	Deep-Water Auger	
<i>Euterebra tristis</i>		
<i>Eutriphora armillata</i>		
<i>Eutriphora cana</i>		
<i>Eutriphora tricolor</i>		
<i>Exomilopsis spica</i>		
<i>Exomilus cancellatus</i>		
<i>Exomilus dyscritos</i>		
<i>Exomilus telescopialis</i>		
<i>Exquisitiropa agnewi</i>	Silky Pinwheel Snail	
<i>Facelina hartleyi</i>		
<i>Favartia (Murexiella) brazieri</i>	Brazier's Murex	
<i>Fax (Fax) tabidus</i>		
<i>Fax (Fax) tenuicostatus</i>		
<i>Fax (Scaeofax) grandior</i>		
<i>Ferrissia (Pettancylus) petterdi</i>		
<i>Ferrissia (Pettancylus) tasmanicus</i>		
<i>Filodrillia columnaria</i>		
<i>Filodrillia haswelli</i>		
<i>Filodrillia lacteola</i>		
<i>Filodrillia mucronata</i>		
<i>Filodrillia ordinata</i>		
<i>Filodrillia stadialis</i>		
<i>Filodrillia tricarinata</i>		
<i>Filodrillia trophonoides</i>		
<i>Filodrillia vitrea</i>		
<i>Fiona pinnata</i>		
<i>Flabellina rubrolineata</i>		
<i>Fossarina (Fossarina) patula</i>		
<i>Fossarina (Fossarina) petterdi</i>	Petterd's Top Shell	
<i>Fossarina (Minopa) legrandi</i>	Legrand's Top Shell	
<i>Friginatica beddomei</i>		
<i>Fusceulima jacksonensis</i>		
<i>Fusceulima perexigua</i>		
<i>Fusinus (Fusinus) annae</i>		
<i>Fusinus (Fusinus) australis</i>	Southern Spindle	
<i>Fusinus (Fusinus) novaehollandiae</i>	New Holland Spindle	
<i>Fusinus (Propefusinus) pyrulatus</i>	Waved Spindle	
<i>Fusitriton magellanicus</i>		
<i>Gabrielona pisinna</i>		
<i>Gatliffena fenestrata</i>		

<i>Gazameda gunnii</i>	Gunn's Screw Shell	
<i>Gazameda iredalei</i>	Cross-Barred Screw Shell	
<i>Gazameda tasmanica</i>		
<i>Gemixystus laminatus</i>	Filled Gemixystus	
<i>Gemixystus polyphyllius</i>		
<i>Gemixystus recurvatus</i>	Recurved Benthoxystus	
<i>Gemixystus rhodanos</i>		
<i>Gemixystus segmentatus</i>		
<i>Gergovia exigua</i>		
<i>Gibberula agapeta</i>		
<i>Gibberula diplostreptus</i>		
<i>Gibberula pulchella</i>		
<i>Gibberula subbulbosa</i>	Toothed Margin Shell	
<i>Gibbula (Hisseyagibbula) hisseyiana</i>		
<i>Glacidorbis rusticus</i>		
<i>Glyphostoma alliteratum</i>		
<i>Glyptophysa (Glyptophysa) gibbosa</i>		
<i>Glyptozaria opulenta</i>	Opulent Screw Shell	
<i>Granata imbricata</i>	Wide-Mouth Ear-Shell	
<i>Granulifusus kiranus</i>		
<i>Granulina anxia</i>		
<i>Granulina elliottae</i>		
<i>Granulina nympa</i>		
<i>Graphicomassa peroniana</i>		
<i>Guraleus australis</i>		
<i>Guraleus brazieri</i>		
<i>Guraleus cuspis</i>		
<i>Guraleus delicatulus</i>		
<i>Guraleus fascinus</i>		
<i>Guraleus incrusta</i>		
<i>Guraleus lallemantianus</i>		
<i>Guraleus pictus</i>		
<i>Guraleus tasmanicus</i>		
<i>Guraleus tasmantis</i>		
<i>Gyraulus (Gyraulus) meridionalis</i>		
<i>Haliotis coccoradiata</i>	Scarlet-Rayed Ear Shell	
<i>Haliotis laevigata</i>	Greenlip Abalone	
<i>Haliotis rubra</i>	Warty Ear Shell	
<i>Haliotis scalaris</i>	Ridged Ear Shell	
<i>Hallaxa indecora</i>		
<i>Hallaxa michaeli</i>		
<i>Haminoea maugeansis</i>		
<i>Hastula brazieri</i>		
<i>Haurakia imitator</i>		
<i>Haurakia novarensis</i>		
<i>Hebeulima kilcundae</i>		
<i>Hedleytriphora basimacula</i>		
<i>Hedleytriphora fasciata</i>		
<i>Hedleytriphora scitula</i>		
<i>Helicarion cuvieri</i>		
<i>Heliconoides inflatus</i>		
<i>Hemiliostraca joshuana</i>		
<i>Herpetopoma aspersus</i>	Pearled Euchelus or Top Shell	
<i>Herpetopoma fenestrata</i>		
<i>Herpetopoma hamiltoni</i>	Spotted Bead Shell	
<i>Herpetopoma scabriuscula</i>	Scurfy Bead Shell	
<i>Heterocithara bilineata</i>		
<i>Hiloa variabilis</i>		
<i>Hinemoa ligata</i>		
<i>Hinemoa suprasculpta</i>		
<i>Hipponix australis</i>	Horse Hoof Limpet	

<i>Hipponix conica</i>	Conical Horse-Hoof / Bonnet Limpet	
<i>Hoplodoris nodulosa</i>		
<i>Hydrococcus brazieri</i>		
<i>Hydroginella columnaria</i>		
<i>Hydroginella mixta</i>		
<i>Hydroginella tridentata</i>		
<i>Hypermastus coxi</i>		
<i>Hypermastus mucronatus</i>		
<i>Hypselodoris bennetti</i>		
<i>Icuncula consobrina</i>		
<i>Icuncula torcularis</i>		
<i>Icuncula zodiacus</i>		
<i>Ilbia ilbi</i>		
<i>Incisura remota</i>		
<i>Inella innotabilis</i>		
<i>Inella obtusa</i>		
<i>Inella spina</i>		
<i>Inglisella etheridgei</i>		
<i>Insularopa barrenensis</i>	Furneaux Islands Pinwheel Snail	
<i>Isara badia</i>		
<i>Isara carbonaria</i>	Black Mitre	
<i>Isara glabra</i>	Glabra Mitre	
<i>Isotriphora amethystina</i>		
<i>Isotriphora disjuncta</i>		
<i>Isotriphora nivea</i>		
<i>Isotriphora simulata</i>		
<i>Isotriphora tasmanica</i>		
<i>Isotriphora vercoi</i>		
<i>Janolus hyalinus</i>		
<i>Janthina exigua</i>	Globose Violet Snail	
<i>Janthina janthina</i>	Common Violet Sea Snail	
<i>Jorunna hartleyi</i>		
<i>Jorunna pantherina</i>		
<i>Kolonella harrissoni</i>		
<i>Kolonella micra</i>		
<i>Kolonella moniliformis</i>		
<i>Laevilitorina (Laevilitorina) bruniensis</i>		
<i>Laevilitorina (Laevilitorina) mariae</i>		
<i>Laevilitorina (Macquariella) hamiltoni</i>		
<i>Laevilitorina (Macquariella) kingensis</i>		
<i>Lamellaria australis</i>		
<i>Lamellaria ophione</i>		
<i>Laomavix collisi</i>	Collis' Pinhead Snail	
<i>Lehmannia nyctelia</i>	Striped Field Slug	
<i>Leiopyrga lineolaris</i>	Lined Kelp Shell	
<i>Leiopyrga octona</i>		
<i>Letomola barrenensis</i>		
<i>Leuconopsis pellucidus</i>		
<i>Leucosyrinx pikei</i>		
<i>Leucotina casta</i>		
<i>Leucotina micra</i>		
<i>Liloa brevis</i>		
<i>Limacina lesueurii</i>		
<i>Limax maximus</i>	Leopard Slug	
<i>Linopyrga portseaensis</i>		
<i>Liocarinia disjuncta</i>		
<i>Liotella annulata</i>		
<i>Liotella compacta</i>		
<i>Liotella johnstoni</i>		
<i>Liotella petalifera</i>		
<i>Lironoba australis</i>		

Lironoba layardi		
Lironoba unilirata		
Lissotesta contabulata		
Lissotesta inscripta		
Lissotesta micra		
Litiopa limnophysa		
Litozamia brazieri	Brazier's Trophon	
Litozamia rudolphi		
Livonia mammilla	False Bailer Shell	
Livonia roadnightae	Roadnight's Volute	
Lodderena minima	Minute Liotia	
Lodderia lodderae	Lodder's Liotia	
Lottia mixta		
Lucerapex casearia		
Lucidestea atkinsoni		
Lunella (Ninella) torquatus	Rough Turban Shell	
Lunella (Subninella) undulatus	Wavy Periwinkle	
Lymnaea stagnalis		
Lyria (Mitraelyria) mitraeformis	Lyre Shell	
Macroschisma producta	Elongated Keyhole Limpet	
Macroschisma tasmaniae	Posterior Keyhole Limpet	
Macrozafra legrandi		
Macteola anomala	Beaded Turrid	
Madrella sanguinea		
Magilaoma penolensis	Penola Pinhead Snail	
Magnosinister hedleyi		
Malluvium devotus		
Mancinella alouina	The Pimpled Purpura	
Maoricolpus roseus	New Zealand Screw Shell	
Maoricrypta immersa	Slipper Limpet	
Maoritomella foliacea		
Marinula parva		
Marinula xanthostoma		
Marita bella		
Marita compta		
Marita inornata		
Marita insculpta		
Marita schoutenensis		
Mathilda decorata		
Megastomia simplex		
Melanella augur		
Melanella mayi		
Melanella schoutanica		
Melanella tenisoni		
Melanochlamys queritor		
Melibe australis		
Merelina cancellata		
Merelina cheilostoma		
Merelina elegans		
Merelina gracilis		
Merelina hirta		
Merica purpuriformis		
Mesoginella altilabra		
Mesoginella caducocincta		
Mesoginella consobrina		
Mesoginella inconspicua		
Mesoginella olivella		
Mesoginella punicea		
Mesoginella pygmaeoides		
Mesoginella schoutanica		
Mesoginella sinapi		

Mesoginella stilla		
Mesoginella strangei		
Mesoginella translucida	Translucent Margin Shell	
Mesoginella turbinata	Turbinate Margin Shell	
Mesoginella victoriae		
Microcarina surgerea		
Microcolus dunkeri		
Microdiscula charopa		
Microdryas iravadioides		
Microdryas janjucensis		
Microsveltia haswelli		
Microsveltia patricia		
Microvoluta australis		
Microvoluta miranda		
Microvoluta royana		
Microxeromagna lowei	Citrus Snail	
Midorigai australis		
Milax gagates	Jet Slug	
Minolops arata		
Minolops pulcherrima		
Miselaoma weldii	Weld's Pinhead Snail	
Mitraguraleus mitralis		
Mitrella bicincta		
Mitrella legrandi		
Mitrella pulla		
Mitrella vincta		
Mitromorpha alba		
Mitromorpha angusta		
Mitromorpha axicostata		
Mitromorpha axiscalpta		
Mitromorpha bassiana		
Mitromorpha columnaria		
Mitromorpha costifera		
Mitromorpha macphersonae		
Mitromorpha paucilirata		
Mitromorpha proles		
Mnestia arachis		
Monophorus angasi	Angas's Triphora	
Monophorus nigrofuscus		
Monoplex exaratus	Ploughed Triton	
Monoplex parthenopeus	Hairy Whelk	
Monstrotyphis yatesi	Yate's Typhis	
Montfortia submarginata	Margin Notch Limpet	
Montfortula rugosa	Rough Notch Limpet	
Munditia mayana	May's Munditia	
Munditia tasmanica	Tasmanian Liotia	
Murdochella macrina		
Murexsul planiliratus	Fimbriate Murex	
Myosotella myosotis		
Mysticoncha wilsoni	Wilson's Lamellaria	
Nanocochlea parva		
Nanula galbina	Yellow Top Shell	
Nanula tasmanica		
Naricava angasi		
Naricava angulata		
Naricava vincentiana		
Narvaliscalca dorysa	Wentletrap	
Nassarius (Alectrion) glans	Acorn Dog Whelk	
Nassarius (Hima) mobilis		
Nassarius (Niotha) nigellus	Tasmanian Dog Whelk	
Nassarius (Niotha) pauperatus	Poor Dog Whelk	

Nassarius (Plicarularia) jonasii	Jonas's Dog Whelk	
Nassarius (Zeuxis) pyrrhus	Banded Nassarius	
Natica sticta	Spotted Sand Shell	
Natica subcostata		
Neodoris chrysoderma		
Nepotilla bathentoma		
Nepotilla carinata		
Nepotilla diaphana		
Nepotilla excavata		
Nepotilla fenestrata		
Nepotilla lamellosa		
Nepotilla microscopica		
Nepotilla mimica		
Nepotilla minuta		
Nepotilla triseriata		
Nerita (Lisanerita) atramentosa	Black Nerite/Periwinkle	
Nerita (Lisanerita) melanotragus		
Nerita (Ritena) plicata	Plicate Nerite	
Neverita aulacoglossa		
Neverita didyma		
Nevia spirata	Spirate Cross-Barred Shell	
Nipponatys tumidus		
Noalda exigua		
Notoacmea alta		
Notoacmea corrodenda		
Notoacmea flammea		
Notoacmea mayi		
Notoacmea petterdi	Petterd's Limpet	
Notocochlis gualteriana	Spotted Sand Shell	
Notocochlis subcostata		
Notocrater ponderi		
Notocypraea angustata	Brown Cowry	
Notocypraea comptoni	Compton's Cowry	
Notocypraea declivis	Speckled Cowry	
Notocypraea piperita	Peppered Cowry	
Notocypraea pulcaria	Flea-Spotted Cowry	
Notocypraea subcarnea		
Notogibbula bicarinata	Cox's Top Shell	
Notogibbula lehmanni	Many Coloured Top Shell	
Notogibbula preissiana	Twin Keeled Top Shell	
Nototriphora regina		
Nototriphora vestita		
Noumea haliclona		
Nozeba topaziaca		
Obesula albovittata		
Obesula mamillata		
Obesula profundior		
Obrussena bracteata		
Odostomia crassicosta		
Odostomia deplexa		
Odostomia metcalfei		
Ollaphon molorthus		
Omegapilla australis	Bronze Pupasnail	
Onchidella nigricans		
Onoba (Onoba) agnewi		
Onoba (Onoba) multilirata		
Onoba (Ovirissoa) perpolita		
Onoba (Ovirissoa) pertumidus		
Onoba (Ovirissoa) rubicunda		
Onoba (Subestea) australiae		
Onoba (Subestea) supracostata		

Oocorys sulcata		
Opalia australis	Australian Ladder Shell	
Opalia granosa	Granose Wentletrap	
Ophicardelus ornatus		
Orbitestella bastowi		
Oreomava otwayensis		
Ovaginella ovulum	Ovulum Margin Shell	
Ovaginella pisum		
Oxychilus alliarius	Garlic Snail	
Oxychilus cellarius	Cellar Snail	
Oxymeris albida		
Oxynoe viridis		
Paliolla cooki		
Paracuneus immaculatus		
Paradoris dubia		
Paradrillia coriorudis		
Paradrillia coxi	Cox's Turrid	
Paradrillia garrardi		
Paradrillia suavis		
Paradrillia torquata		
Paralaoma caputspinulae	Prickle Pinhead Snail	
Paralaoma servilis		
Paramontana mayana		
Paramontana modesta		
Paramontana rufozonata		
Parviterebra brazieri		
Parviterebra trilineata	Three Lined Auger	
Patelloida alticostata	Tall-Ribbed Limpet	
Patelloida insignis	Maltese Cross Limpet	
Patelloida latistrigata		
Patelloida mimula		
Patelloida mufria	White Ridged Limpet	
Patelloida victoriana		
Peasistilifer solitaria		
Peculator porphyria		
Peculator verconis		
Pedicularia pacifica		
Pelseneeria brunnea		
Pelycidion eukyrtos		
Pelycidion xanthias		
Penion mandarinus	Waite's Buccinum Whelk	
Penion maximus	Whelk	
Persicula pulchella	Flat-Topped Margin Shell	
Petalocochus caperatus		
Phallomedusa austrina		
Phallomedusa solida		
Phasianella angasi		
Phasianella australis	Australian Pheasant or Painted Lady	
Phasianella variegata	Variegated Pheasant	
Phasianella ventricosa	Common Pheasant	
Phasianotrochus apicinus	Pointed Kelp Shell	
Phasianotrochus bellulus	Necklace Weed Shell	
Phasianotrochus eximius	Kelp Shell	
Phasianotrochus irisodontes	Kelp Shells	
Phasianotrochus rutilus	Pink Tipped Kelp Shell	
Phenacolepas calva		
Phenacovolva philippinarum		
Philine angasi		
Philine columnaria		
Philinopsis taronga		
Philippia lutea	Yellow Sundial	

Phos (Phos) senticosus	Pacific Phos	
Phrixgnathus hamiltoni		
Phycothais botanica		
Phycothais reticulata	Net Lepsiella	
Phyllocoma (Galfridus) speciosa	Pettard's Galfridus	
Phyllodesmium macphersonae		
Phyllodesmium poindimiei		
Physa acuta		
Pisinna albizona		
Pisinna approxima		
Pisinna bicolor		
Pisinna circumlabra		
Pisinna columnaria		
Pisinna costata		
Pisinna dubitabilis		
Pisinna frauenfeldi		
Pisinna kershawi		
Pisinna megastoma		
Pisinna nitida		
Pisinna oblata		
Pisinna olivacea		
Pisinna paucirugosa		
Pisinna tasmanica		
Pisinna tumida		
Pisinna varicifera		
Pisinna vincula		
Placida dendritica		
Plesiotrochus monachus	Monk Creeper	
Pleurobranchaea maculata		
Pleurobranchus hilli	Hill's Side-Gill Slug	
Pleurotomella brenchleyi		
Pleurotomella bullata		
Pleurotomella spicula		
Polinices (Glossaulax) didyma	Bladder Moon Snail	
Polinices (Glossaulax) incei	Ince's Sand Snail	
Polinices catenoides		
Polinices mammilla	Pear-Shaped Sand Snail	
Pollia bednalli		
Polybranchia pallens		
Polycera janjukia		
Polycera parvula		
Potamopyrgus antipodarum		
Powellisetia simillima		
Prietocella barbara	Small Pointed Snail	
Prolesophanta dyeri	Dyer's Carnivorous Snail	
Prolixodens infracolor		
Propebela costatus		
Propebela emina		
Propebela howelli		
Propebela kingensis		
Propebela subitus		
Propefusus undulatus		
Propescala translucida		
Propilidium tasmanicum		
Proterato denticulata		
Prothalotia lehmanni	Lesueur's Top Shell	
Prothalotia pulcherrimus	Crimson Lip Weed Shell	
Prototyphis angasi	Angas' Murex	
Pseudamycla dermestoidea		
Pseudamycla miltostoma		
Pseudestea pyramidatus		

Pseudoliotia micans		
Pseudopisinna gregaria		
Pseudorissolina capitivava		
Pseudorissolina tasmanica		
Pseudoskenella depressa		
Pseudostomatella decolorata		
Psilaxis oxytropis		
Pterochelus duffusi	Duffuse Murex	
Pterochelus triformis	Murex Shell	
Pterotrachea kingicola		
Pugillaria stowae		
Pugnus parvus		
Puncturella (Cranopsis) corolla	The Crown Puncturella	
Puncturella (Puncturella) demissa		
Puncturella (Puncturella) harrissoni	Harrison's Slot Limpet	
Pupa tragulata		
Pusillina (Haurakia) angulata		
Pusillina (Haurakia) discrepans		
Putilla porcellana		
Pyrazus ebeninus	Hercules Club Whelk	
Pyreneola fulgida		
Pyreneola lurida		
Pyrgulina pascoei		
Quasimitra solida	Solid Mitre	
Ranella australasia	Australian Triton	
Reticunassa compacta		
Reticunassa paupera	Poor Dog Whelk	
Retizafra calva		
Retizafra multicostata		
Retizafra plexa		
Retusa amphizosta		
Retusa atkinsoni		
Retusa pelyx		
Retusa protumida		
Retusa pygmaea		
Retusa sculpta		
Ringicula australis		
Ringicula meridionalis		
Ringicula semisculpta		
Rissoella (Jeffreysiella) fretterae		
Rissoella (Jeffreysiella) secunda		
Rissoella (Jeffreysiella) wilfredi		
Rissoella (Rissoella) fallax		
Rissoella (Zelaxitas) imperforata		
Rissoella (Zelaxitas) micra		
Rissoina (Moerchiella) dorbignyi		
Rissoina (Rissoina) angasii		
Rissoina (Rissoina) cretacea		
Rissoina (Rissoina) elegantula		
Rissoina (Rissoina) fasciata		
Rissoina (Rissoina) ferruginea		
Rissoina (Rissoina) gertrudis		
Rissoina (Rissoina) iredalei		
Rissoina (Rissoina) nivea		
Rissoina (Rissoina) rhyllensis		
Rissoina (Rissoina) royana		
Rissoina (Rissoina) vincentiana		
Rissopsetia maoria		
Roburnella wilsoni		
Rolandiella umbilicata	Umbilicated Murex	
Roseomitra strangei		

Rostanga calumus		
Rostanga crawfordi		
Rostanga turia		
Runcina australis		
Sabia conica		
Sabinella munita		
Sabinella schoutanica		
Sacoproteus browni		
Sacoproteus yhiaie		
Sagaminopteron ornatum		
Salinator fragilis		
Sassia bassi	Bass's Triton	
Sassia epitrema		
Sassia garrardi		
Sassia kampyla		
Sassia parkinsonia	Parkinson's Triton	
Sassia petulans		
Sassia remensa		
Sassia subdistorta	Somewhat-Distorted Triton	
Scalenostoma lodderae	Petterd's Stilifer	
Scaphander illecebrosus		
Scelidoropa officeri	Circular Head Pinwheel Snail	
Scelidoropa tamarensis	Tamar River Pinwheel Snail	
Scissurella cyprina	Venus Slit Shell	
Sclerodoris tarka		
Scrinium brazieri		
Scrinium furtivum		
Scutellastra chapmani	Chapman's Limpet	
Scutellastra peronii	Scaly Limpet	
Scutus (Scutus) antipodes	Duck's Bill or Shield Shell	
Scyllaea pelagica		
Seila albosutura		
Seila crocea		
Seila insignis		
Seila magna		
Seilarex turritelliformis		
Semicassis (Semicassis) angasi	Angas' Bonnet	
Semicassis (Semicassis) labiata	Lipped Bonnet	
Semicassis (Semicassis) pyrum	Spotted Helmet	
Semicassis (Semicassis) royana	Hedley's Helmet	
Semicassis (Semicassis) thomsoni	Thomson's Helmet	
Serrata mustelina		
Sigapatella hedleyi		
Sinezona beddomei	Beddome Slit Shell	
Sinum zonale		
Sinutor incertum	Uncertain Top Shell	
Siphonaria diemenensis	Air-Breathing Limpet	
Siphonaria funiculata	Air-Breathing Limpet	
Siphonaria tasmanica		
Siphonaria zelandica	Air-Breathing Limpet	
Siphonochelus (Siphonochelus) syringianus	Piped Cyphonochelus	
Sirius badius		
Skenella castanea		
Skenella voorwindei		
Socienna angasi		
Socienna apicicostata		
Socienna hebes		
Socienna trisculpta		
Solatisonax injussa		
Spectamen philippensis		
Specula turbonilloides		

Splendrillia eburnea		
Splendrillia lygdina		
Splendrillia nenia		
Splendrillia subviridis		
Splendrillia woodsi		
Spurilla macleayi		
Stenacapha hamiltoni		
Stilapex lactarius		
Stiliger smaragdinus		
Stomatella impertusa	False Ear Shell	
Strangesta gawleri	Gawler Carnivorous Snail	
Styliferina translucida		
Styliola subula		
Succinea (Succinea) australis		
Sukashitrochus atkinsoni	Atkinson Slit Shell	
Sukashitrochus pulcher	Beautiful Slit Shell	
Sulcerato lachryma	Erato Cowry	
Sydaphera granosa	Granose Cross-Barred Shell	
Sydaphera lactea		
Sydaphera undulata	Waved Cross-Barred Shell	
Symnola angasi		
Symnola aurantiaca		
Symnola tasmanica		
Symnola tincta		
Tamanovalva babai		
Tambja cf. verconis		
Tanea euzona	Painted Sand Snail	
Tanea luculenta		
Tanea sagittata		
Taranis mayi		
Tasmaphena ruga	Coarse-Ribbed Carnivorous Snail	
Tasmathera limula	Pipers River Pinwheel Snail	
Tasmathera ricei	Riceâ€™S Pinwheel Snail	
Tasmatica schoutanica		
Tasmeuthria clarkei		
Tasmeuthria kingicola		
Tatea rufilabris		
Tectonatica shorehami	Shoreham Sand Shell	
Teinostoma (Callomphala) lucida	Bright Liotia	
Teleochilus royanus		
Tenagodus australis	Australian Worm Shell	
Tenagodus weldii		
Terebra lauretanae		
Teretriphora gemmegens		
Teretriphora spica		
Thalassocyon bonus		
Thalotia conica	Conical Top Shell	
Theba pisana	White Italian Snail	
Thryasona diemenensis		
Thylacodes siphon		
Tiberia bifasciata		
Tonna tetracotula	Deep-Water Tun	
Tornatellinops jacksonensis	Port Jackson Miniature Treesnail	
Tornatina apicina		
Tornatina exserta		
Tornatina hofmani		
Trapania brunnea		
Tricolia rosea	Rosy Pheasant	
Tricolia variabilis	Minute Pheasant	
Trimusculus conica		
Trinchesia catachroma		

<i>Tritia burchardi</i>	Burchard's Dog Whelk	
<i>Tritia ephamilla</i>		
<i>Trivellona excelsa</i>		
<i>Trivia merces</i>		
<i>Trocholaoma parvissima</i>	Tiny Pinhead Snail	
<i>Truncatella scalarina</i>		
<i>Truncatella vincentiana</i>		
<i>Tubercliopsis cesticus</i>		
<i>Tubercliopsis dannevigii</i>		
<i>Tugali cicatricosa</i>	Scar False Limpet	
<i>Tugali parmophoidea</i>	Flat Notched Limpet	
<i>Turbo (Carswellena) gruneri</i>	Turban Shell	
<i>Turbo (Turbo) jourdani</i>	Gaint Brown Snail or Turban	
<i>Turbonilla acicularis</i>		
<i>Turbonilla beddomei</i>		
<i>Turbonilla fusca</i>		
<i>Turbonilla gravis</i>		
<i>Turbonilla hofmani</i>		
<i>Turbonilla mariae</i>		
<i>Turbonilla scalpidens</i>		
<i>Turbonilla vana</i>		
<i>Turrella granulosisissima</i>		
<i>Turrella letourneuxiana</i>		
<i>Turrella morologus</i>		
<i>Turriplicifer australis</i>		
<i>Turritriton labiosus</i>	Wide-Lipped Triton	
<i>Tylodina corticalis</i>		
<i>Typhis (Typhis) phillipensis</i>	Smoke Shell	
<i>Typhlomangelia corona</i>		
<i>Umbilia hesitata</i>	Wonder Cowry	
<i>Umbraculum umbraculum</i>		
<i>Vacerrena kesteveni</i>		
<i>Vaceuchelus ampullus</i>		
<i>Vaceuchelus profundior</i>		
<i>Vanikoro helicoidea</i>		
<i>Vercomaris pergradata</i>		
<i>Vexillum (Costellaria) acromiale</i>		
<i>Vexillum (Costellaria) discolorium</i>		
<i>Vexitomina radulaeformis</i>		
<i>Victaphanta compacta</i>	Otway Black Snail	
<i>Vitellidelos helmsiana</i>	Snowy Mountains Carnivorous Snail	
<i>Vitreolina commensalis</i>		
<i>Volutomitra obscura</i>	Magpie Mitre	
<i>Volvarina diminuta</i>		
<i>Volvarina haswelli</i>		
<i>Volvarina hedleyi</i>		
<i>Volvulella rostrata</i>		
<i>Williamia radiata</i>		
<i>Xenophora (Xenophora) solarioides</i>		
<i>Zaclys semilaevis</i>		
<i>Zafra atrata</i>		
<i>Zafra columnaria</i>		
<i>Zeacumantus diemenensis</i>		
<i>Zeacumantus plumbeus</i>		
<i>Zeadmete kulanda</i>		
<i>Zella beddomei</i>		
<i>Zemira australis</i>	Australian Zemira	
Polyplacophora		
<i>Acanthochitona bednalli</i>		
<i>Acanthochitona gatliffi</i>		

Acanthochitona granostrata		
Acanthochitona kimberi		
Acanthochitona pilsbryi		
Acanthochitona retrojecta		
Acanthochitona sueurii		
Bassethullia matthewsi		
Callistochiton antiquus		
Callochiton crocinus		
Callochiton elongatus		
Craspedoplax variabilis		
Cryptoplax iredalei		
Cryptoplax striata		
Ischnochiton (Autochiton) torri		
Ischnochiton (Autochiton) virgatus		
Ischnochiton (Haploplax) lentiginosus		
Ischnochiton (Haploplax) smaragdinus		
Ischnochiton (Haploplax) thomasi		
Ischnochiton (Heterozona) cariosus		
Ischnochiton (Heterozona) fruticosus		
Ischnochiton (Heterozona) subviridis		
Ischnochiton (Ischnochiton) carinulatus		
Ischnochiton (Ischnochiton) contractus		
Ischnochiton (Ischnochiton) elongatus		
Ischnochiton (Ischnochiton) falcatus		
Ischnochiton (Ischnochiton) lineolatus		
Ischnochiton (Ischnochiton) mayi		
Ischnochiton (Ischnochiton) variegatus		
Ischnochiton (Ischnochiton) versicolor		
Ischnochiton (Ischnoradsia) australis		
Leptochiton (Leptochiton) matthewsianus		
Leptochiton alveolus		
Lorica volvox		
Notoplax addenda		
Notoplax costata		
Notoplax mayi		
Notoplax rubrostrata		
Notoplax speciosa		
Plaxiphora (Fremblya) matthewsi		
Plaxiphora (Plaxiphora) albida		
Rhyssoplax calliozona		
Rhyssoplax canaliculata		
Rhyssoplax diaphora		
Rhyssoplax jugosa		
Rhyssoplax tricostalis		
Stenochiton cymodocealis		
Stenochiton pilsbryanus		
Subterenchiton gabrieli		
Sypharochiton pelliserpentis		
Scaphopoda		
Cadulus occiduus		
Cadulus simillimus		
Cadulus vincentianus		
Calliodentalium crocinum		
Compressidens platyceras		
Episiphon bordaensis		
Episiphon virgula		
Fissidentalium horikoshii		
Fissidentalium ponderi		
Fissidentalium verconis		
Fustiaria caesura		

Gadila bordaensis		
Gadila spreta		
Laevidentalium erectum		
Laevidentalium lubricatum		
Paradentalium francisense		
Paradentalium hemileuron		
Paradentalium octopleuron		
Polyschides gibbosus		
NEMATODA		
Chromadorea		
Contraecum aduncum		
Hemicycliophora halophila		
Maxvachonia chabaudi		
Pseudorictularia disparilis		
Xiphinema radicum		
PLATYHELMINTHES		
Rhabditophora		
Cestoplane rubrocincta		
Fletchamia sugdeni		
Temnohaswellia comes		
Trematoda		
Postlepidapedon quintum		
Weketrema hawaiiense		
Dolichoperoides macalpini		
Elytrophalloides oatesi		
Cephalolepidapedon warehou		
PORIFERA		
Calcarea		
Clathrina procumbens		
Leucetta microraphis		
Leucettusa haeckeliana		
Leucettusa imperfecta		
Demospongiae		
Acanthella dendyi		
Ancorina geodides		
Ancorina repens		
Ancorina suina		
Aplysilla rosea		
Aplysina lendenfeldi		
Axinella aruensis		
Callyspongia (Callyspongia) bilamellata		
Callyspongia (Callyspongia) paucispina		
Callyspongia (Callyspongia) ramosa		
Callyspongia (Callyspongia) serpentina		
Callyspongia (Callyspongia) spiculifera		
Callyspongia (Callyspongia) toxifera		
Carteriospongia vermicularis		
Chondropsis kirki		
Ciocalyptra massalis		
Clathria (Axosuberites) canaliculata		
Clathria (Axosuberites) cylindrica		
Clathria (Axosuberites) thetidis		
Clathria (Clathria) caelata		

Clathria (Clathria) inanchorata		
Clathria (Clathria) transiens		
Clathria (Clathria) wilsoni		
Clathria (Thalysias) cactiformis		
Clathria (Thalysias) costifera		
Clathria (Thalysias) rubra		
Clathria (Wilsonella) australiensis		
Cliona celata		
Coscinoderma pesleonis		
Craniella stewarti		
Cymbastela lamellata		
Dactylia varia		
Darwinella australiensis		
Darwinella gardineri		
Dendrilla cactus		
Dendrilla rosea		
Dragmacidon clathriforme		
Dysidea avara		
Dysidea fragilis		
Echinochalina (Echinochalina) barba		
Echinochalina (Echinochalina) reticulata		
Echinochalina (Echinochalina) tubulosa		
Echinoclathria axinelloides		
Echinoclathria egena		
Echinoclathria leporina		
Echinoclathria riddlei		
Ecionemia robusta		
Fasciospongia rimosa		
Fenestraspongia intertexta		
Forcepia (Forcepia) biceps		
Gelliodes incrustans		
Geodia punctata		
Holopsamma laminaefavosa		
Hyattella intestinalis		
Ianthella flabelliformis		
Ircinia caliculata		
Jaspis stellifera		
Latrunculia conulosa		
Latrunculia hallmanni		
Leiosella caliculata		
Leiosella levis		
Lissodendoryx (Ectyodoryx) maculata		
Lissodendoryx (Lissodendoryx) isodictyalis		
Microtylostylifer anomalus		
Mycale (Arenochalina) mirabilis		
Mycale parasitica		
Neofibularia mordens		
Phorbas tenacior		
Phoriospongia argentea		
Phoriospongia carcinophila		
Polymastia crassa		
Psammocinia arenosa		
Psammocinia halmiformis		
Psammoclema bitextum		
Psammoclema callosum		
Psammoclema densum		
Psammoclema goniodes		
Psammoclema nodosum		
Psammoclema ramosum		
Psammoclema vansoesti		
Pseudoceratina rotunda		

Raspailia (Raspailia) cacticutis		
Rhabdastrella cordata		
Rhabdastrella intermedia		
Rhaphoxya felina		
Rhopaloeides odorabile		
Sigmaxinella hipposiderus		
Sigmosceptrella fibrosa		
Spheciospongia areolata		
Spongia (Spongia) hispida		
Stelletta arenitecta		
Strepsichordaia caliciformis		
Strongylacidon stelliderma		
Suberea ianthelliformis		
Suberites flabellatus		
Taonura flabelliformis		
Tedania (Tedania) anhelans		
Tethya bergquistae		
Tethya bullae		
Tethya ingalli		
Thorecta tuberculatus		
Thorectandra glomeratus		
Trachycladus laevispirulifer		
Homoscleromorph		
Corticium candelabrum		
SIPUNCULA		
Phascolosomatidea		
Phascolosoma (Phascolosoma) annulatum		
Phascolosoma (Phascolosoma) noduliferum		
Sipunculidea		
Nephasoma (Nephasoma) schuettei		
Sipunculus (Sipunculus) robustus		
Themiste (Lagenopsis) minor		

Appendix 8

Victorian Biodiversity Atlas (VBA)
search tool results

VICTORIAN BIODIVERSITY ATLAS - PRION MSS - EMBA

Status	Scientific Name	Common Name	Species Count
Terrestrial Species			
	<i>Acacia genistifolia</i>	Spreading Wattle	2
#	<i>Acacia longifolia</i>	Sallow Wattle	1
#	<i>Acacia longifolia</i> subsp. <i>longifolia</i>	Sallow Wattle	2
#	<i>Acacia longifolia</i> subsp. <i>sophorae</i>	Coast Wattle	14
	<i>Acacia stricta</i>	Hop Wattle	6
	<i>Acacia verticillata</i> subsp. <i>verticillata</i>	Prickly Moses	8
	<i>Acaena novae-zelandiae</i>	Bidgee-widgee	14
	<i>Acanthagenys rufogularis</i>	Spiny-cheeked Honeyeater	13
	<i>Acanthiza chrysorrhoa</i>	Yellow-rumped Thornbill	107
	<i>Acanthiza lineata</i>	Striated Thornbill	105
	<i>Acanthiza nana</i>	Yellow Thornbill	24
	<i>Acanthiza pusilla</i>	Brown Thornbill	198
	<i>Acanthiza reguloides</i>	Buff-rumped Thornbill	23
	<i>Acanthorhynchus tenuirostris</i>	Eastern Spinebill	137
	<i>Accipiter cirrocephalus</i>	Collared Sparrowhawk	18
	<i>Accipiter fasciatus</i>	Brown Goshawk	74
vu L	<i>Accipiter novaehollandiae</i>	Grey Goshawk	14
*	<i>Acetosella vulgaris</i>	Sheep Sorrel	6
	<i>Achrophyllum dentatum</i>	Toothed Mitre-moss	1
	<i>Acianthus caudatus</i>	Mayfly Orchid	2
	<i>Acianthus pusillus</i>	Small Mosquito-orchid	3
*	<i>Acridotheres tristis</i>	Common Myna	80
	<i>Acritoscincus duperreyi</i>	Eastern Three-lined Skink	8
	<i>Acrocephalus australis</i>	Reed-Warbler	28
	<i>Acrotriche affinis</i>	Ridged Ground-berry	1
	<i>Acrotriche serrulata</i>	Honey-pots	1
	<i>Actites megalocarpus</i>	Dune Thistle	11
vu	<i>Adriana quadripartita</i>	Coast Bitter-bush	1
	<i>Aegotheles cristatus</i>	Australian Owlet-nightjar	13
*	<i>Aira caryophyllea</i> subsp. <i>caryophyllea</i>	Silvery Hair-grass	13
*	<i>Aira cupaniana</i>	Quicksilver Grass	3
*	<i>Aira elegantissima</i>	Delicate Hair-grass	3
*	<i>Aira praecox</i>	Early Hair-grass	3
*	<i>Aira</i> spp.	Hair Grass	4
	<i>Ajuga australis</i>	Austral Bugle	6
*	<i>Alauda arvensis</i>	Eurasian Skylark	79
	<i>Alisterus scapularis</i>	Australian King-Parrot	55
	<i>Allocasuarina littoralis</i>	Black Sheoak	2
	<i>Allocasuarina paludosa</i>	Scrub Sheoak	2
	<i>Allocasuarina verticillata</i>	Drooping Sheoak	2
*	<i>Aloe maculata</i>	Common Soap Aloe	1
	<i>Alyxia buxifolia</i>	Sea Box	10
*	<i>Ammophila arenaria</i>	Marram Grass	8
	<i>Amperea xiphoclada</i> var. <i>xiphoclada</i>	Broom Spurge	1
	<i>Amphibolurus muricatus</i>	Tree Dragon	1
	<i>Amphibromus</i> spp.	Swamp Wallaby-grass	1
	<i>Amyema</i> spp.	Mistletoe	1
	<i>Anas castanea</i>	Chestnut Teal	70
	<i>Anas gracilis</i>	Grey Teal	58
*	<i>Anas platyrhynchos</i>	Mallard	1
	<i>Anas querquedula</i>	Garganey	1
	<i>Anas superciliosa</i>	Pacific Black Duck	122
	<i>Anepischtos maccoyi</i>	McCoy's Skink	5
	<i>Anhinga novaehollandiae</i>	Australasian Darter	14
	<i>Anisopogon avenaceus</i>	Oat Spear-grass	1
	<i>Anous stolidus</i>	Brown Noddy	1

nt L	<i>Anseranas semipalmata</i>	Magpie Goose	4
	Brolga	Agile Antechinus	41
	<i>Antechinus mimetes</i>	Mainland Dusky Antechinus	4
VU nt L	<i>Antechinus minimus maritimus</i>	Swamp Antechinus	70
	<i>Anthoceros laevis</i>	Hornwort	1
	<i>Anthochaera carunculata</i>	Red Wattlebird	161
	<i>Anthochaera chrysoptera</i>	Little Wattlebird	179
CR cr L	<i>Anthochaera phrygia</i>	Regent Honeyeater	9
	<i>Anthosachne scabra s.s.</i>	Common Wheat-grass	2
	<i>Anthus australis</i>	Australian Pipit	179
vu L	<i>Antigone rubicunda</i>	Brolga	7
	<i>Aotus ericoides</i>	Common Aotus	2
	<i>Aphelocephala leucopsis</i>	Southern Whiteface	1
vu	<i>Apium insulare</i>	Island Celery	3
	<i>Apium prostratum subsp. prostratum</i>	Sea Celery	4
	<i>Apium prostratum subsp. prostratum var. filiforme</i>	Sea Celery	2
	<i>Apium prostratum subsp. prostratum var. prostratum</i>	Sea Celery	1
	<i>Aquila audax</i>	Wedge-tailed Eagle	116
vu L	<i>Ardea alba</i>	Great Egret	98
en L	<i>Ardea intermedia plumifera</i>	Plumed Egret	10
	<i>Ardea pacifica</i>	White-necked Heron	61
cr L	<i>Ardeotis australis</i>	Australian Bustard	5
*	<i>Argyranthemum frutescens subsp. frutescens</i>	Marguerite	2
	<i>Artamus cyanopterus</i>	Dusky Woodswallow	82
	<i>Artamus personatus</i>	Masked Woodswallow	7
	<i>Artamus superciliosus</i>	White-browed Woodswallow	17
	<i>Arthropodium spp. (s.s.)</i>	Vanilla Lily	2
	<i>Asperula spp.</i>	Woodruff	1
vu	<i>Asplenium obtusatum subsp. northlandicum</i>	Shore Spleenwort	17
	<i>Astroloma humifusum</i>	Cranberry Heath	1
	<i>Atriplex cinerea</i>	Coast Saltbush	4
r	<i>Australina pusilla subsp. pusilla</i>	Small Shade-nettle	1
	<i>Austrelaps superbus</i>	Lowland Copperhead	4
	<i>Austrostipa flavescens</i>	Coast Spear-grass	1
	<i>Austrostipa spp.</i>	Spear Grass	3
	<i>Austrostipa stipoides</i>	Prickly Spear-grass	8
*	<i>Avena barbata</i>	Bearded Oat	1
*	<i>Avena spp.</i>	Oat	6
*	<i>Axis porcinus</i>	Hog Deer	5
vu	<i>Aythya australis</i>	Hardhead	20
	<i>Baloskion tetraphyllum subsp. tetraphyllum</i>	Tassel Cord-rush	4
	<i>Banksia integrifolia subsp. integrifolia</i>	Coast Banksia	1
	<i>Banksia marginata</i>	Silver Banksia	5
	<i>Banksia serrata</i>	Saw Banksia	2
	<i>Barnardius zonarius barnardi</i>	Mallee Ringneck	1
	<i>Barnardius zonarius zonarius</i>	Port Lincoln Parrot	1
	<i>Baumea acuta</i>	Pale Twig-sedge	2
	<i>Billardiera macrantha</i>	Purple Apple-berry	1
	<i>Billardiera scandens s.l.</i>	Common Apple-berry	4
r	<i>Billardiera scandens s.s.</i>	Velvet Apple-berry	1
vu	<i>Biziura lobata</i>	Musk Duck	41
	<i>Blechnum minus</i>	Soft Water-fern	4
	<i>Blechnum nudum</i>	Fishbone Water-fern	1
	<i>Blechnum watsii</i>	Hard Water-fern	1
*	<i>Borago officinalis</i>	Borage	1
	<i>Boronia muelleri</i>	Forest Boronia	1
	<i>Bossiaea prostrata</i>	Creeping Bossiaea	2
	<i>Brachyloma daphnoides</i>	Daphne Heath	2
	<i>Brachyscome diversifolia</i>	Tall Daisy	7
	<i>Brachyscome graminea</i>	Grass Daisy	3
	<i>Brachyscome parvula</i>	Coast Daisy	1

	<i>Brachyscome spathulata</i>	Spoon Daisy	3
*	<i>Briza maxima</i>	Large Quaking-grass	1
*	<i>Briza minor</i>	Lesser Quaking-grass	4
*	<i>Bromus hordeaceus</i>	Soft Brome	3
	<i>Bryum argenteum</i>	Silver Moss	1
	<i>Bubulcus coromandus</i>	Eastern Cattle Egret	22
	<i>Bulbine bulbosa</i>	Bulbine Lily	3
r	<i>Bulbine crassa</i>	Coast Lily	15
	<i>Bulbine glauca</i>	Rock Lily	7
	<i>Bulbine semibarbata</i>	Leek Lily	1
	<i>Burchardia umbellata</i>	Milkmaids	1
en L	<i>Burhinus grallarius</i>	Bush Stone-curlew	1
	<i>Bursaria spinosa</i> subsp. <i>spinosa</i> var. <i>spinosa</i>	Sweet Bursaria	2
	<i>Butorides striata</i>	Striated Heron	1
	<i>Cacatua galerita</i>	Sulphur-crested Cockatoo	56
	<i>Cacatua tenuirostris</i>	Long-billed Corella	7
	<i>Cacomantis flabelliformis</i>	Fan-tailed Cuckoo	95
	<i>Cacomantis pallidus</i>	Pallid Cuckoo	52
	<i>Cacomantis variolosus</i>	Brush Cuckoo	12
*	<i>Cakile maritima</i> subsp. <i>maritima</i>	Sea Rocket	3
	<i>Caladenia carnea</i> sensu Willis (1970)	Pink Fingers	1
k X	<i>Caladenia cleistantha</i>	Closed Finger-orchid	1
	<i>Caladenia latifolia</i>	Pink Fairies	1
	<i>Caladenia</i> spp.	<i>Caladenia</i>	1
r	<i>Caladenia vulgaris</i>	Slender Pink-fingers	1
	<i>Calamanthus fuliginosus</i>	Striated Fieldwren	75
vu L	<i>Calamanthus pyrrhopygius</i>	Chestnut-rumped Heathwren	13
	<i>Calandrinia calyptрата</i>	Pink Purslane	9
	<i>Caligavis chrysops</i>	Yellow-faced Honeyeater	174
*	<i>Callitriche stagnalis</i>	Common Water-starwort	1
	<i>Callocephalon fimbriatum</i>	Gang-gang Cockatoo	94
	<i>Calyptorhynchus funereus</i>	Yellow-tailed Black-Cockatoo	135
vu L	<i>Calyptorhynchus lathami</i>	Glossy Black-Cockatoo	11
	<i>Calyptrochaeta apiculata</i>	Priest's-cap Mitre-moss	2
	<i>Calystegia sepium</i> subsp. <i>roseata</i>	Large Bindweed	1
	<i>Cabestana spengleri</i>	Swan-neck Moss	2
	<i>Campylopus introflexus</i>	Heath Star Moss	1
*	<i>Canis familiaris</i>	Dingo & Dog (feral)	1
*	<i>Capra hircus</i>	Goat (feral)	1
	<i>Cardamine</i> spp.	Bitter Cress	1
*	<i>Carduelis carduelis</i>	European Goldfinch	174
*	<i>Carduus</i> spp.	Slender Thistle	3
	<i>Carex appressa</i>	Tall Sedge	4
	<i>Carex bichenoviana</i>	Plains Sedge	1
	<i>Carex fascicularis</i>	Tassel Sedge	1
*	<i>Carpobrotus aequilaterus</i>	Angled Pigface	1
	<i>Carpobrotus rossii</i>	Karkalla	16
	<i>Cassinia aculeata</i> subsp. <i>aculeata</i>	Common Cassinia	1
	<i>Cassinia longifolia</i>	Shiny Cassinia	4
	<i>Cassytha phaeolasia</i>	Rusty Dodder-laurel	1
*	<i>Catapodium rigidum</i>	Fern Grass	3
*	<i>Cenchrus clandestinus</i>	Kikuyu	5
*	<i>Centaurea melitensis</i>	Malta Thistle	1
*	<i>Centaurium erythraea</i>	Common Centaury	7
*	<i>Centaurium tenuiflorum</i>	Slender Centaury	1
	<i>Centella cordifolia</i>	Centella	2
	<i>Centrolepis fascicularis</i>	Tufted Centrolepis	3
	<i>Centrolepis strigosa</i> subsp. <i>strigosa</i>	Hairy Centrolepis	3
*	<i>Cerastium glomeratum</i> s.l.	Common Mouse-ear Chickweed	6
nt X	<i>Cercartetus nanus</i>	Eastern Pygmy-possum	4
	<i>Cereopsis novaehollandiae</i>	Cape Barren Goose	133

*	<i>Cervus unicolor</i>	Sambar Deer	2
nt	<i>Ceyx azureus</i>	Azure Kingfisher	39
	<i>Chalinobus gouldii</i>	Gould's Wattle Bat	4
	<i>Cheilanthes austrotenuifolia</i>	Green Rock-fern	2
	<i>Cheilanthes sieberi</i> subsp. <i>sieberi</i>	Narrow Rock-fern	2
	<i>Cheilanthes</i> spp.	Rock Fern	1
	<i>Chenonetta jubata</i>	Australian Wood Duck	38
	<i>Chiloglottis cornuta</i>	Green Bird-orchid	1
	<i>Chiloscyphus semiteres</i> s.l.	Common Crestwort	1
nt	<i>Chlidonias hybrida</i>	Whiskered Tern	10
*	<i>Chloris chloris</i>	European Greenfinch	44
	<i>Chrysocephalum apiculatum</i> s.s.	Common Everlasting	2
	<i>Chrysococcyx basalis</i>	Horsfield's Bronze-Cuckoo	66
	<i>Chrysococcyx lucidus</i>	Shining Bronze-Cuckoo	47
nt	<i>Chrysococcyx osculans</i>	Black-eared Cuckoo	1
	<i>Cincloramphus cruralis</i>	Brown Songlark	10
	<i>Cincloramphus mathewsi</i>	Rufous Songlark	15
nt	<i>Cinclosoma punctatum</i>	Spotted Quail-thrush	29
	<i>Circus approximans</i>	Swamp Harrier	170
nt	<i>Circus assimilis</i>	Spotted Harrier	7
*	<i>Cirsium vulgare</i>	Spear Thistle	8
	<i>Cisticola exilis</i>	Golden-headed Cisticola	53
	<i>Cladia retipora</i>	Bone Coral-lichen	2
	<i>Cladonia</i> spp.	Candelabra Lichen	3
	<i>Clematis aristata</i>	Mountain Clematis	3
	<i>Clematis microphylla</i> s.l.	Small-leaved Clematis	1
	<i>Climacteris erythropis</i>	Red-browed Treecreeper	21
nt	<i>Climacteris picumnus</i>	Brown Treecreeper	7
	<i>Colluricincla harmonica</i>	Grey Shrike-thrush	220
*	<i>Columba livia</i>	Domestic Pigeon	26
	<i>Comesperma volubile</i>	Love Creeper	4
vu	<i>Conospermum taxifolium</i>	Variable Smoke-bush	1
	<i>Coprosma hirtella</i>	Rough Coprosma	1
	<i>Coprosma quadrifida</i>	Prickly Currant-bush	1
	<i>Coracina novaehollandiae</i>	Black-faced Cuckoo-shrike	133
	<i>Coracina papuensis</i>	White-bellied Cuckoo-shrike	3
	<i>Coracina tenuirostris</i>	Common Cicadabird	9
	<i>Corcorax melanorhamphos</i>	White-winged Chough	27
	<i>Cormobates leucophaea</i>	White-throated Treecreeper	131
	<i>Coronidium elatum</i> subsp. <i>elatum</i>	Tall Everlasting	1
	<i>Correa alba</i>	White Correa	9
	<i>Correa alba</i> var. <i>alba</i>	White Correa	2
vu	<i>Correa backhouseana</i> var. <i>backhouseana</i>	Coast Correa	3
	<i>Correa reflexa</i> var. <i>reflexa</i>	Common Correa	3
	<i>Correa reflexa</i> var. <i>speciosa</i>	Eastern Correa	1
	<i>Corunastylis</i> spp.	Midge Orchid	1
	<i>Corvus coronoides</i>	Australian Raven	154
	<i>Corvus mellori</i>	Little Raven	46
*	<i>Corvus splendens</i>	House Crow	1
	<i>Corvus</i> spp.	Ravens and Crows	7
	<i>Corvus tasmanicus</i>	Forest Raven	36
	<i>Corybas</i> spp.	Helmet Orchid	1
	<i>Corybas unguiculatus</i>	Small Pelican-orchid	2
*	<i>Cotoneaster</i> spp.	Cotoneaster	1
*	<i>Cotula coronopifolia</i>	Water Buttons	4
	<i>Coturnix pectoralis</i>	Stubble Quail	37
	<i>Cracticus torquatus</i>	Grey Butcherbird	111
	<i>Craspedia variabilis</i>	Variable Billy-buttons	1
	<i>Crassula decumbens</i> var. <i>decumbens</i>	Spreading Crassula	1
	<i>Crassula helmsii</i>	Swamp Crassula	1
	<i>Crassula sieberiana</i> s.l.	Sieber Crassula	2

	<i>Crassula sieberiana</i> s.s.	Sieber Crassula	2
	<i>Crassula</i> spp.	Crassula	1
	<i>Crassula tetramera</i>	Australian Stonecrop	4
	<i>Crinia signifera</i>	Common Froglet	5
*	<i>Crocoshia X crocosmiiflora</i>	Montbretia	1
	<i>Cryptostylis subulata</i>	Large Tongue-orchid	3
vu L	<i>Cyathea cunninghamii</i>	Slender Tree-fern	1
	<i>Cycnogeton</i> spp.	Water Ribbons	2
	<i>Cygnus atratus</i>	Black Swan	216
*	<i>Cynosurus echinatus</i>	Rough Dog's-tail	1
	<i>Dacelo novaeguineae</i>	Laughing Kookaburra	220
	<i>Dampiera stricta</i>	Blue Dampiera	1
	<i>Daphoenositta chrysoptera</i>	Varied Sittella	38
EN en L	<i>Dasyornis brachypterus</i>	Eastern Bristlebird	5
nt L	<i>Dasyornis broadbenti</i>	Rufous Bristlebird	1
nt L	<i>Dasyornis broadbenti caryochrous</i>	Rufous Bristlebird (Otway)	25
EN en L	<i>Dasyurus maculatus maculatus</i>	Spot-tailed Quoll	3
EN rx L	<i>Dasyurus viverrinus</i>	Eastern Quoll	1
	<i>Daucus glochidiatus</i>	Australian Carrot	8
	<i>Daviesia benthamii</i> subsp. <i>humilis</i> spp. agg.	Spiny Bitter-pea	3
	<i>Dendrocygna arcuata</i>	Wandering Whistling-Duck	2
	<i>Dendrocygna eytoni</i>	Plumed Whistling-Duck	1
	<i>Deyeuxia minor</i>	Small Bent-grass	1
	<i>Deyeuxia quadriseta</i>	Reed Bent-grass	2
	<i>Deyeuxia</i> spp.	Bent Grass	8
	<i>Dianella caerulea</i> s.l.	Paroo Lily	1
	<i>Dianella revoluta</i> s.l.	Black-anther Flax-lily	3
	<i>Dicaeum hirundinaceum</i>	Mistletoebird	36
	<i>Dicathais orbita</i>	Cart-wheel Purple	40
	<i>Dichelachne crinita</i>	Long-hair Plume-grass	4
	<i>Dichelachne sciurea</i> spp. agg.	Short-hair Plume-grass	1
	<i>Dichelachne</i> spp.	Plume Grass	1
	<i>Dichondra repens</i>	Kidney-weed	20
	<i>Dicksonia antarctica</i>	Soft Tree-fern	1
	<i>Dicrurus bracteatus</i>	Spangled Drongo	3
	<i>Dillwynia glaberrima</i>	Smooth Parrot-pea	1
*	<i>Dipogon lignosus</i>	Common Dipogon	1
	<i>Disphyma crassifolium</i> subsp. <i>clavellatum</i>	Rounded Noon-flower	6
	<i>Distichlis distichophylla</i>	Australian Salt-grass	3
	<i>Diuris orientis</i>	Wallflower Orchid	1
	<i>Diuris</i> spp.	Diuris	1
	<i>Diuris sulphurea</i>	Tiger Orchid	2
r	<i>Dodonaea viscosa</i> subsp. <i>angustifolia</i>	Giant Hop-bush	4
nt	<i>Dromaius novaehollandiae</i>	Emu	28
	<i>Drosera auriculata</i>	Tall Sundew	2
	<i>Drosera macrantha</i> subsp. <i>planchonii</i>	Climbing Sundew	2
	<i>Drosera peltata</i> s.l.	Pale Sundew	1
	<i>Drosera pygmaea</i>	Tiny Sundew	3
	<i>Drymophila cyanocarpa</i>	Turquoise Berry	2
	<i>Drysdalia coronoides</i>	White-lipped Snake	5
vu L	<i>Dupetor flavicollis</i>	Black Bittern	1
	<i>Echinopogon ovatus</i>	Common Hedgehog-grass	2
	<i>Egernia saxatilis intermedia</i>	Black Rock Skink	1
	<i>Egretta novaehollandiae</i>	White-faced Heron	318
	<i>Elaeocarpus reticulatus</i>	Blue Oliveberry	1
	<i>Elanus axillaris</i>	Black-shouldered Kite	97
	<i>Elanus scriptus</i>	Letter-winged Kite	4
	<i>Eleocharis sphacelata</i>	Tall Spike-sedge	1
	<i>Empodisma minus</i>	Spreading Rope-rush	2
	<i>Engaeus cunicularius</i>	Granular Burrowing Crayfish	2
	<i>Eolophus roseicapilla</i>	Galah	55

	<i>Eopsaltria australis</i>	Eastern Yellow Robin	196
	<i>Epacris impressa</i>	Common Heath	3
	<i>Epilobium billardioreanum</i> subsp. <i>cinereum</i>	Grey Willow-herb	9
	<i>Epthianura albifrons</i>	White-fronted Chat	115
	<i>Epthianura tricolor</i>	Crimson Chat	2
	<i>Eragrostis</i> spp.	Love Grass	1
*	<i>Erigeron bonariensis</i>	Flaxleaf Fleabane	1
*	<i>Erigeron canadensis</i> s.l.	Canadian Fleabane	1
*	<i>Erigeron</i> spp.	Fleabane	1
	<i>Eriochilus cucullatus</i> s.l.	Parson's Bands	1
	<i>Erodium</i> spp.	Heron's Bill	1
	<i>Eucalyptus blakelyi</i>	Blakely's Red-gum	2
#	<i>Eucalyptus botryoides</i>	Southern Mahogany	1
	<i>Eucalyptus consideriana</i>	Yertchuk	1
	<i>Eucalyptus globoidea</i>	White Stringybark	4
r #	<i>Eucalyptus globulus</i> subsp. <i>globulus</i>	Southern Blue-gum	2
	<i>Eucalyptus goniocalyx</i> s.s.	Bundy	2
	<i>Eucalyptus polyanthemus</i> subsp. <i>vestita</i>	Red Box	1
	<i>Eucalyptus viminalis</i> subsp. <i>viminalis</i>	Manna Gum	3
	<i>Euchiton involucratus</i> s.l.	Common Cudweed	3
	<i>Euchiton japonicus</i> s.s.	Creeping Cudweed	11
	<i>Eudynamys orientalis</i>	Eastern Koel	2
	<i>Eulamprus heatwolei</i>	Yellow-bellied Water Skink	14
	<i>Eulamprus</i> spp.	Unidentified water skink	73
	<i>Eulamprus tympanum tympanum</i>	Southern Water Skink	2
*	<i>Euphorbia paralias</i>	Sea Spurge	5
	<i>Eurostopodus mystacalis</i>	White-throated Nightjar	8
	<i>Eurystomus orientalis</i>	Oriental Dollarbird	6
	<i>Exocarpos strictus</i>	Pale-fruit Ballart	1
	<i>Falco berigora</i>	Brown Falcon	126
	<i>Falco cenchroides</i>	Nankeen Kestrel	133
	<i>Falco longipennis</i>	Australian Hobby	34
	<i>Falco peregrinus</i>	Peregrine Falcon	65
vu L	<i>Falco subniger</i>	Black Falcon	5
	<i>Falcunculus frontatus</i>	Eastern Shrike-tit	43
*	<i>Felicia amelloides</i>	Blue Marguerite	1
*	<i>Felis catus</i>	Domestic Cat (feral)	4
	<i>Ficinia nodosa</i>	Knobby Club-sedge	32
	<i>Fissidens taylorii</i>	Pygmy Pocket-moss	1
	<i>Fulica atra</i>	Eurasian Coot	57
*	<i>Fumaria bastardii</i>	Bastard's Fumitory	1
*	<i>Fumaria</i> spp.	Fumitory	1
	<i>Gadopsis marmoratus</i>	River Blackfish	1
vu	<i>Gahnia grandis</i>	Brickmaker's Sedge	4
	<i>Gahnia sieberiana</i>	Red-fruit Saw-sedge	2
	<i>Galium leiocarpum</i>	Maori Bedstraw	4
	<i>Galium</i> spp.	Bedstraw	5
	<i>Gallinula tenebrosa</i>	Dusky Moorhen	46
*	<i>Gamochaeta purpurea</i> s.l.	Purple Cudweed	3
*	<i>Gamochaeta purpurea</i> s.s.	Spiked Cudweed	1
	<i>Gavicalis virescens</i>	Singing Honeyeater	25
*	<i>Gazania linearis</i>	Gazania	1
*	<i>Gazania</i> spp.	Gazania	1
	<i>Geopelia placida</i>	Peaceful Dove	9
*	<i>Geranium molle</i>	Dove's Foot	2
	<i>Geranium solanderi</i> s.l.	Austral Crane's-bill	2
	<i>Geranium</i> spp.	Crane's Bill	4
	<i>Gerygone mouki</i>	Brown Gerygone	9
	<i>Gerygone olivacea</i>	White-throated Gerygone	3
	<i>Glareola maldivarum</i>	Oriental Pratincole	2
	<i>Gleichenia microphylla</i>	Scrambling Coral-fern	2

	<i>Glossopsitta concinna</i>	Musk Lorikeet	33
	<i>Glycine clandestina</i>	Twining Glycine	1
	<i>Glycine microphylla</i>	Small-leaf Glycine	3
	<i>Glyciphila melanops</i>	Tawny-crowned Honeyeater	107
	<i>Gonocarpus humilis</i>	Shade Raspwort	1
	<i>Gonocarpus teucroides</i> s.l.	Germander Raspwort	1
	<i>Goodenia</i> spp.	Goodenia	2
r	<i>Goodenia stelligera</i>	Spiked Goodenia	1
	<i>Grallina cyanoleuca</i>	Magpie-lark	223
	<i>Grevillea lanigera</i>	Woolly Grevillea	1
r	<i>Grevillea patulifolia</i>	Swamp Grevillea	1
	<i>Gymnorhina tibicen</i>	Australian Magpie	300
	<i>Hakea decurrens</i> subsp. <i>physocarpa</i>	Bushy Needlewood	1
r	<i>Hakea decurrens</i> subsp. <i>platytaenia</i>	Coast Needlewood	2
	<i>Hakea teretifolia</i> subsp. <i>hirsuta</i>	Dagger Hakea	1
	<i>Haliastur sphenurus</i>	Whistling Kite	100
	<i>Hardenbergia violacea</i>	Purple Coral-pea	1
	<i>Harmonia conformis</i>	Common Spotted Ladybird	2
	<i>Helichrysum leucopsidium</i>	Satin Everlasting	3
	<i>Hemarthria uncinata</i> var. <i>uncinata</i>	Mat Grass	1
	<i>Heteronympha merope</i>	Common Brown Butterfly	1
	<i>Hibbertia obtusifolia</i>	Grey Guinea-flower	2
	<i>Hieraaetus morphnoides</i>	Little Eagle	21
VU vu L	<i>Hirundapus caudacutus</i>	White-throated Needletail	92
	<i>Hirundo neoxena</i>	Welcome Swallow	360
	<i>Histiopteris incisa</i>	Bat's Wing Fern	2
*	<i>Holcus lanatus</i>	Yorkshire Fog	5
*	<i>Hordeum leporinum</i>	Barley-grass	1
*	<i>Hordeum murinum</i> s.l.	Barley-grass	1
*	<i>Hordeum</i> spp.	Barley Grass	4
r	<i>Hybanthus vernonii</i> subsp. <i>vernonii</i>	Erect Violet	1
*	<i>Hydrocotyle bonariensis</i>	American Pennywort	1
	<i>Hydrocotyle hirta</i>	Hairy Pennywort	11
	<i>Hydrocotyle laxiflora</i>	Stinking Pennywort	3
	<i>Hydrocotyle muscosa</i>	Mossy Pennywort	5
	<i>Hydrocotyle sibthorpioides</i>	Shining Pennywort	3
	<i>Hydrocotyle</i> spp.	Pennywort	1
vu	<i>Hydrorchis orbicularis</i>	Swamp Onion-orchid	2
	<i>Hypericum gramineum</i>	Small St John's Wort	1
	<i>Hypericum japonicum</i>	Matted St John's Wort	1
	<i>Hypnum cupressiforme</i>	Common Plait-moss	1
*	<i>Hypochaeris glabra</i>	Smooth Cat's-ear	7
*	<i>Hypochaeris radicata</i>	Flatweed	19
	<i>Hypolaena fastigiata</i>	Tassel Rope-rush	1
	<i>Hypolepis muelleri</i>	Harsh Ground-fern	1
	<i>Hypotaenidia philippensis</i>	Buff-banded Rail	8
#	<i>Imperata cylindrica</i>	Blady Grass	1
	<i>Ischyrodon lepturus</i>	Golden Silk-moss	1
	<i>Isolepis cernua</i> s.s.	Nodding Club-sedge	3
	<i>Isolepis fluitans</i>	Floating Club-sedge	1
	<i>Isolepis inundata</i>	Swamp Club-sedge	2
*	<i>Isolepis levynsiana</i>	Tiny Flat-sedge	2
	<i>Isolepis marginata</i>	Little Club-sedge	2
	<i>Isolepis subtilissima</i>	Mountain Club-sedge	1
EN nt L	<i>Isodon obesulus</i> <i>obesulus</i>	Southern Brown Bandicoot	3
	<i>Isopogon ceratophyllus</i>	Horny Cone-bush	1
en L	<i>Ixobrychus dubius</i>	Australian Little Bittern	2
	<i>Juncus bufonius</i>	Toad Rush	1
	<i>Juncus caespiticius</i>	Grassy Rush	1
*	<i>Juncus capitatus</i>	Capitate Rush	1
	<i>Juncus kraussii</i> subsp. <i>australiensis</i>	Sea Rush	2

	<i>Juncus pallidus</i>	Pale Rush	7
	<i>Juncus planifolius</i>	Broad-leaf Rush	1
	<i>Juncus</i> spp.	Rush	6
	<i>Kennedia prostrata</i>	Running Postman	2
#	<i>Kennedia rubicunda</i>	Dusky Coral-pea	2
#	<i>Kunzea ambigua</i>	White Kunzea	4
	<i>Lachnagrostis billardierei</i> s.l.	Coast Blown-grass	1
	<i>Lachnagrostis filiformis</i> s.l.	Common Blown-grass	2
*	<i>Lactuca</i> spp.	Lettuce	1
	<i>Lagenophora stipitata</i> s.l.	Common Bottle-daisy	18
	<i>Lagenophora sublyrata</i>	Slender Bottle-daisy	1
*	<i>Lagurus ovatus</i>	Hare's-tail Grass	2
	<i>Lalage tricolor</i>	White-winged Triller	17
	<i>Lampropholis guichenoti</i>	Garden Skink	5
	<i>Laphangium luteoalbum</i>	Jersey Cudweed	16
	<i>Latridopsis forsteri</i>	Bastard Trumpeter	7
*	<i>Lavandula</i> spp.	Lavender	1
r	<i>Lepidium desvauxii</i>	Bushy Peppercross	5
vu	<i>Lepidium foliosum</i>	Leafy Peppercross	3
k	<i>Lepidium pseudohyssopifolium</i>	Native Peppercross	1
	<i>Lepidosperma concavum</i>	Sandhill Sword-sedge	3
	<i>Lepidosperma gladiatum</i>	Coast Sword-sedge	1
	<i>Lepidosperma</i> spp.	Sword Sedge	1
vu	<i>Leptecophylla juniperina</i> subsp. <i>oxycedrus</i>	Crimson Berry	1
	<i>Leptinella reptans</i> s.s.	Creeping Cotula	1
	<i>Leptocarpus tenax</i>	Slender Twine-rush	2
#	<i>Leptospermum laevigatum</i>	Coast Tea-tree	16
	<i>Leptospermum scoparium</i>	Manuka	2
	<i>Leptospermum</i> spp.	Tea Tree	1
	<i>Lerista bougainvillii</i>	Bougainville's Skink	38
*	<i>Leucojum aestivum</i>	Snowflake	2
	<i>Leucophyta brownii</i>	Cushion Bush	8
	<i>Leucopogon affinis</i>	Lance Beard-heath	1
	<i>Leucopogon collinus</i>	Fringed Beard-heath	1
	<i>Leucopogon ericoides</i>	Pink Beard-heath	1
	<i>Leucopogon parviflorus</i>	Coast Beard-heath	18
	<i>Leucosarcia melanoleuca</i>	Wonga Pigeon	36
vu L	<i>Lewinia pectoralis</i>	Lewin's Rail	9
vu	<i>Lichenostomus cratitius</i>	Purple-gaped Honeyeater	1
	<i>Lichenostomus melanops</i>	Yellow-tufted Honeyeater	17
	<i>Lilaeopsis polyantha</i>	Australian Lilaeopsis	3
	<i>Limnodynastes dumerilii</i>	Southern Bullfrog (ssp. unknown)	5
	<i>Limnodynastes dumerilii dumerilii</i>	Pobblebonk Frog	1
	<i>Limnodynastes dumerilii insularis</i>	Pobblebonk Frog	4
	<i>Limnodynastes peronii</i>	Striped Marsh Frog	3
	<i>Limnodynastes tasmaniensis</i>	Spotted Marsh Frog (race unknown)	3
*	<i>Linaria pelisseriana</i>	Pelisser's Toad-flax	1
	<i>Lindsaea linearis</i>	Screw Fern	1
	<i>Liopholis whitii</i> GROUP	White's Skink	77
	<i>Litoria ewingii</i>	Southern Brown Tree Frog	3
	<i>Litoria ewingii</i> SOUTHERN	Southern Brown Tree Frog SOUTHERN	4
VU en L	<i>Litoria raniformis</i>	Growling Grass Frog	1
	<i>Litoria verreauxii verreauxii</i>	Verreaux's Tree Frog	1
	<i>Lobelia anceps</i>	Angled Lobelia	8
*	<i>Lolium perenne</i>	Perennial Rye-grass	1
*	<i>Lolium rigidum</i>	Wimmera Rye-grass	2
*	<i>Lolium</i> spp.	Rye Grass	5
	<i>Lomandra filiformis</i>	Wattle Mat-rush	2
	<i>Lomandra longifolia</i>	Spiny-headed Mat-rush	5
	<i>Lomandra longifolia</i> subsp. <i>longifolia</i>	Spiny-headed Mat-rush	1
	<i>Lomandra</i> spp.	Mat-rush	3

vu L	<i>Lophoictinia isura</i>	Square-tailed Kite	1
	<i>Lopholaimus antarcticus</i>	Topknot Pigeon	3
*	<i>Lotus corniculatus</i> var. <i>corniculatus</i>	Bird's-foot Trefoil	1
*	<i>Lotus uliginosus</i>	Giant Honey-myrtle	1
	<i>Lunella</i> (<i>Subnarella</i>) <i>undulatus</i>	Common Warrener	32
*	<i>Lupinus arboreus</i>	Tree Lupin	1
	<i>Luzula meridionalis</i>	Common Woodrush	9
	<i>Luzula meridionalis</i> var. <i>densiflora</i>	Common Woodrush	1
	<i>Luzula meridionalis</i> var. <i>flaccida</i>	Common Woodrush	2
	<i>Luzula meridionalis</i> var. <i>meridionalis</i>	Common Woodrush	1
*	<i>Lycium ferocissimum</i>	African Box-thorn	1
r	<i>Lycopodiella serpentina</i>	Bog Clubmoss	1
*	<i>Lysimachia arvensis</i>	Pimpernel	5
	<i>Lythrum hyssopifolia</i>	Small Loosestrife	1
	<i>Macropus giganteus</i>	Eastern Grey Kangaroo	6
	<i>Macropus</i> spp.	Kangaroo	1
	<i>Malacorhynchus membranaceus</i>	Pink-eared Duck	10
	<i>Malurus cyaneus</i>	Superb Fairy-wren	293
	<i>Malva preissiana</i> s.l.	Australian Hollyhock	8
	<i>Malva</i> spp.	Mallow	1
	<i>Manorina melanocephala</i>	Noisy Miner	48
	<i>Manorina melanophrys</i>	Bell Miner	56
r #	<i>Melaleuca armillaris</i> subsp. <i>armillaris</i>	Giant Honey-myrtle	3
#	<i>Melaleuca ericifolia</i>	Swamp Paperbark	14
	<i>Melaleuca</i> spp.	Honey-myrtle	1
	<i>Melaleuca squarrosa</i>	Scented Paperbark	4
nt L	<i>Melanodryas cucullata</i>	Hooded Robin	7
*	<i>Meililotus indicus</i>	Sweet Melilot	1
	<i>Meliphaga lewinii</i>	Lewin's Honeyeater	34
	<i>Melithreptus brevirostris</i>	Brown-headed Honeyeater	55
	<i>Melithreptus lunatus</i>	White-naped Honeyeater	80
	<i>Melopsittacus undulatus</i>	Budgerigar	1
	<i>Mentha diemenica</i> var. <i>serpyllifolia</i>	Slender Mint	9
	<i>Menura novaehollandiae</i>	Superb Lyrebird	39
	<i>Merops ornatus</i>	Rainbow Bee-eater	7
	<i>Microeca fascinans</i>	Jacky Winter	41
	<i>Microlaena stipoides</i> var. <i>stipoides</i>	Weeping Grass	6
	<i>Microseris walteri</i>	Yam Daisy	1
	<i>Microtis arenaria</i>	Notched Onion-orchid	2
	<i>Microtis oblonga</i>	Sweet Onion-orchid	3
	<i>Microtis parviflora</i>	Slender Onion-orchid	1
	<i>Microtis</i> spp.	Onion Orchid	1
	<i>Milvus migrans</i>	Black Kite	1
L	<i>Miniopterus schreibersii</i> GROUP	Common Bent-wing Bat	2
	<i>Mirafra javanica</i>	Horsfield's Bushlark	6
	<i>Monarcha melanopsis</i>	Black-faced Monarch	20
	<i>Monotoca elliptica</i> s.l.	Tree Broom-heath	1
	<i>Monotoca elliptica</i> s.s.	Tree Broom-heath	3
r	<i>Monotoca glauca</i>	Currant-wood	4
	<i>Muehlenbeckia adpressa</i>	Climbing Lignum	7
r	<i>Muellerina celastroides</i>	Coast Mistletoe	4
*	<i>Mus musculus</i>	House Mouse	41
	<i>Myiagra cyanoleuca</i>	Satin Flycatcher	39
	<i>Myiagra inquieta</i>	Restless Flycatcher	25
	<i>Myiagra rubecula</i>	Leaden Flycatcher	24
#	<i>Myoporum insulare</i>	Common Boobialla	15
	<i>Myriophyllum</i> spp.	Water Milfoil	1
	<i>Myzomela sanguinolenta</i>	Scarlet Honeyeater	4
*	<i>Nasturtium officinale</i>	Watercress	3
r	<i>Nematolepis squamea</i> subsp. <i>squamea</i>	Satinwood	1
	<i>Neochmia temporalis</i>	Red-browed Finch	133

	<i>Neophema chrysostoma</i>	Blue-winged Parrot	43
	<i>Nesoptilotis leucotis</i>	White-eared Honeyeater	110
	<i>Ninox boobook</i>	Southern Boobook	78
en L	<i>Ninox connivens</i>	Barking Owl	5
vu L	<i>Ninox strenua</i>	Powerful Owl	9
	<i>Niveoscincus coventryi</i>	Coventry's Skink	3
	<i>Niveoscincus metallicus</i>	Metallic Skink	38
	<i>Notamacropus rufogriseus banksianus</i>	Red-necked Wallaby	1
	<i>Notechis scutatus</i>	Tiger Snake	4
	<i>Notelaea ligustrina</i>	Privet Mock-olive	1
	<i>Notocypraea angustata</i>	Brown Cowry	1
nt	<i>Nycticorax caledonicus</i>	Nankeen Night-Heron	24
	<i>Nymphicus hollandicus</i>	Cockatiel	2
	<i>Olearia argophylla</i>	Musk Daisy-bush	1
	<i>Olearia axillaris</i>	Coast Daisy-Bush	1
	<i>Olearia floribunda</i>	Heath Daisy-bush	2
	<i>Olearia glutinosa</i>	Sticky Daisy-bush	13
	<i>Olearia lepidophylla</i>	Club-moss Daisy-bush	7
	<i>Olearia lirata</i>	Snowy Daisy-bush	1
	<i>Olearia phlogopappa</i>	Dusty Daisy-bush	5
	<i>Olearia phlogopappa</i> subsp. <i>continentalis</i>	Dusty Daisy-bush	1
	<i>Olearia ramulosa</i>	Twiggy Daisy-bush	3
	<i>Olearia rugosa</i>	Wrinkled Daisy-bush	1
k	<i>Olearia stellulata</i>	Starry Daisy-bush	1
	<i>Opercularia aspera</i>	Coarse Stinkweed	4
*	<i>Opuntia</i> spp.	Prickly Pear	1
	Orchidaceae spp.	Orchid	2
	<i>Oriolus sagittatus</i>	Olive-backed Oriole	34
	<i>Orthoceras strictum</i>	Horned Orchid	2
*	<i>Oryctolagus cuniculus</i>	European Rabbit	13
	<i>Oxalis exilis</i>	Shade Wood-sorrel	14
r	<i>Oxalis rubens</i>	Dune Wood-sorrel	6
	<i>Oxalis</i> spp.	Wood Sorrel	1
en L	<i>Oxyura australis</i>	Blue-billed Duck	10
r	<i>Ozothamnus argophyllus</i>	Spicy Everlasting	2
	<i>Ozothamnus obcordatus</i>	Grey Everlasting	3
	<i>Ozothamnus turbinatus</i>	Coast Everlasting	2
	<i>Pachycephala olivacea</i>	Olive Whistler	57
	<i>Pachycephala pectoralis</i>	Golden Whistler	168
	<i>Pachycephala rufiventris</i>	Rufous Whistler	76
	<i>Parablennius tasmanianus</i>	Tasmanian Blenny	1
*	<i>Paraserianthes lophantha</i> subsp. <i>lophantha</i>	Cape Wattle	4
	<i>Pardalotus punctatus</i>	Spotted Pardalote	79
	<i>Pardalotus striatus</i>	Striated Pardalote	40
	<i>Parietaria debilis</i> s.l.	Shade Pellitory	2
	<i>Parietaria debilis</i> s.s.	Shade Pellitory	1
	<i>Parvipsitta porphyrocephala</i>	Purple-crowned Lorikeet	9
	<i>Parvipsitta pusilla</i>	Little Lorikeet	17
*	<i>Passer domesticus</i>	House Sparrow	140
*	<i>Passer montanus</i>	Eurasian Tree Sparrow	7
	<i>Patersonia fragilis</i>	Short Purple-flag	1
	<i>Patersonia sericea</i> var. <i>sericea</i>	Silky Purple-flag	2
	<i>Pelargonium australe</i>	Austral Stork's-bill	14
	<i>Pellaea falcata</i> s.l.	Sickle Fern	2
	<i>Pentapogon quadrifidus</i> var. <i>quadrifidus</i>	Five-awned Spear-grass	1
	<i>Perameles nasuta</i>	Southern Long-nosed Bandicoot	3
	<i>Persoonia linearis</i>	Narrow-leaf Geebung	1
	<i>Petaurus australis</i>	Yellow-bellied Glider	3
	<i>Petaurus breviceps</i>	Sugar Glider	1
	<i>Petrochelidon ariel</i>	Fairy Martin	35
	<i>Petrochelidon nigricans</i>	Tree Martin	57

	<i>Petroica boodang</i>	Scarlet Robin	108
	<i>Petroica goodenovii</i>	Red-capped Robin	3
	<i>Petroica phoenicea</i>	Flame Robin	101
	<i>Petroica rodinogaster</i>	Pink Robin	24
	<i>Petroica rosea</i>	Rose Robin	29
*	<i>Petrorhagia dubia</i>	Velvety Pink	1
en L	<i>Pezoporus wallicus</i>	Ground Parrot	44
	<i>Phalacrocorax carbo</i>	Great Cormorant	243
nt	<i>Phalacrocorax varius</i>	Pied Cormorant	107
	<i>Phaps chalcoptera</i>	Common Bronzewing	54
	<i>Phaps elegans</i>	Brush Bronzewing	87
	<i>Phascolarctos cinereus</i>	Koala	33
P	<i>Phebalium squamulosum</i>	Forest Phebalium	2
vu	<i>Phebalium squamulosum</i> subsp. <i>argenteum</i>	Silvery Phebalium	2
r	<i>Phebalium squamulosum</i> subsp. <i>squamulosum</i>	Forest Phebalium	4
	<i>Philemon corniculatus</i>	Noisy Friarbird	12
	<i>Philonotis tenuis</i>	Apple Moss	2
	<i>Phylidonyris novaehollandiae</i>	New Holland Honeyeater	292
	<i>Phylidonyris pyrrhopterus</i>	Crescent Honeyeater	108
*	<i>Physalis peruviana</i>	Cape Gooseberry	2
	<i>Picris angustifolia</i> subsp. <i>angustifolia</i>	Coast Picris	2
	<i>Pimelea axiflora</i>	Bootlace Bush	1
vu	<i>Pimelea drupacea</i>	Cherry Rice-flower	1
	<i>Pimelea linifolia</i>	Slender Rice-flower	3
	<i>Pimelea</i> spp.	Rice Flower	2
#	<i>Pittosporum undulatum</i>	Sweet Pittosporum	1
*	<i>Plantago coronopus</i>	Buck's-horn Plantain	4
*	<i>Plantago coronopus</i> subsp. <i>coronopus</i>	Buck's-horn Plantain	1
	<i>Plantago hispida</i>	Hairy Plantain	1
*	<i>Plantago myosuroides</i> subsp. <i>myosuroides</i>	Mouse Plantain	2
	<i>Plantago</i> spp.	Plantain	1
	<i>Platycercus elegans</i>	Crimson Rosella	212
	<i>Platycercus eximius</i>	Eastern Rosella	88
k	<i>Platylobium triangulare</i>	Ivy Flat-pea	1
	<i>Platysace lanceolata</i>	Shrubby Platysace	1
nt	<i>Plegadis falcinellus</i>	Glossy Ibis	1
*	<i>Poa annua</i> s.l.	Annual Meadow-grass	1
r	<i>Poa billardierei</i>	Coast Fescue	6
	<i>Poa labillardierei</i> var. <i>labillardierei</i>	Common Tussock-grass	1
	<i>Poa morrisii</i>	Soft Tussock-grass	1
	<i>Poa poiformis</i>	Coast Tussock-grass	13
	<i>Poa poiformis</i> var. <i>poiformis</i>	Coast Tussock-grass	20
r	<i>Poa poiformis</i> var. <i>ramifer</i>	Dune Poa	9
*	<i>Poa pratensis</i>	Kentucky Blue-grass	1
	<i>Poa</i> spp.	Tussock Grass	6
	<i>Podargus strigoides</i>	Tawny Frogmouth	25
	<i>Podiceps cristatus</i>	Great Crested Grebe	16
	<i>Poliocephalus poliocephalus</i>	Hoary-headed Grebe	48
*	<i>Polycarpon tetraphyllum</i>	Four-leaved Allseed	4
r	<i>Pomaderris apetala</i> subsp. <i>apetala</i>	Grampians Pomaderris	2
	<i>Pomaderris intermedia</i>	Citron Pomaderris	2
	<i>Pomaderris lanigera</i>	Woolly Pomaderris	1
P	<i>Pomaderris oraria</i>	Bassian Pomaderris	2
	<i>Pomaderris paniculosa</i> subsp. <i>paralia</i>	Coast Pomaderris	2
en L	<i>Pomatostomus temporalis</i>	Grey-crowned Babbler	5
	<i>Poodytes gramineus</i>	Little Grassbird	48
	<i>Poranthera microphylla</i> s.l.	Small Poranthera	4
	<i>Poranthera microphylla</i> s.s.	Small Poranthera	1
	<i>Porphyrio melanotus</i>	Australasian Swamphen	80
	<i>Porzana fluminea</i>	Australian Spotted Crane	9
vu L	<i>Porzana pusilla</i>	Baillon's Crane	4

	<i>Porzana tabuensis</i>	Spotless Crane	6
VU nt L	<i>Potorous tridactylus trisulcatus</i>	Long-nosed Potoroo	2
	<i>Prasophyllum odoratum</i> s.l.	Scented Leek-orchid	1
	<i>Prasophyllum</i> spp.	Leek Orchid	2
	<i>Psephotus haematonotus</i>	Red-rumped Parrot	10
	<i>Pseudemoia spenceri</i>	Spencer's Skink	1
	<i>Pseudocheirus peregrinus</i>	Eastern Ring-tailed Possum	9
EN en L	<i>Pseudomys fumeus</i>	Smoky Mouse	1
	<i>Pseudonaja textilis</i>	Eastern Brown Snake	1
vu	<i>Pseudophryne semimarmorata</i>	Southern Toadlet	4
	<i>Psophodes olivaceus</i>	Eastern Whipbird	107
	<i>Pteridium esculentum</i> subsp. <i>esculentum</i>	Austral Bracken	18
	<i>Pteris tremula</i>	Tender Brake	1
VU vu L	<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox	1
vu	<i>Pterostylis alveata</i>	Coastal Greenhood	2
	<i>Pterostylis curta</i>	Blunt Greenhood	2
	<i>Pterostylis mutica</i>	Midget Greenhood	1
	<i>Pterostylis nutans</i>	Nodding Greenhood	2
	<i>Pterostylis parviflora</i> s.s.	Tiny Greenhood	2
	<i>Pterostylis pedunculata</i>	Maroonhood	4
	<i>Pterostylis</i> spp.	Greenhood	5
	<i>Ptilinopus regina</i>	Rose-crowned Fruit-Dove	1
	<i>Ptilinopus superbus</i>	Superb Fruit-Dove	1
	<i>Ptilonorhynchus violaceus</i>	Satin Bowerbird	44
	<i>Ptilotula fusca</i>	Fuscous Honeyeater	5
	<i>Ptilotula ornata</i>	Yellow-plumed Honeyeater	1
	<i>Ptilotula penicillata</i>	White-plumed Honeyeater	63
	<i>Pultenaea daphnoides</i>	Large-leaf Bush-pea	2
	<i>Pultenaea dentata</i>	Clustered Bush-pea	1
#	<i>Pultenaea forsythiana</i>	Prickly Bush-pea	1
	<i>Pultenaea juniperina</i> s.l.	Prickly Bush-pea	4
	<i>Pultenaea retusa</i>	Blunt Bush-pea	2
	<i>Pultenaea scabra</i>	Rough Bush-pea	1
	<i>Pycnopus coccineus</i>		1
	<i>Pycnoptilus floccosus</i>	Pilotbird	21
vu L	<i>Pyrrholaemus sagittatus</i>	Speckled Warbler	3
	<i>Racopilum cuspidigerum</i>	Carpet Moss	1
	<i>Racopilum cuspidigerum</i> var. <i>convolutaceum</i>	Common Carpet-moss	1
	<i>Ranunculus amphitrichus</i>	Small River Buttercup	1
*	<i>Ranunculus muricatus</i>	Sharp Buttercup	1
	<i>Rattus fuscipes</i>	Bush Rat	137
	<i>Rattus lutreolus</i>	Swamp Rat	4
*	<i>Rattus norvegicus</i>	Brown Rat	41
*	<i>Rattus rattus</i>	Black Rat	8
	<i>Rattus</i> spp.	Rats	4
	<i>Retropinna semoni</i>	Australian Smelt	1
	<i>Rhagodia candolleana</i> subsp. <i>candolleana</i>	Seaberry Saltbush	17
	<i>Rhipidura albiscapa</i>	Grey Fantail	267
	<i>Rhipidura leucophrys</i>	Willie Wagtail	197
	<i>Rhipidura rufifrons</i>	Rufous Fantail	53
	<i>Rhytidosporum procumbens</i>	White Marianth	1
r	<i>Roepera billardierei</i>	Coast Twin-leaf	2
*	<i>Romulea rosea</i>	Onion Grass	2
	<i>Rosulabryum campylothecium</i>	Sand Thread-moss	1
*	<i>Rubus fruticosus</i> spp. agg.	Blackberry	3
*	<i>Rubus polyanthemus</i>	Forest Blackberry	1
	<i>Rumex brownii</i>	Slender Dock	1
	<i>Rumex</i> spp.	Dock	2
	<i>Sagaminopteron ornatum</i>	Tassel	1
	<i>Rytidosperma caespitosum</i>	Common Wallaby-grass	1
	<i>Rytidosperma longifolium</i>	Long-leaf Wallaby-grass	1

	<i>Rytidosperma penicillatum</i>	Weeping Wallaby-grass	3
	<i>Rytidosperma racemosum</i> var. <i>racemosum</i>	Slender Wallaby-grass	8
	<i>Rytidosperma semiannulare</i>	Wetland Wallaby-grass	4
	<i>Rytidosperma setaceum</i>	Bristly Wallaby-grass	3
	<i>Rytidosperma setaceum</i> var. <i>setaceum</i>	Bristly Wallaby-grass	1
	<i>Rytidosperma</i> spp.	Wallaby Grass	8
	<i>Sagaminopteron ornatum</i>	bubble snail	1
*	<i>Sagina apetala</i>	Common Pearlwort	1
*	<i>Sagina procumbens</i>	Spreading Pearlwort	2
*	<i>Salix</i> spp.	Willow	1
	<i>Sambucus gaudichaudiana</i>	White Elderberry	19
	<i>Samolus repens</i> var. <i>repens</i>	Creeping Brookweed	13
vu	<i>Santalum obtusifolium</i>	Blunt Sandalwood	1
	<i>Saproscincus mustelinus</i>	Weasel Skink	2
	<i>Sarcocornia quinqueflora</i>	Beaded Glasswort	4
	<i>Sarcocornia quinqueflora</i> subsp. <i>quinqueflora</i>	Beaded Glasswort	4
vu	<i>Scaevola calendulacea</i>	Dune Fan-flower	2
	<i>Schizaea asperula</i>	Rough Comb-fern	1
	<i>Schizaea bifida</i> s.s.	Forked Comb-fern	1
	<i>Schizaea fistulosa</i>	Narrow Comb-fern	1
	<i>Schoenus apogon</i>	Common Bog-sedge	2
r	<i>Schoenus ericetorum</i>	Heathy Bog-sedge	1
	<i>Schoenus maschalinus</i>	Leafy Bog-sedge	2
	<i>Schoenus nitens</i>	Shiny Bog-sedge	12
	<i>Scincidae</i> spp.	Unidentified skink	14
	<i>Scleranthus biflorus</i> s.l.	Twin-flower Knawel	1
	<i>Scorpis aequipinnis</i>	Sea Sweep	55
	<i>Scorpis lineolata</i>	Silver Sweep	7
	<i>Selaginella uliginosa</i>	Swamp Selaginella	3
	<i>Selliera radicans</i>	Shiny Swamp-mat	5
	<i>Sematophyllum homomallum</i>	Bronze Signal-moss	1
*	<i>Senecio angulatus</i>	Climbing Groundsel	1
	<i>Senecio biserratus</i>	Jagged Fireweed	10
r	<i>Senecio glomeratus</i> subsp. <i>longifructus</i>	Annual Fireweed	1
	<i>Senecio linearifolius</i>	Fireweed Groundsel	2
	<i>Senecio linearifolius</i> var. <i>linearifolius</i>	Fireweed Groundsel (type variant)	2
	<i>Senecio minimus</i>	Shrubby Fireweed	6
	<i>Senecio odoratus</i>	Scented Groundsel	16
	<i>Senecio pinnatifolius</i>	Variable Groundsel	13
	<i>Senecio pinnatifolius</i> var. <i>maritimus</i>	Coast Groundsel	1
	<i>Senecio quadridentatus</i>	Cotton Fireweed	1
	<i>Senecio spathulatus</i> s.l.	Dune Groundsel	6
	<i>Senecio</i> spp.	Groundsel	2
	<i>Sericornis frontalis</i>	White-browed Scrubwren	201
	<i>Sericornis magnirostra</i>	Large-billed Scrubwren	5
*	<i>Silene gallica</i>	French Catchfly	2
*	<i>Sinapis</i> spp.	Mustard	1
	<i>Smicronis brevirostris</i>	Weebill	7
	<i>Solanum aviculare</i>	Kangaroo Apple	8
*	<i>Solanum nigrum</i> s.s.	Black Nightshade	2
	<i>Solanum opacum</i>	Green-berry Nightshade	6
	<i>Solanum</i> spp.	Nightshade	1
*	<i>Solanum triflorum</i>	Cut-leaf Nightshade	3
	<i>Solanum vescum</i>	Gunyang	1
*	<i>Sonchus asper</i> s.l.	Rough Sow-thistle	2
*	<i>Sonchus oleraceus</i>	Common Sow-thistle	8
vu	<i>Spatula rhynchotis</i>	Australasian Shoveler	15
*	<i>Spergula</i> spp.	Corn Spurrey	1
	<i>Spergularia</i> spp.	Sand Spurrey	3
	<i>Sphagnum</i> spp.	Peat Moss	1
*	<i>Spilopelia chinensis</i>	Spotted Dove	55

	<i>Spinifex sericeus</i>	Hairy Spinifex	5
r	<i>Sporadanthus tasmanicus</i>	Branching Scale-rush	1
	<i>Sporobolus virginicus</i>	Salt Couch	1
	<i>Sprengelia incarnata</i>	Pink Swamp-heath	1
*	<i>Stachys arvensis</i>	Stagger Weed	1
	<i>Stagonopleura bella</i>	Beautiful Firetail	43
nt L	<i>Stagonopleura guttata</i>	Diamond Firetail	8
*	<i>Stellaria media</i>	Chickweed	2
	<i>Stellaria pungens</i>	Prickly Starwort	1
*	<i>Stenotaphrum secundatum</i>	Buffalo Grass	4
	<i>Sticherus</i> spp.	Fan Fern	1
en L	<i>Stictonetta naevosa</i>	Freckled Duck	4
	<i>Stipiturus malachurus</i>	Southern Emu-wren	72
	<i>Strepera graculina</i>	Pied Currawong	105
	<i>Strepera versicolor</i>	Grey Currawong	78
*	<i>Sturnus vulgaris</i>	Common Starling	267
	<i>Stylidium armeria</i>	Common Triggerplant	1
	<i>Stylidium graminifolium</i> s.l.	Grass Triggerplant	1
	<i>Stylidium inundatum</i>	Hundreds and Thousands	1
	<i>Swainsona lessertiifolia</i>	Coast Swainson-pea	4
en L	<i>Synoicus chinensis</i>	King Quail	4
	<i>Synoicus ypsilophorus</i>	Brown Quail	16
	<i>Tachybaptus novaehollandiae</i>	Australasian Grebe	41
	<i>Tachyglossus aculeatus</i>	Short-beaked Echidna	6
	<i>Tadarida australis</i>	White-striped Freetail Bat	1
	<i>Tadorna tadornoides</i>	Australian Shelduck	59
*	<i>Taraxacum officinale</i> spp. agg.	Garden Dandelion	1
	<i>Tecticornia arbuscula</i>	Shrubby Glasswort	3
	<i>Tetragonia implexicoma</i>	Bower Spinach	14
	<i>Tetragonia tetragonioides</i>	New Zealand Spinach	1
	<i>Tetrarrhena distichophylla</i>	Hairy Rice-grass	2
	<i>Thelymitra ixioides</i> s.s.	Spotted Sun-orchid	1
	<i>Thelymitra pauciflora</i> s.l.	Slender Sun-orchid	1
	<i>Thelymitra rubra</i>	Salmon Sun-orchid	1
	<i>Thelymitra</i> spp.	Sun Orchid	7
	<i>Themeda</i> spp.	Kangaroo Grass	1
*	<i>Thinopyrum junceiforme</i>	Sea Wheat-grass	1
	<i>Threskiornis molucca</i>	Australian White Ibis	161
	<i>Threskiornis spinicollis</i>	Straw-necked Ibis	90
rx L	<i>Thylogale billardierii</i>	Rufous-bellied Pademelon	1
	<i>Thysanotus patersonii</i>	Twining Fringe-lily	1
	<i>Tiliqua nigrolutea</i>	Blotched Blue-tongued Lizard	4
*	<i>Tinca tinca</i>	Tench	1
r	<i>Tmesipteris parva</i>	Small Fork-fern	3
	<i>Todiramphus sanctus</i>	Sacred Kingfisher	55
*	<i>Torilis nodosa</i>	Knotted Hedge-parsley	1
	<i>Tortula muralis</i>	Common Wall-moss	1
	<i>Tortula papillosa</i>	Screw Moss	1
*	<i>Tradescantia fluminensis</i>	Wandering Jew	2
	<i>Tribonyx ventralis</i>	Black-tailed Native-hen	2
	<i>Trichoglossus molucannus</i>	Rainbow Lorikeet	94
	<i>Trichosurus cunninghami</i>	Mountain Brush-tailed Possum	1
	<i>Trichosurus vulpecula</i>	Common Brush-tailed Possum	2
*	<i>Trifolium arvense</i> var. <i>arvense</i>	Hare's-foot Clover	1
*	<i>Trifolium cernuum</i>	Drooping-flower Clover	1
*	<i>Trifolium repens</i> var. <i>repens</i>	White Clover	1
*	<i>Trifolium</i> spp.	Clover	7
	<i>Triglochin striata</i>	Streaked Arrowgrass	2
	<i>Triptilodiscus pygmaeus</i>	Common Sunray	1
	<i>Triquetrella papillata</i>	Common Twine-moss	1
*	<i>Turdus merula</i>	Common Blackbird	242

*	<i>Turdus philomelos</i>	Song Thrush	2
	<i>Turnix varius</i>	Painted Button-quail	12
nt	<i>Turnix velox</i>	Little Button-quail	4
	<i>Tylophora barbata</i>	Bearded Tylophora	1
	<i>Typha</i> spp.	Bulrush	2
	<i>Tyto alba</i>	Barn Owl	33
	<i>Tyto longimembris</i>	Eastern Grass Owl	3
en L	<i>Tyto novaehollandiae</i>	Masked Owl	2
vu L	<i>Tyto tenebrosa</i>	Sooty Owl	3
	<i>Urtica incisa</i>	Scrub Nettle	3
	<i>Utricularia</i> spp.	Bladderwort	1
	<i>Vanellus miles</i>	Masked Lapwing	248
	<i>Vanellus tricolor</i>	Banded Lapwing	19
en	<i>Varanus varius</i>	Lace Monitor	1
*	<i>Vellereophyton dealbatum</i>	White Cudweed	2
	<i>Veronica calycina</i>	Hairy Speedwell	4
*	<i>Vicia sativa</i>	Common Vetch	1
*	<i>Vicia sativa</i> subsp. <i>nigra</i>	Narrow-leaf Vetch	2
*	<i>Vicia</i> spp.	Vetch	2
	<i>Viola cleistogamoides</i>	Hidden Violet	1
	<i>Viola hederacea</i> sensu Willis (1972)	Ivy-leaf Violet	6
	<i>Viola sieberiana</i> spp. agg.	Tiny Violet	3
	<i>Vombatus ursinus</i>	Bare-nosed Wombat	13
*	<i>Vulpes vulpes</i>	Red Fox	7
*	<i>Vulpia bromoides</i>	Squirrel-tail Fescue	2
*	<i>Vulpia</i> spp.	Fescue	12
	<i>Wahlenbergia</i> spp.	Bluebell	5
	<i>Wallabia bicolor</i>	Black-tailed Wallaby	19
	<i>Xanthoparmelia</i> spp.	Foliose Lichen	1
	<i>Xanthorrhoea australis</i>	Austral Grass-tree	2
	<i>Xanthosia pusilla</i> spp. agg.	Heath Xanthosia	2
r	<i>Xerochrysum papillosum</i>	Island Everlasting	4
	<i>Xerochrysum</i> spp.	Everlasting	2
	<i>Zieria arborescens</i> subsp. <i>arborescens</i>	Stinkwood	1
vu	<i>Zieria littoralis</i>	Dwarf Zieria	6
	<i>Zoothera lunulata</i>	Bassian Thrush	74
	<i>Zoysia macrantha</i>	Prickly Couch	6
	<i>Zoysia macrantha</i> subsp. <i>macrantha</i>	Prickly Couch	3
	<i>Zosterops lateralis</i>	Silvereye	311

Shorebirds			
vu	<i>Actitis hypoleucos</i>	Common Sandpiper	13
	<i>Apus pacificus</i>	Fork-tailed Swift	11
vu	<i>Arenaria interpres</i>	Ruddy Turnstone	27
EN en L	<i>Botaurus poiciloptilus</i>	Australasian Bittern	13
	<i>Calidris acuminata</i>	Sharp-tailed Sandpiper	47
nt	<i>Calidris alba</i>	Sanderling	14
EN en	<i>Calidris canutus</i>	Red Knot	21
CR en L	<i>Calidris ferruginea</i>	Curlew Sandpiper	41
nt	<i>Calidris melanotos</i>	Pectoral Sandpiper	1
	<i>Calidris ruficollis</i>	Red-necked Stint	63
CR en L	<i>Calidris tenuirostris</i>	Great Knot	10
	<i>Charadrius bicinctus</i>	Double-banded Plover	39
VU cr	<i>Charadrius leschenaultii</i>	Greater Sand Plover	9
EN cr	<i>Charadrius mongolus</i>	Lesser Sand Plover	14
	<i>Charadrius ruficapillus</i>	Red-capped Plover	108
nt	<i>Chlidonias leucopterus</i>	White-winged Black Tern	2
	<i>Cladorhynchus leucocephalus</i>	Banded Stilt	6
en L	<i>Egretta garzetta</i>	Little Egret	20
	<i>Egretta sacra</i>	Eastern Reef Egret	15
	<i>Elseyonis melanops</i>	Black-fronted Dotterel	34

	<i>Erythrogonys cinctus</i>	Red-kneed Dotterel	8
	<i>Eudyptes chrysocome</i>	Rockhopper Penguin	2
	<i>Eudyptes pachyrhynchus</i>	Fiordland Penguin	2
	<i>Eudyptula minor</i>	Little Penguin	259
nt	<i>Gallinago hardwickii</i>	Latham's Snipe	37
en L	<i>Gelochelidon macrotarsa</i>	Australian Gull-billed Tern	8
nt	<i>Haematopus fuliginosus</i>	Sooty Oystercatcher	239
	<i>Haematopus longirostris</i>	Pied Oystercatcher	148
	<i>Himantopus leucocephalus</i>	Pied Stilt	19
nt L	<i>Hydroprogne caspia</i>	Caspian Tern	104
	<i>Larus dominicanus</i>	Kelp Gull	14
nt	<i>Larus pacificus</i>	Pacific Gull	362
CR en L	<i>Lathamus discolor</i>	Swift Parrot	7
	<i>Limicola falcinellus</i>	Broad-billed Sandpiper	1
VU	<i>Limosa lapponica</i>	Bar-tailed Godwit	53
vu	<i>Limosa limosa</i>	Black-tailed Godwit	7
	<i>Microcarbo melanoleucos</i>	Little Pied Cormorant	221
CR cr L	<i>Neophema chrysogaster</i>	Orange-bellied Parrot	40
CR vu L	<i>Numenius madagascariensis</i>	Eastern Curlew	69
	<i>Numenius minutus</i>	Little Curlew	3
vu	<i>Numenius phaeopus</i>	Whimbrel	19
	<i>Onychoprion fuscatus</i>	Sooty Tern	1
	<i>Pelecanus conspicillatus</i>	Australian Pelican	142
nt	<i>Phalacrocorax fuscescens</i>	Black-faced Cormorant	112
	<i>Platalea flavipes</i>	Yellow-billed Spoonbill	53
nt	<i>Platalea regia</i>	Royal Spoonbill	70
vu	<i>Pluvialis fulva</i>	Pacific Golden Plover	22
en	<i>Pluvialis squatarola</i>	Grey Plover	15
	<i>Recurvirostra novaehollandiae</i>	Red-necked Avocet	7
EN cr L	<i>Rostratula australis</i>	Australian Painted-snipe	11
	<i>Spheniscus magellanicus</i>	Magellanic Penguin	1
	<i>Sterna hirundo</i>	Common Tern	21
	<i>Sterna paradisaea</i>	Arctic Tern	4
nt	<i>Sterna striata</i>	White-fronted Tern	36
vu L	<i>Sternula albifrons</i>	Little Tern	43
VU en L	<i>Sternula nereis</i>	Fairy Tern	27
	<i>Thalasseus bergii</i>	Crested Tern	276
VU vu L	<i>Thinornis cucullatus</i>	Hooded Plover	129
cr L	<i>Tringa brevipes</i>	Grey-tailed Tattler	11
vu	<i>Tringa glareola</i>	Wood Sandpiper	3
vu	<i>Tringa nebularia</i>	Common Greenshank	30
vu	<i>Tringa stagnatilis</i>	Marsh Sandpiper	5
en L	<i>Xenus cinereus</i>	Terek Sandpiper	4
Seabirds			
	<i>Aphrodroma brevirostris</i>	Kerguelen Petrel	3
	<i>Ardenna bulleri</i>	Buller's Shearwater	2
	<i>Ardenna carneipes</i>	Flesh-footed Shearwater	5
	<i>Ardenna grisea</i>	Sooty Shearwater	18
	<i>Ardenna pacifica</i>	Wedge-tailed Shearwater	3
	<i>Ardenna tenuirostris</i>	Short-tailed Shearwater	286
	<i>Calonectris leucomelas</i>	Streaked Shearwater	1
	<i>Chroicocephalus novaehollandiae</i>	Silver Gull	498
	<i>Daption capense</i>	Cape Petrel	15
VU vu L	<i>Diomedea epomophora</i>	Southern Royal Albatross	7
VU en L	<i>Diomedea exulans</i>	Wandering Albatross	49
	<i>Fregetta tropica</i>	Black-bellied Storm-Petrel	5
	<i>Fulmarus glacialisoides</i>	Southern Fulmar	13
	<i>Garrodia nereis</i>	Grey-backed Storm-Petrel	3
vu L	<i>Haliaeetus leucogaster</i>	White-bellied Sea-Eagle	169
VU	<i>Halobaena caerulea</i>	Blue Petrel	11

EN vu L	<i>Macronectes giganteus</i>	Southern Giant-Petrel	17
VU nt L	<i>Macronectes halli</i>	Northern Giant-Petrel	13
	<i>Morus serrator</i>	Australasian Gannet	192
	<i>Oceanites oceanicus</i>	Wilson's Storm-Petrel	12
	<i>Pachyptila belcheri</i>	Slender-billed Prion	18
	<i>Pachyptila crassirostris</i>	Fulmar Prion	6
	<i>Pachyptila desolata</i>	Antarctic Prion	6
	<i>Pachyptila salvini</i>	Salvin's Prion	5
vu	<i>Pachyptila turtur</i>	Fairy Prion	96
	<i>Pachyptila vittata</i>	Broad-billed Prion	1
	<i>Pandion cristatus</i>	Eastern Osprey	4
vu	<i>Pelagodroma marina</i>	White-faced Storm-Petrel	39
nt	<i>Pelecanoides urinatrix</i>	Common Diving-Petrel	69
VU L	<i>Phoebastria fusca</i>	Sooty Albatross	3
L	<i>Phoebastria palpebrata</i>	Light-mantled Sooty Albatross	2
	<i>Procellaria aequinoctialis</i>	White-chinned Petrel	6
	<i>Procellaria cinerea</i>	Grey Petrel	1
	<i>Procellaria parkinsoni</i>	Black Petrel	3
	<i>Procelsterna cerulea</i>	Grey Ternlet	2
	<i>Pterodroma inexpectata</i>	Mottled Petrel	4
	<i>Pterodroma lessonii</i>	White-headed Petrel	17
EN	<i>Pterodroma leucoptera</i>	Gould's Petrel	5
	<i>Pterodroma macroptera</i>	Great-winged Petrel	11
	<i>Pterodroma solandri</i>	Providence Petrel	11
	<i>Puffinus assimilis</i>	Little Shearwater	3
	<i>Puffinus gavia</i>	Fluttering Shearwater	57
	<i>Puffinus huttoni</i>	Hutton's Shearwater	4
	<i>Stercorarius antarcticus</i>	Great Skua	17
	<i>Stercorarius longicaudus</i>	Long-tailed Jaeger	3
	<i>Stercorarius parasiticus</i>	Arctic Jaeger	22
	<i>Stercorarius pomarinus</i>	Pomarine Jaeger	13
VU L	<i>Thalassarche bulleri</i>	Buller's Albatross	11
VU vu L	<i>Thalassarche carteri</i>	Indian Yellow-nosed Albatross	39
VU vu L	<i>Thalassarche cauta</i>	Shy Albatross	80
EN vu L	<i>Thalassarche chrysostoma</i>	Grey-headed Albatross	8
VU vu	<i>Thalassarche melanophris</i>	Black-browed Albatross	82
Marine reptiles			
EN cr L	<i>Dermochelys coriacea</i>	Leathery Turtle	5
VU	<i>Eretmochelys imbricata</i>	Hawksbill Turtle	1
	<i>Pelamis platurus</i>	Yellow-bellied Sea Snake	6
Marine Mammals			
X	<i>Arctocephalus pusillus doriferus</i>	Australian Fur Seal	3
vu	<i>Arctophoca forsteri</i>	Long-nosed Fur Seal	9
	<i>Balaenoptera acutorostrata</i>	Common Minke Whale	2
EN cr L	<i>Balaenoptera musculus</i>	Blue Whale	12
	<i>Delphinus delphis</i>	Short-beaked Common Dolphin	19
EN cr L	<i>Eubalaena australis</i>	Southern Right Whale	39
	<i>Hydrurga leptonyx</i>	Leopard Seal	1
	<i>Kogia breviceps</i>	Pygmy Sperm Whale	1
VU vu L	<i>Megaptera novaeangliae australis</i>	Southern Humpback Whale	64
	<i>Mesoplodon layardi</i>	Strap-toothed Whale	1
VU	<i>Mirounga leonina</i>	Southern Elephant Seal	1
	<i>Orcinus orca</i>	Killer Whale	17
	<i>Pseudorca crassidens</i>	False Killer Whale	4
en L	<i>Tursiops australis</i>	Burrnunan Dolphin	1
	<i>Tursiops truncatus</i>	Common Bottle-nosed dolphin	2
Marine Invertebrates			
	<i>Amoria undulata</i>	Benthic Volute	1

	<i>Astrarium tentoriformis</i>	Common Tent Shell	8
	<i>Cabestana spengleri</i>	Spengler's Triton	4
	<i>Cabestana tabulata</i>	Ploughed Triton	2
	<i>Calliostoma (Fautor) armillatum</i>	Jewelled Top Shell	1
	<i>Cenolia tasmaniae</i>	Feather star	10
	<i>Cenolia trichoptera</i>	Feather star	119
	<i>Centrostephanus rogersii</i>	Black Sea Urchin	29
	<i>Chromodoris tasmaniensis</i>	Sea Slug	2
	<i>Chromodoris tinctoria</i>	Sea Slug	2
	<i>Clanculus undatus</i>	Top snail	1
	<i>Echinaster arcystatus</i>	Seastar	38
	<i>Erythropodium hicksoni</i>	gorgonian coral	1
	<i>Fromia polypora</i>	Seastar	49
	<i>Goniocidaris tubaria</i>	Thorny Sea Urchin	1
	<i>Guinusia chabrus</i>	Cleft-fronted Shore Crab	40
	<i>Haliotis laevigata</i>	Green-lip Abalone	8
	<i>Haliotis rubra</i>	Black-lip Abalone	260
	<i>Heliocidaris erythrogramma</i>	Sea urchin	142
	<i>Holopneustes purpurascens</i>	Sea urchin	3
	<i>Hypselodoris bennetti</i>	Sea slug	1
	<i>Jasus edwardsii</i>	Red Rock Lobster	23
	<i>Meridiastra gunnii</i>	Seastar	33
	<i>Mimachlamys asperima</i>	Doughboy Scallop	2
	<i>Nectocarcinus tuberculatus</i>	Rough Rock Crab	6
	<i>Nectria macrobrachia</i>	Seastar	61
	<i>Nectria multispina</i>	Seastar	29
	<i>Nectria ocellata</i>	Seastar	106
	<i>Neodoris chrysotherma</i>	Sea slug	4
	<i>Pagurid sp. (grey)</i>	Right-handed hermit crab	1
	<i>Paguroidea spp.</i>	Hermit crab	2
	<i>Patelloida latistrigata</i>	Limpet	3
	<i>Penion mandarinus</i>	Waite's Buccinum Whelk	2
	<i>Pentagonaster duebeni</i>	Vermillion Seastar	61
	<i>Petricia vernicina</i>	Velvet Seastar	49
	<i>Phasianotrochus eximius</i>	Kelp Shell	2
	<i>Plectaster decanus</i>	Seastar	58
	<i>Pleuroploca australasia</i>	Australian Horse Conch	4
	<i>Pseudonepanthia trougtoni</i>	Seastar	42
	<i>Scutellastra chapmani</i>	Chapman's Limpet	1
	<i>Scutus (Scutus) antipodes</i>	Boat Shell	17
	<i>Sepioteuthis australis</i>	Southern Calamari Squid	1
	<i>Strigopagurus strigimanus</i>	Stridulating Hermit Crab	14
	<i>Tambja verconis</i>	Sea slug	3
	<i>Tosia australis</i>	Biscuit Star	13
	<i>Tosia magnifica</i>	Biscuit Star	3
	<i>Uniophora granifera</i>	Five-armed Seastar	1
Fish			
	<i>Acanthaluteres vittiger</i>	Toothbrush Leatherjacket	80
	<i>Acanthopagrus butcheri</i>	Black Bream	1
	<i>Achoerodus viridis</i>	Eastern Blue Groper	3
	<i>Anguilla australis</i>	Southern Shortfin Eel	2
	<i>Aplodactylus arcidens</i>	Marblefish	28
	<i>Aplodactylus lophodon</i>		9
	<i>Aracana ornata</i>	Ornate Cowfish	1
	<i>Argyrosomus japonicus</i>	Mulloway	1
	<i>Atypichthys strigatus</i>	Mado	28
	<i>Caesioperca lepidopterus</i>	Butterfly Perch	12
	<i>Caesioperca rasor</i>	Barber Perch	131
	<i>Cephaloscyllium laticeps</i>	Draughtboard Shark	3
	<i>Cheilodactylus fuscus</i>	Red Morwong	2

	<i>Cheilodactylus nigripes</i>	Magpie Perch	93
	<i>Cheilodactylus spectabilis</i>	Banded Morwong	43
	<i>Chromis hypsilepis</i>	Onespot Puller	20
	<i>Chrysophrys auratus</i>	Snapper	1
	<i>Conger verreauxi</i>	Southern Conger	1
*	<i>Cyprinus carpio</i>	European Carp	2
	<i>Dactylophora nigricans</i>	Dusky Morwong	3
	<i>Dinolestes lewini</i>	Longfin Pike	49
	<i>Diodon nictemerus</i>	Globefish	11
	<i>Dotalabrus aurantiacus</i>	Castelnau's Wrasse	10
	<i>Enoplosus armatus</i>	Old Wife	84
	<i>Eubalichthys bucephalus</i>	Black Reef Leatherjacket	2
	<i>Eubalichthys gunnii</i>	Gunn's Leatherjacket	24
	<i>Eubalichthys mosaicus</i>	Mosaic Leatherjacket	2
	<i>Eupetrichthys angustipes</i>	Snakeskin Wrasse	1
	<i>Genypterus tigrinus</i>	Rock Ling	1
	<i>Girella elevata</i>	Rock Blackfish	1
	<i>Girella tricuspidata</i>	Luderick	3
	<i>Girella zebra</i>	Zebra fish	53
	<i>Gnathanacanthus goetzei</i>	Red Velvetfish	1
	<i>Gymnothorax prasinus</i>	Green Moray	1
	<i>Helicolenus percoides</i>	Reef Ocean Perch	3
	<i>Heteroclinus perspicillatus</i>	Common Weedfish	1
	<i>Heterodontus portusjacksoni</i>	Port Jackson Shark	2
	<i>Hypoplectrodes annulatus</i>	Blackbanded Seaperch	1
	<i>Kyphosus sydneyanus</i>	Silver Drummer	4
	<i>Lotella rhacina</i>	rock cod	1
EN en L	<i>Macquaria australasica</i>	Macquarie Perch	2
	<i>Meuschenia australis</i>	Brownstriped Leatherjacket	5
	<i>Meuschenia flavolineata</i>	Yellowstriped Leatherjacket	47
	<i>Meuschenia freycineti</i>	Sixspine Leatherjacket	40
	<i>Meuschenia hippocrepis</i>	Horse-shoe leatherjacket	11
	<i>Meuschenia trachylepis</i>	Yellow-finned Leatherjacket	2
	<i>Nemadactylus macropterus</i>	Jackass morwong	3
	<i>Nemadactylus douglasi</i>	Blue morwong	1
	<i>Notolabrus fucicola</i>	Purple Wrasse	135
	<i>Notolabrus gymnogenis</i>	Crimsonband Wrasse	1
	<i>Notolabrus tetricus</i>	Blue Throated Wrasse	165
	<i>Odax acroptilus</i>	Rainbow cale	28
	<i>Olisthops cyanomelas</i>	Herring Cale	133
	<i>Ophthalmolepis lineolatus</i>	Southern Maori Wrasse	10
	<i>Parascyllium variolatum</i>	Varied Catshark	1
	<i>Parequula melbournensis</i>	Silverbelly	1
	<i>Parma microlepis</i>	White-ear	22
	<i>Parma victoriae</i>	Scalyfin	69
	<i>Pempheris multiradiata</i>		20
	<i>Pentaceropsis recurvirostris</i>	Longsnout boarfish	9
*	<i>Perca fluviatilis</i>	Redfin	1
	<i>Percalates colonorum</i>	Estuary Perch	2
X	<i>Percalates novemaculeatus</i>	Australian Bass	1
	<i>Pictilabrus laticlavus</i>	Senator Wrasse	75
	<i>Pseudaphritis urvillii</i>	Tupong	1
	<i>Pseudocaranx georgianus</i>	Silver Trevally	1
	<i>Pseudolabrus mortonii</i>	Rosy Wrasse	38
	<i>Pseudophycis bachus</i>	Red Rock Cod	4
	<i>Pseudophycis barbata</i>	Bearded Rock Cod	4
	<i>Scobinichthys granulatus</i>	Rough Leatherjacket	1
	<i>Siphonognathus attenuatus</i>	Slender Weed Whiting	2
	<i>Siphonognathus beddomei</i>	Pencil Weed Whiting	40
	<i>Siphonognathus radiatus</i>	Longray Weed Whiting	1
	<i>Thysites atun</i>	Barracouta	1

	<i>Trachinops caudimaculatus</i>	Southern Hulafish	67
	<i>Trachinops taeniatus</i>	Eastern Hulafish	7
	<i>Trinorfolkia clarkei</i>	Clarks Threefin	9
	<i>Upeneichthys vlamingii</i>	Bluespotted Goatfish	17
	<i>Urolophus paucimaculatus</i>	Sparsely-spotted Stingaree	1
	<i>Vincentia conspersa</i>	Southern Cardinalfish	2
Marine Flora			
	<i>Acrocarpia paniculata</i>	Brown algae	103
	<i>Acrotylus australis</i>		19
	Algae Algal turf		8
	<i>Amphiroa anceps</i>		19
	<i>Apjohnia laetevirens</i>	Green algae	6
	<i>Areschougia</i> spp.	Red Algae	1
	<i>Arthrocardia wardii</i>		11
	<i>Asparagopsis armata</i>		4
	<i>Ballia callitricha</i>		206
	<i>Bovichtus angustifrons</i>		3
	<i>Callophycus laxus</i>		3
	<i>Callophyllis lambertii</i>		3
	<i>Callophyllis rangiferina</i>		36
	<i>Carpoglossum confluens</i>	Brown algae	1
	<i>Carpomitra costata</i>	Brown algae	34
	<i>Caulerpa brownii</i>	Green algae	5
	<i>Caulerpa cactoides</i>	Green algae	1
	<i>Caulerpa flexilis</i>	Green algae	19
	<i>Caulerpa flexilis</i> var. <i>muelleri</i>	Green algae	3
	<i>Caulerpa geminata</i>	Green algae	5
	<i>Caulerpa hodkinsoniae</i>	Green algae	3
	<i>Caulerpa obscura</i>	Green algae	8
	<i>Caulerpa scalpelliformis</i>	Green algae	1
	<i>Caulerpa simpliciuscula</i>	Green algae	2
	<i>Caulocystis cephalornithos</i>	Brown algae	2
	<i>Chaetomorpha</i> spp.	Green Algae	1
	<i>Cheilosporum sagittatum</i>		15
	<i>Chlanidophora microphylla</i>	brown alga	4
	<i>Cladophora</i> spp.	Green Algae	1
	<i>Codium duthieae</i>	Green algae	3
	<i>Codium</i> spp.	Green Algae	2
	<i>Corallina officinalis</i>		3
	Corallinaceae spp.	Coralline Algae	517
	<i>Cordylecladia furcellata</i>		1
	<i>Craspedocarpus tenuifolius</i>		4
	<i>Cystophora monilifera</i>	Brown Algae	15
	<i>Cystophora moniliformis</i>	Brown Algae	34
	<i>Cystophora retroflexa</i>	Brown Algae	6
	<i>Cystophora siliquosa</i>	Brown Algae	1
	<i>Delisea pulchra</i>		21
	<i>Dictyomenia harveyana</i>		1
	<i>Dictyopteris acrostichoides</i>	Brown algae	2
	<i>Dictyopteris muelleri</i>	Brown algae	1
	<i>Dictyota dichotoma</i>	Brown algae	9
	<i>Dictyota</i> spp.	Brown Algae	2
	<i>Distromium flabellatum</i>	Brown Algae	4
	<i>Distromium</i> spp.	Brown Algae	10
	<i>Durvillaea potatorum</i>	Brown algae	11
	<i>Ecklonia radiata</i>	Brown algae	585
	<i>Erythroclonium</i> spp.	Red Algae	1
	<i>Euptilota articulata</i>		2
	<i>Gelidium asperum</i>		3
	<i>Gelidium australe</i>		2

Gelidium spp.	Red Algae	3
Gracilaria secundata		1
Halopteris spp.	Brown Algae	43
Hemineura frondosa		4
Homoeostrichus sinclairii	Brown algae	26
Hypnea ramentacea		1
Jania rosea		291
Laurencia elata		3
Laurencia filiformis		4
Laurencia spp.	Red Algae	6
Lobophora variegata	Brown algae	1
Lobospira bicuspidata	Brown algae	18
Macrocystis pyrifera	Brown algae	1
Mastophoropsis canaliculata		2
Melanthalia abscissa		20
Melanthalia concinna		3
Melanthalia obtusata		146
Metagoniolithon radiatum		22
Metamastophora flabellata		22
Nizymania australis		14
Perithalia caudata	Brown algae	12
Peyssonnelia novaehollandiae		1
Peyssonneliaceae spp.	Red Algae	10
Phacelocarpus alatus		1
Phacelocarpus peperocarpus		335
Phaeophyceae spp.	Brown Algae	5
Phyllospora comosa	Brown algae	563
Phyllotricha decipiens	Brown algae	21
Phyllotricha sonderi	Brown algae	58
Phyllotricha varians	Brown algae	11
Phyllotricha verruculosum	Brown algae	84
Plocamium angustum		180
Plocamium cartilagineum		27
Plocamium costatum		7
Plocamium dilatatum		79
Plocamium leptophyllum		11
Plocamium mertensii		42
Plocamium pressianum		6
Polyopes constrictus		4
Pterocladia lucida		118
Pterocладиella capillacea		16
Ptilonia australasica		7
Rhodophyllis multipartita		1
Rhodophyta other thallose red algae	Red Algae	115
Rhodophyta spp.	Red Algae	1
Rhodymenia australis		71
Rhodymenia linearis		3
Rhodymenia obtusa		1
Rhodymenia spp.	Red Algae	37
Rhodymenia wilsonii		6
Sargassum fallax	Brown Algae	21
Sargassum lacerifolium	Brown Algae	6
Sargassum spinuligerum	Brown Algae	9
Sargassum spp.	Brown Algae	38
Sargassum vestitum	Brown Algae	9
Seirococcus axillaris	Brown algae	80
Sonderopelta coriacea		40
Xiphophora chondrophylla	Brown algae	23
Zonaria angustata	Brown algae	6
Zonaria spiralis	Brown algae	1
Zonaria turneriana	Brown algae	38

Appendix 9

JASCO Applied Sciences Underwater
Sound Modelling Report



Prion 3-D Marine Seismic Survey

Acoustic Modelling for Assessing Marine Fauna Sound Exposures

Submitted to:

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The results presented herein are relevant within the specific context described in this report. They could be misinterpreted if not considered in the light of all the information contained in this report. Accordingly, if information from this report is used in documents released to the public or to regulatory bodies, such documents must clearly cite the original report, which shall be made readily available to the recipients in integral and unedited form.

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Executive Summary

JASCO Applied Sciences (JASCO) performed a numerical estimation study of underwater sound levels associated with the planned Prion 3-D Marine Seismic Survey (MSS) to assist in understanding the potential acoustic impact on key regional receptors including marine mammals, fish, turtles, benthic invertebrates (in particular scallops), sponges, coral, and plankton. Modelling considered a 2495 in³ seismic source in a triple source configuration, towed at 7 m depth behind a single vessel.

A specialised airgun array source model was used to predict the acoustic signature of the seismic source, and complementary underwater acoustic propagation models were used in conjunction with the modelled array signature to estimate sound levels over a large area around the source. Single-impulse sound fields were predicted at four sites within the survey area. The water depths at the modelled sites ranged between 50 and 79 m. Accumulated sound exposure fields were predicted for a representative scenario for likely survey operations within the survey area over 24 hours.

The modelling methodology considered source directivity and range-dependent environmental properties in each of the areas assessed. Estimated underwater acoustic levels are presented as sound pressure levels (SPL, L_p), zero-to-peak pressure levels (PK, L_{pk}), peak-to-peak pressure levels (PK-PK; L_{pk-pk}), and either single-impulse (i.e., per-pulse) or accumulated sound exposure levels (SEL, L_E) as appropriate for different noise effect criteria. A conservative sound speed profile that would be most supportive of sound propagation conditions for the period of the survey was defined and applied to all modelling.

The analysis considered the distances away from the seismic source at which several effects criteria or relevant sound levels were reached. The results are summarised below for the representative single-impulse sites and accumulated SEL scenario.

Marine mammal injury and behaviour

- The maximum distance where the U.S. National Oceanographic and Atmospheric Administration (NOAA) (2019) marine mammal behavioural response criterion of 160 dB re 1 μ Pa (SPL) could be exceeded varied between 8.13 and 9.10 km.
- The results for marine mammal injury considered the criteria from the National Marine Fisheries Service (NMFS 2018) technical guidance. NMFS (2018) allows for two metrics in the criteria (PK and SEL_{24h}) for the assessment of marine mammal Permanent Threshold Shift (PTS) and Temporary Threshold Shift (TTS). The longest distance associated with either metric is required to be applied for assessment. Table 1 summarises the maximum distances for PTS, along with the relevant metric; the farthest distances were associated with Scenario 2.
- 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 for low-frequency cetaceans were larger than those for peak pressure criteria, but they represent an unlikely worst-case scenario. More realistically, marine mammals (and fish) 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 effect (either PTS or TTS) if it remained in that location for 24 hours.

Table 1. Summary of maximum marine mammal PTS onset distances for the modelled scenario.

Hearing group	Metric associated with longest distance to PTS onset	R_{max} (km)
Low-frequency cetaceans†	SEL _{24h}	5.45
Mid-frequency cetaceans	—	—
High-frequency cetaceans	PK	0.36
Phocid pinnipeds in water	SEL _{24h}	0.06
Otariid pinnipeds in water	—	—

† The model does not account for shutdowns.

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

Turtles

- The maximum distance to the SEL_{24h} metric was 60 m for PTS onset and 3.27 km for TTS onset (Finneran et al. 2017). As is the case with marine mammals, a reported radius for SEL_{24h} criteria does not mean that turtles travelling within this radius of the source will be injured, but rather that an animal could be exposed to the sound level associated with either PTS or TTS if it remained in that location for 24 hours.
- Table 2 summarises the distances to where the NMFS criterion (NSF 2011) for behavioural response of turtles to the 166 dB re 1 μ Pa (SPL) and the 175 dB re 1 μ Pa (SPL) threshold for behavioural disturbance (McCauley et al. 2000b, McCauley et al. 2000a) could be exceeded.

Table 2. Summary of distances to turtle behavioural response criteria.

SPL (L_p ; dB re 1 μ Pa)	Distance (km)	
	Minimum	Maximum
175†	1.96	2.19
166‡	4.91	5.11

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

‡ Threshold for turtle behavioural response to impulsive noise (NSF 2011).

Fish, fish eggs, and fish larvae

- This modelling study assessed the ranges for quantitative criteria based on Popper et al. (2014) and considered both PK (seafloor and water column) and SEL_{24h} metrics associated with mortality and potential mortal injury as well as impairment in the following groups:
 - Fish without a swim bladder (also appropriate for sharks in the absence of other information)
 - Fish with a swim bladder that do not use it for hearing
 - Fish that use their swim bladders for hearing
 - Fish eggs and fish larvae
- Table 3 summarises distances to effect criteria for fish, fish eggs, and fish larvae along with the relevant metric.

Table 3. Summary of maximum fish, fish eggs, and larvae injury and TTS onset distances for single impulse and SEL_{24h} modelled scenarios.

Relevant hearing group	Effect criteria	Water column		Seafloor	
		Metric associated with longest distance to criteria	R_{max} (km)	Metric associated with longest distance to criteria	R_{max} (km)
Fish: No swim bladder	Injury	PK	0.07	PK	0.09
	TTS	SEL _{24h}	6.70	SEL _{24h}	6.44
Fish: Swim bladder not involved in hearing and Swim bladder involved in hearing	Injury	PK	0.21	PK	0.22
	TTS	SEL _{24h}	6.70	SEL _{24h}	6.44
Fish eggs, and larvae	Injury	PK	0.21	PK	0.22

Benthic invertebrates, Sponges, Coral, and Plankton

To assist with assessing the potential effects on these receptors, the following results were determined:

- Bivalves: The distance where a particle acceleration of 37.57 ms⁻² at the seafloor could occur was determined for comparing to results presented in Day et al. (2016a). The maximum distance to this particle acceleration level was 8 m from the three sites considered.
- Crustaceans: The sound level of 202 dB re 1 μPa PK-PK from Payne et al. (2008) was considered for seafloor sound levels; the sound level was reached at ranges between 761 m and 650 m depending on the modelled site.
- Sponges and coral: the PK sound level at the seafloor directly underneath the seismic source was estimated at all modelled sites and compared to the sound level of 226 dB re 1 μPa PK for sponges and corals (Heyward et al. 2018); it was not reached at any of the modelled sites.
- Plankton: The maximum distance to potential injury in plankton, applying the threshold from Popper et al. (2014) for fish eggs and larvae, is 0.21 km within the water column.
- Octopus and squid: The maximum (R_{max}) and 95% ($R_{95\%}$) distances to the sound level of 162 dB re 1 μPa²·s from Fewtrell and McCauley (2012) associated with inking, and referred to as a startle response threshold, was estimated to be 3.66 and 2.94 km respectively (Site 3).

1. Introduction

JASCO Applied Sciences (JASCO) performed a numerical estimation study of underwater sound levels associated with the planned Prion 3-D Marine Seismic Survey (MSS) to assist in understanding the potential acoustic impact on key regional receptors including marine mammals, fish, turtles, benthic invertebrates (particularly scallops), plankton, sponges and corals.

JASCO's specialised Airgun Array Source Model (AASM) was used to predict acoustic signatures and spectra for a 2495 in³ airgun array for the Prion 3-D MSS. AASM accounts for individual airgun volumes, airgun bubble interactions, and array geometry to yield accurate source predictions.

Complementary underwater acoustic propagation models were used in conjunction with the selected array signature to estimate sound levels considering environmental effects. Single-impulse sound fields were predicted at four defined locations within three potential survey areas, and an accumulated sound exposure field was predicted for a representative scenario for survey operations over 24 h (Section 2). A conservative sound speed profile that would be most supportive of sound propagation conditions for the potential survey period was defined and applied throughout. Results are in part presented as maps to assist with understanding the acoustic impact and potential effects spatially, primarily to the Tasmanian Scallop Fishery.

The modelling methodology considered source directivity and range-dependent environmental properties. Estimated underwater acoustic levels are presented as sound pressure levels (SPL, L_p), zero-to-peak pressure levels (PK, L_{pk}), peak-to-peak pressure levels (PK-PK; L_{pk-pk}), and either single-impulse (i.e., per-pulse) or accumulated sound exposure levels (SEL, L_E) as appropriate for different noise effect criteria.

Section 3 explains the metrics used to represent underwater acoustic fields and the impact criteria considered. Section 4 details the methodology for predicting the source levels and modelling the sound propagation, including the specifications of the seismic source and all environmental parameters the propagation models require. Section 5 presents the results, which are then discussed and summarised in Section 6.

2. Modelling Scenarios

Four standalone single impulse sites and one likely scenario for survey operations over 24 hours to assess accumulated SEL were modelled. The locations of all modelled sites are provided in Table 4, with all sites and the acquisition lines shown in Figure 1 along with the survey boundaries. The modelling assumed that a survey vessel sailed along survey lines at ~4.0 knots, with an impulse interval of 12.5 m.

The single impulse sites and the accumulated SEL scenario were selected based on the proposed survey line plan option where the survey will be acquired along survey lines orientated 30/210°. The locations of the single impulse sites are considered representative of the range of water depths that will be covered during the Prion 3-D MSS and the potential sound propagation characteristics that may arise during survey acquisition. The orientations of the single impulse sites and line scenarios were selected as they provide for the greatest sound propagation radii broadside from the seismic source towards an area of interest to the Tasmanian Scallop Fishery to the west of the survey. Other receptors include, but are not limited to, southern right whale biologically important area (BIAs).

The accumulated SEL scenario consisted three lines during a 24-hour period, where the first two acquisition lines line took 7.2 h (each) to traverse and the third, which was a partial segment of a full acquisition line, took 3.0 h to traverse. The time to complete a turn was ~3.4 h per turn for the scenario. The accumulated SEL scenario, 15416 impulses for Scenario 2 during a 24 h period of acquisition. During line turns, the seismic source was not operating.

Table 4. Location details for the single impulse modelled sites.

Site	Latitude (S)	Longitude (E)	MGA* Zone 55		Water depth (m)	Tow direction (°)
			x (m)	y (m)		
1	40° 10' 18.6093"	145° 18' 15.5323"	355617	5551792	50	30 & 210
2	39° 59' 19.9081"	145° 16' 14.5556"	352360	5572047	58	30 & 210
3	39° 44' 09.5260"	145° 33' 08.7658"	375959	5600544	79	30 & 210
4	40° 00' 46.3101"	145° 03' 14.9670"	333929	5569001	54	30 & 210

* Map Grid of Australia (MGA)

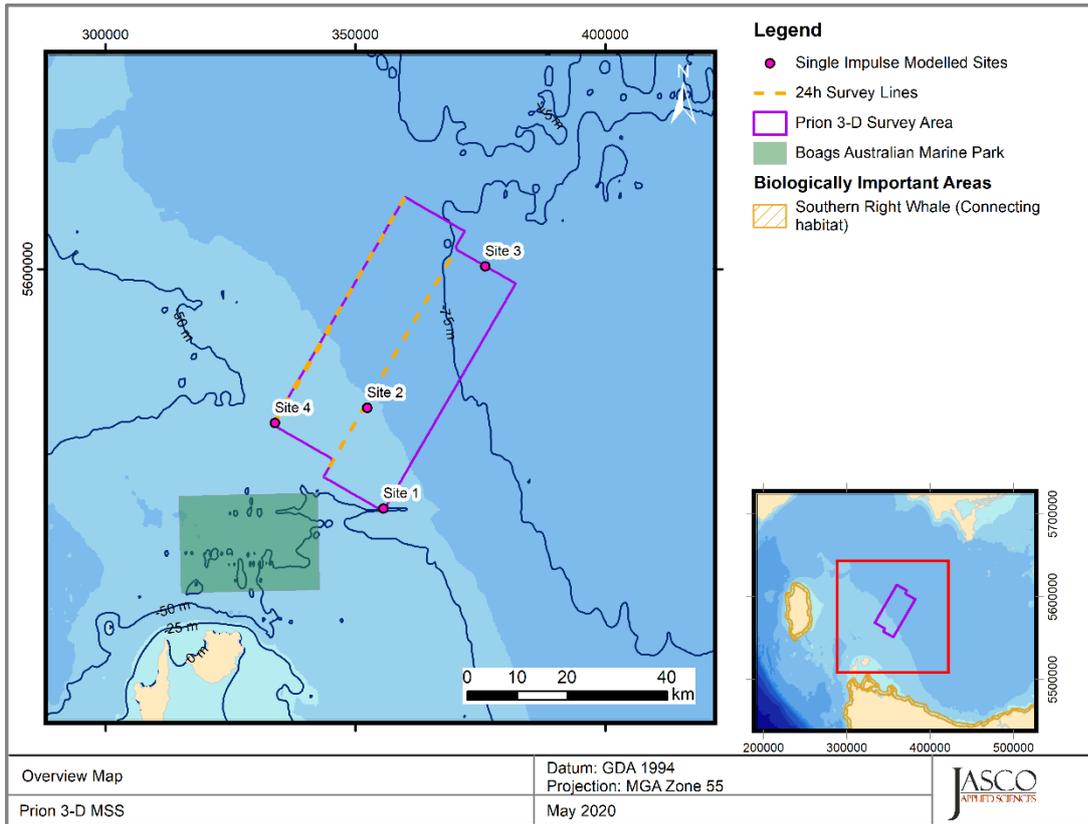


Figure 1. Overview of the modelled sites, acquisition lines, and features for the Prion 3-D MSS.

3. Noise Effect Criteria

The perceived loudness of sound, especially impulsive noise such as from seismic airguns, is not generally proportional to the instantaneous acoustic pressure. Rather, perceived loudness depends on the pulse rise-time and duration, and the frequency content. Several sound level metrics, such as PK, SPL, and SEL, are commonly used to evaluate noise and its effects on marine life (Appendix A). The period of accumulation associated with SEL is defined, with this report referencing either a “per pulse” assessment or over 24 h. Appropriate subscripts indicate any applied frequency weighting; unweighted SEL is defined as required. The acoustic metrics in this report reflect the updated ISO standard for acoustic terminology, ISO/DIS 18405:2017 (2017).

Whether acoustic exposure levels might injure or disturb marine mammals 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), and United States National Marine Fisheries Service (NMFS 2018). The number of studies that have investigated the level of behavioural disturbance to marine fauna by anthropogenic sound has also increased substantially.

We chose the following noise criteria and sound levels for this study because they include standard thresholds, thresholds suggested by the best available science, and sound levels presented in literature for species with no suggested thresholds (Sections 3.1–3.3 and Appendix A):

1. Peak pressure levels (PK; L_{pk}) and frequency-weighted accumulated sound exposure levels (SEL; $L_{E,24h}$) from the U.S. National Oceanic and Atmospheric Administration (NOAA) Technical Guidance (NMFS 2018) for the onset of Permanent Threshold Shift (PTS) in marine mammals.
2. Marine mammal behavioural threshold based on the current U.S. National Oceanographic and Atmospheric Administration (NOAA) (2019) of 160 dB re 1 μ Pa SPL (L_p) for impulsive sound sources.
3. Sound exposure guidelines for fish, fish eggs and larvae (including plankton), and turtles (Popper et al. 2014).
4. Peak pressure levels (PK; L_{pk}) and 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 turtles.
5. Turtle behavioural response threshold of 166 dB re 1 μ Pa SPL (L_p) (NSF 2011), as applied by the US NMFS, along with a sound level associated with behavioural disturbance 175 dB re 1 μ Pa (SPL) (McCauley et al. 2000b, 2000a).
6. Peak-peak pressure levels (PK-PK; L_{pk-pk}) and particle acceleration at the seafloor to help assess effects of noise on crustaceans and bivalves through comparing to results in Day et al. (2016a), Day et al. (2019), Day et al. (2016b), Day et al. (2017) and Payne et al. (2008).
7. A sound level of 226 dB re 1 μ Pa PK (L_{pk}) reported for comparing to Heyward et al. (2018) for sponges and corals.
8. An squid/octopus startle (inking) response threshold of 162 dB re 1 μ Pa²s per-pulse SEL (L_E) (Fewtrell and McCauley 2012).

Additionally, to assess the size of the low-power zone required under the Australian Environment Protection and Biodiversity Conservation (EPBC) Act Policy Statement 2.1, Department of the Environment, Water, Heritage and the Arts (DEWHA 2008), the distance to an unweighted per-pulse SEL of 160 dB re 1 μ Pa²·s is reported.

The following subsections expand on the thresholds and sound levels for marine mammals, fish, turtles, fish eggs, fish larvae, and invertebrates.

3.1. Marine Mammals

The criteria applied in this study to assess possible effects of airgun noise on marine mammals are summarised in Table 5 and detailed in Sections 3.1.1 and 3.1.2, with frequency weighting explained in Appendix A.4.

Table 5. Unweighted SPL, SEL_{24h}, and PK thresholds for acoustic effects on marine mammals.

Hearing group	NOAA (2019)	NMFS (2018)			
	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 µPa ² ·s)	PK (L _{pk} ; dB re 1 µPa)	Weighted SEL _{24h} (L _{E,24h} ; dB re 1 µPa ² ·s)	PK (L _{pk} ; dB re 1 µPa)
Low-frequency cetaceans	160	183	219	168	213
Mid-frequency cetaceans		185	230	170	224
High-frequency cetaceans		155	202	140	196
Phocid pinnipeds in water		185	218	170	212
Otariid pinnipeds in water		203	232	188	226

* Dual metric acoustic thresholds for impulsive sounds: Use whichever results in the largest isopleth for calculating PTS onset. If a non-impulsive sound has the potential of exceeding the peak sound pressure level thresholds associated with impulsive sounds, these thresholds should also be considered.

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

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

L_E denotes cumulative sound exposure over a 24-hour period and has a reference value of 1 µPa²·s.

Subscripts indicate the designated marine mammal auditory weighting.

3.1.1. Behavioural Response

Southall et al. (2007) extensively reviewed marine mammal behavioural responses to sounds. Their review found that most marine mammals exhibited varying responses between 140 and 180 dB re 1 µPa SPL, but inconsistent results between studies made choosing a single behavioural threshold difficult. Studies varied in their lack of control groups, imprecise measurements, inconsistent metrics, and that animal responses depended on study context, which included the animal’s activity state. To create meaningful quantitative data from the collected information, Southall et al. (2007) proposed a severity scale that increased with increasing sound levels.

NMFS has historically used a relatively simple sound level criterion for potentially disturbing a marine mammal. For impulsive sounds, this threshold is 160 dB re 1 µPa SPL for marine mammals (NOAA 2019), which has been applied for this report.

3.1.2. 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 injuries to marine mammals, this report applies the criteria recommended by NMFS (2018), considering both PTS and TTS, to help assess the potential for injuries to and hearing sensitivity changes in marine mammals. Appendix A.3 provides more information about the NMFS (2018) criteria.

3.2. Fish, 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 turtles, work begun by a panel convened by NOAA two years earlier. The resulting guidelines included specific thresholds for different levels of effects and for different groups of species (Popper et al. 2014). These guidelines defined 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. These effects are not assessed in this report. Because the presence or absence of a swim bladder has a role in hearing, fish's susceptibility to injury from noise exposure varies depending on the species and the presence and possible role of a swim bladder in hearing. Thus, different thresholds were proposed for fish without a swim bladder (also appropriate for sharks and applied to whale sharks in the absence of other information), fish with a swim bladder not used for hearing, and fish that use their swim bladders for hearing. Turtles, fish eggs, and fish larvae are considered separately. Table 6 lists relevant effects thresholds from Popper et al. (2014). In general, any adverse effects of seismic sound on fish behaviour depends on the species, the state of the individuals exposed, and other factors. We note that, despite mortality being a possibility for fish exposed to airgun sounds, Popper et al. (2014) do not reference an actual occurrence of this effect. Since the publication of that work, newer studies have further examined the question of possible mortality. Popper et al. (2016) adds further information to the possible levels of impulsive seismic airgun sound to which adult fish can be exposed without immediate mortality. They found that the two fish species in their study, with body masses in the range 200–400 g, exposed to a single-impulse of a maximum received level of either 231 dB re 1 μ Pa (PK) or 205 dB re 1 μ Pa²-s (SEL), remained alive for 7 days after exposure and that the probability of mortal injury did not differ between exposed and control fish.

The SEL metric integrates noise intensity over some period of exposure. Because the period of integration for regulatory assessments is not well defined for sounds that do not have a clear start or end time, or for very long-lasting exposures, it is required to define a time. Popper et al. (2014) recommend applying a standard period, where this is either defined as a justified fixed period or the duration of the activity; however, Popper et al. (2014) also included caveats about how long the fish will be exposed because they can move (or remain in location) and so can the source. Popper et al. (2014) summarises that in all TTS studies considered, fish that showed TTS recovered to normal hearing levels within 18–24 hours. Due to this, a period of accumulation of 24 hours has been applied in this study for SEL, which is similar to that applied for marine mammals in NMFS (2016, 2018).

In the discussion of the criteria, Popper et al. (2014) discuss the complications in determining a relevant period of mobile seismic surveys, as the received levels at the fish change between impulses because the source is moving, and that in reality a revised guideline based on the closest PK or the per-pulse SEL might be more useful than one based on accumulated SEL. This is because exposures at the closest point of approach (CPA) are the primary exposures contributing to a receiver's accumulated level (Gedamke et al. 2011). Additionally, several important factors determine the likelihood and duration a receiver is expected to be in close proximity to a sound source (i.e., overlap in space and time between the source and receiver). For example, accumulation time for fast moving (relative to the receiver) mobile sources is driven primarily by the characteristics of the source (i.e., speed, duty cycle; NMFS 2016, 2018).

As discussed in Popper (2018), many fish species move around, some over large distances. The author suggests that it is reasonable to think that if the sound of a seismic source becomes too loud, the fish will move away from the source because they are able to determine the direction of a sound source. If the fish moves away, the amount of energy to which it is exposed is likely to be one or a few seismic pulses, and these would not likely be loud enough to result in any effect because the fish would move away at a much lower level signal than could cause harm. Data on TTS for fish are very limited, with the only study that examined recovery from seismic impulses being Popper et al. (2005). Popper (2018) states that if this study had been conducted on wild, free-swimming fish instead of

caged ones, there would have been no effect whatsoever because they were likely to have moved away from the source as it approached them, as would happen with normally free-moving demersal and pelagic fish species associated with a 3-D seismic survey in northern Australian waters, extrapolating from the Bethany 3-D assessed in Popper (2018).

Table 6. Criteria for seismic noise exposure for fish, adapted from Popper et al. (2014).

Type of animal	Mortality and Potential mortal injury	Impairment			Behaviour
		Recoverable injury	TTS	Masking	
Fish I: No swim bladder (particle motion detection)	>219 dB SEL _{24h} or >213 dB PK	>216 dB SEL _{24h} or >213 dB PK	>>186 dB SEL _{24h}	(N) Low (I) Low (F) Low	(N) High (I) Moderate (F) Low
Fish II: Swim bladder not involved in hearing (particle motion detection)	210 dB SEL _{24h} or >207 dB PK	203 dB SEL _{24h} or >207 dB PK	>>186 dB SEL _{24h}	(N) Low (I) Low (F) Low	(N) High (I) Moderate (F) Low
Fish III: Swim bladder involved in hearing (primarily pressure detection)	207 dB SEL _{24h} or >207 dB PK	203 dB SEL _{24h} or >207 dB PK	186 dB SEL _{24h}	(N) Low (I) Low (F) Moderate	(N) High (I) High (F) Moderate
Fish eggs and fish larvae	>210 dB SEL _{24h} or >207 dB PK	(N) Moderate (I) Low (F) Low	(N) Moderate (I) Low (F) Low	(N) Low (I) Low (F) Low	(N) Moderate (I) Low (F) Low

Notes: Peak sound level (PK) dB re 1 µPa; SEL_{24h} dB re 1µPa²-s. All criteria are presented as sound pressure, even for fish without swim bladders, since no data for particle motion exist. Relative risk (high, moderate, or low) is given for animals at three distances from the source defined in relative terms as near (N), intermediate (I), and far (F).

3.2.1. Turtles

There is a paucity of data regarding responses of turtles to acoustic exposure, and no studies of hearing loss due to exposure to loud sounds. McCauley et al. (2000b) observed the behavioural response of caged turtles—green (*Chelonia mydas*) and loggerhead (*Caretta caretta*)—to an approaching seismic airgun. For received levels above 166 dB re 1 µPa (SPL), the turtles increased their swimming activity and above 175 dB re 1 µPa they began to behave erratically, which was interpreted as an agitated state. The 166 dB re 1 µPa level has been used as the threshold level for a behavioural disturbance response by NMFS and applied in the Arctic Programmatic Environment Impact Statement (PEIS) (NSF 2011). At that time, and in the absence of any data from which to determine the sound levels that could injure an animal, TTS or PTS onset were considered possible at an SPL of 180 dB re 1 µPa (NSF 2011). Some additional data suggest that behavioural responses occur closer to an SPL of 175 dB re 1 µPa, and TTS or PTS at even higher levels (McCauley et al. 2000b, McCauley et al. 2000a), but the received levels were unknown, and the NSF (2011) PEIS maintained the earlier NMFS criteria levels of 166 and 180 dB re 1 µPa (SPL) for behavioural response and injury, respectively. Popper et al. (2014) suggested injury to turtles could occur for sound exposures above 207 dB re 1 µPa (PK) or above 210 dB re 1 µPa²-s (SEL_{24h}). Sound levels defined by Popper et al. (2014) show that animals are very likely to exhibit a behavioural response when they are near an airgun (tens of metres), a moderate response if they encounter the source at intermediate ranges (hundreds of metres), and a low response if they are far (thousands of meters) from the airgun.

Finneran et al. (2017) presented revised thresholds for turtle injury, considering both PK and frequency weighted SEL, which have been applied in this study, along with the NMFS criterion for behavioural response (SPL of 166 dB re 1 µPa), and a criterion for behavioural disturbance (SPL of 175 dB re 1 µPa) (McCauley et al. 2000b, McCauley et al. 2000a) (Table 7).

Table 7. Acoustic effects of impulsive noise on turtles: Unweighted SPL, SEL_{24h}, and PK thresholds.

Effect type	Criterion	SPL (L_p ; dB re 1 μ Pa)	Weighted SEL _{24h} ($L_{E,24h}$; dB re 1 μ Pa ² ·s)	PK (L_{pk} ; dB re 1 μ Pa)
Behaviour	NSF (2011)	166	NA	
	McCauley et al. (2000a)	175		
PTS onset thresholds* (received level)	Finneran et al. (2017)	NA	204	232
TTS onset thresholds* (received level)			189	226

* Dual metric acoustic thresholds for impulsive sounds: Use whichever results in the largest isopleth for calculating PTS onset. If a non-impulsive sound has the potential of exceeding the peak sound pressure level thresholds associated with impulsive sounds, these thresholds should also be considered.

L_p denotes sound pressure level period and has a reference value of 1 μ Pa.

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

L_E denotes cumulative sound exposure over a 24-hour period and has a reference value of 1 μ Pa²·s.

3.3. Invertebrates

3.3.1. Crustaceans and Bivalves

Research is ongoing into the relationship between sound and its effects on crustaceans, including the relevant metrics for both effect and impact. Available literature suggests particle motion, rather than sound pressure, is a more important factor for crustacean and bivalve hearing. Water depth, seabed material, and seismic source size are related to the particle motion levels at the seafloor, with larger arrays and shallower water being related to higher particle motion levels, more likely relevant to effects on crustaceans and bivalves.

At the seafloor interface, crustaceans and bivalves are subject to particle motion stimuli from several acoustic or acoustically induced waves. These include the particle motion associated with an impinging sound pressure wave in the water column (the incident, reflected, and transmitted portions), substrate acoustic waves, and interface waves of the Scholte type. However, it is unclear which aspect(s) of these waves is/are most relevant to the animals, either when they normally sense the environment or their physiological responses to loud sounds so there is not enough information to establish similar criteria and thresholds as done for marine mammals and fish. Including recent research, such as Day et al. (2016a), current literature does not clearly define an appropriate metric or identify relevant levels (pressure or particle motion) for an assessment. This includes the consideration of what particle motion levels lead to a behavioural response, or mortality. Therefore, at this stage, we cannot propose authoritative thresholds to inform the impact assessment. However, levels can be determined for pressure metrics presented in literature to assist the assessment.

The pressure and acceleration examples provided in Day et al. (2016)(Figures 11 and 12) indicate that the acceleration and pressure signals occurred simultaneously, which was interpreted as an indication that the waterborne sounds were responsible for the accelerations measured by the geophones. For clarity, it is important to distinguish that the acceleration from waterborne sound energy is *not* ground roll, which Day et al. (2016) correctly define as the sound that propagates along the interface at a speed lower than the shear wave speed of the sediment. However, the report subsequently uses ground roll for all further discussions of particle acceleration. While Day et al. (2016) discuss that they chose the simplest measure of ground roll, it should have been referring to as 'the acceleration from waterborne sound energy', or 'waterborne acceleration' for short.

For crustaceans, a PK-PK sound level of 202 dB re 1 μ Pa (Payne et al. 2008) is considered to be associated with no impact, and it is therefore applied in this assessment. Additionally for context, the PK-PK sound levels determined for crustaceans in Day et al. (2016a), Day et al. (2016b), and Day et al. (2019) 209–213 dB re 1 μ Pa are also included.

For scallops (and bivalves), PK-PK sound levels of 212 and 213 dB re 1 μ Pa are presented to allow comparison to the maximum sound levels measured in Day et al. (2016a) and Day et al. (2017).

Literature does not present a sound level associated with no impact, and as particle motion is the more relevant metric, particle acceleration from the seismic source has been presented for comparing the results in Table 7 of Day et al. (2016b). The maximum particle acceleration assessed for scallops was 37.57 ms^{-2} .

3.3.2. Octopus and Squid

There are no reported studies regarding the response of octopus to airgun signals, however the responses of squid were investigated by Fewtrell and McCauley (2012). The authors conducted a number of experiments, and examined the received per-pulse SEL for caged squid. They found that in one trial, where the received level of the first airgun impulse was $162 \text{ dB re } 1 \mu\text{Pa}^2\text{-s}$, the squid inked. This response was not observed again within this trial, however the authors stated that it was unknown if this was due to depleted ink reserves or habituation. In two other trials, the initial received levels were lower (132 and $146 \text{ dB re } 1 \mu\text{Pa}^2\text{-s}$ per-pulse SEL), and although the received levels did exceed $162 \text{ dB re } 1 \mu\text{Pa}^2\text{s}$, no inking behaviour was observed. The authors hypothesised that the results also suggest that a gradual increase in received levels and prior exposure to air gun impulses decreases the severity of the alarm responses in this species. This aligns with findings of general habituation in response to predators in squid (Long et al. 1989)

The results presented in by Fewtrell and McCauley (2012) were stated by the authors to be preliminary, and while they stated that while it is possible that noise levels greater than $147 \text{ dB re } 1 \mu\text{Pa}^2\text{-s}$ are required to induce avoidance behaviour, the level associated with inking, of $162 \text{ dB re } 1 \mu\text{Pa}^2\text{-s}$ per-pulse SEL, has been considered as a startle response threshold for both squid and octopus.

3.3.3. Plankton

To assess impacts to plankton, there are only a few studies to base threshold criteria on. Popper et al. (2014) cites many of the references and studies on potential impacts of noise emissions on fish eggs and larvae prior to 2014. Results presented in Day et al. (2016b) for embryonic lobsters and Fields et al. (2019) for copepods align with those presented in Popper et al. (2014), which is that mortality and sub-lethal injury are limited to within tens of metres of seismic sources. Additionally, the Popper et al. (2014) criteria (Table 6), are extrapolated from simulated pile driving signals which have a more rapid rise time and greater potential for trauma than pulses from a seismic source.

Other research, such as McCauley et al. (2017), has indicated the potential for effects at longer range, however Fields et al. (2019) noted that it was difficult to reconcile the high mortality reported by McCauley et al. (2017) with the low mortalities reported in the greater previous body of earlier research and their experiment. They recommended further research into whether it is the sound pulse itself (i.e. the energy, peak pressures, or particle acceleration), the (turbulent) fluid flow occurring more slowly (i.e. not related to the sound pulse), or other effects such as the bubble cloud that which might cause higher mortality near the seismic source.

4. Methods

4.1. Acoustic Source Model

The pressure signature of the individual airguns and the composite 1/3-octave-band point-source equivalent directional levels (i.e., source levels) of the seismic source were modelled with JASCO's Airgun Array Source Model (AASM). Although AASM accounts for notional pressure signatures of each seismic source with respect to the effects of surface-reflected signals on bubble oscillations and inter-bubble interactions, the surface-reflected signal (known as surface ghost) is not included in the far-field source signatures. The acoustic propagation models account for those surface reflections, which are a property of the propagating medium rather than the source.

AASM considers:

- Array layout.
- Volume, tow depth, and firing pressure of each airgun.
- Interactions between different airguns in the array.

The seismic source considered was modelled over AASM's full frequency range, up to 25 kHz. Appendix B.1 details this model.

4.2. Parameter Overview

The specifications of the seismic source and the environmental parameters used in the propagation models are described in detail in Appendix D. A single sound speed profile for February was considered in this modelling study; this was identified as the seasonal period that would have the potential to produce the loudest levels for seafloor receptors (Appendix D.3.2) due to the presence of the strongest downward refracting sound speed profile.

Seabed sediments in the survey area were modelled with one discrete seabed profile. The seabed geoaoustic profile consisted of a thick series of muddy sand sediments underlain by cemented limestone (see profile in Table D-1).

4.3. Sound Propagation Models

Three sound propagation models were used to predict the acoustic field around the seismic source:

- Combined range-dependent parabolic equation and Gaussian beam acoustic ray-trace model (MONM-BELLHOP, 5 Hz to 25 kHz).
- Full Waveform Range-dependent Acoustic Model (FWRAM, 5 to 1024 Hz).
- Wavenumber integration model (VSTACK, 5 to 1024 Hz).

The models were used in combination to characterise the acoustic fields at short and long ranges in terms of SEL, SPL, PK, and PK-PK. Appendix C details each model. MONM-BELLHOP was used to calculate SEL of a 360° area around each source location. FWRAM was used to model synthetic seismic pulses and to generate a generalised range-dependent SEL to SPL conversion function for the considered modelled sites. The range-dependent conversion function was applied to predicted per-pulse SEL results from MONM-BELLHOP to estimate SPL values. FWRAM was also used to calculate water column PK and PK-PK levels.

The study is required to assess the acceleration from waterborne sound energy, based on the work presented in Day et al. (2016), discussed in Section 3.3.1. Therefore, VSTACK was used to calculate close range PK, PK-PK, and particle motion levels at 50 cm above along transects the seafloor from the loudest direction of the seismic source at the shallowest modelled site (Site 1) as well as two deeper modelled sites (Site 2–3).

The acceleration is calculated by Day et al. (2016) via the method: '*The respective velocities were differentiated to give acceleration (ms^{-2}) in the vertical or the vector sum in the horizontal. For analysis here the absolute magnitude of the three component acceleration vector has been used, and termed ground roll acceleration.*' (Page 14), and this is also referred to as '*maximum peak ground-motion magnitude*' (Page 39). We have interpreted this to mean the 'peak magnitude particle motion acceleration', calculated using the peak (maximum) of the vector sum of the acceleration, which is what we have calculated using VSTACK. Additional details on the modelling approach are provided in Appendix C.4.

4.4. Accumulated SEL

During a seismic survey, new sound energy is introduced into an environment with each pulse from the seismic source. While some impact criteria are based on the per-pulse energy released, others, such as the marine mammal and fish SEL criteria used in this report (Sections 3.1–3.3), account for the total acoustic energy marine fauna is subjected to over a specified duration, defined in this report as 24 h. An accurate assessment of the accumulated sound energy depends not only on the parameters of each seismic impulse but also on the number of impulses delivered in a duration and the relative positions of the impulses.

When there are many seismic pulses, it becomes computationally prohibitive to perform sound propagation modelling for every single event. The distance between the consecutive seismic impulses is small enough, however, that the environmental parameters that influence sound propagation are virtually the same for many impulse points. The acoustic fields can, therefore, be modelled for a subset of seismic pulses and estimated at several adjacent ones. After sound fields from representative impulse locations are calculated, they are adjusted to account for the source position for nearby impulses.

Although estimating the cumulative sound field with the described approach is not as precise as modelling sound propagation at every impulse location, small-scale, site-specific sound propagation features tend to blur and become less relevant when sound fields from adjacent impulses are summed. Larger scale sound propagation features, primarily dependent on water depth, dominate the cumulative field. The accuracy of the present method acceptably reflects those large-scale features, thus providing a meaningful estimate of a wide area SEL field in a computationally feasible framework.

To produce the map of accumulated received sound level distributions and 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 and seafloor sound levels for each impulse were then resampled (by linear triangulation) to produce a regular Cartesian grid. The sound field grids from all impulses were summed (Equation A-5) to produce the cumulative sound field grid with cell sizes of 20 m. The contours and threshold ranges were calculated from these flat Cartesian projections of the modelled acoustic fields. The single-impulse SEL fields were computed over model grids approximately 200×200 km in range, which encompasses the full area of the cumulative grid (the entire survey area).

The unweighted (fish) and frequency-weighted SEL_{24h} results were rendered as contour maps, including contours that focus on the relevant criteria-based thresholds. Only contours at ranges larger than the nearfield of the seismic source were rendered.

4.5. Geometry and Modelled Regions

To assess sound levels with MONM-BELLHOP, the sound field modelling calculated propagation losses up to distances of 100 km from the source in each cardinal direction, with a horizontal separation of 20 m between receiver points along the modelled radials. The sound fields were modelled with a horizontal angular resolution of $\Delta\theta = 2.5^\circ$ for a total of $N = 144$ radial planes. Receiver depths were chosen to span the entire water column over the modelled areas, from 2 m to a maximum of 120 m, with step sizes that increased with depth. To supplement the MONM results, high-frequency results for propagation loss were modelled using BELLHOP for frequencies from 2.5

to 25 kHz. The MONM and Bellhop results were combined to produce results for the full frequency range of interest.

FWRAM was run to 100 km, but along only four radials (fore and aft endfire, and port and starboard broadside) for computational efficiency. This was done to compute SEL-to-SPL conversions (Appendix D.2) but also to quantify water column PK and PK-PK. The horizontal range step is dependent on frequency and ranges from 50 m at lower frequencies to 10 m above 800 Hz.

The maximum modelled range for VSTACK was 1000 m, and a variable receiver range increment that increased away from the source was used, which increased from 10 to 25 m. Received levels were computed for receivers at the seafloor.

5. Results

5.1. Acoustic Source Levels and Directivity

AASM (Section 4.1) was used to predict the horizontal and vertical overpressure signatures and corresponding power spectrum levels for the 2495 in³ seismic source with a 7 m tow depth (see Appendix D.4 for details on this source), with results provided in Appendix B.2 along with the horizontal directivity plots.

Table 8 shows the PK and per-pulse SEL source levels in the horizontal-plane broadside (perpendicular to the tow direction), endfire (along the tow direction), and vertical directions. The vertical source level that accounts for the “surface ghost” (the out of phase reflected pulse from the water surface) is also presented to make it easier to compare the output of other seismic source models.

Figure B-1 shows the broadside, endfire, and vertical overpressure signature and corresponding power spectrum levels for the source. The signature consists of a strong primary peak, related to the initial release of high-pressure air, followed by a series of pulses associated with bubble oscillations. Most energy was produced at frequencies below 400 Hz. Frequency-dependent peaks and nulls in the spectrum result from interference among airguns in the source and correspond with the volumes and relative locations of the airguns to each other.

Table 8. Far-field source level specifications for the 2495 in³ source, for a 7 m tow depth. Source levels are for a point-like acoustic source with equivalent far-field acoustic output in the specified direction. Sound level metrics are per-pulse and unweighted.

Direction	Peak source pressure level ($L_{s,pk}$; dB re 1 μ Pa m)	Per-pulse source SEL ($L_{s,E}$; dB 1 μ Pa ² m ² s)	
		10–2000 Hz	2000–25000 Hz
Broadside	248.6	224.1	183.8
Endfire	244.6	222.1	187.0
Vertical	254.6	227.5	194.3
Vertical (surface affected source level)	254.6	229.8	197.2

5.2. Per-pulse Sound Fields

5.2.1. Tabulated results

Tables 9–13 list per-pulse results for the 2495 in³ seismic source towed at 7 m are presented for SPL, SEL, PK, and PK-PK, including seafloor PK and PK-PK. For the SEL and SPL isopleths, in Tables 9 and 10, see Table 4 for details modelled sites.

5.2.1.1. Entire water column

Table 9. Maximum (R_{max}) and 95% ($R_{95\%}$) horizontal distances (in km) from the 2495 in³ seismic source to modelled maximum-over-depth unweighted per-pulse SEL isopleths from the modelled single impulse sites, with water depth indicated.

Per-pulse SEL (L_E ; dB re 1 $\mu\text{Pa}^2\cdot\text{s}$)	Site 1 (50 m)		Site 2 (58 m)		Site 3 (79 m)		Site 4 (54 m)	
	R_{max}	$R_{95\%}$	R_{max}	$R_{95\%}$	R_{max}	$R_{95\%}$	R_{max}	$R_{95\%}$
190	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
180	0.28	0.23	0.28	0.23	0.28	0.23	0.28	0.23
170	1.29	1.12	1.32	1.11	1.22	1.04	1.41	1.15
162 [‡]	3.45	2.78	3.35	2.81	3.66	2.94	3.40	2.89
160 [†]	4.26	3.43	4.07	3.43	4.50	3.55	4.16	3.49
150	9.53	7.93	9.69	7.91	10.6	8.55	9.60	7.92
140	20.7	17.1	21.8	16.8	21.9	18.0	19.6	15.7
130	42.4	34.0	45.8	34.1	43.7	34.9	36.2	29.1
120	74.0	58.7	80.3	60.7	75.5	59.6	62.8	50.1

[†] Low power zone assessment criteria DEWHA (2008).

[‡] Threshold for squid behavioural response (inking) to impulsive noise (Fewtrell and McCauley 2012).

Table 10. Maximum (R_{max}) and 95% ($R_{95\%}$) horizontal distances (in km) from the 2495 in³ seismic source to modelled maximum-over-depth SPL isopleths from the modelled single impulse sites with water depth indicated.

SPL (L_p ; dB re 1 μPa)	Site 1 (50 m)		Site 2 (58 m)		Site 3 (79 m)		Site 4 (54 m)	
	R_{max}	$R_{95\%}$	R_{max}	$R_{95\%}$	R_{max}	$R_{95\%}$	R_{max}	$R_{95\%}$
200	0.05	0.05	0.03	0.03	0.03	0.03	0.03	0.03
190	0.23	0.21	0.23	0.21	0.23	0.20	0.25	0.22
180	1.22	0.99	1.16	0.95	1.08	0.88	1.17	0.98
175 [#]	2.07	1.75	2.11	1.80	1.96	1.71	2.19	1.78
170	3.47	2.80	3.36	2.81	3.65	2.94	3.41	2.88
166 [†]	4.92	3.99	4.91	4.07	5.11	4.23	4.93	4.11
160 [‡]	8.13	6.78	8.30	6.81	9.10	7.33	8.34	6.79
150	18.3	15.3	19.4	15.1	19.7	16.2	17.6	14.1
140	38.8	31.3	41.8	31.1	40.1	32.2	33.5	27.0
130	69.4	54.8	75.2	56.5	70.6	55.7	58.3	46.8

[#] Threshold for turtle behavioural disturbance from impulsive noise (McCauley et al. 2000b).

[†] Threshold for turtle behavioural response to impulsive noise (NSF 2011).

[‡] Marine mammal behavioural threshold for impulsive sound sources (NOAA 2019).

Table 11. Maximum (R_{max}) horizontal distances (in km) from the 2495 in³ array to modelled maximum-over-depth peak pressure level (PK) thresholds based on the NOAA Technical Guidance (NMFS 2018) for marine mammals, and Popper et al. (2014) for fish and Finneran et al. (2017) for turtles, at site 2 (Table 4), with water depth indicated.

Hearing group	PK threshold (L_{pk} ; dB re 1 μ Pa)	Distance R_{max} (km)
		Site 2 (58 m)
Low-frequency cetaceans (PTS)	219	0.03
Low-frequency cetaceans (TTS)	213	0.07
Mid-frequency cetaceans (PTS)	230	—
Mid-frequency cetaceans (TTS)	224	—
High-frequency cetaceans (PTS)	202	0.36
High-frequency cetaceans (TTS)	196	0.79
Phocid pinnipeds in water (PTS)	218	0.04
Phocid pinnipeds in water (TTS)	212	0.08
Otariid pinnipeds in water (PTS)	232	—
Otariid pinnipeds in water (TTS)	226	—
Turtles (PTS)	232	—
Turtles (TTS)	226	—
Fish: No swim bladder (also applied to sharks)	213	0.07
Fish: Swim bladder not involved in hearing, Swim bladder involved in hearing Fish eggs, and larvae Plankton	207	0.21

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

5.2.1.2. Seafloor

Table 12. Maximum (R_{max}) horizontal distances (in m) from the 2495 in³ array to modelled seafloor peak pressure level thresholds (PK) from three single-impulse modelled sites (Table 4), with water depth indicated.

Hearing group/animal type	PK threshold (L_{pk} ; dB re 1 μ Pa)	Distance R_{max} (m)		
		Site 1 (50 m)	Site 2 (58 m)	Site 3 (79 m)
Sound levels for sponges and corals [†]	226	*	*	*
Fish: No swim bladder (also applied to sharks)	213	91	84	72
Fish: Swim bladder not involved in hearing, Swim bladder involved in hearing Fish eggs, and larvae	207	191	205	223

[†] Heyward et al. (2018)

An asterisk indicates that the sound level was not reached.

Table 13. Maximum (R_{max}) horizontal distances (in m) from the 2495 in³ seismic source to modelled seafloor peak-peak pressure levels (PK-PK) from three single-impulse modelled sites (Table 4), with water depth indicated. Results included in relation to benthic invertebrates (Section 3.3).

PK-PK (L_{pk-pk} ; dB re 1 μ Pa)	Distance R_{max} (km)		
	Site 1 (50 m)	Site 2 (58 m)	Site 3 (79 m)
213 ^{a,b,c}	187.	200	217
212 ^{b,c}	198	210	235
210 ^{a,b}	228	241	267
209 ^{a,b}	355	258	286
202 ^d	747	761	650

^a Day et al. (2019), lobster

^b Day et al. (2016a), lobster and scallops

^c Day et al. (2017), scallops.

^d Payne et al. (2008), lobster

5.2.2. Sound field maps and graphs

5.2.2.1. Sound level contour maps

Figures 2–9 show maps of the estimated sound fields, threshold contours, and isopleths of interest for the per-pulse SEL and SPL sound fields at all modelled sites (Table 4).

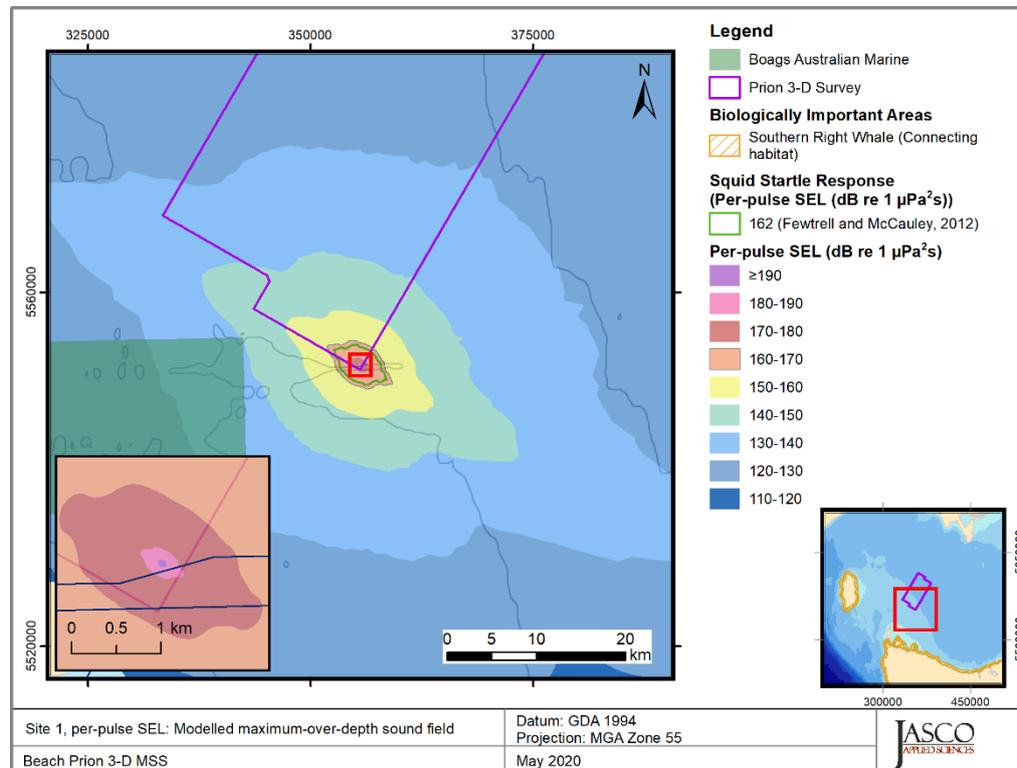


Figure 2. *Site 1, per-pulse SEL*: Sound level contour map of unweighted maximum-over-depth results. The squid startle response threshold specifically refers to inking.

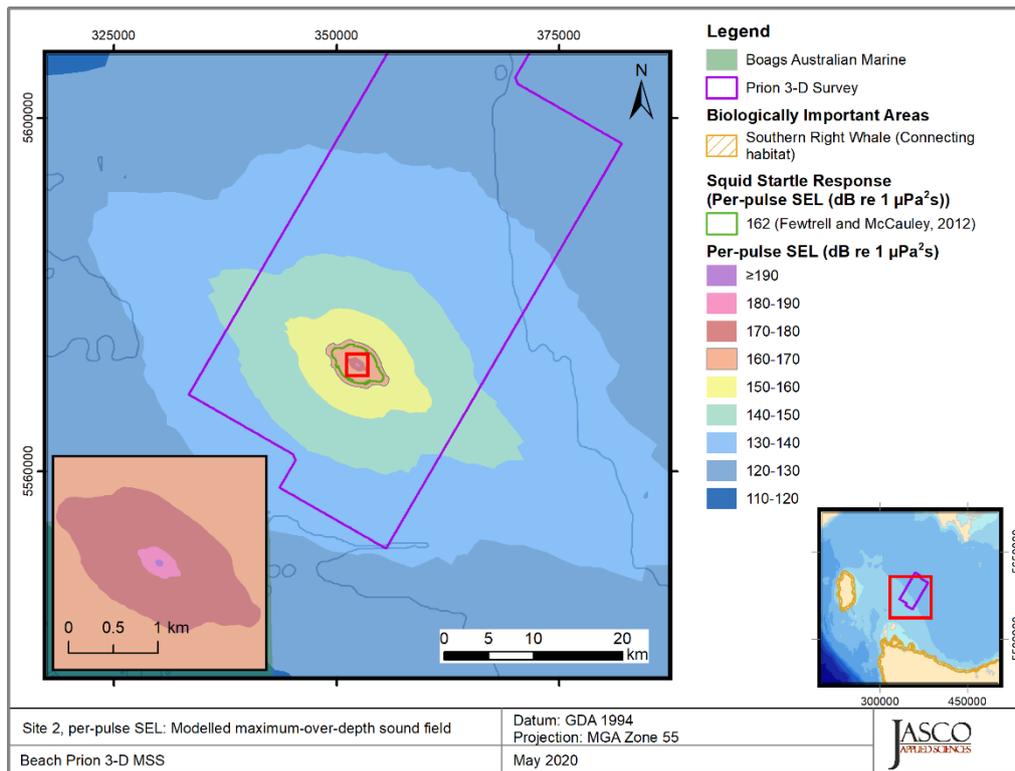


Figure 3. Site 2, *per-pulse SEL*: Sound level contour map of unweighted maximum-over-depth results. The squid startle response threshold specifically refers to inking.

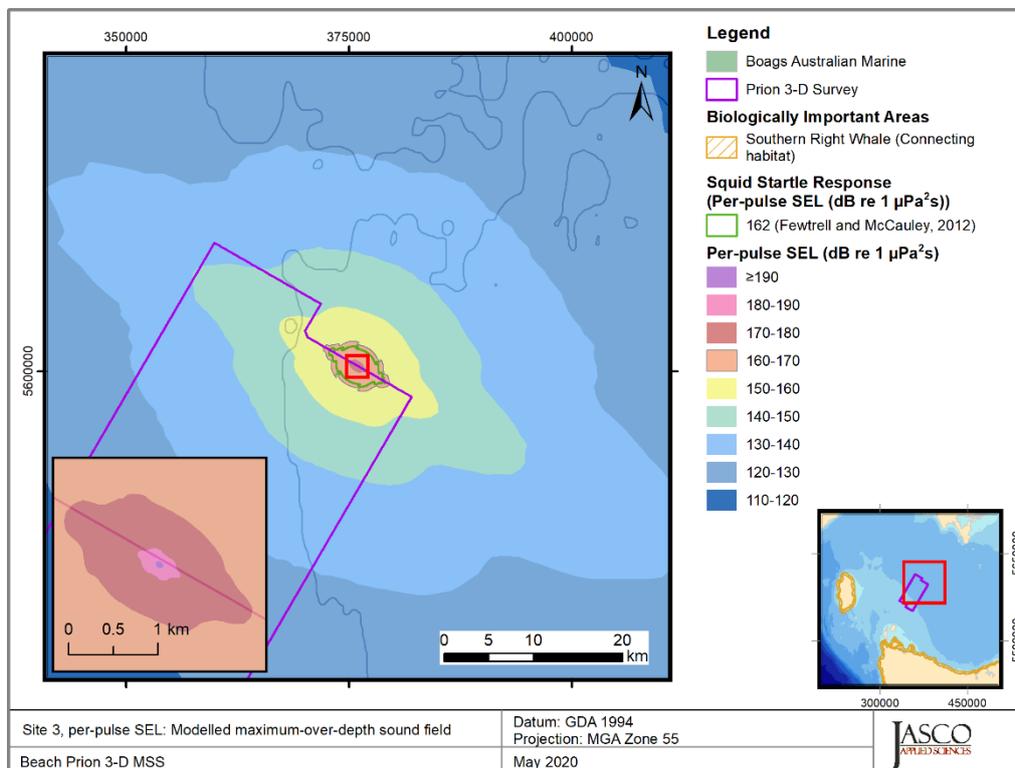


Figure 4. Site 3, *per-pulse SEL*: Sound level contour map of unweighted maximum-over-depth results. The squid startle response threshold specifically refers to inking.

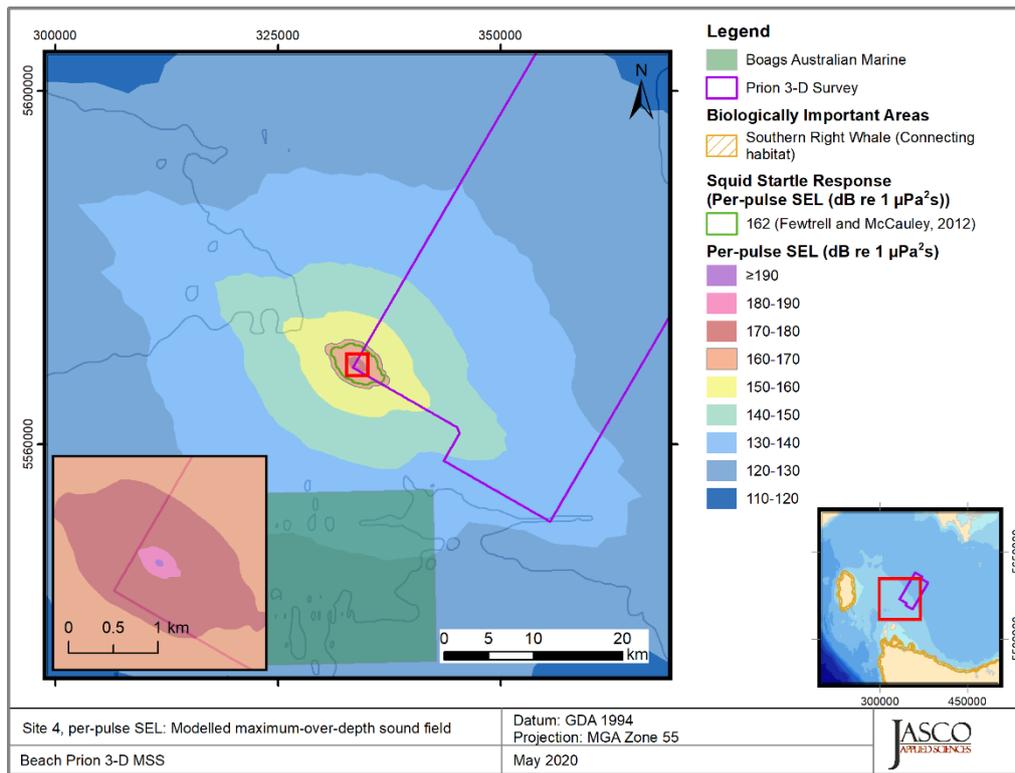


Figure 5. Site 4, *per-pulse SEL*: Sound level contour map of unweighted maximum-over-depth results. The squid startle response threshold specifically refers to inking.

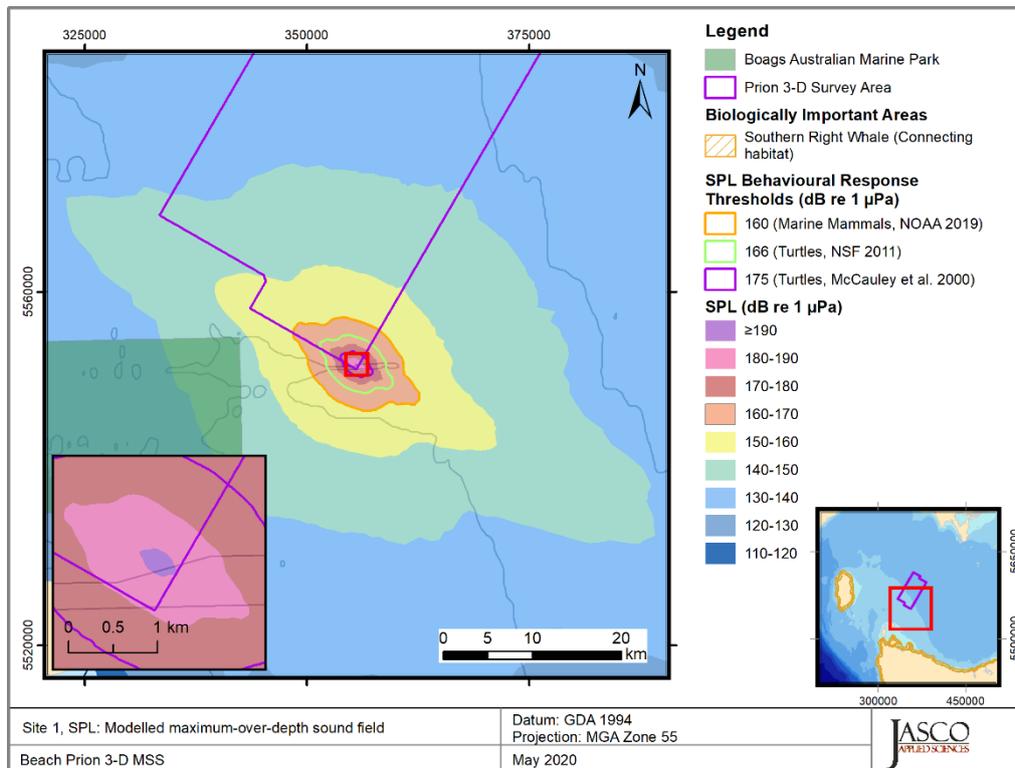


Figure 6. Site 1, *SPL*: Sound level contour map of unweighted maximum-over-depth results.

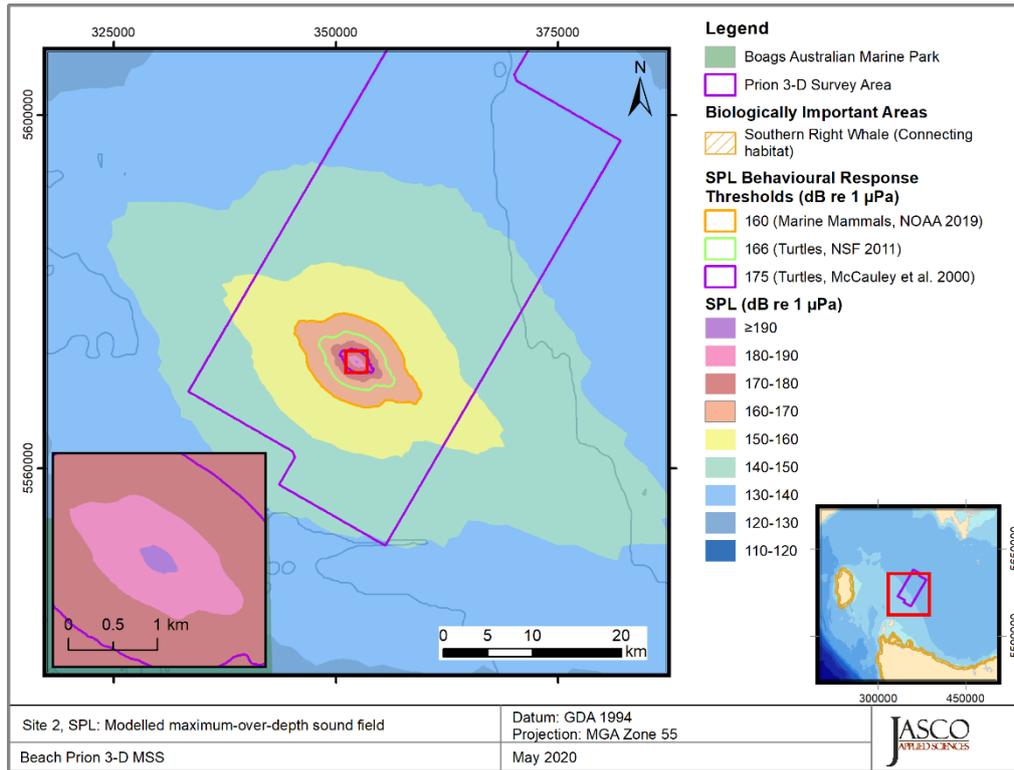


Figure 7. Site 2, SPL: Sound level contour map of unweighted maximum-over-depth results.

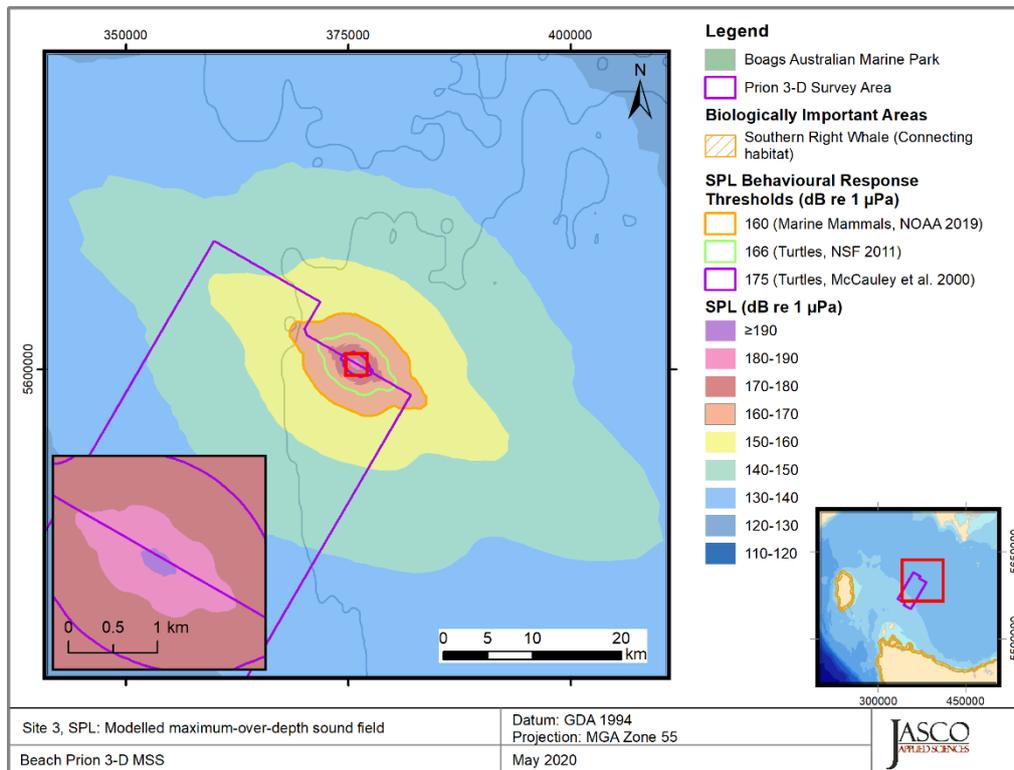


Figure 8. Site 3, SPL: Sound level contour map of unweighted maximum-over-depth results.

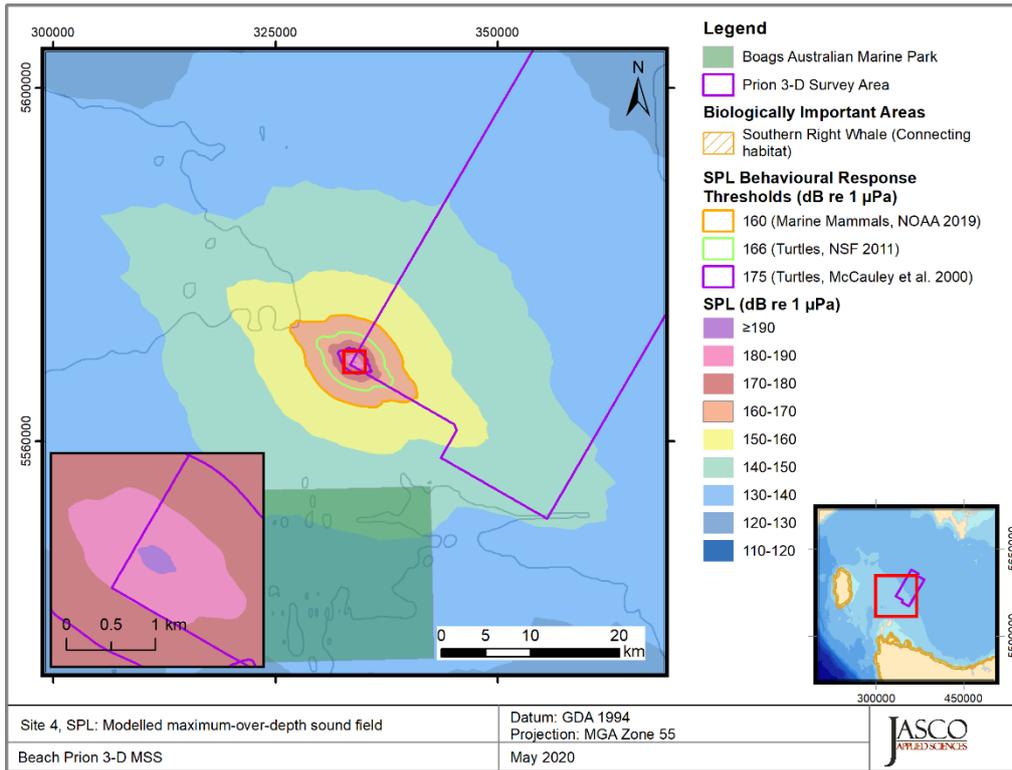


Figure 9. Site 4, SPL: Sound level contour map of unweighted maximum-over-depth results.

5.2.2.2. Vertical slices of modelled sound fields

Figures 10–13 show vertical slices of the SPL sound fields for the 2495 in³ seismic source.

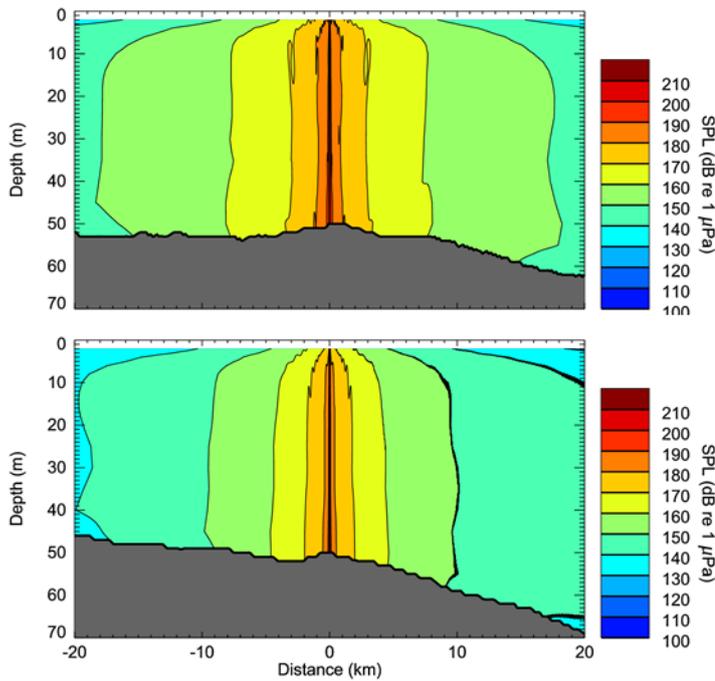


Figure 10. *Site 1, SPL*: Vertical slice of the predicted SPL for the 2495 in³ seismic source. Levels are shown along the broadside (top) and endfire (bottom) directions.

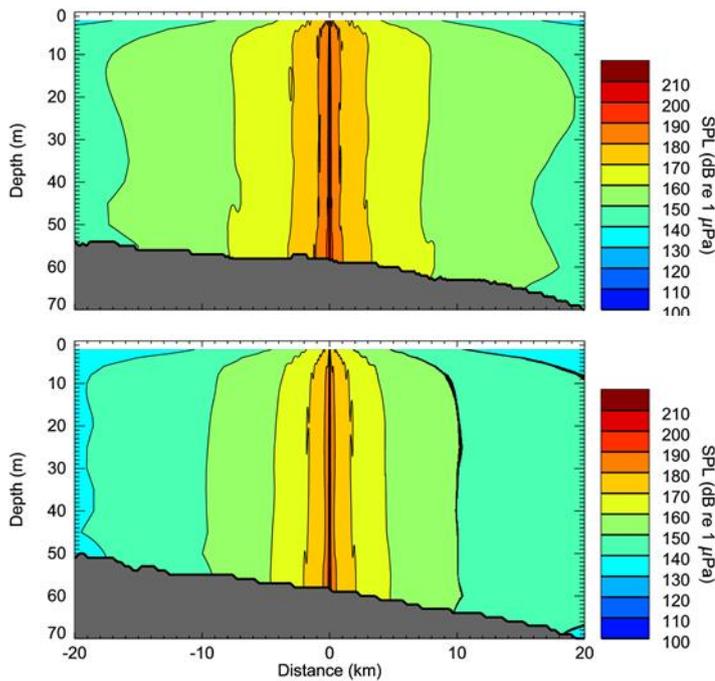


Figure 11. *Site 2, SPL*: Vertical slice of the predicted SPL for the 2495 in³ seismic source. Levels are shown along the broadside (top) and endfire (bottom) directions.

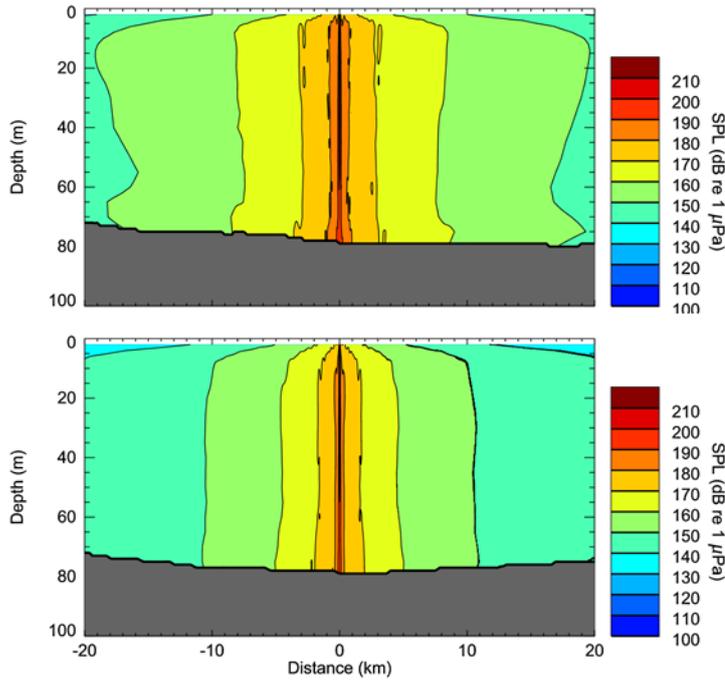


Figure 12. Site 3, SPL: Vertical slice of the predicted SPL for the 2495 in³ seismic source. Levels are shown along the broadside (top) and endfire (bottom) directions.

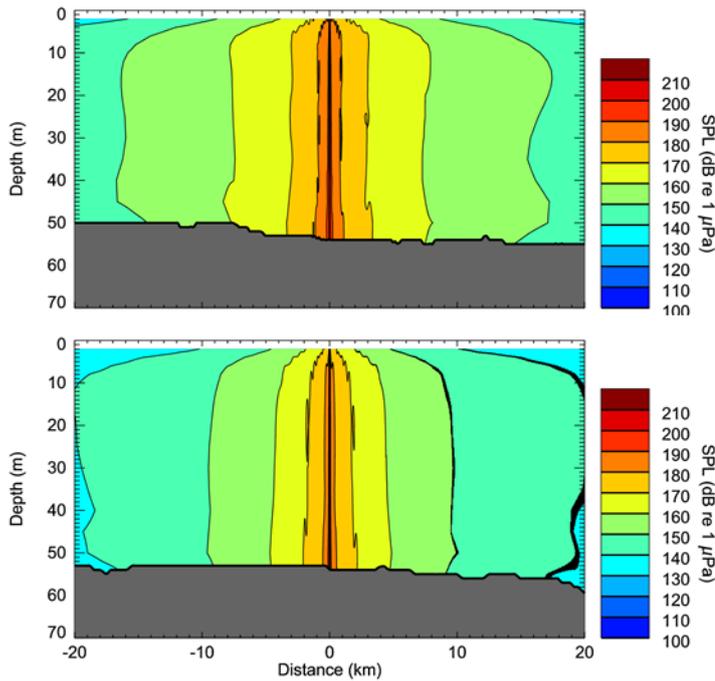


Figure 13. Site 4, SPL: Vertical slice of the predicted SPL for the 2495 in³ seismic source. Levels are shown along the broadside (top) and endfire (bottom) directions.

5.2.2.3. Particle motion

Figures 14–16 show modelled maximum particle acceleration as a function of horizontal range in four perpendicular directions from the centre of the 2495 in³ seismic source at the three shallowest modelled sites (Sites 1–3 , 50–79 m water depth). The modelling considered a resolution of 10 m, and a receiver positioned 50 cm off the seafloor. The maximum distance to a particle acceleration of the closest value to 37.57 ms⁻² (Section 3.3, Day et al. (2016a)) occurs at approximately 8 m at all sites (Figures 14–16) .

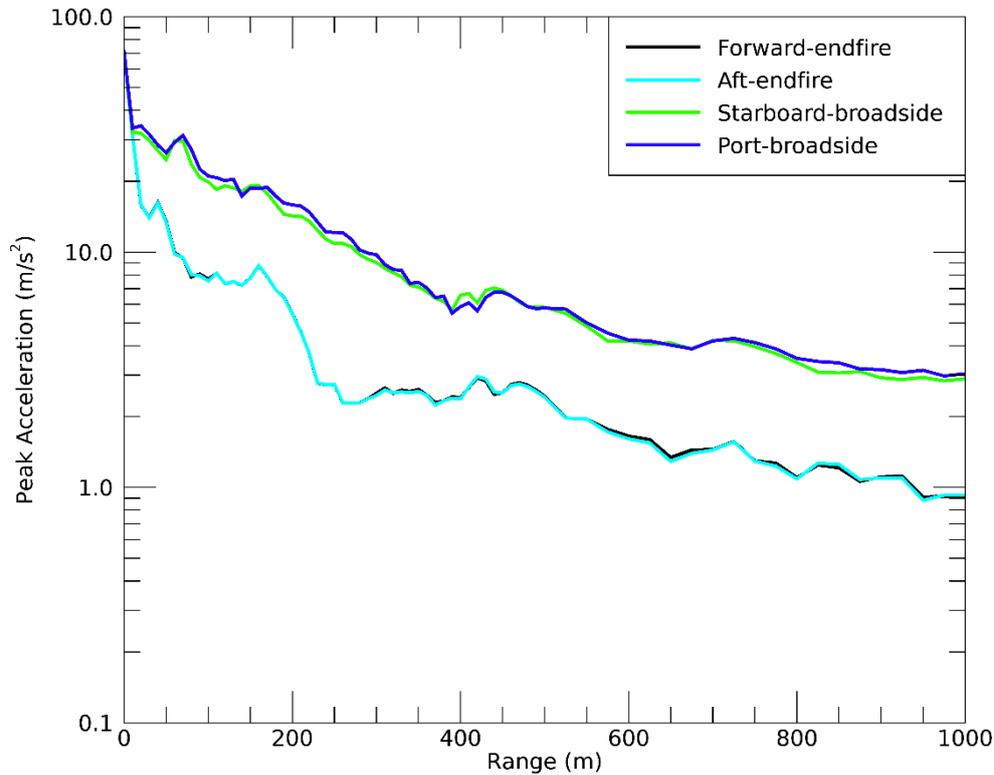


Figure 14. Site 1 (50 m water depth): Maximum particle acceleration at the seafloor as a function of horizontal range from the centre of a single 2495 in³ seismic source along four directions.

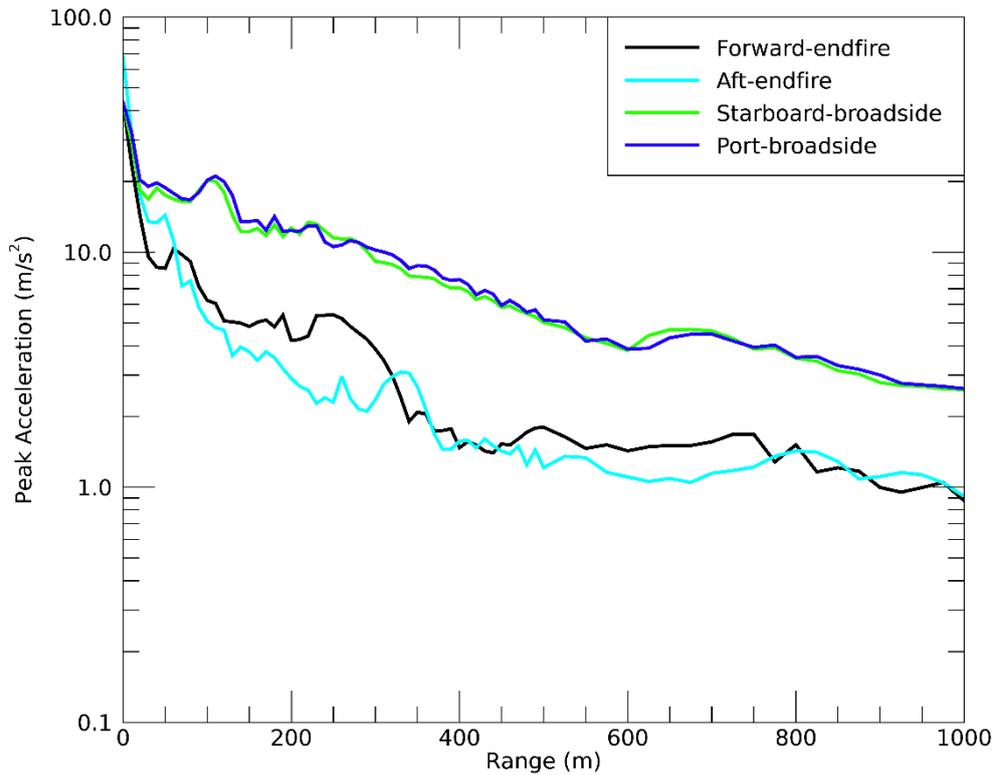


Figure 15. Site 2 (58 m water depth): Maximum particle acceleration at the seafloor as a function of horizontal range from the centre of a single 2495 in³ seismic source along four directions.

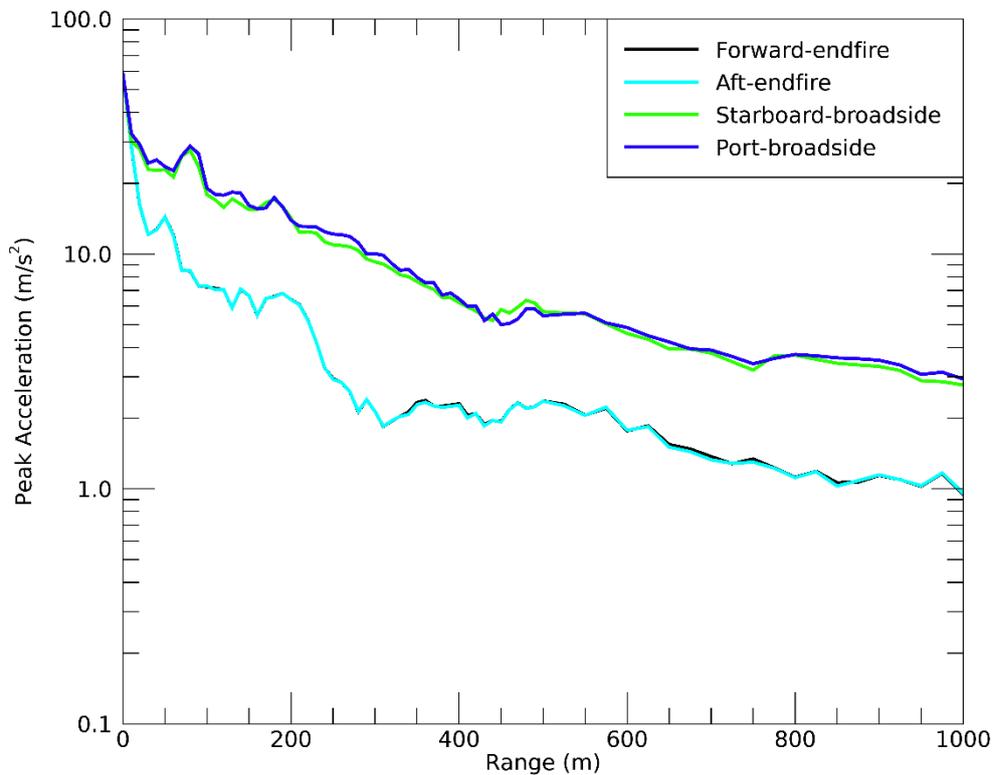


Figure 16. Site 3 (79 m water depth): Maximum particle acceleration at the seafloor as a function of horizontal range from the centre of a single 2495 in³ seismic source along four directions.

5.3. Multiple Pulse Sound Fields

The SEL_{24h} results for the proposed survey are presented for Scenarios 1–3 within the survey areas. Tables 14 and 15 show the estimated ranges to the appropriate cumulative exposure criterion contour for the various marine fauna groups considered and the corresponding ensounded areas. The ranges in this section are the perpendicular distance from the survey line to the relevant isopleth. Figure 17 shows a map of the maximum-over-depth sound fields, including threshold contours relating to marine mammals and fish, while Figure 18 shows the estimates of the sound field at the seafloor and threshold contours relevant to fish.

5.3.1. Tabulated results

Table 14. Maximum-over-depth distances (in km) to frequency-weighted SEL_{24h} based marine mammal PTS and TTS thresholds NMFS (2018) and turtles (Finneran et al. 2017).

Hearing group	Threshold for SEL _{24h} (L _{E,24h} ; dB re 1 μPa ² s)	R _{max} (km)	Area (km ²)
PTS			
Low-frequency cetaceans	183	5.45	777
Mid-frequency cetaceans	185	—	—
High-frequency cetaceans	155	0.05	3.38
Phocid pinnipeds in water	185	0.06	4.61
Otariid pinnipeds in water	203	—	—
Turtles	204	0.06	5.01
TTS			
Low-frequency cetaceans	168	27.9	4069
Mid-frequency cetaceans	170	0.01	0.01
High-frequency cetaceans	140	2.37	278
Phocid pinnipeds in water	170	4.04	516
Otariid pinnipeds in water	188	0.05	3.38
Turtles	189	3.27	470

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

Table 15. Distances to SEL_{24h} based fish criteria in the water column.

Marine fauna group	Threshold for SEL _{24h} (L _{E,24h} ; dB re 1 µPa ² ·s)	Maximum-over-depth	
		R _{max} (km)	Area (km ²)
Mortality and potential mortal injury			
I	219	0.04	4.10
II, fish eggs and fish larvae	210	0.04	5.28
III	207	0.04	5.28
Fish recoverable injury			
I	216	0.04	5.28
II, III	203	0.10	19.1
Fish TTS			
I, II, III	186	6.7	715

Fish I—No swim bladder; Fish II—Swim bladder not involved with hearing; Fish III—Swim bladder involved with hearing. A dash indicates the threshold was not reached within the limits of the modelling resolution (20 m).

Table 16. Distances to SEL_{24h} based fish criteria at the seafloor.

Marine fauna group	Threshold for SEL _{24h} (L _{E,24h} ; dB re 1 µPa ² ·s)	Seafloor	
		R _{max} (km)	Area (km ²)
Mortality and potential mortal injury			
I	219	*	*
II, fish eggs and fish larvae	210	*	*
III	207	*	*
Fish recoverable injury			
I	216	*	*
II, III	203	0.15	13.6
Fish TTS			
I, II, III	186	6.44	1085

Fish I—No swim bladder; Fish II—Swim bladder not involved with hearing; Fish III—Swim bladder involved with hearing. An asterisk indicates that the threshold was not reached.

5.3.2. Sound field maps

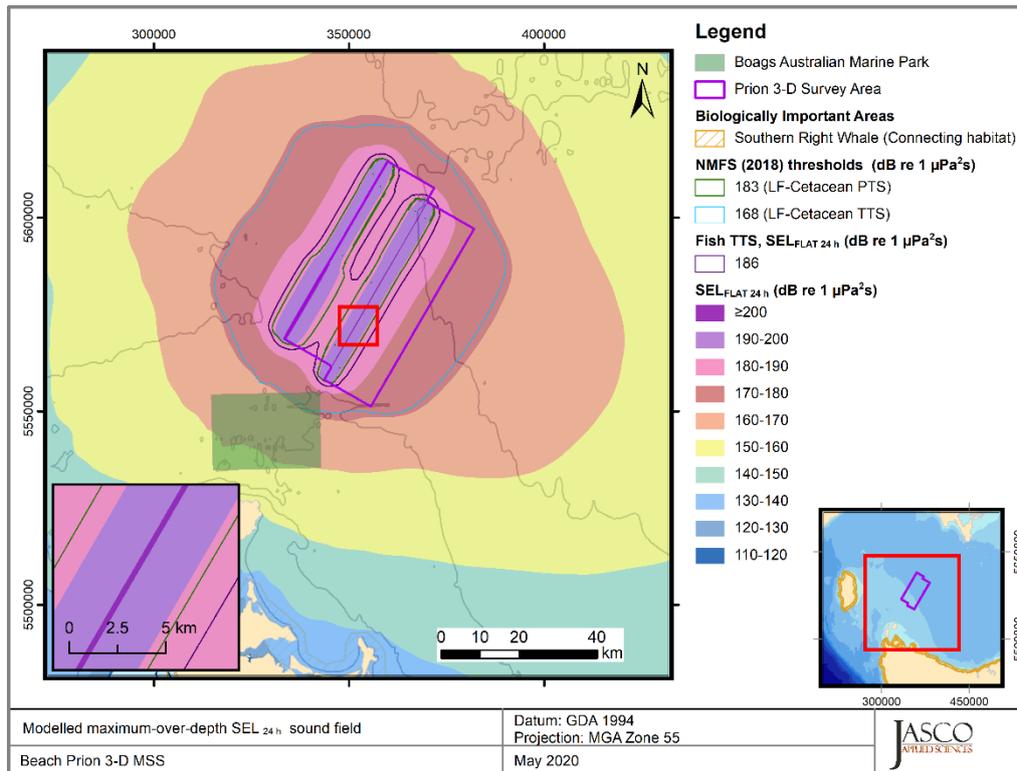


Figure 17. Sound level contour map of unweighted maximum-over-depth $\text{SEL}_{24 \text{ h}}$ results, along with isopleths for low-frequency cetaceans and fish TTS. Thresholds for mid- and high-frequency cetacean and phocid pinniped PTS were not shown as thresholds were not reached or threshold contours were not large enough to display graphically.

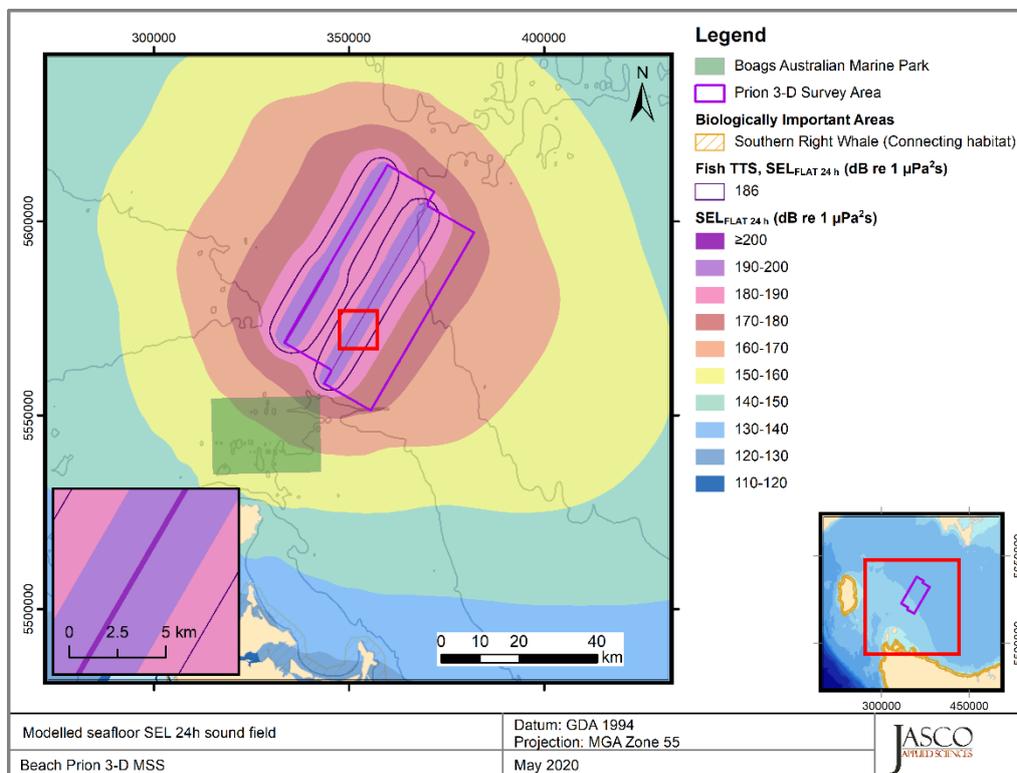


Figure 18. Sound level contour map of unweighted seafloor $\text{SEL}_{24 \text{ h}}$ results, along with the isopleth for fish TTS.

6. Discussion

This modelling study predicted underwater sound levels associated with the planned Prion 3-D MSS. The underwater sound field was modelled for a 2495 in³ seismic source (Appendix B).

An analysis of seasonal sound speed profiles, the results of which are presented in Appendix D.3.2, indicated that February was the month most conducive sound propagation incident on the seafloor due to the presence of a downward refracting profile; as such it was selected to ensure a conservative estimation of distances to received sound level thresholds for seafloor receptors particularly the scallop bed to the west of the survey areas. Modelling also accounted for site-specific bathymetric variations (Appendix D.3.1) and local geoacoustic properties (Appendix D.3.3).

Most acoustic energy from a seismic source is output at lower frequencies, in the tens to hundreds of hertz. The modelled 2495 in³ array had a pronounced broadside directivity for 1/3-octave-bands between ~125 to 251 Hz (Appendix B.2), which caused a noticeable axial bulge in the modelled acoustic footprints.

The overall broadband (10–25000 Hz) unweighted per-pulse SEL source level of the 2495 in³ seismic source operating at 7 m depth was 224.1 dB 1 $\mu\text{Pa}^2\text{m}^2\text{s}$ in the broadside direction and 222.1 dB 1 $\mu\text{Pa}^2\text{m}^2\text{s}$ in the endfire direction. The peak source pressure level in the same directions was 248.6 and 244.6 dB re 1 μPa m, respectively (Table 8).

6.1. Per-Pulse Sound Fields

The directionality of the array produced louder levels in the broadside direction of the array, apparent as axial bulges in the maximum-over-depth sound footprint maps (Section 5.2.2.1). The bathymetry within the vicinity of the Prion 3-D MSS varied gradually between 20–70 m over a 100 km long north to south transect. The array directionality and frequency content coupled with bathymetry, resulted in shallow water propagation phenomena where the water column sound field is significantly influenced by variations and interactions with the seabed. Generally larger lobes of sound energy extended into the deeper waters to the east of the survey area where the bathymetry transitioned into slightly deeper water environment. This allows more energy to be trapped between the sea surface and the seabed. The bathymetry generally decreased to the south and west of the survey area, which has the opposite effect of deeper water. As water depth decreases more energy is transmitted into the seabed where it generally attenuates more rapidly with distance as compared to within the water column. The maximum-over-depth sound footprint maps and vertical slice plots (Sections 5.2.2.1 and 5.2.2.2) assist in demonstrating the influence of the regional bathymetry, source location and directionality on sound propagation from the seismic source.

There was a 19 m difference in depth between the shallowest (Site 1) and deepest (Site 3) modelling sites. This, coupled with the trends in the bathymetry surrounding the sites, as described above, resulted in the distance to the 160 dB re 1 μPa (SPL) being 1 km further at Site 3 (Table 10). The site closest to the area of interest to the Tasmanian Scallop Fishery, Site 4, was only 4 m deeper than Site 1. However, despite the similar site depths, the surrounding bathymetry influences the extent of ensonification. The maximum-over-depth per-pulse SEL ranges at close range are the same at both sites, at medium ranges, associated with per-pulse SELs of 170 and 150 dB re 1 $\mu\text{Pa}^2\text{s}$, ranges are slightly greater at Site 2 (by a maximum of 120 m), however for longer ranges, associated with per-pulse SELs of less than 150 dB re 1 $\mu\text{Pa}^2\text{s}$, the ranges are greater at Site 1, by a maximum of 11.2 km at 120 dB re 1 $\mu\text{Pa}^2\text{s}$.

The distances to PK and PK-PK based criteria (Sections 3.2 and 3.3) for bivalves, fish, and benthic crustaceans, and at the seafloor generally increased with increasing water depth (Tables 12 and 13). However, distances to these criteria did not always consistently change with increasing depth as any correlation between water depth and threshold distance is related to complex patterns of surface and seabed reflections that affect how sound propagates in shallow water. However, the three modelled sites assessed for seabed receptors encompass a representative range of water depths within the survey area (50–79 m), and thus provides a good representation of the potential variability of received levels for seabed receptors.

6.2. Particle Motion

Section 5.2.2.3 discuss the relevance of particle motion (acceleration) to benthic invertebrates. Particle acceleration decays rapidly away from the source location within the distance equal to half the water depth. It is then influenced by shallow water propagation effects, such as constructive interference from sea-surface and seabed reflections. This resulted in up to 10 ms⁻² variation in predicted levels out to a distance equivalent to two water depths, Beyond this distance, it exhibited an almost linear decay (Figures 14–16).

Day et al. (2016a) and Day et al. (2016b) included a regression of particle acceleration versus range for the single 150 in³ airgun used in their study (minimum range of 6 m) and showed that acceleration at 10 and 100 m range was typically 26 and 5 ms⁻², respectively. Day et al. (2016a) and Day et al. (2016b) also referenced an unpublished maximum particle acceleration measurement of 6.2 ms⁻² from a 3130 in³ airgun array at 477 m range in 36 m of water. In our study, modelled peak acceleration at 10 m range was predicted to be between 29.6 and 33.6 ms⁻² depending on the site; corresponding values at 100 m range are between 17.9 and 21.1 ms⁻². At ~477 m, our study predicts acceleration ranging between 5.5–6.3 ms⁻² in the broadside directions. These result aligns with the measurements reported in Day et al. (2016a) and Day et al. (2016b), thus represents what is likely to occur particularly considering the predicted broadside maximum acceleration 6.2 ms⁻² for a 2495 in³ array at the shallowest modelled site (Site 1) in 50 m of water.

JASCO has several measurements of particle acceleration vs distance from seismic airgun arrays made with a variety of sensor types, ranging from extremely close range in shallow water to deeper water and longer ranges. In 110 m of water over a sandy seabed we found seabed accelerations of 20 m/s² at a radial closest point of approach (CPA) distance of 15 m. In much shallower waters, accelerations in excess of 40 m/s² were measured at CPA distances of 50 m, and higher levels again were received at close range in shallow water. The results also show that the specific conditions at each location affect the fine scale results of both modelling and measurements.

The maximum distance to a particle acceleration of the closest value to 37.57 ms⁻², 50 cm off the seafloor, determined for comparing literature, (Section 3.3; Day et al. (2016a), Day et al. (2016b)) is 8 m. If the receiver was closer to the seafloor, the expected waterborne particle acceleration would be lower.

6.3. Multiple Pulse Sound Fields

The accumulated SEL over 24 hours of seismic source operation was modelled considering a representative scenario with a realistic acquisition pattern for the Prion 3-D MSS. The modelling predicted the accumulation of sound energy, considering the change in location and the azimuth of the source at each pulse point, which were used to assess possible injury in marine mammals and the SEL_{24h} based fish and marine mammal criteria. The results were presented as maps of the accumulated exposure levels and tabulated values of ranges to threshold levels and exposure areas for the given effects criteria (Section 3).

The footprints and range maxima for all accumulated SEL thresholds within the survey area are primarily influenced by the high levels in the broadside direction and the gradual variations in bathymetry as discussed above. For the considered 24 h scenario, the maximum ranges to species specific thresholds are associated with the broadside source levels and near constant bathymetry.

The presented isopleths for the accumulated SEL over 24 hours for receptors at the seafloor were marginally smaller than the maximum-over-depth equivalent. This due to propagation and interference effects at the seafloor interface (see the vertical slice plots Section 5.2.2.2 for examples). This propagation effect would be more pronounced if the survey were conducted in deeper water. However given the almost constant and relatively shallow water depths, the maximum over depth isopleths and associated radii are comparable in their respective extent and magnitude. This suggest that the average water depth and seabed geoacoustic profile control the levels at the seafloor rather than water column sound speed variations for the considered 24 hour scenario.

6.4. Summary

The study findings pertaining to each metric and criteria for various marine species of interest are summarised below with references to the result location.

Marine mammal injury and behaviour

- The maximum distance where the NOAA (2019) marine mammal behavioural response criterion of 160 dB re 1 μ Pa (SPL) could be exceeded varied between 8.13 and 9.10 km (Site 1 and Site 3), provided in Table 10.
- The results for the criteria applied for marine mammal Permanent Threshold Shift (PTS), NMFS (2018), consider both metrics within the criteria (PK and SEL_{24h}). The longest distance associated with either metric is required to be applied. Table 17 summarises the maximum distances for PTS, along with the relevant metric and the location of the results within this report; the farthest distances were associated with Scenario 2.
- 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 for low-frequency cetaceans were larger than those for peak pressure criteria, but they represent an unlikely worst-case scenario. More realistically, marine mammals (and fish) 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 injury (either PTS or TTS) if it remained in that location for 24 hours.

Table 17. Summary of maximum marine mammal PTS onset distances for modelled scenarios (PK values from Table 11 and SEL_{24h} values from Table 14)

Hearing group	Metric associated with longest distance to PTS onset	R _{max} (km)
Low-frequency cetaceans†	SEL _{24h}	5.45
Mid-frequency cetaceans	—	—
High-frequency cetaceans	PK	0.36
Phocid pinnipeds in water	SEL _{24h}	0.06
Otariid pinnipeds in water	—	—

†The model does not account for shutdowns.

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

Turtles

- The maximum distance to the SEL_{24h} metric was 60 m for PTS onset and 3.27 km for TTS onset (Finneran et al. 2017). As is the case with marine mammals, a reported radius for SEL_{24h} criteria does not mean that turtles travelling within this radius of the source will be injured, but rather that an animal could be exposed to the sound level associated with either PTS or TTS if it remained in that location for 24 hours.
- Table 18 summarises the distances to where the NMFS criterion (NSF 2011) for behavioural response of turtles to the 166 dB re 1 μ Pa (SPL) and the 175 dB re 1 μ Pa (SPL) threshold for behavioural disturbance (McCauley et al. 2000b, McCauley et al. 2000a) could be exceeded.

Table 18. Summary of distances to turtle behavioural response criteria (from Table 10).

SPL (L_p ; dB re 1 μ Pa)	Distance (km)	
	Minimum	Maximum
175†	1.96	2.19
166‡	4.91	5.11

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

‡ Threshold for turtle behavioural response to impulsive noise (NSF 2011).

Fish, fish eggs, and fish larvae

- This modelling study assessed the ranges for quantitative criteria based on Popper et al. (2014) and considered both PK (seafloor and water column) and SEL_{24h} metrics associated with mortality and potential mortal injury as well as impairment in the following groups:
 - Fish without a swim bladder (also appropriate for sharks in the absence of other information)
 - Fish with a swim bladder that do not use it for hearing
 - Fish that use their swim bladders for hearing
 - Fish eggs and fish larvae
- Table 19 summarises the distances to injury criteria for fish, fish eggs, and fish larvae along with the relevant metric and the location of the information within this report.

Table 19. Summary of maximum fish, fish eggs, and larvae injury and TTS onset distances for single impulse and SEL_{24h} modelled scenarios (PK values from Tables 11 and 12 and SEL_{24h} values from Tables 15 and 16).

Relevant hearing group	Effect criteria	Water column		Seafloor	
		Metric associated with longest distance to criteria	R_{max} (km)	Metric associated with longest distance to criteria	R_{max} (km)
Fish: No swim bladder	Injury	PK	0.07	PK	0.09
	TTS	SEL _{24h}	6.70	SEL _{24h}	6.44
Fish: Swim bladder not involved in hearing and Swim bladder involved in hearing	Injury	PK	0.21	PK	0.22
	TTS	SEL _{24h}	6.70	SEL _{24h}	6.44
Fish eggs, and larvae	Injury	PK	0.21	PK	0.22

Invertebrates, Sponges, Coral, and Plankton

To assist with assessing the potential effects on these receptors, the following were determined:

- Bivalves: The distance where a particle acceleration of 37.57 ms⁻² at the seafloor could occur was determined for comparing to results presented in Day et al. (2016a). The maximum distance to this particle acceleration level was 8 m from the three sites considered.
- Crustaceans: The sound level of 202 dB re 1 μ Pa PK-PK from Payne et al. (2008) was considered for seafloor sound levels; the sound level was reached at ranges between 761 m and 650 m depending on the modelled site (Table 13).

- Sponges and coral: the PK sound level at the seafloor directly underneath the seismic source was estimated at all modelled sites and compared to the sound level of 226 dB re 1 μ Pa PK for sponges and corals (Heyward et al. 2018); it was not reached at any of the modelled sites (Table 12).
- Plankton: The maximum distance to potential injury in plankton, applying the threshold from Popper et al. (2014), is 0.21 km (Table 11) within the water column.
- Octopus and squid: The maximum (R_{max}) and 95% ($R_{95\%}$) distances to the sound level of 162 dB re 1 μ Pa²·s from Fewtrell and McCauley (2012) associated with inking, and referred to as a startle response threshold, was estimated to be 3.66 and 2.94 km respectively (Site 3, Table 9).

Glossary

1/3-octave

One third of an octave. Note: A one-third octave is approximately equal to one decidecade ($1/3 \text{ oct} \approx 1.003 \text{ ddec}$; ISO 2017).

1/3-octave-band

Frequency band whose bandwidth is one one-third octave. Note: The bandwidth of a one-third octave-band increases with increasing centre frequency.

90%-energy time window

The time interval over which the cumulative energy rises from 5 to 95% of the total pulse energy. This interval contains 90% of the total pulse energy. Symbol: T_{90} .

azimuth

A horizontal angle relative to a reference direction, which is often magnetic north or the direction of travel. In navigation it is also called bearing.

broadband sound level

The total sound pressure level measured over a specified frequency range. If the frequency range is unspecified, it refers to the entire measured frequency range.

broadside direction

Perpendicular to the travel direction of a source. Compare with endfire direction.

cavitation

A rapid formation and collapse of vapor cavities (i.e., bubbles or voids) in water, most often caused by a rapid change in pressure. Fast-spinning vessel propellers typically cause cavitation, which creates a lot of noise.

cetacean

Any animal in the order Cetacea. These are aquatic, mostly marine 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 primary wave or P-wave.

decibel (dB)

One-tenth of a bel. Unit of level when the base of the logarithm is the tenth root of ten, and the quantities concerned are proportional to power (ANSI S1.1-1994 R2004).

endfire direction

Parallel to the travel direction of a source. See also broadside direction.

ensonified

Exposed to sound.

far-field

The zone where, to an observer, sound originating from an array of sources (or a spatially distributed source) appears to radiate from a single point. The distance to the acoustic far-field increases with frequency.

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.

hearing group

Groups of marine mammal species with similar hearing ranges. Commonly defined functional hearing groups include low-, mid-, and high-frequency cetaceans, pinnipeds in water, and pinnipeds in air.

geoacoustic

Relating to the acoustic properties of the seabed.

hertz (Hz)

A unit of frequency defined as one cycle per second.

high-frequency (HF) cetacean

The functional cetacean hearing group that represents those odontocetes (toothed whales) specialized for hearing high frequencies.

impulsive sound

Sound that is typically brief and intermittent with rapid (within a few seconds) rise time and decay back to ambient levels (NOAA 2013, ANSI S12.7-1986 R2006). For example, seismic airguns and impact pile driving.

low-frequency (LF) cetacean

The functional cetacean hearing group that represents mysticetes (baleen whales) specialized for hearing low frequencies.

mean-square sound pressure spectral density

Distribution as a function of frequency of the mean-square sound pressure per unit bandwidth (usually 1 Hz) of a sound having a continuous spectrum (ANSI S1.1-1994 R2004). Unit: $\mu\text{Pa}^2/\text{Hz}$.

mid-frequency (MF) cetacean

The functional cetacean hearing group that represents those odontocetes (toothed whales) specialized for mid-frequency hearing.

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.

parabolic equation method

A computationally efficient solution to the acoustic wave equation that is used to model transmission loss. The parabolic equation approximation omits effects of back-scattered sound, simplifying the computation of transmission loss. The effect of back-scattered sound is negligible for most ocean-acoustic propagation problems.

particle acceleration

The rate of change of particle velocity. Unit: meters per second squared (m/s^2). Symbol: a .

peak pressure level (PK)

The maximum instantaneous sound pressure level, in a stated frequency band, within a stated period. Also called zero-to-peak pressure level. Unit: decibel (dB).

peak-to-peak pressure level (PK-PK)

The difference between the maximum and minimum instantaneous pressure levels. Unit: decibel (dB).

permanent threshold shift (PTS)

A permanent loss of hearing sensitivity caused by excessive noise exposure. PTS is considered auditory injury.

point source

A source that radiates sound as if from a single point (ANSI S1.1-1994 R2004).

pressure, acoustic

The deviation from the ambient hydrostatic pressure caused by a sound wave. Also called overpressure. Unit: pascal (Pa). Symbol: p .

received level (RL)

The sound level measured (or that would be measured) at a defined location.

rms

root-mean-square.

shear wave

A mechanical vibration wave in which the direction of particle motion is perpendicular to the direction of propagation. Also called 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.

signature

Pressure signal generated by a source.

sound

A time-varying pressure disturbance generated by mechanical vibration waves travelling through a fluid medium such as air or water.

sound exposure

Time integral of squared, instantaneous frequency-weighted sound pressure over a stated time interval or event. Unit: pascal-squared second ($\text{Pa}^2\cdot\text{s}$) (ANSI S1.1-1994 R2004).

sound exposure level (SEL)

A cumulative measure related to the sound energy in one or more pulses. Unit: dB re 1 $\mu\text{Pa}^2\cdot\text{s}$. SEL is expressed over the summation period (e.g., per-pulse SEL [for airguns], single-strike SEL [for pile drivers], 24-hour SEL).

sound exposure spectral density

Distribution as a function of frequency of the time-integrated squared sound pressure per unit bandwidth of a sound having a continuous spectrum (ANSI S1.1-1994 R2004). Unit: $\mu\text{Pa}^2\cdot\text{s}/\text{Hz}$.

sound field

Region containing sound waves (ANSI S1.1-1994 R2004).

sound intensity

Sound energy flowing through a unit area perpendicular to the direction of propagation per unit time.

sound speed profile

The speed of sound in the water column as a function of depth below the water surface.

source level (SL)

The sound level measured in the far-field and scaled back to a standard reference distance of 1 metre from the acoustic centre of the source. Unit: dB re 1 μPa m (pressure level) or dB re 1 $\mu\text{Pa}^2\cdot\text{s}\cdot\text{m}^2$ (exposure level).

spectral density level

The decibel level ($10\cdot\log_{10}$) of the spectral density of a given parameter such as SPL or SEL, for which the units are dB re 1 $\mu\text{Pa}^2/\text{Hz}$ and dB re 1 $\mu\text{Pa}^2\cdot\text{s}/\text{Hz}$, respectively.

spectrum

An acoustic signal represented in terms of its power, energy, mean-square sound pressure, or sound exposure distribution with frequency.

surface duct

The upper portion of a water column within which the sound speed profile gradient causes sound to refract upward and therefore reflect off the surface resulting in relatively long-range sound propagation with little loss.

temporary threshold shift (TTS)

Temporary loss of hearing sensitivity caused by excessive noise exposure.

thermocline

The depth interval near the ocean surface that experiences temperature gradients due to warming or cooling by heat conduction from the atmosphere and by warming from solar heating.

transmission loss (TL)

The decibel reduction in sound level between two stated points that results from sound spreading away from an acoustic source subject to the influence of the surrounding environment. Also referred to as propagation loss.

wavelength

Distance over which a wave completes one cycle of oscillation. Unit: metre (m). Symbol: λ .

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Appendix A. Acoustic Metrics

A.1. Pressure Related Acoustic Metrics

Underwater sound pressure amplitude is measured in decibels (dB) relative to a fixed reference pressure of $p_0 = 1 \mu\text{Pa}$. Because the perceived loudness of sound, especially pulsed sound such as from seismic airguns, pile driving, and sonar, is not generally proportional to the instantaneous acoustic pressure, several sound level metrics are commonly used to evaluate sound and its effects on marine life. Here we provide specific definitions of relevant metrics used in the accompanying report. Where possible, we follow the American National Standard Institute and International Organization for Standardization definitions and symbols for sound metrics (e.g., ISO 2017, ANSI R2013), but these standards are not always consistent.

The zero-to-peak sound pressure, or peak sound pressure (PK or $L_{p,\text{pk}}$; dB re 1 μPa), is the decibel level of the maximum instantaneous acoustic pressure in a stated frequency band attained by an acoustic pressure signal, $p(t)$:

$$L_{p,\text{pk}} = 10 \log_{10} \frac{\max|p^2(t)|}{p_0^2} = 20 \log_{10} \frac{\max|p(t)|}{p_0} \quad (\text{A-1})$$

PK is often included as a criterion for assessing whether a sound is potentially injurious; however, because it does not account for the duration of an acoustic event, it is generally a poor indicator of perceived loudness.

The peak-to-peak sound pressure (PK-PK or $L_{p,\text{pk-pk}}$; dB re 1 μPa) is the difference between the maximum and minimum instantaneous sound pressure, possibly filtered in a stated frequency band, attained by an impulsive sound, $p(t)$:

$$L_{p,\text{pk-pk}} = 10 \log_{10} \frac{[\max(p(t)) - \min(p(t))]^2}{p_0^2} \quad (\text{A-2})$$

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:

$$L_p = 10 \log_{10} \left(\frac{1}{T} \int g(t) p^2(t) dt / p_0^2 \right) \quad (\text{A-3})$$

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. For short acoustic events, such as sonar pulses and marine mammal vocalizations, it is important to choose an appropriate time window that matches the duration of the signal. For in-air studies, when evaluating the perceived loudness of sounds with rapid amplitude variations in time, the time weighting function $g(t)$ is often set to a decaying exponential function that emphasizes more recent pressure signals. This function mimics the leaky integration nature of mammalian hearing. For example, human-based fast time-weighted SPL ($L_{p,\text{fast}}$) applies an exponential function with time constant 125 ms. A related simpler approach used in underwater acoustics sets $g(t)$ to a boxcar (unity amplitude) function of width 125 ms; the results can be referred to as $L_{p,\text{boxcar } 125\text{ms}}$. Another approach, historically used to evaluate SPL of impulsive signals underwater, defines $g(t)$ as a boxcar function with edges set to the times corresponding to 5% and 95% of the cumulative square pressure function encompassing the duration of an impulsive acoustic event. This calculation is applied individually to each impulse signal, and the results have been referred to as 90% SPL ($L_{p,90\%}$).

The sound exposure level (SEL or L_E ; dB re 1 $\mu\text{Pa}^2\cdot\text{s}$) is the time-integral of the squared acoustic pressure over a duration (T):

$$L_E = 10 \log_{10} \left(\int_T p^2(t) dt / T_0 p_0^2 \right) \quad (\text{A-4})$$

where T_0 is a reference time interval of 1 s. SEL continues to increase with time when non-zero pressure signals are present. It is a dose-type measurement, so the integration time applied must be carefully considered for its relevance to impact to the exposed recipients.

SEL can be calculated over a fixed duration, such as the time of a single event or a period with multiple acoustic events. When applied to pulsed sounds, SEL can be calculated by summing the SEL of the N individual pulses. For a fixed duration, the square pressure is integrated over the duration of interest. For multiple events, the SEL can be computed by summing (in linear units) the SEL of the N individual events:

$$L_{E,N} = 10 \log_{10} \sum_{i=1}^N 10^{\frac{L_{E,i}}{10}} \quad (\text{A-5})$$

Because the $\text{SPL}(T_{90})$ and SEL are both computed from the integral of square pressure, these metrics are related numerically by the following expression, which depends only on the duration of the time window T :

$$L_p = L_E - 10 \log_{10}(T) \quad (\text{A-6})$$

$$L_{p90} = L_E - 10 \log_{10}(T_{90}) - 0.458 \quad (\text{A-7})$$

where the 0.458 dB factor accounts for the 10% of pulse SEL missing from the $\text{SPL}(T_{90})$ integration time window.

Energy equivalent SPL (L_{eq} ; dB re 1 μPa) denotes the SPL of a stationary (constant amplitude) sound that generates the same SEL as the signal being examined, $p(t)$, over the same time period, T :

$$L_{\text{eq}} = 10 \log_{10} \left(\frac{1}{T} \int_T p^2(t) dt / p_0^2 \right) \quad (\text{A-8})$$

The equations for SPL and the energy-equivalent SPL are numerically identical. Conceptually, the difference between the two metrics is that the SPL is typically computed over short periods (typically of one second or less) and tracks the fluctuations of a non-steady acoustic signal, whereas the L_{eq} reflects the average SPL of an acoustic signal over time periods typically of one minute to several hours.

If applied, the frequency weighting of an acoustic event should be specified, as in the case of weighted SEL (e.g., $L_{E,LF,24h}$; see Appendix A.4) or auditory-weighted SPL ($L_{p,ht}$). The use of fast, slow, or impulse exponential-time-averaging or other time-related characteristics should also be specified.

In the present report, audiogram-weighted, fast-averaged SPL ($L_{p,ht,F}$) is defined by the exponential function from Plomp and Bouman (1959):

$$L_{p,ht} = L_{E,ht,per-pulse} - 10 \log_{10}(d/0.9),$$

$$L_{p,ht,F} = L_{p,ht} + 10 \log_{10} \frac{1 - e^{-d/\tau}}{1 - e^{-T/\tau}} \quad (\text{A-9})$$

where d is the duration in seconds, τ is the time constant of 0.125 s representing marine mammal auditory integration time, $L_{p,ht}$ is the audiogram-weighted SPL over pulse duration, and T is the pulse repetition period. This metric accounts for the hearing sensitivity of specific species through frequency weighting, and results in reduced perceived loudness (i.e., sensation level) for pulses shorter than auditory integration time (τ).

A.2. Particle Acceleration and Velocity Metrics

Since sound is a mechanical wave, it can also be measured in terms of the vibratory motion of fluid particles. Particle motion can be measured in terms of three different (but related) quantities: displacement, velocity, or acceleration. Acoustic particle velocity is the time derivative of particle displacement, and likewise acceleration is the time derivative of velocity. For the present study, acoustic particle motion has been reported in terms of acceleration and velocity.

The particle velocity (v) is the physical speed of a particle in a material moving back and forth in the direction of the pressure wave. It can be derived from the pressure gradient and Euler's linearised momentum equation where ρ_0 is the density of the medium:

$$v = - \int \nabla p(t) dt / \rho_0 \quad (\text{A-10})$$

The particle acceleration (a) is the rate of change of the velocity with respect to time, and it can be obtained from equation A-13 as:

$$a = \frac{dv}{dt} = - \frac{\nabla p(t)}{\rho_0} \quad (\text{A-11})$$

Unlike sound pressure, particle motion is a vector quantity, meaning that it has both magnitude and direction: at any given point in space, acoustic particle motion has three different time-varying components (x , y , and z). Given the particle velocity in the x , y , and z , directions, v_x , v_y , and v_z , the particle velocity magnitude $|v|$ is computed per the Pythagorean equation:

$$|v| = \sqrt{v_x^2 + v_y^2 + v_z^2} \quad (\text{A-12})$$

The magnitude of particle acceleration is calculated similarly from the particle acceleration in the x , y , and z directions.

A.3. Marine Mammal Impact Criteria

It has been long recognised that marine mammals can be adversely affected by underwater anthropogenic noise. For example, Payne and Webb (1971) suggested that communication distances of fin whales are reduced by shipping sounds. Subsequently, similar concerns arose regarding effects of other underwater noise sources and the possibility that impulsive sources—primarily airguns used in seismic surveys—could cause auditory injury. This led to a series of workshops held in the late 1990s, conducted to address acoustic mitigation requirements for seismic surveys and other underwater noise sources (NMFS 1998, ONR 1998, Nedwell and Turnpenny 1998, HESS 1999, Ellison and Stein 1999). In the years since these early workshops, a variety of thresholds have been proposed for both injury and disturbance. The following sections summarize the recent development of thresholds; however, this field remains an active research topic.

A.3.1. Injury

In recognition of shortcomings of the SPL-only based injury criteria, in 2005 NMFS sponsored the Noise Criteria Group to review literature on marine mammal hearing to propose new noise exposure criteria. Some members of this expert group published a landmark paper (Southall et al. 2007) that suggested assessment methods similar to those applied for humans. The resulting recommendations introduced dual acoustic injury criteria for impulsive sounds that included peak pressure level thresholds and 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 the 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 human; 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 injury values for LF and HF cetaceans while retaining the filter shapes. Their revised thresholds were based on TTS-onset levels in harbour porpoises from Lucke et al. (2009), which led to a revised impulsive sound PTS threshold for HF cetaceans of 179 dB re 1 $\mu\text{Pa}^2\cdot\text{s}$. Because there were no data available for baleen whales, Wood et al. (2012) based their recommendations for LF cetaceans on results obtained from MF cetacean studies. In particular they referenced Finneran and Schlundt (2010) research, which found mid-frequency cetaceans are more sensitive to non-impulsive sound exposure than Southall et al. (2007) assumed. Wood et al. (2012) thus recommended a more conservative TTS-onset level for LF cetaceans of 192 dB re 1 $\mu\text{Pa}^2\cdot\text{s}$.

As of 2017, an optimal approach is not apparent. There is consensus in the research community that an SEL-based method is preferable either separately or in addition to an SPL-based approach to assess the potential for injuries. In August 2016, after substantial public and expert input into three draft versions and based largely on the above-mentioned literature (NOAA 2013, 2015, 2016), NMFS finalised technical guidance for assessing the effect of anthropogenic sound on marine mammal hearing (NMFS 2016). The guidance describes injury criteria with new thresholds and frequency weighting functions for the five hearing groups described by Finneran and Jenkins (2012). The latest revision to this work was published in 2018; with the criteria defined in NMFS (2018) applied in this report.

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 U.S. Navy technical report by Finneran (2015) recommended new auditory weighting functions. The overall shape of the auditory weighting functions is similar to human A-weighting functions, which follows the sensitivity of the human ear at low sound levels. The new frequency-weighting function is expressed as:

$$G(f) = K + 10 \log_{10} \left[\left(\frac{(f/f_{lo})^{2a}}{[1 + (f/f_{lo})^2]^a [1 + (f/f_{hi})^2]^b} \right) \right] \quad (\text{A-13})$$

Finneran (2015) proposed five functional hearing groups for marine mammals in water: low-, mid-, and high-frequency cetaceans, 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 noise impacts on marine mammals (NMFS 2016, NMFS 2018). Table A-1 lists the frequency-weighting parameters for each hearing group; Figure A-1 shows the resulting frequency-weighting curves.

Table A-1. Parameters for the auditory weighting functions used in this project as recommended by NMFS (2018).

Hearing group	a	b	f_{lo} (Hz)	f_{hi} (kHz)	K (dB)
Low-frequency cetaceans (baleen whales)	1.0	2	200	19,000	0.13
Mid-frequency cetaceans (dolphins, plus toothed, beaked, and bottlenose whales)	1.6	2	8,800	110,000	1.20
High-frequency cetaceans (true porpoises, <i>Kogia</i> , river dolphins, cephalorhynchid, <i>Lagenorhynchus cruciger</i> and <i>L. australis</i>)	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

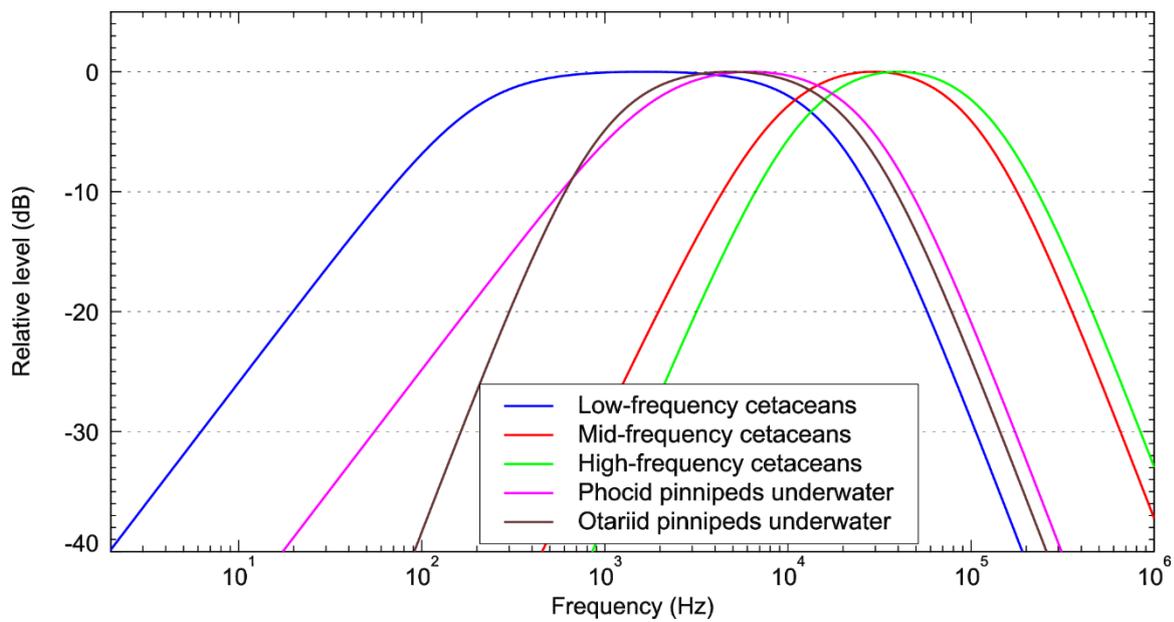


Figure A-1. Auditory weighting functions for functional marine mammal hearing groups used in this project as recommended by NMFS (2018).

Appendix B. Acoustic Source Model

B.1. Airgun Array Source Model

The source levels and directivity of the seismic source were predicted with JASCO's Airgun Array Source Model (AASM). AASM includes low- and high-frequency modules for predicting different components of the seismic source spectrum. The low-frequency module is based on the physics of oscillation and radiation of airgun bubbles, as originally described by Ziolkowski (1970), that solves the set of parallel differential equations that govern bubble oscillations. Physical effects accounted for in the simulation include pressure interactions between airguns, port throttling, bubble damping, and generator-injector (GI) gun behaviour discussed by Dragoset (1984), Laws et al. (1990), and Landro (1992). A global optimisation algorithm tunes free parameters in the model to a large library of airgun source signatures.

While airgun signatures are highly repeatable at the low frequencies, which are used for seismic imaging, their sound emissions have a large random component at higher frequencies that cannot be predicted using a deterministic model. Therefore, AASM uses a stochastic simulation to predict the high-frequency (800–25,000 Hz) sound emissions of individual airguns, using a data-driven multiple-regression model. The multiple-regression model is based on a statistical analysis of a large collection of high quality seismic source signature data recently obtained from the Joint Industry Program (JIP) on Sound and Marine Life (Mattsson and Jenkerson 2008). The stochastic model uses a Monte-Carlo simulation to simulate the random component of the high-frequency spectrum of each airgun in an array. The mean high-frequency spectra from the stochastic model augment the low-frequency signatures from the physical model, allowing AASM to predict airgun source levels at frequencies up to 25,000 Hz.

AASM produces a set of “notional” signatures for each array element based on:

- Array layout
- Volume, tow depth, and firing pressure of each airgun
- Interactions between different airguns in the array

These notional signatures are the pressure waveforms of the individual airguns at a standard reference distance of 1 m; they account for the interactions with the other airguns in the array. The signatures are summed with the appropriate phase delays to obtain the far-field source signature of the entire array in all directions. This far-field array signature is filtered into 1/3-octave-bands to compute the source levels of the array as a function of frequency band and azimuthal angle in the horizontal plane (at the source depth), after which it is considered a directional point source in the far field.

A seismic array consists of many sources and the point source assumption is invalid in the near field where the array elements add incoherently. The maximum extent of the near field of an array (R_{nf}) is:

$$R_{nf} < \frac{l^2}{4\lambda} \quad (\text{B-1})$$

where λ is the sound wavelength and l is the longest dimension of the array (Lurton 2002, §5.2.4). For example, a seismic source length of $l = 21$ m yields a near-field range of 147 m at 2 kHz and 7 m at 100 Hz. Beyond this R_{nf} range, the array is assumed to radiate like a directional point source and is treated as such for propagation modelling.

The interactions between individual elements of the array create directionality in the overall acoustic emission. Generally, this directionality is prominent mainly at frequencies in the mid-range between tens of hertz to several hundred hertz. At lower frequencies, with acoustic wavelengths much larger than the inter-airgun separation distances, the directionality is small. At higher frequencies, the pattern of lobes is too finely spaced to be resolved and the effective directivity is less.

B.2. Array Source Levels and Directivity

Figure B-1 shows the broadside (perpendicular to the tow direction), endfire (parallel to the tow direction), and vertical overpressure signature and corresponding power spectrum levels for the 2495 in³ array considered for the survey (Appendix D.4).

Horizontal 1/3-octave-band source levels are shown as a function of band centre frequency and azimuth (Figure B-2).

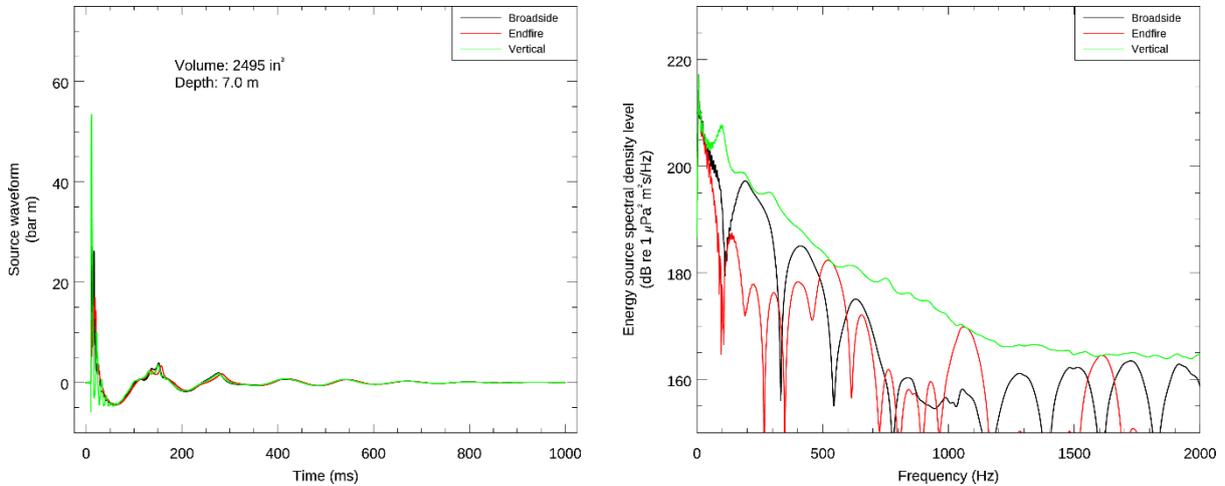


Figure B-1. Predicted source level details for the 2495 in³ array at 7 m towed depth. (Left) the overpressure signature and (right) the power spectrum for in-plane horizontal (broadside), perpendicular (endfire), and vertical directions.

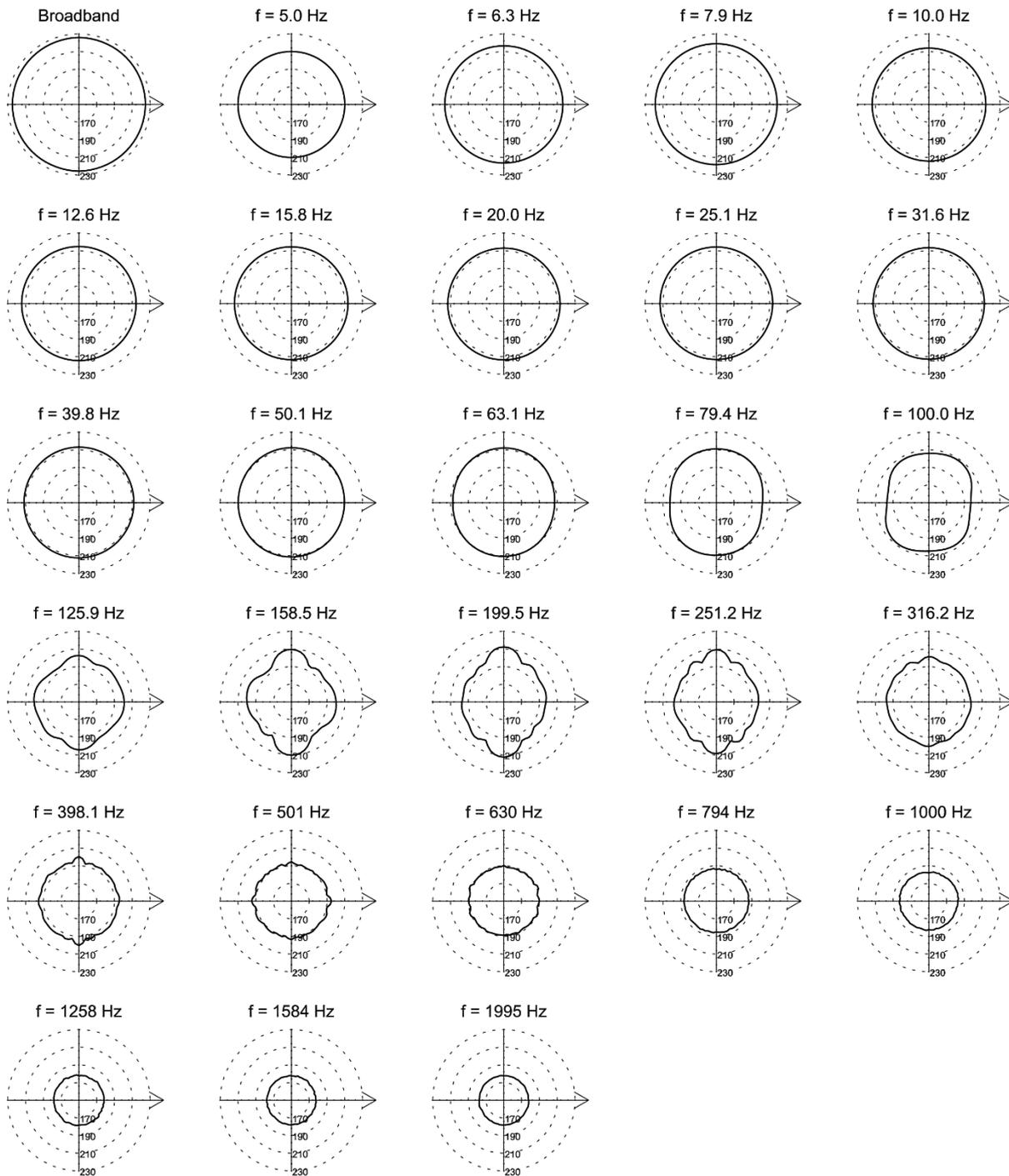


Figure B-2. Directionality of the predicted horizontal source levels for the 2495 in³ seismic source, 5 Hz to 2 kHz. Source levels (in dB re 1 $\mu\text{Pa}^2\cdot\text{s m}^2$) are shown as a function of azimuth for the centre frequencies of the 1/3-octave-bands modelled; frequencies are shown above the plots. The perpendicular direction to the frame is to the right. Tow depth is 7 m (see Figure B-1).

Appendix C. Sound Propagation Models

C.1. MONM-BELLHOP

Long-range sound fields were computed using JASCO’s Marine Operations Noise Model (MONM). Compared to VSTACK, MONM less accurately predicts steep-angle propagation for environments with higher shear speed but is well suited for effective longer-range estimation. This model computes sound propagation at frequencies of 10 Hz to 1.25 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 > 1.25 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 transmission 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 $N = 360^\circ/\Delta\theta$ number of planes (Figure C-1).

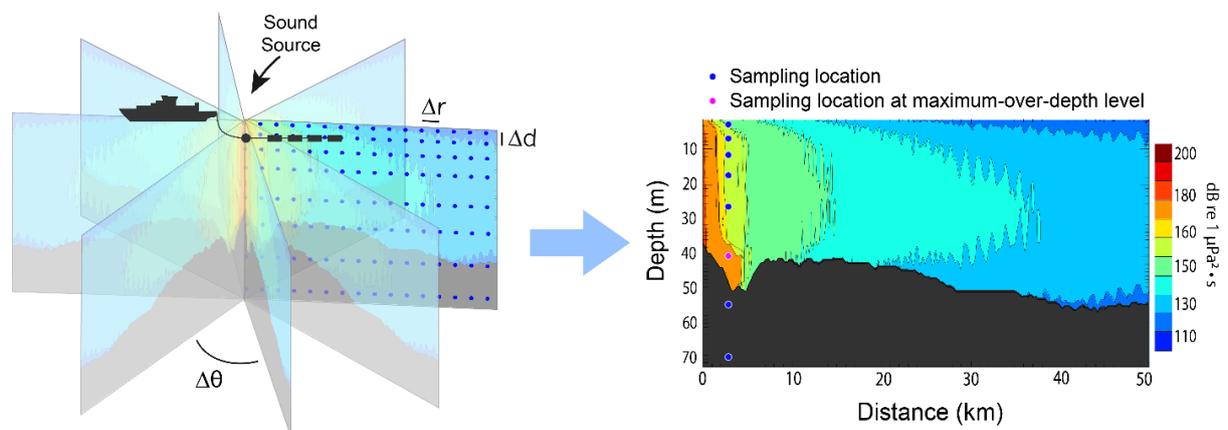


Figure C-1. The N×2-D and maximum-over-depth modelling approach used by MONM.

MONM treats frequency dependence by computing acoustic transmission loss at the centre frequencies of 1/3-octave-bands. Sufficiently many 1/3-octave-bands, starting at 10 Hz, are modelled to include most of the acoustic energy emitted by the source. At each centre frequency, the transmission loss is modelled within each of the N vertical planes as a function of depth and range from the source. The 1/3-octave-band received per-pulse SEL are computed by subtracting the band transmission loss values from the directional source level in that frequency band. Composite broadband received per-pulse SEL are then computed by summing the received 1/3-octave-band levels.

The received per-pulse SEL sound field within each vertical radial plane is sampled at various ranges from the source, generally with a fixed radial step size. At each sampling range along the surface, the sound field is sampled at various depths, with the step size between samples increasing with depth below the surface. The step sizes are chosen to provide increased coverage near the depth of the source and at depths of interest in terms of the sound speed profile. For areas with deep water, sampling is not performed at depths beyond those reachable by marine mammals. The received per-pulse 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-pulse SEL. These maximum-over-depth per-pulse SEL are presented as colour contours around the source.

C.2. Full Waveform Range-dependent Acoustic Model: FWRAM

For impulsive sounds from the seismic source, time-domain representations of the pressure waves generated in the water are required to calculate SPL and PK. Furthermore, the seismic source must be represented as a distributed source to accurately characterise vertical directivity effects in the near-field zone. For this study, synthetic pressure waveforms were computed using FWRAM, which is a time-domain acoustic model based on the same wide-angle parabolic equation (PE) algorithm as MONM. FWRAM computes synthetic pressure waveforms versus range and depth for range-varying marine acoustic environments, and it takes the same environmental inputs as MONM (bathymetry, water sound speed profile, and seafloor geoacoustic profile). Unlike MONM, FWRAM computes pressure waveforms via Fourier synthesis of the modelled acoustic transfer function in closely spaced frequency bands. FWRAM employs the array starter method to accurately model sound propagation from a spatially distributed source (MacGillivray and Chapman 2012).

Besides providing direct calculations of the PK and SPL, the synthetic waveforms from FWRAM can also be used to convert the SEL values from MONM to SPL.

C.3. Wavenumber Integration Model

Sound pressure levels near the seismic source were modelled using JASCO's VSTACK wavenumber integration model. VSTACK computes synthetic pressure waveforms versus depth and range for arbitrarily layered, range-independent acoustic environments using the wavenumber integration approach to solve the exact (range-independent) acoustic wave equation. This model is valid over the full angular range of the wave equation and can fully account for the elasto-acoustic properties of the sub-bottom. Wavenumber integration methods are extensively used in the field of underwater acoustics and seismology where they are often referred to as reflectivity methods or discrete wavenumber methods. VSTACK computes sound propagation in arbitrarily stratified water and seabed layers by decomposing the outgoing field into a continuum of outward-propagating plane cylindrical waves. Seabed reflectivity in the model is dependent on the seabed layer properties: compressional and shear wave speeds, attenuation coefficients, and layer densities. The output of the model can be post-processed to yield estimates of the SEL, SPL, and PK.

VSTACK accurately predicts steep-angle propagation in the proximity of the source, but it is computationally slow at predicting sound pressures at large distances due to the need for smaller wavenumber steps with increasing distance. Additionally, VSTACK assumes range-invariant bathymetry with a horizontally stratified medium (i.e., a range-independent environment) which is azimuthally symmetric about the source. VSTACK is thus best suited to modelling the sound field near the source.

C.4. Particle Motion

VSTACK was also used to compute estimates of particle acceleration and velocity for the three shallowest modelled sites (Sites 1–3, 50–79 m water depth) for the 2495 in³ airgun array. Particle motion waveforms were modelled and pulse metrics were computed from the time-domain traces. VSTACK uses the wavenumber integration approach to solve the exact acoustic wave equation for arbitrarily layered range-independent acoustic environments.

The VSTACK model setup for the particle velocity scenarios was identical to that for the peak pressure scenarios (Section 5.2.1.2) in terms of source treatment, frequency range and environmental model. The particle acceleration and velocity waveforms were computed to a maximum distance of 1000 m in the broadside and endfire directions from the centre of the airgun array for a receiver 50 cm above the seafloor.

As discussed above in Appendix A.2, particle velocity (v) is the physical speed of a particle in a material. It can be derived from the pressure gradient and Euler's linearised momentum equation where ρ_0 is the density of the medium:

$$v = - \int \nabla p(t) dt / \rho_0 \quad (\text{C-1})$$

Since the wavenumber integration kernel is a product of analytic expressions in terms of range and depth, VSTACK computes particle velocity by computing the spatial gradient of the pressure field analytically in the frequency domain. Fourier synthesis is applied to compute time series synthetic pressure and/or velocity waveforms at depth and range receivers by convolving the source waveforms with the impulse response of the waveguide. Particle velocity metrics at each receiver location were calculated from the modelled particle motion along three perpendicular axes (horizontal and along the source-receiver path, horizontal and perpendicular to the source-receiver path, and vertical).

The particle velocity results were converted to acceleration by time differentiation. The peak particle acceleration and velocity were calculated from the maximum of the predicted acceleration and velocity magnitude, defined as "peak magnitude" and are presented as plots of peak value versus range.

Appendix D. Methods and Parameters

This section describes the specifications of the seismic source that was used at all sites and the environmental parameters used in the propagation models.

D.1. 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 D-1).

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 D-1(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 D-1(b), on the other hand, $R_{95\%}$ neglects to account for significant protrusions in the footprint. In such cases R_{max} might better represent the region of effect in specific directions. Cases such as this are usually associated with bathymetric features affecting propagation. The difference between R_{max} and $R_{95\%}$ depends on the source directivity and the non-uniformity of the acoustic environment.

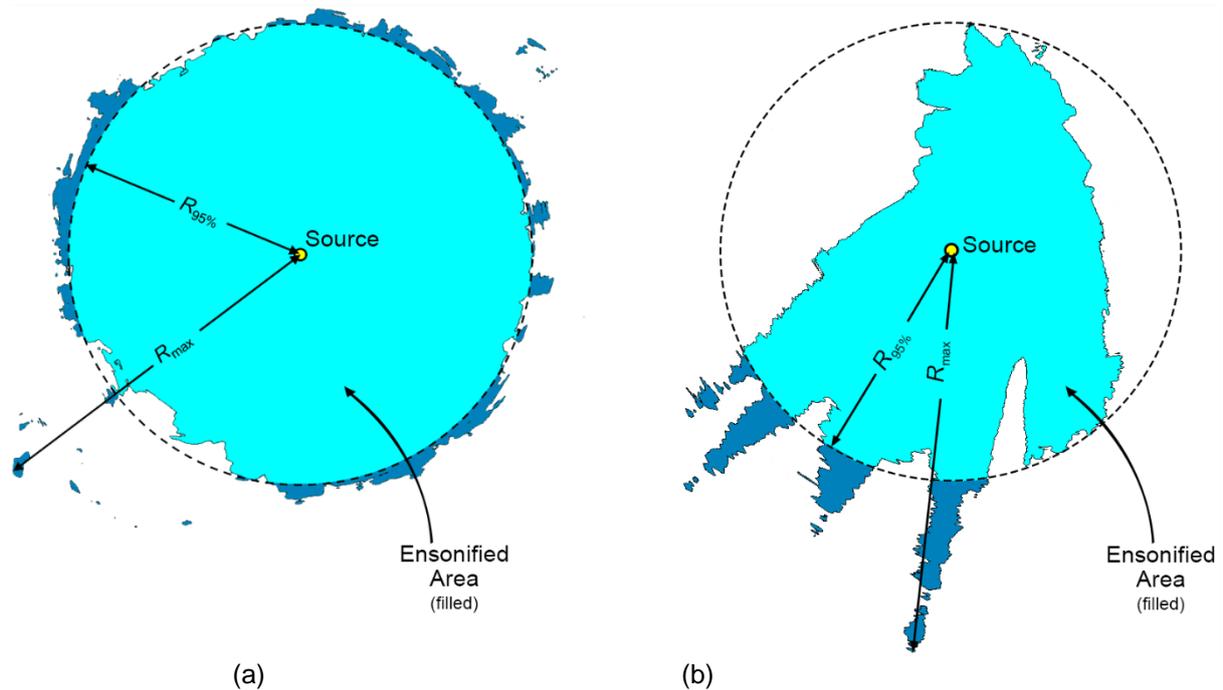


Figure D-1. Sample areas ensonified to an arbitrary sound level with R_{max} and $R_{95\%}$ ranges shown for two different scenarios. (a) Largely symmetric sound level contour with small protrusions. (b) Strongly asymmetric sound level contour with long protrusions. Light blue indicates the ensonified areas bounded by $R_{95\%}$; darker blue indicates the areas outside this boundary which determine R_{max} .

D.2. Estimating SPL from Modelled SEL Results

The per-pulse SEL of sound pulses is an energy-like metric related to the dose of sound received over a pulse's entire duration. The pulse SPL on the other hand, is related to its intensity over a specified time interval. Seismic pulses typically lengthen in duration as they propagate away from their source, due to seafloor and surface reflections, and other waveguide dispersion effects. The changes in pulse length, and therefore the time window considered, affect the numeric relationship between SPL and SEL. This study has applied a fixed window duration to calculate SPL ($T_{\text{fix}} = 125$ ms; see Appendix A.1), as implemented in Martin et al. (2017b). Full-waveform modelling was used to estimate SPL, but this type of modelling is computationally intensive, and can be prohibitively time consuming when run at high spatial resolution over large areas.

For the current study, FWRAM (Appendix C.2) was used to model synthetic seismic pulses over the frequency range 5–1024 Hz. This was performed along all broadside and endfire radials at a single site. FWRAM uses Fourier synthesis to recreate the signal in the time domain so that both the SEL and SPL from the source can be calculated. The differences between the SEL and SPL were extracted for all ranges and depths that corresponded to those generated from the high spatial-resolution results from MONM. A 125 ms fixed time window positioned to maximize the SPL over the pulse duration was applied. The resulting SEL-to-SPL offsets were averaged in 0.02 km range bins along each modelled radial and depth, and the 90th percentile was selected at each range to generate a generalised range-dependent conversion function for each site. The range-dependent conversion function was applied to predicted per-pulse SEL results from MONM to model SPL values. Figure D-2 show the conversion offsets for Site 2, the spatial variation is caused by changes in the received airgun pulse as it propagates from the source.

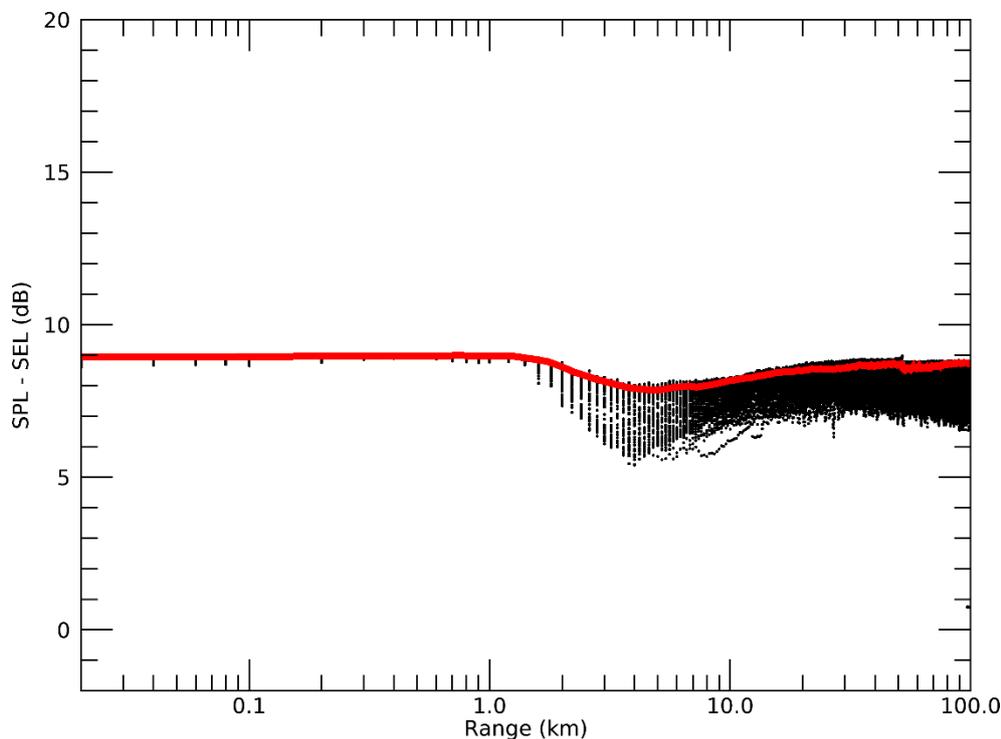


Figure D-2. *Site 2*: Range-and-depth-dependent conversion offsets for converting SEL to SPL for seismic pulses. Slices are shown for the 2495 in³ seismic source. Black lines are the modelled differences between SEL and SPL across different radials and receiver depths; the solid red line is the 90th percentile of the modelled differences at each range.

D.3. Environmental Parameters

D.3.1. Bathymetry

Water depths throughout the modelled area were extracted from the Australian Bathymetry and Topography Grid, a 9 arc-second grid rendered for Australian waters (Whitway 2009) for the region shown in Figure 1. Bathymetry data were extracted and re-gridded onto a Map Grid of Australia (MGA) coordinate projection (Zone 55) with a regular grid spacing of 100 x 100 m to generate the bathymetry in Figure D-3.

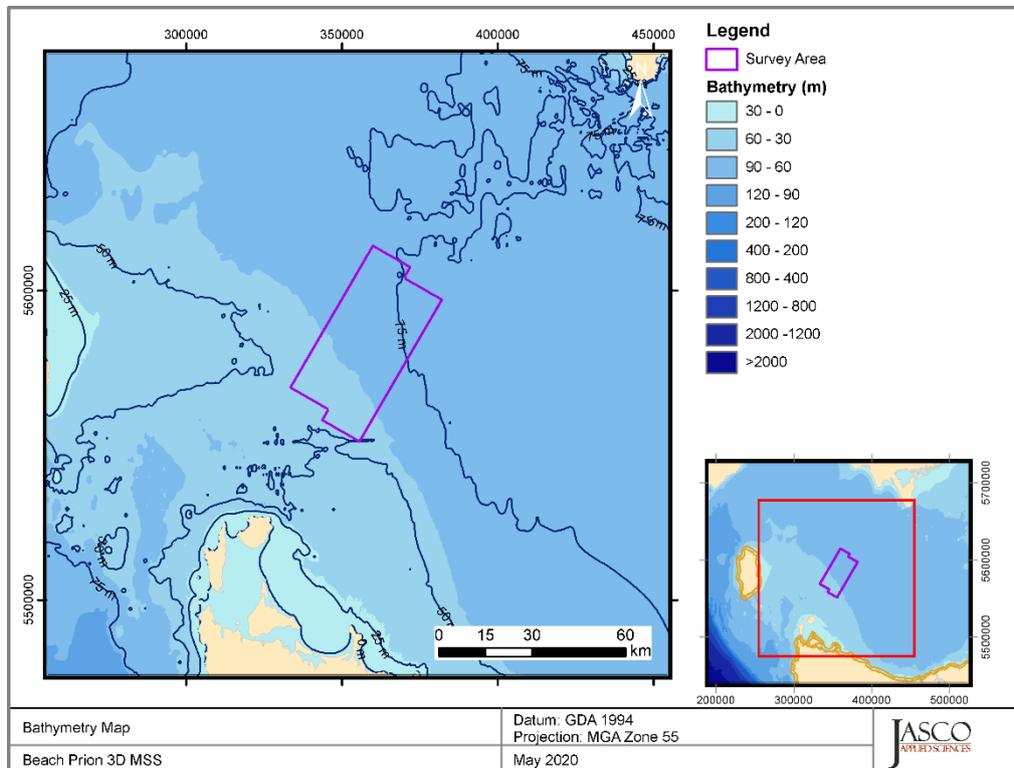


Figure D-3. Bathymetry map of the modelling area for the Prion 3-D MSS.

D.3.2. Sound speed profile

The sound speed profiles for the modelled sites were 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 Coppins (1981).

Mean monthly sound speed annual profiles were derived from the GDEM profiles within a 100 km box radius encompassing all modelled sites. The month of February is expected to be most favourable for sound propagation at the seafloor during the proposed survey time frame. As such, February was selected for sound propagation modelling to ensure precautionary estimates of distances to received sound level thresholds for seafloor receptors. Figure D-4 shows the resulting profile used as input to the sound propagation modelling.

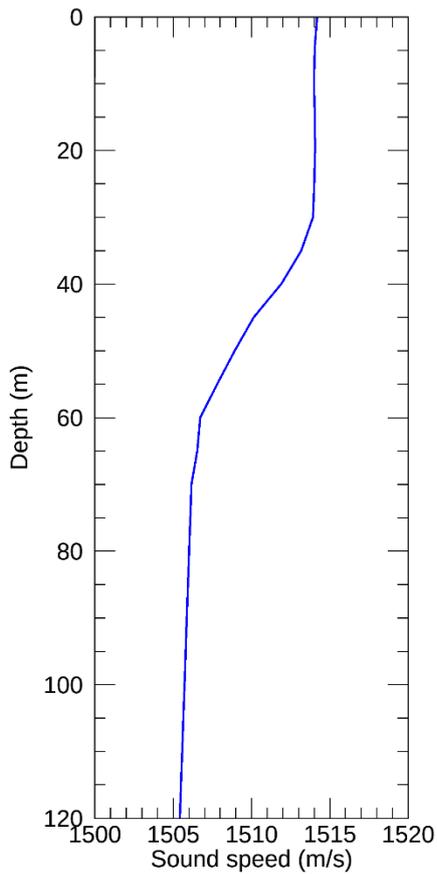


Figure D-4. The sound speed profile (February) used for the modelling. Profile was calculated from temperature and salinity profiles from GDEM V 3.0 (GDEM; Teague et al. 1990, Carnes 2009).

Geoacoustics

A single geoacoustic profile was used for all modelled sites due to their proximity and near constant water depth. Geoacoustic parameters used for modelling at sites were derived from sedimentary grain size measurements from the Australian Government’s Marine Sediments (MARS) database (Heap 2009). On average, the surficial grain size indicates sand with a minor component of mud is present throughout the modelled area. Representative grain sizes and porosity were used in the grain-shearing model proposed by Buckingham (2005) to estimate the geoacoustic parameters required by the sound propagation models. Well log information from Trigg et al. (2003) (BASS-3 well) was used to determine the deeper stratigraphy and to estimate the thickness of un-lithified sediments. The parameters for cemented limestone from Duncan et al. (2009) were used for the acoustic basement of the geoacoustic profile. The full profile and geoacoustic parameters used for modelling at Sites 1–4 are provided in Table D-1.

Table D-1. Geoacoustic profile for the Sites 1–4

Depth below seafloor (m)	Predicted lithology	Density (g/cm ³)	Compressional wave		Shear wave	
			Speed (m/s)	Attenuation (dB/λ)	Speed (m/s)	Attenuation (dB/λ)
0–10	Unconsolidated muddy fine carbonate sand	2.05	1643–1812	0.17–0.79	339	3.65
10–20	Compact muddy fine carbonate sand	2.05	1812–1858	0.79–1.30		
20–50		2.05	1858–1994	1.30–1.56		
50–100		2.05	1994–2118	1.56–1.65		
100–170		2.05	2118–2241	1.65–1.78		
≥170	Cemented Limestone (Calcarenite)	2.40	2800	0.1		

D.4. Seismic Sources

Figure D-5 shows the layout of the 2495 in³ seismic source used for modelling in this study and considered in Appendix B. Table D-2 provides details of the airgun parameters.

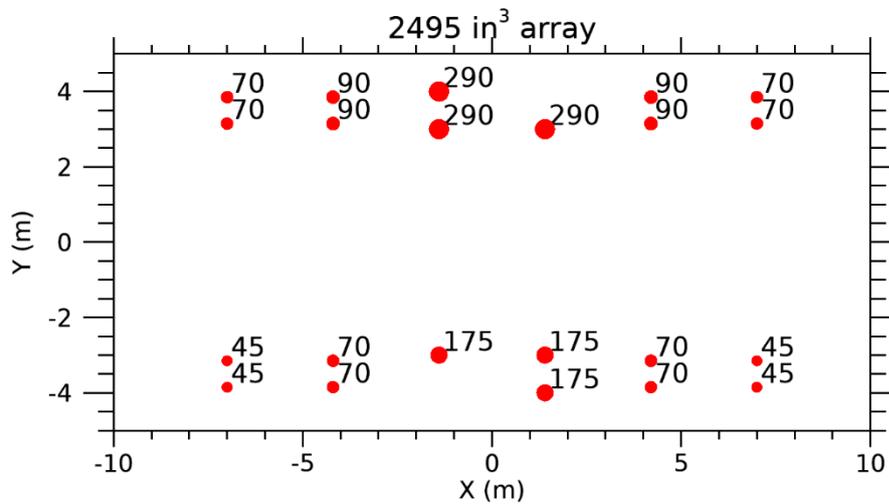


Figure D-5. Layout of the modelled 2495 in³ seismic array. Tow depth is 7 m. The labels indicate the firing volume (in cubic inches) for each airgun. Also see Table D-2. Table D-2. Layout of the modelled 2495 in³ seismic array. Tow depth is 7 m. Firing pressure for all guns is 2000 psi. Also see Figure D-5.

Gun	x (m)	y (m)	z (m)	Volume (in ³)	Gun	x (m)	y (m)	z (m)	Volume (in ³)
1	7	-3.85	7	45	13	7	3.15	7	70
2	7	-3.15	7	45	14	7	3.85	7	70
3	4.2	-3.85	7	70	15	4.2	3.15	7	90
4	4.2	-3.15	7	70	16	4.2	3.85	7	90
5	1.4	-4	7	175	17	1.4	3	7	290
6	1.4	-3	7	175	19	-1.4	3	7	290
8	-1.4	-3	7	175	20	-1.4	4	7	290
9	-4.2	-3.85	7	70	21	-4.2	3.15	7	90
10	-4.2	-3.15	7	70	22	-4.2	3.85	7	90
11	-7	-3.85	7	45	23	-7	3.15	7	70
12	-7	-3.15	7	45	24	-7	3.85	7	70

D.5. Model Validation Information

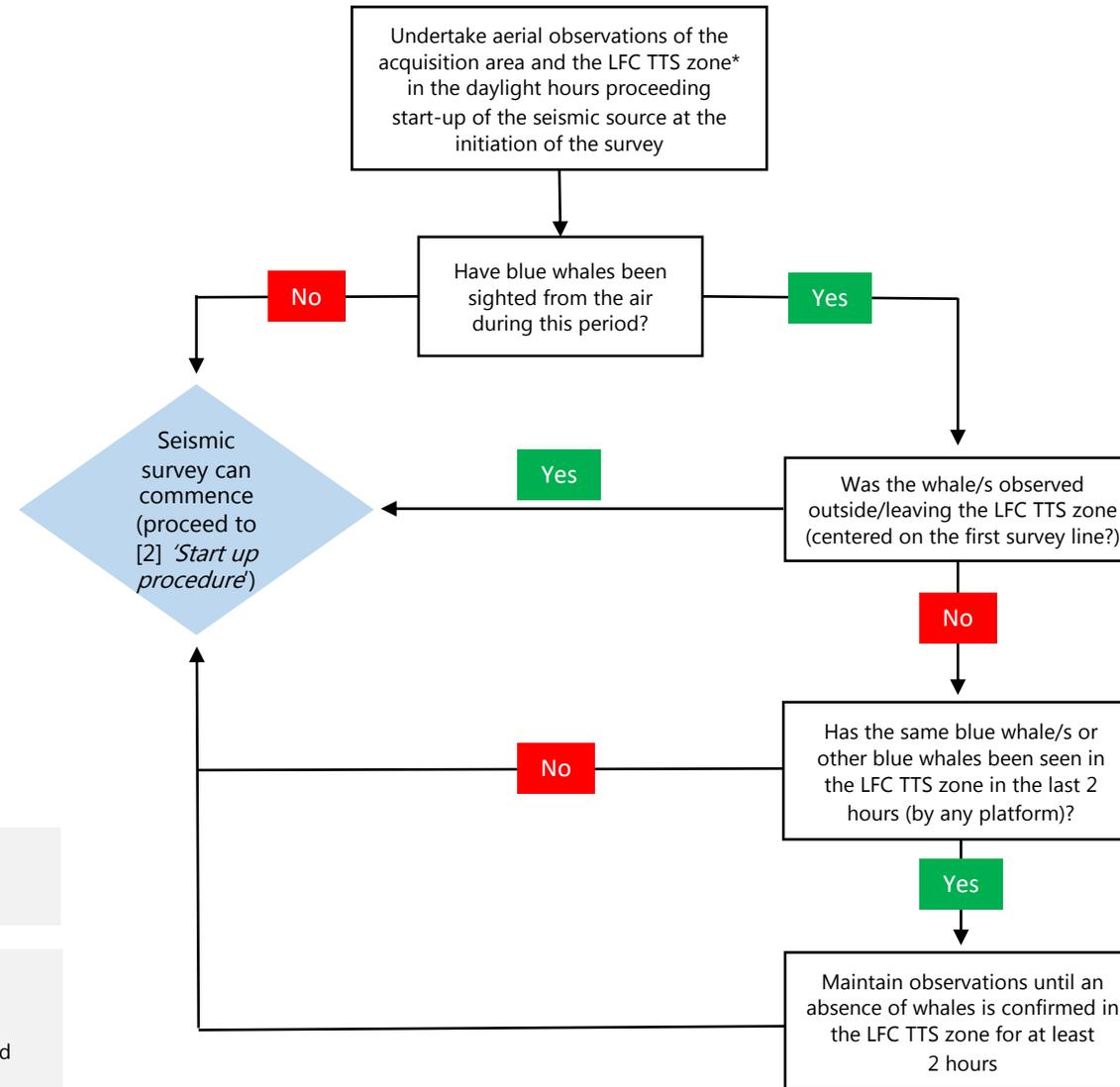
Predictions from JASCO's Airgun Array Source Model (AASM) and propagation models (MONM, FWRAM and VSTACK) have been validated against experimental data from a number of underwater acoustic measurement programs conducted by JASCO globally, including the United States and Canadian Arctic, Canadian and 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 which have included internal validation of the modelling (including McCrodon et al. 2011, Austin and Warner 2012, McPherson and Warner 2012, Austin and Bailey 2013, Austin et al. 2013, Zykov and MacDonnell 2013, Austin 2014, Austin et al. 2015, Austin and Li 2016, Martin and Popper 2016).

Appendix 10

Adaptive Whale Management Procedure

[1] Pre-start observations of acquisition area



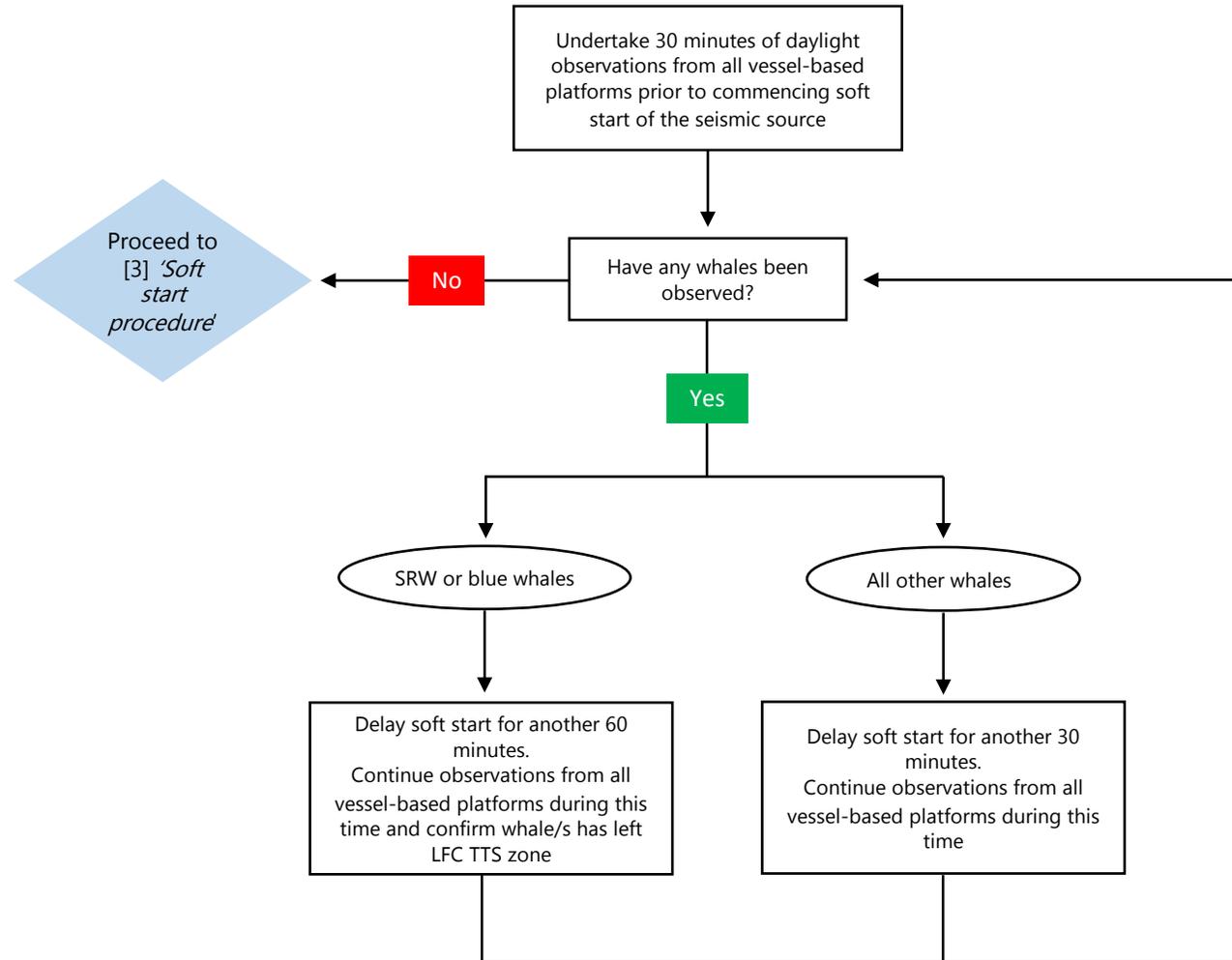
LFC = low frequency cetacean.

* TTS = temporary threshold shift (which is 27.9 km for LFC).

All vessel-based platforms:

- Survey vessel (3 MMOs);
- Support vessel (1 MMO and 1 trained crew member); and
- Chase vessel (2 trained crew members).

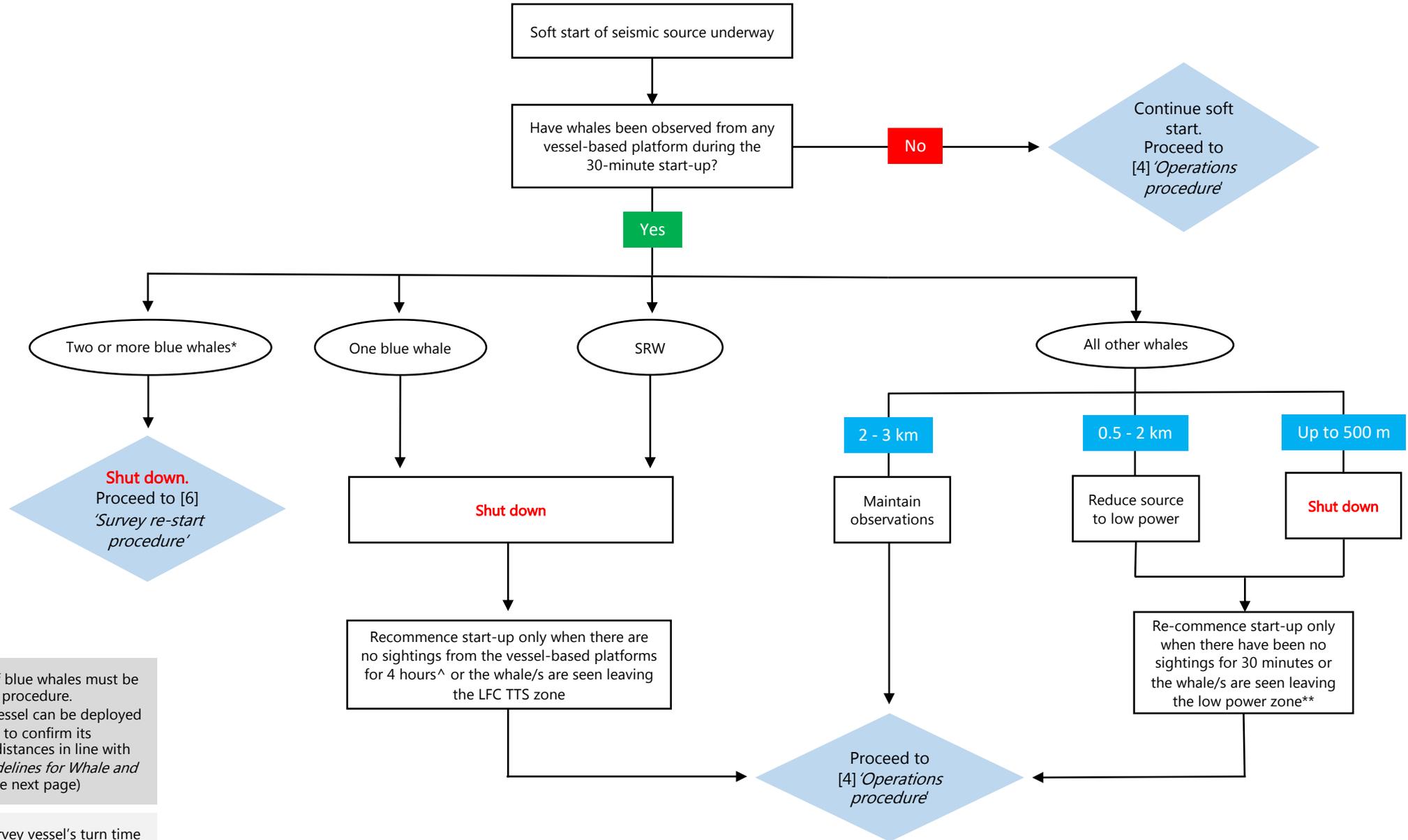
[2] Pre-watch procedure



SRW = southern right whale (single, pod or cow/calf pair)

Where a positive whale identification cannot be made, assume it is a blue whale

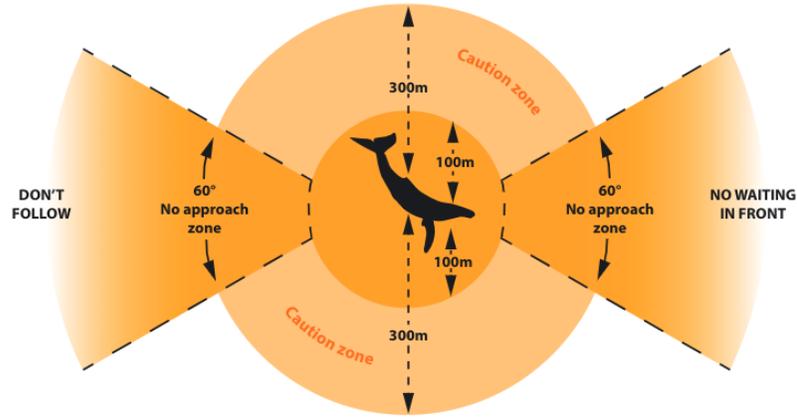
[3] Soft start procedure



* A positive identification of blue whales must be made to trigger the re-start procedure. The support and/or chase vessel can be deployed to move closer to the whale to confirm its identification (maintaining distances in line with the *Australian National Guidelines for Whale and Dolphin Watching 2017*) (see next page)

^ 4 hours represents the survey vessel's turn time

Vessel approach distances to whales (to confirm identification)

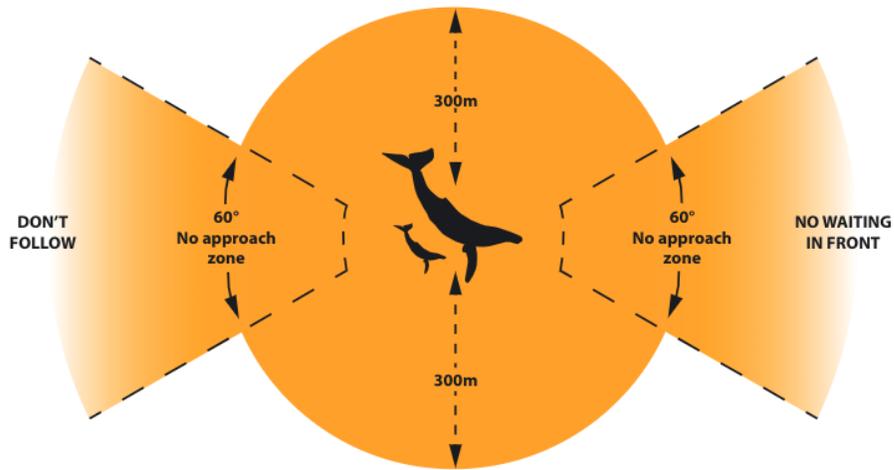


Adult whales

No approach zone = 100 m. Do not enter, plus area of 300 m directly in front or behind

Caution zone = 300 m radius. Vessel must operate at <6 knots, no more than 3 vessels

Do not approach closer than 1 km for SRW



Whale calves

Caution zone = 300 m. Do not enter when calf is present, do not follow and do not wait in front

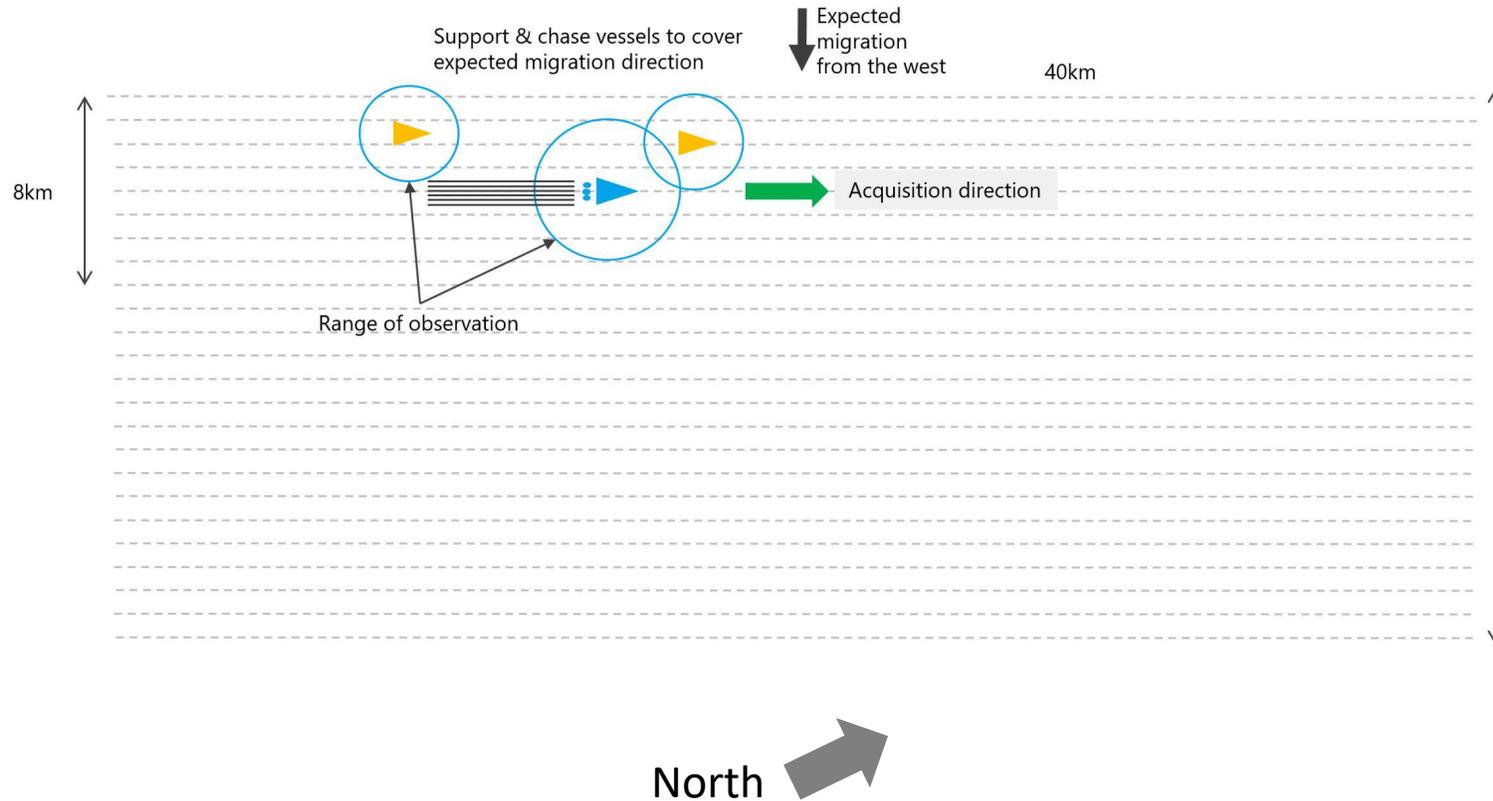
Do not enter or remain in caution zone if whales shows signs of disturbance

Do not approach closer than 1 km for SRW

Taken from the Australian National Guidelines for Whale and Dolphin Watching (Dept of Environment & Energy, 2017)

[4] Operations procedure

Typical vessel spread



Assumptions

Vessel speed = 5 knots (9.2 km/hr)

Visibility from survey vessel = 3 km radius

Visibility from support/chase vessels = 2 km radius

Travel distances

1 survey line = 4.3 hours

1 line turn = 4 hours

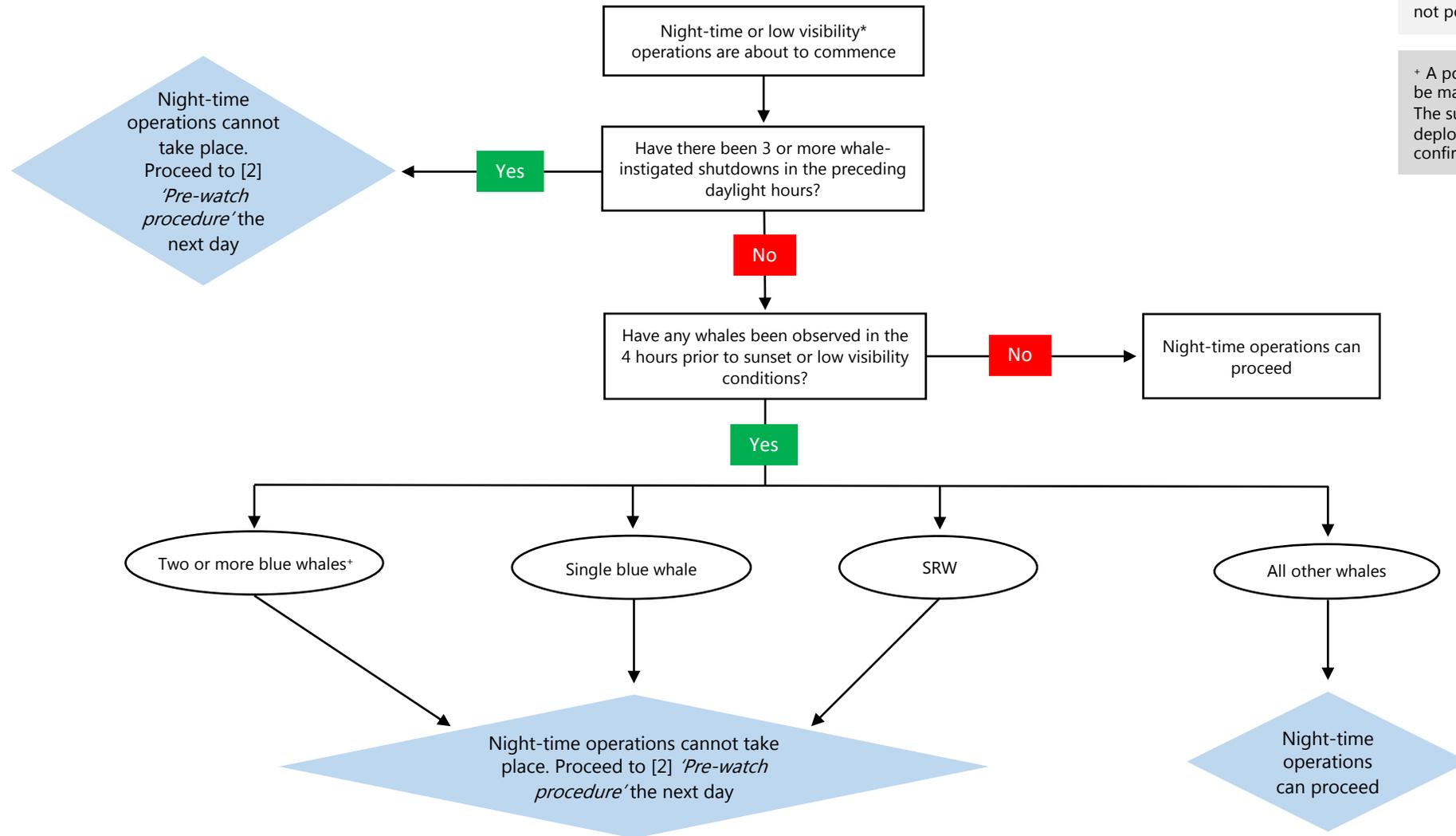


Survey vessel



Support & chase vessels

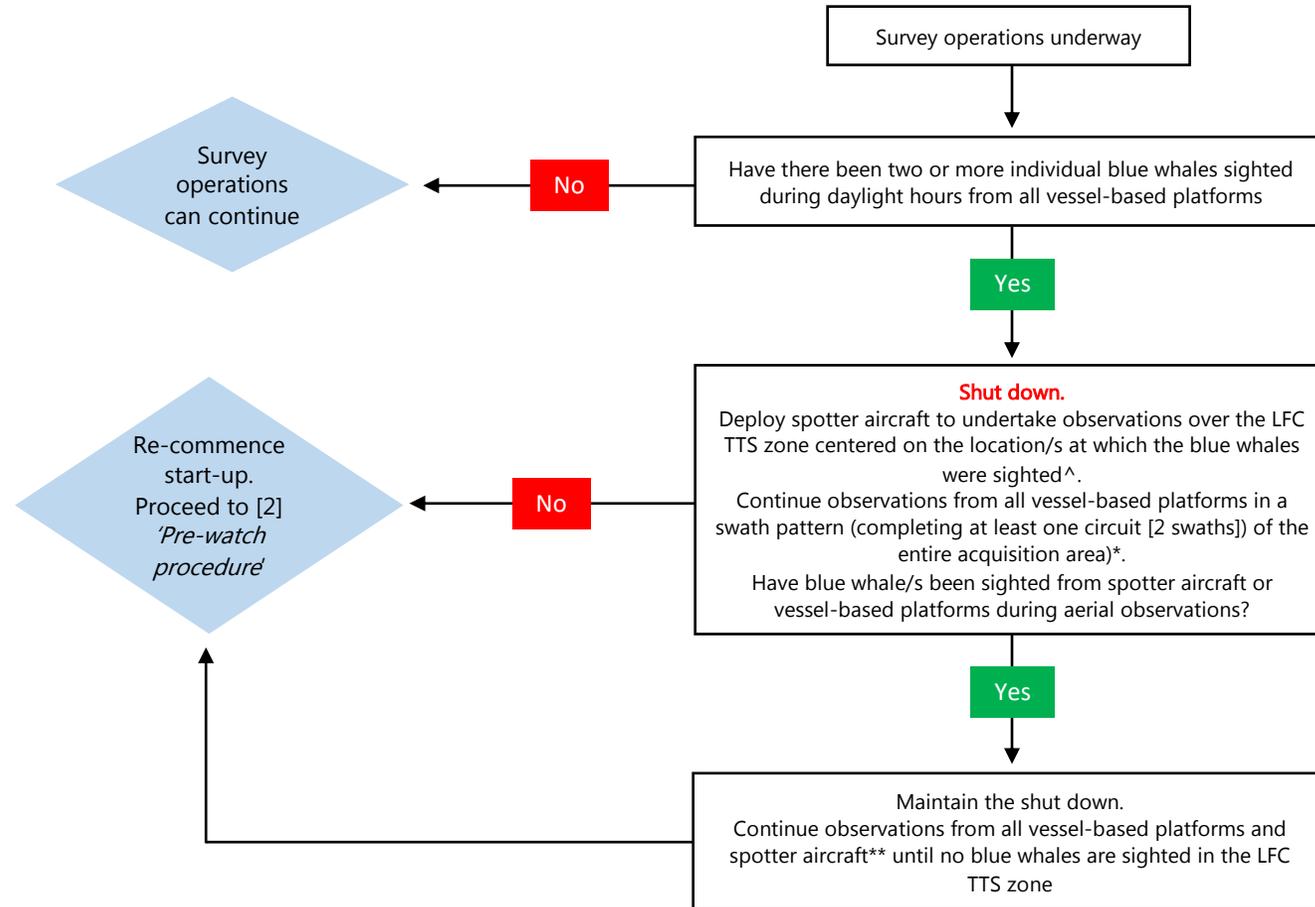
[5] Night-time and low visibility procedure



* Low visibility means that observations are not possible beyond 3 km.

+ A positive identification of blue whales must be made to trigger the re-start procedure. The support and/or chase vessel can be deployed to move closer to the whale to confirm its identification.

[6] Survey re-start procedure (blue whales)



^ The LFC TTS zone is a radius of 27.9 km.

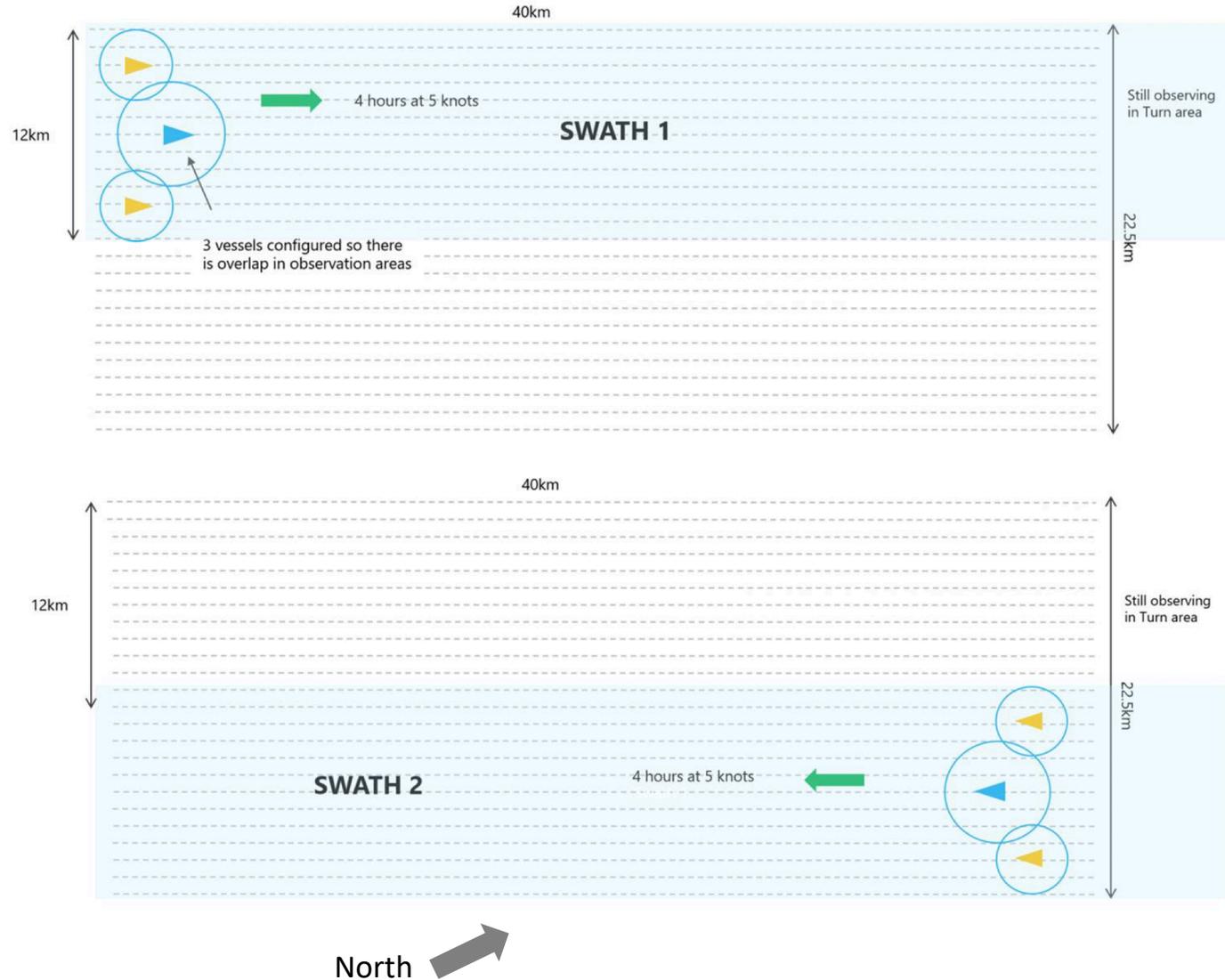
* See next page for swath pattern.

** It is assumed that one aerial circuit could be completed each day (allowing for mobilisation time to and from Warrnambool, Vic). Where daylight hours, fuel availability at King Island and safety considerations allow, another circuit of of the acquisition area could be undertaken in the same day.

See next pages for notional mobilisation path and observation circuit, including travel time assumptions.

[6] Survey re-start procedure (blue whales)

Vessel swath-based search pattern



Assumptions

Vessel speed = 5 knots (9.2 km/hr)

Visibility from survey vessel = 3 km radius

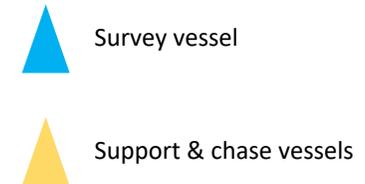
Visibility from support/chase vessels = 2 km radius

Travel distances

1 survey line = 4.3 hours

1 line turn = 4 hours

2 swaths (covering entire acquisition area) will take 12.3 hours



[6] Survey re-start procedure (blue whales)

Spotter aircraft notional mobilisation path and search circuit

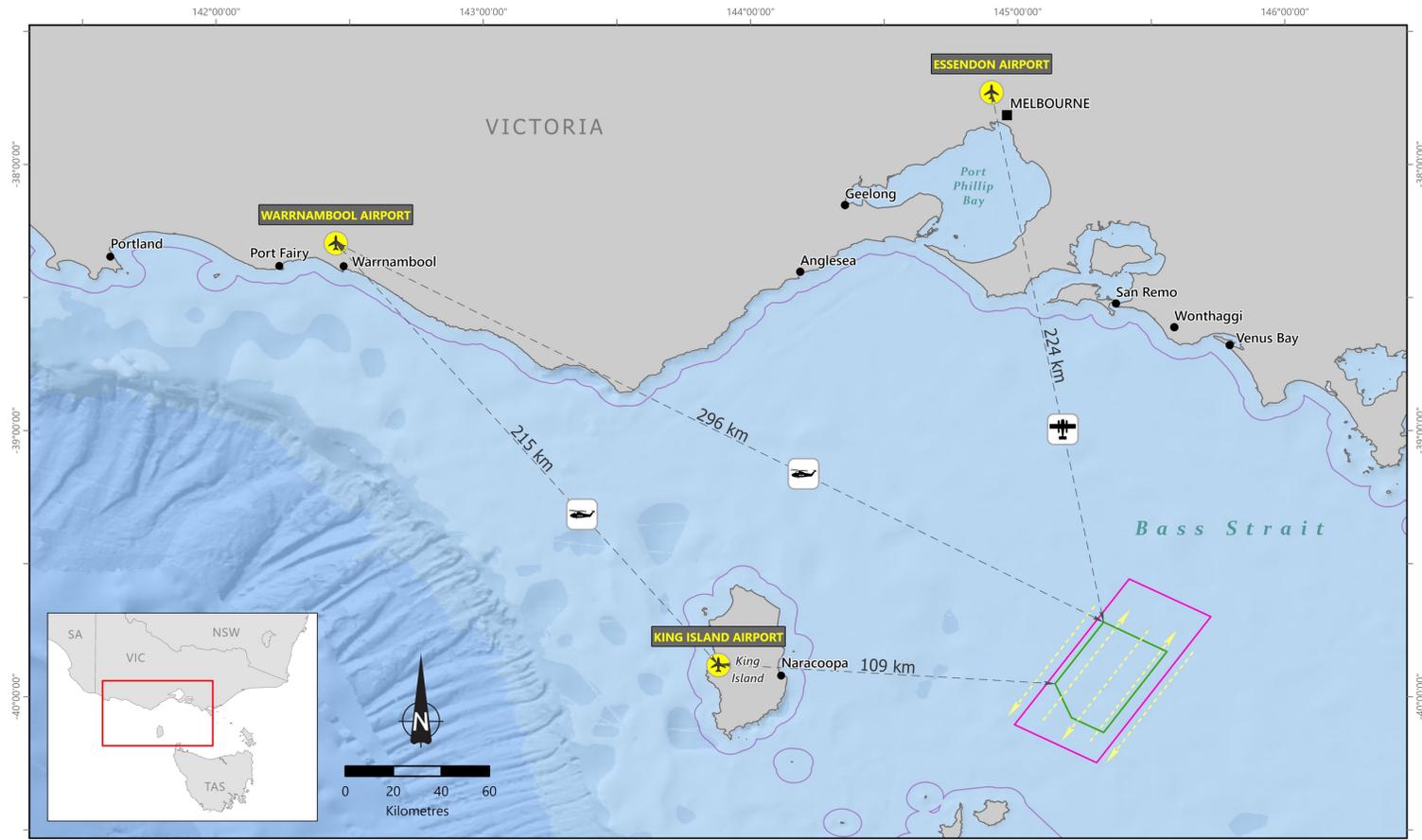


Image source: ESRI. Data sources: Beach operational data, GA. Distances are approximate.

There is no warranty that this map is free from errors or omissions.

Coordinates: GDA2020

- Airport
- Helicopter route
- Plane route
- Flight transect
- Coastal waters (3 nm limit)
- Prion seismic survey acquisition area
- Prion seismic survey operational area



10/08/2021 | BG21-0015-R1

Aerial observations

An aerial observations flight plan to cover the LFC TTS zone is in development with the Blue Whale Study.

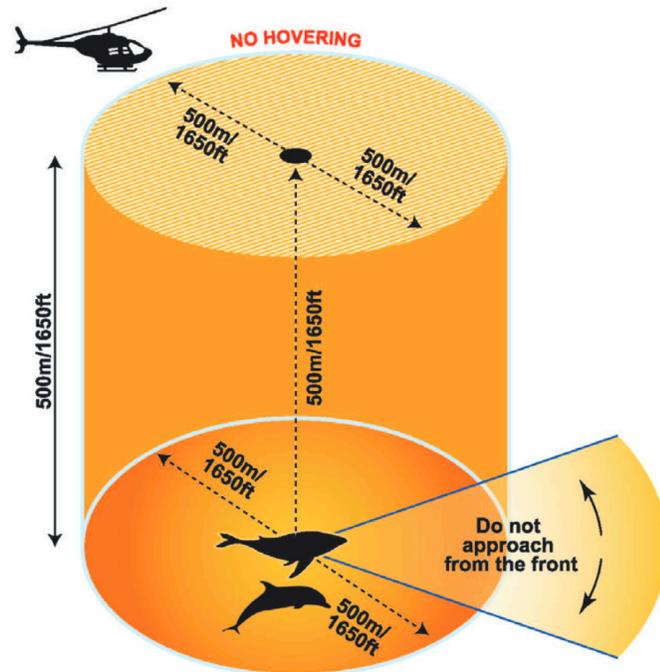
The flight transects illustrated on the map are indicative only.

Mobilisation and observation time is expected to take 6-9 hours, depending on whether a helicopter is mobilised from Warrnambool (where Beach has helicopters contracted to support the Otway drilling project) or from Essendon (where Beach has a contract with Sharp Airlines for a fixed-wing aircraft).

[6] Survey re-start procedure (blue whales)

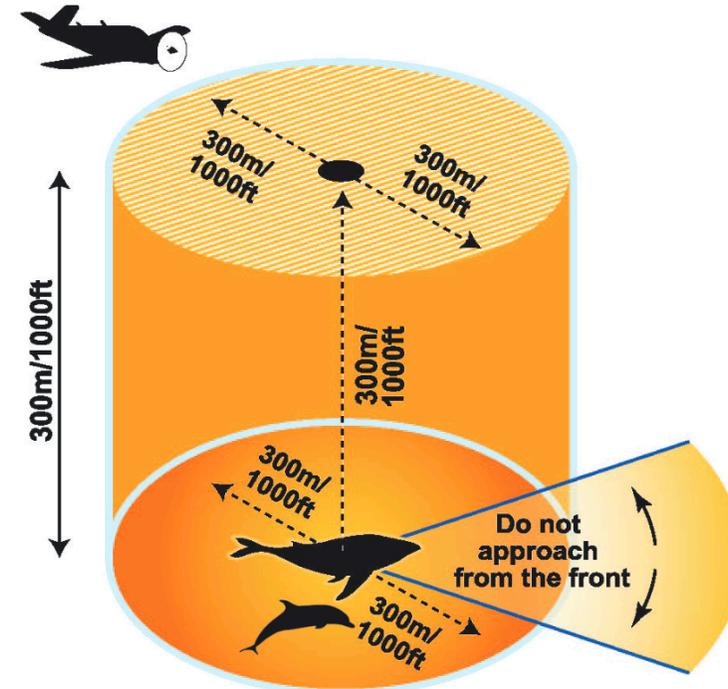
Spotter aircraft whale approach distances

Taken from the Australian National Guidelines for Whale and Dolphin Watching (Dept of Environment & Energy, 2017)



Helicopters

- Do not fly lower than 500 m within a 500-m radius of whale
- Do not approach whale from head on
- Do not hover



Fixed wing aircraft

- Do not fly lower than 300 m within a 300-m radius of whale
- Do not approach whale from head on

Appendix 11

Fair Ocean Access information sheet



Introduction

Licensed commercial fishers and petroleum title holders have lawful rights and obligations to carry out their activities safely and without interference. Beach is committed to *Fair Ocean Access* by minimising impacts from its offshore activities to commercial fishers.

Beach's *Fair Ocean Access Procedure* sets out commitments by Beach to genuine consultation with fishers to understand and minimise safety, environmental and economic impacts.

Where impacts cannot be minimised by Beach, and a fisher has acted to avoid risks and impacts to a Beach project, Beach's *Fair Ocean Access Procedure* includes a simple and fair process for a fisher to claim compensation for an economic loss, and a rapid approval and payment process.

Safety

Safety is Beach's first priority and operating safely will sometimes require restricted access for relatively small offshore areas over short periods. Beach will consult with fishers to seek to minimise potential disturbance to areas that are regular fishing grounds and where the fisher has no alternative fishing options.

Environmental Protection

Beach's projects are subject to stringent assessment and mitigation of potential environmental impacts. Beach must prepare Environment Plans for its offshore projects. These identify all environmental and socio-economic impacts and set out mitigation measures to reduce impacts, so they are "as low as reasonably practicable" and acceptable by regulators. Mitigation measures may include compensation where impacts on the commercial fishing industry cannot be minimised and where these impacts cause an economic loss.

Assessment of impacts includes identifying State and Commonwealth commercial fisheries that are actively fished in Beach's project areas and any biological or economic impacts to those fisheries. Consultation with commercial fishers is an important part of Beach's environmental assessment process.

Genuine consultation

Beach will consult with openness, transparency and mutual respect with fishers who may be directly impacted by Beach's projects. Beach will use its best endeavours to consult with all potentially impacted fishers during preparation of its Environment Plan for a project, and before projects commence.

Respecting the representative role of fishing associations, Beach will seek engagement with potentially impacted fishers via the relevant association. Beach will also engage directly with a fisher if they are not a member of an association, or where they request direct engagement with Beach.

Where a fishing association or fisher believes they will be impacted by a Beach project, Beach will share its fishing impact assessments, validate that with fishers, and discuss their specific circumstances with the objective of minimising potential impacts.

If project avoidance and impact minimisation is not possible, Beach will provide a copy of its full *Fair Ocean Access Procedure* and discuss mitigation options set out in the procedure, as appropriate to the individual fisher or association.

Economic loss

Beach is committed to the principle that a fisher should not suffer an economic loss as a direct result of a Beach project. Losses may occur for different reasons such as:

- reduced catch from fishing in a new area in order to avoid a Beach project
- reduced catch due to impacts to a fishery from the project activities
- steaming costs to avoid a Beach project area
- costs to repair or replace fishing gear.

Acting in good faith

Beach is committed to a fair, simple and transparent process for a fisher to claim compensation, where the fisher has consulted with Beach in good faith before a project, and provided the fisher has:

- acted to avoid risks and impacts to a Beach project
- acted to mitigate any economic losses to their business that may arise from avoiding risks and impacts to a Beach project
- evidence of fishing in the Beach project area during the same time of year as the project timing, for at least three years within the last five years, unless there are genuine fishery or fishing practice reasons for lesser periods
- historical and current catch and effort evidence and the ability to demonstrate an economic loss, as set out in Beach's *Fair Ocean Access Procedure*.

Making a claim

The *Fair Ocean Access Procedure* sets out a simple claim form and describes the evidence required for a claim, such as historical catch and effort records, current catch and effort records, and fish prices.

Claims must be made within 60 days of completion of a Beach project unless there is evidence that the project

has caused an impact to the fishery which has impacted future catch and caused an economic loss.

The *Fair Ocean Access Procedure* sets out timeframes for the rapid assessment and payment of successful claims and for ensuring the fisher is kept informed. Beach will nominate a single point of contact at Beach for a fisher to liaise with.

Claims and evidence will be managed in accordance with Beach's Privacy Policy which can be found on Beach's website.

If a claim is not approved, Beach will provide written reasons for the decision.

Resolving disagreements

Where a fisher and Beach cannot agree on a fisher's claim, the *Fair Ocean Access Procedure* includes steps for appointing an independent expert to resolve the matter. Beach will pay the reasonable costs of the independent expert, as set out in the *Fair Ocean Access Procedure*.

We welcome your questions and feedback

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beachenergy.com.au