



Seadragon Offshore Wind Farm Preliminary Desktop Biodiversity Assessment

Prepared for ERIAS Group Pty Ltd

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Contents

Summary	iv
1. Introduction	6
1.1 Project overview.....	6
1.2 Scope of assessment	7
2. Approach.....	9
2.1 Background review.....	9
2.1.1 Database searches.....	9
2.1.2 Spatial datasets.....	9
2.2 Definitions of threatened species or communities.....	10
2.3 Determining likelihood of occurrence of listed threatened species	10
2.4 Legislation and policy.....	10
2.5 Mapping.....	10
3. Biodiversity legislation	11
3.1 Commonwealth.....	11
3.1.1 Environment Protection and Biodiversity Conservation Act 1999.....	11
3.2 State.....	11
3.2.1 Environment Effects Act 1978	11
3.2.2 Flora and Fauna Guarantee Act 1988.....	12
3.2.3 National Parks Act 1975.....	12
4. Results	13
4.1 Landscape context.....	13
4.2 Vegetation.....	13
4.3 Wetlands and waterways.....	15
4.4 Other ecological values.....	15
4.5 Terrestrial and aquatic fauna habitat.....	17
4.6 Offshore fauna habitat	17
4.7 Threatened species and ecological communities	18
4.7.1 Threatened flora.....	18
4.7.2 Threatened fauna	18
4.7.3 Threatened ecological communities.....	23
4.8 Migratory species.....	27
4.9 Threatening processes	27
5. Potential impacts and mitigation measures.....	60
6. Key ecological values and recommendations.....	67
References.....	69
Appendices.....	71

Appendix 1	Flora	72
Appendix 2	Fauna	95
Appendix 3	PMST output	133

Tables

Table 1	Conservation status of threatened species and ecological communities.....	10
Table 2	DELWP 2005 modelled EVCs within study area (DELWP 2018a)	14
Table 3	Public land likely to be of significant ecological value within the study area	16
Table 4	Threatened seabird species with a medium or higher likelihood of occurring in the study area	19
Table 5	Threatened shorebird species with a medium or higher likelihood of occurring in the study area	20
Table 6	Threatened terrestrial bird species with a medium or higher likelihood of occurring in the study area	21
Table 7	Threatened fish species with a medium or higher likelihood of occurring in the study area	22
Table 8	Other threatened terrestrial and aquatic fauna species with a medium or higher likelihood of occurring in the study area.....	22
Table 9	TECs considered likely to occur within the study area	24
Table 10	Assessment of the project's potential to contribute to potentially threatening processes under the FFG Act (DELWP 2016).....	28
Table 11	Assessment of the project's potential to contribute to key threatening processes under the EPBC Act (DAWE 2021).....	30
Table 12	Assessment of potential impacts against SIC guidelines under the EPBC Act (Commonwealth of Australia 2013).....	61
Table 13	Assessment of potential impacts against referral criteria against the ministerial guidelines under the EE Act (DSE 2006).....	63

Figures

Figure 1	Location of the study area, Victoria.....	8
Figure 2	Modelled EVCs & threatened taxa records	32
Figure 3	Parks, reserves & DELWP current wetlands	41
Figure 4	Modelled TECs	51

Summary

ERIAS Group Pty Ltd has engaged Biosis to complete a preliminary desktop biodiversity assessment of the study area proposed for the development of the Seadragon Offshore Wind Farm. This assessment of ecological values has been conducted with a view to informing project referrals under both the Commonwealth of Australia's *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act) and Victoria's *Environmental Effects Act 1978* (EE Act). The report aims to identify the key potential biodiversity values which is being used as a high-level assessment of potential impacts and mitigation measures.

Ecological values

Key ecological values identified within the study area are as follows:

- Extensive areas of native vegetation contained primarily within public land including:
 - Gippsland Lakes Coastal Park,
 - Holey Plains State Park,
 - Giffard (Rifle Range) Flora Reserve,
 - Stradbroke Flora and Fauna Reserve.
- 25 Ecological Vegetation Classes (EVCs) within the Gippsland Plain bioregion including:
 - Ten EVCs with a Bioregional Conservation Status (BCS) of Endangered,
 - Nine EVCs with a BCS of Vulnerable ,
 - One EVC with a BCS of Rare.
- Over 1,000 wetlands are modelled within the study area including:
 - One internationally important (Ramsar) wetland - The Gippsland Lakes,
 - One nationally important wetland - Lake Wellington Wetlands,
 - Two waterbodies of regional significance - Jack Smith Lake & Lake Dennison.
- Waterways including:
 - Merriman Creek & associated tributaries,
 - LaTrobe River & associated tributaries,
 - Carr Creek & associated tributaries.
- Four nationally (EPBC Act) listed and six Victorian *Flora and Fauna Guarantee Act 1988* (FFG Act) listed threatened ecological communities.
- Populations of and / or suitable habitat for EPBC Act and FFG Act threatened flora and fauna species.
- Suitable habitat for migratory species listed under the EPBC Act including:
 - 53 migratory avifauna.

Government legislation and policy

Potential impacts to MNES under the EPBC Act

Our preliminary assessment of the project's potential impacts to biodiversity against the *Matters of National Environmental Significance, Significant Impact Criteria Guidelines 1.1 Environmental Protection and Biodiversity Conservation Act 1999* (Commonwealth of Australia 2013) indicate that the project could significantly impact the following MNES:

- Listed threatened flora and fauna species,
- Listed threatened ecological communities (TECs),
- Migratory species,
- Wetlands of international importance (Ramsar sites).

Further details are provided in Table 12 (Section 5).

Potential environmental effects under the EE Act

Our preliminary assessment of the project's potential impacts to biodiversity against the individual and combined referral criteria outlined in the *Ministerial Guidelines for Assessment of Environmental Effects under the Environment Effects Act 1978* (DSE 2006) indicate that the project could satisfy up to four of the individual potential environmental effects criteria and up to five of the combination of potential environmental effects criteria (Table 13, Section 5).

Recommendations

The primary measure to reduce impacts to biodiversity values within the study area is to avoid and minimise removal of native vegetation and terrestrial and aquatic habitat. It is critical that this be considered during the design phase of the project, when key decisions are made about the location of project components such as built infrastructure / site compounds / access roads / temporary material storage etc.

This could be achieved by:

- Avoiding / minimising unnecessary duplication of infrastructure e.g. utilise existing easements to connect to existing transmission network, co-locate project components with other infrastructure.
- Aligning the impact footprint through existing cleared land including agricultural land and plantations e.g. along Merrimans Creek / Gormandale – Stradbroke Road or along Seaspray Road and Hyland Highway.
- Strategic use of horizontal directional drilling (HDD).
- The development of a project specific Construction Environmental Management Plan (CEMP) and Operational Environmental Management Plan (OEMP).

The results of this assessment should be:

- Used to inform the referrals process under both the EPBC Act and EE Act to develop an appropriate scope for the environmental impact assessment of the project.
- Integrated into project design to avoid and minimise impacts to biodiversity.
- Used to inform development of a site-specific CEMP and OEMP.
- Used to inform development of an offset strategy for potential impacts to biodiversity.

1. Introduction

1.1 Project overview

Floatation Energy is proposing the development of the Seadragon Offshore Wind Farm (the project); a 1.5 GW offshore wind development in the Bass Strait. The project comprises an offshore wind farm along with an offshore and onshore electricity transmission network required to connect energy supply into the Victorian network. The key components of the project are:

- Offshore wind assets consisting of up to 150 Wind Turbine Generators located offshore and a network of buried and/or mechanically protected subsea inter-array cables.
- Offshore substations
 - Four Offshore Substation Platforms (OSPs) installed on new supporting structures and/or existing infrastructure.
- Offshore cables
 - Four to six buried and/or mechanically protected subsea export cables connecting the OSPs to the shore crossing.
- Onshore transmission cables will be installed to connect from the shore crossing location to the onshore project substation(s). Additionally onshore transmission cables will connect the onshore substation(s) to the onshore terminal station connection. Several nominal corridors are being considered including reuse of existing easements to reduce impacts. After further studies and stakeholder consultation a preferred corridor(s) will be defined.
- Onshore substation
 - Up to two onshore substations, incorporating switching gear and reactive power where required will be installed each with a nominal footprint of 6 hectares. Additional jointing pits may be required depending on the proximity of the onshore substation to the shore crossing.
- Onshore Terminal Station Connection
 - A connection to an existing, upgraded or new onshore terminal station. The terminal station is expected to be connected to existing infrastructure at Loy Yang, or Hazlewood or to a new terminal station within the Gippsland Renewable Energy Zone (G-REZ) at Giffard, within the survey area.
- Shore Crossing
 - A shore crossing connecting the offshore export cables to the onshore cables.
- Ports and harbours
 - The Project will utilise existing port facilities for the construction and operations phases.

The Project comprises offshore components located generally between McGaurans and Paradise Beach, off the Ninety Mile Beach on the Victorian coastline (Figure 1). The wind turbines will be installed within an approximate area of 300km² within the offshore referral/study area. Two indicative offshore sites have been identified as alternative options and a focus for further assessment:

- Central: centred at 38° 25' S / 147° 26' E, 10–30km off-shore with waters of 20-40m depth.

- Bream: centred at 38° 30' S / 147° 46' E encompassing an area around the Bream A and Bream B oil and gas platforms, 30-50km offshore where the waters are approximately 60m deep.

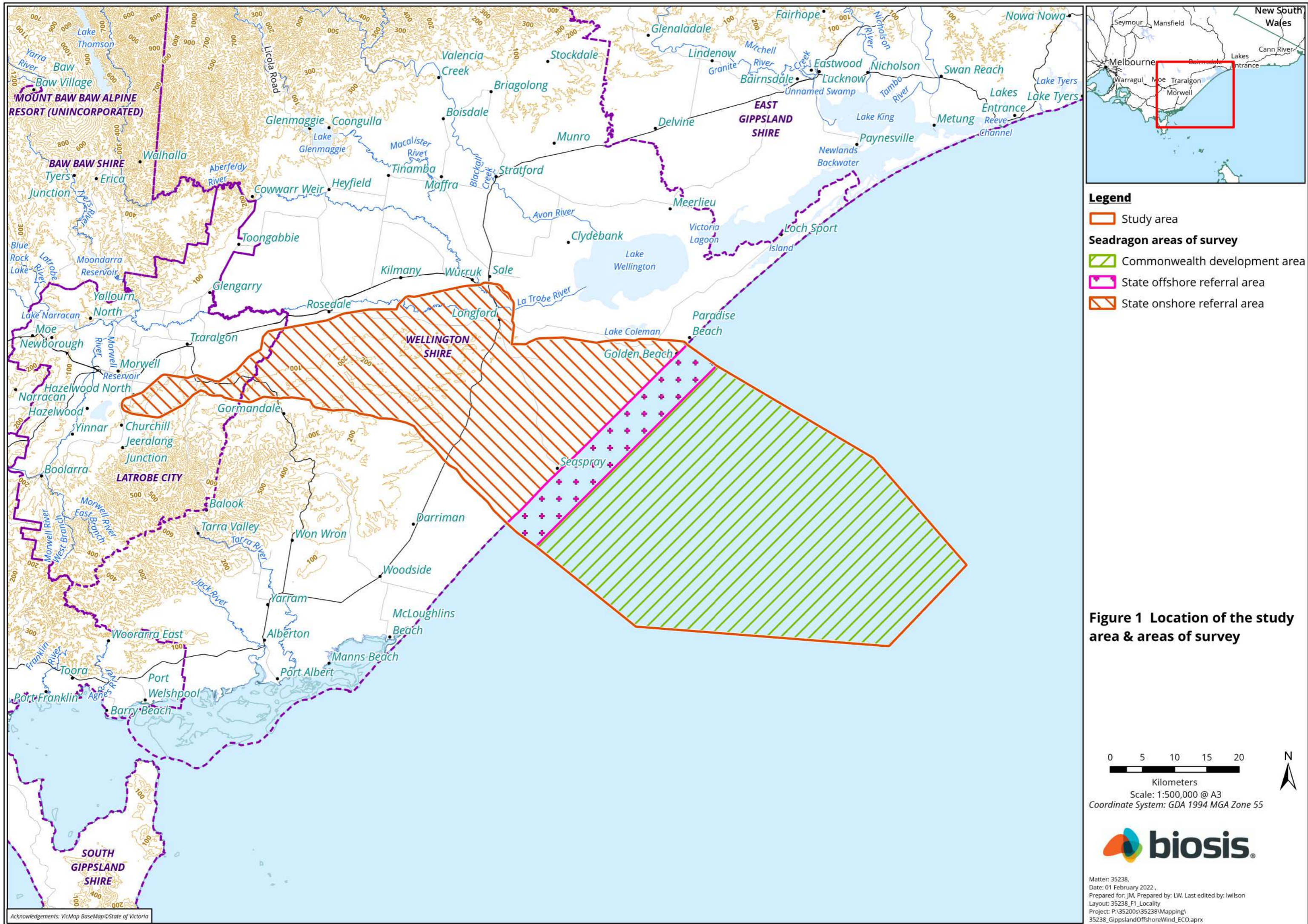
The Project's onshore components are generally proposed within an area extending from the coastal locations described above towards the west within a study / referral area that includes the proposed G-REZ and the existing Loy Yang and Hazlewood Power Stations.

ERIAS Group Pty Ltd has engaged Biosis to complete a preliminary desktop biodiversity assessment of the study area proposed for development (Figure 1). This assessment of ecological values has been conducted with a view to informing project referrals under both the Commonwealth of Australia's *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act) and Victoria's *Environmental Effects Act 1978* (EE Act). The report aims to identify the key potential biodiversity values which then informs a high-level assessment of potential impacts and mitigation measures.

1.2 Scope of assessment

The objectives of this preliminary desktop biodiversity assessment are to:

- Undertake biodiversity database searches and spatial dataset analysis of the search area (study area buffered by 500 metres as requested by ERIAS Group Pty Ltd) to identify potential ecological values.
 - Including all avifauna (marine, migratory, shorebirds, terrestrial birds) and terrestrial aquatic ecosystems.
- Conduct a high-level assessment of potential impacts to ecological values and mitigation measures with regard to the EPBC Act and EE Act.
- Provide a report documenting this assessment to inform EPBC Act and EE Act project referrals.



Legend

- Study area
- Commonwealth development area
- State offshore referral area
- State onshore referral area

Figure 1 Location of the study area & areas of survey

0 5 10 15 20
 Kilometers
 Scale: 1:500,000 @ A3
 Coordinate System: GDA 1994 MGA Zone 55



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Acknowledgements: VicMap BaseMap © State of Victoria

2. Approach

This section outlines the approach taken by the project team to deliver the preliminary ecological assessment. Our approach has included:

- Background review of databases and literature.
- Assessment of potential impacts to ecological values against:
 - Potential for significant impacts to Matters of National Environmental Significance (MNES) under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) against the *Matters of National Environmental Significance, Significant Impact Criteria Guidelines 1.1 Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth of Australia 2013),
 - Potential to satisfy criteria for referral under the EE Act as outlined in *Ministerial Guidelines for Assessment of Environmental Effects under the Environment Effects Act 1978* (the 'ministerial guidelines') (DSE 2006).

2.1 Background review

2.1.1 Database searches

In order to provide a context for the study area, information about flora and fauna from within 500 metres of the study area (the 'search area') was obtained from relevant biodiversity databases, many of which are maintained by the Victorian Government Department of Environment, Land, Water and Planning (DELWP) or the Australian Government Department of Agriculture, Water and the Environment (DAWE). Records from the following databases were collated and reviewed:

- DELWP's Victorian Biodiversity Atlas (VBA), including the 'VBA_FLORA25, FLORA100 & FLORA Restricted' and 'VBA_FAUNA25, FAUNA100 & FAUNA Restricted' datasets
- DAWE's Protected Matters Search Tool for matters protected by the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act)

2.1.2 Spatial datasets

The following spatial datasets have been accessed and used to understand existing conditions and to identify opportunities and constraints when undertaking further design:

- Topographic data including roads, waterways, contours, cadastre,
- Land tenure (public and private),
- Ecological Vegetation Classes (EVC) (NV2005_EVCBCS) (DELWP 2018a),
- Flora and Fauna Guarantee Act Listed Communities (NV2005_FFG_COMM) (DELWP 2018b),
- Ecological Communities of National Environmental Significance Distributions (Public Grids) (DAWE 2020),
- Victorian Biodiversity Atlas (VBA) flora and fauna records,
- Ramsar Wetlands of Australia (DoEE 2018),
- Victorian Wetland Inventory (Current) (WETLAND_CURRENT) (DELWP 2021).

2.2 Definitions of threatened species or communities

Threatened species or communities include those species or communities that are listed under the EPBC Act and/or *Flora and Fauna Guarantee Act 1988* (FFG Act). The conservation status of a species or ecological community is determined by its listing status under Commonwealth or State legislation / policy (Table 1).

Table 1 Conservation status of threatened species and ecological communities

Conservation status	
National	Listed as nationally critically endangered, endangered or vulnerable under the EPBC Act
State	Listed as extinct, extinct in the wild, critically endangered, endangered, vulnerable or conservation dependent in Victoria under the FFG Act

Lists of threatened species generated from the databases are provided in Appendix 1 (flora) and Appendix 2 (fauna) and the species have been assessed to determine their likelihood of occurrence based on the process outlined below.

2.3 Determining likelihood of occurrence of listed threatened species

Likelihood of occurrence indicates the potential for a species or ecological community to occur regularly within the study area. It is based on expert opinion, information in relevant biodiversity databases and reports, and an assessment of the habitats on site. Likelihood of occurrence is ranked as negligible, low, medium, high or recorded. The rationale for the rank assigned is provided for each species in Appendix 1 (flora) and Appendix 2 (fauna). Those species for which there is little or no suitable habitat within the study area are assigned a likelihood of low or negligible and are not considered further.

Only those species listed under the EPBC Act or the FFG Act (hereafter referred to as 'threatened species') are assessed to determine their likelihood of occurrence. Threatened species which have at least medium likelihood of occurrence are given further consideration in this report.

2.4 Legislation and policy

The implications for the project were assessed in relation to key biodiversity legislation and policy including:

- Matters listed under the EPBC Act, associated policy statements, significant impacts guidelines, listing advice and key threatening processes.
- Threatened taxa, communities and threatening processes listed under Section 10 of the FFG Act and associated action statements and listing advice.
- *Environment Effects Act 1978*, particularly the *Ministerial Guidelines for Assessment of Environmental Effects under the Environment Effects Act 1978* (the 'ministerial guidelines') (DSE 2006).
- *National Parks Act 1975* as it relates to referral criteria under the EE Act ministerial guidelines (DSE 2006).
- *Planning and Environment Act 1987* as it relates to referral criteria under the EE Act ministerial guidelines (DSE 2006).

2.5 Mapping

ERIAS Group Pty Ltd supplied spatial data files outlining the location and extent of the study area.

3. Biodiversity legislation

This section provides an overview of the key biodiversity legislation relevant to the development of the project to the next approval stage. This section does not describe the legislation and policy in detail.

3.1 Commonwealth

3.1.1 Environment Protection and Biodiversity Conservation Act 1999

The EPBC Act applies to developments and associated activities that have the potential to significantly impact on MNES protected under the Act. Guidance on the potential for significant impacts is provided in the *Matters of National Environmental Significance, Significant Impact Criteria Guidelines 1.1 Environmental Protection and Biodiversity Conservation Act 1999* (the 'SIC guidelines') (Commonwealth of Australia 2013).

MNES relevant to the project are:

- Listed threatened flora and fauna species,
- Listed threatened ecological communities (TECs),
- Migratory species,
- Wetlands of international importance (Ramsar sites).

An assessment of the project's potential to trigger significant impacts to MNES under the EPBC Act is provided in Table 12 (Section 5).

3.2 State

3.2.1 Environment Effects Act 1978

The *Environment Effects Act 1978* establishes a process to assess the environmental impacts of a project. If applicable, the Act requires that an Environment Effects Statement (EES) be prepared by the proponent. The EES is submitted to the Minister for Planning and enables them to assess the potential environmental effects of the proposed development.

The general objective of the assessment process is to *provide for the transparent, integrated and timely assessment of the environmental effects of projects capable of having a significant effect on the environment* (DSE 2006).

The *Ministerial Guidelines for Assessment of Environmental Effects under the Environment Effects Act 1978* (the 'ministerial guidelines') (DSE 2006) provide a range of criteria that can be used to determine whether an EES may be required for a project. These criteria relate to individual potential environmental effects and a combination of (two or more) potential environmental effects.

An assessment of the project against the individual potential effects criteria and against the combination of potential effects criteria is provided in Table 13 (Section 5).

However, the guidelines are not binding, and the decision as to whether an EES is required is ultimately at the discretion of the Minister for Planning.

3.2.2 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 threatening processes. Matters listed under the FFG Act are specifically mentioned in referral criteria under the EE Act ministerial guidelines (DSE 2006).

3.2.3 National Parks Act 1975

The *National Parks Act 1975* (NP Act) concerns the creation and management of national parks, State parks, marine national parks and marine sanctuaries in Victoria. Land relating to the NP Act is included within the referral criteria under the EE Act ministerial guidelines (DSE 2006). Several parks within the study area are included under this Act.

4. Results

The ecological features of the study area are described below and mapped in Figure 2, Figure 3 and Figure 4.

Flora and fauna species recorded or predicted to occur in the local area along with an assessment of the likelihood of the species occurring within the study area are listed in Appendix 1 (flora) and Appendix 2 (fauna). The output of the Commonwealth of Australia's Protected Matters Search Tool (PMST) is provided in Appendix 3.

4.1 Landscape context

The study area lies within the Gippsland Plain bioregion between the Strzelecki Ranges to the south-west and the Gippsland Lakes to the north-east. Landforms that occur within the study area include coastal and dune complexes, plains, low hills and large coastal / near-coastal waterbodies such as Lake Reeve. The region is dominated by flat to slightly undulating Cainozoic sediments which form the coastal plain. The land within the study area is generally below 250 metres above sea level and largely slopes gently to the east. Soils are predominately sedimentary in origin (VRO 2020).

Approximately half of the study area has been cleared of native vegetation, primarily for agriculture (dairying, beef, lamb, wool and vegetable production), plantations (hardwood and softwood), residential development and linear infrastructure such as roads and transmission lines (VicFlora n.d.). The vast majority of native vegetation that remains is within public land, most notably Holey Plains State Park, Stradbroke Flora and Fauna Reserve, Giffard (Rifle Range) Flora Reserve, and Gippsland Lakes Coastal Park. Due primarily to the scale of disturbance throughout the landscape, the native vegetation retained within these remaining pieces of public land is of significant biodiversity conservation value.

4.2 Vegetation

A total of 25 Ecological Vegetation Classes (EVCs) across the Gippsland Plain bioregion are modelled to occur within the study area according to DELWP's Native Vegetation - Modelled 2005 Ecological Vegetation Classes (with Bioregional Conservation Status) dataset (Figure 2). These EVCs are presented along with bioregional conservation status (BCS) in Table 2 and include a range of forest, scrub, woodland, grassland, wetland, heathland and saltmarsh communities. It should be noted that there are some EVCs, primarily wetland communities, which are not modelled within the NV2005_EVCBCS dataset (DELWP 2018a). Such EVCs may also be present within the study area but have not been captured in this desktop assessment.

Almost a third of modelled native vegetation within the study area is EVC 48 – Heathy Woodland (28.9% of modelled EVC area within study area) followed by EVC 16 – Lowland Forest (17.1%), EVC 53 – Swamp Scrub (11.3%) and EVC 03 – Damp Sands Herb-rich Woodland (11.0%). The modelled area of these four EVCs combined represents approximately 68% of modelled native vegetation extent within the study area.

EVC 48 – Heathy Woodland is a low woodland associated with nutrient poor soils. The canopy is dominated by Eucalypt species such as Messmate Stringybark *Eucalyptus obliqua* or Narrow-leaf Peppermint *E. radiata* but can also include Saw Banksia *Banksia serrata* over a diverse array of ericoid shrubs or bracken (depending on fire frequency). EVC 16 – Lowland Forest is a diverse ecosystem that occurs on relatively fertile, moderately well-drained soils in areas of relatively high rainfall. Characteristic canopy species include Messmate Stringybark, Narrow-leaf Peppermint and Yertchuk *E. considaniana*. EVC 03 – Damp Sands Herb-rich Woodland is typically characterised by Rough-barked Manna Gum *E. viminalis* subsp. *pryoriana* and occurs on

moderately fertile, well-drained deep sandy or loamy topsoils over heavier subsoils. The ground layer is rich in grasses and herbs including orchids. EVC 53 – Swamp Scrub is a closed scrub dominated by Woolly Tea-tree *Leptospermum lanigerum* and / or Swamp Paperbark *Melaleuca ericifolia* which occurs at low elevations on alluvial deposits or other poorly drained sites with higher nutrient availability (DSE 2004).

Ten EVCs modelled within the study area have a BCS of Endangered, nine modelled EVCs have a BCS of Vulnerable and one EVC, EVC – 06 Sand Heathland, is considered Rare. The presence of EVCs with a BCS of Endangered, Vulnerable or Rare is of particular concern as sufficient impacts to these communities (e.g. clearing 10 hectares or more) is likely to satisfy the referral criteria for individual potential environmental effects under the EE Act ministerial guidelines (DSE 2006). Avoiding threatened and / or high conservation value EVCs should be a focus at the design stage to reduce the project's overall impacts by locating as much of the terrestrial impact footprint as possible within existing cleared land including plantations and through utilising existing transmission infrastructure.

Table 2 DELWP 2005 modelled EVCs within study area (DELWP 2018a)

EVC	Bioregional conservation status (BCS)	Modelled extent within study area (ha)
Gippsland Plain (GipP)		
EVC 01 - Coastal Dune Scrub/Coastal Dune Grassland Mosaic	Depleted	1,639
EVC 02 - Coast Banksia Woodland	Vulnerable	397
EVC 03 - Damp Sands Herb-rich Woodland	Vulnerable	6,933
EVC 06 - Sand Heathland	Rare	5,708
EVC 07 - Clay Heathland	Depleted	203
EVC 09 - Coastal Saltmarsh	Least Concern	213
EVC 10 - Estuarine Wetland	Least Concern	1,672
EVC 16 - Lowland Forest	Vulnerable	10,803
EVC 18 - Riparian Forest	Vulnerable	309
EVC 29 - Damp Forest	Endangered	226
EVC 48 - Heathy Woodland	Least Concern	18,247
EVC 53 - Swamp Scrub	Endangered	7,140
EVC 55 - Plains Grassy Woodland	Endangered	684
EVC 56 - Floodplain Riparian Woodland	Endangered	1,689
EVC 83 - Swampy Riparian Woodland	Endangered	84
EVC 125 - Plains Grassy Wetland	Endangered	14
EVC 132 - Plains Grassland	Endangered	237
EVC 136 - Sedge Wetland	Vulnerable	761

EVC	Bioregional conservation status (BCS)	Modelled extent within study area (ha)
EVC 151 - Plains Grassy Forest	Vulnerable	29
EVC 191 - Riparian Scrub	Vulnerable	3,813
EVC 259 - Plains Grassy Woodland/Gilgai Wetland Mosaic	Endangered	35
EVC 334 - Billabong Wetland Aggregate	Endangered	18
EVC 681 - Deep Freshwater Marsh	Vulnerable	1,721
EVC 698 - Lowland Forest/Heathy Woodland Mosaic	Vulnerable	445
EVC 863 - Floodplain Reedbed	Endangered	49

4.3 Wetlands and waterways

As shown in Figure 3, over 1,000 wetlands occur within the study area based on DELWP's Victorian Wetland Inventory dataset (DELWP 2021).

One wetland within the study area, the Gippsland Lakes, is a Ramsar wetland which includes Lake Reeve, Lake Coleman and Lake Wellington (DEPI 2013). Lake Wellington Wetlands is also listed in the Directory of Important Wetlands in Australia as a nationally important wetland (DAWE 2019).

Other major natural hydrological features within the study area include:

- Merriman Creek & associated tributaries,
- LaTrobe River & associated tributaries,
- Carr Creek & associated tributaries,
- Jack Smith Lake,
 - Considered a site of regional significance as a remnant of the extensive lagoon and inlet complex that extended from Merriman Creek south-west to Woodside Beach and the lake's with similarities to Lake Reeve (part of the Gippsland Lakes Ramsar wetland) (VRO 2019a).
- Lake Dennison.
 - Considered a site of regional significance primarily because the lake, barrier, bluff and the lagoonal channels represent distinctive stages in the evolution of barrier and lagoon systems (VRO 2019b).

Impacts to aquatic, estuarine or marine ecosystems are relevant to both the Commonwealth and State biodiversity legislation. Avoiding wetlands and waterways should be a focus at the design stage to reduce the project's overall impacts by locating as much of the terrestrial impact footprint as possible within existing cleared land including plantations and through utilising existing transmission infrastructure.

4.4 Other ecological values

The study area contains over 20 pieces of public land considered likely to be of significant ecological value including flora reserves, bushland reserves, wildlife reserves, flora & fauna reserves, natural features

reserves, nature conservation reserves and state forests (Table 3, Figure 3). Three of these are included within the *National Parks Act 1975*.

- Gippsland Lakes Coastal Park,
- Holey Plains State Park,
- Ninety Mile Beach Marine National Park.

The study area also includes approximately 45 kilometres of coastline along Ninety Mile Beach. The entire length of Ninety Mile Beach is backed by dunes forming a coastal barrier which is critical in protecting the coastal plain from marine erosion and inundation (VRO n.d.). The beach also provides habitat for beach dwelling fauna such as shorebirds.

Table 3 Public land likely to be of significant ecological value within the study area

Public land	Listed under NP Act (Y / N)
Callignee State Forest	N
Darriman H29 Bushland Reserve	N
Giffard (Rifle Range) Flora Reserve	N
Giffard H30 Bushland Reserve	N
Giffard H31 Bushland Reserve	N
Gippsland Lakes Coastal Park (inc. proposed additions)	Y
Gormandale Flora Reserve	N
Gormandale State Forest	N
Holey Plains State Park	Y
Jack Smith Lake Wildlife Reserve	N
Lake Denison Wildlife Reserve	N
Longford Natural Features Reserve	N
McLoughlins Beach - Seaspray Coastal Reserve	N
Merrimans Creek Flora Reserve	N
Mullungdung State Forest	N
Ninety Mile Beach Marine National Park	Y
Rosedale Bushland Reserve	N
Sale Common Nature Conservation Reserve	N
Seaspray Park & Recreation Reserve	N
Seaspray Public Purposes Reserve	N

Public land	Listed under NP Act (Y / N)
Stradbroke Flora and Fauna Reserve	N
Stradbroke Hall & Recreation Reserve	N
The Waterhole Gippsland Lakes Reserve	N
Willung Recreation Reserve	N

4.5 Terrestrial and aquatic fauna habitat

Approximately half of the study area has been cleared of native vegetation for agriculture, plantations, residential development and linear infrastructure, which is of limited ecological value to fauna. The remaining area comprises a range of forest, scrub, woodland, grassland, wetland, heathland and saltmarsh vegetation which is of high ecological value to fauna.

Woodland and forest vegetation may provide suitable habitats for several bird species including threatened species such as the Swift Parrot *Lathamus discolor* and Painted Honeyeater *Grantiella picta*. In addition, these vegetation types provide habitat for various arboreal mammals and reptiles. Scrub and heathland vegetation provides further habitat to a range of small mammals such as the New Holland Mouse *Pseudomys novaehollandiae* and are also of value to a range of avifauna.

Several wetlands and waterways in the area are of high value to a range of shorebirds and other wetland birds. In particular, the Gippsland Lakes are listed as a Ramsar site and provide important habitat for several migratory shorebirds including the Double-banded Plover *Charadrius bicinctus*, Latham's Snipe *Gallinago hardwickii*, Red-necked Stint *Calidris ruficollis* and Sharp-tailed Sandpiper *Calidris acuminata*. In addition, Jack Smith Lake is an area of regional significance and provides important seasonal habitat for a number of migratory shorebirds, including the Double-banded Plover and Sharp-tailed Sandpiper. Wetlands and surrounding waterways throughout the study area also provide habitat for a range of ichthyofauna including threatened species such as Dwarf Galaxias *Galaxiella pusilla* and Australian Grayling *Prototroctes maraena*.

The coastal habitat at Ninety Mile Beach is a highly dynamic environment which may not be suitable to certain shorebird species. However, while it is unlikely that this area will support a high diversity and abundance of shorebirds, there are several migratory species which are known to utilise this area, including Red-necked Stint, Double-banded Plover and Sanderling *Calidris alba*. In addition the sandy beaches also provide habitat for resident Hooded Plover *Thinornis cucullatus* and Red-capped Plovers *Charadrius ruficapillus*.

4.6 Offshore fauna habitat

Bass Strait is considered to be an area of high importance for a large number of marine predators, particularly for a vast number of seabird species that breed and forage within this area (Chambers et al. 2015). The Bass Strait Islands around Wilsons Promontory provide breeding habitat for a range of seabird species including large numbers of the migratory Short-tailed Shearwater *Ardenna tenuirostris*. The offshore environment is also likely to provide foraging habitat for several threatened and/or migratory seabirds including various albatross and petrel species. In addition the offshore environment associated with the study area may also serve as a movement passage and foraging ground for several other marine megafauna, including whales, dolphins, seals, sea turtles and sharks.

4.7 Threatened species and ecological communities

4.7.1 Threatened flora

A 500 metre buffered search of the PMST and Victorian biodiversity databases indicates 15 nationally listed and 57 Victorian FFG Act listed flora species occur, or are predicted to occur, in the search area (Appendix 1, Table A1.1). A total of 13 nationally listed and 62 state listed flora species are considered to have a medium or higher likelihood of occurring within the study area (Appendix 1, Table A1.1). Nine of the 13 nationally listed flora species considered likely to occur in the study area are also state listed.

Threatened flora species considered likely to occur within the study area occupy a range of habitats from wetlands, saltmarsh and coastal dunes through to forests, woodlands and heathlands. There are a number of range restricted flora species such as Wellington Mint-bush *Prostanthera galbraithiae* (EPBC VU), which is endemic to Victoria and restricted to the Holey Hill - Dutson area. The study area also contains disjunct populations of several threatened flora species such as Rush Lily *Sowerbaea juncea* (FFG vu) and Dusky Violet *Viola fuscoviolacea* (FFG en).

Areas of greatest value for threatened flora species within the study area are:

- Giffard (Rifle Range) Flora Reserve: known to support populations of and / or suitable habitat for several EPBC and FFG listed flora species such as Dwarf Kerrawang *Commersonia prostrata* (EPBC EN).
- Holey Plains State Park: known to support populations of and / or suitable habitat for several EPBC and FFG listed flora species such as Wellington Mint-bush (EPBC VU) and Trailing Hop-bush *Dodonaea procumbens* (EPBC VU).
- Dutson Downs public land areas: known to support populations of several EPBC and FFG listed flora species such as Thick-lip Spider-orchid *Caladenia tessellata* (EPBC VU).
- Stradbroke Flora and Fauna Reserve and surrounding reserves: known to support populations of and / or suitable habitat for several EPBC and FFG listed flora species including Golden Grevillea *Grevillea chrysophaea* (FFG vu).
- Gippsland Lakes Coastal Park: known to support populations of and / or suitable habitat for several EPBC and FFG listed flora species including Maroon Leek-orchid *Prasophyllum frenchii* (EPBC EN).
- Wetlands, lakes and waterways: known to support populations of and / or suitable habitat for several EPBC and FFG listed flora species including River Swamp Wallaby-grass *Amphibromus fluitans* (EPBC VU).

4.7.2 Threatened fauna

A 500 metre buffered search of the PMST and Victorian databases indicates 68 nationally listed and 43 Victorian FFG Act listed fauna species occur, or are predicted to occur, in the search area (Appendix 2). A total of 45 nationally listed and 41 state listed fauna species are considered to have a medium or higher likelihood of occurring within the study area (Appendix 2). Of the 45 nationally listed fauna species with a medium or higher likelihood of occurring within the study area, 36 are also state listed.

The threatened fauna species considered likely to occur within the study area occupy a variety of habitats ranging from wetlands, saltmarshes and coastal dunes, to forests, woodlands and heathlands as well as open ocean environments.

As such, threatened fauna are discussed further under three sub-headings, namely:

- Avifauna (which includes all relevant seabirds, shorebirds and terrestrial birds),
- Ichthyofauna (which includes all relevant freshwater fish species),

- Other fauna (which includes all relevant terrestrial and freshwater aquatic mammals, reptiles and amphibians).

4.7.2.1 Avifauna

For the purpose of this report, avifauna are discussed separately as seabirds (marine birds foraging and breeding offshore), shorebirds (marine and freshwaters waders, wetland birds and terns) and terrestrial birds (all species occupying terrestrial habitats).

Seabirds

A total of 13 nationally listed and one state listed threatened seabird species are considered as having a medium or higher likelihood of occurring within the study area (Table 4). Nine of the 13 nationally listed seabirds are also state listed, while the state listed Light-mantled Sooty Albatross *Phoebetria palpebrata*, is listed as Migratory under the EPBC Act. The proposed area thus has the potential to overlap with the at-sea distributions of eight threatened Albatross species and five threatened Procellariidae (Petrels and Shearwaters) with an EPBC listing.

The Bass Strait Islands, particularly those to west and east of Wilsons Promontory, provide nesting habitat for a number other important seabird species (Schumann et al. 2014). While there are no known seabird breeding colonies within the study area, several breeding species are known to breed within 100 kilometres of the study area, including:

- Little Penguin *Eudyptula minor*
- Short-tailed Shearwater *Ardenna tenuirostris*
- Black-faced Cormorant *Phalacrocorax fuscescens*
- Common Diving-Petrel *Pelecanoides urinatrix*
- Fairy Prion *Pachyptila turtar*
- Pacific Gull *Larus pacificus*

Given the high mobility and dispersal capabilities of seabirds, particularly outside of the breeding period, it is highly likely that these species' ranges overlap with the proposed study area.

Table 4 Threatened seabird species with a medium or higher likelihood of occurring in the study area

Common name	Species name	Conservation status	
		EPBC	FFG
Wandering Albatross	<i>Diomedea exulans</i>	VU, Migratory	cr
Southern Royal Albatross	<i>Diomedea epomophora</i>	VU, Migratory	cr
Black-browed Albatross	<i>Thalassarche melanophris</i>	VU, Migratory	
Indian Yellow-nosed Albatross	<i>Thalassarche carteri</i>	VU, Migratory	en
Grey-headed Albatross	<i>Thalassarche chrysostoma</i>	EN, Migratory	en
Shy Albatross	<i>Thalassarche cauta</i>	VU, Migratory	en
Buller's Albatross	<i>Thalassarche bulleri</i>	VU, Migratory	en
Sooty Albatross	<i>Phoebetria fusca</i>	VU, Migratory	cr
Gould's Petrel	<i>Pterodroma leucoptera leucoptera</i>	EN	

Common name	Species name	Conservation status	
		EPBC	FFG
Blue Petrel	<i>Halobaena caerulea</i>	VU	
Fairy Prion (southern)	<i>Pachyptila turtur subantarctica</i>	VU	
Southern Giant-Petrel	<i>Macronectes giganteus</i>	EN, Migratory	en
Northern Giant-Petrel	<i>Macronectes halli</i>	VU, Migratory	en
Light-mantled Sooty Albatross	<i>Phoebastria palpebrata</i>	Migratory	cr

Shorebirds

For the purpose of this report, marine waders, wetland birds and terns are discussed collectively as shorebirds. A total of 12 nationally listed and 19 state listed shorebird species are considered to have a medium or higher likelihood of occurring within the study area (Table 5). Of the 12 nationally listed species, 10 are also state listed.

Table 5 Threatened shorebird species with a medium or higher likelihood of occurring in the study area

Common name	Species name	Conservation status	
		EPBC	FFG
Australian Painted-snipe	<i>Rostratula australis</i>	EN	cr
Australasian Bittern	<i>Botaurus poiciloptilus</i>	EN	cr
Bar-tailed Godwit (baueri)	<i>Limosa lapponica baueri</i>	VU	
Australian Fairy Tern	<i>Sternula nereis nereis</i>	VU	
Fairy Tern	<i>Sternula nereis</i>	VU	cr
Hooded Plover	<i>Thinornis cucullatus</i>	VU	vu
Greater Sand Plover	<i>Charadrius leschenaultii</i>	VU, Migratory	v
Eastern Curlew	<i>Numenius madagascariensis</i>	CR, Migratory	cr
Bar-tailed Godwit	<i>Limosa lapponica</i>	VU, Migratory	vu
Curlew Sandpiper	<i>Calidris ferruginea</i>	CR, Migratory	cr
Red Knot	<i>Calidris canutus</i>	EN, Migratory	en
Great Knot	<i>Calidris tenuirostris</i>	CR, Migratory	cr
Caspian Tern	<i>Hydroprogne caspia</i>	Migratory	vu
Little Tern	<i>Sternula albifrons</i>	Migratory	cr
Ruddy Turnstone	<i>Arenaria interpres</i>	Migratory	en
Grey Plover	<i>Pluvialis squatarola</i>	Migratory	vu
Pacific Golden Plover	<i>Pluvialis fulva</i>	Migratory	vu
Common Sandpiper	<i>Actitis hypoleucos</i>	Migratory	vu
Common Greenshank	<i>Tringa nebularia</i>	Migratory	en
Marsh Sandpiper	<i>Tringa stagnatilis</i>	Migratory	en
Lewin's Rail	<i>Lewinia pectoralis</i>		vu
Little Egret	<i>Egretta garzetta</i>		en

Common name	Species name	Conservation status	
		EPBC	FFG
Plumed Egret	<i>Ardea intermedia plumifera</i>		cr
Eastern Great Egret	<i>Ardea alba modesta</i>		vu
Australian Little Bittern	<i>Ixobrychus dubius</i>		en
Magpie Goose	<i>Anseranas semipalmata</i>		vu
Australasian Shoveler	<i>Spatula rhynchotis</i>		vu
Freckled Duck	<i>Stictonetta naevosa</i>		en
Hardhead	<i>Aythya australis</i>		vu
Blue-billed Duck	<i>Oxyura australis</i>		vu
Musk Duck	<i>Biziura lobata</i>		vu

Terrestrial birds

A total of four nationally listed and 10 state listed terrestrial avifauna species, are considered to have a medium or higher likelihood of occurring within the study area (Table 6). All four of the national listed species are also state listed.

Table 6 Threatened terrestrial bird species with a medium or higher likelihood of occurring in the study area

Common name	Species name	Conservation status	
		EPBC	FFG
Orange-bellied Parrot	<i>Neophema chrysogaster</i>	CR	cr
Swift Parrot	<i>Lathamus discolor</i>	CR	cr
White-throated Needletail	<i>Hirundapus caudacutus</i>	VU, Migratory	vu
Painted Honeyeater	<i>Grantiella picta</i>	VU	vu
Grey Goshawk	<i>Accipiter novaehollandiae</i>		en
Little Eagle	<i>Hieraetus morphnoides</i>		vu
White-bellied Sea-Eagle	<i>Haliaeetus leucogaster</i>		en
Square-tailed Kite	<i>Lophoictinia isura</i>		vu
Powerful Owl	<i>Ninox strenua</i>		vu
Masked Owl	<i>Tyto novaehollandiae</i>		cr
Hooded Robin	<i>Melanodryas cucullata</i>		vu
Chestnut-rumped Heathwren	<i>Calamanthus pyrrhopygius</i>		vu
Speckled Warbler	<i>Pyrrholaemus sagittatus</i>		en
Diamond Firetail	<i>Stagonopleura guttata</i>		vu

4.7.2.2 Ichthyofauna

A total of two nationally listed and one state listed freshwater fish species, are considered to have a medium or higher likelihood of occurrence within the study area (Table 7). Both nationally listed fish species are also state listed.

Table 7 Threatened fish species with a medium or higher likelihood of occurring in the study area

Common name	Species name	Conservation status	
		EPBC	FFG
Australian Grayling	<i>Prototroctes maraena</i>	VU	en
Dwarf Galaxias	<i>Galaxiella pusilla</i>	VU	en
Flinders Pygmy Perch	<i>Nannoperca sp. 1</i>		vu

4.7.2.3 Other terrestrial and aquatic fauna

The remaining fauna identified through database searches covers terrestrial and aquatic mammals, reptiles and amphibians. A total of four nationally listed mammals and two nationally listed amphibians are considered to have a medium or higher likelihood of occurrence within the study area. Five of these nationally listed species are also state listed. In addition three state listed mammals, three reptiles and two amphibians are also considered to have a medium or higher likelihood of occurring within the study area.

Database searches also identified a number of national and state listed marine megafauna s with the potential to occur within the proposed study area. These species are outside the scope of this report but are included in Appendix 2, along with likelihood estimations. Of relevance to the proposed study area is the movement patterns of several whale species, including Humpback Whales *Megaptera novaeangliae* and *M. n. australis* and Southern Right Whales *Eubalaena australis*, as well as the population of Burrunan Dolphins *Tursiops australis* around the Gippsland Lakes area. In addition, the proposed study area may overlap with the distributions of EPBC listed marine fishes such as the Southern Bluefin Tuna *Thunnus maccoyii*, Blue Warehouse *Seriolella brama*, Great White Shark *Carcharodon carcharias* and School Shark *Galeorhinus galeus*. It is noteworthy that the study area is within travel range of several Australian fur seal *Arctocephalis pusillus doriferus* and Long-nosed fur seal *A. fosteri* breeding colonies, with both of these fur seal species known to forage extensively throughout this area.

Table 8 Other threatened terrestrial and aquatic fauna species with a medium or higher likelihood of occurring in the study area

Common name	Species name	Conservation status	
		EPBC	FFG
Southern Greater Glider	<i>Petauroides volans</i>	VU	vu
New Holland Mouse	<i>Pseudomys novaehollandiae</i>	VU	en
Southern Brown Bandicoot	<i>Isoodon obesulus obesulus</i>	EN	en
Grey-headed Flying-fox	<i>Pteropus poliocephalus</i>	VU	vu
Green and Golden Bell Frog	<i>Litoria aurea</i>	VU	
Growling Grass Frog	<i>Litoria raniformis</i>	VU	vu
White-footed Dunnart	<i>Sminthopsis leucopus</i>		vu

Common name	Species name	Conservation status	
		EPBC	FFG
Platypus	<i>Ornithorhynchus anatinus</i>		vu
Yellow-bellied Sheath-tail Bat	<i>Saccolaimus flaviventris</i>		vu
Lace Monitor	<i>Varanus varius</i>		en
Swamp Skink	<i>Lissolepis coventryi</i>		en
Glossy Grass Skink	<i>Pseudemoia rawlinsoni</i>		en
Southern Toadlet	<i>Pseudophryne semimarmorata</i>		en
Martin's Toadlet	<i>Uperoleia martini</i>		cr

4.7.3 Threatened ecological communities

A 500 metre buffered search of the PMST and Victorian databases indicates four nationally listed and six Victorian FFG Act listed threatened ecological communities (TECs) occur, or are predicted to occur, in the search area. Based on the available desktop data all ten TECs are considered likely to occur within the study area. Descriptions of each TEC are provided in Table 9. Modelled occurrences of these TECs are presented in Figure 4.

The EPBC Act listed TECs Natural Damp Grassland of the Victorian Coastal Plains and Gippsland Red Gum (*Eucalyptus tereticornis* subsp. *mediana*) Grassy Woodland and Associated Native Grassland are broadly modelled throughout large swathes of the study area. Modelled occurrences of the other two EPBC Act listed TECs Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains (SHWLTP) and Subtropical and Temperate Coastal Saltmarsh are much more spatially refined. It should be noted that SHWLTP can occur and do persist in low-lying areas of otherwise cleared agricultural land and can be difficult to detect.

Aside from Coastal Moonah Woodland all other FFG Act listed TECs are modelled in the northern half of the study area primarily along the LaTrobe River valley between Longford and Traralgon. The EPBC Act listed TEC SHWLTP is also modelled within the LaTrobe River valley just west of Longford. Patches of Sedge-rich Eucalyptus camphora Swamp are modelled along the upper reaches of Merriman Creek around Willung.

Table 9 TECs considered likely to occur within the study area

Community Name	Conservation status	Source	Description
National significance			
Gippsland Red Gum (<i>Eucalyptus tereticornis</i> subsp. <i>mediana</i>) Grassy Woodland and Associated Native Grassland	Critically Endangered	PMST	A type of eucalypt woodland with the tree canopy dominated by Gippsland Red Gum and the ground layer dominated by grasses or grass-like plants. The ecological community occurs in two forms. The grassy woodland form is dominated by a tree canopy with a graminoid ground layer. In the grassland form, the tree cover is largely absent. The woodland and grassland forms now show a degree of divergence in their floristic composition due to differences in their long-term management history (DEWHA 2008).
Natural Damp Grassland of the Victorian Coastal Plains	Critically Endangered	PMST	A type of grassland ranging to open grassy woodland with scattered trees and shrubs that occurs in Victoria's coastal plains. It is generally found on heavy grey silty-loamy soils, which are poorly drained and therefore often damp and sometimes waterlogged. The grassland has a variable floristic composition but generally is dominated by tussock grasses, notably Kangaroo Grass <i>Themeda triandra</i> on the drier sites or Common Tussock-grass <i>Poa labillardierei</i> , on wetter sites. Where trees are present, they are typically a sparse cover of eucalypt species associated with damp sites, such as Manna Gum <i>E. viminalis</i> or Swamp Gum <i>E. ovata</i> , but characteristically exclude Gippsland Red Gum which occurs on the drier parts of the Gippsland Plain subregion. Non-eucalypt trees may include Drooping She-oak <i>Allocasuarina verticillata</i> , Blackwood <i>Acacia melanoxylon</i> , Black Wattle <i>A. mearnsii</i> and Silver Banksia <i>Banksia marginata</i> (DoE 2015).

Community Name	Conservation status	Source	Description
Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains	Critically Endangered	PMST	Temporary freshwater wetlands that are inundated on a seasonal basis, typically filling after winter-spring rains, and then drying out. The vegetation is generally treeless and dominated by a herbaceous ground layer, often with a considerable graminoid component and with forbs present. The herbaceous species present are characteristic of wetter locations and are typically absent or uncommon in any adjoining dryland grasslands and woodlands. The dominant plants present are subject to seasonal and site conditions, and the diversity of the flora may range from relatively species-poor to species-rich composition (DSEWPC 2012).
Subtropical and Temperate Coastal Saltmarsh	Vulnerable	PMST	This ecological community occurs in coastal areas under regular or intermittent tidal influence. In southern latitudes (e.g. Victoria) saltmarsh is often the main vegetation-type in the intertidal zone and commonly occurs in association with estuaries. The ecological community consists mainly of salt-tolerant vegetation (halophytes) including: grasses, herbs, sedges, rushes and shrubs. Succulent herbs, shrubs and grasses generally dominate and vegetation is generally of less than 0.5 m height. Many species of non-vascular plants are also found in saltmarsh, including epiphytic algae, diatoms and cyanobacterial mats (DSEWPC 2013).
State significance			
Central Gippsland Plains Grassland Community	Threatened	NV2005_FFG_COMM	This community is dominated by Kangaroo Grass) and includes a range of native herbs and, rarely, trees such as Drooping She-oak, Burgan <i>Kunzea ericoides</i> and Forest Red Gum. The community is extremely restricted in distribution; it is estimated that less than 20 to 30 hectares remain (SAC 2013).
Coastal Moonah (<i>Melaleuca lanceolata</i> subsp. <i>lanceolata</i>) Woodland Community	Threatened	NV2005_FFG_COMM	This community is an open grassy woodland that is dominated by Moonah and found along parts of the Victorian coastline. Coastal Moonah Woodlands tend to occur on high-level dunes along the coast where soils are strongly alkaline and developed on moderately organic aeolian sands or on dune calcarenites (SAC 2013).

Community Name	Conservation status	Source	Description
Forest Red Gum Grassy Woodland Community	Threatened	NV2005_FFG_COMM	This community is a type of woodland found at a number of sites in Gippsland. The community is characteristically dominated by Forest Red Gum, often with co-dominant Red Box <i>E. polyanthemos</i> . Coast Grey Box <i>E. bosistoana</i> occurs towards the coast, while Apple Box <i>E. bridgesiana</i> is often co-dominant on sandy sites (SAC 2013).
Herb-rich Plains Grassy Wetland (West Gippsland) Community	Threatened	NV2005_FFG_COMM	This community typically occurs in shallow (less than 50 cm deep) seasonal wetlands that fill in winter and spring and are dry by summer. Some may retain water for longer periods, but typically only have surface water for up to six months. The community contains a rich plant association of grasses, sedges and aquatic herbs. It is estimated that less than 70 ha of this community still exists, including degraded areas (SAC 2013).
Plains Grassland (South Gippsland) Community	Threatened	NV2005_FFG_COMM	This community varies in structure from closed tussock grassland to open woodland. Its original vegetation structure is likely to have been an open woodland that included areas of very sparsely-treed tussock grassland with shrubby zones associated with drainage lines. This community type occurs in places on the Gippsland plains in the Yarram region between Seaspray and Welshpool (SAC 2013).
Sedge Rich <i>Eucalyptus camphora</i> Swamp Community	Threatened	NV2005_FFG_COMM	This community is characterised by Mountain Swamp Gum <i>E. camphora</i> over a shrub layer dominated by Woolly Tea-tree <i>Leptospermum lanigerum</i> and a ground cover of diverse sedges and rushes. The community varies in structure from an open woodland or open grassy woodland to a closed shrubland and, where it has been highly disturbed, a grassland dominated by the Common Reed <i>Phragmites australis</i> (SAC 2013).

4.8 Migratory species

A 500 metre buffered search of the PMST and Victorian databases indicates 71 migratory species that occur or are predicted to occur, within the search area (Appendix 2). In total, 35 of these species are also listed as threatened under national legislation, while a further nine are listed under state legislation.

Fifty three of these migratory species are avifauna which typically travel extensive distances and are likely to occur within the study area. This includes 20 seabirds, 27 shorebirds and six terrestrial birds. This includes the Short-tailed shearwater *Ardenna tenuirostris*, the most numerically abundant seabird in south-eastern Australia which is known to breed in large numbers at colonies within 80 km of the study area (Schumann et al. 2014).

The 18 remaining migratory fauna are all marine species, comprising various mammals, sharks and sea turtles. Further assessment of these species is outside the scope of this report, but it is likely that their distributions will overlap with the proposed study area.

4.9 Threatening processes

High-level assessments of the potential of the project to contribute to the listed potentially threatening processes under the FFG Act and listed key threatening processes under the EPBC Act are provided in Table 10 and Table 11 respectively (DELWP 2016, DAWE 2021).

The contribution of the project to these threatening processes is primarily associated with:

- Potential impacts to terrestrial ecosystems from onshore works including the spread of viruses / diseases and impacts from introduced species.
- Potential impacts to aquatic, estuarine and marine ecosystems from onshore and offshore works in and / or adjacent to these areas.

Table 10 Assessment of the project’s potential to contribute to potentially threatening processes under the FFG Act (DELWP 2016)

Potentially threatening process	Potential to contribute (Y / N)
Alteration to the natural flow regimes of rivers and streams	Y
Alteration to the natural temperature regimes of rivers and streams	Y
Collection of native orchids	N
Degradation and loss of habitats caused by feral Horses (<i>Equus caballus</i>)	N
Degradation of native riparian vegetation along Victorian rivers and streams	Y
Habitat fragmentation as a threatening process for fauna in Victoria	Y
High frequency fire resulting in disruption of life cycle processes in plants and animals and loss of vegetation structure and composition	N
Human activity which results in artificially elevated or epidemic levels of Myrtle Wilt within <i>Nothofagus</i> -dominated Cool Temperate Rainforest	N
Inappropriate fire regimes causing disruption to sustainable ecosystem processes and resultant loss of biodiversity	N
Incidental catch (or bycatch) of seabirds during longline fishing operations	N
Increase in sediment input into Victorian rivers and streams due to human activities	Y
Infection of amphibians with Chytrid Fungus, resulting in chytridiomycosis	Y
Input of organotins to Victorian marine and estuarine waters	N
Input of petroleum and related products into Victorian marine and estuarine environments	Y
Input of toxic substances into Victorian rivers and streams	Y
Introduction and spread of <i>Spartina</i> to Victorian estuarine environments	Y
Introduction of live fish into waters outside their natural range within a Victorian river catchment after 1770	N

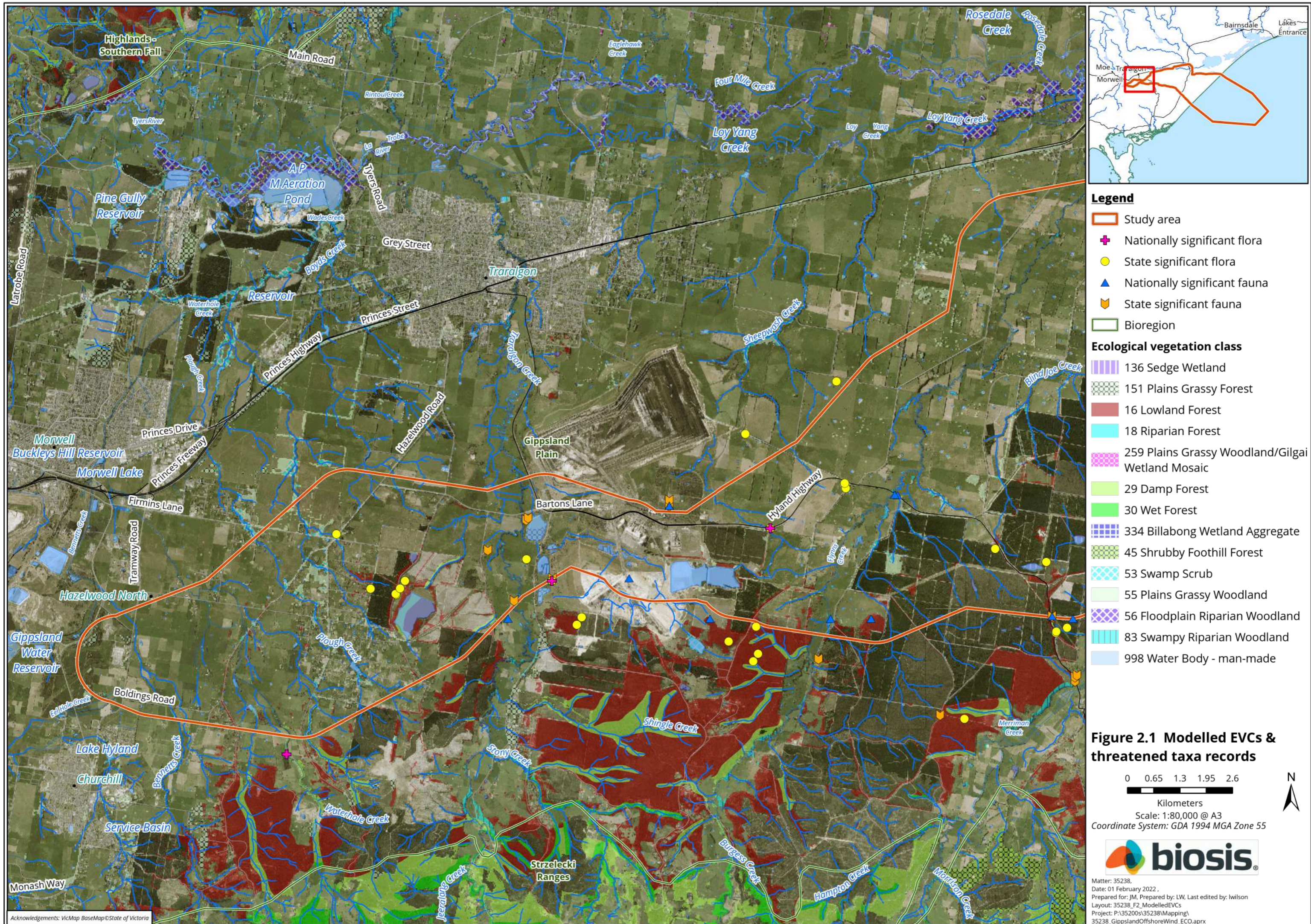
Potentially threatening process	Potential to contribute (Y / N)
Invasion of native vegetation by Blackberry <i>Rubus fruticosus</i> L. agg.	Y
Invasion of native vegetation by 'environmental weeds'	Y
Invasion of native vegetation communities by Tall Wheat-grass <i>Lophopyrum ponticum</i>	Y
Loss of biodiversity as a result of the spread of Coast Wattle (<i>Acacia longifolia</i> subsp. <i>sophorae</i>) and Sallow Wattle (<i>Acacia longifolia</i> subsp. <i>longifolia</i>) into areas outside its natural range	Y
Loss of biodiversity in native ant populations and potential ecosystem integrity following invasion by Argentine Ants (<i>Linepithema humile</i>)	Y
Loss of coarse woody debris from Victorian native forests and woodlands	Y
Loss of hollow-bearing trees from Victorian native forests	Y
Loss of terrestrial climatic habitat caused by anthropogenic emissions of greenhouse gases	N
Predation of native wildlife by the cat, <i>Felis catus</i>	Y
Predation of native wildlife by the introduced Red Fox <i>Vulpes vulpes</i>	Y
Prevention of passage of aquatic biota as a result of the presence of instream structures	Y
Reduction in biodiversity of native vegetation by Sambar (<i>Cervus unicolor</i>)	Y
Reduction in biodiversity resulting from Noisy Miner (<i>Manorina melanocephala</i>) populations in Victoria	Y
Reduction in biomass and biodiversity of native vegetation through grazing by the Rabbit <i>Oryctolagus cuniculus</i>	Y
Removal of wood debris from Victorian streams	Y
Soil and vegetation disturbance resulting from marble mining	N
Soil degradation and reduction of biodiversity through browsing and competition by feral goats (<i>Capra hircus</i>)	Y

Potentially threatening process	Potential to contribute (Y / N)
Soil erosion and vegetation damage and disturbance in the alpine regions of Victoria caused by cattle grazing	N
Spread of <i>Pittosporum undulatum</i> in areas outside its natural distribution	Y
The discharge of human-generated marine debris into Victorian marine or estuarine waters	Y
The introduction and spread of the Large Earth Bumblebee <i>Bombus terrestris</i> into Victorian terrestrial environments	N
The introduction of exotic organisms into Victorian marine waters	Y
The spread of <i>Phytophthora cinnamomi</i> from infected sites into parks and reserves, including roadsides, under the control of a state or local government authority	Y
Threats to native flora and fauna arising from the use by the feral honeybee <i>Apis mellifera</i> of nesting hollows and floral resources	Y
Use of <i>Phytophthora</i> -infected gravel in construction of roads, bridges and reservoirs	Y
Wetland loss and degradation as a result of change in water regime, dredging, draining, filling and grazing	Y

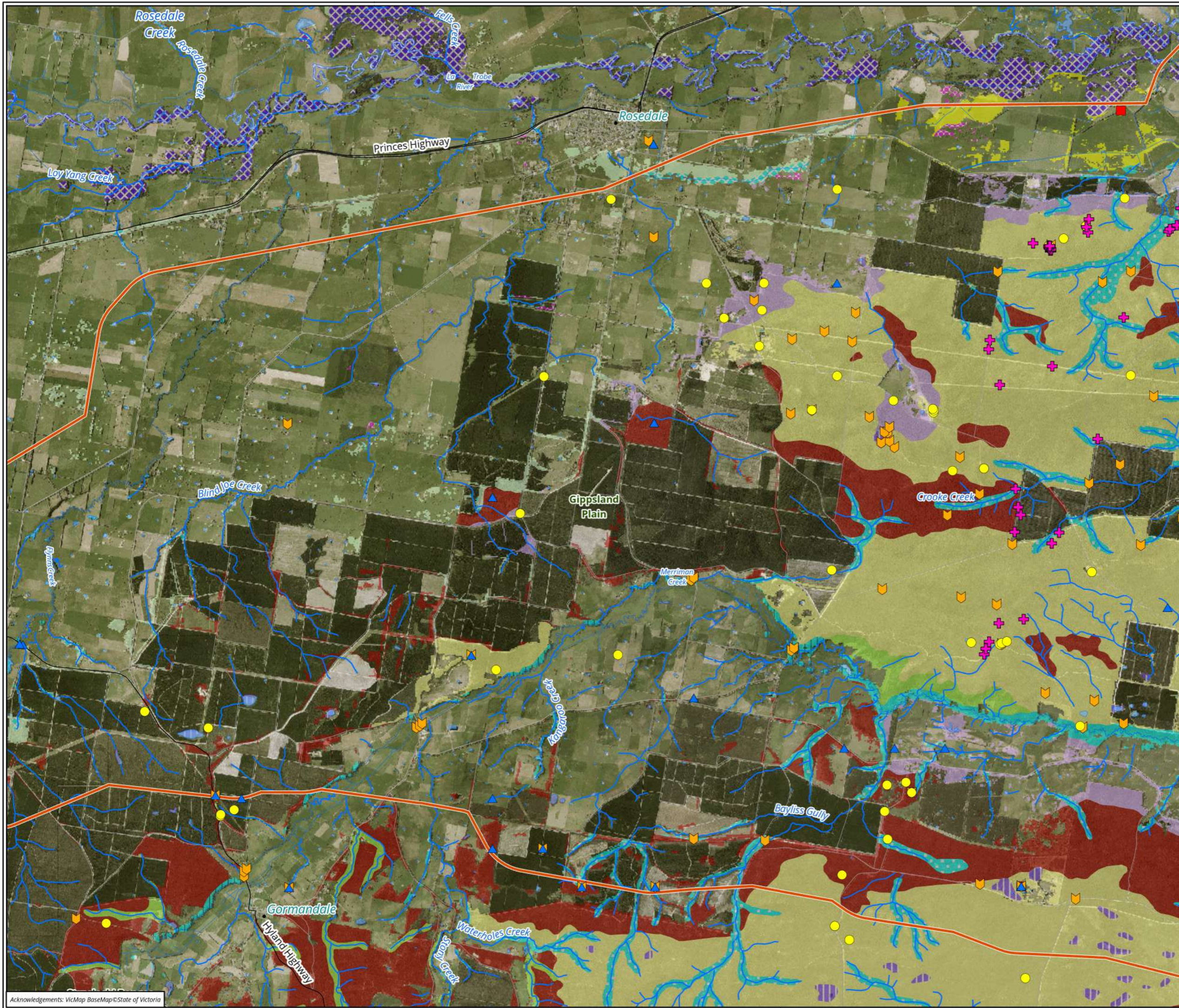
Table 11 Assessment of the project's potential to contribute to key threatening processes under the EPBC Act (DAWE 2021)

Key threatening processes	Potential to contribute (Y / N)
Aggressive exclusion of birds from potential woodland and forest habitat by over-abundant noisy miners (<i>Manorina melanocephala</i>)	Y
Competition and land degradation by rabbits	Y
Competition and land degradation by unmanaged goats	Y
Dieback caused by the root-rot fungus (<i>Phytophthora cinnamomi</i>)	Y
Incidental catch (bycatch) of Sea Turtle during coastal otter-trawling operations within Australian waters north of 28 degrees South	N
Incidental catch (or bycatch) of seabirds during oceanic longline fishing operations	N

Key threatening processes	Potential to contribute (Y / N)
Infection of amphibians with chytrid fungus resulting in chytridiomycosis	Y
Injury and fatality to vertebrate marine life caused by ingestion of, or entanglement in, harmful marine debris	Y
Invasion of northern Australia by Gamba Grass and other introduced grasses	N
Land clearance	Y
Loss and degradation of native plant and animal habitat by invasion of escaped garden plants, including aquatic plants	Y
Loss of biodiversity and ecosystem integrity following invasion by the Yellow Crazy Ant (<i>Anoplolepis gracilipes</i>) on Christmas Island, Indian Ocean	N
Loss of climatic habitat caused by anthropogenic emissions of greenhouse gases	N
Novel biota and their impact on biodiversity	Y
Predation by European red fox	Y
Predation by exotic rats on Australian offshore islands of less than 1000 km ² (100,000 ha)	N
Predation by feral cats	Y
Predation, habitat degradation, competition and disease transmission by Feral Pigs	Y
Psittacine Circoviral (beak and feather) disease affecting endangered psittacine species	N
The biological effects, including lethal toxic ingestion, caused by Cane Toads (<i>Bufo marinus</i>)	N
The reduction in the biodiversity of Australian native fauna and flora due to the red imported fire ant, <i>Solenopsis invicta</i>	N

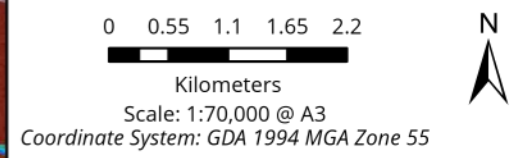


Acknowledgements: VicMap BaseMap © State of Victoria



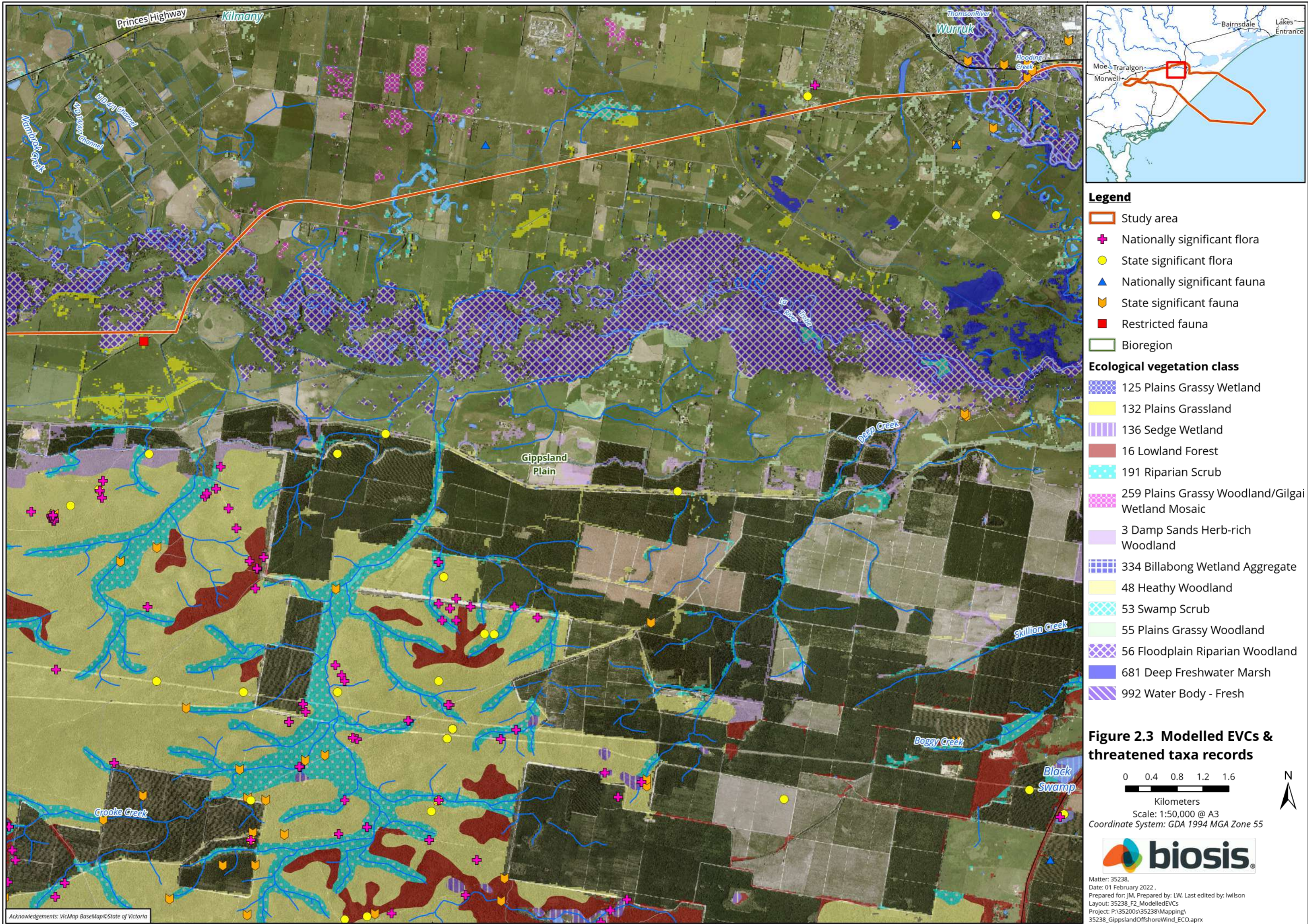
- Legend**
- Study area
 - + Nationally significant flora
 - State significant flora
 - ▲ Nationally significant fauna
 - ♣ State significant fauna
 - Restricted fauna
 - Bioregion
- Ecological vegetation class**
- 132 Plains Grassland
 - 136 Sedge Wetland
 - 16 Lowland Forest
 - 18 Riparian Forest
 - 191 Riparian Scrub
 - 259 Plains Grassy Woodland/Gilgai Wetland Mosaic
 - 29 Damp Forest
 - 3 Damp Sands Herb-rich Woodland
 - 30 Wet Forest
 - 334 Billabong Wetland Aggregate
 - 48 Heathy Woodland
 - 53 Swamp Scrub
 - 55 Plains Grassy Woodland
 - 56 Floodplain Riparian Woodland
 - 83 Swampy Riparian Woodland

Figure 2.2 Modelled EVCs & threatened taxa records



Matter: 35238.
 Date: 01 February 2022.
 Prepared for: JM, Prepared by: LW, Last edited by: lwilson
 Layout: 35238_F2_ModelledEVCs
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Legend

- Study area
- + Nationally significant flora
- State significant flora
- ▲ Nationally significant fauna
- ↘ State significant fauna
- Restricted fauna
- Bioregion

Ecological vegetation class

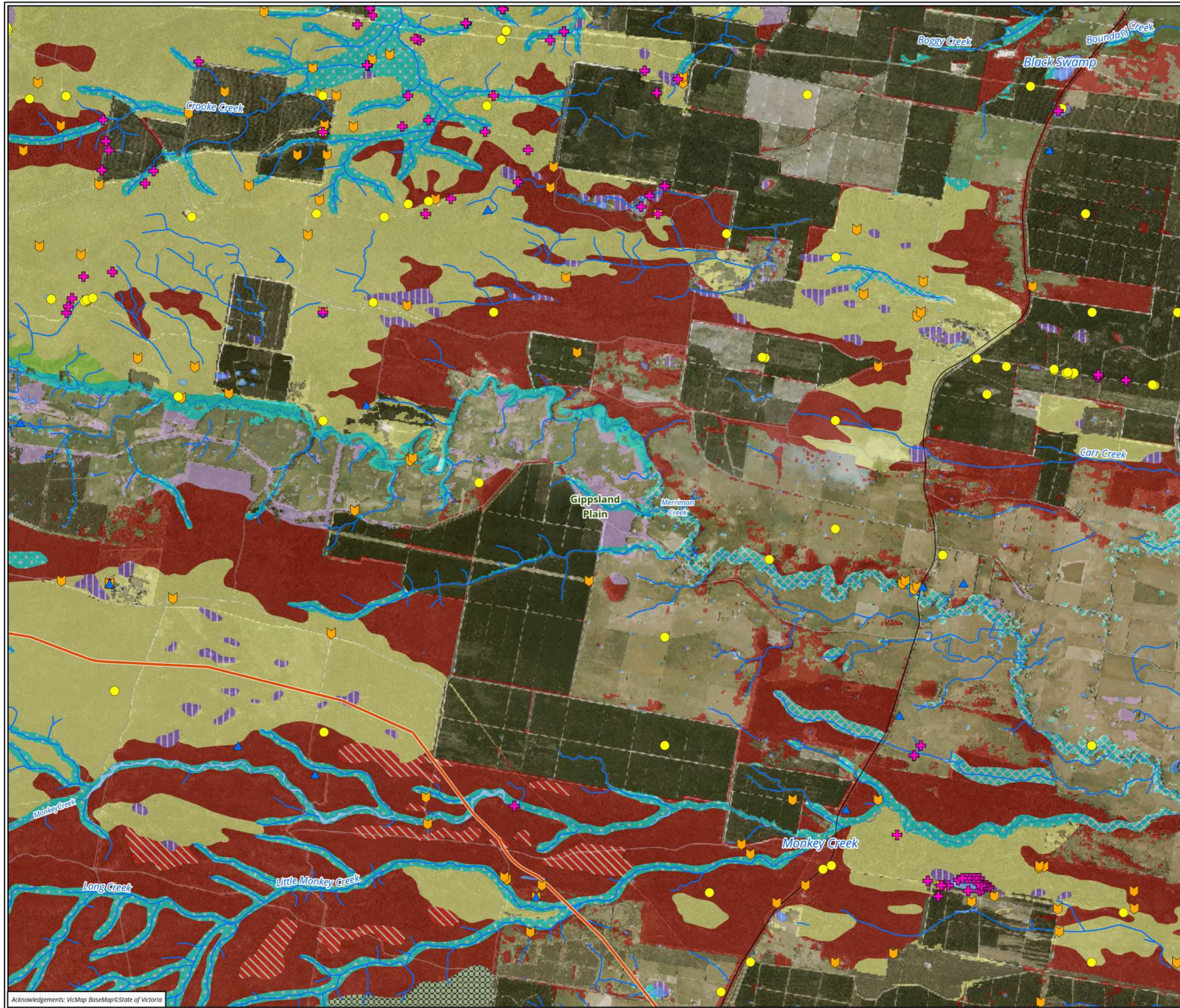
- 125 Plains Grassy Wetland
- 132 Plains Grassland
- 136 Sedge Wetland
- 16 Lowland Forest
- 191 Riparian Scrub
- 259 Plains Grassy Woodland/Gilgai Wetland Mosaic
- 3 Damp Sands Herb-rich Woodland
- 334 Billabong Wetland Aggregate
- 48 Heathy Woodland
- 53 Swamp Scrub
- 55 Plains Grassy Woodland
- 56 Floodplain Riparian Woodland
- 681 Deep Freshwater Marsh
- 992 Water Body - Fresh

Figure 2.3 Modelled EVCs & threatened taxon records

0 0.4 0.8 1.2 1.6
Kilometers

Scale: 1:50,000 @ A3
Coordinate System: GDA 1994 MGA Zone 55

Acknowledgements: VicMap BaseMap © State of Victoria



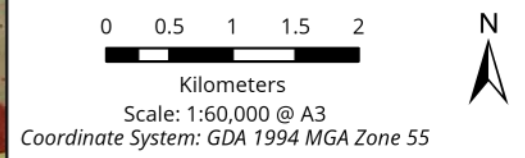
Legend

- Study area
- + Nationally significant flora
- State significant flora
- ▲ Nationally significant fauna
- ↘ State significant fauna
- Restricted fauna
- Bioregion

Ecological vegetation class

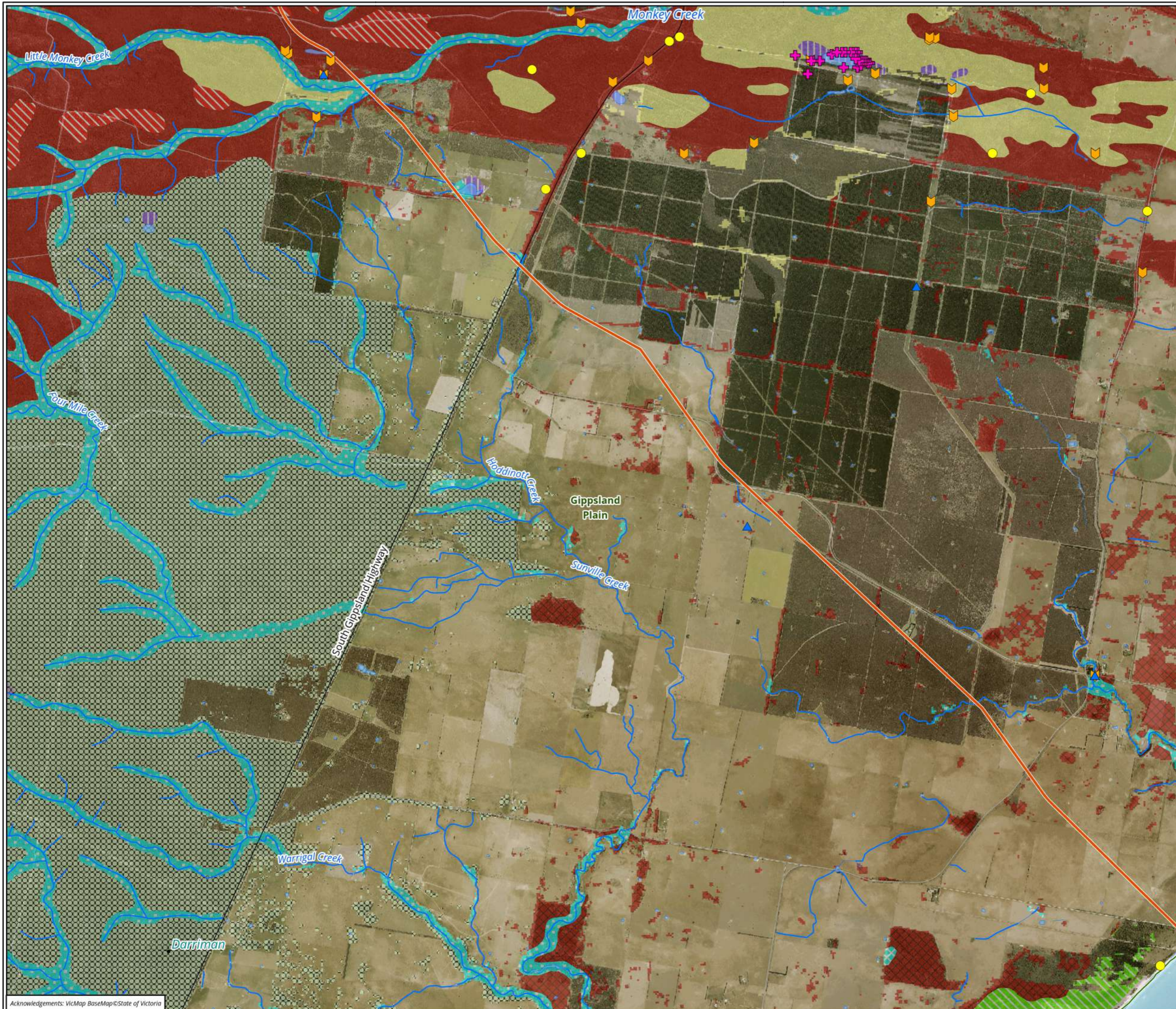
- 136 Sedge Wetland
- 151 Plains Grassy Forest
- 16 Lowland Forest
- 18 Riparian Forest
- 191 Riparian Scrub
- 29 Damp Forest
- 3 Damp Sands Herb-rich Woodland
- 48 Heathy Woodland
- 53 Swamp Scrub
- 7 Clay Heathland

Figure 2.4 Modelled EVCs & threatened taxon records



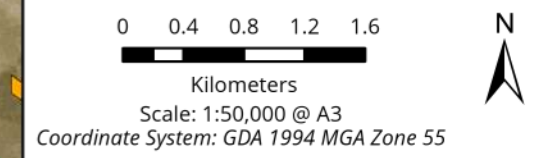
Matter: 35238,
 Date: 01 February 2022,
 Prepared for: JM, Prepared by: LW, Last edited by: Iwison
 Layout: 35238_F2_ModelledEVCs
 Project: P:\35200s\35238\Mapping\35238_GippslandOffshoreWind_ECO.aprx

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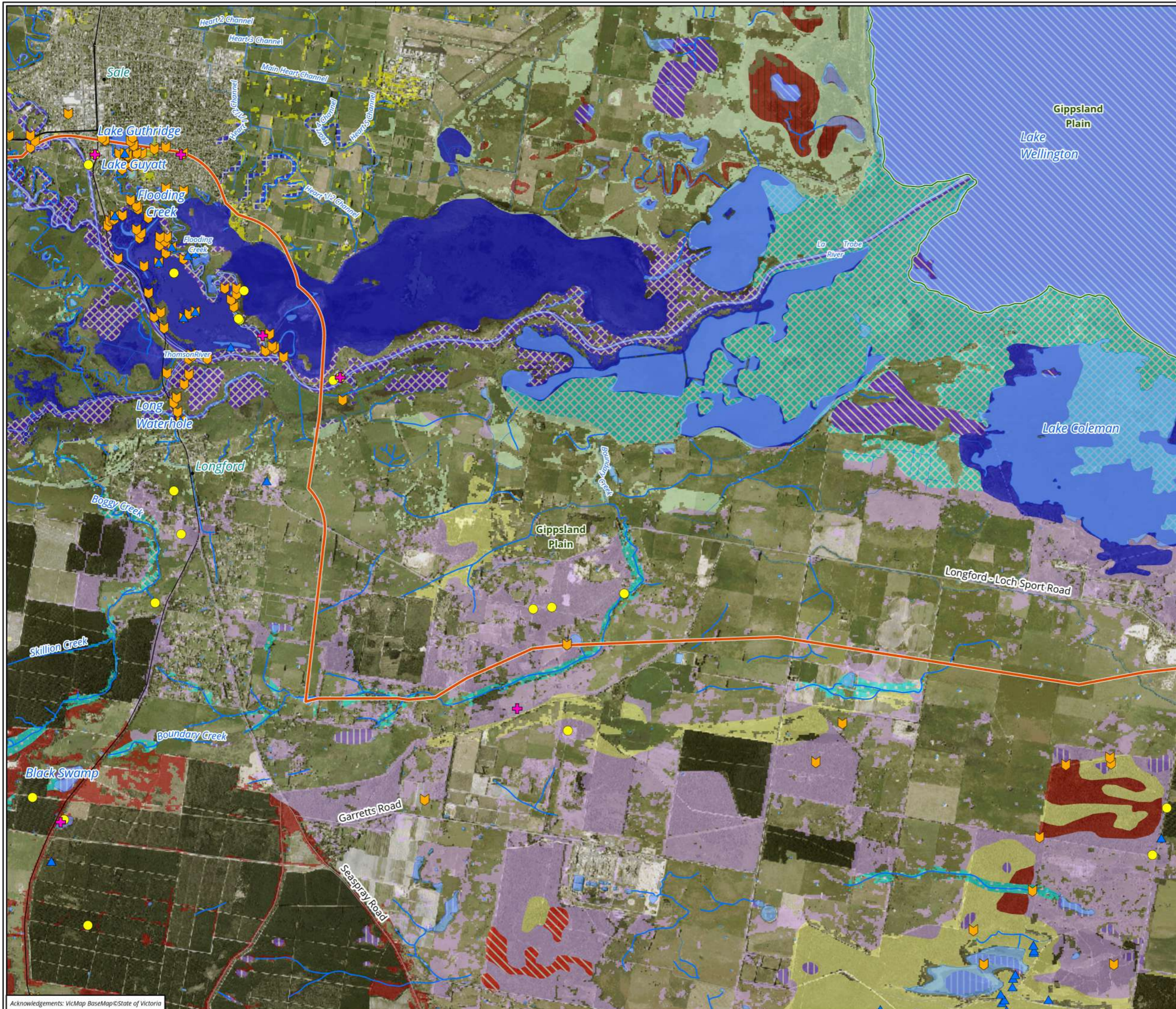
- Legend**
- Study area
 - + Nationally significant flora
 - State significant flora
 - ▲ Nationally significant fauna
 - State significant fauna
 - Bioregion
- Ecological vegetation class**
- 1 Coastal Dune Scrub/Coastal Dune Grassland Mosaic
 - 10 Estuarine Wetland
 - 136 Sedge Wetland
 - 151 Plains Grassy Forest
 - 16 Lowland Forest
 - 164 Creekline Herb-rich Woodland
 - 191 Riparian Scrub
 - 48 Heathy Woodland
 - 53 Swamp Scrub
 - 698 Lowland Forest/Heathy Woodland Mosaic
 - 7 Clay Heathland

Figure 2.5 Modelled EVCs & threatened taxon records



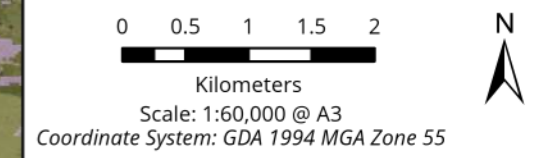
Matter: 35238.
 Date: 01 February 2022.
 Prepared for: JM, Prepared by: LW, Last edited by: lwilson
 Layout: 35238_F2_ModelledEVCs
 Project: P:\35200s\35238\Mapping\35238_GippslandOffshoreWind_ECO.aprx

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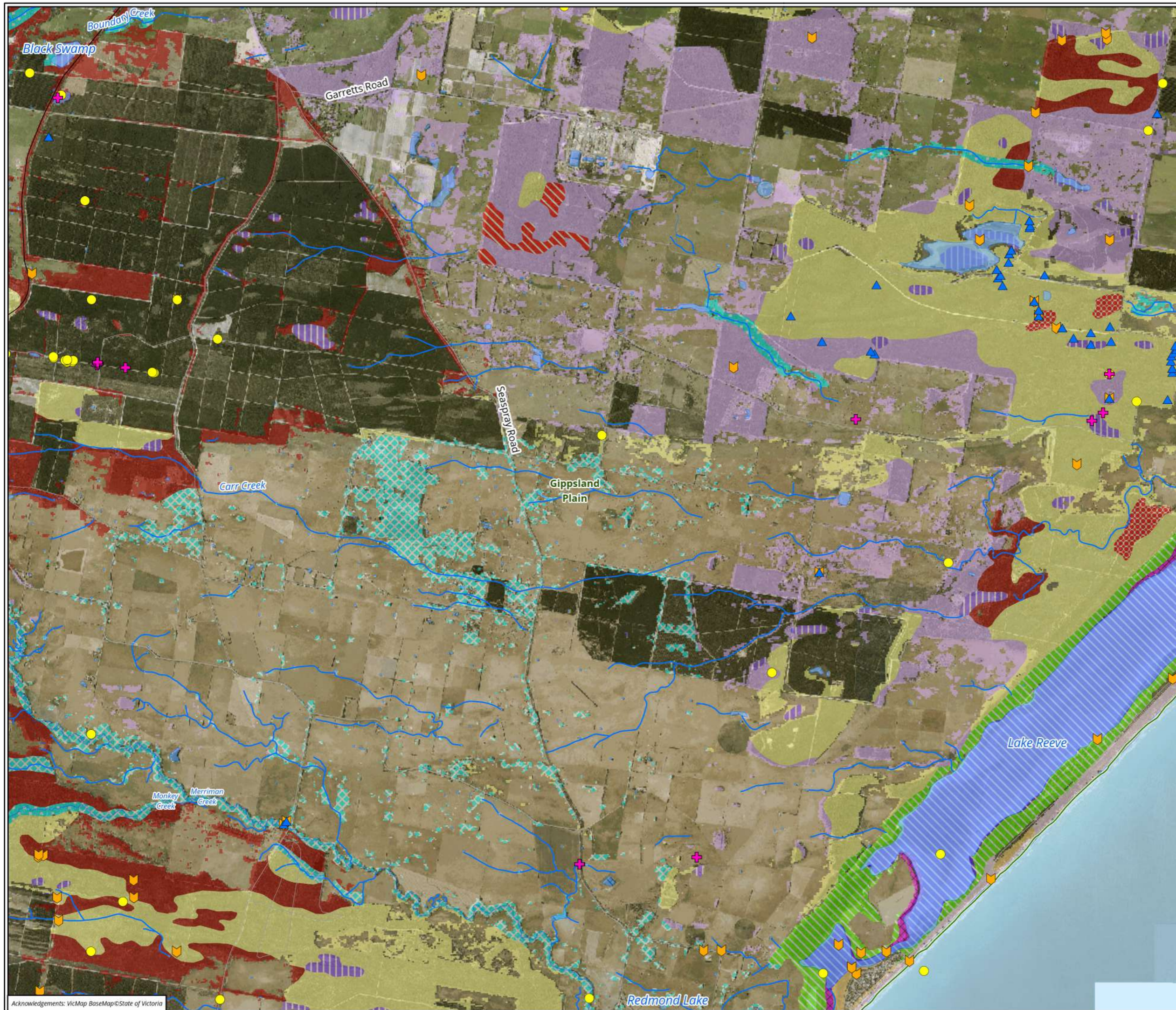
- Legend**
- Study area
 - + Nationally significant flora
 - State significant flora
 - ▲ Nationally significant fauna
 - ↘ State significant fauna
 - Bioregion
- Ecological vegetation class**
- 125 Plains Grassy Wetland
 - 132 Plains Grassland
 - 136 Sedge Wetland
 - 16 Lowland Forest
 - 191 Riparian Scrub
 - 3 Damp Sands Herb-rich Woodland
 - 334 Billabong Wetland Aggregate
 - 48 Heathy Woodland
 - 53 Swamp Scrub
 - 55 Plains Grassy Woodland
 - 56 Floodplain Riparian Woodland
 - 681 Deep Freshwater Marsh
 - 691 Aquatic Herbland/Plains Sedgy Wetland Mosaic
 - 7 Clay Heathland
 - 992 Water Body - Fresh

Figure 2.6 Modelled EVCs & threatened taxa records



Matter: 35238.
 Date: 01 February 2022.
 Prepared for: JM, Prepared by: LW, Last edited by: lwilson
 Layout: 35238_F2_ModelledEVCs
 Project: P:\35200s\35238\Mapping\35238_GippslandOffshoreWind_ECO.aprx

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- Legend**
- Study area
 - + Nationally significant flora
 - State significant flora
 - ▲ Nationally significant fauna
 - ♂ State significant fauna
 - Bioregion
- Ecological vegetation class**
- 1 Coastal Dune Scrub/Coastal Dune Grassland Mosaic
 - 10 Estuarine Wetland
 - 136 Sedge Wetland
 - 16 Lowland Forest
 - 191 Riparian Scrub
 - 2 Coast Banksia Woodland
 - 3 Damp Sands Herb-rich Woodland
 - 48 Heathy Woodland
 - 53 Swamp Scrub
 - 6 Sand Heathland
 - 7 Clay Heathland
 - 863 Floodplain Reedbed
 - 9 Coastal Saltmarsh
 - 992 Water Body - Fresh

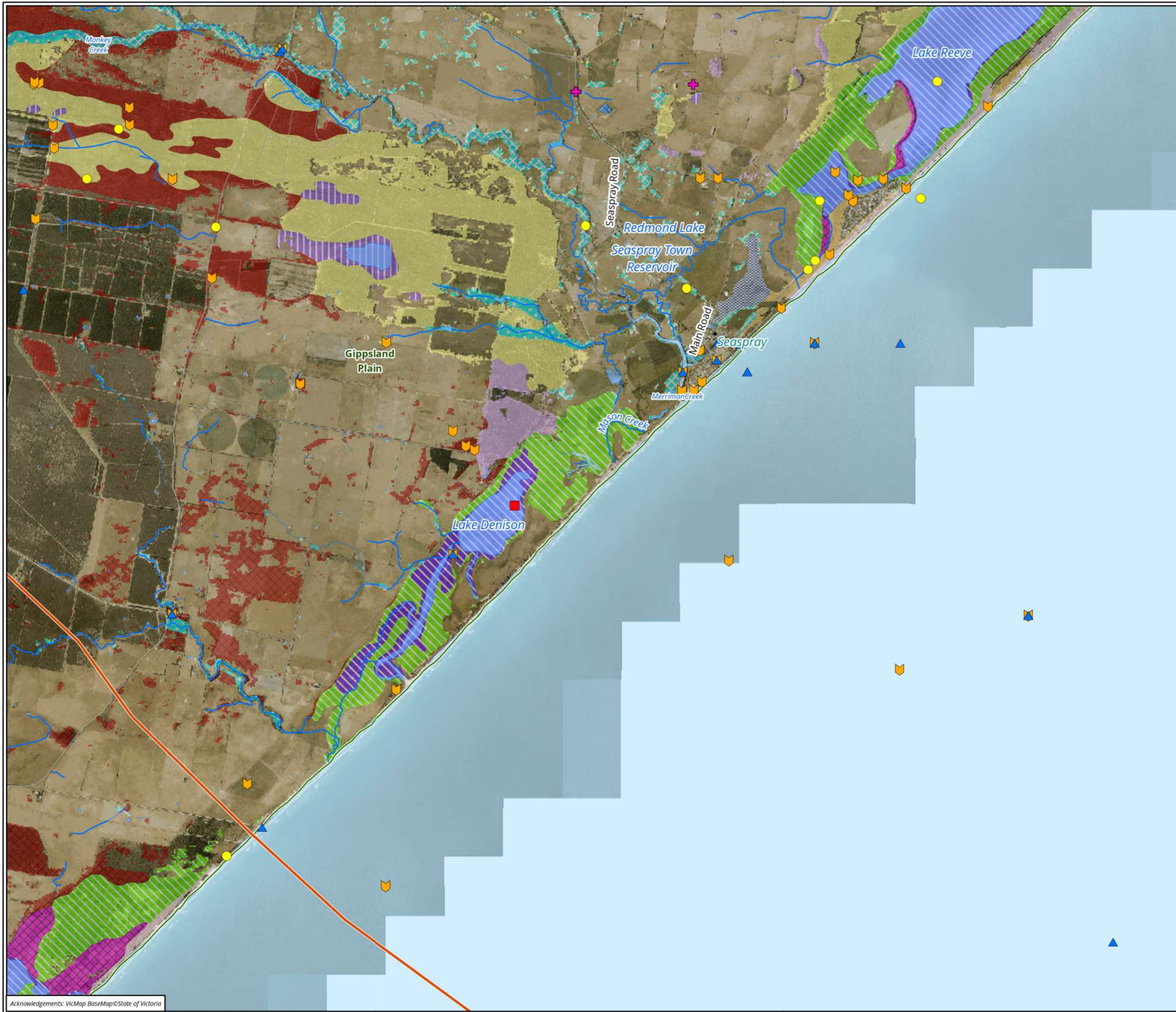
Figure 2.7 Modelled EVCs & threatened tax records

0 0.5 1 1.5 2
 Kilometers
 Scale: 1:60,000 @ A3
 Coordinate System: GDA 1994 MGA Zone 55



Matter: 35238,
 Date: 01 February 2022,
 Prepared for: JM, Prepared by: LW, Last edited by: IWilson
 Layout: 35238_F2_ModelledEVCs
 Project: P:\35200s\35238\Mapping\35238_GippslandOffshoreWind_ECO.aprx

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Legend

- Study area
- Nationally significant flora
- State significant flora
- Nationally significant fauna
- State significant fauna
- Restricted fauna
- Bioregion

Ecological vegetation class

- 1 Coastal Dune Scrub/Coastal Dune Grassland Mosaic
- 10 Estuarine Wetland
- 136 Sedge Wetland
- 16 Lowland Forest
- 191 Riparian Scrub
- 2 Coast Banksia Woodland
- 3 Damp Sands Herb-rich Woodland
- 48 Heathy Woodland
- 53 Swamp Scrub
- 698 Lowland Forest/Heathy Woodland Mosaic
- 863 Floodplain Reedbed
- 9 Coastal Saltmarsh
- 992 Water Body - Fresh

Figure 2.8 Modelled EVCs & threatened taxa records

0 0.5 1 1.5 2
 Kilometers
 Scale: 1:60,000 @ A3
 Coordinate System: GDA 1994 MGA Zone 55



Matter: 35238.
 Date: 01 February 2022.
 Prepared for: JM, Prepared by: LW, Last edited by: lwilson
 Layout: 35238_F2_ModelledEVCs
 Project: P:\35200s\35238\Mapping\35238_GippslandOffshoreWind_ECO.aprx

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- Legend**
- Study area
 - + Nationally significant flora
 - State significant flora
 - ▲ Nationally significant fauna
 - ♣ State significant fauna
 - Restricted fauna
 - Bioregion
- Ecological vegetation class**
- 1 Coastal Dune Scrub/Coastal Dune Grassland Mosaic
 - 10 Estuarine Wetland
 - 136 Sedge Wetland
 - 16 Lowland Forest
 - 191 Riparian Scrub
 - 2 Coast Banksia Woodland
 - 3 Damp Sands Herb-rich Woodland
 - 48 Heathy Woodland
 - 53 Swamp Scrub
 - 6 Sand Heathland
 - 681 Deep Freshwater Marsh
 - 9 Coastal Saltmarsh
 - 992 Water Body - Fresh

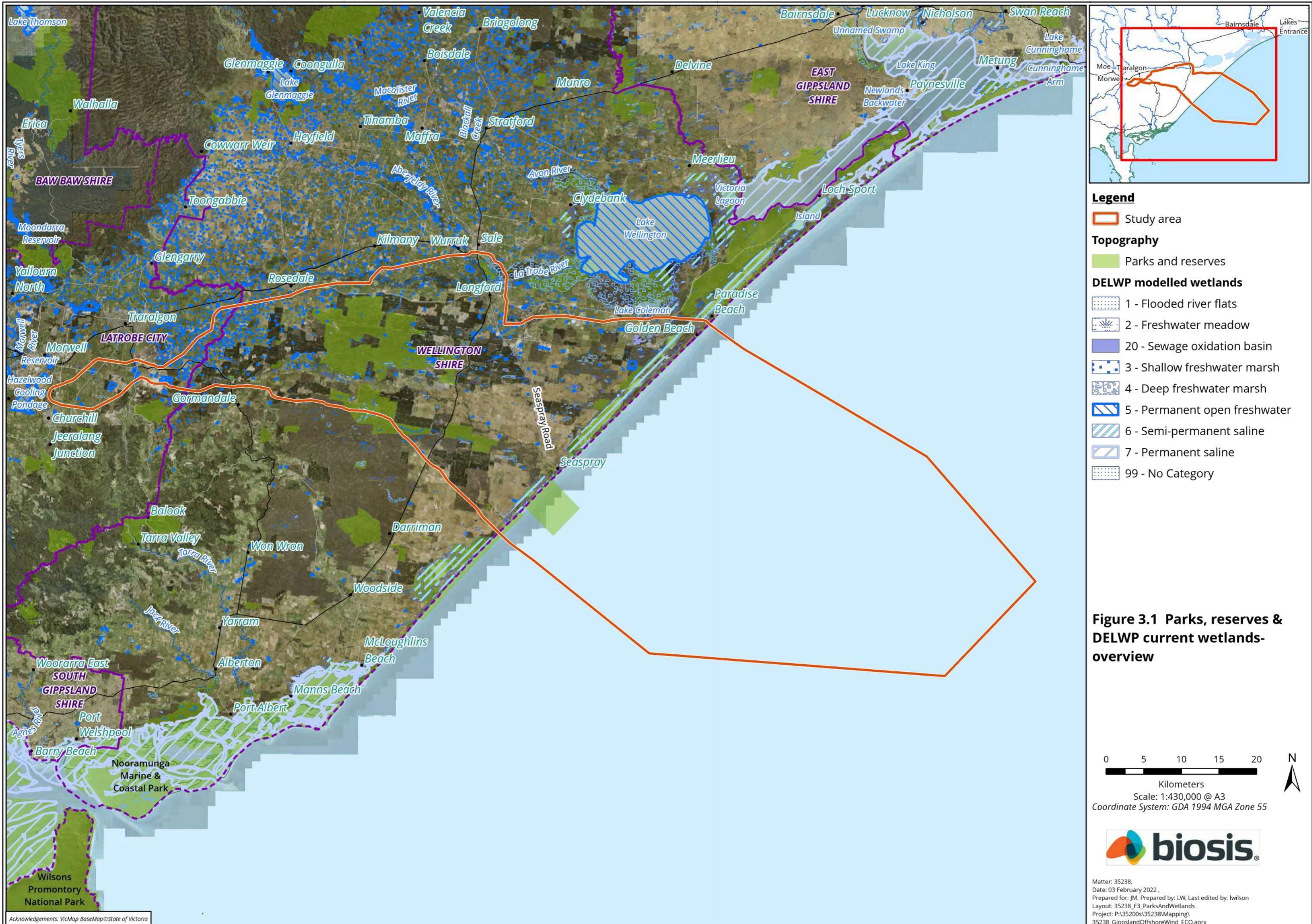
Figure 2.9 Modelled EVCs & threatened taxa records

0 0.5 1 1.5 2
 Kilometers
 Scale: 1:60,000 @ A3
 Coordinate System: GDA 1994 MGA Zone 55



Matter: 35238.
 Date: 01 February 2022.
 Prepared for: JM, Prepared by: LW, Last edited by: lwilson
 Layout: 35238_F2_ModelledEVCs
 Project: P:\35200s\35238\Mapping\35238_GippslandOffshoreWind_ECO.aprx

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- Legend**
- Study area
- Topography**
- Parks and reserves
- DELWP modelled wetlands**
- 2 - Freshwater meadow
 - 20 - Sewage oxidation basin
 - 3 - Shallow freshwater marsh
 - 4 - Deep freshwater marsh
 - 5 - Permanent open freshwater

Figure 3.2 Parks, reserves & DELWP current wetlands

0 0.9 1.8 2.7 3.6
 Kilometers
 Scale: 1:80,000 @ A3
 Coordinate System: GDA 1994 MGA Zone 55



Matter: 35238,
 Date: 03 February 2022,
 Prepared for: JM, Prepared by: LW, Last edited by: lwilson
 Layout: 35238_F3_ParksAndWetlands
 Project: P:\35200s\35238\Mapping\35238_GippslandOffshoreWind_ECO.aprx

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- Legend**
- Study area
- Topography**
- Parks and reserves
- DELWP modelled wetlands**
- 2 - Freshwater meadow
 - 20 - Sewage oxidation basin
 - 3 - Shallow freshwater marsh
 - 4 - Deep freshwater marsh
 - 5 - Permanent open freshwater

Figure 3.3 Parks, reserves & DELWP current wetlands

0 0.8 1.6 2.4 3.2
 Kilometers
 Scale: 1:70,000 @ A3
 Coordinate System: GDA 1994 MGA Zone 55



Matter: 35238,
 Date: 03 February 2022,
 Prepared for: JM, Prepared by: LW, Last edited by: lwilson
 Layout: 35238_F3_ParksAndWetlands
 Project: P:\35200s\35238\Mapping\35238_GippslandOffshoreWind_ECO.aprx

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Legend

- Study area

Topography

- Parks and reserves

DELWP modelled wetlands

- 2 - Freshwater meadow
- 3 - Shallow freshwater marsh
- 4 - Deep freshwater marsh
- 5 - Permanent open freshwater

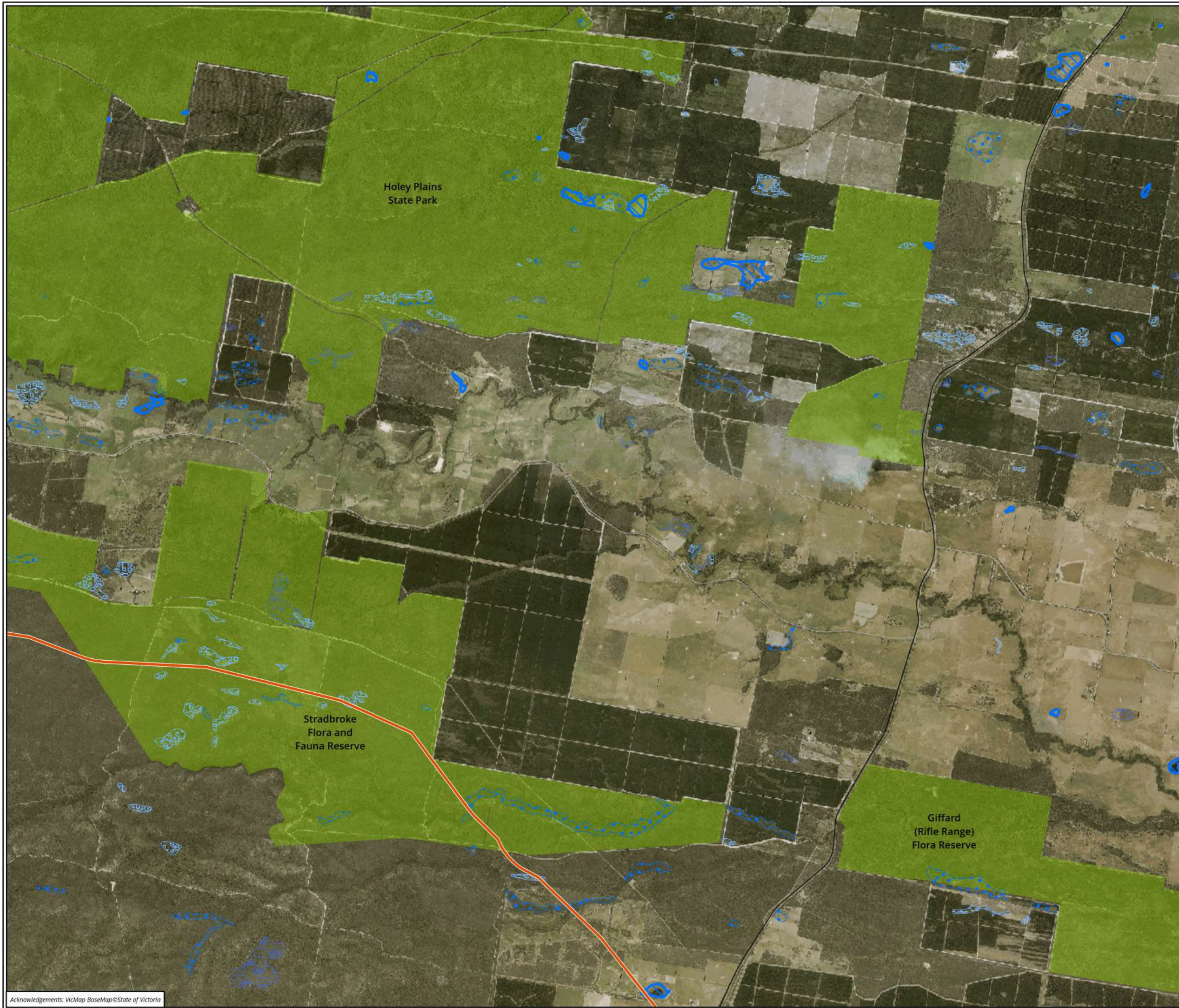
Figure 3.4 Parks, reserves & DELWP current wetlands

0 0.55 1.1 1.65 2.2
 Kilometers
 Scale: 1:50,000 @ A3
 Coordinate System: GDA 1994 MGA Zone 55



Matter: 35238,
 Date: 03 February 2022,
 Prepared for: JM, Prepared by: LW, Last edited by: lwilson
 Layout: 35238_F3_ParksAndWetlands
 Project: P:\35200s\35238\Mapping\35238_GippslandOffshoreWind_ECO.aprx

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Legend

- Study area

Topography

- Parks and reserves

DELWP modelled wetlands

- 2 - Freshwater meadow
- 3 - Shallow freshwater marsh
- 4 - Deep freshwater marsh
- 5 - Permanent open freshwater

Figure 3.5 Parks, reserves & DELWP current wetlands

0 0.7 1.4 2.1 2.8
 Kilometers
 Scale: 1:60,000 @ A3
 Coordinate System: GDA 1994 MGA Zone 55



Matter: 35238,
 Date: 03 February 2022,
 Prepared for: JM, Prepared by: LW, Last edited by: lwilson
 Layout: 35238_F3_ParksAndWetlands
 Project: P:\35200s\35238\Mapping\35238_GippslandOffshoreWind_ECO.aprx



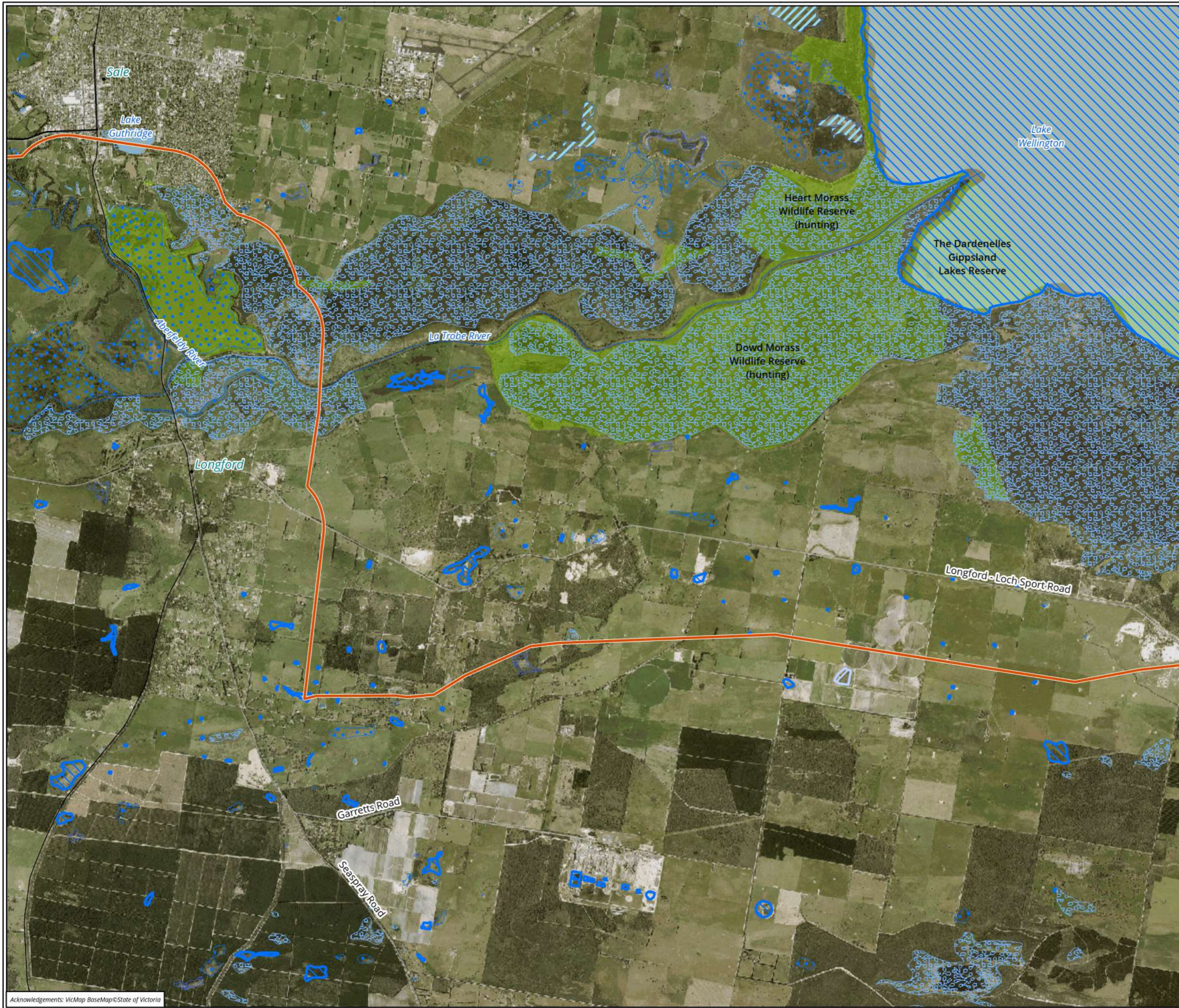
- Legend**
- Study area
- Topography**
- Parks and reserves
- DELWP modelled wetlands**
- 2 - Freshwater meadow
 - 3 - Shallow freshwater marsh
 - 4 - Deep freshwater marsh
 - 5 - Permanent open freshwater
 - 6 - Semi-permanent saline

Figure 3.6 Parks, reserves & DELWP current wetlands

0 0.55 1.1 1.65 2.2
 Kilometers
 Scale: 1:50,000 @ A3
 Coordinate System: GDA 1994 MGA Zone 55



Matter: 35238,
 Date: 03 February 2022,
 Prepared for: JM, Prepared by: LW, Last edited by: lwilson
 Layout: 35238_F3_ParksAndWetlands
 Project: P:\35200s\35238\Mapping\
 35238_GippslandOffshoreWind_ECO.aprx



Legend

- Study area

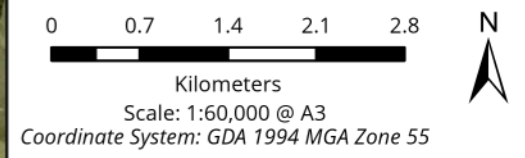
Topography

- Parks and reserves

DELWP modelled wetlands

- 2 - Freshwater meadow
- 3 - Shallow freshwater marsh
- 4 - Deep freshwater marsh
- 5 - Permanent open freshwater
- 6 - Semi-permanent saline
- 7 - Permanent saline

Figure 3.7 Parks, reserves & DELWP current wetlands



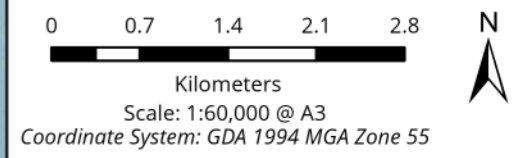
Matter: 35238,
 Date: 03 February 2022,
 Prepared for: JM, Prepared by: LW, Last edited by: Iwison
 Layout: 35238_F3_ParksAndWetlands
 Project: P:\35200s\35238\Mapping\35238_GippslandOffshoreWind_ECO.aprx

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- Legend**
- Study area
- Topography**
- Parks and reserves
- DELWP modelled wetlands**
- 2 - Freshwater meadow
 - 3 - Shallow freshwater marsh
 - 4 - Deep freshwater marsh
 - 5 - Permanent open freshwater
 - 6 - Semi-permanent saline

Figure 3.8 Parks, reserves & DELWP current wetlands



Matter: 35238.
 Date: 03 February 2022.
 Prepared for: JM, Prepared by: LW, Last edited by: lwilson
 Layout: 35238_F3_ParksAndWetlands
 Project: P:\35200s\35238\Mapping\35238_GippslandOffshoreWind_ECO.aprx

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- Legend**
- Study area
- Topography**
- Parks and reserves
- DELWP modelled wetlands**
- 2 - Freshwater meadow
 - 3 - Shallow freshwater marsh
 - 4 - Deep freshwater marsh
 - 5 - Permanent open freshwater
 - 6 - Semi-permanent saline

Figure 3.9 Parks, reserves & DELWP current wetlands

0 0.7 1.4 2.1 2.8
 Kilometers
 Scale: 1:60,000 @ A3
 Coordinate System: GDA 1994 MGA Zone 55



Matter: 35238,
 Date: 03 February 2022,
 Prepared for: JM, Prepared by: LW, Last edited by: lwilson
 Layout: 35238_F3_ParksAndWetlands
 Project: P:\35200s\35238\Mapping\35238_GippslandOffshoreWind_ECO.aprx

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- Legend**
- Study area
- Topography**
- Parks and reserves
- DELWP modelled wetlands**
- 2 - Freshwater meadow
 - 20 - Sewage oxidation basin
 - 3 - Shallow freshwater marsh
 - 4 - Deep freshwater marsh
 - 5 - Permanent open freshwater
 - 6 - Semi-permanent saline

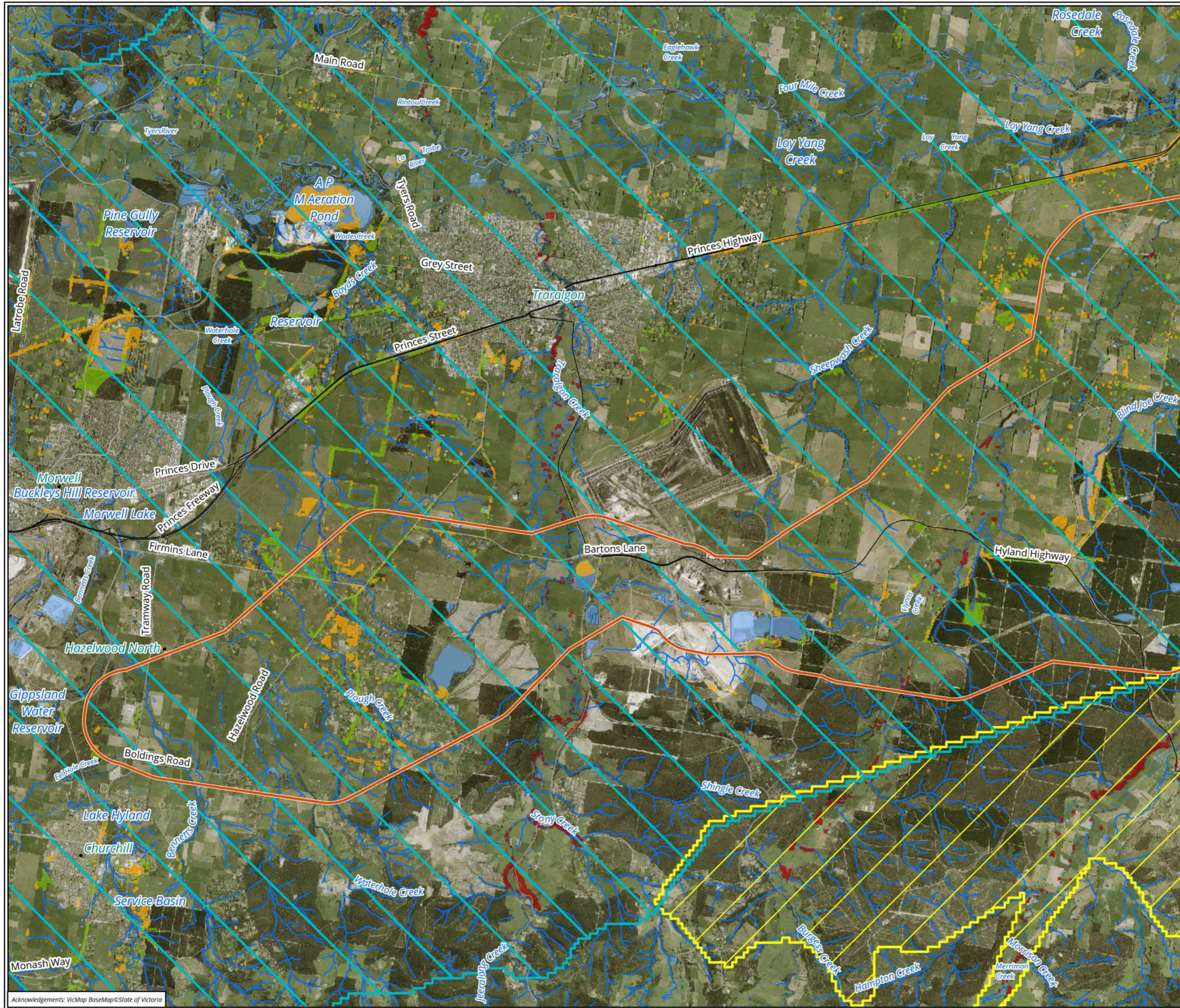
Figure 3.10 Parks, reserves & DELWP current wetlands

0 0.7 1.4 2.1 2.8
 Kilometers
 Scale: 1:60,000 @ A3
 Coordinate System: GDA 1994 MGA Zone 55



Matter: 35238.
 Date: 03 February 2022 .
 Prepared for: JM, Prepared by: LW, Last edited by: lwilson
 Layout: 35238_F3_ParksAndWetlands
 Project: P:\35200s\35238\Mapping\
 35238_GippslandOffshoreWind_ECO.aprx

Acknowledgements: VicMap BaseMap © State of Victoria



- Legend**
- Study area
- Environment Protection and Biodiversity Conservation Act Listed Communities**
- 133 Natural Damp Grassland of the Victorian Coastal Plains
 - 73 Gippsland Red Gum (*Eucalyptus tereticornis* subsp. *mediana*) Grassy Woodland and Associated Native Grassland
- Flora and Fauna Guarantee Act Listed Communities**
- 242 Forest Red Gum Grassy Woodland
 - 243 Central Gippsland Plains Grassland
 - 339 Sedge-rich *Eucalyptus camphora* Swamp

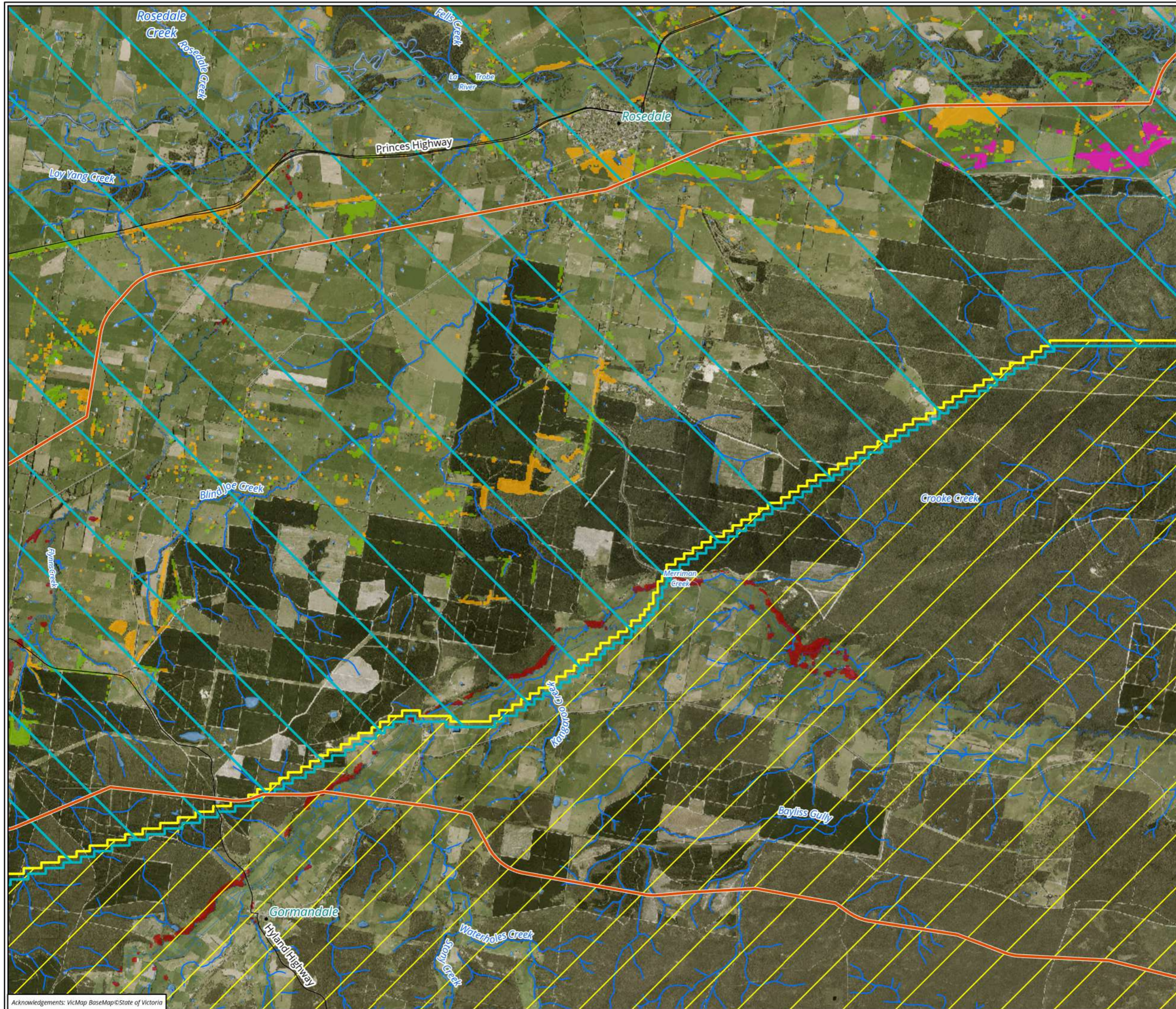
Figure 4.1 Modelled TECs

0 0.65 1.3 1.95 2.6
 Kilometers
 Scale: 1:80,000 @ A3
 Coordinate System: GDA 1994 MGA Zone 55



Matter: 35238,
 Date: 01 February 2022,
 Prepared for: JM, Prepared by: LW, Last edited by: Iwison
 Layout: 35238_F4_ModelledTECs
 Project: P:\35200s\35238\Mapping\35238_GippslandOffshoreWind_ECO.aprx

Acknowledgements: VicMap BaseMap © State of Victoria



- Legend**
- Study area
- Environment Protection and Biodiversity Conservation Act Listed Communities**
- 133 Natural Damp Grassland of the Victorian Coastal Plains
 - 73 Gippsland Red Gum (*Eucalyptus tereticornis* subsp. *mediana*) Grassy Woodland and Associated Native Grassland
- Flora and Fauna Guarantee Act Listed Communities**
- 242 Forest Red Gum Grassy Woodland
 - 243 Central Gippsland Plains Grassland
 - 244 Plains Grassland (South Gippsland)
 - 339 Sedge-rich *Eucalyptus camphora* Swamp

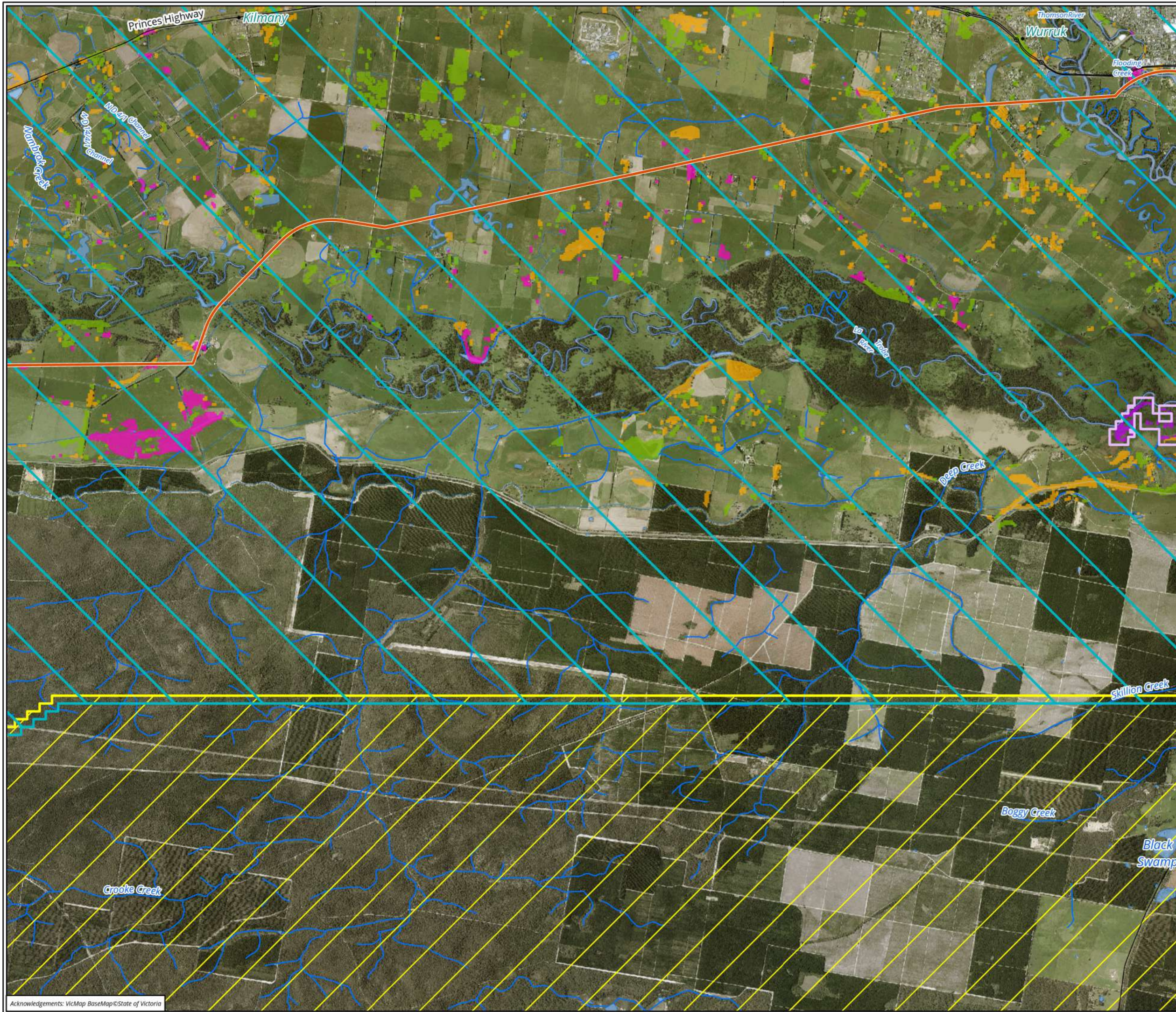
Figure 4.2 Modelled TECs

0 0.55 1.1 1.65 2.2
 Kilometers
 Scale: 1:70,000 @ A3
 Coordinate System: GDA 1994 MGA Zone 55



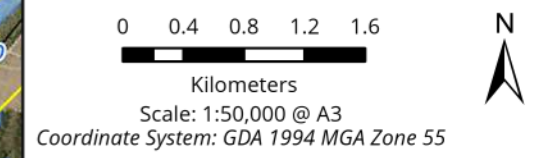
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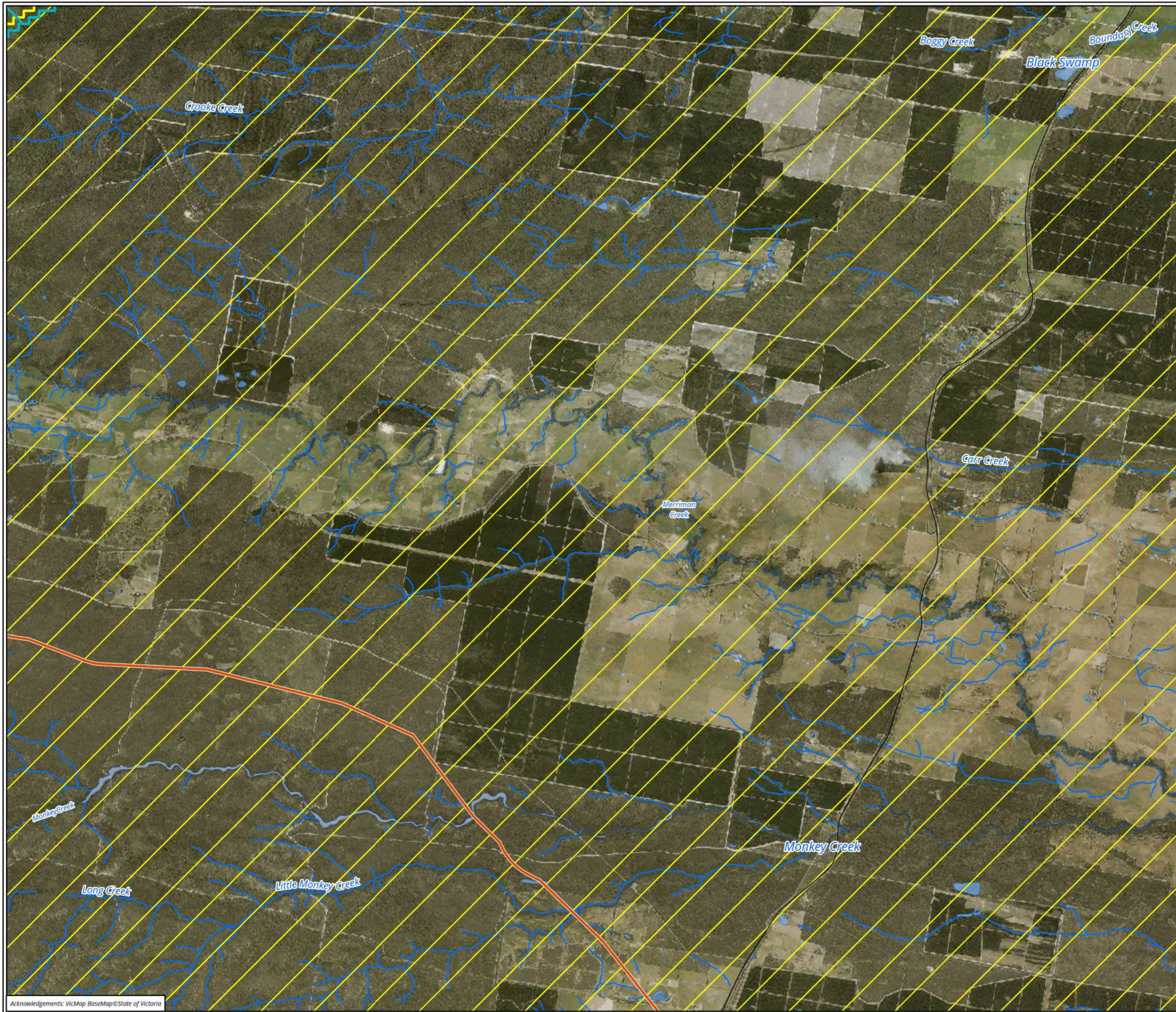
Acknowledgements: VicMap BaseMap © State of Victoria



- Legend**
- Study area
- Environment Protection and Biodiversity Conservation Act Listed Communities**
- 133 Natural Damp Grassland of the Victorian Coastal Plains
 - 73 Gippsland Red Gum (*Eucalyptus tereticornis* subsp. *mediana*) Grassy Woodland and Associated Native Grassland
 - 97, Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains
- Flora and Fauna Guarantee Act Listed Communities**
- 242 Forest Red Gum Grassy Woodland
 - 243 Central Gippsland Plains Grassland
 - 244 Plains Grassland (South Gippsland)
 - 365 Herb-rich Plains Grassy Wetland (West Gippsland)

Figure 4.3 Modelled TECs








- Legend**
-  Study area
 - Environment Protection and Biodiversity Conservation Act Listed Communities**
 -  133 Natural Damp Grassland of the Victorian Coastal Plains
 -  73 Gippsland Red Gum (*Eucalyptus tereticornis* subsp. *mediana*) Grassy Woodland and Associated Native Grassland

Figure 4.4 Modelled TECs

0 0.5 1 1.5 2
 Kilometers
 Scale: 1:60,000 @ A3
 Coordinate System: GDA 1994 MGA Zone 55

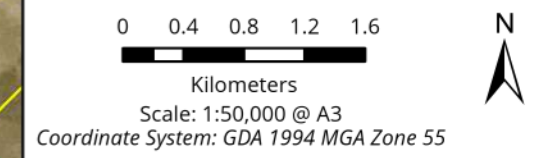


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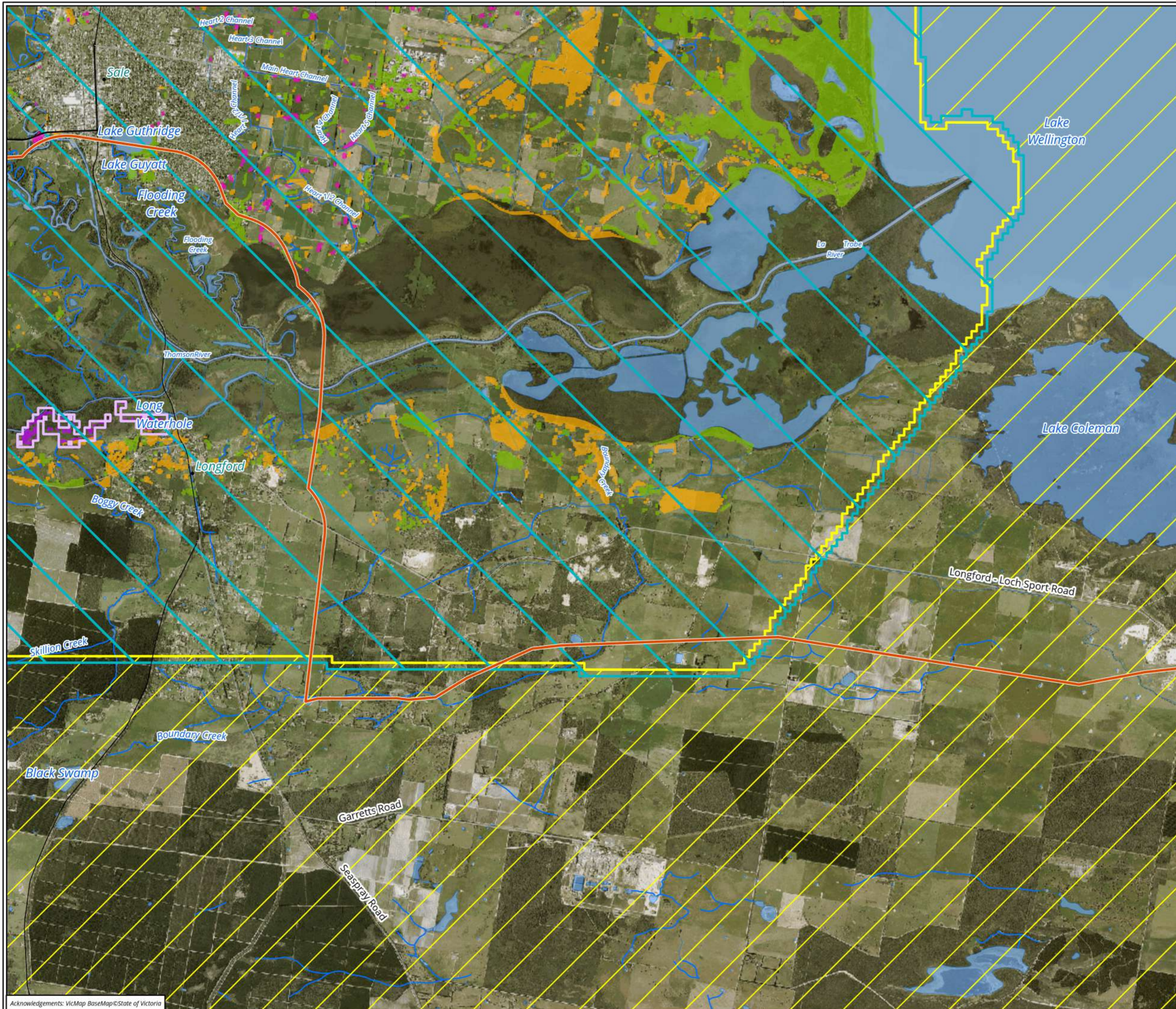
- Legend**
- Study area
 - Environment Protection and Biodiversity Conservation Act Listed Communities**
 - 118 Subtropical and Temperate Coastal Saltmarsh
 - 133 Natural Damp Grassland of the Victorian Coastal Plains
 - Flora and Fauna Guarantee Act Listed Communities**
 - 460 Coastal Moonah Woodland

Figure 4.5 Modelled TECs



Matter: 35238.
 Date: 01 February 2022.
 Prepared for: JM, Prepared by: LW, Last edited by: lwilson
 Layout: 35238_F4_ModelledTECs
 Project: P:\35200s\35238\Mapping\35238_GippslandOffshoreWind_ECO.aprx

Acknowledgements: VicMap BaseMap © State of Victoria



- Legend**
- Study area
- Environment Protection and Biodiversity Conservation Act Listed Communities**
- 133 Natural Damp Grassland of the Victorian Coastal Plains
 - 73 Gippsland Red Gum (*Eucalyptus tereticornis* subsp. *mediana*) Grassy Woodland and Associated Native Grassland
 - 97, Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains
- Flora and Fauna Guarantee Act Listed Communities**
- 242 Forest Red Gum Grassy Woodland
 - 243 Central Gippsland Plains Grassland
 - 244 Plains Grassland (South Gippsland)
 - 365 Herb-rich Plains Grassy Wetland (West Gippsland)

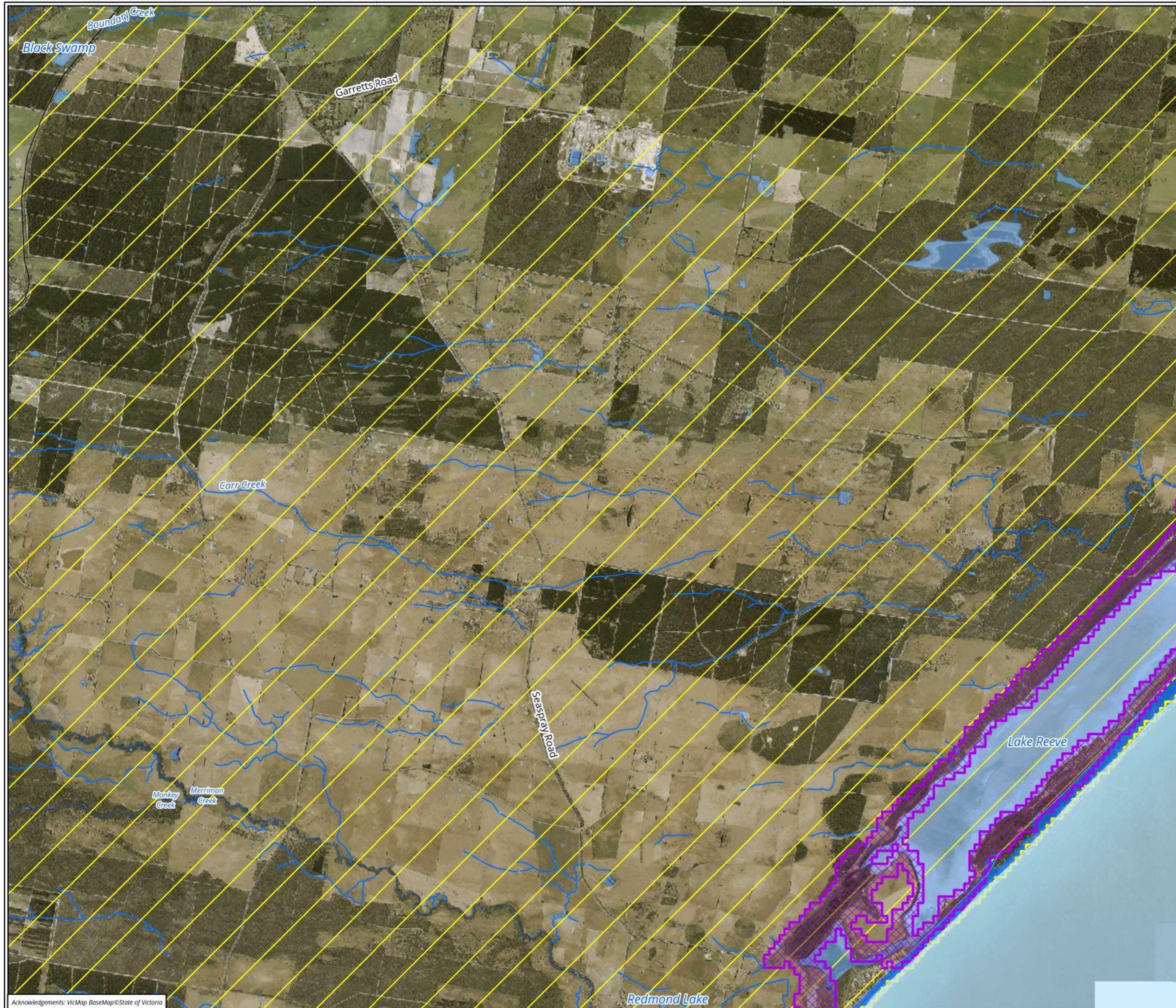
Figure 4.6 Modelled TECs

0 0.5 1 1.5 2
 Kilometers
 Scale: 1:60,000 @ A3
 Coordinate System: GDA 1994 MGA Zone 55



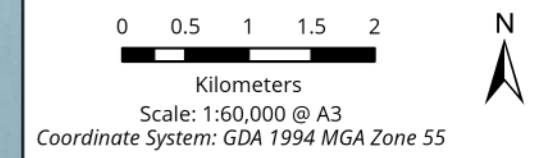
Matter: 35238,
 Date: 01 February 2022,
 Prepared for: JM, Prepared by: LW, Last edited by: lwilson
 Layout: 35238_F4_ModelledTECs
 Project: P:\35200s\35238\Mapping\35238_GippslandOffshoreWind_ECO.aprx

Acknowledgements: VicMap BaseMap © State of Victoria



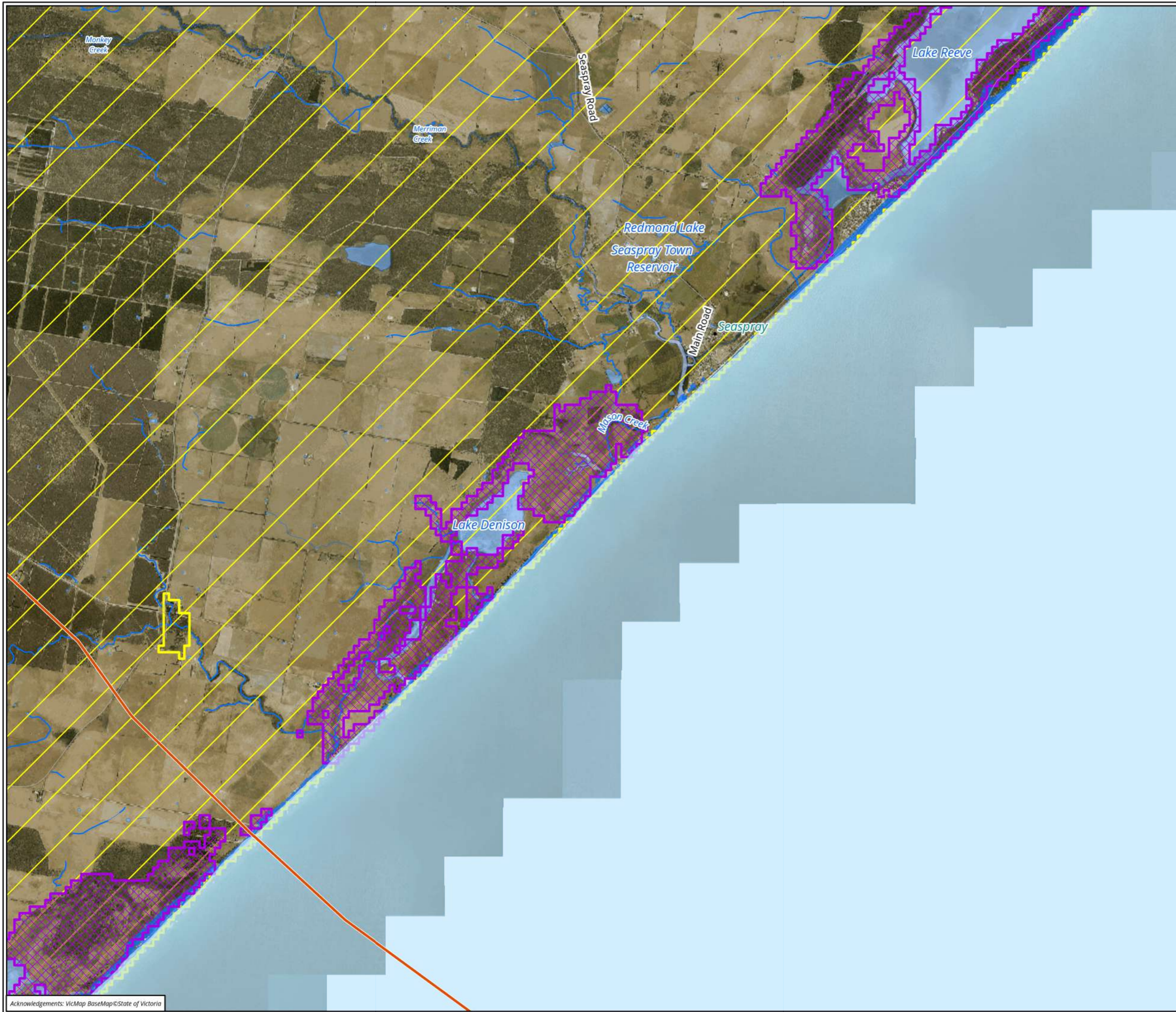
- Legend**
- Study area
- Environment Protection and Biodiversity Conservation Act Listed Communities**
- 118 Subtropical and Temperate Coastal Saltmarsh
 - 133 Natural Damp Grassland of the Victorian Coastal Plains
- Flora and Fauna Guarantee Act Listed Communities**
- 460 Coastal Moonah Woodland

Figure 4.7 Modelled TECs



Matter: 35238,
Date: 01 February 2022,
Prepared for: JM, Prepared by: LW, Last edited by: lwilson
Layout: 35238_F4_ModelledTECs
Project: P:\35200s\35238\Mapping\35238_GippslandOffshoreWind_ECO.aprx

Acknowledgements: VicMap BaseMap © State of Victoria



- Legend**
- Study area
 - Environment Protection and Biodiversity Conservation Act Listed Communities**
 - 118 Subtropical and Temperate Coastal Saltmarsh
 - 133 Natural Damp Grassland of the Victorian Coastal Plains
 - Flora and Fauna Guarantee Act Listed Communities**
 - 460 Coastal Moonah Woodland

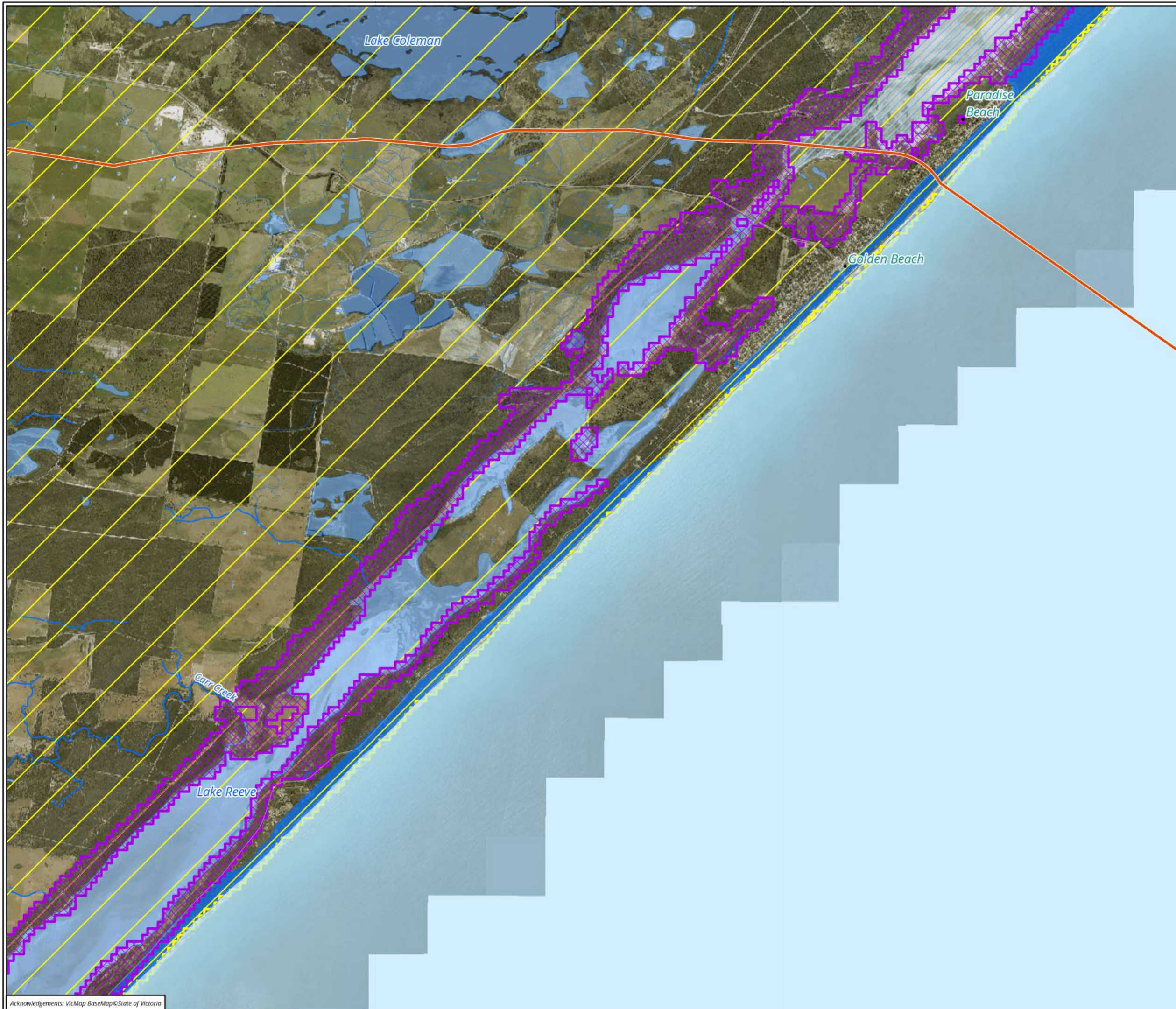
Figure 4.8 Modelled TECs

0 0.5 1 1.5 2
 Kilometers
 Scale: 1:60,000 @ A3
 Coordinate System: GDA 1994 MGA Zone 55



Matter: 35238,
 Date: 01 February 2022,
 Prepared for: JM, Prepared by: LW, Last edited by: lwilson
 Layout: 35238_F4_ModelledTECs
 Project: P:\35200s\35238\Mapping\
 35238_GippslandOffshoreWind_ECO.aprx

Acknowledgements: VicMap BaseMap © State of Victoria



- Legend**
- Study area
 - Environment Protection and Biodiversity Conservation Act Listed Communities**
 - 118 Subtropical and Temperate Coastal Saltmarsh
 - 133 Natural Damp Grassland of the Victorian Coastal Plains
 - Flora and Fauna Guarantee Act Listed Communities**
 - 460 Coastal Moonah Woodland

Figure 4.9 Modelled TECs

0 0.5 1 1.5 2
 Kilometers
 Scale: 1:60,000 @ A3
 Coordinate System: GDA 1994 MGA Zone 55



Matter: 35238.
 Date: 01 February 2022.
 Prepared for: JM, Prepared by: LW, Last edited by: lwilson
 Layout: 35238_F4_ModelledTECs
 Project: P:\35200s\35238\Mapping\35238_GippslandOffshoreWind_ECO.aprx

Acknowledgements: VicMap BaseMap © State of Victoria

5. Potential impacts and mitigation measures

This section provides a high-level assessment of potential impacts to ecological values against:

- Potential for significant impacts to MNES under the SIC guidelines (Commonwealth of Australia 2013),
- Potential to satisfy criteria for referral under the EE Act as outlined in the ministerial guidelines (DSE 2006).

Potential mitigation measures are also included.

The primary measure to reduce impacts to biodiversity values within the study area is to avoid and minimise removal of native vegetation and terrestrial and aquatic habitat. This could be achieved by:

- Avoiding / minimising unnecessary duplication of infrastructure e.g. utilise existing easements to connect to existing transmission network, co-locate project components with other infrastructure.
- Aligning the impact footprint through existing cleared land including agricultural land and plantations e.g. along Merrimans Creek / Gormandale – Stradbroke Road or along Seaspray Road and Hyland Highway.
- Strategic use of horizontal directional drilling (HDD).
- The development of a project specific Construction Environmental Management Plan (CEMP) and Operational Environmental Management Plan (OEMP).

Given the proximity of the project to the Star of the South project the potential for cumulative impacts also needs to be considered as the development approvals process proceeds.

Table 12 Assessment of potential impacts against SIC guidelines under the EPBC Act (Commonwealth of Australia 2013)

MNES	Project specifics	Potential for significant impact	Potential mitigation measures
<p>Threatened species</p>	<p>Study area contains populations of and / or habitat for EPBC Act listed threatened species.</p>	<p>Yes - it is possible that impacts from the project may result in significant impacts to EPBC Act listed threatened species.</p>	<p>Avoid / minimise alignment of project components in areas that provide habitat for threatened species.</p> <p>Avoid / minimise unnecessary duplication of infrastructure by utilising existing infrastructure for onshore project components e.g. utilise existing easements to connect to existing transmission network, co-locate project components with other infrastructure.</p> <p>Strategic implementation of horizontal directional drilling (HDD) to avoid / minimise impacts to habitat for threatened species.</p> <p>Manage construction and operational activities through CEMP & OEMP to minimise impacts to threatened species.</p>
<p>Threatened ecological communities</p>	<p>Study area may contain up to three TECs with a conservation status of CR making them eligible for significant impact assessment against SIC guidelines.</p>	<p>Yes - depending on the terrestrial impacts associated with the project, namely the onshore cable alignment, there is the potential for significant impacts to TECs.</p>	<p>Avoid / minimise alignment of onshore project components in areas that contain EPBC Act listed TECs.</p> <p>Avoid / minimise unnecessary duplication of infrastructure by utilising existing infrastructure for onshore project components e.g. utilise existing easements to connect to existing transmission network, co-locate project components with other infrastructure.</p> <p>Strategic implementation of horizontal directional drilling (HDD) to avoid / minimise impacts to areas that contain EPBC Act listed TECs.</p> <p>Manage construction and operational activities through CEMP & OEMP to minimise impacts to EPBC Act listed TECs.</p>

MNES	Project specifics	Potential for significant impact	Potential mitigation measures
<p>Migratory species</p>	<p>Study area contains wetlands and other habitat features that support migratory bird species.</p>	<p>Yes - depending on the terrestrial impacts associated with the project, namely the onshore cable alignment, there is the potential for significant impacts to migratory species.</p>	<p>Avoid / minimise alignment of project components in areas that provide habitat for migratory species.</p> <p>Avoid / minimise unnecessary duplication of infrastructure by utilising existing infrastructure for onshore project components e.g. utilise existing easements to connect to existing transmission network, co-locate project components with other infrastructure.</p> <p>Strategic implementation of horizontal directional drilling (HDD) to avoid / minimise impacts to habitat for migratory species.</p> <p>Manage construction and operational activities through CEMP & OEMP to minimise impacts to migratory bird species.</p>
<p>Wetlands of international importance (Ramsar sites)</p>	<p>Study area contains the Gippsland Lakes Ramsar site.</p>	<p>Yes - depending on the terrestrial impacts associated with the project, namely the onshore cable alignment, it is possible that the project may significantly impact the Gippsland Lakes Ramsar site.</p>	<p>Avoid alignment of onshore project components within or adjacent to boundaries of Gippsland Lakes Ramsar site and Gippsland Lakes Coastal Park.</p> <p>Manage construction and operational activities through CEMP & OEMP to minimise impacts to Gippsland Lakes Ramsar site and Gippsland Lakes Coastal Park.</p>

Table 13 Assessment of potential impacts against referral criteria against the ministerial guidelines under the EE Act (DSE 2006)

Referral criteria	Project specifics	Potential for significant effects	Potential mitigation measures
Individual potential environmental effects			
<p>Potential clearing of 10 ha or more of native vegetation from an area that:</p> <ul style="list-style-type: none"> - is of an Ecological Vegetation Class identified as endangered by the Department of Sustainability and Environment (in accordance with Appendix 2 of Victoria's Native Vegetation Management Framework); or - is, or is likely to be, of very high conservation significance (as defined in accordance with Appendix 3 of Victoria's Native Vegetation Management Framework); and - is not authorised under an approved Forest Management Plan or Fire Protection Plan. 	<p>Study area contains large areas of native vegetation including EVCs identified as endangered (10 EVCs), vulnerable (9 EVCs) and rare (1 EVC). Endangered, vulnerable and rare EVCs can all qualify as being of high conservation significance if vegetation condition is high enough.</p>	<p>Yes - depending on the terrestrial impacts associated with the project, namely the onshore cable alignment, it is possible that more than 10 ha of such native vegetation may be cleared.</p>	<p>Avoid / minimise alignment of onshore project components in areas of native vegetation.</p> <p>Avoid / minimise unnecessary duplication of infrastructure by utilising existing infrastructure for onshore project components e.g. utilise existing easements to connect to existing transmission network, co-locate project components with other infrastructure.</p> <p>Strategic implementation of HDD to avoid / minimise impacts to native vegetation.</p>
<p>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.</p>	<p>Study area contains known populations of and / or remaining habitat for threatened flora and fauna species.</p>	<p>Yes - it is possible that impacts from the project may lead to the the long-term loss of a significant proportion of known remaining habitat and / or population of threatened species within Victoria</p>	<p>Avoid / minimise alignment of project components in areas that provide habitat for threatened species.</p> <p>Avoid / minimise unnecessary duplication of infrastructure by utilising existing infrastructure for onshore project components e.g. utilise existing easements to connect to existing transmission network, co-locate project components with other infrastructure.</p> <p>Strategic implementation of horizontal directional drilling (HDD) to avoid / minimise impacts to habitat for threatened species.</p> <p>Manage construction and operational activities through CEMP & OEMP to minimise impacts to threatened species.</p>
<p>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'.</p>	<p>Study area contains the Gippsland Lakes Ramsar wetland and nationally important Lake Wellington Wetlands.</p>	<p>Yes - depending on the terrestrial impacts associated with the project, namely the onshore cable alignment, it is possible that the project may lead to a long-term change in the ecological character of one or both of these wetlands.</p>	<p>Avoid alignment of onshore project components within or adjacent to boundaries of these wetlands.</p> <p>Manage construction and operational activities through CEMP & OEMP to minimise impacts to catchments of these wetlands.</p>

Referral criteria	Project specifics	Potential for significant effects	Potential mitigation measures
<p>Potential extensive or major effects on the health or biodiversity of aquatic, estuarine or marine ecosystems, over the long term.</p>	<p>Study area contains aquatic, estuarine and marine ecosystems.</p>	<p>Yes - it is possible that impacts from the project may lead to the extensive or major effects on the health or biodiversity of aquatic, marine and / or marine ecosystems over the long-term.</p>	<p>Avoid / minimise alignment of onshore project components in aquatic and / or estuarine ecosystems.</p> <p>Avoid alignment of offshore project components within Ninety Mile Beach Marine National Park.</p> <p>Avoid / minimise unnecessary duplication of infrastructure by utilising existing infrastructure e.g. utilise existing easements to connect to existing transmission network, co-locate project components with other infrastructure.</p> <p>Strategic implementation of horizontal directional drilling (HDD) to avoid / minimise impacts to aquatic, estuarine and / or marine ecosystems.</p> <p>Manage construction and operational activities through CEMP & OEMP to minimise impacts to catchments of these ecosystems.</p>
Combination of potential environmental effects			
<p>Potential clearing of 10 ha or more of native vegetation, unless authorised under an approved Forest Management Plan or Fire Protection Plan.</p>	<p>Study area contains large areas of native vegetation.</p>	<p>Yes - depending on the terrestrial impacts associated with the project, namely the onshore cable alignment, it is possible that more than 10 ha of native vegetation may be cleared.</p>	<p>Avoid / minimise alignment of onshore project components in areas of native vegetation.</p> <p>Avoid / minimise unnecessary duplication of infrastructure by utilising existing infrastructure for onshore project components e.g. utilise existing easements to connect to existing transmission network, co-locate project components with other infrastructure.</p> <p>Strategic implementation of horizontal directional drilling (HDD) to avoid / minimise impacts to native vegetation.</p>

Referral criteria	Project specifics	Potential for significant effects	Potential mitigation measures
<p>Matters listed under the <i>Flora and Fauna Guarantee Act 1988</i>:</p> <ul style="list-style-type: none"> - 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. 	<p>Study area contains FFG Act listed ecological communities, populations and / or habitat for threatened species and wetlands that support migratory bird species.</p>	<p>Yes - it is possible that impacts from the project may sufficiently impact matters listed under the FFG Act.</p>	<p>Avoid / minimise alignment of project components in areas that contain FFG Act listed ecological communities, populations and / or habitat for threatened species and / or wetlands that support migratory bird species.</p> <p>Avoid / minimise unnecessary duplication of infrastructure by utilising existing infrastructure for onshore project components e.g. utilise existing easements to connect to existing transmission network, co-locate project components with other infrastructure.</p> <p>Strategic implementation of horizontal directional drilling (HDD) to avoid / minimise impacts to areas that contain FFG Act listed ecological communities, populations and / or habitat for threatened species and / or wetlands that support migratory bird species.</p> <p>Manage construction and operational activities through CEMP & OEMP to minimise impacts to FFG Act listed ecological communities, populations and / or habitat for threatened species and / or wetlands that support migratory bird species.</p>
<p>Potential extensive or major effects on landscape values of regional importance, especially where recognised by a planning scheme overlay or within or adjoining land reserved under the <i>National Parks Act 1975</i>.</p>	<p>Study area contains areas of land within or adjoining land reserved under the NP Act and two wetlands of regional significance - Jake Smith Lake and Lake Dennison.</p>	<p>Yes - it is possible that impacts from the project may result in extensive or major effects on landscape values of regional importance.</p>	<p>Avoid / minimise alignment of project components in areas that contain landscape values of regional importance.</p> <p>Avoid / minimise unnecessary duplication of infrastructure by utilising existing infrastructure for onshore project components e.g. utilise existing easements to connect to existing transmission network, co-locate project components with other infrastructure.</p> <p>Strategic implementation of horizontal directional drilling (HDD) to avoid / minimise impacts in areas that contain landscape values of regional importance.</p> <p>Manage construction and operational activities through CEMP & OEMP to minimise impacts on landscape values of regional importance.</p>

Referral criteria	Project specifics	Potential for significant effects	Potential mitigation measures
<p>Potential extensive or major effects on land stability, acid sulphate soils or highly erodible soils over the short or long term.</p>	<p>Study area encompasses coastal / near-coastal areas that are vulnerable to erosion and is also likely to contain acid sulphate soils.</p>	<p>Yes - it is possible that impacts from the project may result in extensive or major effects on land stability, acid sulphate soils or highly erodible soils over the short or long term.</p>	<p>Avoid / minimise alignment of project components in areas that contain land stability issues, acid sulphate soils and / or highly erodible soils.</p> <p>Avoid / minimise unnecessary duplication of infrastructure by utilising existing infrastructure for onshore project components e.g. utilise existing easements to connect to existing transmission network, co-locate project components with other infrastructure.</p> <p>Strategic implementation of horizontal directional drilling (HDD) to avoid / minimise impacts to land stability and areas that contain acid sulphate soils and / or highly erodible soils.</p> <p>Manage construction and operational activities through CEMP & OEMP to minimise impacts on land stability, acid sulphate soils and / or highly erodible soils.</p>
<p>Potential extensive or major effects on beneficial uses of waterbodies over the long term due to changes in water quality, streamflows or regional groundwater levels.</p>	<p>Study area contains numerous waterbodies including lakes, rivers and creeks.</p>	<p>Yes - it is possible that impacts from the project may result in extensive or major effects on beneficial uses of waterbodies over the long-term due to changes in water quality, streamflows or regional groundwater levels.</p>	<p>Avoid / minimise alignment of onshore project components within or adjacent to waterbodies.</p> <p>Avoid / minimise unnecessary duplication of infrastructure by utilising existing infrastructure e.g. utilise existing easements to connect to existing transmission network, co-locate project components with other infrastructure.</p> <p>Strategic implementation of horizontal directional drilling (HDD) to avoid / minimise impacts to waterbodies.</p> <p>Manage construction and operational activities through CEMP & OEMP to minimise impacts to catchments of waterbodies.</p>

6. Key ecological values and recommendations

This section summarises key ecological values, potential implications of the project under the EPBC Act and EE Act and provides recommendations on proceeding with the development application process while avoiding and / or minimising impacts to biodiversity.

Ecological values

Key ecological values identified within the study area are as follows:

- Extensive areas of native vegetation contained primarily within public land including:
 - Gippsland Lakes Coastal Park,
 - Holey Plains State Park,
 - Giffard (Rifle Range) Flora Reserve,
 - Stradbroke Flora and Fauna Reserve.
- 25 Ecological Vegetation Classes (EVCs) within the Gippsland Plain bioregion including:
 - Ten EVCs with a Bioregional Conservation Status (BCS) of Endangered,
 - Nine EVCs with a BCS of Vulnerable ,
 - One EVC with a BCS of Rare.
- Over 1,000 wetlands are modelled within the study area including:
 - One internationally important (Ramsar) wetland - The Gippsland Lakes,
 - One nationally important wetland - Lake Wellington Wetlands,
 - Two waterbodies of regional significance - Jack Smith Lake & Lake Dennison.
- Waterways including:
 - Merriman Creek & associated tributaries,
 - LaTrobe River & associated tributaries,
 - Carr Creek & associated tributaries.
- Four nationally (EPBC Act) listed and six Victorian FFG Act listed threatened ecological communities.
- Populations and / or suitable habitat for EPBC Act and FFG Act threatened flora and fauna species.
- Suitable habitat for migratory species listed under the EPBC Act including:
 - 53 migratory avifauna.

Government legislation and policy

Potential impacts to MNES under the EPBC Act

Our preliminary assessment of the project's potential impacts to biodiversity against the *Matters of National Environmental Significance, Significant Impact Criteria Guidelines 1.1 Environmental Protection and Biodiversity Conservation Act 1999* (Commonwealth of Australia 2013) indicate that the project could significantly impact the following MNES:

- Listed threatened flora and fauna species,
- Listed threatened ecological communities (TECs),
- Migratory species,
- Wetlands of international importance (Ramsar sites).

Further details are provided in Table 12 (Section 5).

Potential environmental effects under the EE Act

Our preliminary assessment of the project's potential impacts to biodiversity against the individual and combined referral criteria outlined in the *Ministerial Guidelines for Assessment of Environmental Effects under the Environment Effects Act 1978* (DSE 2006) indicate that the project could satisfy up to four of the individual potential environmental effects criteria and up to five of the combination of potential environmental effects criteria (Table 13, Section 5).

Recommendations

The primary measure to reduce impacts to biodiversity values within the study area is to avoid and minimise removal of native vegetation and terrestrial and aquatic habitat. It is critical that this be considered during the design phase of the project, when key decisions are made about the location of project components such as built infrastructure / site compounds / access roads / temporary material storage etc.

This could be achieved by:

- Avoiding / minimising unnecessary duplication of infrastructure e.g. utilise existing easements to connect to existing transmission network, co-locate project components with other infrastructure.
- Aligning the impact footprint through existing cleared land including agricultural land and plantations e.g. along Merrimans Creek / Gormandale – Stradbroke Road or along Seaspray Road and Hyland Highway.
- Strategic use of horizontal directional drilling (HDD).
- The development of a project specific CEMP and OEMP.

The results of this assessment should be:

- Used to inform the referrals process under both the EPBC Act and EE Act to develop an appropriate scope for the environmental impact assessment of the project.
- Integrated into project design to avoid and minimise impacts to biodiversity.
- Used to inform development of a project specific CEMP and OEMP.
- Used to inform development of an offset strategy for potential impacts to biodiversity.

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Appendices

Appendix 1 Flora

The following abbreviations and symbols are relevant to this Appendix:

Code	Meaning	Reference
National listings (EPBC Act)		
EX	Extinct	Commonwealth <i>Environment Protection and Biodiversity Conservation Act 1999</i> (EPBC Act)
CR	Critically endangered	
EN	Endangered	
VU	Vulnerable	
PMST	Protected Matters Search Tool	
State listings (FFG Act¹)		
x	Extinct	Victorian <i>Flora and Fauna Guarantee Act 1988</i> (FFG Act)
cr	Critically endangered	
en	Endangered	
vu	Vulnerable	
t	Threatened	

¹ The DELWP Advisory List for Rare or Threatened Plants was revoked in 2021 and are superseded by the current list of threatened species under the FFG Act 1988.

A1.1 Listed flora species

The following table includes threatened flora species that have potential to occur within the study area. The list of threatened species is sourced from the VBA and PMST (accessed on 25 October 2021). Where years are specified for the most recent database records, these refer to records from the VBA unless otherwise specified. Where no year is specified, the PMST has predicted that the species has potential to occur. A proportion of the flora habitat descriptions have been reproduced with permission from the Royal Botanic Gardens Victoria (RBGV 2020).

Table A1.1 Threatened flora species recorded or predicted to occur within 500 metres of the study area

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
National significance								
<i>Amphibromus fluitans</i>	River Swamp Wallaby-grass	VU		2008	PMST	Swampy areas, mainly along the Murray River between Wodonga and Echuca with scattered records from southern Victoria.	High	Suitable habitat present. Multiple recent records within the study area in 2004 & 2008.
<i>Caladenia tessellata</i>	Thick-lip Spider-orchid	VU		2013	PMST	Heathlands, heathy woodlands and lowland forest in coastal areas east from Port Phillip Bay.	High	Suitable habitat present. Recorded within the study area in 2013.
<i>Commersonia prostrata</i>	Dwarf Kerrawang	EN	en	2012	PMST	Swampy, sometimes ephemeral, wetlands and lake margins, that are often dominated by <i>Lepidosperma</i> spp.	High	Suitable habitat present. Multiple recent records within the study area.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
<i>Dianella amoena</i>	Matted Flax-lily	EN	cr		PMST	Lowland grassland and grassy woodland, on well-drained to seasonally waterlogged fertile sandy loam soils to heavy cracking clays.	Medium	Suitable habitat present based on EVC and TEC modelling. No records within 500 m of study area.
<i>Dodonaea procumbens</i>	Trailing Hop-bush	VU		2012	PMST	Sandy or clay soils in low-lying, winter-wet areas in grasslands, woodlands, and low-open forest.	High	Suitable habitat present. Hundreds of recent records within the study area.
<i>Eucalyptus strzeleckii</i>	Strzelecki Gum	VU	cr	2008	PMST	Ridges, slopes and along the banks of streams on deep, fertile loam soils that are seasonally waterlogged; less commonly found on undulating or flat terrain.	High	Suitable habitat present. Multiple recent records within the study area.
<i>Glycine latrobeana</i>	Clover Glycine	VU	vu	1882	PMST	Grasslands and grassy woodlands, particularly those dominated by Kangaroo Grass.	Low	Small areas of suitable habitat may be present based on EVC and TEC modelling. No records within 500 m of study area since 1882.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
<i>Lepidium hyssopifolium</i>	Basalt Pepper-cress	EN			PMST	Basalt plains grassland and woodland communities.	Low	Small areas of suitable habitat may be present based on EVC and TEC modelling. No records within 500 m of study area.
<i>Prasophyllum frenchii</i>	Maroon Leek-orchid	EN	en	2012	PMST	Grassland and grassy woodland environments on sandy or black clay loam soils, that are generally damp but well drained.	High	Suitable habitat present. Multiple recent records within the study area.
<i>Prasophyllum spicatum</i>	Dense Leek-orchid	VU	cr		PMST	Heath and heathy woodlands.	Medium	Suitable habitat present based on EVC and TEC modelling. No records within 500 m of study area though species is cryptic and is widespread throughout coastal and near-coastal areas of southern Victoria.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
<i>Prostanthera galbraithiae</i>	Wellington Mint-bush	VU	en	2020	PMST	Heathy open forest, heathland and heathy woodland, usually on gravelly sand.	High	Suitable habitat present. Over a hundred recent records within the study area.
<i>Pterostylis chlorogramma</i>	Green-striped Greenhood	VU	en		PMST	Heathy woodland; more specific habitat requirements are poorly known.	Medium	Suitable habitat present based on EVC and TEC modelling. No records within 500 m of study area though species is cryptic and is widespread throughout southern Victoria.
<i>Senecio psilocarpus</i>	Swamp Fireweed	VU			PMST	Seasonally inundated herb-rich swamps, growing on peaty soils or volcanic clays.	Medium	Suitable habitat present based on EVC and TEC modelling. Species occurs throughout southern Victoria west from Sale. No records within 500 m of study area though species is easily overlooked.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
<i>Thelymitra epipactoides</i>	Metallic Sun-orchid	EN	en	2013	PMST	Moist or dry sandy loams or loamy sands, primarily in coastal heaths, grasslands and woodlands, but also in similar communities at drier inland sites.	High	Suitable habitat present. Multiple recent records within the study area.
<i>Xerochrysum palustre</i>	Swamp Everlasting	VU	cr	2009	PMST	Sedge-swamps and shallow freshwater marshes and swamps in lowlands, on black cracking clay soils.	Medium	Suitable habitat present. Recorded within the study area in 1972 & 2009.
State significance								
<i>Acacia howittii</i>	Sticky Wattle		vu	2009		Moist forest. Natural occurrences are confined to South Gippsland and Central Highlands.	Low	Small areas of suitable habitat may be present. Widely planted as an ornamental. Single record along Churchill - Traralgon Road may be planted.
<i>Allocasuarina nana</i>	Stunted Sheoak		en	2011		Known only from Mt Elizabeth and the upper Genoa River, growing in heath on sandstone in exposed situations.	Medium	Suitable heath habitat present. Single record within study area collected by Darcy Duggan.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
<i>Althenia marina</i>	Sea Water-mat		cr	1979		Occurs in marine intertidal (mid-eulittoral) areas of western Port Phillip Bay on muddy substrates with <i>Zostera muelleri</i> and <i>Ruppia maritima</i>	Medium	Suitable habitat present. No recent records within 500 m of study area though species is easily overlooked.
<i>Amphibromus sinuatus</i>	Wavy Swamp Wallaby-grass		en	2013		Confined to permanent swamps in cool sites.	Medium	Suitable habitat present. Three recent records within 500 m of study area.
<i>Astrotricha parvifolia</i> subsp. 1	Small-leaf Star-hair		cr	2012		Endemic in Victoria. Restricted to the Gippsland Lakes hinterland (Providence Ponds, Dutson, Robinson) and not recently collected. Regeneration mode and habitat not known.	High	Suitable habitat present. Multiple recent records within the study area.
<i>Austrostipa rudis</i> subsp. <i>australis</i>	Veined Spear-grass		en	1983		Cooler areas of moderate altitude, in open-forest on sandy or sandstone derived soils.	Medium	Suitable habitat present. No recent records within 500 m of study area though species is easily overlooked.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
<i>Billardiera scandens</i> s.s.	Velvet Apple-berry		en	2012		Common in heathland, woodland and forests from near sea level to the subalps.	Medium	Suitable habitat present. Single recent record within the study area.
<i>Bossiaea heterophylla</i>	Variable Bossiaea		en	2015		Sandy soils in a range of habitats including heathland and open woodland.	High	Suitable habitat present. Multiple recent records within the study area.
<i>Brachyscome salkiniae</i>	Elegant Daisy		vu	1987		In forests and woodland on sandy or loamy soil, often on river banks and flats, throughout East Gippsland and extending west into the Latrobe Valley near Moe.	Medium	Suitable habitat present. No recent records within 500 m of study area though species is easily overlooked.
<i>Caladenia aurantiaca</i>	Orange-tip Finger-orchid		en	1992		Lowland forest and heathy woodlands, typically near the coast.	Medium	Suitable habitat present. No recent records within 500 m of study area though species is cryptic.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
<i>Caladenia vulgaris</i>	Slender Pink-fingers		vu	1995		Scattered across southern Victoria where sometimes locally common in heathland and coastal scrub on moisture-retentive sandy soils.	Medium	Suitable habitat present. No recent records within 500 m of study area though species is cryptic.
<i>Calochilus imberbis</i>	Naked Beard-orchid		cr	1979		Mainly found in heath, heathy woodlands and lowland forests.	Medium	Suitable habitat present. No recent records within 500 m of study area though species is cryptic.
<i>Coronidium gunnianum</i>	Pale Swamp Everlasting		cr	2013		Widespread and sometimes locally common, particularly in high-rainfall areas of Victoria; often in moist sites in open forests and woodlands.	High	Suitable habitat present. Three recent records within study area.
<i>Corybas aconitiflorus</i>	Spurred Helmet-orchid		en	1995		Coastal scrubs, heath, heathy woodland and moist foothill forest in damp, shady sites.	Medium	Suitable habitat present. A cryptic species with a single recent record within the study area.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
<i>Corybas fimbriatus</i>	Fringed Helmet-orchid		en	2012		Damp, shady locations within coastal scrub, heath, heathy woodland and lowland forest.	High	Suitable habitat present. Two recent records within study area.
<i>Cycnogeton microtuberosum</i>	Eastern Water-ribbons		en	2013		Common in fresh, still or slow-flowing water 50-120 cm deep, in small creeks, swamps and farm dams. Can also be found in stagnant water that is often highly eutrophic and humic from farmland run-off.	High	Suitable habitat present. Multiple recent records within the study area.
<i>Cymbonotus lawsonianus</i>	Bear's-ear		en	2003		Woodland communities.	High	Suitable habitat present. Two recent records within study area.
<i>Deparia petersenii</i> subsp. <i>congrua</i>	Japanese Lady-fern		en	1989		Shaded, wet forests and river flats, often near or on rocks.	Medium	Suitable habitat present. No recent records within 500 m of study area though species is easily overlooked.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
<i>Diuris punctata</i> var. <i>punctata</i>	Purple Diuris		en	2003		Fertile, loamy soils and periodically wet areas in lowland grasslands, grassy woodlands, heathy woodlands and open heathlands.	High	Suitable habitat present. Two recent records within study area.
<i>Eriocaulon scariosum</i>	Common Pipewort		en	1973		Bog communities and drainage areas, often where there is running water.	Medium	Suitable habitat present. No recent records within 500 m of study area though species is easily overlooked.
<i>Eucalyptus arenicola</i>	Gippsland Lakes Peppermint		en	2015		Sandy soils in both coastal and near coastal environments.	High	Suitable habitat present. Multiple recent records within the study area.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
<i>Eucalyptus bosistoana</i>	Coast Grey-box		en	2005		Occurs mostly on loamy soils east from Woodside, around the Gippsland Lakes and near the coast, extending further inland (east) along the Cann and Genoa River Valleys. Commonly associated with <i>Eucalyptus globoidea</i> .	High	Suitable habitat present. Two recent records within study area.
<i>Eucalyptus fulgens</i>	Green Scentbark		en	2003		Forests and woodlands of the Gippsland Plain and adjacent foothills.	High	Suitable habitat present. Two recent records within study area.
<i>Eucalyptus willisii</i> s.s.	Promontory Peppermint		vu	1969		Restricted to sandy areas and granite hills in Wilsons Promontory.	Negligible	Plants previously included in this species from the Gippsland Lakes region are now recognised as a distinct species (<i>E. arenicola</i>).
<i>Eucalyptus yarraensis</i>	Yarra Gum		cr	2008		Valley flats and along stream on soils subject to periodic inundation or waterlogging.	High	Suitable habitat present. Two recent records within study area.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
<i>Fimbristylis velata</i>	Veiled Fringe-sedge		en	2013		Drying mud beside lakes and rivers and in seasonally wet depressions.	High	Suitable habitat present. Multiple recent records within 500 m the study area.
<i>Fissidens dealbatus</i>	Nerveless Pocket-moss		en	1974		Damp, shaded, mineral soil, especially on stream banks and the sides of intermittent water courses.	Medium	Suitable habitat present. No recent records within 500 m of study area though species is easily overlooked.
<i>Grevillea chrysophaea</i>	Golden Grevillea		vu	2018		Silty sand and sandy loam soils in woodlands and heath.	High	Suitable habitat present. Multiple recent records within the study area.
<i>Lachnagrostis robusta</i>	Salt Blown-grass		en	1998		Confined to saline swamps and lake edges but widespread across the Victorian Volcanic Plain and occasionally in the southern Wimmera.	Medium	Suitable habitat present. No recent records within 500 m of study area though species is easily overlooked.
<i>Lachnagrostis rudis</i> subsp. <i>rudis</i>	Rough Blown-grass		en	2011		Uncommon, occurs in moist, shaded forests and swamp margins near the coast.	Medium	Suitable habitat present. Recorded once within the study area in 2011.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
<i>Lachnagrostis semibarbata</i> var. <i>filifolia</i>	Purple Blown-grass		en	1991		Wet marshes and slightly saline swamps and depressions, on heavy soils away from the coast.	Medium	Suitable habitat present. No recent records within 500 m of study area though species is easily overlooked.
<i>Lawrenzia spicata</i>	Salt Lawrenzia		en	2008		Fringe habitats of coastal saltmarsh communities.	High	Suitable habitat present. Multiple recent records within the study area.
<i>Leptorhynchus elongatus</i>	Lanky Buttons		en	1994		Grassy Eucalyptus pauciflora woodlands in the eastern uplands; dry open-forest in the west and southern mallee.	Medium	Suitable habitat present. Recorded once within the study area in 1994.
<i>Melaleuca armillaris</i> subsp. <i>armillaris</i>	Giant Honey-myrtle		en	2013		Near coastal heath/scrub, rocky coast and foothill outcrops eastwards from about Marlo. Occurrences to the west are naturalized from cultivated stock.	Negligible	Outside known natural range of the species which is widely planted.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
<i>Muellerina celastroides</i>	Coast Mistletoe		cr	1978		Confined to coastal areas mostly on Banksia spp. and Allocasuarina spp.	Medium	Suitable habitat present. Recorded once within the study area in 1978 though species is easily overlooked.
<i>Oxalis rubens</i>	Dune Wood-sorrel		en	2003		Near coastal sites, often on sand dunes.	Medium	Suitable habitat present. Recorded once within the study area in 2003 though species is easily overlooked.
<i>Platysace ericoides</i>	Heath Platysace		en	2000		Dry forests on coastal plains, foothills and lowland woodlands - typically on shallow, rocky soils.	High	Suitable habitat present. Multiple records within the study area in 1999 & 2000.
<i>Poa billardierei</i>	Coast Fescue		en	1979		Coastal dunes.	Medium	Suitable habitat present. Recorded once within the study area in 1979 though species is easily overlooked.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
<i>Pomaderris aurea</i>	Golden Pomaderris		en	1993		Dry foothill forests and heathy woodlands to wetter montane forests.	Medium	Suitable habitat present. Multiple records within the study area but not recorded since 1993.
<i>Pomaderris pilifera</i> subsp. <i>pilifera</i>	Striped Pomaderris		en	1986		Occurs in hill country woodlands and open forests on well-drained clay loams.	Medium	Suitable habitat present. Recorded once within the study area in 1986.
<i>Pseudanthus ovalifolius</i>	Oval-leaf Pseudanthus		vu	1899		Dry sandy or shallow, shale soils.	Low	Suitable habitat present though not recorded within 500 m of study area since 1899. Species is relatively distinctive even outside of flowering period.
<i>Pterostylis fischii</i>	Fisch's Greenhood		en	2003		Grassy moist areas within open forest.	High	Suitable habitat present. A cryptic species with two recent records within the study area.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
<i>Pterostylis grandiflora</i>	Cobra Greenhood		en	1899		Moist, shady slopes in open-forest, on well-drained soil.	Medium	Suitable habitat present. No recent records within 500 m of study area though species is cryptic.
<i>Pterostylis pedoglossa</i>	Prawn Greenhood		en	1972		Heath and heathy woodland near the coast.	Medium	Suitable habitat present. No recent records within 500 m of study area though species is cryptic.
<i>Pterostylis X ingens</i>	Sharp Greenhood		vu	1967		Moist areas in open forest. A sporadic natural hybrid between <i>Pterostylis nutans</i> and <i>P. falcata</i> , forming clonal colonies.	Medium	Suitable habitat present. No recent records within 500 m of study area though species is cryptic.
<i>Pterostylis X toveyana</i>	Mentone Greenhood		en	2013		Coastal scrub and moist areas of open-forest. A natural hybrid between <i>P. concinna</i> and <i>P. nichollsiana</i> forming clonal colonies, usually in close proximity to the parents.	High	Suitable habitat present. Two recent records within the study area in 2012 & 2013.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
<i>Ranunculus amplus</i>	Lacey River Buttercup		cr	2008		Shallow margins of freshwater swamps, billabongs and dams.	Medium	Suitable habitat present. One recent record within 500 m of study area though species is easily overlooked.
<i>Schoenus imberbis</i>	Beardless Bog-sedge		vu	2012		Occasional in near-coastal heathland and woodland eastward from about Sale.	Medium	Suitable habitat present. One recent record within study area though species is easily overlooked.
<i>Senecio diaschides</i>	Shingle Fireweed		en	2011		Confined to river valleys in the east, with records from along the Avon, Macalister, Murrindal, Buchan and Snowy Rivers, commonly occurring on sand or among rocks near the watercourse.	Medium	Suitable habitat present. One recent record within 500 m of study area though species is easily overlooked.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
<i>Senecio glomeratus</i> subsp. <i>longifructus</i>	Annual Fireweed		vu	2011		Areas adjacent to streams, swamps and saline flats.	Medium	Suitable habitat present. One recent record within 500 m of study area though species is easily overlooked.
<i>Sowerbaea juncea</i>	Rush Lily		vu	2020		Locally common in damp, near-coastal heath and woodland communities in the far east (from near Mario to the NSW border) with scattered, disjunct occurrences in the northern part of Wilsons Promontory and areas between Traralgon and Sale south to near Yarram.	High	Suitable habitat present. Multiple recent records within the study area.
<i>Thelymitra hiemalis</i>	Winter Sun-orchid		cr	2012		Brown Stringybark Eucalyptus baxteri or Promontory Peppermint E. willisii woodland, typically with a heathy understorey.	Medium	Suitable habitat present. A cryptic species recorded once within the study area in 2012.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
<i>Thryptomene micrantha</i>	Ribbed Thryptomene		en	2012		In Victoria found mostly in heath or heathy woodland on sandy soils near the Gippsland Lakes (e.g. Sperm Whale Head), but with isolated occurrences in low shrubland on exposed rocky slopes north of Licola. Old records from the Grampians and a 2003 collection from the lower Glenelg River area.	High	Suitable habitat present. Multiple recent records within the study area.
<i>Triglochin mucronata</i>	Prickly Arrowgrass		en	1983		Herbfields on damp saline soils of salt flats and coastal saltmarshes.	Medium	Suitable habitat present. One record within study area though species is easily overlooked.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
<i>Viola fuscoviolacea</i>	Dusky Violet		en	1991		Damp alpine herbfields on Buffalo Plateau, Bogong High Plains, Mt Wellington and Nunniong Plateau with isolated occurrences in near-coastal <i>Lepidosperma longitudinale</i> sedgeland between Wilsons Promontory and Sale.	Medium	Suitable habitat present. Single record within study area in Holey Plains State Park.
<i>Xanthosia leiophylla</i>	Parsley Xanthosia		en	1978		Sandy heathland and heathy woodland.	Medium	Suitable habitat present. One record within study area though species is easily overlooked.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
<i>Zieria veronicea</i> subsp. <i>veronicea</i>	Pink Zieria		en	2012		Sandy mallee and heathy mallee habitats within the Wimmera and southern Mallee with a southerly outlier near Casterton, and disjunct populations in sandy lowland heaths around the Gippsland Lakes.	High	Suitable habitat present. Multiple recent records within the study area.

A1.2 Threatened ecological communities

The following table includes the threatened ecological communities that have potential to occur within the project area. The list of threatened ecological communities has been compiled with reference to characteristics of FFG Act threatened communities (SAC 2013) and predictive output from the PMST (accessed on 25 October 2021).

Table A1.2 Threatened ecological communities predicted to occur within 500 metres of the project area.

Community Name	Conservation status	Source
National significance		
Gippsland Red Gum (<i>Eucalyptus tereticornis</i> subsp. <i>mediana</i>) Grassy Woodland and Associated Native Grassland	Critically Endangered	PMST
Natural Damp Grassland of the Victorian Coastal Plains	Critically Endangered	PMST
Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains	Critically Endangered	PMST
Subtropical and Temperate Coastal Saltmarsh	Vulnerable	PMST
State significance		
Central Gippsland Plains Grassland Community	Threatened	NV2005_FFG_COMM
Coastal Moonah (<i>Melaleuca lanceolata</i> subsp. <i>lanceolata</i>) Woodland Community	Threatened	NV2005_FFG_COMM
Forest Red Gum Grassy Woodland Community	Threatened	NV2005_FFG_COMM
Herb-rich Plains Grassy Wetland (West Gippsland) Community	Threatened	NV2005_FFG_COMM
Plains Grassland (South Gippsland) Community	Threatened	NV2005_FFG_COMM
Sedge Rich <i>Eucalyptus camphora</i> Swamp Community	Threatened	NV2005_FFG_COMM

Appendix 2 Fauna

The following abbreviations and symbols are relevant to this Appendix:

Code	Meaning	Reference
National listings (EPBC Act)		
EX	Extinct	Commonwealth <i>Environment Protection and Biodiversity Conservation Act 1999</i> (EPBC Act)
CR	Critically endangered	
EN	Endangered	
VU	Vulnerable	
NT	Near threatened	
CD	Conservation dependent	
PMST	Protected Matters Search Tool	
State listings (FFG Act²)		
x	Extinct	Victorian <i>Flora and Fauna Guarantee Act 1988</i> (FFG Act)
cr	Critically endangered	
en	Endangered	
vu	Vulnerable	
t	Threatened	
P	Protected (fish only)	

² The DELWP Advisory Lists for Threatened Terrestrial and Invertebrate Fauna were revoked in 2021 and are superseded by the current list of threatened species under the FFG Act 1988.

A2.1 Listed fauna species

The following table includes a list of threatened fauna species that have potential to occur within the study area. The list of threatened species is sourced from the VBA and PMST (accessed on 31 January 2022). Where years are specified for the most recent database records, these refer to records from the VBA unless otherwise specified. Where no year is specified, the PMST has predicted that the species has potential to occur.

Table A2.1 Threatened fauna species recorded or predicted to occur within 500 metres of the study area

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
National significance								
<i>Rostratula australis</i>	Australian Painted-snipe	EN	cr	1970	PMST	Shallows of well-vegetated freshwater wetlands.	High	Contemporary records in surrounding area and suitable habitat present.
<i>Botaurus poiciloptilus</i>	Australasian Bittern	EN	cr	1992	PMST	Shallow freshwater and brackish wetlands with abundant emergent aquatic vegetation.	High	Contemporary records in surrounding area and suitable habitat present.
<i>Falco hypoleucos</i>	Grey Falcon	VU	vu		PMST	Lightly timbered plains and Acacia scrub.	Low	No records within the study area or nearby surrounding areas.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
<i>Neophema chrysogaster</i>	Orange-bellied Parrot	CR	cr	1980	PMST	Coastal vegetation including saltmarshes, dunes, pastures, shrublands, sewage plants, saltworks, islands, and beaches.	Medium	Historic records in surrounding area and suitable habitat present.
<i>Lathamus discolor</i>	Swift Parrot	CR	cr	2017	PMST	A range of forests and woodlands, especially those supporting nectar-producing tree species. Also well-treed urban areas.	High	Recent records in study area and suitable habitat present.
<i>Hirundapus caudacutus</i>	White-throated Needletail	VU	vu	2019	PMST	An almost exclusively aerial species within Australia, occurring over most types of habitat, particularly wooded areas.	High	Likely to be seen flying high over the study area.
<i>Thalassarche bulleri platei</i>	Northern Buller's Albatross	VU			PMST	Buller's Albatross breeds in New Zealand and is a seasonal visitor to Victorian coastal waters where it occurs in pelagic and inshore waters.	Low	No records within the study area or nearby surrounding areas.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
<i>Pachyptila turtur subantarctica</i>	Fairy Prion (southern)	VU			PMST	Open ocean over continental shelves and slopes, and rarely coming close to shore except at breeding islands and during rough weather.	Medium	Ssp. breeds on sub-Antarctic islands but disperses north during winter. May occur off south eastern Australia in small numbers. May be difficult to distinguish from locally breeding <i>Pachyptila turtur</i> and thus cannot be excluded from likelihoods.
<i>Fregetta grallaria grallaria</i>	Storm-Petrel (Australasian)	VU			PMST		Low	Potential Ssp. of white-bellied Storm-Petrel. Not known to occur in Victorian waters

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
<i>Diomedea antipodensis gibsoni</i>	Gibson's Albatross	VU			PMST	A marine, pelagic species that ranges widely throughout the Pacific region of the Southern Ocean. It visits off-shore waters of southern Australia.	Low	No records within the study area or nearby surrounding areas. Only Australian record off NSW
<i>Pterodroma leucoptera leucoptera</i>	Gould's Petrel	EN			PMST	The Gould's Petrel is a marine pelagic spending the majority of its time at sea. It has breeding colonies on Cabbage Tree Island and Boondelbah Island.	Medium	Historic records in surrounding areas including Wilsons Promontory. May be an occasional visitor to the study area.
<i>Halobaena caerulea</i>	Blue Petrel	VU			PMST	A marine species, usually pelagic but sometimes observed over shallow waters. A regular visitor to southern Australian waters.	Medium	Historic records in surrounding areas including Wilsons Promontory. May be an occasional visitor to the study area.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
<i>Diomedea exulans</i>	Wandering Albatross	VU	cr		PMST	Occurs from Antarctic to subtropical areas in the southern hemisphere. In Australia, observed over continental shelves often in areas of continental upwellings. Regularly recorded feeding in sheltered harbours, often gathering at sewerage outfalls.	Medium	Historic and recent records in surrounding areas including Wilsons Promontory. May be an occasional visitor to the study area.
<i>Thalassarche melanophris</i>	Black-browed Albatross	VU		1978	PMST	Breeds in antarctic and sub-antarctic islands, but commonly occurs in pelagic waters off the coast of Victoria.	High	Multiple historic and recent records in surrounding areas. Likely to pass through the study area
<i>Thalassarche carteri</i>	Indian Yellow-nosed Albatross	VU	en		PMST	The Indian Yellow-nosed Albatross is a marine bird, located in subtropical and warmer subantarctic waters .	Medium	Historic records in surrounding areas including Wilsons Promontory. May be an occasional visitor to the study area.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
<i>Thalassarche chrysostoma</i>	Grey-headed Albatross	EN	en		PMST	Occurs in warmer areas over winter, its breeding grounds are found in the Antarctic and subantarctic islands. Generally, forages over the open oceans. There have been a small number of records over inshore and offshore areas along the Victorian coast.	Medium	Historic records in surrounding areas including Wilsons Promontory. May be an occasional visitor to the study area.
<i>Thalassarche cauta</i>	Shy Albatross	EN	en	2007	PMST	The Shy Albatross is a marine pelagic species inhabiting sub-Antarctic and subtropical waters, spending the majority of their time at sea. Occasionally it is observed in continental shelf waters in bays and harbours.	High	Multiple historic and recent records within the study area and in surrounding areas. Likely to be a pass through the study area frequently
<i>Phoebastria fusca</i>	Sooty Albatross	VU	cr		PMST	Subantarctic and subtropical marine waters.	Medium	Limited records off the coast of Victoria, but could be an occasional visitor to the study area

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
<i>Macronectes giganteus</i>	Southern Giant-Petrel	EN	en		PMST	Adults of this species are present all year round at Antarctic breeding colonies, from where immature birds disperse, some as far north as subtropical areas.	Medium	Historic records in surrounding areas including Wilsons Promontory. May be an occasional visitor to the study area.
<i>Thalassarche bulleri</i>	Buller's Albatross	VU	en		PMST	Buller's Albatross breeds in New Zealand and is a seasonal visitor to Victorian coastal waters where it occurs in pelagic and inshore waters.	Medium	Occasional records in surrounding areas. May be an occasional visitor to the study area
<i>Macronectes halli</i>	Northern Giant-Petrel	VU	en		PMST	Breeds in coastal habitats on subantarctic islands. Dispersal movements of juveniles are poorly known but have been observed along temperate coastal areas of Australia. Often seen around sewer outfalls or seal and penguin colonies.	High	Multiple historic and recent records in surrounding areas. Likely to pass through the study area frequently

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
<i>Diomedea epomophora</i>	Southern Royal Albatross	VU	cr	1974	PMST	The range of the Southern Royal Albatross extends throughout the oceans of the Southern Hemisphere. The Southern Royal Albatross nests almost exclusively on the Chatham Islands, located hundreds of miles east of New Zealand.	Medium	Historic and recent records in surrounding areas including Wilsons Promontory. May be an occasional visitor to the study area.
<i>Diomedea sanfordi</i>	Northern Royal Albatross	EN			PMST	The Northern Royal Albatross is marine, pelagic species and its habitat includes subantarctic, subtropical, and occasionally Antarctic waters (Marchant & Higgins 1990). The species nests on flat or gently sloping ground, on slopes, ridges, gullies and plateaux of large islands, and on the summits of islets (Bailey & Sorensen 1962; Dawson 1973; Westerkov 1963). Northern royal albatrosses (<i>D. e. sanfordi</i>) commonly nest on Campbell Island and the Auckland Islands.	Low	Not commonly seen over continental slope and pelagic waters, with sighting limited to marine environment off eastern Tasmania.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
<i>Diomedea antipodensis</i>	New Zealand Wandering Albatross	VU			PMST	A marine, pelagic species that ranges widely throughout the Pacific region of the Southern Ocean. It visits off-shore waters of southern Australia.	Low	Uncommon visitor to south-eastern Australia, with sighting limited to marine environment off eastern Tasmania.
<i>Thalassarche eremita</i>	Chatham Albatross	EN			PMST	Breeding for the Chatham Albatross is restricted to Pyramid Rock, Chatham Islands, off the coast of New Zealand. The principal foraging range for this species is in coastal waters off eastern and southern New Zealand, and Tasmania.	Low	Occasional visitor to the pelagic environment off south-east Australia.
<i>Thalassarche salvini</i>	Salvin's Albatross	VU			PMST	Salvin's Albatross is a marine species occurring in subantarctic and subtropical waters (Marchant & Higgins 1990). Salvin's Albatross nest's on level or gently sloping ledges, summits, slopes and caves of rocky islets and stacks, usually in broken terrain with little soil and vegetation (Brothers 1979a, 1979b; Fleming 1939; Green 1974; Miskelly 1984).	Low	Uncommon visitor to south-eastern Australia.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
<i>Thalassarche steadi</i>	White-capped Albatross	VU			PMST	The White-capped Albatross is a marine species and occurs in subantarctic and subtropical waters. Birds nest on slopes vegetated with tussock and succulents on Auckland Island (Marchant & Higgins 1990).	Low	Occasional visitor to the pelagic environment off south-east Australia.
<i>Thalassarche impavida</i>	Campbell Albatross	VU			PMST	The Campbell Albatross is a marine sea bird inhabiting sub-Antarctic and subtropical waters from pelagic to shelf-break water habitats (Marchant & Higgins 1990). The Campbell Albatross breed on Campbell Island (Marchant & Higgins 1990). They make their nests on tussock-covered ledges and terraces of cliffs, slopes and hills, overlooking the sea or valleys, and on the summits of rocky islets (Bailey & Sorenson 1962; Downs et al. 1959; Weimerskirch et al. 1986).	Low	Commonly recorded over deeper shelf waters off southern Australia. Unlikely to occur within the study area.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
<i>Limosa lapponica baueri</i>	Bar-tailed Godwit (baueri)	VU			PMST	Bar-tailed Godwits inhabit estuarine mudflats, beaches and mangroves. They are common in coastal areas around Australia. They are social birds and are often seen in large flocks and in the company of other waders.	High	Multiple historic and recent records in surrounding areas. Suitable habitat present within the study area
<i>Sternula nereis</i>	Fairy Tern	VU	cr	1972		Fairy Terns inhabit coastal environments including intertidal mudflats, sand flats and beaches. Nests above high-water mark on sandy shell-grit beaches.	High	Multiple historic and recent records in surrounding areas. Suitable habitat present within the study area
<i>Thinornis cucullatus</i>	Hooded Plover	VU	vu	2002	PMST	Sandy ocean beaches, estuaries and inland lakes.	High	Multiple historic and recent records in surrounding areas. Suitable habitat present within the study area

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
<i>Charadrius leschenaultii</i>	Greater Sand Plover	VU	vu		PMST	Intertidal mudflats and sandbanks of sheltered bays and estuaries.	High	Multiple historic and recent records in surrounding areas. Suitable habitat present within the study area
<i>Numenius madagascariensis</i>	Eastern Curlew	CR	cr	1977	PMST	Large intertidal sandflats, banks, mudflats, estuaries, inlets, sewage farms, saltworks, harbours, coastal lagoons and bays.	High	Multiple historic and recent records in surrounding areas. Suitable habitat present within the study area
<i>Limosa lapponica</i>	Bar-tailed Godwit	VU	vu	1977	PMST	Bar-tailed Godwits inhabit estuarine mudflats, beaches and mangroves. They are common in coastal areas around Australia. They are social birds and are often seen in large flocks and in the company of other waders.	High	Multiple historic and recent records in surrounding areas. Suitable habitat present within the study area

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
<i>Calidris ferruginea</i>	Curlew Sandpiper	CR	cr	2017	PMST	Large intertidal sandflats, banks, mudflats, estuaries, inlets, sewage farms, saltworks, harbours, coastal lagoons and bays.	High	Multiple historic and recent records within study area and in surrounding areas. Suitable habitat present within the study area
<i>Calidris canutus</i>	Red Knot	EN	en	1981	PMST	Large intertidal sandflats, banks, mudflats, estuaries, inlets, sewage farms, saltworks, harbours, coastal lagoons and bays.	High	Multiple historic and recent records in surrounding areas. Suitable habitat present within the study area

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
<i>Calidris tenuirostris</i>	Great Knot	CR	cr	1972		Large intertidal sandflats, banks, mudflats, estuaries, inlets, sewage farms, saltworks, harbours, coastal lagoons and bays.	High	Multiple historic and recent records in surrounding areas. Suitable habitat present within the study area
<i>Grantiella picta</i>	Painted Honeyeater	VU	vu		PMST	Dry open woodlands and forests. Typically forages for fruit and nectar in mistletoes and in tree canopies.	Medium	Recent records near Lake Tyers and habitat suitable
<i>Anthochaera phrygia</i>	Regent Honeyeater	CR	cr	1933	PMST	A range of dry woodlands and forests dominated by nectar-producing tree species.	Low	Habitat is suitable but population is regionally reduced to NE Vic
<i>Balaenoptera borealis</i>	Sei Whale	VU			PMST	An oceanic species recorded in Australian waters.	Low	Uncommon whale off southern Australia, sightings have been far offshore.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
<i>Dasyurus maculatus maculatus</i> (SE mainland population)	Spot-tailed Quoll	EN	en	1975	PMST	Rainforest and wet and dry sclerophyll forests and woodlands.	Low	No records within study area and population is sparsely distributed throughout south-eastern Australia.
<i>Antechinus minimus maritimus</i>	Swamp Antechinus	VU	vu		PMST	Dense wet heath and heathy woodland, sedgeland and dense tussock grassland.	Low	No records within study area and populations in surrounding areas are spatially restricted. Suitable habitat unlikely to occur in study area.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
<i>Petauroides volans</i>	Southern Greater Glider	VU	vu	1981	PMST	Wet and damp sclerophyll forest with large hollow-bearing trees.	Medium	Historic records within the study area and recent records in surrounding areas. Species may occur in study area if suitable habitat is present.
<i>Potorous tridactylus trisulcatus</i>	Long-nosed Potoroo (SE mainland)	VU	vu		PMST	Forest, heathy woodlands and heathlands.	Low	No records within study area, with known range to be further east in Gippsland.
<i>Potorous longipes</i>	Long-footed Potoroo	EN	en	1900		Temperate rainforest, riparian forest and wet and dry sclerophyll forest.	Low	
<i>Mastacomys fuscus mordicus</i>	Broad-toothed Rat	VU	vu		PMST	Sub-alpine Woodland, Heathland, Sedgeland, and sedge-dominated areas within forest.	Low	No suitable habitat.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
<i>Pseudomys novaehollandiae</i>	New Holland Mouse	VU	en	2018	PMST	Coastal heathland, heathy woodland and dry sclerophyll forest.	High	Multiple recent records within the study area and suitable habitat present
<i>Mirounga leonina</i>	Southern Elephant Seal	VU		2014		Occurs in antarctic and subantarctic areas. Victorian records likely to be of vagrants, which have been found on rare occasions along the entire Victorian coast, including Port Phillip and Hobsons Bay.	Medium	Vagrants occur on shore and off the coast of Victoria. May be an occasional visitor to the study area.
<i>Eubalaena australis</i>	Southern Right Whale	EN	en	2017	PMST	Migrates between summer feeding grounds in the Southern Ocean to warmer northern waters over winter, where it can be found along the Victorian coastline. The coast 8 km east of Warrnambool is a locally important calving and nursing site until late October or early November.	High	Multiple recent records within the study area and surrounding areas. Likely to pass through the study area

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
<i>Balaenoptera musculus</i>	Blue Whale	EN	en		PMST	Found throughout the Southern Ocean, though migration paths appear to be diffuse and widespread. Often enters coastal waters, including Victoria (particularly the smaller subspecies <i>Balaenoptera physalus</i>).	Low	No records in the surrounding area
<i>Balaenoptera physalus</i>	Fin Whale	VU			PMST	Occurs worldwide with populations in the southern hemisphere undergoing extensive north-south migrations. Only one record in Victoria.	Low	Limited records off the coast of Victoria, particularly within the study area and surrounds
<i>Megaptera novaeangliae australis</i>	Southern Humpback Whale	VU	cr	2011	PMST	Migrate between summer feeding grounds in the Southern Ocean to Northern waters where birthing and mating occurs. Increasingly recorded along the Victorian coast, occasionally entering Port Phillip and Western Port.	High	Commonly recorded of south-eastern Australia and likely to pass through the offshore portion of the study area.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
<i>Arctocephalus tropicalis</i>	Subantarctic Fur Seal	EN		2014		Near coastal and offshore waters.	Medium	Occasionally recorded in southern Australian waters but these animals are mainly vagrants.
<i>Isoodon obesulus obesulus</i>	Southern Brown Bandicoot	EN	en		PMST	Heathland, shrubland, sedgeland, heathy open forest and woodland; also exotic vegetation, such as blackberry thickets and rank grasses where native vegetation has been removed.	Medium	Historic and recent records in surrounding areas including Wilsons Promontory. May occur if suitable habitat occurs in the study area.
<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox	VU	vu	1951	PMST	Rainforest, wet and dry sclerophyll forest, woodland and urban areas.	Medium	Historic and recent records in surrounding areas. May be an occasional visitor to the study area.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
<i>Chelonia mydas</i>	Green Turtle	VU			PMST	Marine species with a pan-tropical distribution throughout the world. More abundant along the tropical coasts of Australia and the Great Barrier Reef. Green Turtles spend their first five to ten years drifting on ocean currents.	Low	Limited records in Bass Strait.
<i>Dermochelys coriacea</i>	Leathery Turtle	EN	cr		PMST	Marine species usually sighted along the eastern seaboard often in bays, estuaries and rivers. No major nesting events have been recorded in Australia.	Medium	Records in nearby bays and lakes. May be an occasional visitor to the study area.
<i>Caretta caretta</i>	Loggerhead Turtle	EN			PMST	Loggerhead Turtles forage widely in the waters of coral and rocky reefs, seagrass beds and muddy bays throughout eastern, northern and western Australia. Nesting occurs in coastal environments of northern WA, NT and QLD.	Low	Limited records in Bass Strait
<i>Heleioporus australiacus</i>	Giant Burrowing Frog	VU	cr		PMST	Forests, woodlands and heathland with slow-flowing streams or other waterbodies for breeding.	Low	Suitable habitat may be present but records of this species are limited in surrounding area

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
<i>Litoria aurea</i>	Green and Golden Bell Frog	VU		2020	PMST	Still or slow-flowing waterbodies and surrounding terrestrial vegetation.	High	Recent records within the study area and suitable habitat present
<i>Litoria raniformis</i>	Growling Grass Frog	VU	vu	2017	PMST	Still or slow-flowing waterbodies and surrounding terrestrial vegetation.	High	Recent records within the study area and suitable habitat present
<i>Thunnus maccoyii</i>	Southern Bluefin Tuna	CD	cd		PMST	The species is highly migratory, occurring globally in waters between 30-50 degrees Celsius.	Medium	Species is typically recorded in deeper offshore waters but is highly mobile and may occur in inshore waters occasionally.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
<i>Carcharodon carcharias</i>	Great White Shark	VU	en		PMST	Near coastal and offshore waters.	High	Likely to occur in coastal and offshore waters, particularly around fur seal colonies.
<i>Prototroctes maraena</i>	Australian Grayling	VU	en	1976	PMST	Adults inhabit cool, clear, freshwater streams.	High	Recent records in surrounding areas. May occur within the study area depending on connectivity.
<i>Galaxiella pusilla</i>	Dwarf Galaxias	VU	en	2012	PMST	Slow-flowing or still freshwater wetlands such as swamps, drains and backwaters of streams.	High	Recent records in the study area and surrounding areas. May occur within the study area depending on connectivity.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
<i>Seriolella brama</i>	Blue Warehou	CD	cd		PMST	The species occurs predominantly in coastal shelf, upper continental slope and seamount waters offshore from New South Wales, Tasmania, Victoria and South Australia. The species occurs at depths between 3 and 550 m.	Medium	Species typically occurs in offshore waters but may occasionally occur in shallower inshore waters.
<i>Rhincodon typus</i>	Whale Shark	VU			PMST	An oceanic and coastal, tropical to warm-temperate pelagic shark. In Australia, the Whale Shark is known from NSW, Queensland, Northern Territory, Western Australia and occasionally Victoria and South Australia.	Low	Rarely recorded in cool-temperate waters. May occasionally pass through the study area.
<i>Galeorhinus galeus</i>	School Shark	CD			PMST	School Shark is most abundant in cold to temperate continental seas, from the surf line and very shallow water to well offshore. Females and juveniles utilise inshore coastal areas around Victoria, Tasmania and parts of South Australia for nursery areas.	High	Common species in Victorian waters from the inshore to offshore environment.
State significance								

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
<i>Lewinia pectoralis</i>	Lewin's Rail		vu	2015		Swamps, dense riparian vegetation and saltmarsh.	High	Recent records within the study area and suitable habitat present
<i>Egretta garzetta</i>	Little Egret		en	2017		Swamps, billabongs, floodplain pools, mudflats, mangroves and channels; breeds in trees standing in water.	High	Recent records within the study area and suitable habitat present
<i>Ardea intermedia plumifera</i>	Plumed Egret		cr	1991		Densely-vegetated freshwater wetlands including lakes, swamps and billabongs. Breeds in trees standing in water.	Medium	Recent records in surrounding area and suitable habitat present.
<i>Ardea alba modesta</i>	Eastern Great Egret		vu	2018		Flooded crops, pasture, swamps, lagoons, saltmarsh, sewage ponds, estuaries, dams, roadside ditches. Breeds in trees standing in water.	High	Recent records within the study area and suitable habitat present

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
<i>Ixobrychus dubius</i>	Australian Little Bittern		en	1970		Freshwater swamps, lakes and rivers with dense reedbeds, saltmarsh and coastal lagoons.	Medium	Recent records in surrounding area and suitable habitat present.
<i>Anseranas semipalmata</i>	Magpie Goose		vu	2007		Swamps, lakes, sewage ponds, flooded pasture, dams.	High	Recent records within the study area and suitable habitat present
<i>Spatula rhynchotis</i>	Australasian Shoveler		vu	2018		Prefers large, permanent lakes and swamps with deep water, stable conditions and abundant aquatic vegetation. Less commonly recorded in small or shallow waters, such as billabongs, sewage ponds, freshwater rivers and densely vegetated farm dams. Forages in open water but nests in densely vegetated freshwater wetlands, where fringing vegetation may be an important habitat feature.	High	Recent records within the study area and suitable habitat present

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
<i>Stictonetta naevosa</i>	Freckled Duck		en	2019		Large freshwater wetlands, generally with dense vegetation.	High	Recent records within the study area and suitable habitat present
<i>Aythya australis</i>	Hardhead		vu	2019		A mainly aquatic species preferring large, deep freshwater environments with abundant aquatic vegetation, including slow moving areas of rivers. Also occurs in brackish wetlands and may be found in deep dams and water storage ponds. Occasionally in estuarine and littoral habitats such as saltpans, coastal lagoons and sheltered inshore waters. Avoids main streams or rivers, except in calm reaches where aquatic flora is developed.	High	Recent records within the study area and suitable habitat present
<i>Oxyura australis</i>	Blue-billed Duck		vu	2007		Open or densely vegetated wetlands.	High	Recent records within the study area and suitable habitat present

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
<i>Biziura lobata</i>	Musk Duck		vu	2007		A largely aquatic species preferring deep water on large, permanent swamps, lakes and estuaries with abundant aquatic vegetation. Often occurs in areas of dense vegetated cover within a wetland. Less commonly recorded in small or shallow waters, such as billabongs, sewage ponds, freshwater rivers and densely vegetated farm dams.	High	Recent records within the study area and suitable habitat present
<i>Accipiter novaehollandiae</i>	Grey Goshawk		en	1999		Rainforest, gallery forest, tall wet forest and woodland. Also partially cleared agricultural land.	Medium	Historic and recent records in surrounding areas and suitable habitat present
<i>Hieraetus morphnoides</i>	Little Eagle		vu	2005		Woodland and open areas. Rabbits are a key component of their diet. Nesting occurs in mature trees in open woodland or riparian vegetation.	High	Recent records within the study area and suitable habitat present.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
<i>Haliaeetus leucogaster</i>	White-bellied Sea-Eagle		en	2019		Coastal areas such as beaches and estuaries, inland wetlands and major inland streams.	High	Commonly recorded within the study area and surrounds. Suitable habitat present.
<i>Lophoictinia isura</i>	Square-tailed Kite		vu	1986		Eucalypt woodlands, open forest and partially cleared farmland.	Medium	Scattered records in surrounding areas and suitable habitat present
<i>Falco subniger</i>	Black Falcon		cr	1999		Woodlands, open country and around terrestrial wetlands areas, including rivers and creeks. Mostly hunts over open plains and undulating land with large tracts of low vegetation. Primarily occurs in arid and semi-arid zones in the north, north-west and west of Victoria, though can be forced into more coastal areas by droughts and subsequent food shortages.	Low	Historic and recent records in surrounding areas, although limited arid habitat suitable for hunting.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
<i>Ninox strenua</i>	Powerful Owl		vu	2018		Eucalypt forests and woodlands, well-treed urban areas.	High	Recent records within the study area and suitable habitat present.
<i>Tyto novaehollandiae</i>	Masked Owl		cr	2007		A variety of lowland forests and woodlands.	Medium	Scattered records in surrounding areas and suitable habitat present
<i>Phoebetria palpebrata</i>	Light-mantled Sooty Albatross		cr	1991		Pelagic marine species.	Medium	Uncommon visitor to south-eastern Australia but has the potential to occur.
<i>Hydroprogne caspia</i>	Caspian Tern		vu	2018		Estuaries, inlets, bays, lagoons, inland lakes, flooded pasture, sewage ponds.	High	Recent records within the study area and suitable habitat present.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
<i>Sternula albifrons</i>	Little Tern		cr	2017	PMST	This bird is mostly recorded in sheltered coastal environments, including bays, lagoons and estuaries. Nests on sandy substrates containing much shell-grit, which provides good camouflage for their eggs.	High	Recent records within the study area and suitable habitat present.
<i>Arenaria interpres</i>	Ruddy Turnstone		en	1977		Mainly found on coastal beaches, exposed reefs, and rock platforms.	Medium	Recent records in surrounding area and suitable habitat present.
<i>Pluvialis squatarola</i>	Grey Plover		vu	1981		Mudflats, saltmarsh, tidal reefs and estuaries.	Medium	Recent records in surrounding area and suitable habitat present.
<i>Pluvialis fulva</i>	Pacific Golden Plover		vu	2017		A range of coastal habitats including mudflats, sandflats rocky shores and saltmarsh.	High	Recent records within the study area and suitable habitat present.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
<i>Actitis hypoleucos</i>	Common Sandpiper		vu		PMST	Migrates to Australia from Eurasia in August where it inhabits a wide variety of coastal and inland wetlands with muddy margins before departing north in March.	Medium	Recent records in surrounding area and suitable habitat present.
<i>Tringa nebularia</i>	Common Greenshank		en	2019	PMST	A variety of ephemeral and permanent inland wetlands and sheltered coastal wetlands.	High	Recent records within the study area and suitable habitat present.
<i>Tringa stagnatilis</i>	Marsh Sandpiper		en	2006		Permanent or ephemeral wetlands, mudflats and saltmarshes in coastal and inland environments.	High	Recent records within the study area and suitable habitat present.
<i>Melanodryas cucullata</i>	Hooded Robin		vu	1979		Woodlands of eucalypt, Mallee, semi-cleared farmland.	Medium	Recent records in surrounding area and suitable habitat present.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
<i>Calamanthus pyrrhopygius</i>	Chestnut-rumped Heathwren		vu	2017		Woodland habitat with a dense, shrubby understorey.	High	Recent records within the study area and suitable habitat present.
<i>Pyrrholaemus sagittatus</i>	Speckled Warbler		en	1978		Eucalypt woodland with rocky gullies, ridges, tussock grasses and a sparse shrub understorey.	Medium	Recent records in surrounding area and suitable habitat present.
<i>Stagonopleura guttata</i>	Diamond Firetail		vu	1977		Open forests and woodlands with a grassy ground layer.	Medium	Recent records in surrounding area and suitable habitat present.
<i>Phascogale tapoatafa</i>	Brush-tailed Phascogale		vu	1962		Drier sclerophyll forests and woodlands.	Low	Limited historic records in surrounding areas.
<i>Sminthopsis leucopus</i>	White-footed Dunnart		vu	2017		Lowland heathy woodland and forest, coastal scrub and coastal grasslands.	High	Recent records within the study area and suitable habitat present.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
<i>Arctocephalus forsteri</i>	Long-nosed Fur Seal		vu	2018		Breeds on islands off the southern Australian coast.	High	Commonly observed along the coast of south-east Australia and known to forage throughout the marine environment of Bass Strait.
<i>Tursiops australis</i>	Burrunan Dolphin		cr	2003		Marine waters in Port Phillip and the Gippsland Lakes.	High	Multiple recent records around Gippsland Lakes waters.
<i>Ornithorhynchus anatinus</i>	Platypus		vu	1994		A variety of freshwater waterbodies, particularly those with stable banks suitable for burrows, and shallow waters for foraging.	Medium	Scattered records in surrounding areas and suitable habitat present

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
<i>Saccolaimus flaviventris</i>	Yellow-bellied Sheathtail Bat		vu	2007		A variety of habitats, ranging from wet forests to desert.	High	Recent records within the study area and suitable habitat present.
<i>Varanus varius</i>	Lace Monitor		en	2017		A variety of wooded habitats, including woodlands; shelters in hollow trunks, limbs and logs.	High	Recent records within the study area and suitable habitat present.
<i>Lissolepis coventryi</i>	Swamp Skink		en	2007		Densely vegetated swamps and associated watercourses, and adjacent wet heaths, sedgelands and saltmarshes.	Medium	Relatively recent records within the study area and suitable habitat present.
<i>Pseudemoia rawlinsoni</i>	Glossy Grass Skink		en	2007		Damp environments like drainage lines, soaks and the margins of creeks, particularly in dense vegetation including rank grass, reeds and sedges. Also the fringes of coastal saltmarshes.	Medium	Relatively recent records within the study area and suitable habitat present.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
<i>Pseudophryne semimarmorata</i>	Southern Toadlet		en	2020		A variety of habitats such as open forests, lowland woodlands and heathlands where adults shelter beneath leaf litter and other debris in moist soaks and depressions.	High	Recent records within the study area and suitable habitat present.
<i>Uperoleia martini</i>	Martin's Toadlet		cr	2014		Dry grasslands, woodlands and heathlands at scattered locations on the coastal border of eastern Victoria and New South Wales.	High	Recent records within the study area and suitable habitat present.
<i>Nannoperca sp. 1</i>	Flinders Pygmy Perch		vu	2012		Slow flowing, deep shaded pool with abundant instream aquatic vegetation. A population occurs east of the La Trobe River in Gippsland.	High	Recent records in the study area and surrounding areas. May occur depending on connectivity.

A2.2 Migratory species (EPBC Act listed)

Table A2.2 Migratory fauna species recorded or predicted to occur within 500 metres of the study area

Scientific name	Common name	Most recent record
Migratory species		
<i>Gallinago stenura</i>	Pin-tailed Snipe	PMST
<i>Gallinago megala</i>	Swinhoe's Snipe	PMST
<i>Gallinago hardwickii</i>	Latham's Snipe	2010
<i>Plegadis falcinellus</i>	Glossy Ibis	2009
<i>Hirundapus caudacutus</i>	White-throated Needletail	2019
<i>Apus pacificus</i>	Fork-tailed Swift	PMST
<i>Pandion haliaetus</i>	Osprey	PMST
<i>Ardenna grisea</i>	Sooty Shearwater	1972
<i>Ardenna tenuirostris</i>	Short-tailed Shearwater	2008
<i>Ardenna carneipes</i>	Flesh-footed Shearwater	PMST
<i>Diomedea exulans</i>	Wandering Albatross	PMST
<i>Thalassarche melanophris</i>	Black-browed Albatross	1978
<i>Thalassarche carteri</i>	Indian Yellow-nosed Albatross	PMST
<i>Thalassarche chrysostoma</i>	Grey-headed Albatross	PMST
<i>Thalassarche cauta</i>	Shy Albatross	2007
<i>Phoebastria fusca</i>	Sooty Albatross	PMST
<i>Phoebastria palpebrata</i>	Light-mantled Sooty Albatross	1991
<i>Macronectes giganteus</i>	Southern Giant-Petrel	PMST
<i>Thalassarche bulleri</i>	Buller's Albatross	PMST
<i>Macronectes halli</i>	Northern Giant-Petrel	PMST
<i>Sterna hirundo</i>	Common Tern	1977
<i>Diomedea epomophora</i>	Southern Royal Albatross	1974
<i>Diomedea sanfordi</i>	Northern Royal Albatross	PMST
<i>Diomedea antipodensis</i>	New Zealand Wandering Albatross	PMST
<i>Thalassarche eremita</i>	Chatham Albatross	PMST
<i>Thalassarche salvini</i>	Salvin's Albatross	PMST
<i>Thalassarche steadi</i>	White-capped Albatross	PMST
<i>Thalassarche impavida</i>	Campbell Albatross	PMST
<i>Chlidonias leucopterus</i>	White-winged Black Tern	1972
<i>Hydroprogne caspia</i>	Caspian Tern	2018
<i>Thalasseus bergii</i>	Crested Tern	1981
<i>Sternula albifrons</i>	Little Tern	2017
<i>Arenaria interpres</i>	Ruddy Turnstone	1977
<i>Pluvialis squatarola</i>	Grey Plover	1981
<i>Pluvialis fulva</i>	Pacific Golden Plover	2017
<i>Charadrius bicinctus</i>	Double-banded Plover	1980

Scientific name	Common name	Most recent record
<i>Charadrius leschenaultii</i>	Greater Sand Plover	PMST
<i>Numenius madagascariensis</i>	Eastern Curlew	1977
<i>Numenius minutus</i>	Little Curlew	PMST
<i>Limosa lapponica</i>	Bar-tailed Godwit	1977
<i>Actitis hypoleucos</i>	Common Sandpiper	PMST
<i>Tringa nebularia</i>	Common Greenshank	2019
<i>Tringa stagnatilis</i>	Marsh Sandpiper	2006
<i>Calidris ferruginea</i>	Curlew Sandpiper	2017
<i>Calidris ruficollis</i>	Red-necked Stint	1981
<i>Calidris acuminata</i>	Sharp-tailed Sandpiper	2006
<i>Calidris canutus</i>	Red Knot	1981
<i>Calidris tenuirostris</i>	Great Knot	1972
<i>Calidris melanotos</i>	Pectoral Sandpiper	PMST
<i>Motacilla flava</i>	Yellow Wagtail	PMST
<i>Rhipidura rufifrons</i>	Rufous Fantail	2000
<i>Myiagra cyanoleuca</i>	Satin Flycatcher	1981
<i>Monarcha melanops</i>	Black-faced Monarch	PMST
<i>Balaena glacialis australis</i>	Southern Right Whale	PMST
<i>Balaenoptera borealis</i>	Sei Whale	PMST
<i>Lagenorhynchus obscurus</i>	Dusky Dolphin	PMST
<i>Megaptera novaeangliae</i>	Humpback Whale	PMST
<i>Eubalaena australis</i>	Southern Right Whale	2017
<i>Caperea marginata</i>	Pygmy Right Whale	PMST
<i>Balaenoptera musculus</i>	Blue Whale	PMST
<i>Balaenoptera physalus</i>	Fin Whale	PMST
<i>Balaenoptera edeni</i>	Bryde's Whale	PMST
<i>Megaptera novaeangliae australis</i>	Southern Humpback Whale	PMST
<i>Orcinus orca</i>	Killer Whale	PMST
<i>Chelonia mydas</i>	Green Turtle	PMST
<i>Dermochelys coriacea</i>	Leathery Turtle	PMST
<i>Caretta caretta</i>	Loggerhead Turtle	PMST
<i>Lamna nasus</i>	Porbeagle	PMST
<i>Isurus oxyrinchus</i>	Shortfin Mako	PMST
<i>Carcharodon carcharias</i>	Great White Shark	PMST
<i>Rhincodon typus</i>	Whale Shark	PMST

Appendix 3 PMST output

Protected Matters Search Tool

Report Generated - 11:36AM - 01 February 2022

Matters of National Environment Significance	Count
World Heritage Properties	0
National Heritage Places	0
Wetlands of International Importance (Ramsar Wetlands)	1
Great Barrier Reef Marine Park	0
Commonwealth Marine Area	1
Listed Threatened Ecological Communities	4
Listed Threatened Species	78
Listed Migratory Species	57

Extra Information [?]	Count
State and Territory Reserves	19
Regional Forest Agreements	1
Nationally Important Wetlands	2
EPBC Act Referrals	36
Key Ecological Features	0
Biologically Important Areas	16
Bioregional Assessments	1
Geological and Bioregional Assessments	0

Other Matters Protected by the EPBC Act	Count
Commonwealth Lands	11
Commonwealth Heritage Places	0
Listed Marine Species	87
Whales and Other Cetaceans	15
Critical Habitats	0
Commonwealth Reserves Terrestrial	0
Australian Marine Parks	0
Habitat Critical to the Survival of Marine Turtles	0

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 and is accurate at the time of generation. Please see the caveat for interpretation of information provided here. Consider carefully the age of information for decision making.

Report Metadata	Caveat
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Wetlands of International Importance (Ramsar Wetlands)

Ramsar Site No.	Ramsar Site Name	Proximity	Website	Buffer Status
21	GIPPSLAND LAKES	Within Ramsar site	Australian Wetlands	In feature area

[Back to Summary](#)

Commonwealth Marine Area

Feature Name	Buffer Status
EEZ and Territorial Sea	In feature area

Listed Threatened Ecological Communities

				Presence		
Community ID	Community Name	Threatened Category	Website	Rank	Text	Buffer Status
73	Gippsland Red Gum	Critically Endangered	Species Profile and Threat	Likely	Community likely to occur	In feature area
133	Natural Damp Grassland of	Critically Endangered	Species Profile and Threat	Likely	Community likely to occur	In feature area
97	Seasonal Herbaceous	Critically Endangered	Species Profile and Threat	Likely	Community likely to occur	In feature area
118	Subtropical and	Vulnerable	Species Profile and Threat	Likely	Community likely to occur	In feature area

Listed Threatened Species

Species ID	Scientific Name	Common Name	Class	Simple Presence	Presence Text	Threatened Category
69402	<i>Thunnus maccoyii</i>	Southern Bluefin Tuna	Fish	Likely	Species or species habitat	Conservation Dependent
69374	<i>Seriolella brama</i>	Blue Warehou	Fish	Known	Species or species habitat	Conservation Dependent
68453	<i>Galeorhinus galeus</i>	School Shark, Eastern	Shark	Likely	Species or species habitat	Conservation Dependent
856	<i>Calidris ferruginea</i>	Curlew Sandpiper	Bird	Known	Species or species habitat	Critically Endangered
82338	<i>Anthochaera phrygia</i>	Regent Honeyeater	Bird	Known	Species or species habitat	Critically Endangered
747	<i>Neophema chrysogaster</i>	Orange-bellied Parrot	Bird	Likely	Species or species habitat	Critically Endangered
744	<i>Lathamus discolor</i>	Swift Parrot	Bird	Known	Species or species habitat	Critically Endangered
847	<i>Numenius</i>	Eastern Curlew, Far	Bird	Known	Species or species habitat	Critically Endangered
66491	<i>Thalassarche chrystostoma</i>	Grey-headed Albatross	Bird	May	Species or species habitat	Endangered
16542	<i>Lepidium hyssopifolium</i>	Basalt Pepper-cress,	Plant	Likely	Species or species habitat	Endangered
40	<i>Eubalaena australis</i>	Southern Right Whale	Mammal	Known	Species or species habitat	Endangered
1768	<i>Dermochelys coriacea</i>	Leatherback Turtle,	Reptile	Known	Species or species habitat	Endangered
9704	<i>Prasophyllum frenchii</i>	Maroon Leek-orchid, Slaty	Plant	Known	Species or species habitat	Endangered
1060	<i>Macronectes giganteus</i>	Southern Giant-Petrel,	Bird	May	Species or species habitat	Endangered
855	<i>Calidris canutus</i>	Red Knot, Knot	Bird	Known	Species or species habitat	Endangered
68050	<i>Isoodon obesulus obesulus</i>	Southern Brown	Mammal	May	Species or species habitat	Endangered
64886	<i>Dianella amoena</i>	Matted Flax-lily	Plant	Known	Species or species habitat	Endangered
36	<i>Balaenoptera musculus</i>	Blue Whale	Mammal	Likely	Species or species habitat	Endangered
1001	<i>Botaurus poiciloptilus</i>	Australasian Bittern	Bird	Known	Species or species habitat	Endangered
64456	<i>Diomedea sanfordi</i>	Northern Royal Albatross	Bird	Likely	Foraging, feeding or	Endangered
1763	<i>Caretta caretta</i>	Loggerhead Turtle	Reptile	Likely	Breeding likely to occur	Endangered
64457	<i>Thalassarche eremita</i>	Chatham Albatross	Bird	Likely	Species or species habitat	Endangered
77037	<i>Rostratula australis</i>	Australian Painted Snipe	Bird	Likely	Species or species habitat	Endangered
11896	<i>Thelymitra epipactoides</i>	Metallic Sun-orchid	Plant	Known	Species or species habitat	Endangered
87152	<i>Commersonia prostrata</i>	Dwarf Kerrawang	Plant	Known	Species or species habitat	Endangered
26033	<i>Pterodroma leucoptera</i>	Gould's Petrel, Australian	Bird	May	Species or species habitat	Endangered
89224	<i>Thalassarche cauta</i>	Shy Albatross	Bird	Likely	Foraging, feeding or	Endangered
75184	<i>Dasyurus maculatus</i>	Spot-tailed Quoll, Spotted-	Mammal	May	Species or species habitat	Endangered
13910	<i>Glycine latrobeana</i>	Clover Glycine, Purple	Plant	Likely	Species or species habitat	Vulnerable
19215	<i>Amphibromus fluitans</i>	River Swamp Wallaby-	Plant	Known	Species or species habitat	Vulnerable
64445	<i>Pachyptila turtur</i>	Fairy Prion (southern)	Bird	Known	Species or species habitat	Vulnerable
89221	<i>Diomedea epomophora</i>	Southern Royal Albatross	Bird	Likely	Foraging, feeding or	Vulnerable
929	<i>Falco hypoleucos</i>	Grey Falcon	Bird	Likely	Species or species habitat	Vulnerable
12149	<i>Dodonaea procumbens</i>	Trailing Hop-bush	Plant	Known	Species or species habitat	Vulnerable

64976	<i>Senecio psilocarpus</i>	Swamp Fireweed, Smooth-	Plant	Likely	Species or species habitat	Vulnerable
64470	<i>Carcharodon carcharias</i>	White Shark, Great White	Shark	Known	Breeding known to occur	Vulnerable
26179	<i>Prototroctes maraena</i>	Australian Grayling	Fish	Known	Species or species habitat	Vulnerable
1075	<i>Phoebastria fusca</i>	Sooty Albatross	Bird	May	Species or species habitat	Vulnerable
1828	<i>Litoria raniformis</i>	Growling Grass Frog,	Frog	Likely	Species or species habitat	Vulnerable
86380	<i>Limosa lapponica baueri</i>	Nunivak Bar-tailed Godwit,	Bird	May	Species or species habitat	Vulnerable
66645	<i>Potorous tridactylus</i>	Long-nosed Potoroo (SE	Mammal	May	Species or species habitat	Vulnerable
76215	<i>Xerochrysum palustre</i>	Swamp Everlasting,	Plant	Known	Species or species habitat	Vulnerable
1059	<i>Halobaena caerulea</i>	Blue Petrel	Bird	May	Species or species habitat	Vulnerable
254	<i>Petauroides volans</i>	Greater Glider	Mammal	Likely	Species or species habitat	Vulnerable
2119	<i>Caladenia tessellata</i>	Thick-lipped Spider-orchid,	Plant	Known	Species or species habitat	Vulnerable
83086	<i>Antechinus minimus</i>	Swamp Antechinus	Mammal	May	Species or species habitat	Vulnerable
55400	<i>Eucalyptus strzeleckii</i>	Strzelecki Gum	Plant	Known	Species or species habitat	Vulnerable
186	<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox	Mammal	Known	Foraging, feeding or	Vulnerable
64460	<i>Thalassarche bulleri</i>	Buller's Albatross, Pacific	Bird	May	Species or species habitat	Vulnerable
82950	<i>Sternula nereis nereis</i>	Australian Fairy Tern	Bird	Known	Species or species habitat	Vulnerable
64463	<i>Thalassarche salvini</i>	Salvin's Albatross	Bird	Likely	Foraging, feeding or	Vulnerable
64462	<i>Thalassarche steadi</i>	White-capped Albatross	Bird	Likely	Foraging, feeding or	Vulnerable
64959	<i>Prostanthera galbraithiae</i>	Wellington Mintbush	Plant	Known	Species or species habitat	Vulnerable
82270	<i>Diomedea antipodensis</i>	Gibson's Albatross	Bird	Likely	Foraging, feeding or	Vulnerable
82273	<i>Thalassarche bulleri platei</i>	Northern Buller's	Bird	May	Species or species habitat	Vulnerable
64464	<i>Thalassarche carteri</i>	Indian Yellow-nosed	Bird	Likely	Species or species habitat	Vulnerable
64438	<i>Fregetta grallaria grallaria</i>	White-bellied Storm-	Bird	Likely	Species or species habitat	Vulnerable
1870	<i>Litoria aurea</i>	Green and Golden Bell	Frog	Known	Species or species habitat	Vulnerable
56790	<i>Galaxiella pusilla</i>	Eastern Dwarf Galaxias,	Fish	Known	Species or species habitat	Vulnerable
34	<i>Balaenoptera borealis</i>	Sei Whale	Mammal	Likely	Foraging, feeding or	Vulnerable
90381	<i>Thinornis cucullatus</i>	Eastern Hooded Plover,	Bird	Known	Species or species habitat	Vulnerable
1973	<i>Heleioporus australiacus</i>	Giant Burrowing Frog	Frog	May	Species or species habitat	Vulnerable
37	<i>Balaenoptera physalus</i>	Fin Whale	Mammal	Likely	Foraging, feeding or	Vulnerable
64458	<i>Diomedea antipodensis</i>	Antipodean Albatross	Bird	Likely	Foraging, feeding or	Vulnerable
64459	<i>Thalassarche impavida</i>	Campbell Albatross,	Bird	Likely	Foraging, feeding or	Vulnerable
1061	<i>Macronectes halli</i>	Northern Giant Petrel	Bird	May	Species or species habitat	Vulnerable
1765	<i>Chelonia mydas</i>	Green Turtle	Reptile	May	Species or species habitat	Vulnerable
682	<i>Hirundapus caudacutus</i>	White-throated Needletail	Bird	Known	Species or species habitat	Vulnerable
66472	<i>Thalassarche melanophris</i>	Black-browed Albatross	Bird	May	Species or species habitat	Vulnerable
877	<i>Charadrius leschenaultii</i>	Greater Sand Plover, Large	Bird	Likely	Species or species habitat	Vulnerable
470	<i>Grantiella picta</i>	Painted Honeyeater	Bird	Likely	Species or species habitat	Vulnerable
55146	<i>Prasophyllum spicatum</i>	Dense Leek-orchid	Plant	Known	Species or species habitat	Vulnerable
89223	<i>Diomedea exulans</i>	Wandering Albatross	Bird	Likely	Foraging, feeding or	Vulnerable

96	<i>Pseudomys</i>	New Holland Mouse,	Mammal	Known	Species or species habitat	Vulnerable
56510	<i>Pterostylis chlorogramma</i>	Green-striped Greenhood	Plant	Likely	Species or species habitat	Vulnerable
38	<i>Megaptera novaeangliae</i>	Humpback Whale	Mammal	Known	Species or species habitat	Vulnerable
87617	<i>Mastacomys fuscus</i>	Broad-toothed Rat	Mammal	Likely	Species or species habitat	Vulnerable
66680	<i>Rhincodon typus</i>	Whale Shark	Shark	May	Species or species habitat	Vulnerable

Migratory Status	Migratory Category	Marine Status	Cetacean Status	Website	Buffer Status
				Species Profile and Threat	In feature area
				Species Profile and Threat	In feature area
				Species Profile and Threat	In feature area
Migratory	Migratory Wetlands	Listed - overfly marine		Species Profile and Threat	In feature area
				Species Profile and Threat	In feature area
		Listed - overfly marine		Species Profile and Threat	In feature area
		Listed - overfly marine		Species Profile and Threat	In feature area
Migratory	Migratory Wetlands	Listed		Species Profile and Threat	In feature area
Migratory	Migratory Marine Birds	Listed		Species Profile and Threat	In feature area
				Species Profile and Threat	In feature area
Migratory (as Balaena	Migratory Marine Species		Cetacean	Species Profile and Threat	In feature area
Migratory	Migratory Marine Species	Listed		Species Profile and Threat	In feature area
				Species Profile and Threat	In feature area
Migratory	Migratory Marine Birds	Listed		Species Profile and Threat	In feature area
Migratory	Migratory Wetlands	Listed - overfly marine		Species Profile and Threat	In feature area
				Species Profile and Threat	In feature area
				Species Profile and Threat	In feature area
Migratory	Migratory Marine Species		Cetacean	Species Profile and Threat	In feature area
				Species Profile and Threat	In feature area
Migratory	Migratory Marine Birds	Listed		Species Profile and Threat	In feature area
Migratory	Migratory Marine Species	Listed		Species Profile and Threat	In feature area
Migratory	Migratory Marine Birds	Listed		Species Profile and Threat	In feature area
		Listed - overfly marine		Species Profile and Threat	In feature area
				Species Profile and Threat	In feature area
				Species Profile and Threat	In feature area
				Species Profile and Threat	In feature area
Migratory	Migratory Marine Birds	Listed		Species Profile and Threat	In feature area
				Species Profile and Threat	In feature area
				Species Profile and Threat	In feature area
				Species Profile and Threat	In feature area
Migratory	Migratory Marine Birds	Listed		Species Profile and Threat	In feature area
				Species Profile and Threat	In feature area
				Species Profile and Threat	In feature area

				Species Profile and Threat	In feature area
Migratory	Migratory Marine Species			Species Profile and Threat	In feature area
				Species Profile and Threat	In feature area
Migratory	Migratory Marine Birds	Listed		Species Profile and Threat	In feature area
				Species Profile and Threat	In feature area
				Species Profile and Threat	In feature area
				Species Profile and Threat	In feature area
				Species Profile and Threat	In feature area
		Listed		Species Profile and Threat	In feature area
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				Species Profile and Threat	In feature area
				Species Profile and Threat	In feature area
Migratory	Migratory Marine Birds	Listed		Species Profile and Threat	In feature area
				Species Profile and Threat	In feature area
Migratory	Migratory Marine Birds	Listed		Species Profile and Threat	In feature area
Migratory	Migratory Marine Birds	Listed		Species Profile and Threat	In feature area
				Species Profile and Threat	In feature area
		Listed (as Diomedea		Species Profile and Threat	In feature area
		Listed (as Thalassarche sp.		Species Profile and Threat	In feature area
Migratory	Migratory Marine Birds	Listed		Species Profile and Threat	In feature area
				Species Profile and Threat	In feature area
				Species Profile and Threat	In feature area
				Species Profile and Threat	In feature area
Migratory	Migratory Marine Species		Cetacean	Species Profile and Threat	In feature area
		Listed - overfly marine		Species Profile and Threat	In feature area
				Species Profile and Threat	In buffer area only
Migratory	Migratory Marine Species		Cetacean	Species Profile and Threat	In feature area
Migratory	Migratory Marine Birds	Listed		Species Profile and Threat	In feature area
Migratory	Migratory Marine Birds	Listed		Species Profile and Threat	In feature area
Migratory	Migratory Marine Birds	Listed		Species Profile and Threat	In feature area
Migratory	Migratory Marine Species	Listed		Species Profile and Threat	In feature area
Migratory	Migratory Terrestrial	Listed - overfly marine		Species Profile and Threat	In feature area
Migratory	Migratory Marine Birds	Listed		Species Profile and Threat	In feature area
Migratory	Migratory Wetlands	Listed		Species Profile and Threat	In feature area
				Species Profile and Threat	In feature area
				Species Profile and Threat	In feature area
Migratory	Migratory Marine Birds	Listed		Species Profile and Threat	In feature area

				Species Profile and Threat	In feature area
				Species Profile and Threat	In feature area
Migratory	Migratory Marine Species		Cetacean	Species Profile and Threat	In feature area
				Species Profile and Threat	In feature area
Migratory	Migratory Marine Species			Species Profile and Threat	In feature area

Listed Migratory Species

Species ID	Scientific Name	Common Name	Class	Presence		Threatened Category
				Rank	Text	
832	<i>Tringa nebularia</i>	Common Greenshank,	Bird	Known	Species or species habitat	
66491	<i>Thalassarche chrysostoma</i>	Grey-headed Albatross	Bird	May	Species or species habitat	Endangered
59309	<i>Actitis hypoleucos</i>	Common Sandpiper	Bird	Known	Species or species habitat	
856	<i>Calidris ferruginea</i>	Curlew Sandpiper	Bird	Known	Species or species habitat	Critically Endangered
89221	<i>Diomedea epomophora</i>	Southern Royal Albatross	Bird	Likely	Foraging, feeding or	Vulnerable
40	<i>Eubalaena australis</i>	Southern Right Whale	Mammal	Known	Species or species habitat	Endangered
64470	<i>Carcharodon carcharias</i>	White Shark, Great White	Shark	Known	Breeding known to occur	Vulnerable
1768	<i>Dermochelys coriacea</i>	Leatherback Turtle,	Reptile	Known	Species or species habitat	Endangered
1075	<i>Phoebastria fusca</i>	Sooty Albatross	Bird	May	Species or species habitat	Vulnerable
678	<i>Apus pacificus</i>	Fork-tailed Swift	Bird	Likely	Species or species habitat	
1060	<i>Macronectes giganteus</i>	Southern Giant-Petrel,	Bird	May	Species or species habitat	Endangered
82849	<i>Sternula albifrons</i>	Little Tern	Bird	May	Species or species habitat	
855	<i>Calidris canutus</i>	Red Knot, Knot	Bird	Known	Species or species habitat	Endangered
874	<i>Calidris acuminata</i>	Sharp-tailed Sandpiper	Bird	Known	Roosting known to occur	
46	<i>Orcinus orca</i>	Killer Whale, Orca	Mammal	Likely	Species or species habitat	
848	<i>Numenius minutus</i>	Little Curlew, Little	Bird	Likely	Roosting likely to occur	
609	<i>Monarcha melanopsis</i>	Black-faced Monarch	Bird	Likely	Species or species habitat	
35	<i>Balaenoptera edeni</i>	Bryde's Whale	Mammal	May	Species or species habitat	
952	<i>Pandion haliaetus</i>	Osprey	Bird	Likely	Species or species habitat	
43	<i>Lagenorhynchus obscurus</i>	Dusky Dolphin	Mammal	May	Species or species habitat	
858	<i>Calidris melanotos</i>	Pectoral Sandpiper	Bird	Known	Species or species habitat	
82404	<i>Ardenna carneipes</i>	Flesh-footed Shearwater,	Bird	Likely	Foraging, feeding or	
612	<i>Myiagra cyanoleuca</i>	Satin Flycatcher	Bird	Known	Breeding known to occur	
64460	<i>Thalassarche bulleri</i>	Buller's Albatross, Pacific	Bird	May	Species or species habitat	Vulnerable
64463	<i>Thalassarche salvini</i>	Salvin's Albatross	Bird	Likely	Foraging, feeding or	Vulnerable
64462	<i>Thalassarche steadi</i>	White-capped Albatross	Bird	Likely	Foraging, feeding or	Vulnerable
64464	<i>Thalassarche carteri</i>	Indian Yellow-nosed	Bird	Likely	Species or species habitat	Vulnerable
592	<i>Rhipidura rufifrons</i>	Rufous Fantail	Bird	Known	Species or species habitat	
644	<i>Motacilla flava</i>	Yellow Wagtail	Bird	May	Species or species habitat	
34	<i>Balaenoptera borealis</i>	Sei Whale	Mammal	Likely	Foraging, feeding or	Vulnerable
36	<i>Balaenoptera musculus</i>	Blue Whale	Mammal	Likely	Species or species habitat	Endangered
37	<i>Balaenoptera physalus</i>	Fin Whale	Mammal	Likely	Foraging, feeding or	Vulnerable
64458	<i>Diomedea antipodensis</i>	Antipodean Albatross	Bird	Likely	Foraging, feeding or	Vulnerable
64459	<i>Thalassarche impavida</i>	Campbell Albatross,	Bird	Likely	Foraging, feeding or	Vulnerable

64456	<i>Diomedea sanfordi</i>	Northern Royal Albatross	Bird	Likely	Foraging, feeding or	Endangered
1763	<i>Caretta caretta</i>	Loggerhead Turtle	Reptile	Likely	Breeding likely to occur	Endangered
64457	<i>Thalassarche eremita</i>	Chatham Albatross	Bird	Likely	Species or species habitat	Endangered
83288	<i>Lamna nasus</i>	Porbeagle, Mackerel Shark	Shark	Likely	Species or species habitat	
1061	<i>Macronectes halli</i>	Northern Giant Petrel	Bird	May	Species or species habitat	Vulnerable
1765	<i>Chelonia mydas</i>	Green Turtle	Reptile	May	Species or species habitat	Vulnerable
682	<i>Hirundapus caudacutus</i>	White-throated Needletail	Bird	Known	Species or species habitat	Vulnerable
66472	<i>Thalassarche melanophris</i>	Black-browed Albatross	Bird	May	Species or species habitat	Vulnerable
844	<i>Limosa lapponica</i>	Bar-tailed Godwit	Bird	Known	Species or species habitat	
841	<i>Gallinago stenura</i>	Pin-tailed Snipe	Bird	Likely	Roosting likely to occur	
877	<i>Charadrius leschenaultii</i>	Greater Sand Plover, Large	Bird	Likely	Species or species habitat	Vulnerable
39	<i>Caperea marginata</i>	Pygmy Right Whale	Mammal	May	Foraging, feeding or	
864	<i>Gallinago megala</i>	Swinhoe's Snipe	Bird	Likely	Roosting likely to occur	
89223	<i>Diomedea exulans</i>	Wandering Albatross	Bird	Likely	Foraging, feeding or	Vulnerable
863	<i>Gallinago hardwickii</i>	Latham's Snipe, Japanese	Bird	Known	Species or species habitat	
860	<i>Calidris ruficollis</i>	Red-necked Stint	Bird	Known	Roosting known to occur	
79073	<i>Isurus oxyrinchus</i>	Shortfin Mako, Mako	Shark	Likely	Species or species habitat	
82651	<i>Ardenna grisea</i>	Sooty Shearwater	Bird	May	Species or species habitat	
89224	<i>Thalassarche cauta</i>	Shy Albatross	Bird	Likely	Foraging, feeding or	Endangered
84108	<i>Carcharhinus longimanus</i>	Oceanic Whitetip Shark	Shark	May	Species or species habitat	
38	<i>Megaptera novaeangliae</i>	Humpback Whale	Mammal	Known	Species or species habitat	Vulnerable
66680	<i>Rhincodon typus</i>	Whale Shark	Shark	May	Species or species habitat	Vulnerable
847	<i>Numenius</i>	Eastern Curlew, Far	Bird	Known	Species or species habitat	Critically Endangered

Migratory Status	Migratory Category	Marine Status	Cetacean Status	Website	Buffer Status
Migratory	Migratory Wetlands	Listed - overfly marine		Species Profile and Threat	In feature area
Migratory	Migratory Marine Birds	Listed		Species Profile and Threat	In feature area
Migratory	Migratory Wetlands	Listed		Species Profile and Threat	In feature area
Migratory	Migratory Wetlands	Listed - overfly marine		Species Profile and Threat	In feature area
Migratory	Migratory Marine Birds	Listed		Species Profile and Threat	In feature area
Migratory (as Balaena	Migratory Marine Species		Cetacean	Species Profile and Threat	In feature area
Migratory	Migratory Marine Species			Species Profile and Threat	In feature area
Migratory	Migratory Marine Species	Listed		Species Profile and Threat	In feature area
Migratory	Migratory Marine Birds	Listed		Species Profile and Threat	In feature area
Migratory	Migratory Marine Birds	Listed - overfly marine		Species Profile and Threat	In feature area
Migratory	Migratory Marine Birds	Listed		Species Profile and Threat	In feature area
Migratory	Migratory Marine Birds	Listed (as Sterna albifrons)		Species Profile and Threat	In feature area
Migratory	Migratory Wetlands	Listed - overfly marine		Species Profile and Threat	In feature area
Migratory	Migratory Wetlands	Listed		Species Profile and Threat	In feature area
Migratory	Migratory Marine Species		Cetacean	Species Profile and Threat	In feature area
Migratory	Migratory Wetlands	Listed - overfly marine		Species Profile and Threat	In feature area
Migratory	Migratory Terrestrial	Listed - overfly marine		Species Profile and Threat	In feature area
Migratory	Migratory Marine Species		Cetacean	Species Profile and Threat	In feature area
Migratory	Migratory Wetlands	Listed		Species Profile and Threat	In feature area
Migratory	Migratory Marine Species		Cetacean	Species Profile and Threat	In feature area
Migratory	Migratory Wetlands	Listed - overfly marine		Species Profile and Threat	In feature area
Migratory	Migratory Marine Birds	Listed (as Puffinus		Species Profile and Threat	In feature area
Migratory	Migratory Terrestrial	Listed - overfly marine		Species Profile and Threat	In feature area
Migratory	Migratory Marine Birds	Listed		Species Profile and Threat	In feature area
Migratory	Migratory Marine Birds	Listed		Species Profile and Threat	In feature area
Migratory	Migratory Marine Birds	Listed		Species Profile and Threat	In feature area
Migratory	Migratory Marine Birds	Listed		Species Profile and Threat	In feature area
Migratory	Migratory Terrestrial	Listed - overfly marine		Species Profile and Threat	In feature area
Migratory	Migratory Terrestrial	Listed - overfly marine		Species Profile and Threat	In feature area
Migratory	Migratory Marine Species		Cetacean	Species Profile and Threat	In feature area
Migratory	Migratory Marine Species		Cetacean	Species Profile and Threat	In feature area
Migratory	Migratory Marine Species		Cetacean	Species Profile and Threat	In feature area
Migratory	Migratory Marine Birds	Listed		Species Profile and Threat	In feature area
Migratory	Migratory Marine Birds	Listed		Species Profile and Threat	In feature area

Migratory	Migratory Marine Birds	Listed		Species Profile and Threat	In feature area
Migratory	Migratory Marine Species	Listed		Species Profile and Threat	In feature area
Migratory	Migratory Marine Birds	Listed		Species Profile and Threat	In feature area
Migratory	Migratory Marine Species			Species Profile and Threat	In feature area
Migratory	Migratory Marine Birds	Listed		Species Profile and Threat	In feature area
Migratory	Migratory Marine Species	Listed		Species Profile and Threat	In feature area
Migratory	Migratory Terrestrial	Listed - overfly marine		Species Profile and Threat	In feature area
Migratory	Migratory Marine Birds	Listed		Species Profile and Threat	In feature area
Migratory	Migratory Wetlands	Listed		Species Profile and Threat	In feature area
Migratory	Migratory Wetlands	Listed - overfly marine		Species Profile and Threat	In feature area
Migratory	Migratory Wetlands	Listed		Species Profile and Threat	In feature area
Migratory	Migratory Marine Species		Cetacean	Species Profile and Threat	In feature area
Migratory	Migratory Wetlands	Listed - overfly marine		Species Profile and Threat	In feature area
Migratory	Migratory Marine Birds	Listed		Species Profile and Threat	In feature area
Migratory	Migratory Wetlands	Listed - overfly marine		Species Profile and Threat	In feature area
Migratory	Migratory Wetlands	Listed - overfly marine		Species Profile and Threat	In feature area
Migratory	Migratory Marine Species			Species Profile and Threat	In feature area
Migratory	Migratory Marine Birds	Listed (as Puffinus griseus)		Species Profile and Threat	In feature area
Migratory	Migratory Marine Birds	Listed		Species Profile and Threat	In feature area
Migratory	Migratory Marine Species			Species Profile and Threat	In feature area
Migratory	Migratory Marine Species		Cetacean	Species Profile and Threat	In feature area
Migratory	Migratory Marine Species			Species Profile and Threat	In feature area
Migratory	Migratory Wetlands	Listed		Species Profile and Threat	In feature area

Commonwealth Lands

Commonwealth Land ID	Commonwealth Land	Agency	State	Buffer Status
20038	Defence - DUTSON	Defence	VIC	In feature area
20062	Defence - DUTSON	Defence	VIC	In buffer area only
20058	Defence - DUTSON	Defence	VIC	In buffer area only
20059	Defence - DUTSON	Defence	VIC	In buffer area only
20035	Defence - DUTSON	Defence	VIC	In buffer area only
20036	Defence - DUTSON	Defence	VIC	In buffer area only
20060	Defence - DUTSON	Defence	VIC	In buffer area only
20037	Defence - DUTSON	Defence	VIC	In feature area
20050	Defence - DUTSON	Defence	VIC	In buffer area only
21445	Defence - EAST SALE -	Defence	VIC	In feature area
20051	Defence - DUTSON	Defence	VIC	In buffer area only

Listed Marine Species

Species ID	Scientific Name	Common Name	Class	Presence		Threatened Category
				Rank	Text	
832	<i>Tringa nebularia</i>	Common Greenshank,	Bird	Known	Species or species habitat	
66491	<i>Thalassarche chrysostoma</i>	Grey-headed Albatross	Bird	May	Species or species habitat	Endangered
59309	<i>Actitis hypoleucos</i>	Common Sandpiper	Bird	Known	Species or species habitat	
66251	<i>Lissocampus runa</i>	Javelin Pipefish	Fish	May	Species or species habitat	
856	<i>Calidris ferruginea</i>	Curlew Sandpiper	Bird	Known	Species or species habitat	Critically Endangered
89221	<i>Diomedea epomophora</i>	Southern Royal Albatross	Bird	Likely	Foraging, feeding or	Vulnerable
66243	<i>Histiogamphelus cristatus</i>	Rhino Pipefish, Macleay's	Fish	May	Species or species habitat	
66242	<i>Histiogamphelus briggsii</i>	Crested Pipefish, Briggs'	Fish	May	Species or species habitat	
1066	<i>Pachyptila turtur</i>	Fairy Prion	Bird	Known	Species or species habitat	
66246	<i>Kaupus costatus</i>	Deepbody Pipefish, Deep-	Fish	May	Species or species habitat	
823	<i>Stercorarius skua</i>	Great Skua	Bird	May	Species or species habitat	
66276	<i>Stigmatopora argus</i>	Spotted Pipefish, Gulf	Fish	May	Species or species habitat	
66278	<i>Stipecampus cristatus</i>	Ringback Pipefish, Ring-	Fish	May	Species or species habitat	
1768	<i>Dermochelys coriacea</i>	Leatherback Turtle,	Reptile	Known	Species or species habitat	Endangered
66275	<i>Solegnathus spinosissimus</i>	Spiny Pipehorse,	Fish	May	Species or species habitat	
66274	<i>Solegnathus robustus</i>	Robust Pipehorse, Robust	Fish	May	Species or species habitat	
66705	<i>Hippocampus minotaur</i>	Bullneck Seahorse	Fish	May	Species or species habitat	
66277	<i>Stigmatopora nigra</i>	Widebody Pipefish, Wide-	Fish	May	Species or species habitat	
1075	<i>Phoebastria fusca</i>	Sooty Albatross	Bird	May	Species or species habitat	Vulnerable
66247	<i>Kimblaeus bassensis</i>	Trawl Pipefish, Bass Strait	Fish	May	Species or species habitat	
66248	<i>Leptoichthys fistularius</i>	Brushtail Pipefish	Fish	May	Species or species habitat	
670	<i>Merops ornatus</i>	Rainbow Bee-eater	Bird	May	Species or species habitat	
678	<i>Apus pacificus</i>	Fork-tailed Swift	Bird	Likely	Species or species habitat	
66245	<i>Hypsognathus rostratus</i>	Knifesnout Pipefish, Knife-	Fish	May	Species or species habitat	
1060	<i>Macronectes giganteus</i>	Southern Giant-Petrel,	Bird	May	Species or species habitat	Endangered
82849	<i>Sternula albifrons</i>	Little Tern	Bird	May	Species or species habitat	
1059	<i>Halobaena caerulea</i>	Blue Petrel	Bird	May	Species or species habitat	Vulnerable
855	<i>Calidris canutus</i>	Red Knot, Knot	Bird	Known	Species or species habitat	Endangered
874	<i>Calidris acuminata</i>	Sharp-tailed Sandpiper	Bird	Known	Roosting known to occur	
87735	<i>Thinornis cucullatus</i>	Hooded Dotterel, Hooded	Bird	Likely	Species or species habitat	
848	<i>Numenius minutus</i>	Little Curlew, Little	Bird	Likely	Roosting likely to occur	
609	<i>Monarcha melanopsis</i>	Black-faced Monarch	Bird	Likely	Species or species habitat	
952	<i>Pandion haliaetus</i>	Osprey	Bird	Likely	Species or species habitat	
858	<i>Calidris melanotos</i>	Pectoral Sandpiper	Bird	Known	Species or species habitat	

82404	<i>Ardenna carneipes</i>	Flesh-footed Shearwater,	Bird	Likely	Foraging, feeding or	
66233	<i>Hippocampus abdominalis</i>	Big-belly Seahorse,	Fish	May	Species or species habitat	
66235	<i>Hippocampus breviceps</i>	Short-head Seahorse,	Fish	May	Species or species habitat	
66282	<i>Urocampus carinirostris</i>	Hairy Pipefish	Fish	May	Species or species habitat	
612	<i>Myiagra cyanoleuca</i>	Satin Flycatcher	Bird	Known	Breeding known to occur	
66283	<i>Vanacampus margaritifer</i>	Mother-of-pearl Pipefish	Fish	May	Species or species habitat	
64460	<i>Thalassarche bulleri</i>	Buller's Albatross, Pacific	Bird	May	Species or species habitat	Vulnerable
64463	<i>Thalassarche salvini</i>	Salvin's Albatross	Bird	Likely	Foraging, feeding or	Vulnerable
66279	<i>Syngnathoides</i>	Double-end Pipehorse,	Fish	May	Species or species habitat	
64462	<i>Thalassarche steadi</i>	White-capped Albatross	Bird	Likely	Foraging, feeding or	Vulnerable
82270	<i>Diomedea antipodensis</i>	Gibson's Albatross	Bird	Likely	Foraging, feeding or	Vulnerable
82273	<i>Thalassarche bulleri platei</i>	Northern Buller's	Bird	May	Species or species habitat	Vulnerable
64464	<i>Thalassarche carteri</i>	Indian Yellow-nosed	Bird	Likely	Species or species habitat	Vulnerable
66285	<i>Vanacampus</i>	Longsnout Pipefish,	Fish	May	Species or species habitat	
66284	<i>Vanacampus phillipi</i>	Port Phillip Pipefish	Fish	May	Species or species habitat	
870	<i>Himantopus himantopus</i>	Pied Stilt, Black-winged	Bird	Known	Roosting known to occur	
592	<i>Rhipidura rufifrons</i>	Rufous Fantail	Bird	Known	Species or species habitat	
66262	<i>Mitotichthys tuckeri</i>	Tucker's Pipefish	Fish	May	Species or species habitat	
66261	<i>Mitotichthys semistriatus</i>	Halfbanded Pipefish	Fish	May	Species or species habitat	
644	<i>Motacilla flava</i>	Yellow Wagtail	Bird	May	Species or species habitat	
66268	<i>Phyllopteryx taeniolatus</i>	Common Seadragon,	Fish	May	Species or species habitat	
90381	<i>Thinornis cucullatus</i>	Eastern Hooded Plover,	Bird	Known	Species or species habitat	Vulnerable
66265	<i>Notiocampus ruber</i>	Red Pipefish	Fish	May	Species or species habitat	
66227	<i>Heraldia nocturna</i>	Upside-down Pipefish,	Fish	May	Species or species habitat	
64458	<i>Diomedea antipodensis</i>	Antipodean Albatross	Bird	Likely	Foraging, feeding or	Vulnerable
64459	<i>Thalassarche impavida</i>	Campbell Albatross,	Bird	Likely	Foraging, feeding or	Vulnerable
64456	<i>Diomedea sanfordi</i>	Northern Royal Albatross	Bird	Likely	Foraging, feeding or	Endangered
1763	<i>Caretta caretta</i>	Loggerhead Turtle	Reptile	Likely	Breeding likely to occur	Endangered
64457	<i>Thalassarche eremita</i>	Chatham Albatross	Bird	Likely	Species or species habitat	Endangered
1061	<i>Macronectes halli</i>	Northern Giant Petrel	Bird	May	Species or species habitat	Vulnerable
21	<i>Arctocephalus pusillus</i>	Australian Fur-seal,	Mammal	May	Species or species habitat	
1765	<i>Chelonia mydas</i>	Green Turtle	Reptile	May	Species or species habitat	Vulnerable
66252	<i>Maroubra perserrata</i>	Sawtooth Pipefish	Fish	May	Species or species habitat	
682	<i>Hirundapus caudacutus</i>	White-throated Needletail	Bird	Known	Species or species habitat	Vulnerable
20	<i>Arctocephalus forsteri</i>	Long-nosed Fur-seal, New	Mammal	May	Species or species habitat	
77037	<i>Rostratula australis</i>	Australian Painted Snipe	Bird	Likely	Species or species habitat	Endangered
66472	<i>Thalassarche melanophris</i>	Black-browed Albatross	Bird	May	Species or species habitat	Vulnerable
844	<i>Limosa lapponica</i>	Bar-tailed Godwit	Bird	Known	Species or species habitat	
841	<i>Gallinago stenura</i>	Pin-tailed Snipe	Bird	Likely	Roosting likely to occur	

943	<i>Haliaeetus leucogaster</i>	White-bellied Sea-Eagle	Bird	Known	Breeding known to occur	
877	<i>Charadrius leschenaultii</i>	Greater Sand Plover, Large	Bird	Likely	Species or species habitat	Vulnerable
747	<i>Neophema chrysogaster</i>	Orange-bellied Parrot	Bird	Likely	Species or species habitat	Critically Endangered
744	<i>Lathamus discolor</i>	Swift Parrot	Bird	Known	Species or species habitat	Critically Endangered
881	<i>Charadrius ruficapillus</i>	Red-capped Plover	Bird	Known	Roosting known to occur	
726	<i>Neophema chrysostoma</i>	Blue-winged Parrot	Bird	Known	Species or species habitat	
864	<i>Gallinago megala</i>	Swinhoe's Snipe	Bird	Likely	Roosting likely to occur	
89223	<i>Diomedea exulans</i>	Wandering Albatross	Bird	Likely	Foraging, feeding or	Vulnerable
863	<i>Gallinago hardwickii</i>	Latham's Snipe, Japanese	Bird	Known	Species or species habitat	
860	<i>Calidris ruficollis</i>	Red-necked Stint	Bird	Known	Roosting known to occur	
82651	<i>Ardenna grisea</i>	Sooty Shearwater	Bird	May	Species or species habitat	
89224	<i>Thalassarche cauta</i>	Shy Albatross	Bird	Likely	Foraging, feeding or	Endangered
66521	<i>Bubulcus ibis</i>	Cattle Egret	Bird	May	Species or species habitat	
847	<i>Numenius</i>	Eastern Curlew, Far	Bird	Known	Species or species habitat	Critically Endangered

Migratory Status	Migratory Category	Marine Status	Cetacean Status	Website	Buffer Status
Migratory	Migratory Wetlands	Listed - overfly marine		Species Profile and Threat	In feature area
Migratory	Migratory Marine Birds	Listed		Species Profile and Threat	In feature area
Migratory	Migratory Wetlands	Listed		Species Profile and Threat	In feature area
		Listed		Species Profile and Threat	In feature area
Migratory	Migratory Wetlands	Listed - overfly marine		Species Profile and Threat	In feature area
Migratory	Migratory Marine Birds	Listed		Species Profile and Threat	In feature area
		Listed		Species Profile and Threat	In feature area
		Listed		Species Profile and Threat	In feature area
		Listed		Species Profile and Threat	In feature area
		Listed		Species Profile and Threat	In feature area
		Listed (as Catharacta skua)		Species Profile and Threat	In feature area
		Listed		Species Profile and Threat	In feature area
		Listed		Species Profile and Threat	In feature area
Migratory	Migratory Marine Species	Listed		Species Profile and Threat	In feature area
		Listed		Species Profile and Threat	In feature area
		Listed		Species Profile and Threat	In feature area
		Listed		Species Profile and Threat	In feature area
		Listed		Species Profile and Threat	In feature area
Migratory	Migratory Marine Birds	Listed		Species Profile and Threat	In feature area
		Listed		Species Profile and Threat	In feature area
		Listed		Species Profile and Threat	In feature area
		Listed - overfly marine		Species Profile and Threat	In feature area
Migratory	Migratory Marine Birds	Listed - overfly marine		Species Profile and Threat	In feature area
		Listed		Species Profile and Threat	In feature area
Migratory	Migratory Marine Birds	Listed		Species Profile and Threat	In feature area
Migratory	Migratory Marine Birds	Listed (as Sterna albifrons)		Species Profile and Threat	In feature area
		Listed		Species Profile and Threat	In feature area
Migratory	Migratory Wetlands	Listed - overfly marine		Species Profile and Threat	In feature area
Migratory	Migratory Wetlands	Listed		Species Profile and Threat	In feature area
		Listed - overfly marine		Species Profile and Threat	In feature area
Migratory	Migratory Wetlands	Listed - overfly marine		Species Profile and Threat	In feature area
Migratory	Migratory Terrestrial	Listed - overfly marine		Species Profile and Threat	In feature area
Migratory	Migratory Wetlands	Listed		Species Profile and Threat	In feature area
Migratory	Migratory Wetlands	Listed - overfly marine		Species Profile and Threat	In feature area

Migratory	Migratory Marine Birds	Listed (as Puffinus		Species Profile and Threat	In feature area
		Listed		Species Profile and Threat	In feature area
		Listed		Species Profile and Threat	In feature area
		Listed		Species Profile and Threat	In feature area
Migratory	Migratory Terrestrial	Listed - overfly marine		Species Profile and Threat	In feature area
		Listed		Species Profile and Threat	In feature area
Migratory	Migratory Marine Birds	Listed		Species Profile and Threat	In feature area
Migratory	Migratory Marine Birds	Listed		Species Profile and Threat	In feature area
		Listed		Species Profile and Threat	In feature area
Migratory	Migratory Marine Birds	Listed		Species Profile and Threat	In feature area
		Listed (as Diomedea		Species Profile and Threat	In feature area
		Listed (as Thalassarche sp.		Species Profile and Threat	In feature area
Migratory	Migratory Marine Birds	Listed		Species Profile and Threat	In feature area
		Listed		Species Profile and Threat	In feature area
		Listed		Species Profile and Threat	In feature area
		Listed - overfly marine		Species Profile and Threat	In feature area
Migratory	Migratory Terrestrial	Listed - overfly marine		Species Profile and Threat	In feature area
		Listed		Species Profile and Threat	In feature area
		Listed		Species Profile and Threat	In feature area
Migratory	Migratory Terrestrial	Listed - overfly marine		Species Profile and Threat	In feature area
		Listed		Species Profile and Threat	In feature area
		Listed - overfly marine		Species Profile and Threat	In feature area
		Listed		Species Profile and Threat	In feature area
		Listed		Species Profile and Threat	In feature area
Migratory	Migratory Marine Birds	Listed		Species Profile and Threat	In feature area
Migratory	Migratory Marine Birds	Listed		Species Profile and Threat	In feature area
Migratory	Migratory Marine Birds	Listed		Species Profile and Threat	In feature area
Migratory	Migratory Marine Species	Listed		Species Profile and Threat	In feature area
Migratory	Migratory Marine Birds	Listed		Species Profile and Threat	In feature area
Migratory	Migratory Marine Birds	Listed		Species Profile and Threat	In feature area
		Listed		Species Profile and Threat	In feature area
Migratory	Migratory Marine Species	Listed		Species Profile and Threat	In feature area
		Listed		Species Profile and Threat	In feature area
Migratory	Migratory Terrestrial	Listed - overfly marine		Species Profile and Threat	In feature area
		Listed		Species Profile and Threat	In feature area
		Listed - overfly marine		Species Profile and Threat	In feature area
Migratory	Migratory Marine Birds	Listed		Species Profile and Threat	In feature area
Migratory	Migratory Wetlands	Listed		Species Profile and Threat	In feature area
Migratory	Migratory Wetlands	Listed - overfly marine		Species Profile and Threat	In feature area

		Listed		Species Profile and Threat	In feature area
Migratory	Migratory Wetlands	Listed		Species Profile and Threat	In feature area
		Listed - overfly marine		Species Profile and Threat	In feature area
		Listed - overfly marine		Species Profile and Threat	In feature area
		Listed - overfly marine		Species Profile and Threat	In feature area
		Listed - overfly marine		Species Profile and Threat	In feature area
Migratory	Migratory Wetlands	Listed - overfly marine		Species Profile and Threat	In feature area
Migratory	Migratory Marine Birds	Listed		Species Profile and Threat	In feature area
Migratory	Migratory Wetlands	Listed - overfly marine		Species Profile and Threat	In feature area
Migratory	Migratory Wetlands	Listed - overfly marine		Species Profile and Threat	In feature area
Migratory	Migratory Marine Birds	Listed (as Puffinus griseus)		Species Profile and Threat	In feature area
Migratory	Migratory Marine Birds	Listed		Species Profile and Threat	In feature area
		Listed - overfly marine		Species Profile and Threat	In feature area
Migratory	Migratory Wetlands	Listed		Species Profile and Threat	In feature area

Whales and Other Cetaceans

				Presence		
Species ID	Scientific Name	Common Name	Class	Rank	Text	Threatened Category
40	<i>Eubalaena australis</i>	Southern Right Whale	Mammal	Known	Species or species habitat	Endangered
48	<i>Pseudorca crassidens</i>	False Killer Whale	Mammal	Likely	Species or species habitat	
46	<i>Orcinus orca</i>	Killer Whale, Orca	Mammal	Likely	Species or species habitat	
35	<i>Balaenoptera edeni</i>	Bryde's Whale	Mammal	May	Species or species habitat	
43	<i>Lagenorhynchus obscurus</i>	Dusky Dolphin	Mammal	May	Species or species habitat	
60	<i>Delphinus delphis</i>	Common Dolphin, Short-	Mammal	May	Species or species habitat	
64	<i>Grampus griseus</i>	Risso's Dolphin, Grampus	Mammal	May	Species or species habitat	
34	<i>Balaenoptera borealis</i>	Sei Whale	Mammal	Likely	Foraging, feeding or	Vulnerable
68417	<i>Tursiops truncatus s. str.</i>	Bottlenose Dolphin	Mammal	May	Species or species habitat	
36	<i>Balaenoptera musculus</i>	Blue Whale	Mammal	Likely	Species or species habitat	Endangered
37	<i>Balaenoptera physalus</i>	Fin Whale	Mammal	Likely	Foraging, feeding or	Vulnerable
68418	<i>Tursiops aduncus</i>	Indian Ocean Bottlenose	Mammal	Likely	Species or species habitat	
33	<i>Balaenoptera</i>	Minke Whale	Mammal	May	Species or species habitat	
39	<i>Caperea marginata</i>	Pygmy Right Whale	Mammal	May	Foraging, feeding or	
38	<i>Megaptera novaeangliae</i>	Humpback Whale	Mammal	Known	Species or species habitat	Vulnerable

Migratory Status	Migratory Category	Marine Status	Cetacean Status	Website	Buffer Status
Migratory (as Balaena	Migratory Marine Species		Cetacean	Species Profile and Threat	In feature area
			Cetacean	Species Profile and Threat	In feature area
Migratory	Migratory Marine Species		Cetacean	Species Profile and Threat	In feature area
Migratory	Migratory Marine Species		Cetacean	Species Profile and Threat	In feature area
Migratory	Migratory Marine Species		Cetacean	Species Profile and Threat	In feature area
			Cetacean	Species Profile and Threat	In feature area
			Cetacean	Species Profile and Threat	In feature area
Migratory	Migratory Marine Species		Cetacean	Species Profile and Threat	In feature area
			Cetacean	Species Profile and Threat	In feature area
Migratory	Migratory Marine Species		Cetacean	Species Profile and Threat	In feature area
Migratory	Migratory Marine Species		Cetacean	Species Profile and Threat	In feature area
			Cetacean	Species Profile and Threat	In feature area
			Cetacean	Species Profile and Threat	In feature area
Migratory	Migratory Marine Species		Cetacean	Species Profile and Threat	In feature area
Migratory	Migratory Marine Species		Cetacean	Species Profile and Threat	In feature area

State and Territory Reserves

Protected Area ID	Protected Area Name	Reserve Type	State	Jurisdiction	Environment	Buffer Status
VIC_3362	Gippsland Lakes Coastal	Conservation Park	VIC	State	Terrestrial	In feature area
VIC_88	Giffard (Rifle Range) F.R.	Nature Conservation	VIC	State	Terrestrial	In feature area
VIC_2166	Darriman H29 B.R	Natural Features Reserve	VIC	State	Terrestrial	In feature area
VIC_259	Herb Guyatt F.R.	Nature Conservation	VIC	State	Terrestrial	In feature area
VIC_681	Lake Denison W.R	Natural Features Reserve	VIC	State	Terrestrial	In feature area
VIC_3668	The Waterhole G.L.R	Natural Features Reserve	VIC	State	Terrestrial	In feature area
VIC_668	Jack Smith Lake W.R	Natural Features Reserve	VIC	State	Terrestrial	In buffer area only
VIC_3780	Longford N.F.R	Natural Features Reserve	VIC	State	Terrestrial	In feature area
VIC_3667	Sale Common N.C.R.	Nature Conservation	VIC	State	Terrestrial	In feature area
VIC_3334	Holey Plains	State Park	VIC	State	Terrestrial	In feature area
VIC_2167	Giffard H30 B.R	Natural Features Reserve	VIC	State	Terrestrial	In feature area
VIC_380	Lake Coleman W.R	Natural Features Reserve	VIC	State	Terrestrial	In buffer area only
VIC_275	Stradbroke F.F.R.	Nature Conservation	VIC	State	Terrestrial	In feature area
VIC_2168	Giffard H31 B.R	Natural Features Reserve	VIC	State	Terrestrial	In feature area
VIC_1034	Rosedale B.R.	Natural Features Reserve	VIC	State	Terrestrial	In feature area
VIC_296	Gormandale F.R	Nature Conservation	VIC	State	Terrestrial	In feature area
VIC_164	Traralgon South F.R	Nature Conservation	VIC	State	Terrestrial	In buffer area only
VIC_1035	Merrimans Creek F.R.	Nature Conservation	VIC	State	Terrestrial	In feature area
346	Ninety Mile Beach	Marine National Park	VIC	State	Marine	In feature area

[Back to Summary](#)

Regional Forest Agreements

RFA Region	State	Website	Buffer Status
Gippsland RFA	Victoria	RFA website	In feature area

Nationally Important Wetlands

Reference Code	Wetland Name	State	Website	Buffer Status
VIC069	Jack Smith Lake State	VIC	Australian Wetlands	In buffer area only
VIC073	Lake Wellington Wetlands	VIC	Australian Wetlands	In feature area

EPBC Act Referrals

Reference Number	Title of referral	Jurisdiction	Industry Type	Stage	Stage Description	Referral Outcome
2010/5332	East Princess Highway	VIC	Transport - Land	Completed	Referral Decision Made	Not Controlled Action
2019/8513	Golden Beach Gas Project	VIC	Mining	Post-Approval	Approval Decision Made	Controlled Action
2010/5640	Princes Highway	VIC	Transport - Land	Post-Approval	Approval Decision Made	Controlled Action
2003/1031	Golden Beach gas field	VIC	Mining	Post-Approval	Referral Decision Made	Not Controlled Action
2003/1282	2004/2005 drilling	VIC	Exploration (mineral, oil	Completed	Referral Decision Made	Not Controlled Action
2007/3915	West Triton Drilling	VIC	Energy Generation and	Completed	Referral Decision Made	Not Controlled Action
2010/5288	Southern Flanks 2D	CM	Exploration (mineral, oil	Post-Approval	Referral Decision Made	Not Controlled Action
2009/4959	Highway Realignment and	VIC	Transport - Land	Post-Approval	Referral Decision Made	Not Controlled Action
2006/2556	Bream 3D seismic survey	VIC	Exploration (mineral, oil	Post-Approval	Referral Decision Made	Not Controlled Action
2001/177	Hemingway1/Oil	CM	Mining	Completed	Referral Decision Made	Not Controlled Action
2003/1204	Development of Turrum	VIC	Energy Generation and	Completed	Referral Decision Made	Not Controlled Action
2004/1889	Acquistion of 2D seismic	VIC	Exploration (mineral, oil	Completed	Referral Decision Made	Not Controlled Action
2003/1053	Allmans Levee Track -	VIC	Water Management and	Completed	Referral Decision Made	Not Controlled Action
2020/8650	Star of the South Offshore	CM	Energy Generation and	Guidelines Issued	Guidelines Issued	Controlled Action
2017/8127	INDIGO Central Submarine	NSW	Telecommunications	Completed	Referral Decision Made	Not Controlled Action
2005/2216	Soil and Organic Recycling	VIC	Waste Management (non-	Post-Approval	Referral Decision Made	Not Controlled Action
2017/7999	Lower Latrobe River	VIC	Natural Resources	Completed	Referral Decision Made	Not Controlled Action
2000/20	Gas Pipeline	VIC	Energy Generation and	Post-Approval	Referral Decision Made	Not Controlled Action
2021/9053	Marinus Link underground	VIC	Energy Generation and	Assessment Approach	Assessment Method	Controlled Action
2001/277	Long Waterhole project,	VIC	Transport - Land	Completed	Referral Decision Made	Not Controlled Action
2001/206	Seismic Survey	CM	Exploration (mineral, oil	Post-Approval	Referral Decision Made	Not Controlled Action
2001/140	Northern Fields 3D Seismic	CM	Exploration (mineral, oil	Post-Approval	Referral Decision Made	Not Controlled Action
2010/5734	Thomson River Mercury	VIC	Natural Resources	Completed	Lapsed	Controlled Action
2005/2234	Rebuild of Existing	VIC	Manufacturing	Completed	Referral Decision Made	Not Controlled Action
2015/7522	Improving rabbit	NSW	Natural Resources	Completed	Referral Decision Made	Not Controlled Action
2003/1100	Windfarm	VIC	Energy Generation and	Completed	Referral Decision Made	Not Controlled Action
2001/167	Melville 1 Oil Exploration	CM	Exploration (mineral, oil	Completed	Referral Decision Made	Not Controlled Action
2017/8097	Pelican 3D Marine Seismic	VIC	Exploration (mineral, oil	Post-Approval	Referral Decision Made	Not Controlled Action
2014/7202	Installation of	VIC	Energy Generation and	Post-Approval	Approval Decision Made	Controlled Action
2021/8989	Loy Yang Battery Energy	VIC	Energy Generation and	Completed	Referral Decision Made	Not Controlled Action
2017/7996	INDIGO Marine Cable	CM	Telecommunications	Post-Approval	Referral Decision Made	Not Controlled Action
2001/289	Offshore Petroleum	CM	Exploration (mineral, oil	Completed	Referral Decision Made	Not Controlled Action
2006/3162	Sale Golf Club	VIC	Tourism and Recreation	Completed	Referral Decision Made	Not Controlled Action
2006/3146	Apache 3D seismic	VIC	Exploration (mineral, oil	Post-Approval	Referral Decision Made	Not Controlled Action

2004/1866	Gippsland Basin Seismic	CM	Exploration (mineral, oil)	Completed	Referral Decision Made	Not Controlled Action
2002/723	Country Passenger Rail	VIC	Transport - Land	Post-Approval	Referral Decision Made	Not Controlled Action

Biologically Important Areas

<i>Species ID</i>	Scientific Name	Common Name	Species Group	Behaviour	Presence	Website
82652	<i>Ardenna tenuirostris</i>	Short-tailed Shearwater	Seabirds	Foraging	Known to occur	Species Profile and Threat
1073	<i>Diomedea exulans</i> (sensu	Wandering Albatross	Seabirds	Foraging	Known to occur	Species Profile and Threat
1018	<i>Pelecanoides urinatrix</i>	Common Diving-petrel	Seabirds	Foraging	Known to occur	Species Profile and Threat
64460	<i>Thalassarche bulleri</i>	Bullers Albatross	Seabirds	Foraging	Known to occur	Species Profile and Threat
82345	<i>Thalassarche cauta cauta</i>	Shy Albatross	Seabirds	Foraging likely	Likely to occur	Species Profile and Threat
85249	<i>Thalassarche</i>	Indian Yellow-nosed	Seabirds	Foraging	Known to occur	Species Profile and Threat
66472	<i>Thalassarche melanophris</i>	Black-browed Albatross	Seabirds	Foraging	Known to occur	Species Profile and Threat
82449	<i>Thalassarche melanophris</i>	Campbell Albatross	Seabirds	Foraging	Known to occur	Species Profile and Threat
64470	<i>Carcharodon carcharias</i>	White Shark	Sharks	Breeding (nursery area)	Known to occur	Species Profile and Threat
64470	<i>Carcharodon carcharias</i>	White Shark	Sharks	Distribution	Known to occur	Species Profile and Threat
64470	<i>Carcharodon carcharias</i>	White Shark	Sharks	Distribution (low density)	Likely to occur	Species Profile and Threat
64470	<i>Carcharodon carcharias</i>	White Shark	Sharks	Known distribution	Known to occur	Species Profile and Threat
81317	<i>Balaenoptera musculus</i>	Pygmy Blue Whale	Whales	Distribution	Known to occur	Species Profile and Threat
81317	<i>Balaenoptera musculus</i>	Pygmy Blue Whale	Whales	Foraging	Likely to be present	Species Profile and Threat
40	<i>Eubalaena australis</i>	Southern Right Whale	Whales	Known core range	Known to occur	Species Profile and Threat
40	<i>Eubalaena australis</i>	Southern Right Whale	Whales	Migration and resting on	Known to occur	Species Profile and Threat

[Back to Summary](#)

Bioregional Assessments

SubRegion	BioRegion	Website	Buffer Status
Gippsland	Gippsland Basin	BA website	In feature area

Caveat

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 (EPBC) Act 1999. The report provides the 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, listed threatened ecological communities and other information could be useful as an indicator of potential habitat value. The mapped locations have been collated from a range of data sources at various resolutions as acknowledged at the end of this report.

Not all species listed under the EPBC Act have been mapped (see below) and therefore this report is a general guide only. Where data is available to support mapping, the type of presence that can be determined from the data is indicated in general terms. People using this information to inform 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, thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps, thematic spatial data 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, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using point locations and environmental data layers.

Where very little information is available for species or a large number of maps are required in a short time-frame, maps are derived or supplemented either with 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.). In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping

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 vagrants
- some recently listed species and ecological communities – as there may be a delay of several days in the mapping being made available for reporting after a listing event
- some terrestrial species that overfly the Commonwealth marine area

- some listed migratory and listed marine species, which are not listed as threatened species
- 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:

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

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

Nationally Important Wetlands are not a Matter of National Environmental Significance and do not have protection under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act). They may however provide habitat and support other listed species that are protected under the EPBC Act.

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