VIC Offshore Windfarm Pty Ltd VIC Offshore Windfarm project Ecology (Terrestrial) Desktop Study

Draft 1 | 20 April 2021



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Arup Pty Ltd ABN 18 000 966 165

Arup

SkyPark, One Melbourne Quarter 699 Collins Street, Docklands VIC 3008 Australia



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Introduction

1.1 **Project Description**

VIC Offshore Windfarm Pty Ltd is proposing the construction, operation and decommissioning of the Victorian (VIC) Offshore Wind Farm project ('the Project'). The Project will be located approximately 5.5 km off the coast of Portland (see Figure 1). If constructed, it will have a generation capacity of up to 495 MW, enough to power 330,000¹ Victorian homes.

The Project will comprise up to 62 offshore wind turbine generators (WTGs) with supporting offshore and onshore electrical assets to transfer energy generated by the wind farm to the existing electricity network.

Offshore assets would be located in Victorian coastal waters² as defined in the Seas and Submerged Lands Act 1973 (Cth) and the Coastal Waters (State Powers) Act 1980. Site selection for the landfall site and onshore infrastructure is ongoing, with the existing 550 kV network substation at Heywood Terminal Station being investigated as one possible connection point to the National Electricity Market (NEM).

The Project site is located within the Glenelg local government area (LGA) and Project infrastructure would be located on Gunditjmara land and in Gunditjmara waters. The Project would be directly adjacent a Commonwealth Marine Area, and Project infrastructure may also need to be located within the Discovery Bay State Marine Park.

¹ Based on average household consumption of 6570kWh / year and 50% load factor for the 495MW OWF (www.arelectrical.com.au/average-electricity-usage-in-australia)

² Coastal waters are generally defined as being within 3 nautical miles seaward of the territorial sea baseline (TSB). Reference: http://www.ga.gov.au/scientifictopics/marine/jurisdiction/maritime-boundary-definitions#heading-3

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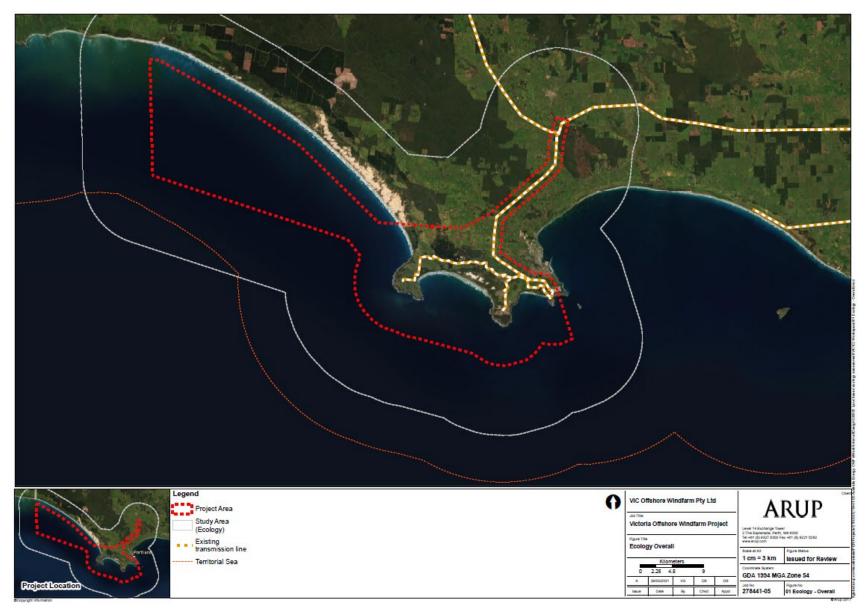


Figure 1: Investigation Area and Study Area

1.2 Investigation and Study Areas

The Investigation and Study Areas for this assessment relate to the terrestrial areas of the Project only.

The Investigation Area covers the broadest possible area where the final alignment may be located. This is to compensate for there being several possible alignment options that are being considered, with a preference to utilise the existing transmission lines in Figure 1. The size of the Investigation Area is approximately 20 ha.

The purpose of the Study Area is to allow a buffer for desktop searches of the Victorian Biodiversity Atlas (VBA) and Protected Matters Search Tool (PMST), which compensates for the lack of survey effort within the Investigation Area for threatened and migratory species, and threatened ecological communities. The buffer for the Study Area is 5-10 km from the Investigation Area

The Study Area is located within the Glenelg Hopkins Catchment Management Area, and the bioregions of the Victorian Volcanic Plain, Glenelg Plain and Bridgewater.

2 Methods

The study involved a review of the following databases and information sources:

- Australian Government Environment Protection and Biodiversity
 Conservation (EPBC) Act Protected Matters Search Tool (PMST) for
 presence or likely presence of matters of national environmental significance
 (MNES) within the Study Area
- Victorian Biodiversity Atlas for records of threatened flora and fauna, and migratory species within the Study Area (DEWLP, 2020a)
- Naturekit Map (DELWP, 2020b) and Ecological Vegetation Class (EVC) mapping (DELWP, 2020d) for modelled location of native vegetation, Location Category of native vegetation, and 'current wetlands' within the Investigation Area.

As this assessment focusses on only the terrestrial sections of the Study Area, the following species groups were focussed on:

- Terrestrial flora flora including coastal, terrestrial or wetland species
- Amphibians amphibians that are found on land
- Birds Terrestrial associated with woodland, forest, grassland or shrubland habitats or aerial species
- Birds Wetland/Coastal associated with coastal, estuarine, wetlands or freshwater habitats (e.g. migratory shorebirds, wader species)
- Fish Freshwater/Diadromous associated with freshwater environments or spend part of their life-cycle in freshwater environments (i.e. diadromous)
- Invertebrates crayfish, insects, butterflies, etc.
- Mammals Terrestrial associated with woodland, grassland, shrubland or forest habitats
- Reptiles lizards, snakes, etc.

For the purposes of this report, nationally significant refers to any species or community listed under the Commonwealth EPBC Act. State-significant refers to any species or community listed under the Victorian Flora and Fauna Guarantee Act 1988 or Victorian Advisory Lists (e.g. DSE 2009, DSE 2013, DEPI 2014).

3 Results

3.1 Native Vegetation

There are twenty-five (25) Ecological Vegetation Classes (EVCs) modelled to occur within the Investigation Area, covering three bioregions (Table 1). The EVCs fall into five categories of Bioregional Conservation Status (BCS).

Table 1: Modelled EVCs within the Investigation Area

BCS	EVC	Bioregion			
		Bridgewater	Glenelg Plain	Victorian Volcanic Plain	
Endangered	53 Swamp Scrub	✓			
	161 Coastal Headland Scrub	~ (v	✓		
	200 Shallow Freshwater Marsh	\sim \sim \sim	~	✓	
	665 Coastal Mallee Scrub		✓		
	858 Coastal Alkaline Scrub		✓		
	876 Spray-zone Coastal Shrubland	// //	✓		
Vulnerable	3 Damp Sands Herb-rich Woodland	√	✓	✓	
	23 Herb-rich Foothill Forest	✓	✓	✓	
	53 Swamp Scrub		✓		
	161 Coastal Headland Scrub	✓			
,	650 Heathy Woodland/Damp Heathy Woodland/Damp Heathland Mosaic	✓	√	√	
	664 Limestone Ridge Woodland		✓		
	681 Deep Freshwater Marsh	✓	✓		
	713 Damp Sands Herb-rich Woodland/Damp Heathland/Damp Heathy Woodland Mosaic		✓	✓	
Restricted	5 Coastal Sand Heathland		✓	✓	
	6 Sand Heathland		✓	✓	
	876 Spray-zone Coastal Shrubland	✓		✓	
Depleted	746 Damp Heathland/Damp Heathy Woodland Mosaic		✓		
	762 Damp Heathland/Sand Heathland Mosaic		✓		
Least	16 Lowland Forest		✓	✓	
Concern	48 Heathy Woodland		✓		
	160 Coastal Dune Scrub	✓			
	858 Coastal Alkaline Scrub	✓			

3.2 Threatened Ecological Communities

The PMST identified the six threatened ecological communities identified in Table 2 as potentially occurring within the Study Area.

Table 2: EPBC Act-listed threatened ecological communities

Threatened Ecological Community	Status
Assemblages of species associated with open- coast salt-wedge estuaries of western and central Victoria ecological community	Endangered
Giant Kelp Marine Forests of South East Australia	Endangered
Grassy Eucalypt Woodland of the Victorian Volcanic Plain	Critically Endangered
Karst springs and associated alkaline fens of the Naracoorte Coastal Plain Bioregion	Endangered
Natural Temperate Grassland of the Victorian Volcanic Plain	Critically Endangered
Subtropical and Temperate Coastal Saltmarsh	Vulnerable

3.3 Threatened Flora

3.3.1 Nationally-significant

There are eleven threatened flora species listed under the EPBC Act that have been recorded within the Study Area:

- River Swamp Wallaby-grass Amphibromus fluitans
- Eastern Spider Orchid Caladenia orientalis
- Ornate Pink Fingers Caladenia ornata
- Wrinkled Cassinia Cassinia rugata
- Clover Glycine Glycine latrobeana
- Square Rasport Haloragis exalata var. exalata
- Coast Ixodia Ixodia achillaeoides subsp. arenicola
- Green-striped Greenhood Pterostylis chlorogramma
- Swamp Fireweed Senecio psilocarpus
- Coast Dandelion Taraxacum cygnorum
- Swamp Everlasting Xerochrysum palustre

The PMST identified a further ten EPBC Act-listed flora species that may occur in the Study Area (see Table 2), but were not identified as part of the VBA search.

3.3.2 State-significant

Thirty-two (32) threatened flora species listed under the FFG Act have been recorded within the Study Area (see Table 4).

One-hundred and twenty-three (123) Advisory-listed flora species have been recorded within the Study Area (Table 4).

3.4 Threatened Fauna

3.4.1 Amphibians

Nationally significant

One nationally-significant amphibian has been recorded within the Study Area:

• Growling Grass Frog Litoria raniformis (Table 5).

State significant

One FFG Act-listed amphibian species has been recorded within the Study Area:

• Growling Grass Frog.

Three Advisory-listed fauna species have been recorded within the Study Area:

- Green and Golden Bell Frog
- Growling Grass Frog
- Southern Toadlet Pseudophryne semimarmorata (Table 5).

3.4.2 Birds – Terrestrial

Nationally significant

Four terrestrial bird species listed as threatened under the EPBC Act have previously been recorded within the Study Area:

- Malleefowl Leipoa ocellata
- Red-tailed Black-Cockatoo (south-eastern) Calyptorhynchus banksia graptogyne
- Regent Honeyeater Anthochaera Phrygia
- White-throated Needletail Hirundapus caudacutus.

A further four EPBC Act-listed terrestrial birds were identified by the PMST as potentially occurring within the Study Area, but were not identified by the VBA search.

State significant

Twenty-seven (27) terrestrial-bird species listed under the FFG Act and the Victorian Advisory List have previously been recorded within the Study Area (Table 5).

3.4.3 Birds – Wetland/Coastal

Nationally significant

Eleven (11) wetland/coastal birds listed as threatened under the EPBC Act have been recorded within the Study Area (Table 5).

State significant

Twenty-three (23) FFG Act-listed wetland/coastal bird species have previously been recorded within the Study Area (see Table 2).

Forty-two (42) Advisory-listed wetland/coastal bird species have previously been recorded within the Study Area (Table 5).

3.4.4 Fish – Freshwater/Diadromous

Nationally-significant

Two freshwater/diadromous fish species listed under the EPBC Act have previously been recorded within the Study Area:

- Variegated Pygmy Perch Nannoperca variegata
- Yarra Pygmy Perch Nannoperca obscura.
- The PMST search identified two additional freshwater/diadromous fish species listed under the EPBC Act that were not identified via the VBA search:
- Australian Grayling Prototroctes maraena
- Eastern Dwarf Galaxias Galaxiella pusilla.

State significant

Two freshwater/diadromous fish species listed as threatened under the FFG Act have previously been recorded within the Study Area:

- Variegated Pygmy Perch
- Yarra Pygmy Perch.

Three freshwater/diadromous fish species listed under the Victorian Advisory List have been recorded within the Study Area:

- Little Galaxias Galaxiella toourtkoourt
- Variegated Pygmy Perch
- Yarra Pygmy Perch.

3.4.5 Invertebrates

Nationally significant

One invertebrate species listed as threatened under the EPBC Act has previously been recorded within the Study Area:

Glenelg Spiny Crayfish Euastacus bispinosus.

State significant

Three invertebrate species listed as threatened under the FFG Act have previously been recorded within the Study Area:

- Large Bronze Azure Butterfly Ogyris halmaturia
- Squeak Beetle Hyrobia australasiae
- Glenelg Spiny Crayfish

Four invertebrate species listed under the Victorian Advisory List have previously been recorded within the Study Area:

- Caddisfly Plectrotarsus gravenhorstii
- Large Bronze Azure Butterfly
- Squeak Beetle
- Glenelg Spiny Crayfish.

3.4.6 Mammals - Terrestrial

Nationally significant

Seven terrestrial mammal species listed as threatened under the EPBC Act have previously been recorded within the Study Area:

- Grey-headed Flying-fox Pteropus poliocephalus
- Heath Mouse Pseudomys shortridgei
- Long-nosed Potoroo Potorous tridactyuls trisulcatus
- Southern Brown Bandicoot Isoodon obesulus obesulus
- Spot-tailed Quoll Dasyurus maculatus maculatus
- Swamp Antechinus Antechinus minimus maritimus
- White-footed Rabbit-rat Conilurus albipes³.

Two additional EPBC Act-listed terrestrial mammal species were raised by the PMST as potentially occurring within the Study Area, but were not identified via the VBA search:

- Smoky Mouse Pseudomys fumeus
- Southern Bent-wing Bat Minopterus orianae bassanii.

State significant

Ten terrestrial mammal species listed as threatened under the FFG Act have previously been recorded within the Study Area (Table 5). Nine terrestrial mammal species listed under the Victorian Advisory List have previously been recorded within the Study Area (Table 5).

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³ Species now considered extinct.

3.4.7 Reptiles - Terrestrial

Nationally significant

One reptile species listed as threatened under the EPBC Act has previously been recorded within the Study Area:

• Striped Legless Lizard Delma impar

State significant

Two reptile species which are both listed as threatened under the FFG Act, and on the Victorian Advisory List, have been recorded within the Study Area:

- Striped Legless Lizard
- Striped Worm-Lizard.

3.5 Migratory Species

Nationally significant

Thirty-two (32) species listed as migratory under the EPBC Act, and are associated with terrestrial, wetland and/or coastal environments, have been recorded within the Study Area (Table 5). An additional nine migratory-listed species were raised by the PMST as potentially occurring within the Study Area, but had not been identified via the VBA search (Table 5).

3.6 Wetlands and Waterways

3.6.1 Wetlands of International Importance

One Wetland of International Importance (Ramsar Site) is located within the Investigation Area:

• Glenelg Estuary and Discovery Bay.

One Ramsar Site is located within the Study Area, but outside of the Investigation Area:

Piccaninnie ponds karst wetlands.

3.6.2 Current Wetlands

The following 'current wetlands' occur within the Investigation Area:

- 20584
- 20587
- 23447
- 20565
- 20590
- 20562

- 20586
- 20600
- 20581
- 23440
- 20588
- 20583
- 20563
- 20561
- 23728
- 23523
- 23521
- 23872
- 23870
- 23871
- 23873.

The full extent of current wetlands within the Investigation Area is 173.31 ha.

3.6.3 Waterways

The Investigation Area intersects the following major waterways:

- Surrey River
- Wattle Hill Creek
- Bridgewater Lakes.

3.7 Parks and Conservation Reserves

The Investigation Area intersects with the following parks (national and State) and conservation reserves:

- Cape Nelson State Park
- Bats Ridge Wildlife Reserve
- Discovery Bay Coastal Park
- Point Danger Coastal Reserve
- Narrawong Coastal Reserve
- Nelson Bay Coastal Reserve
- Portland H46 Bushland Reserve
- Portland H47 Bushland Reserve
- Cobbobonee Forest Park
- Narrawong Flora Reserve.

4 Legislation and policy

This section assesses the ecological impacts of the Project against relevant legislation and policy and identifies any approvals that may be required for the Project to proceed.

4.1 Environment Protection and Biodiversity Conservation Act 1999

Under the EPBC Act, an action that is likely to have a significant impact on MNES should be referred to the Commonwealth Minister for the Environment to determine whether an assessment under the EPBC Act is required.

The Project may impact (directly or indirectly) the following categories of MNES that were identified as part of this desktop study:

- Listed threatened species and ecological communities
- Wetlands of International Importance
- Listed migratory species.

4.2 Environment Effects Act 1978

The Environment Effects Act 1978 (EE Act) provides for assessments of projects that are capable of having a significant effect on the environment. It allows the Minister responsible for administering the Act to decide if an Environment Effects Statement (EES) should be prepared.

The following EES referral triggers, relevant to terrestrial ecology, have potential to be exceeded as part of this Project based on the findings of this desktop study:

- Potential clearing of 10 ha or more of native vegetation
- Potential clearing of 10 ha or more of native vegetation of an EVC that is listed as Endangered
- Potential long-term loss of a significant proportion (e.g. 1 to 5 percent depending on the conservation status of the species) of known remaining habitat or population of a threatened species within Victoria
- Potential long-term change to the ecological character of a wetland listed under the Ramsar Convention or in 'A Directory of Important Wetlands in Australia'
- Potential extensive or major effects on the health or biodiversity of aquatic, estuarine or marine ecosystems, over the long term
- Matters listed under the FFG Act:
- potential loss of a significant area of a listed ecological community; or
- potential loss of a genetically important population of an endangered or threatened species (listed or nominated for listing), including as a result of loss or fragmentation of habitats; or
- potential loss of critical habitat; or
- potential significant effects on habitat values of a wetland supporting migratory bird species.

4.3 Planning and Environment Act 1987

The Planning and Environment Act 1987 (P&E Act) establishes a framework for planning the use, development and protection of land in Victoria.

The P&E Act enables the Victorian Planning Provisions, planning schemes, regulations and Ministerial directions under legislation.

4.3.1 Guidelines for the removal, destruction or lopping of native vegetation (DELWP, 2017)

The Guidelines for the removal, destruction or lopping of native vegetation, i.e. 'the Guidelines' (DELWP, 2017), is an Incorporated Document under all planning schemes in Victoria. The purpose of the Guidelines is to describe how the removal of native vegetation is to be assessed and compensated.

The Guidelines determine the assessment pathway for an application to remove native vegetation based on the extent and location of the native vegetation to be removed.

Given the potential size of the project footprint, it is likely the Project would be assessed under the Detailed pathway.

Table 3: Determining	the assessment	nothway	(DELW/D	2017)
Table 5: Determining	the assessment	paınway (DELWP.	201/1

	Location category					
Extent of native vegetation	Location 1	Location 2	Location 3			
Less than 0.5 hectares and not including any large trees	Basic	Intermediate	Detailed			
Less than 0.5 hectares and including one or more large trees	Intermediate	Intermediate	Detailed			
0.5 hectares or more	Detailed	Detailed	Detailed			

4.4 Flora and Fauna Guarantee Act 1988

The FFG Act is the key piece of Victorian legislation for the conservation of threatened species and communities and for the management of potentially threatened processes.

Under the FFG Act, a permit is required to take listed or protected flora from Crown land. Impacts to FFG Act-listed species and communities is also considered under the EE Act.

The following species listed as 'threatened' under the FFG Act have been recorded within the Study Area:

- 32 flora species
- 1 amphibian species
- 27 terrestrial bird species
- 23 wetland/coastal bird species
- 2 freshwater/diadromous fish species
- 3 terrestrial invertebrate species

- 10 terrestrial mammal species
- 2 reptile species.

4.5 Wildlife Act 1975

The Wildlife Act 1975 and Wildlife Regulations 2002 protect wildlife throughout Victoria and regulate the possession, trade and utilisation of wildlife for private and commercial purposes. All wildlife is protected under the Act unless declared to be unprotected.

The removal of trees, shrubs or aquatic habitat could potentially injure, harm or kill wildlife. A trained zoologist with 'Management Authorisation' under the Act should be on site to relocate wildlife as required.

4.6 Catchment and Land Protection Act 1994

The Catchment and Land Protection Act 1994 (CaLP Act) regulates the impact of projects on soil, water and land resources. It is the main legislation for regulating the management of invasive plants and animals in Victoria.

The Investigation Area is likely to contain areas of noxious weeds and pest animals that should be appropriately managed during construction and operation of the Project to avoid further increasing their extent.

5 Conclusion and Recommendations

- This desktop report identifies terrestrial ecological values that could potentially be impacted by the Victorian Offshore Wind Farm project. Given the nature of the Project, and the values identified, it is likely that the Project could have a significant impact on the environment both at the national and State-level.
- During the options assessment phase, the following recommendations should be considered to avoid and minimise impacts to ecological values:
- The alignment should avoid known significant ecological values, such as Ramsar Sites, current wetlands and conservation reserves
- Existing power easements should be utilised or where not-feasible, the alignment should follow existing cleared land
- Where ecological values cannot be avoided, construction methods should be considered that minimise impacts, such as horizontal directional drilling.

Field studies will be required to verify the values identified in this report, namely native vegetation, habitat for threatened and migratory species, and threatened ecological communities. This can occur once the Investigation Area has been refined to concentrate survey effort.

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Appendix A Threatened Flora and Fauna

Table 4: Threatened Flora

Scientific Name	Common Name	ЕРВС	FFG	VicAdv	No. of records	Year of last record
Acrotriche cordata	Coast Ground-berry	732.		r	25	2015
Adriana quadripartita	Coast Bitter-bush	(2)2/ /		v	4	1991
Amphibromus fluitans	River Swamp Wallaby-grass	VU			7	2006
Argentipallium dealbatum	Silver Everlasting			r	2	1991
Asplenium aethiopicum	Shredded Spleenwort			v	1	1976
Atriplex billardierei	Glistening Saltbush). \	L	X	4	1980
Austrostipa mundula	Neat Spear-grass			r	3	2011
Billardiera scandens s.s.	Velvet Apple-berry			r	5	1969
Boronia pilosa subsp. torquata	Hairy Boronia			r	22	2017
Bossiaea cordigera	Wiry Bossiaea			r	5	2006
Burnettia cuneata	Lizard Orchid	>		r	8	1980
Caladenia calcicola	Limestone Spider-orchid	VU	L	е	-	-
Caladenia carnea var. subulata	Striped Pink-fingers		L	X	1	1947
Caladenia colorata	Coloured Spider-orchid	EN	L			
Caladenia fragrantissima	Scented Spider-orchid		L	е	158	2015
Caladenia hastata	Melblom's Spider'orchid	EN	L	e	-	-
Caladenia orientalis	Eastern Spider-orchid	EN	L	e	9	1980
Caladenia ornata	Ornate Pink Fingers	VU	L	v	5	2003
Caladenia reticulata s.s.	Veined Spider-orchid			v	1	1925

Scientific Name	Common Name	ЕРВС	FFG	VicAdv	No. of records	Year of last record
Caladenia venusta	Large White Spider-orchid			r	6	1944
Cardamine papillata	Forest Bitter-cress			v	1	1945
Carex tasmanica	Curly Sedge	^ ·	L	v	13	2015
Cassinia rugata	Wrinkled Cassinia	VU	L	v	14	2012
Cladium procerum	Leafy Twig-sedge			r	16	2019
Colobanthus apetalus var. apetalus	Coast Colobanth			r	15	2015
Comesperma polygaloides	Small Milkwort	> (/ ~)	L	v	1	1991
Coronidium gunnianum	Pale Swamp Everlasting			V	2	2011
Correa alba var. pannosa	Velvet White Correa			r	21	2017
Corunastylis nuda	Tiny Midge-orchid			r	9	1980
Corybas despectans	Coast Helmet-orchid	/ / / ,	L	v	35	2016
Corybas sp. aff. diemenicus (Coastal)	Late Helmet-orchid	0./	L	e	3	2008
Dipodium pardalinum	Spotted Hyacinth-orchid			r	7	2003
Diuris behrii	Golden Cowslips			v	1	1991
Diuris palustris	Swamp Diuris		L	v	15	2006
Eucalyptus diversifolia subsp. megacarpa	Coast Gum			v	30	2011
Eucalyptus falciformis	Western Peppermint			r	46	2017
Eucalyptus kitsoniana	Bog Gum			r	13	2018
Eucalyptus leucoxylon subsp. megalocarpa	Large-fruit Yellow-gum		L	e	11	2012
Eucalyptus ovata subsp. grandiflora	West-coast Swamp-gum			r	1	1986
Euphrasia collina subsp. tetragona	Purple Eyebright			r	1	1770
Euphrasia scabra	Rough Eyebright		L	e	3	1936
Exocarpos syrticola	Coast Ballart			r	39	2016

Scientific Name	Common Name	EPBC	FFG	VicAdv	No. of records	Year of last record
Galium compactum	Compact Bedstraw			r	18	2010
Galium curvihirtum	Tight Bedstraw			r	15	2017
Geranium solanderi var. solanderi s.s.	Austral Crane's-bill	A .		v	1	1946
Glycine latrobeana	Clover Glycine	VU	L	v	7	2015
Goodenia lineata	Grampians Goodenia	\wedge		r	2	1983
Goodia pubescens	Silky Golden-tip			r	4	1983
Gratiola pumilo	Dwarf Brooklime) (/ 2)		r	2	2016
Grevillea micrantha	Small-flower Grevillea			r	6	2010
Haloragis eichleri	Eichler's Raspwort			v	2	1980
Haloragis exalata var. exalata	Square Rasport	VU		v	5	1980
Haloragis myriocarpa	Prickly Raspwort	// / /		v	11	1985
Hibbertia pallidiflora	Pale Guinea-flower	0./		r	40	2010
Hydrorchis orbicularis	Swamp Onion-orchid			v	8	1990
Isolepis wakefieldiana	Tufted Club-sedge			r	3	1999
Ixodia achillaeoides subsp. arenicola	Coast Ixodia	VU		v	9	2008
Lachnagrostis rudis subsp. rudis	Rough Blown-grass			r	11	2008
Lachnagrostis semibarbata var. filifolia	Purbple Blown-grass		L	r	1	1998
Lasiopetalum schulzenii	Drooping Velvet-bush			r	12	2016
Lepidium desvauxii	Bushy Peppercress			r	1	1946
Lepidium foliosum	Leafy Peppercress			v	3	1960
Lepidium hyssopifolium	Basalt Pepper-cress	EN	L	e	-	-
Lepidosperma canescens	Hoary Rapier-sedge			r	32	1999
Leptospermum turbinatum	Shiny Tea-tree			r	1	2011

Scientific Name	Common Name	ЕРВС	FFG	VicAdv	No. of records	Year of last record
Levenhookia turbinatum	Slender Stylewort			r	1	1946
Lobelia beaugleholei	Showy Lobelia			r	15	2018
Logania ovata	Oval-leaf Logania	A .		r	30	2009
Lomandra micrantha subsp. tuberculata	Small-flower Mat-rush	. < \		r	2	1984
Machaerina laxa	Lax Twig-sedge			r	18	2009
Melaleuca armillaris subsp. armillaris	Giant Honey-myrtle			r	3	2019
Melaleuca halmaturorum	Salt Paperbark) () ~	L	v	1	2012
Morchella esculenta	Common Morel			v	1	2005
Muehlenbeckia gunnii	Coastal Lignum			v	14	2014
Olearia asterotricha	Rough Daisy-bush			r	10	1999
Olearia passerinoides subsp. glutescens	Shiny Daisy-bush	/ / \ `	L	e	2	1891
Ornduffia umbricola var. umbricola	Lax Marsh-flower			v	7	2019
Orthrosanthus multiflorus	Morning Flag			r	10	2014
Pimelea hewardiana	Forked Rice-flower			r	14	2000
Poa billardierei	Coast Fescue			r	13	2007
Poa fax	Scaly Poa			r	5	1980
Poa halmaturina	Dwarf Coast Poa			v	4	2016
Poa poiformis var. ramifer	Dune Poa			r	1	2007
Pomaderris halmaturina subsp. continentis	Glenelg Pomaderris			r	5	1999
Prasophyllum frenchii	Maroon Leek-orchid	EN	L	e	-	-
Prasophyllum lindleyanum	Green Leek-orchid		X	v	2	1958
Prasophyllum litorale	Coastal Leek-orchid		L	v	64	2016
Prasophyllum parviflorum	Slender Leek-orchid		X	v	4	1980

Scientific Name	Common Name	ЕРВС	FFG	VicAdv	No. of records	Year of last record
Prasophyllum pyriforme s.s.	Silurian Leek-orchid			e	3	1950
Prasophyllum sp. aff. odoratum C	White Leek-orchid			v	3	2008
Prasophyllum spicatum	Dense Leek-orchid	VU		e	-	-
Pterostylis chlorogramma	Green-striped Greenhood	VU	L	v	4	2007
Pterostylis cucullata subsp. cucullata	Leafy Greenhood	\wedge	L	e	16	2001
Pterostylis dolichochila	Long-tongue Shell-orchid			r	3	2006
Pterostylis lustra	Small Sickle Greenhood) (/ 2	L	e	9	2014
Pterostylis tenuissima	Swamp Greenhood	VU		v	-	-
Pultenaea canaliculata	Coast Bush-pea			r	10	1999
Pultenaea prolifera	Otway Bush-pea			r	36	2010
Roepera billardierei	Coast Twin-leaf	/		r	8	1983
Salsola tragus subsp. pontica	Coast Saltwort			r	4	1980
Scaevola calendulacea	Dune Fan-flower			v	13	2015
Schoenus carsei	Wiry Bog-sedge			r	11	1991
Schoenus deformis	Small Bog-sedge			v	4	1980
Senecio hispidissimus	Sand Fireweek			r	1	20016
Senecio macrocarpus	Large-fruit Fireweed	VU	L	e	-	-
Senecio psilocarpus	Swamp Fireweed	VU		v	4	2011
Senecio X orarius	Coast Fireweed			r	1	1990
Sporadanthus tasmanicus	Branching Scale-rush			r	3	1980
Taraxacum cygnorum	Coast Dandelion	VU	L	e	18	2017
Thelionema umbellatum	Clustered Lily			r	1	1950
Thelymitra benthamiana	Blotched Sun-orchid			v	12	2006

Common Name	ЕРВС	FFG	VicAdv	No. of records	Year of last record
Metallic Sun-orchid	EN	L	e	-	-
Winter Sun-orchid		L	e	7	2010
Inflated Sun-orchid	A .		v	1	1981
Spiral Sun-orchid	VU	L	v	-	-
Plum Orchid			V	2	1983
Crimson Sun-orchid			v	2	1938
Prickly Arrowgrass) () ~)		r	3	1980
Coast Speedwell	_ // / /		v	11	2009
Tiny Violet			r	26	2017
One-flower Early Nancy			r	5	2006
Tufted Grass-tree	/ / \ `		r	1	2012
Parsley Xanthosia			r	7	2011
Southern Xanthosia			r	3	2011
Swamp Everlasting	VU	L	v	3	1947
	Metallic Sun-orchid Winter Sun-orchid Inflated Sun-orchid Spiral Sun-orchid Plum Orchid Crimson Sun-orchid Prickly Arrowgrass Coast Speedwell Tiny Violet One-flower Early Nancy Tufted Grass-tree Parsley Xanthosia Southern Xanthosia	Metallic Sun-orchid EN Winter Sun-orchid Inflated Sun-orchid Spiral Sun-orchid VU Plum Orchid Crimson Sun-orchid Prickly Arrowgrass Coast Speedwell Tiny Violet One-flower Early Nancy Tufted Grass-tree Parsley Xanthosia Southern Xanthosia	Metallic Sun-orchid EN L Winter Sun-orchid L Inflated Sun-orchid VU L Plum Orchid Crimson Sun-orchid Prickly Arrowgrass Coast Speedwell Tiny Violet One-flower Early Nancy Tufted Grass-tree Parsley Xanthosia Southern Xanthosia	Metallic Sun-orchid EN L e Winter Sun-orchid L e Inflated Sun-orchid VU L v Plum Orchid v Crimson Sun-orchid v Prickly Arrowgrass r Coast Speedwell v Tiny Violet r One-flower Early Nancy r Parsley Xanthosia r Southern Xanthosia	Metallic Sun-orchid EN L e - Winter Sun-orchid L e 7 Inflated Sun-orchid v 1 Spiral Sun-orchid VU L v - Plum Orchid v 2 Crimson Sun-orchid v 2 Prickly Arrowgrass r 3 Coast Speedwell v 11 Tiny Violet r 26 One-flower Early Nancy r 5 Tufted Grass-tree r 1 Parsley Xanthosia r 7 Southern Xanthosia r 3

LEGEND

EPBC VicAdv **FFG**

L – Listed as threatened EX – Extinct x - Presumed Extinct

X – Rejected for listing CR – Critically Endangered e – Endangered

EN – Endangered v - Vulnerable

VU - Vulnerable r - Rare

k – Poorly Known

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Ecology (Terrestrial) Desktop Study

Table 5: Threatened Fauna

Common Name	Scientific Name	ЕРВС	FFG	VicAdv	No. of records	Year of last record
Amphibians - Freshwater						
Green and Golden Bell Frog	Litoria aurea	. (')		vu	1	2017
Growling Grass Frog	Litoria raniformis	VU	L	en	13	2002
Southern Toadlet	Pseudophryne semimarmorata			vu	11	2011
Bird - Marine					I.	
Antipodean Albatross	Diomedea antipodensis	VU, Mi			-	-
Arctic Jaeger	Stercorarius parasiticus	Mi			12	2017
Black-browed Albatross	Thalassarche melanophris	VU, Mi		vu	65	2019
Blue Petrel	Halobaena caerulea	VU			11	1992
Buller's Albatross	Thalassarche bulleri	VU, Mi	L		3	2000
Campbell Albatross	Thalassarche impavida	VU, Mi			-	-
Fairy Prion	Pachyptila turtur			vu	53	2011
Flesh-footed Shearwater	Ardenna carneipes	Mi			8	1987
Fork-tailed Swift	Apus pacificus	Mi			19	2019
Gould's Petrel	Pterodroma leucoptera	EN			1	1952
Grey Petrel	Procellaria cinerea	Mi			1	1992
Grey-headed Albatross	Thalassarche chrysostoma	EN, Mi	L	vu	17	2007
Indian Yellow-nosed Albatross	Thalassarche carteri	VU, Mi	L	vu	42	2017
Light-mantled Sooty Albatross	Phoebetria palpebrate	Mi	L		2	1980
Little Tern	Sternula albifrons	Mi	L	vu	20	2002
	1		1	1	I	1

Common Name	Scientific Name	ЕРВС	FFG	VicAdv	No. of records	Year of last record
Northern Giant-Petrel	Macronectes halli	VU, Mi	L	nt	7	2000
Northern Royal Albatross	Diomedea sanfordi	EN, Mi			-	-
Pomarine Jaeger	Stercorarius pomarinus	Mi			7	1999
Salvin's Albatross	Thalassarche salvini	VU, Mi			-	-
Short-tailed Shearwater	Ardenna tenuirostris	Mi			108	2009
Shy Albatross	Thalassarche cauta	VU, Mi	L	vu	49	2000
Soft-plumaged Petrel	Pterodroma mollis	VU			1	1959
Sooty Albatross	Phoebetria fusca	VU, Mi			1	1987
Sooty Shearwater	Ardenna grisea	Mi			26	1997
Southern Giant-Petrel	Macronectes giganteus	EN, Mi	L	vu	25	2017
Southern Royal Albatross	Diomedea epomophora	VU	L	vu	4	1987
Wandering Albatross	Diomedea exulans	VU, Mi	L	en	22	2017
White-capped Albatross	Thalassarche steadi	VU, Mi			2	2019
White-chinned Petrel	Procellaria aequinoctialis	Mi			2	1987
White-faced Storm-Petrel	Pelagodroma marina			vu	15	2017
Wilson's Storm-Petrel	Oceanites oceanicus	Mi			7	1987
Bird - Terrestrial		1		•	J.	
Australian Bustard	Ardeotis australis		L	cr	1	1937
Barking Owl	Ninox connivens		L	en	5	2003
Black-faced Monarch	Monarcha melanopsis	Mi			-	-
Black Falcon	Falco subniger		L	vu	8	2010

Common Name	Scientific Name	ЕРВС	FFG	VicAdv	No. of records	Year of last record
Chestnut-rumped Heathwren	Calamanthus pyrrhopygius		L	vu	3	1980
Diamond Dove	Geopelia cuneata		L	nt	1	1938
Diamond Firetail	Stagonopleura guttata		L	nt	4	1985
Great Egret	Ardea alba	\wedge	L	vu	153	2018
Grey Falcon	Falco hypoleucos	VU	L	en	-	-
Grey Goshawk	Accipiter novaehollandiae) (/ 2)	L	vu	13	2019
Grey-crowned Babbler	Pomatostomus temporalis		L	en	3	1914
Ground Cuckoo-shrike	Caracina maxima		L	vu	2	1957
Ground Parrot	Pezoporus wallicus		L	en	22	2018
Hooded Robin	Melanodryas cucullata	/// //	L	nt	16	1991
King Quail	Synoicus chinensis	ON	L	en	2	1951
Malleefowl	Leipoa ocellata	VU	L	en	10	1991
Masked Owl	Tyto novaehollandiae		L	en	5	2003
Painted Honeyeater	Grantiella picta	VU	L	vu	-	-
Plains-wanderer	Pedionomus torquatus	CR	L	cr	-	-
Powerful Owl	Ninox strenua		L	vu	41	2018
Red-tailed Black-Cockatoo (south-eastern)	Calyptorhynchus banksii graptogyne	EN	L	en	194	2019
Regent Honeyeater	Anthochaera phrygia	CR	L	cr	2	1940
Rufous Bristlebird	Dasyornis broadbenti		L	nt	113	2019
Rufous Bristlebird (Coorong)	Dasyornis broadbenti broadbenti		L	nt	141	2007
Rufous Bristlebird (Otway)	Dasyornis broadbenti caryochrous		L	nt	1	2007

Common Name	Scientific Name	ЕРВС	FFG	VicAdv	No. of records	Year of last record
Rufous Fantail	Rhipidura rufifrons	Mi			28	2013
Satin Flycatcher	Myiagra cyanoleuca	Mi			23	2009
Square-tailed Kite	Lophoictinia isura		L	vu	4	2018
Swift Parrot	Lathamus discolor	CR	L	en	-	-
White-throated Needletail	Hirundapus caudacutus	VU, Mi	L	vu	51	2018
Yellow Wagtail	Motacilla flava	Mi			-	-
Bird – Wetland/Coastal			4	•	•	•
Australasian Bittern	Botaurus poiciloptilus	EN	L	en	41	2020
Australasian Shoveler	Spatula rhynchotis			vu	51	2019
Australian Fairy Tern	Sternula nereis nereis	VU			-	-
Australian Gull-billed Tern	Gelochelidon macrotarsa	ON	L	en	6	1999
Australian Little Bittern	Ixobrychus dubius		L	en	1	1949
Australian Painted Snipe	Rostratula australis	EN	L	cr	3	1999
Baillon's Crake	Porzana pusilla	>	L	vu	5	2000
Bar-tailed Godwit	Limosa lapponica	VU, Mi			26	2016
Black-tailed Godwit	Limosa limosa	Mi		vu	2	2014
Blue-billed Duck	Oxyura australis		L	en	12	2017
Broad-billed Sandpiper	Limicola falcinellus	Mi			2	1980
Brolga	Antigone rubicunda		L	vu	546	2020
Caspian Tern	Hydroprogne caspia	Mi	L	nt	141	2019
Common Greenshank	Tringa nebularia	Mi		vu	64	2019

Common Name	Scientific Name	ЕРВС	FFG	VicAdv	No. of records	Year of last record
Common Sandpiper	Actitis hypoleucos	Mi		vu	41	2017
Common Tern	Sterna hirundo	Mi			2	1979
Curlew Sandpiper	Calidris ferruginea	CR, Mi	L	en	34	2019
Double-banded Plover	Charadrius bicinctus	Mi			68	2020
Eastern Curlew	Numenius madagascariensis	CR, Mi	L	vu	14	2004
Eastern Great Egret	Ardea alba modesta) (/)	L	vu	77	2019
Fairy Prion	Pachyptila turtur			vu	40	2011
Fairy Prion (southern)	Pachyptila turtur subantarctica	VU		vu	-	-
Fairy Tern	Sternula nereis	VU	L	en	10	2019
Freckled Duck	Stictonetta naevosa	/ / > '	L	en	4	2014
Glossy Ibis	Plegadis falcinellus	Mi		nt	1	1951
Great Knot	Calidris tenuirostris	CR, Mi	L	en	2	2000
Greater Sand Plover	Charadrius leschenaultii	VU, Mi		cr	3	1979
Grey Plover	Pluvialis squatarola	Mi		en	8	2015
Grey-tailed Tattler	Tringa brevipes	Mi	L	cr	2	2005
Hardhead	Aythya australis			vu	25	2019
Hooded Plover	Thinornis cucullatus	VU	L	vu	193	2019
Latham's Snipe	Gallinago hardwickii	Mi		nt	32	2010
Lewin's Rail	Lewinia pectoralis		L	vu	32	2019
Little Curlew	Numenius minutus	Mi			-	-
Little Egret	Egretta garzetta		L	en	69	2019

Common Name	Scientific Name	ЕРВС	FFG	VicAdv	No. of records	Year of last record
Magpie Goose	Anseranas semipalmata		L	nt	11	2019
Marsh Sandpiper	Tringa stagnatilis	Mi		vu	4	2006
Musk Duck	Biziura lobata			vu	225	2019
Night Parrot	Pezoporus occudentalis	EN		rx	-	-
Northern Buller's Albatross	Thalassarche bulleri platei	VU			-	-
Orange-bellied Parrot	Neophema chrysogaster	CR	L	cr	23	1994
Oriental Plover	Charadrius veredus	Mi			1	1980
Osprey	Pandion haliaetus	Mi			3	1988
Pacific Golden Plover	Pluvialis fulva	Mi		vu	2	2005
Pectoral Sandpiper	Calidris melanotos	Mi		nt	1	2006
Pin-tailed Snipe	Gallinago stenura	Mi			-	-
Plumed Egret	Ardea intermedia plumifera		L	en	14	2000
Red Knot	Calidris canutus	EN, Mi		en	4	2001
Red-necked Stint	Calidris ruficollis	Mi			149	2020
Ruddy Turnstone	Arenaria interpres	Mi		vu	19	2005
Sanderling	Calidris alba	Mi		nt	71	2019
Sharp-tailed Sandpiper	Calidris acuminata	Mi			54	2019
Swinhoe's Snipe	Gallinago megala	Mi			-	-
Terek Sandpiper	Xenus cinereus	Mi	L	en	3	2001
Whimbrel	Numenius phaeopus	Mi		vu	3	2005
White-bellied Sea-Eagle	Haliaeetus leucogaster		L	vu	42	2019

Common Name	Scientific Name	ЕРВС	FFG	VicAdv	No. of records	Year of last record
Wood Sandpiper	Tringa glareola	Mi		vu	5	2006
Fish – Freshwater/Diadromous						
Australian Grayling	Prototroctes maraena	VU	L	vu	-	-
Eastern Dwarf Galaxias	Galaxiella pusilla	VU	L	en	-	-
Little Galaxias	Galaxiella toourtkoourt			vu	14	2010
Variegated Pygmy Perch	Nannoperca variegata	VU	L	vu	1	2001
Yarra Pygmy Perch	Nannoperca obscura	VU	L	vu	34	2015
Fish - Marine			•			
Mackerel Shark	Lamna nasus	Mi			-	-
Shortfin Mako	Isurus oxyrinchus	Mi			-	-
White Shark	Carcharodon carcharias	VU, Mi	L	vu	-	-
Invertebrate - Marine			•			
Southern Hooded Shrimp	Athanopsis australis		L	vu	1	1992
Invertebrate			•			
Caddisfly	Plectrotarsus gravenhorstii			vu	1	1952
Large Bronze Azure Butterfly	Ogyris halmaturia		L	rx	1	1872
Squeak Beetle	Hygrobia australasiae		L	vu	1	1973
Glenelg Spiny Crayfish	Euastacus bispinosus	EN	L	en	4	2016
Mammal - Marine			•			
Australian Sea-lion	Neophoca cinerea	EN			8	2018
Blue Whale	Balaenoptera musculus	EN, Mi	L	cr	24	2018

Common Name	Scientific Name	ЕРВС	FFG	VicAdv	No. of records	Year of last record
Bryde's Whale	Balaenoptera edeni	Mi		dd	1	2000
Dusky Dolphin	Lagenorhynchus obscurus	Mi			-	-
Fin Whale	Balaenoptera physalus	VU, Mi		dd	-	-
Humpback Whale	Megaptera novaeangliae	VU, Mi	L	vu	-	-
Killer Whale	Orcinus orca	Mi			13	2007
Long-nosed Fur Seal	Arctophoca forsteri) (/ ~)		vu	3	2019
Pygmy Right Whale	Caperea marginata	Mi			5	1994
Sei Whale	Balaenoptera borealis	VU, Mi			-	-
Southern Elephant Seal	Mirounga leonina	VU			3	2017
Southern Humpback Whale	Megaptera novaeangliae australis	VU, Mi	L	vu	49	2018
Southern Right Whale	Eubalaena australis	EN, Mi	L	cr	403	2018
Sperm Whale	Physeter macrocephalus	Mi	X		7	2005
Subantarctic Fur Seal	Arctophoca tropicalis	EN			1	2015
Mammal - Terrestrial						
Common Bent-wing Bat	Miniopterus schreibersii GROUP		L		20	2005
Grey-headed Flying-fox	Pteropus poliocephalus	VU	L	vu	2	2013
Heath Mouse	Pseudomys shortridgei	EN	L	nt	91	2010
Long-nosed Potoroo	Potorous tridactylus trisulcatus	VU	L	nt	412	2019
Rufous-bellied Pademelon	Thylogale billardierii		L	rx	2	1980
Smoky Mouse	Pseudomys fumeus	EN	L	en	-	-
Southern Bent-wing Bat	Minopterus orianae bassanii	CR	L	cr	-	-

Common Name	Scientific Name	EPBC	FFG	VicAdv	No. of records	Year of last record
Southern Brown Bandicoot	Isoodon obesulus obesulus	EN	L	nt	301	2019
Spot-tailed Quoll	Dasyurus maculatus maculatus	EN	L	en	2	2008
Swamp Antechinus	Antechinus minimus maritimus	VU	L	nt	44	2007
White-footed Dunnart	Sminthopsis leucopus	//> (L	nt	5	2019
White-footed Rabbit-rat	Conilurus albipes	EX	L	ex	1	1845
Reptile – Marine				•	•	1
Green Turtle	Chelonia mydas	VU, Mi			-	-
Leathery Turtle	Dermochelys coriacea	EN, Mi	L	cr	2	2012
Loggerhead Turtle	Caretta caretta	EN, Mi			1	1991
Reptile - Terrestrial			•			
Striped Legless Lizard	Delma impar	VU	L	en	4	1969
Striped Worm-Lizard	Aprasia striolata		L	nt	4	2020
LEGEND EPBC	FFG	VicAdv				
EX – Extinct	L – Listed as threatened	RX – Regionally Extinct				
CR – Critically Endangered		EW – Extinct in the Wild				
EN – Endangered	\ '/	CR - Critically Endangered				
VU - Vulnerable		EN – Endangered				
Mi - Migratory	Ť	VU - Vulnerable				
		NT – Near Threatened				
		DD – Data Deficient				