

Draft Report

Existing Ecological Conditions of the proposed Delburn Wind Farm, Gippsland, Victoria

Prepared for

OSMI Australia Pty Ltd

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Ecology and Heritage Partners Pty Ltd

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GLOSSARY

| Acronym | Description |
|-----------|--|
| AVW | Atlas of Victorian Wildlife |
| CaLP | <i>Catchment and Land Protection Act 1994</i> |
| CMA | Catchment Management Authority |
| DBH | Diameter at Breast Height |
| DELWP | Victorian Department of Environment, Land, Water and Planning |
| DEPI | (former) Victorian Department of Environment and Primary Industries |
| DoEE | Commonwealth Department of Environment and Energy |
| EES | Environment Effects Statement |
| EPBC Act | <i>Environment Protection and Biodiversity Conservation Act 1999</i> |
| EVC | Ecological Vegetation Class |
| FFG Act | <i>Flora and Fauna Guarantee Act 1988</i> |
| FIS | Flora Information System |
| HabHa | Habitat Hectare |
| LT | Large Tree |
| NES | National Environmental Significance |
| NVIM Tool | Native Vegetation Information Management Tool (DELWP) |
| PMST | Protected Matters Search Tool (DoEE) |
| ST | Small Tree |
| TPZ | Tree Protection Zone |
| VBA | Victorian Biodiversity Atlas (DELWP) |

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SUMMARY

Introduction

Ecology and Heritage Partners Pty Ltd was commissioned by Delburn Wind Farm Pty Ltd (OSMI Australia), to prepare a report detailing the existing ecological conditions within and adjacent to the site proposed to support the Delburn Wind Farm, Strzelecki Ranges, Victoria (the study area).

This Existing Conditions report summarises the methods and results of ecological studies undertaken for the project to date by Ecology and Heritage Partners, including detailed vegetation mapping, terrestrial fauna surveys and targeted surveys for significant flora and fauna species. The findings presented herein will support the project Environment Effects Statement (EES) and assessment under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

Methods

Relevant literature, online-resources and databases were reviewed to provide an assessment of flora and fauna values associated with the study area.

Several field assessments between 2018 and 2019 have been undertaken by Ecology and Heritage Partners. The field assessments sought primarily to assess the extent and condition of native vegetation communities and potential flora and fauna habitat within the proposed impact footprint, with particular consideration given to significant ecological communities and species of conservation concern, such as threatened and migratory species.

All fieldwork was carried out under the appropriate licences, including a Research Permit (10008283) and Scientific Procedures Fieldwork Licence (SPFL 20005) issued by DELWP under the *Wildlife Act 1975*, and an Animal Research permit issued by the Wildlife and Small Institutions Animal Ethics Committee (22.13).

Results

Surveys of the study area recorded 57 species of flora (including 47 native species and 10 introduced species), and 77 species of fauna (70 native species and 7 introduced species).

Two nationally significant species were recorded within the study area: Strzelecki Gum *Eucalyptus strzeleckii* and Growling Grass Frog *Litoria raniformis*. Of the bird species identified, 55 native species were recorded, including the Flame Robin *Petroica phoenicea*, Southern Boobook *Ninox boobook* and Yellow-tailed Black Cockatoo *Calyptorhynchus funereus*.

The study area intersects two bioregions: the Gippsland Plain and Strzelecki Ranges. However, the native vegetation identified and geographic context of the study area, provided justification to map all EVCs according to the Strzelecki Ranges bioregion. The native vegetation assessment identified Seven EVCs of the Strzelecki bioregion, including Aquatic Herbland (EVC 653), Damp Forest (EVC 29), Herb-rich Foothill Forest (EVC 23), Lowland Forest (EVC 16), Swamp Scrub (EVC 53), Swampy Woodland (EVC 937) and Tall Marsh (EVC 821).

Most mapped patches of native vegetation within or adjacent to the impact area were of moderate-high quality, based on the habitat condition score for each habitat zone using the VQA methodology (DSE 2004).

The desktop and field assessments identified a number of key ecological features within the study area and surrounding landscape; these are summarised in Table S1.

Table S1. Summary of the ecological values that occur in or adjacent to the impact area.

| | |
|---|--|
| Species Diversity | A diverse assemblage of plants and animals, with 57 flora species and 76 fauna species recorded during 2018-2019 surveys conducted by Ecology and Heritage Partners. |
| Remnant Vegetation | <ul style="list-style-type: none"> A total of 240.19 hectares of mapped native vegetation (this area is all native vegetation mapped within or adjacent to the impact area by EHP (2018-19). The area of native vegetation likely to be impacted by the proposed wind farm is between 41.41 hectares (i.e. including the impact area and within 17 metres either side of the impact area) and 15.60 hectares (impact area only). Mapped native vegetation is represented by seven EVCs of the Strzelecki Ranges bioregion: <ul style="list-style-type: none"> Aquatic Herbland (EVC 653) 0.69 hectares. Damp Forest (EVC 29) 65.27 hectares; Herb-rich Foothill Forest (EVC 23) 115.45 hectares; Lowland Forest (EVC 16) 44.34 hectares; Swamp Scrub (EVC 53) 0.11 hectares; Swampy Woodland (EVC 937) 13.58 hectares; Tall Marsh (EVC 821) 0.75 hectares; 373 large trees in patches were recorded in or adjacent to the impact area (A.1.3). <ul style="list-style-type: none"> When the buffer is reduced to within 17 metres of the impact area, the number of large trees impacted is reduced to 24 large trees. 54 large scattered trees and 39 small scattered trees (not including Strzelecki Gums) were recorded in or adjacent to the impact area. In addition, 14 large scattered Strzelecki Gum trees were identified (Plate 13). <ul style="list-style-type: none"> All impacts to Strzelecki Gum will be avoided entirely through design refinements. |
| Wetlands | <ul style="list-style-type: none"> The Western Port Ramsar site is located approximately 25 kilometres south-west of the study area (downstream). |
| Significant Ecological Communities | <ul style="list-style-type: none"> No national or State significant ecological communities occur within the study area. |

| | |
|------------------------------|--|
| Significant Flora Species | <ul style="list-style-type: none"> The known occurrence of one nationally significant flora species within the study area during targeted surveys: <ul style="list-style-type: none"> Strzelecki Gum <i>Eucalyptus strzeleckii</i> No additional state significant flora species were recorded FFG Protected Flora: Acacia species, including <i>Acacia mearnsii</i> were recorded in the study area |
| Significant Fauna Species | <ul style="list-style-type: none"> The known occurrence of one nationally significant fauna recorded within the study area during the targeted surveys: <ul style="list-style-type: none"> Growling Grass Frog <i>Litoria raniformis</i> No State significant species recorded in the study area (2018 – 19) Non-threatened species of interest within the study area are: <ul style="list-style-type: none"> Koala <i>Phascolarctos cinereus</i>; Yellow-tailed Black-Cockatoo <i>Calyptorhynchus funereus</i>, and; Powerful Owl <i>Ninox strenua</i> |
| Legislative Requirements | <ul style="list-style-type: none"> A referral should be submitted to the Commonwealth according to the <i>Environment, Protection and Biodiversity Conservation Act 1999</i> (EPBC Act) to determine whether the proposed development will have a significant impact on matters of National Environmental Significance (e.g. Strzelecki Gum, Growling Grass Frog). A referral under the <i>Environmental Effects Act 1994</i> should be submitted to determine whether the proposed development will trigger the requirement for an Environmental Effects Statement. |

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1 INTRODUCTION

1.1 Background

Ecology and Heritage Partners Pty Ltd was commissioned by Delburn Wind Farm Pty Ltd (OSMI Australia) to prepare a report detailing the existing ecological conditions within and adjacent to the site proposed to support the Delburn Wind Farm, Strzelecki Ranges, Victoria (the study area).

Ecology and Heritage Partners have undertaken several extensive ecological assessments associated with the proposed project between 2018 and 2019. This Existing Conditions report summarises the methods and results of ecological studies undertaken for the project to date by Ecology and Heritage Partners, including detailed vegetation mapping, bird utilisation surveys and targeted surveys for significant flora and fauna species. It also addresses comments made by members of the public during the community consultation meetings on 1 and 3 August 2019.

The findings presented herein will support the project Environment Effects Statement (EES) and assessment under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

1.2 Objectives

The objectives of the existing conditions assessment were to:

- Review the relevant flora and fauna databases and available literature;
- Conduct an up to date field assessment to identify the quality and extent of native vegetation within the study area;
- Provide maps showing any areas of remnant native vegetation and locations of any significant flora and fauna species, and/or fauna habitat (if present);
- Classify any flora and fauna species and vegetation communities identified or considered likely to occur within the study area in accordance with Commonwealth and State legislation;
- Document relevant environmental legislation and policy;
- Document any opportunities and constraints associated with the proposed works; and,
- Conduct targeted significant flora and/or fauna surveys and advise whether any additional surveys are required prior to works commencing.

Where areas of remnant vegetation were present, the following tasks were completed to address requirements under the 'Guidelines for the removal, destruction or lopping of native vegetation' (Guidelines) (DELWP 2017a):

- A habitat hectare assessment of any areas of remnant native vegetation within the study area, and;
- Recommendations to address requirements under the Guidelines to minimise impacts to remnant vegetation.

However, this existing condition report does not address the:

- Provision of offset targets for any native vegetation, scattered trees and habitat for rare or threatened species proposed to be lost because of the proposed works.

Offsets will be addressed in a later report once the impact area (access roads, cable routes, turbine hardstands) has been finalised.

Matters of NES (National Environmental Significance) were identified in the study area and the proposed action will be referred to the Commonwealth Environment Minister under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). This will determine whether it is a 'controlled action' requiring Commonwealth approval.

A referral will be made to the Victorian Government under the *Environment Effects Act 1978* (EE Act). The Minister for Planning will decide if an Environment Effects Statement (EES) is required for the proposed wind farm under the EE Act.

1.3 Study Area

The study area comprises a mixture of HVP pine and blue gum plantations and remnant native vegetation, located south of Moe and the Princess Freeway and north of Boolarra-Mirboo North Rd. The proposed development site is located at the plantation land centred in the Delburn area, covering the HVP Plantations Thorpdale Tree Farm. The site is generally bounded by Hearn Oak to the north, Coalville, Narracan and Thorpdale to the west, Darlimurla to the south, and Driffield, Boolarra and Yinnar to the east. The study area is approximately 144 kilometres east of Melbourne's CBD (Figure 1) and intersects the Gippsland Plain and Strzelecki bioregions and is applicable to the West Gippsland Catchment Management Authority (CMA).

The study area is composed of a mosaic of native vegetation, pine plantations and private agricultural properties. The mapped remnant native vegetation within the study area represents seven Ecological Vegetation Classes (EVCs) from two bioregions: Gippsland Plain and Strzelecki Ranges. Adjacent remnant native vegetation includes Sayers Trig Bushland Reserve (north), Darlimurla Forest Block (east) and Mirboo North Regional Park (west). In particular, Darlimurla Forest Block (340 ha) supports significant ecological values and is represented by seven EVCs of the Gippsland Plain bioregion: Herb Rich Foothill Forest, Lowland Forest, Dry Valley Forest, Heathy Woodland, Riparian Forest, Swampy Riparian Complex and Swamp Scrub (Biosis 1998).

Tributaries of the Morwell River, Ten Mile Creek and associated wetlands intersect the study area. Artificial waterbodies including dams also provide habitat for waterbirds and other water dependent species.

1.4 Impact Area

The proposed Delburn Wind Farm involves the installation of 35 turbines and associated infrastructure, primarily the expansion of existing roads and access tracks, throughout the study area. This will result in the removal of native vegetation and has the potential to impact significant species. Given the size of the study area, the habitat hectare assessment and targeted flora surveys were undertaken within or directly adjacent to the proposed development footprint (infrastructure layout), while a broad assessment of areas throughout the remaining study area (i.e. outside of the development footprint) was undertaken.

2 METHODS

The following outlines the desk-based and field methods used to determine the presence and extent of ecological values across the study area, and to assess the likelihood of significant flora and fauna species occurring. Due to the large scale of the study area, ecological assessments focussed on areas with native vegetation within or directly adjacent to the impact area.

2.1 Nomenclature

Common and scientific names of vascular plants follow the Victorian Biodiversity Atlas (VBA) (DELWP 2018a) and the Census of Vascular Plants of Victoria (Walsh and Stajsic 2007). Vegetation community names follow DELWP's Ecological Vegetation Classes (EVC) benchmarks (DELWP 2019c). The names of aquatic and terrestrial vertebrate and invertebrate fauna follow the VBA (DELWP 2018a).

2.2 Desktop Assessment

Relevant literature, online-resources and databases were reviewed to provide an assessment of flora and fauna values associated with the study area. The following information sources were reviewed:

- The DELWP NVIM Tool (DELWP 2019a) and NatureKit Map (DELWP 2019b) for:
 - Modelled data for location risk, remnant vegetation patches, scattered trees and habitat for rare or threatened species;
 - The extent of historic and current Ecological Vegetation Classes (EVCs);
 - Previously documented flora and fauna records within the project locality
- EVC benchmarks (DELWP 2019c) for descriptions of EVCs within the Highland – Southern Fall bioregion;
- The Victorian Biodiversity Atlas (VBA) for previously documented flora and fauna records within the project locality (DELWP 2018a);
- The Commonwealth Department of the Environment (DoEE) Protected Matters Search Tool (PMST) for matters of National Environmental Significance (NES) protected under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) (DoEE 2019);
- Relevant listings under the Victorian *Flora and Fauna Guarantee Act 1988* (FFG Act), including the latest Threatened and Protected Lists (DELWP 2018b; DELWP 2017a);
- VicPlan (DELWP 2019d) to ascertain current zoning and environmental overlays in the study area;
- Aerial photography of the study area; and,
- Previous ecological assessments relevant to the study area, including a previous flora and fauna assessment of Darlimurla Forest Block (Biosis 1998).

2.3 Field Assessment

Detailed field assessments were undertaken on the following dates:

- Native vegetation and Large tree assessment
 - 17, 18, 19 July 2018;
 - 18, 19, 20 March 2019, and;
 - 5, 6 and 7 August 2019
- Significant Flora surveys
 - 12 - 16 November 2018 (Strzelecki Gum and Matted Flax-lily), and;
 - 18, 19, 20 March and 5, 6 and 7 August 2019 (Strzelecki Gum)
- Significant Fauna surveys
 - 12, 13, 14, 15, 16 November 2018 and 2, 3, 4 October 2019 (Growling Grass Frog)
- Avifauna
 - 4, 5, 6, 11, 12, 13 June 2019 (Bird Utilisation surveys - Winter)
 - 2, 3, 4 October 2019 (Bird Utilisation surveys – Spring)
 - 30, 31 October and 01, 06, 07, 08 November 2019 (Bird Utilisation surveys – Spring)
 - 12, 13, 14, 15, 16 November 2018 and 30, 31 October and 1 November 2019 (Owl surveys)
- Terrestrial and Arboreal Fauna
 - 12, 13, 14, 15 and 16 November 2018 (general frog and small mammal surveys)
 - 2, 3, 4 October 2019 (Remote camera and bat detector deployment)

2.3.1 Native Vegetation Assessment

Several field assessments have been undertaken by Ecology and Heritage Partners, with the aim of determining native vegetation quality and extent within or directly adjacent to the impact area (Section 2.3).

Vegetation assessments were undertaken in order to obtain information on flora and fauna values within the study area. The study area was walked and/or driven, with all observed vascular flora and fauna species within or adjacent to the impact area recorded, any significant records mapped and the overall condition of vegetation and habitats noted. Remnant vegetation in the local area was also investigated to assist in determining the pre-European vegetation within the study area. Ecological Vegetation Classes were determined with reference to DELWP pre-1750 and extant EVC mapping and their published descriptions (DELWP 2019c).

Where remnant vegetation was identified a habitat hectare assessment was undertaken following methodology described in the Vegetation Quality Assessment Manual (DSE 2004).

The surveys sought primarily to assess the extent and condition of native vegetation communities and potential flora and fauna habitat, with particular consideration given to significant ecological communities and species of conservation concern, such as threatened and migratory species.

All fieldwork was carried out under the appropriate licences, including a Research Permit (10008283) and Scientific Procedures Fieldwork Licence (SPFL 20005) issued by DELWP under the *Wildlife Act 1975*, and an Animal Research permit issued by the Wildlife and Small Institutions Animal Ethics Committee (05.17).

Native vegetation was classified in accordance with the definitions provided in Table 2, as defined in the ‘Guidelines for the removal, destruction or lopping of native vegetation’ (the Guidelines) (DELWP 2017a).

2.4 Removal, Destruction or Lopping of Native Vegetation (the Guidelines)

Under the Planning and Environment Act 1987, Clause 52.17 of the Planning Schemes requires a planning permit from the relevant local Council to remove, destroy or lop native vegetation. The assessment process for the clearing of vegetation follows the ‘Guidelines for the removal, destruction or lopping of native vegetation’ (Guidelines) (DELWP 2017a). The ‘Assessor’s handbook – applications to remove, destroy or lop native vegetation’ (Assessor’s handbook) (DELWP 2017b) provides clarification regarding the application of the Guidelines.

Assessment Pathway

The Guidelines manage the impacts on biodiversity from native vegetation removal using an assessment-based approach. Two factors – extent and location – are used to determine the assessment pathway associated with an application for a permit to remove native vegetation. The location category (1, 2 or 3) has been determined for all areas in Victoria and is available on DELWP’s Native Vegetation Information Management (NVIM) Tool (DELWP 2019a). Determination of the assessment pathway is summarised in Table 1.

Table 1. Assessment pathways for applications to remove native vegetation (DELWP 2017a)

| Extent | | Location | | |
|-------------------|---|--------------|--------------|----------|
| | | 1 | 2 | 3 |
| Native Vegetation | < 0.5 hectares, and not including any large trees | Basic | Intermediate | Detailed |
| | Less than 0.5 hectares, and including one or more large trees | Intermediate | Intermediate | Detailed |
| | 0.5 hectares or more | Detailed | Detailed | Detailed |

Notes: For the purpose of determining the assessment pathway of an application to remove native vegetation the extent includes any other native vegetation that was permitted to be removed on the same contiguous parcel of land with the same ownership as the native vegetation to be removed, where the removal occurred in the five year period before an application to remove native vegetation is lodged.

Vegetation Assessment

Native vegetation (as defined in Table 2) is assessed using two key parameters: extent (in hectares) and condition. For the purposes of this assessment, both condition and extent were determined as part of the field assessments.

In addition, the type and general condition of all vegetation was assessed and a determination made as to whether it qualifies for further consideration under local, State or national legislation and policy.

Table 2. Determination of remnant native vegetation (DELWP 2017a)

| Category | Definition | Extent | Condition |
|------------------------------------|--|---|--|
| Remnant patch of native vegetation | An area of vegetation where at least 25 per cent of the total perennial understorey plant cover is native. OR An area with three or more native canopy trees where the drip line of each tree touches the drip line of at least one other tree, forming a continuous canopy. | Measured in hectares. Based on hectare area of the remnant patch. | Vegetation Quality Assessment Manual (DSE 2004). |
| Scattered tree | A native canopy tree that does not form part of a remnant patch. | Measured in hectares. Each Large scattered tree is assigned an extent of 0.071 hectares (30m diameter). Each Small scattered tree is assigned a default extent of 0.31 hectares (10 metre diameter) | Scattered trees are assigned a default condition score of 0.2 (outside a patch). |

Notes: Native vegetation is defined in the Victoria Planning Provisions as 'plants that are indigenous to Victoria, including trees, shrubs, herbs and grasses'.

Large Tree and Habitat Assessment

A series of field assessments on 17, 18 and 19 July 2018 and 18, 19 and 20 March 2019 were undertaken during the ecological assessment to quantify the number of scattered trees and Large Trees within native vegetation patches in or adjacent to the impact area, as well as to collate data pertaining to the presence of hollows and/or nests and significant 'habitat trees' that may provide habitat for fauna.

2.4.1 Targeted Strzelecki Gum and Matted Flax Lily Surveys

To maximise the likelihood of detecting significant flora species identified as having the potential to occur within or directly adjacent to the impact area, incidental records of the target species were undertaken during the initial vegetation and Large tree assessments and bird utilisation surveys.

Targeted surveys were undertaken by a team of Ecologists and involved systematically walking road reserves and tracks in habitat where Strzelecki Gum and Matted Flax-lily were likely to occur within the impact area. Handheld GPS units were used to record the location of any significant species encountered.

One reference site in Northern Melbourne where Matted Flax-lily are known to occur was visited during the flowering period in Spring-Summer 2018/19. This confirmed that Matted Flax-lily were flowering in the general locality of the study area at the time of surveys.

2.5 Avifauna and Bat Assessments

2.5.1 Bird Utilisation Surveys

Bird utilisation surveys are the most commonly used method for generating quantitative data on bird use of a potential wind farm site. Bird utilisation surveys were conducted in Winter 2019 and the second bout will be conducted in Spring 2019. All bird species are recorded including non-significant raptor species of public concern: Wedge-tail Eagle *Aquila audax*, White-bellied Sea-eagle *Haliaeetus leucogaster*.

The methods employed for the proposed Delburn Wind Farm bird utilisation surveys were designed to comply with the guidelines described in *AusWEA – Wind Farms and Birds: Interim Standards for Risk Assessment* (2005). According to these guidelines, bird utilisation surveys are undertaken to ascertain:

- The species composition of birds that use the study area;
- The frequency with which each of those species use the study area;
- The height at which each of these species fly in the study area; and,
- The distribution of these species across the landscape.

Bird utilisation surveys are a minimum requirement for all wind farm sites and are used to inform the design of higher-level investigations, if required. The total number of point counts will be determined based on both the habitat conditions of the study site and the number of turbines proposed, in addition to any existing data that has already been collected (e.g. detailed significant species data).

2.5.1.1 *AusWEA Wind Farms and Birds: Interim Standards for Risk Assessment*

The Australian Wind Energy Association (AusWEA 2005) has developed interim standards for risk assessment of birds for wind farm developments in Australia. This document outlines the type of investigations required, the order in which they should be undertaken and a systematic approach for assessing risk of bird impact at wind farms. This process allows for more detailed studies should a potentially significant risk be identified during preliminary studies.

The AusWEA (2005) interim standards recommend three levels of investigations, with each level involving increasing levels of detail. These levels include:

- **Level 1** investigations provide an initial assessment of the risk of significant bird impacts from the operation of the proposed wind farm; Level One investigations involve a regional overview, review of existing data, an indicative bird utilisation survey and roaming surveys.
- **Level 2** investigations refine the risk assessment from the Level One investigation, using more intensive methods. Level Two investigations involve roaming surveys and risk modelling.
- **Level 3** investigations are initiated if the results of the Level Two investigations indicate a greater than low level of residual risk of significant bird impacts from the operation of the proposed wind farm. Level Three investigations involve population assessment and population viability analysis.

The interim standards also recommend consultation with the wind farm developer and key representatives of agencies that assess and approve development to:

- Agree on the issues, questions and objectives of bird impact risk assessment studies;
- Agree on the consequence and, where relevant, likelihood criteria that apply to the results of the studies; and,
- Where required, agree on the nature and effectiveness of mitigation measures.

2.5.2.1 Fixed Point Bird Counts

A zoologist, experienced in bird identification, undertook the fixed-point count surveys to the specifications outlined below. 10 × 42 binoculars were used to identify the bird to species, or for some species, generic level (e.g.: non-calling Raven species).

The following was undertaken as part of the fixed-point bird counts:

- Eight locations were established at which to undertake fixed point counts. The locations chosen were to ensure that a range of habitat types were represented in the sample, including two outside of the study area near waterbodies (Figure 5);
- The search radius from the point was at least 100 metres for small birds and up to 800 metres for large birds (e.g. birds of prey, waterbirds), or further, if accurate identification to species level was achievable, using prominent landmarks;
- The duration of each fixed-point count was 20 minutes;
- The height at which each bird flew through the survey area was estimated to the nearest 10 metres;
- The direction of flight of each bird was recorded to the nearest 45 degrees of the compass;
- Each point was surveyed at different times of day (e.g. early morning, late morning, early afternoon and late afternoon) to account for diurnal differences in bird activity; and,
- Each point was surveyed eight times over the course of the survey period.

2.5.2 Incidental observations and roaming surveys

In addition to bird species recorded during the fixed-point count surveys, incidental observations of bird species were recorded while travelling between point counts and during other field-based activities. Birds seen adjacent to the study area were also recorded. Where suitable habitat for wading birds (principally Chradriiformes) and other waterbirds (ducks and herons) was observed, this habitat was surveyed for these species as per the "Significant Survey Guidelines for 36 Migratory Shorebird Species" (DEWHA 2009).

Two fixed-point bird counts were taken outside of the study area (Figure 5). Site X was located north of the study area, along Narracan Creek. Site Z was located south of the Darlimurla Forest Block to the south-east of the study area, adjacent to a wetland. Both sites were selected, to detect the presence of water-dependent species including migratory birds. This approach was also taken to detect rare and threatened species and species with specialised habitat requirements. Parts of the study area that have potentially suitable habitat for these rare or threatened species were targeted to ensure that these species were not overlooked.

To detect the presence of Wedge-tailed Eagles *Aquila audax* in the study area, searches for nests were undertaken during bird utilisation surveys. Swamp Harrier *Circus approximans* was also detected flying at the southern extent of Luxford Pond, 4 October 2019.

2.5.3 Owl Surveys

Owl survey were undertaken in November 2018 and are scheduled again for October - November 2019. Nocturnal surveys were undertaken in accordance with Commonwealth *Survey Guidelines for Australia's threatened birds* (DSE 2010). Target species were Masked Owl *Tyto novaehollandiae*, Powerful Owl *Ninox strenua*, Barking Owl *Ninox connivens* and Sooty Owl *Tyto tenebricosa*. Sites were selected based on the

presence of remnant vegetation and/or hollow-bearing trees and the location of previous records (see also Figure 2c, 2p and 2q). Powerful Owl have been recorded adjacent to the study area in Darlimurla Forest Block (Biosis 1998), Toora-Gunyah Road to the north of the study area Mirboo North and Morwell National Park to the south (Willig and Atkins 2012-14).

The calls of each species were broadcast through a hand-held speaker to attract them to the survey site or to elicit a response. This was followed by listening and spotlighting in the immediate area to locate any owls attracted to the site. This technique relies on the fact that most species of owl are territorial and use calls as a method of defending their territory from individuals of their own species. Call-playback for owls was undertaken over six nights (17, 18 July and 12, 13, 14 and 15 November 2018) which avoided the breeding season of Barking Owl (August to October), while also avoiding the hottest summer months when Powerful Owl are less responsive to call playback. Survey methodology is outlined below:

- Nocturnal call playback surveys were conducted under clear and still weather conditions (avoiding windy, rainy conditions);
- Minimum survey effort requires call-playback at sites within woodland/forested area having a 3km diameter (700 hectares). Call-play back was undertaken in areas of potentially suitable habitat for a range of species to maximise detection. Approximately 20 minutes of call-playback was undertaken at each site as follows:
 - 5 minutes initial passive listening;
 - 2-minutes of call playback;
 - 2-minutes of listening;
 - Repeat method for each species

Note: if a bird responded to call-playback, call-playback for that species was ceased to avoid disturbance; and

- Owl calls were broadcast in the following sequence: Powerful Owl, Barking Owl, Sooty Owl, Masked Owl.

2.5.4 Bat Surveys

Bat detectors (Songmeter SM4BAT FS) were deployed across three days in October (2-4/10/2019) and left for a minimum of 28 days to detect the presence of microbat species. Bat detector locations were chosen, based on geography and habitat type to capture a representative sample of the study area. Weller and Zabel (2002) found detectors placed at a height of 1.4 metres recorded 30% more calls than those placed on the ground. This method will be adopted, at selected locations within the study area.

Grey-headed Flying-fox surveys will also be conducted at dusk during the same time period as Spring bird utilisation surveys.

2.6 Terrestrial Fauna Assessments

Targeted surveys for significant fauna were undertaken in November 2018 (Table 3) and October - November 2019 to maximise the likelihood of detecting significant fauna identified as having the potential to occur within the impact area. Initial habitat assessment surveys occurred 17 – 18 July 2018 and incidental fauna records were recorded throughout 2018-19 surveys.

Table 3. Fauna survey techniques and total survey effort.

| Survey technique | Significant species or groups targeted, or with potential to be detected using the technique | Sites | Total survey effort |
|--|--|--|--|
| Habitat assessments and incidental observations of fauna | Growling Grass Frog and Strzelecki Gum recorded | Within the study area | Seven separate survey bouts undertaken or scheduled for 2018-19 survey period |
| Spotlighting – Owls and arboreal mammals | Potential: Significant bird and mammal species listed in Appendix 2.2 | Spotlighting transects undertaken within the study area | Four nights of spotlighting (November 2018) Three additional nights of spotlighting (late October – early November 2019) targeting Powerful Owl and Sooty Owl |
| Nocturnal call playback | Powerful Owl, Barking Owl, Sooty Owl, Masked Owl | Call playback occurred at beginning of spotlighting transects within the study area | Four nights of call playback (November 2018) Three additional nights of spotlighting (late October – early November 2019) |
| Bat detectors | Common Bent-wing Bat | 4 sites at selected native vegetation remnants (three within and one outside the study area) | Bat detectors are currently deployed for a minimum of 28 days (October – November 2019) |
| Cameras - motion detecting cameras to ascertain ground-dwelling mammal activity | Significant mammal species listed in Appendix 2.2. | 5 sites at selected native vegetation remnants within the study area (November 2018) 12 sites total, 11 selected within the study area and one just south of the study area (October – November 2019) | Four nights of motion detecting camera surveys (November 2018) Cameras are currently deployed for a minimum of 28 days (October – November 2019) |

| Survey technique | Significant species or groups targeted, or with potential to be detected using the technique | Sites | Total survey effort |
|--------------------------------------|--|---|---|
| Targeted Growling Grass Frog surveys | Growling Grass Frog | <p>13 sites at selected waterbodies. All areas of suitable habitat within the study area were assessed during the day.</p> <p>Additional surveys to be conducted at Luxford Pond and other current wetlands not previously surveyed within the study area (that have available habitat)</p> | <p>Four nights of call playback and spotlighting (November 2018).</p> <p>An additional two nights of surveys will be conducted in late October – early November 2019.</p> |

2.6.1 Targeted Growling Grass Frog Surveys

Nocturnal surveys for frogs were conducted over four nights in Spring 2018, when Growling Grass Frog is most active. Other species of frogs were also detected. Additional Growling Grass Frog surveys are scheduled for late October – November 2019 at Luxford Pond and other current wetlands within the study area, that were not previously assessed in 2018.

Targeted surveys for the nationally significant Growling Grass Frog were undertaken over four nights in November 2018 and will be surveyed again for at least two nights in October – November 2019, during the species' active calling period (spring - summer).

The survey was conducted with reference to the prescribed methodology detailed in the following guidelines:

- *Significant Impact Guidelines for the Vulnerable Growling Grass Frog (Litoria raniformis) EPBC Act Policy Statement 3.14* (DEWHA 2009);
- *Survey Guidelines for Australia's Threatened Frogs* (DEWHA 2010); and,
- *Biodiversity Precinct Structure Planning Kit* (DSE 2010).

A total of 13 sites were impacted across the study area including wetlands and creek lines which would provide suitable habitat for this species. Survey methodology is outlined below:

- Nocturnal surveys (spotlighting, active searching, call play-back) was undertaken by two qualified zoologists visiting each site on three occasions, targeting both adults and metamorphs;
- Nocturnal surveys were conducted on still nights when air temperatures were above 15°C, and within 24 hours of rain;
- An initial period of five minutes was spent recording any calling frogs (all species) in and adjacent to wetlands;
- The advertisement call was broadcast to elicit a response from any adult males present;

- Experienced personnel used “Olight” LED hand-held spotlights (up to 1020 lumens/8.4 volts) to locate any calling males on floating vegetation in the waterbody and around the perimeter of wetlands; and,
- Surveyors actively searched ground-level habitat including surface rocks, underneath hard litter, and at the base of vegetation for frogs.

2.6.2 Incidental observations of Growling Grass Frog

Growling Grass Frogs were heard calling during the day at two wetland locations at and north of Luxford Pond between 2 – 4 October 2019 (Figure 2I). No individuals were sighted, however based on calling frequency and volume, a high density of Growling Grass Frogs were present and using the habitat for breeding.

2.6.3 Ground-dwelling Mammals

Daytime searches for the presence of potentially suitable habitat resources for nests or burrows such as, boulders, crevices in the ground or between rocks, as well as signs of the species’ presence such as tracks, nests, burrows or scats were undertaken.

Surveys for ground-dwelling mammals were implemented using motion detecting cameras, which is one of the most effective methods of detecting species at low or moderate densities (Vine *et al.* 2009). Initial surveys were undertaken across four consecutive nights in late Spring 2018 to determine mammal activity at a variety of native forest fragments within the study area. Cameras were positioned within suitable habitat with the focal points aimed at bait stations containing a mix of peanut butter, rolled oats and honey.

Motion detecting cameras were deployed again from early October 2019 for a minimum of 28 days, to target significant species such as the Southern Brown Bandicoot *Isodon obesulus*, which may be present in the study area (DSEWPC 2001).

2.6.4 Arboreal Mammals

Targeted surveys for arboreal mammals (i.e. Greater Glider *Petauroides Volans*) were undertaken in accordance with the *Survey guidelines for Australia’s threatened mammals* (DSE 2011).

Koala *Phascolarctos cinereus*, which have public presence but are not significant species, were also targeted during spotlighting surveys.

Spotlighting was undertaken over four nights (12, 13, 14, 15 November 2018) by qualified zoologists along road transects through areas of suitable habitat within the study area. Surveys were conducted well after dark, as Greater Gliders may not emerge from their hollows as early as some other species. Stag watching, to identify arboreal mammals emerging from tree stag hollows at dusk, was also conducted at selected road transects.

Zoologists used “Olight” LED hand-held spotlights (up to 1020 lumens/8.4 volts) and traversed the spotlighting transects on foot to increase the detection of animals in closed or thick vegetation. As well as direct observation other signs of habitation were also noted, such as scratch marks on tree trunks or around hollows, audible calls or scats on the ground.

2.7 Assessment Qualifications and Limitations

Data and information held within the ecological databases and mapping programs reviewed in the desktop assessment (e.g. VBA, PMST, Biodiversity Interactive Maps etc.) are unlikely to represent all flora and fauna observations within, and surrounding, the study area. It is therefore important to acknowledge that a lack of documented records does not necessarily indicate that a species or community is absent.

Due to the large scale of the study area, only native vegetation and habitat within or adjacent to the impact area was surveyed. Therefore, if the impact area is adjusted additional vegetation surveys, and if required, targeted significant species surveys will be undertaken.

Flora and fauna surveys were undertaken during the optimal flowering/breeding period for all targeted species to maximise the probability of detecting each species. Given that all areas of suitable habitat for significant flora and fauna species were extensively surveyed over multiple years, it is considered that sufficient effort has been employed to determine the likelihood of each target species occurring onsite, and to accurately characterise the flora and fauna values that occur on-site.

The motion detecting cameras were deployed for four consecutive nights in November 2018. This was to gather baseline, supplementary data on ground dwelling mammal species present in or adjacent to the impact area. The purpose of deploying cameras was to gather baseline data, with the intention of further targeted surveys. Targeted camera surveys are scheduled for Winter 2019 and will be deployed for a minimum of 14 nights of detection according to the Survey Guidelines for Australia's threatened mammals (DoSEWPC 2011).

Bird utilisation surveys were undertaken at eight point-count locations (sites); six sites at the study area and two sites within two kilometres of the study area boundary. Sites were chosen to be representative of the habitat types present in the study area, as well as the wider locality. To account for the limited number of survey locations, each site was surveyed eight times to increase the likelihood of counting and identifying the majority of bird species that use or fly-over the study area.

Ecological features identified on site were recorded using a hand-held GPS or tablet with an accuracy of +/- 5 metres. This level of accuracy is considered adequate to provide an accurate assessment of the ecological features present within the study area.

Fauna surveys were conducted under the Ecology and Heritage Partners Pty Ltd research permit (10008283) issued by DELWP under the *Wildlife Act 1975*.

Overall it is considered that the terrestrial flora and fauna data collected during the field assessment, habitat assessments, and information obtained from relevant sources (e.g. biological databases and relevant literature) provides an accurate assessment of the fauna species and habitat values within the study area. However, due to the cryptic nature of many of the target species surveyed for, the precautionary principle has been applied when determining the likelihood of occurrence.

3 RESULTS

The following description of the existing environment is based on the landscape, vegetation, fauna habitats and species identified from the desktop assessment and within the study area during the field surveys.

3.1 Overview

The study area comprises a mixture of HVP pine plantations and remnant native vegetation in the form of forest fragments, road reserves and large trees. Extensive land clearing has occurred surrounding the study area, mainly for conversion to grazing land and other agricultural purposes. Despite the fragmented nature of remnant native vegetation, the study area provides important habitat for an array of species, including the nationally listed Strzelecki Gum *Eucalyptus Strzelecki* and Growling Grass Frog *Litoria raniformis*. Native vegetation considered to be of national conservation significance is directly adjacent to the study area; specifically, the Darlimurla Forest Block provides 340 hectares of high-quality habitat at the south-east boundary (Biosis 1998) (Figure 2).

3.2 Flora and Fauna Species

3.2.1 Flora

Surveys of the study area, including the initial vegetation assessment and the targeted surveys recorded 57 species of flora, including 47 native species and 10 introduced species (Appendix 1.2). Planted trees and shrubs were not recorded unless they were seen to be naturally spreading on site.

3.2.2 Fauna

A total of 77 species of fauna (comprising 70 native species and 7 introduced species) were recorded during the ecological assessment and targeted surveys (Appendix 2.1; Appendix 2.2). A range of bird species were detected, including woodland and wetland birds, along with those tolerant of open and/or modified landscapes. A diversity of mammals were detected, including microbats, arboreal and small ground-dwelling species and macropods. The nationally significant Growling Grass Frog was detected as well as common frog species within dams, wetlands and soaks across the study area (Table 4).

Table 4. Summary of fauna species identified within the study area

| Fauna Guild | Species Richness | |
|--------------------|------------------|------------|
| | Native | Introduced |
| Birds | 55 | 3 |
| Mammals (non-bats) | 8 | 4 |
| Mammals (bats) | 1 | - |
| Frogs | 6 | - |
| Reptiles | - | - |
| Total | 70 | 7 |

3.3 Vegetation Assessment

Two modelled bioregions intersect the study area: Gippsland Plain and Strzelecki Ranges. Following, native vegetation assessments, there is justification to categorise all EVCs according to the Strzelecki Ranges. A defining characteristic of the Strzelecki Ranges bioregion is that the locality is within the Strzelecki Ranges themselves. The geography of the study area consists of moderate to steep slopes with sandstone, siltstone, shales and swampy alluvial fans in the depressions. The mapped native vegetation includes Damp Forest and Lowland Forest, which are dominant EVCs for this bioregion. In contrast, the Gippsland Plain is comprised of flat low lying coastal and alluvial plains with undulating terrain which is not representative of the study area. The following mapped EVCs are characterised according to the Strzelecki Ranges bioregion (Table 5).

3.3.1 Remnant Vegetation

The flora surveys mapped native vegetation representative of seven EVCs of the Strzelecki bioregion, including Aquatic Herbland (EVC 653), Damp Forest (EVC 29), Herb-rich Foothill Forest (EVC 23), Lowland Forest (EVC 16), Swamp Scrub (EVC 53), Swampy Woodland (EVC 937) and Tall Marsh (EVC 821).

This assessment is broadly consistent with (Pre-1750s) DELWP modelled EVCs for the locality, with four modelled EVCs aligning with vegetation mapping: Damp Forest, Herb-rich Foothill Forest, Lowland Forest, Swamp Scrub (Figure 2).

A total of 240.19 hectares of mapped native vegetation (excluding scattered trees) was mapped within the study area. In addition, 46.96 hectares of modelled Current Wetland is also within the study area. Specific details relating to mapped EVCs identified in or adjacent to the impact area during 2018-19 surveys and their Biodiversity Conservation Status (BCS) are provided below, with a summary of the extent of each vegetation type provided in Table 5.

Table 5 Extent of mapped vegetation type (EVC) and BCS within the surveyed area

| Bioregion | EVC | BCS | Mapped Area (ha) |
|-------------------|------------------------------------|---------------|------------------|
| Strzelecki Ranges | Aquatic Herbland (EVC 653) | Not specified | 0.69 |
| | Damp Forest (EVC 29) | Endangered | 65.27 |
| | Herb-rich Foothill Forest (EVC 23) | Endangered | 115.45 |
| | Lowland Forest (EVC 16) | Vulnerable | 44.34 |
| | Swamp Scrub (EVC 53) | Endangered | 0.11 |
| | Swampy Woodland (EVC 937) | Endangered | 13.58 |
| | Tall Marsh (EVC 821) | Not specified | 0.75 |

Aquatic Herbland

Aquatic Herbland is typically a permanent to semi-permanent wetland dominated by submerged or floating to emergent aquatic herbs and sedges (Oates and Taranto 2001). It generally occurs within continuously inundated wetlands and floodplains where creeks and rivers broaden and decrease in flow (Oates and Taranto 2001).

Aquatic Herbland is present within some permanent waterbodies (farm dams) in the study area, with most patches dominated by one of, or a combination of Tall Spike-sedge *Eleocharis sphacelata*, Common Reed

Phragmites australis or Rush *Juncus* spp. Although these wetlands have previously been modified and do not constitute natural wetlands, they support a range of indigenous aquatic herbs, sedges and rushes with eucalypts often along the fringes.

Tall aquatic species present in low densities, included Tall Rush *Juncus procerus*. Submerged and floating aquatic species include Ferny Azolla *Azolla pinnata*, Round Water-starwort *Callitriche muelleri* and Slender Knotweed *Persicaria decipiens*. Species present along the fringes of the waterbodies include Common Spike-sedge *Eleocharis acuta*, Swamp Club-sedge *Isolepis inundata* and Billabong Rush *Juncus usitatus* (Plate 1; Plate 2).



Plate 1. Aquatic Herbland within the study area (Ecology and Heritage Partners Pty Ltd 22/03/2019).



Plate 2. *Juncus* sp. within the study area (Ecology and Heritage Partners Pty Ltd 22/03/2019).

Damp Forest

Damp Forest grows on a wide range of geologies on well-developed generally colluvial soils on a variety of aspects, from sea level to montane elevations. Dominated by a tall eucalypt tree layer to 30m tall over a medium to tall dense shrub layer of broad-leaved species typical of wet forest mixed with elements from dry forest types. The ground layer includes herbs and grasses as well as a variety of moisture-dependent ferns (DELWP 2019c).

Canopy trees observed included Swamp Gum *Eucalyptus ovata* and Mountain Grey Gum *Eucalyptus cypellocarpa* along with midstorey species such as Blackwood *Acacia melanoxylon*, Prickly Moses *Acacia verticillata* and Blanket Leaf *Bedfordia aberescens*. Patches composed of only understorey species were typically dominated by Bracken *Pteridium esculentum*, Common Bulrush *Typha domingensis* and Common Reed *Phragmites australis* (Plate 3 and 4).



Plate 3. Damp Forest within the study area (Ecology and Heritage Partners Pty Ltd 21/03/2019).



Plate 4. Damp Forest within the study area (Ecology and Heritage Partners Pty Ltd 21/03/2019).

Herb-rich Foothill Forest

Herb-rich Foothill Forest is typically an open forest with an understorey supporting shrubs and bracken with a diversity of grasses and herbs (Oates and Taranto 2001). The overstorey is typically dominated by Messmate Stringybark *Eucalyptus obliqua* and Narrow-leaf Peppermint *Eucalyptus radiata*, however several other eucalypt species can also occur (Oates and Taranto 2001). It generally occurs on relatively fertile, well-drained soils in foothill areas with moderate rainfall (Oates and Taranto 2001).

Herb-rich Foothill Forest is the dominant EVC within the study area and generally occurs south of the ridge line on the south-facing slopes (Figure 2). Although Messmate Stringybark and Narrow-leaf Peppermint are present, the dominant overstorey species is Mountain Grey-gum *Eucalyptus cypellocarpa*. The understorey component ranges from dominance by shrubs, herbs and native grasses to introduced pasture grasses.

Typical native species present in the understory include Austral Bracken *Pteridium esculentum*, Hop Goodenia *ovata*, Prickly Moses *Acacia verticillata*, Weeping Grass *Microlaena stipoides* var. *stipoides*, Wattle Mat Rush *Lomandra filiformis*, Common Heath *Epacris impressa*, Thatch Saw-sedge *Gahnia radula*, and Dusty Miller *Spyridium parvifolium*.



Plate 5. Herb-rich Foothills Forest within the study area (Ecology and Heritage Partners Pty Ltd 22/03/2019).



Plate 6. Herb-rich Foothills Forest within the study area (Ecology and Heritage Partners Pty Ltd 14/11/2018).

Lowland Forest

Lowland Forest is typically an open forest dominated by Messmate Stringybark and Narrow-leaf Peppermint with an understorey of shrubby ericoid species, saw-sedges and wire-grasses (Oates and Taranto 2001). It generally occurs within lowland plains and lower foothill slopes on moderately fertile soils (Oates and Taranto 2001).

Lowland Forest generally occurs within the drier areas on north and east-facing slopes within the far eastern and far western portion of the study area (Figure 2). It is generally dominated by Messmate Stringybark, Narrow-leaf Peppermint and Silverleaf Stringybark, however Lowland Forest areas also support Mountain Grey-gum and Manna Gum *Eucalyptus viminalis* subsp. *viminalis* (Plate 7; Plate 8). In most cases, areas containing Lowland Forest vegetation are contiguous with remnant vegetation in adjoining properties to the east and west of the study area (Figure 2).

The understorey within Lowland Forest mapped within the study area is generally of high quality, supporting a high cover of indigenous shrubs, sedges, herbs and grasses including Blackwood Wattle *Acacia melanoxylon*, Prickly Tea-tree *Leptospermum continentale*, Trailing Ground-berry *Acrotriche prostrata*, Tall Sundew *Drosera auriculata*, Common Raspwort *Gonocarpus tetragynus*, Shining Pennywort *Hydrocotyle sibthorpiodes*, Common Heath *Epacris impressa*, and Weeping Grass.



Plate 7. Lowland Forest within the study area (Ecology and Heritage Partners Pty Ltd 22/03/2019).



Plate 8. Lowland within the study area (Ecology and Heritage Partners Pty Ltd 13/11/2018).

Swamp Scrub

Swamp Scrub typically occurs at low elevations along nutrient rich streams or on poorly drained sites. It is generally dominated by thickets of Swamp Paperbark *Melaleuca ericifolia* which out-compete other species. Ground cover often consists of herbaceous species and moss/lichen/liverworts. Swamp Scrub occurs as small pockets in gullies and natural depressions within the study area.

Swampy Woodland

Swampy Woodland generally occupies streambanks within the foothills and plains, and typically comprised of a combination of shrubs and tussock grasses underneath a eucalypt canopy (DELWP 2019c).

Swampy Riparian Woodland is located throughout the impact area in association with creek lines (Figure 2). A total of five habitat zones are present, with most zones supporting a Swamp Gum *Eucalyptus ovata* overstorey, with Woolly Tea-tree and Prickly Tea-tree dominating the shrub layer. Tussock grasses and other graminoids were typically absent from this EVC (Plate 9; Plate 10).



Plate 9. Swampy Woodland within the study area (Ecology and Heritage Partners Pty Ltd 22/03/2019).



Plate 10. Swampy Woodland within the study area (Ecology and Heritage Partners Pty Ltd 21/03/2019).

Tall Marsh

Tall Marsh (EVC 821) occurs primarily on estuarine sands, peaty soils and silty clays in areas with an average rainfall of approximately 600mm. Occurring close to open grasslands, Tall Marsh is generally dominated by Common Reed *Phragmites australis* and Cumbungi *Typha* spp.

Small patches of native vegetation identified as Tall Marsh were identified across the study area in both the northern and southern sections (Plate 11; Plate 12).



Plate 11. Tall Marsh within the study area (Ecology and Heritage Partners Pty Ltd 22/03/2019).



Plate 12. Tall Marsh within the study area (Ecology and Heritage Partners Pty Ltd 22/03/2019).

3.3.2 Large Trees and Scattered Trees

373 large trees in patches were recorded in or adjacent to the impact area (A.1.3). However, when the buffer is reduced to within 17 metres of the impact area, the number of large trees impacted is reduced to 24 large trees. Species included *Eucalyptus cypellocarpa*, *Eucalyptus obliqua* and *Eucalyptus viminalis*.

54 large scattered trees and 39 small scattered trees (not including Strzelecki Gums) were recorded in or adjacent to the impact area. In addition, 14 large scattered Strzelecki Gum trees were identified (Plate 13).

However, when the buffer is reduced to within 17 metres either side of the impact area, the number is reduced to nine large scattered trees and one small scattered tree (not including Strzelecki Gums). In addition, four large scattered Strzelecki Gum trees are likely to be impacted.

This buffer is applied to account for the indirect loss of trees, if >10% of the tree protection zone is impacted. However, the buffer width and subsequent area of impacted vegetation will be revised in consultation with DELWP, once the impact area is finalised.

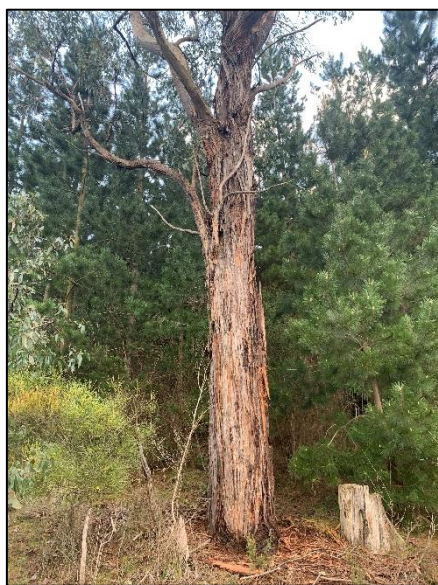


Plate 13. Strzelecki Gum scattered tree (Ecology and Heritage Partners Pty Ltd 06/08/2019).



Plate 14. Large tree within patch in study area (Ecology and Heritage Partners Pty Ltd 22/03/2019).

3.4 Avifauna and Bat Assessments

3.4.1 Fixed Point Bird Counts

Fifty-five (55) native species of birds were recorded, consisting of 1,285 individual animals, during the 64 fixed-point bird counts and incidental surveys, to date.

Four bird species were recorded 50% or more of the time during the survey period: (Australian Magpie *Gymnorhina tibicen* 78%; Crimson Rosella *Platycercus elegans* 97%; Superb Lyrebird *Menura novaehollandiae* 59% and Yellow-tailed Black Cockatoo *Calyptorhynchus funereus* 67%). All of these species are common birds of agricultural environments in southern Victoria.

64% (289 of 449) of bird observations made during the point counts were of individuals that were either on the ground or flying at or below 20 metres, and therefore unlikely to be within the Turbine Rotor Swept Area. The majority of birds seen above 20 metres were flying directly through the survey area and included Yellow-tailed Black Cockatoo, Laughing Kookaburra and Little or Australian Raven. Of Yellow-tailed Black Cockatoo, 48% of records were observed above 20 metres from ground level as they moved across the landscape. All species observed above 20 metres are common birds of agricultural environments (i.e. modified habitats) in southern Victoria. The criteria to assess the likelihood and consequence of risk will

refer to DELWP's: https://www.planning.vic.gov.au/__data/assets/pdf_file/0021/435261/Summary-of-ARI-report-species-of-concern-for-wind-farm-developments.pdf

No significant species were observed during the fixed-point count surveys.

3.4.2 Bat Utilisation

Bat detectors, using Songmeters were deployed 2-4 October 2019 for a minimum of 28 days. A range of microbats are likely to forage for insects around the trees and roost within hollows and fissures, while hollows are also likely to be used by arboreal mammals and nocturnal raptors. The Grey-headed Flying Fox is also likely to use the study area and fixed-point bird count surveys in October – November 2019 will provide an estimate of population abundance.

3.4.3 Owl Surveys

Targeted surveys for Powerful Owl, Masked Owl, Barking Owl and Sooty Owl were conducted across two separate survey periods for a total of six nights in 2018 (Table 3) using call playback and spotlighting techniques. Survey sites were selected based on the availability of large tree hollows within forested areas or along existing tracks. Only Southern Boobook Owl *Ninox boobook* was recorded calling on multiple nights.

Repeat Powerful Owl surveys are scheduled for October – November 2019 at sites within the study area, containing remnant vegetation and/or hollow-bearing trees.

3.4.4 Species of Public Interest

Yellow-tailed Black Cockatoo

The Yellow-tailed Black Cockatoo is a species of public interest due to its charismatic nature and presence, however it is not a significant species. Yellow-tailed Black Cockatoo was recorded frequently in flocks of up to 50 birds within the study area during bird utilisation surveys and via incidental records (Table 3) (A.2.1.1). This species is often found foraging in pine plantations and also likely utilises the available native vegetation and large trees for roosting and nesting. This species will be analysed separately following the second and final Spring Bird Utilisation survey, to determine what the likely impact of turbine strike may be on the species.

Diurnal Birds of Prey

Wedge-tailed Eagle *Aquila audax* and White-bellied Sea-eagle *Haliaeetus leucogaster* are species of public interest due to reported presence in the Strzelecki Ranges, however they are not significant species. No raptors were observed during bird utilisation surveys or incidental surveys in 2018 – 19. However, raptor species including Wedge-tail Eagle and White-bellied Sea-eagle have been previously recorded using the study area (Atlas of living Australia 1988 record) and within 20 kilometres of the study area (A.2.1).

Birds of prey are at risk from wind turbines due to their behaviour of flying at considerable height and looking down at the ground for prey, making them more likely than other birds to be struck by a wind turbine blade. These species will be analysed separately following the second and final Spring Bird Utilisation survey, to determine what the likely impact of turbine strike may be on these species and how to mitigate those impacts during the wind farm design phase.

Nocturnal Birds of Prey

Powerful Owl, while not recorded during 2018-19 surveys, are known to occur in the study area (Willig and Atkins 2016 and 2017; DSE 2013). While Powerful Owl are not a significant species, they are a species of public interest. However, the proposed wind farm is not considered to have a significant impact on the local population. Annual monitoring of the species (Willig and Atkins 2016 and 2017) should continue during the planning stages of the proposed wind farm, in order to avoid as much known or potential habitat (e.g. hollow bearing trees) as possible.

3.5 Terrestrial Fauna Surveys

3.5.1 Targeted Frog Surveys

Two Growling Grass Frogs were observed during nocturnal surveys on the 14 November 2018 near a small pool/creek line in the centre of the study area (Plate 15) (Figure 2j - 2m). They were recorded on either side of an existing dirt track, on the grassy banks of a small pool with fringing vegetation, following call playback and spotlighting targeted nocturnal surveys. Weather conditions on the night of detection were relatively clear skies, with an ambient air temperature of 20.3 degrees Celsius, Wind (25.9 kph) and Relative Humidity (55%) and no rainfall.

A large population of Growling Grass Frog was incidentally heard calling in early October 2019 at two sites in Luxford Pond (Figure 2l).

Other common species were recorded at various survey locations (e.g. wetlands, depressions, dams, creek lines) in the study area during 12 – 15 November 2018, including Common Froglet *Crinia signifera*, Striped Marsh Frog *Limnodynastes peronii*, Peron's Tree Frog *Litoria peronii* and Eastern Banjo Frog *Limnodynastes dumerilii* (Plate 16).



Plate 15. Growling Grass Frog within the study area (Ecology and Heritage Partners Pty Ltd 14/11/2018).



Plate 16. Eastern Banjo Frog within the study area (Ecology and Heritage Partners Pty Ltd 15/11/2018).

3.5.2 Ground-dwelling and Arboreal Mammals

Incidental records of common bird and mammal species were recorded during field assessments (A.2.1.1). Species included Swamp Wallaby *Wallabia bicolor*, Short-beaked Echidna *Tachyglossus aculeatus* and Crimson Rosella *Platycercus elegans*. Camera trapping during November 2018 (Table 3) recorded a variety of common ground-dwelling species including Common Wombat *Vombatus ursinus* and Common Brushtail

Possum *Trichosurus vulpecula*. Spotlighting during July and November 2018 (Table 3) detected several common arboreal mammals, including Sugar Glider *Petaurus breviceps* and Common Brushtail Possum. No Greater Glider were detected.

3.5.3 Species of Public Interest

Koala

Although Koala *Phascolarctos cinereus* is a species of public interest due to its known presence in the Strzelecki Ranges, it is not a significant species listed under Commonwealth or State legislation or identified under the advisory list of rare and threatened species in Victoria (DSE 2013).

Koala was observed in remnant forest patches within the study area during nocturnal spotlighting surveys. It was also heard bellowing during nocturnal surveys (Table 3) (A.2.1.1). It is not expected that the proposed wind farm will have a significant impact on local Koala populations, as the area of native vegetation proposed to be removed is mostly limited to existing tracks or cleared areas (i.e. pine plantations) and does not intersect any larger forest patches. The *National Koala Conservation and Management Strategy 2009 – 2014* (DEWHA 2009) should be referred to during the final planning stages of the proposed wind farm.

Aquatic Fauna Habitat

Natural creek lines and pools exist throughout the study area. Artificial wetlands are also present and have been created by either being dug out or by damming a section of the catchment. The majority of dams provide moderate to high quality habitat to a diversity of aquatic fauna. Commonly observed species utilising aquatic habitat included Purple Swampphen *Porphyrio porphyrio*, Dusky Moorhen *Gallinula tenebrosa*, Eurasian Coot *Fulica atra*, White-necked Heron *Ardea pacifica*, Eastern Great Egret *Ardea modesta* and White-faced Heron *Egretta novaehollandiae*.

All artificial dams within and adjacent to the study area characterised by good aquatic habitat features (i.e. aquatic vegetation and good water quality), exhibited limited or unclear connectivity to downstream receiving waterways (i.e. likely limited aquatic fauna passage opportunities). These sites all had the potential to support aquatic fauna such as fish, amphibians and macroinvertebrates; however, their general lack of obvious connectivity to other aquatic habitats reduces the likelihood that they support significant aquatic biota features.

The Morwell River runs north-south to the east of the study area and a number of wetlands, formed from natural depressions are present within and surrounding the study area.

3.5.4 Habitat Connectivity

Adjoining the eastern boundary of the study area is approximately 320 hectares of remnant vegetation, referred to as the Darlimurla Forest Block. Sayers Trig Bushland Reserve (north), Mirboo North Regional Park and Mount Worth State Park (west) are also directly adjacent to the study area and allow the connectivity of native vegetation and dispersal corridors for fauna. While the native vegetation within the study area is patchy, much of it is connected to riparian corridors or the surrounding vegetation within reserves or regional/state parks bordering the study area.

Riparian habitat acts as important dispersal corridors for native flora and fauna. The Morwell River to the east connects with Stony Creek which passes through the study area. Such connectivity is important in a landscape that has largely been cleared for agricultural purposes. Wildlife corridors and 'stepping stones' of vegetation have numerous benefits to native flora and fauna populations, particularly in modified

landscapes where much of the surrounding vegetation is restricted to linear strips along roadsides. Some of the key benefits of habitat patches and wildlife corridors associated with the maintenance of biodiversity on a local and landscape level include:

- Protection and ongoing maintenance of ecosystem functionality through the reduction of threatening processes (erosion, weed spread, hydrological alterations);
- Protection for populations of threatened species, or disturbance sensitive species (e.g. orchids) that may have been lost from the surrounding landscape;
- Provision of habitat (refuge, shelter, breeding opportunities) for a range of fauna either residing within corridors, or moving through the landscape;
- Maintenance of species richness and diversity;
- A source of seed dispersal for flora species sensitive to moderate levels of disturbance;
- Immigration of animals to supplement declining populations, thus reducing the likelihood of local extinctions;
- Availability of habitat for reintroduction following extinction events;
- Prevent demographic changes occurring in populations that may result from prolonged isolation from other populations of the same species by aiding gene flow, thus enhancement of genetic variation and prevention of inbreeding; and,
- Facilitating fauna movement through modified landscapes to more optimal habitats.

3.6 Nationally Significant Values

Matters of National Environmental Significance (NES) are listed and protected under the EPBC Act. Matters of NES relating to biodiversity are discussed below in relation to the project based on the results of the PMST (DoEE 2018), desktop review of literature, and the results of field surveys.

3.6.1 Flora

The VBA contains records of four nationally significant species and 35 state significant flora species previously recorded within 10 kilometres of the study area (DELWP 2018a) (Appendix 1.3). The majority of these species are located in areas of relatively high quality, undisturbed habitat (i.e. Morwell National Park) or waterways and roadsides (Figure 4). The PMST nominated an additional five nationally significant species which have not been recorded in the locality but have the potential to occur (DoEE 2018; Appendix 1.3).

Of the nine nationally significant flora species that are known to, or are predicted to occur within the locality, two were considered to have a moderate or higher likelihood of occurrence within the study area (Appendix 1.3; Table 8).

Table 4. Nationally significant flora with suitable habitat in the study area

| Species | Suitable habitat within the study area | Survey Timing | Closest known records |
|--|---|--------------------|---|
| Strzelecki Gum <i>Eucalyptus strzeleckii</i> | Recorded along watercourses and wetter areas of Swampy Woodland and Herb-rich Foothill Forest (EHP 2018-19). A large number of records are located along roadsides and watercourses in the centre of the study area (Figure 2). | All Year | Within study area. |
| Matted Flax-lily <i>Dianella amoena</i> | Not recorded in the study area during the current surveys, although has the potential to occur in areas support native vegetation (e.g. along roadside vegetation). | November - January | East of study area adjacent to Morwell River (2012 record) (Figure 3) |

One nationally significant flora species, Strzelecki Gum *Eucalyptus strzeleckii*, was recorded within the central locality of the study area (Figure 2h, 2j and 2l). The species is associated with Swampy Woodland and Herb-rich Foothill Forest mapped native vegetation.

3.6.2 Fauna

The VBA contains records of 6 nationally significant, 32 state significant and 9 regionally significant fauna species previously recorded within 10 kilometres of the study area, (DELWP 2018a) (Appendix 2.3). The PMST nominated an additional 11 nationally significant species which have not been previously recorded but have the potential to occur in the locality (DoEE 2018). The majority of these species are located in areas of relatively high quality, undisturbed habitat (i.e. Morwell National Park and Mirboo North Regional Park) or waterways and roadsides (Figure 4).

Of the 17 nationally significant fauna species that are known to, or are predicted to occur within the locality, three species are considered to have a moderate or higher likelihood of occurrence within the study area (Appendix 2.2; Table 9).

One nationally significant fauna species (Growling Grass Frog *Litoria raniformis*) was recorded within the study area during the targeted surveys (Figure 2j and 2l). This species is listed as vulnerable under the Commonwealth EPBC Act, threatened under the Victorian FFG Act and vulnerable on the Victorian Advisory List (DSE 2013). The species was recorded using grassy habitat surrounding a small pool within Swampy Woodland adjacent to Clarks Rd (Figure 2j).

Targeted surveys for Dwarf Galaxias *Galaxiella pusilla* were not undertaken since the species is considered to have a low likelihood of occurrence based on the lack of available habitat and previous VBA records (DELWP 2018). While the proposed impact will involve the removal of some native vegetation along existing tracks, it is unlikely to significantly impact or disturb creeklines, swamps or riparian areas. Targeted surveys for Greater Glider were not undertaken based on their moderate-low likelihood of occurrence and the lack of detection during spotlighting surveys conducted in November 2018 (Table 3).

Southern Brown Bandicoot *Isodon obesulus* have been previously recorded in the study area, with the most recent record in 1978 occurring within five kilometres of the study area. The species is considered to have a low likelihood of occurring in the study area based on the time since last record and the lack of highly suitable habitat for the species.

The likelihood of any additional nationally significant fauna occurring within or adjacent to the impact area is considered low due to the absence of suitable habitat and/or lack of records in close proximity (Appendix 2.2; Table 9).

Table 5. Nationally significant fauna with suitable habitat in the study area

| Species | Suitable habitat within the study area | Closest known records |
|--|---|--|
| Growing Grass Frog <i>Litoria raniformis</i> | The species was recorded at a pool in the centre of the study area, just south of Clarks Road (Figure 2j). Surveys were undertaken in all wetland habitats (Figure 2). Growing Grass Frog are known in the locality (DELWP 2018) (Figure 4). | Within study area |
| Greater Glider <i>Petauroides volans</i> | The species was previously recorded directly adjacent to the study area (2007) along the eastern boundary. Greater Glider were also observed in 1998 at the Darlimurla Forest Block (Biosis 1998). However, the species is not common within the Gippsland Plain and requires large hollows to nest and den (Menkhorst 1995). While stands of large trees with hollows are present throughout the study area, most are part of road reserves and therefore do not provide large patches, undisturbed habitat for the species. Spotlighting surveys by Ecology and Heritage Partners (2018) did not detect Greater Glider within the study area. Follow up spotlighting surveys will be conducted October – November 2019. | 300 metres east of the study area |
| Dwarf Galaxias <i>Galaxiella pusilla</i> | The species has not previously been recorded within the study area. There is one record approximately 14km north-east of the study area (2012). | 14 kilometres north-east of the study area |

Migratory Species

Migratory species listed under the EPBC Act are those protected under international agreements to which Australia is a signatory. These include the Japan Australia Migratory Bird Agreement (JAMBA), the China Australia Migratory Bird Agreement (CAMBA), the Republic of Korea Migratory Bird Agreement (ROKAMBA), and the Bonn Convention on the Conservation of Migratory Species of Wild Animals. Migratory species are considered matters of NES under the EPBC Act.

One species of bird recognised under the migratory provisions of the EPBC Act, the Eastern Curlew, was identified as having the potential to occur within the study area under the PMST list (DoEE 2018). However, there is limited suitable wetland habitat within the study area and the species is considered to unlikely to occur.

While migratory bird species may occasionally inhabit the study area and locality, the study area is not considered to be classed as an 'important habitat' as defined under the EPBC Act Policy Statement 1.1 Principal Significant Survey Guidelines (DoE 2013), in that it does not contain:

- Habitat utilised by a migratory species occasionally or periodically within a region that supports an ecologically significant proportion of the population of the species;
- Habitat utilised by a migratory species which is at the limit of the species range; or,
- Habitat within an area where the species is declining.

3.6.3 Communities

One nationally listed ecological community Gippsland Red Gum (*Eucalyptus tereticornis* subsp. *mediana*) Grassy Woodland and Associated Native Grassland is modelled to occur within the locality of the study area (DoEE 2018). However, due to the absence of Gippsland Red Gum and other key indicator species, as well as a moderate-high weed cover, the native vegetation within and adjacent to the impact area did not meet

the condition thresholds that define this community, and therefore this listed ecological community does not occur within the study area.

3.6.4 Other Matters of NES

The study area does not support any other features corresponding with matters of NES protected under the EPBC Act (e.g. World or National Heritage Areas) (DoEE 2018). The closest Ramsar wetland is the Westernport Ramsar site approximately 20 kilometres west of the study area.

3.7 State Significant Values

State significant Biodiversity matters present within the study area that are considered of significance to the State of Victoria are outlined below.

3.7.1 Flora

The VBA contains records of 35 State-significant flora species within 20 kilometres of the study area (DELWP 2018a) (Appendix 1.3; Figure 3). The majority of these species are located in areas of relatively high quality, undisturbed habitat (i.e. Morwell National Park) or waterways and roadsides (Figure 4). There is considered to be suitable habitat within the study area for 16 species.

No State significant flora species were recorded within the study area during the targeted surveys. Based on the results of the targeted survey, habitat assessments and landscape context, the remaining state significant fauna species previously recorded, or considered as having potential habitat within the project locality have been assessed as having a low likelihood of occurrence within the study area. This determination is based on the absence of suitable habitats and the results of the targeted surveys conducted over multiple years.

3.7.2 Fauna

The VBA contains records of 32 State significant fauna species previously recorded within 20 kilometres of the study area (DELWP 2018a) (Figure 4; Appendix 2.2). The majority of these species are located in areas of high quality, undisturbed habitat (i.e. Morwell National Park and Mirboo North Regional Park), or waterways and roadsides.

No state significant fauna species were identified within the study area. However, of the 32 State significant fauna species that are known to, or are predicted to occur within the locality, 21 species are considered to have a moderate or high likelihood of occurrence within the study area (Appendix 2.2), including:

- Australasian Shoveler
- Black Falcon
- Blue-billed Duck
- Eastern Great Egret
- Gippsland Burrowing Crayfish
- Glossy Grass Skink
- Grey Goshawk
- Hardhead
- Intermediate Egret
- Lace Goanna
- Lewin's Rail
- Little Bittern
- Little Egret
- Masked Owl

- Musk Duck
- Powerful Owl
- South Gippsland Spiny Crayfish
- Swamp Skink
- White-bellied Sea-Eagle
- White-browed Treecreeper
- White-throated Needletail

There is suitable habitat in the study area for native crayfish species, including the Narracan Burrowing Crayfish *Engaeus phyllocercus*, Strzelecki Burrowing Crayfish *Engaeus rostrigaleatus* and Gippsland Burrowing Crayfish *Engaeus hemicirratulus*. However, only the latter two species are known to occur within the study area (Appendix 2.2). Previous records of this species are commonly associated with riparian habitat where they build burrows along the banks of a river or creek. Although not previously recorded in the study area, the Narracan Burrowing Crayfish has the potential to occur and is a threatened species under the Victorian *Flora and Fauna Guarantee Act* and has an Action Statement (DSE 2003), which states:

‘Any activity which may lead to an alteration in the nature of the streamside water table or drainage patterns could seriously impact on the species survival... Any activity which damages stream bank integrity and alters water tables or drainage lines could be potentially harmful’.

Actions to avoid erosion along or adjacent to creek lines, during the construction phase of the project should be undertaken.

3.8 Regionally Significant Values

The VBA contains records of an additional nine regionally significant fauna species previously recorded within the study area locality (DELWP 2018a) (Appendix 2.2; Figure 4).

No regionally significant fauna species were recorded within the study area during the surveys.

4 LEGISLATIVE AND POLICY IMPLICATIONS

This section identifies biodiversity policy and legislation relevant to the current assessment and principally addresses:

- *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act);
- *Environment Effects Act 1978* (EE Act); and
- *Flora and Fauna Guarantee Act 1988* (FFG Act).

4.1 Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth)

The EPBC Act establishes a Commonwealth process for the assessment of proposed actions (i.e. project, development, undertaking, activity, or series of activities) that are likely to have a significant impact on matters of national environmental significance (NES), or on Commonwealth land. An action, unless otherwise exempt, requires approval from the Commonwealth Environment Minister if it is considered likely to have an impact on any matters of NES.

4.1.1 Implications

Given the presence of significant species (Growling Grass Frog and Strzelecki Gum) identified within the study area, it is recommended that this project is referred to the Commonwealth as an EPBC referral. The Minister will decide whether the proposed action is a 'controlled action', and if so, will require further assessment to determine whether approval will be granted under the EPBC Act. However, if the impact area avoids all known records and known habitats of these matters of NES, then it is considered unlikely that the proposed wind farm will be a 'controlled action'.

4.2 Environment Effects Act 1978 (Victoria)

The *Environment Effects Act 1978* (EE Act) provides for assessments of proposed actions that are capable of exerting a significant impact on the environment and requires the preparation of an Environment Effects Statement (EES). The proposed Delburn wind farm, has the potential to have adverse environmental effects that, individually or in combination, could be significant in a regional or State context.

4.2.1 Implications

The *Environment Effects Act 1978* provides for assessment of proposed actions that are capable of having a significant effect on the environment via the preparation of an Environment Effects Statement (EES). A project with potential adverse environmental effects that, individually or in combination, could be significant in a regional or State context should be referred to the Victorian Minister for Planning.

The criteria for an EES referral are outlined in the *Ministerial guidelines for assessment of environmental effects under the Environment Effects Act 1978* (DSE 2006). The project impacts have been considered against these referral criteria to determine if an EES referral is required. It is assessed that an EES referral is not required for the project.

4.3 Flora and Fauna Guarantee Act 1988 (Victoria)

The FFG Act is the primary legislation dealing with biodiversity conservation and sustainable use of native flora and fauna in Victoria. Proponents are required to apply for an FFG Act Permit to ‘take’ listed and/or protected¹ flora species, listed vegetation communities and listed fish species in areas of public land (i.e. within road reserves, drainage lines and public reserves). An FFG Act permit is generally not required for removal of species or communities on private land, or for the removal of habitat for a listed terrestrial fauna species.

4.3.1 Implications

There is suitable habitat within the study area for several species listed and protected under the FFG Act. However, the study area is privately owned, as such a permit under the FFG Act is not required.

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¹ In addition to ‘listed’ flora species, the FFG Act identifies ‘protected’ flora species. This includes any of the Asteraceae (Daisies), all orchids, ferns (excluding *Pteridium esculentum*) and Acacia species (excluding *Acacia dealbata*, *Acacia decurrens*, *Acacia implexa*, *Acacia melanoxylon* and *Acacia paradoxa*), as well as any taxa that may be a component of a listed ecological community. A species may be both listed and protected.

5 SUMMARY AND FURTHER REQUIREMENTS

The desktop and the various field investigations identified ecological features within the study area and surrounding landscape, and these are summarised below (Table 10). The proposed development footprint (turbine and infrastructure layout) and adjacent areas support a range of native flora and fauna species, and ecological communities (seven EVCs of the Strzelecki Ranges bioregion).

Two nationally significant species (Strzelecki Gum, Growling Grass Frog) were recorded within the study area during the current surveys. Where habitat for significant species has been identified, the impact area has been adjusted to avoid those areas. In addition, efforts have been made to avoid and minimise native vegetation loss, including the reduction of the number of wind turbines from 52 to 35 turbines. This has reduced the extent of access roads required and the cumulative impact footprint.

This Existing Conditions report will accompany the EES referral to DELWP. An impact assessment report will be prepared once the final project design has been completed, and this report will document the extent of proposed impacts and associated implications under relevant environmental legislation and policy, and detail avoidance and minimisation measures. For residual ecological impacts the biodiversity offset requirements, together with an offset strategy will be included in the impact assessment report.

Table 10. Summary of the ecological values that occur within or adjacent to the impact area.

| | |
|------------------------------------|--|
| Species diversity | A diverse assemblage of plants and animals, with 57 flora species and 77 fauna species recorded during 2018-2019 surveys conducted by Ecology and Heritage Partners. |
| Remnant vegetation | <ul style="list-style-type: none"> A total of 240.19 hectares of mapped native vegetation (this area is all native vegetation mapped within or adjacent to the impact area by EHP (2018-19). The area of native vegetation likely to be impacted by the proposed wind farm is between 41.69 hectares (i.e. including the impact area and within 17 metres either side of the impact area) and 14.98 hectares (impact area only). Mapped native vegetation is represented by seven EVCs of the Strzelecki Ranges bioregion: <ul style="list-style-type: none"> Aquatic Herbland (EVC 653) 0.69 hectares. Damp Forest (EVC 29) 65.27 hectares; Herb-rich Foothill Forest (EVC 23) 115.45 hectares; Lowland Forest (EVC 16) 44.34 hectares; Swamp Scrub (EVC 53) 0.11 hectares; Swampy Woodland (EVC 937) 13.58 hectares; Tall Marsh (EVC 821) 0.75 hectares; 373 large trees in patches were recorded in or adjacent to the impact area (A.1.3). <ul style="list-style-type: none"> When the buffer is reduced to within 17 metres of the impact area, the number of large trees impacted is reduced to 24 large trees. 54 large scattered trees and 39 small scattered trees (not including Strzelecki Gums) were recorded in or adjacent to the impact area. In addition, 14 large scattered Strzelecki Gum trees were identified (Plate 13). <ul style="list-style-type: none"> All impacts to Strzelecki Gum will be avoided entirely through design refinements. |
| Wetlands | <ul style="list-style-type: none"> The Western Port Ramsar site is located approximately 25 kilometres south-west of the study area (downstream). |
| Significant ecological communities | <ul style="list-style-type: none"> No national or State significant ecological communities occur within the study area. |
| Significant flora species | <ul style="list-style-type: none"> The known occurrence of one nationally significant flora species <ul style="list-style-type: none"> Strzelecki Gum <i>Eucalyptus strzeleckii</i> No additional state significant flora species were recorded FFG Protected Flora: Acacia species, including <i>Acacia mearnsii</i> were recorded in the study area |

| | |
|---------------------------|--|
| Significant fauna species | <ul style="list-style-type: none"> The known occurrence of one nationally significant fauna recorded within the study area during the targeted surveys: <ul style="list-style-type: none"> Growling Grass Frog <i>Litoria raniformis</i> No State significant species recorded in the study area (2018 – 19) Non-threatened species of interest within the study area are: <ul style="list-style-type: none"> Koala <i>Phascolarctos cinereus</i>; Yellow-tailed Black-Cockatoo <i>Calyptorhynchus funereus</i>, and; Powerful Owl <i>Ninox strenua</i> |
| Legislative requirements | <ul style="list-style-type: none"> A referral should be submitted to the Commonwealth according to the <i>Environment, Protection and Biodiversity Conservation Act 1999</i> (EPBC Act) to determine whether the proposed development will have a significant impact on matters of National Environmental Significance (e.g. Strzelecki Gum, Growling Grass Frog). A referral under the <i>Environmental Effects Act 1994</i> should be submitted to determine whether the proposed development will trigger the requirement for an Environmental Effects Statement. |

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FIGURES

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APPENDICES

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APPENDIX 1 - FLORA

5.1 Appendix 1.1 – Rare or Threatened Categories for Listed Victorian Taxa

Table A1.1. Rare or Threatened categories for listed Victorian taxa.

| Rare or Threatened Categories | |
|---|---|
| Conservation Status in Australia (Based on the EPBC Act 1999) | |
| EX - Extinct: | Extinct is when there is no reasonable doubt that the last individual of the species has died. |
| CR - Critically Endangered: | A species is critically endangered when it is facing an extremely high risk of extinction in the wild in the immediate future. |
| EN - Endangered: | A species is endangered when it is not critically endangered but is facing a very high risk of extinction in the wild in the near future. |
| VU - Vulnerable: | A species is vulnerable when it is not critically endangered or endangered but is facing a high risk of extinction in the wild in the medium-term future. |
| R* - Rare: | A species is rare but overall is not currently considered critically endangered, endangered or vulnerable. |
| K* - Poorly Known: | A species is suspected, but not definitely known, to belong to any of the categories extinct, critically endangered, endangered, vulnerable or rare. |
| Conservation Status in Victoria (Based on DSE 2005, DSE 2009, DSE 2013) | |
| x - Presumed Extinct in Victoria: | not recorded from Victoria during the past 50 years despite field searches specifically for the plant, or, alternatively, intensive field searches (since 1950) at all previously known sites have failed to record the plant. |
| e - Endangered in Victoria: | at risk of disappearing from the wild state if present land use and other causal factors continue to operate. |
| v - Vulnerable in Victoria: | not presently endangered but likely to become so soon due to continued depletion; occurring mainly on sites likely to experience changes in land-use which would threaten the survival of the plant in the wild; or, taxa whose total population is so small that the likelihood of recovery from disturbance, including localised natural events such as drought, fire or landslip, is doubtful. |
| r - Rare in Victoria: | rare but not considered otherwise threatened - there are relatively few known populations or the taxon is restricted to a relatively small area. |
| k - Poorly Known in Victoria: | poorly known and suspected, but not definitely known, to belong to one of the above categories (x, e, v or r) within Victoria. At present, accurate distribution information is inadequate. |

5.2 Appendix 1.2 – Flora Species

Table A1.2. Flora recorded within the study area.

Legend:

CR/EN/VU Listed as Critically Endangered/Endangered/Vulnerable under the EPBC Act;

I Protected under the FFG Act (DELWP 2016);

L Listed under the FFG Act (DELWP 2017e);

e/v/r Listed as endangered/vulnerable/rare in Victoria under the Advisory List of Rare or Threatened Plants in Victoria (DEPI 2014);

***** Listed as a noxious weed under the CaLP Act;

w Weed of National Significance;

Planted Victorian and non-Victorian species;

+ Planted indigenous species that also occur in remnant native vegetation in the study area;

****** Planted indigenous species in the study area.

| Scientific Name | Common Name | Comments |
|---|----------------------|----------|
| Native Species | | |
| <i>Acacia implexa</i> | Lightwood | - |
| <i>Acacia melanoxylon</i> | Blackwood | - |
| <i>Acacia mucronata</i> subsp. <i>longifolia</i> | Narrow-leaf Wattle | - |
| <i>Acacia verticillata</i> | Prickly Moses | - |
| <i>Acrotriche serrulata</i> | Honey-pots | - |
| <i>Austrostipa</i> spp. | Spear Grass | - |
| <i>Banksia spinulosa</i> var. <i>cunninghamii</i> | Hairpin Banksia | - |
| <i>Bedfordia arborescens</i> | Blanket Leaf | - |
| <i>Carex appressa</i> | Tall Sedge | - |
| <i>Cassinia aculeata</i> | Common Cassinia | - |
| <i>Clematis</i> spp. | Clematis | - |
| <i>Coprosma quadrifida</i> | Prickly Currant-bush | - |
| <i>Cyathea australis</i> | Rough Tree-fern | - |
| <i>Cynodon dactylon</i> | Couch | - |
| <i>Cyperus</i> spp. | Flat Sedge | - |
| <i>Dianella tasmanica</i> | Tasman Flax-lily | - |
| <i>Dichondra repens</i> | Kidney-weed | - |
| <i>Drosera auriculata</i> | Tall Sundew | - |
| <i>Epacris impressa</i> | Common Heath | - |
| <i>Eucalyptus cypellocarpa</i> | Mountain Grey-gum | - |
| <i>Eucalyptus obliqua</i> | Messmate Stringybark | - |
| <i>Eucalyptus ovata</i> | Swamp Gum | - |

| Scientific Name | Common Name | Comments |
|---|-----------------------------|------------------|
| <i>Eucalyptus radiata</i> subsp. <i>radiata</i> | Narrow-leaf Peppermint | - |
| <i>Eucalyptus strzeleckii</i> | Strzelecki Gum | VU, L |
| <i>Eucalyptus viminalis</i> | Manna Gum | - |
| <i>Exocarpos cupressiformis</i> | Cherry Ballart | - |
| <i>Gahnia radula</i> | Thatch Saw-sedge | - |
| <i>Geranium</i> spp. | Crane's Bill | - |
| <i>Gonocarpus tetragynus</i> | Common Raspwort | - |
| <i>Goodenia</i> | Goodenia spp. | - |
| <i>Hydrocotyle sibthorpioides</i> | Shining Pennywort | - |
| <i>Juncus acuta</i> | Spiny Rush | - |
| <i>Kunzea ericoides</i> | Bidgee Widgee | - |
| <i>Lachnagrostis palustris</i> | Marsh Blown-grass | - |
| <i>Lepidosperma laterale</i> | Variable Sword-sedge | - |
| <i>Leptospermum continentale</i> | Prickly Tea-tree | - |
| <i>Lomandra filiformis</i> | Wattle Mat-rush | - |
| <i>Phragmites australis</i> | Common Reed | - |
| <i>Pittosporum undulatum</i> | Sweet Pittosporum | - |
| <i>Plantago</i> spp. | Plantain | - |
| <i>Poa</i> spp. | Tussock Grass | - |
| <i>Pomaderris aspera</i> | Hazel Pomaderris | - |
| <i>Prostanthera lasianthos</i> | Victorian Christmas-bush | - |
| <i>Pteridium esculentum</i> | Austral Bracken | - |
| <i>Rubus parvifolius</i> | Small-leaf Bramble | - |
| <i>Senecio</i> spp. | Groundsel | - |
| <i>Sporobolus</i> spp. | Rat-tail Grass | - |
| <i>Tetrarrhena juncea</i> | Forest Wire-grass | - |
| Introduced Species | | |
| <i>Arctotheca</i> spp. | Arctotheca | Introduced |
| <i>Cirsium vulgare</i> | Spear Thistle | Introduced, * |
| <i>Dactylis glomerata</i> | Cocksfoot | Introduced |
| <i>Lycium ferocissimum</i> | African Box-thorn | Introduced, w, * |
| <i>Oxalis pes-caprae</i> | Soursob | Introduced, * |
| <i>Oxalis purpurea</i> | Large-flower Wood-sorrel | Introduced |
| <i>Paspalum</i> | <i>Paspalum dasyleprium</i> | Introduced |
| <i>Rubus cissburiensis</i> | Blackberry | Introduced |
| <i>Trifolium repens</i> var. <i>repens</i> | White Clover | Introduced |
| <i>Vinca major</i> | Blue Periwinkle | Introduced |

5.3 Appendix 1.3 – Scattered Trees and Large Trees in Patches

Table A1.3. Scattered Trees and large trees in patches recorded within or adjacent to the impact area.

| Tree Number | Species Name | Common Name | Size Class | DBH |
|-------------|------------------------|-------------------|---------------------------|-----|
| 1 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 150 |
| 2 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 125 |
| 3 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 170 |
| 4 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 140 |
| 5 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 100 |
| 6 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 120 |
| 7 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 130 |
| 8 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 150 |
| 9 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 95 |
| 10 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 90 |
| 11 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 150 |
| 12 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 110 |
| 13 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 100 |
| 14 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 95 |
| 15 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 85 |
| 16 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 140 |
| 17 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 140 |
| 18 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 80 |
| 19 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 75 |
| 20 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 140 |
| 21 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 110 |
| 22 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 90 |
| 23 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 120 |
| 24 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 90 |
| 25 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 90 |
| 26 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 120 |
| 27 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 85 |
| 28 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 180 |
| 29 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 140 |
| 30 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 85 |
| 31 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 150 |
| 32 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 90 |
| 33 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 80 |
| 34 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 95 |
| 35 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Scattered Large Tree | 135 |
| 36 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Scattered Large Tree | 135 |
| 37 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Scattered Large Tree | 211 |
| 38 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Scattered Large Tree | 90 |
| 39 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Scattered Large Tree | 90 |

| Tree Number | Species Name | Common Name | Size Class | DBH |
|-------------|------------------------|-------------------|---------------------------|-----|
| 40 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Scattered Small Tree | 65 |
| 41 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Scattered Small Tree | 0 |
| 42 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Scattered Small Tree | 0 |
| 43 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Scattered Small Tree | 60 |
| 44 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Scattered Large Tree | 90 |
| 45 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 90 |
| 46 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 100 |
| 47 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 115 |
| 48 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 130 |
| 49 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 200 |
| 50 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 117 |
| 51 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 110 |
| 52 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 110 |
| 53 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 130 |
| 54 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Scattered Large Tree | 180 |
| 55 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Scattered Large Tree | 100 |
| 56 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Scattered Large Tree | 110 |
| 57 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 110 |
| 58 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 100 |
| 59 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 130 |
| 60 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 95 |
| 61 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 110 |
| 62 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 101 |
| 63 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 130 |
| 64 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 150 |
| 65 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Scattered Large Tree | 110 |
| 66 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 95 |
| 67 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 99 |
| 68 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 102 |
| 69 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 135 |
| 70 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 80 |
| 71 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 120 |
| 72 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Scattered Large Tree | 130 |
| 73 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 90 |
| 74 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 101 |
| 75 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 80 |
| 76 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 90 |
| 77 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 100 |
| 78 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 110 |
| 79 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 105 |
| 80 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 125 |
| 81 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 120 |
| 82 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 110 |

| Tree Number | Species Name | Common Name | Size Class | DBH |
|-------------|--------------------------------|-------------------------|---------------------------|-----|
| 83 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 115 |
| 84 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 135 |
| 85 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 180 |
| 86 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 170 |
| 87 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 70 |
| 88 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 70 |
| 89 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 95 |
| 90 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 90 |
| 91 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 90 |
| 92 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 100 |
| 93 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 100 |
| 94 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 75 |
| 95 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 95 |
| 96 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 85 |
| 97 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 80 |
| 98 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 80 |
| 99 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 85 |
| 100 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 85 |
| 101 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 85 |
| 102 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 98 |
| 103 | <i>E. cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 109 |
| 104 | <i>Eucalyptus cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 80 |
| 105 | <i>Eucalyptus cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 110 |
| 106 | <i>Eucalyptus cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 90 |
| 107 | <i>Eucalyptus cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 90 |
| 108 | <i>Eucalyptus cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 90 |
| 109 | <i>Eucalyptus cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 90 |
| 110 | <i>Eucalyptus cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 110 |
| 111 | <i>Eucalyptus cypellocarpa</i> | Mountain Grey-gum | Scattered Large Tree | 70 |
| 112 | <i>Eucalyptus cypellocarpa</i> | Mountain Grey-gum | Scattered Large Tree | 70 |
| 113 | <i>Eucalyptus cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 75 |
| 114 | <i>Eucalyptus cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 85 |
| 115 | <i>Eucalyptus cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 75 |
| 116 | <i>Eucalyptus cypellocarpa</i> | Mountain Grey-gum | Small Tree within a patch | 65 |
| 117 | <i>Eucalyptus cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 75 |
| 118 | <i>Eucalyptus cypellocarpa</i> | Mountain Grey-gum | Large Tree within a patch | 80 |
| 119 | <i>Eucalyptus dives</i> | Broad-leaved Peppermint | Scattered Large Tree | 70 |
| 120 | <i>Eucalyptus dives</i> | Broad-leaved Peppermint | Scattered Small Tree | 50 |
| 121 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 100 |
| 122 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 71 |
| 123 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 80 |
| 124 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 75 |
| 125 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 104 |

| Tree Number | Species Name | Common Name | Size Class | DBH |
|-------------|---------------------------|-------------|---------------------------|-----|
| 126 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 87 |
| 127 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 79 |
| 128 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 112 |
| 129 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 80 |
| 130 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 114 |
| 131 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 90 |
| 132 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 90 |
| 133 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 100 |
| 134 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 110 |
| 135 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 150 |
| 136 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 110 |
| 137 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 101 |
| 138 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 90 |
| 139 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 90 |
| 140 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 90 |
| 141 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 75 |
| 142 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 70 |
| 143 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 80 |
| 144 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 100 |
| 145 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 80 |
| 146 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 75 |
| 147 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 110 |
| 148 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 70 |
| 149 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 75 |
| 150 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 75 |
| 151 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 80 |
| 152 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 70 |
| 153 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 85 |
| 154 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 90 |
| 155 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 70 |
| 156 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 110 |
| 157 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 90 |
| 158 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 100 |
| 159 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 90 |
| 160 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 80 |
| 161 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 120 |
| 162 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 80 |
| 163 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 90 |
| 164 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 85 |
| 165 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 80 |
| 166 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 90 |
| 167 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 90 |
| 168 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 85 |

| Tree Number | Species Name | Common Name | Size Class | DBH |
|-------------|---------------------------|-------------|---------------------------|-----|
| 169 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 90 |
| 170 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 80 |
| 171 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 90 |
| 172 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 85 |
| 173 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 95 |
| 174 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 80 |
| 175 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 85 |
| 176 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 80 |
| 177 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 80 |
| 178 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 70 |
| 179 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 80 |
| 180 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 90 |
| 181 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 70 |
| 182 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 75 |
| 183 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 70 |
| 184 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 80 |
| 185 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 80 |
| 186 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 70 |
| 187 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 75 |
| 188 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 70 |
| 189 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 75 |
| 190 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 80 |
| 191 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 70 |
| 192 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 70 |
| 193 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 70 |
| 194 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 70 |
| 195 | <i>Eucalyptus obliqua</i> | Messmate | Scattered Large Tree | 110 |
| 196 | <i>Eucalyptus obliqua</i> | Messmate | Scattered Large Tree | 85 |
| 197 | <i>Eucalyptus obliqua</i> | Messmate | Scattered Large Tree | 189 |
| 198 | <i>Eucalyptus obliqua</i> | Messmate | Scattered Small Tree | 30 |
| 199 | <i>Eucalyptus obliqua</i> | Messmate | Scattered Large Tree | 70 |
| 200 | <i>Eucalyptus obliqua</i> | Messmate | Scattered Small Tree | 60 |
| 201 | <i>Eucalyptus obliqua</i> | Messmate | Scattered Small Tree | 60 |
| 202 | <i>Eucalyptus obliqua</i> | Messmate | Scattered Small Tree | 60 |
| 203 | <i>Eucalyptus obliqua</i> | Messmate | Scattered Small Tree | 50 |
| 204 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 70 |
| 205 | <i>Eucalyptus obliqua</i> | Messmate | Scattered Large Tree | 70 |
| 206 | <i>Eucalyptus obliqua</i> | Messmate | Scattered Small Tree | 60 |
| 207 | <i>Eucalyptus obliqua</i> | Messmate | Scattered Small Tree | 50 |
| 208 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 0 |
| 209 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 0 |
| 210 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 163 |
| 211 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 128 |

| Tree Number | Species Name | Common Name | Size Class | DBH |
|-------------|---------------------------|-------------|---------------------------|-----|
| 212 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 120 |
| 213 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 95 |
| 214 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 91 |
| 215 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 90 |
| 216 | <i>Eucalyptus obliqua</i> | Messmate | Scattered Large Tree | 90 |
| 217 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 110 |
| 218 | <i>Eucalyptus obliqua</i> | Messmate | Scattered Large Tree | 90 |
| 219 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 150 |
| 220 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 110 |
| 221 | <i>Eucalyptus obliqua</i> | Messmate | Scattered Large Tree | 95 |
| 222 | <i>Eucalyptus obliqua</i> | Messmate | Scattered Large Tree | 200 |
| 223 | <i>Eucalyptus obliqua</i> | Messmate | Scattered Large Tree | 90 |
| 224 | <i>Eucalyptus obliqua</i> | Messmate | Scattered Large Tree | 120 |
| 225 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 100 |
| 226 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 95 |
| 227 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 100 |
| 228 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 110 |
| 229 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 130 |
| 230 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 114 |
| 231 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 100 |
| 232 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 135 |
| 233 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 130 |
| 234 | <i>Eucalyptus obliqua</i> | Messmate | Scattered Large Tree | 100 |
| 235 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 115 |
| 236 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 140 |
| 237 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 130 |
| 238 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 145 |
| 239 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 95 |
| 240 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 90 |
| 241 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 110 |
| 242 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 100 |
| 243 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 90 |
| 244 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 150 |
| 245 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 110 |
| 246 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 105 |
| 247 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 75 |
| 248 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 80 |
| 249 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 95 |
| 250 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 110 |
| 251 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 70 |
| 252 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 70 |
| 253 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 70 |
| 254 | <i>Eucalyptus obliqua</i> | Messmate | Scattered Small Tree | 55 |

| Tree Number | Species Name | Common Name | Size Class | DBH |
|-------------|---------------------------|-------------|---------------------------|-----|
| 255 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 80 |
| 256 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 75 |
| 257 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 78 |
| 258 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 98 |
| 259 | <i>Eucalyptus obliqua</i> | Messmate | Scattered Large Tree | 98 |
| 260 | <i>Eucalyptus obliqua</i> | Messmate | Scattered Large Tree | 80 |
| 261 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 80 |
| 262 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 75 |
| 263 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 75 |
| 264 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 75 |
| 265 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 80 |
| 266 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 80 |
| 267 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 75 |
| 268 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 75 |
| 269 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 90 |
| 270 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 105 |
| 271 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 105 |
| 272 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 80 |
| 273 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 80 |
| 274 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 90 |
| 275 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 95 |
| 276 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 75 |
| 277 | <i>Eucalyptus obliqua</i> | Messmate | Scattered Large Tree | 75 |
| 278 | <i>Eucalyptus obliqua</i> | Messmate | Scattered Small Tree | 50 |
| 279 | <i>Eucalyptus obliqua</i> | Messmate | Scattered Small Tree | 50 |
| 280 | <i>Eucalyptus obliqua</i> | Messmate | Scattered Small Tree | 50 |
| 281 | <i>Eucalyptus obliqua</i> | Messmate | Scattered Small Tree | 50 |
| 282 | <i>Eucalyptus obliqua</i> | Messmate | Scattered Large Tree | 80 |
| 283 | <i>Eucalyptus obliqua</i> | Messmate | Scattered Large Tree | 75 |
| 284 | <i>Eucalyptus obliqua</i> | Messmate | Scattered Large Tree | 75 |
| 285 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 90 |
| 286 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 85 |
| 287 | <i>Eucalyptus obliqua</i> | Messmate | Scattered Large Tree | 85 |
| 288 | <i>Eucalyptus obliqua</i> | Messmate | Scattered Small Tree | 65 |
| 289 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 70 |
| 290 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 80 |
| 291 | <i>Eucalyptus obliqua</i> | Messmate | Scattered Large Tree | 70 |
| 292 | <i>Eucalyptus obliqua</i> | Messmate | Scattered Small Tree | 65 |
| 293 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 75 |
| 294 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 70 |
| 295 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 75 |
| 296 | <i>Eucalyptus obliqua</i> | Messmate | Large Tree within a patch | 70 |
| 297 | <i>Eucalyptus obliqua</i> | Messmate | Scattered Large Tree | 75 |

| Tree Number | Species Name | Common Name | Size Class | DBH |
|-------------|---|------------------------|---------------------------|-----|
| 298 | <i>Eucalyptus obliqua</i> | Messmate | Scattered Large Tree | 80 |
| 299 | <i>Eucalyptus ovata</i> | Swamp Gum | Large Tree within a patch | 98 |
| 300 | <i>Eucalyptus ovata</i> | Swamp Gum | Scattered Small Tree | 70 |
| 301 | <i>Eucalyptus ovata</i> | Swamp Gum | Small Tree within a patch | 70 |
| 302 | <i>Eucalyptus ovata</i> | Swamp Gum | Scattered Large Tree | 80 |
| 303 | <i>Eucalyptus ovata</i> | Swamp Gum | Scattered Large Tree | 75 |
| 304 | <i>Eucalyptus radiata</i> | Narrow-leaf Peppermint | Large Tree within a patch | 100 |
| 305 | <i>Eucalyptus radiata</i> | Narrow-leaf Peppermint | Large Tree within a patch | 80 |
| 306 | <i>Eucalyptus radiata</i> | Narrow-leaf Peppermint | Scattered Small Tree | 45 |
| 307 | <i>Eucalyptus radiata</i> | Narrow-leaf Peppermint | Scattered Small Tree | 50 |
| 308 | <i>Eucalyptus radiata</i> | Narrow-leaf Peppermint | Scattered Large Tree | 89 |
| 309 | <i>Eucalyptus radiata</i> | Narrow-leaf Peppermint | Scattered Large Tree | 90 |
| 310 | <i>Eucalyptus radiata</i> | Narrow-leaf Peppermint | Large Tree within a patch | 75 |
| 311 | <i>Eucalyptus radiata</i> | Narrow-leaf Peppermint | Scattered Large Tree | 80 |
| 312 | <i>Eucalyptus radiata</i> | Narrow-leaf Peppermint | Scattered Small Tree | 65 |
| 313 | <i>Eucalyptus radiata</i> | Narrow-leaf Peppermint | Scattered Small Tree | 0 |
| 314 | <i>Eucalyptus radiata</i> | Narrow-leaf Peppermint | Scattered Small Tree | 60 |
| 315 | <i>Eucalyptus strzeleckii</i> | Strezlecki Gum | Large Tree | 125 |
| 316 | <i>Eucalyptus strzeleckii</i> | Strezlecki Gum | Large Tree | 80 |
| 317 | <i>Eucalyptus strzeleckii</i> | Strezlecki Gum | Large Tree | 76 |
| 318 | <i>Eucalyptus strzeleckii</i> | Strezlecki Gum | Large Tree | 87 |
| 319 | <i>Eucalyptus strzeleckii</i> | Strezlecki Gum | Large Tree | 80 |
| 320 | <i>Eucalyptus strzeleckii</i> | Strezlecki Gum | Large Tree | 78 |
| 321 | <i>Eucalyptus strzeleckii</i> | Strezlecki Gum | Large Tree | 70 |
| 322 | <i>Eucalyptus strzeleckii</i> | Strezlecki Gum | Large Tree | 81 |
| 323 | <i>Eucalyptus strzeleckii</i> | Strezlecki Gum | Large Tree | 89 |
| 324 | <i>Eucalyptus strzeleckii</i> | Strezlecki Gum | Large Tree | 80 |
| 325 | <i>Eucalyptus strzeleckii</i> | Strezlecki Gum | Large Tree | 75 |
| 326 | <i>Eucalyptus strzeleckii</i> | Strezlecki Gum | Large Tree | 80 |
| 327 | <i>Eucalyptus strzeleckii</i> | Strezlecki Gum | Large Tree | 75 |
| 328 | <i>Eucalyptus strzeleckii</i> | Strezlecki Gum | Large Tree | 92 |
| 329 | <i>Eucalyptus viminalis</i> subsp. <i>pryoriana</i> | Manna Gum | Large Tree within a patch | 75 |
| 330 | <i>Eucalyptus viminalis</i> subsp. <i>pryoriana</i> | Manna Gum | Large Tree within a patch | 135 |
| 331 | <i>Eucalyptus viminalis</i> subsp. <i>pryoriana</i> | Manna Gum | Large Tree within a patch | 100 |
| 332 | <i>Eucalyptus viminalis</i> subsp. <i>pryoriana</i> | Manna Gum | Large Tree within a patch | 80 |
| 333 | <i>Eucalyptus viminalis</i> subsp. <i>pryoriana</i> | Manna Gum | Large Tree within a patch | 80 |
| 334 | <i>Eucalyptus viminalis</i> subsp. <i>pryoriana</i> | Manna Gum | Large Tree within a patch | 80 |
| 335 | <i>Eucalyptus viminalis</i> subsp. <i>pryoriana</i> | Manna Gum | Large Tree within a patch | 80 |
| 336 | <i>Eucalyptus viminalis</i> subsp. <i>pryoriana</i> | Manna Gum | Large Tree within a patch | 90 |
| 337 | <i>Eucalyptus viminalis</i> subsp. <i>pryoriana</i> | Manna Gum | Large Tree within a patch | 75 |
| 338 | <i>Eucalyptus viminalis</i> subsp. <i>pryoriana</i> | Manna Gum | Large Tree within a patch | 75 |
| 339 | <i>Eucalyptus viminalis</i> subsp. <i>pryoriana</i> | Manna Gum | Large Tree within a patch | 75 |
| 340 | <i>Eucalyptus viminalis</i> subsp. <i>pryoriana</i> | Manna Gum | Scattered Large Tree | 83 |

| Tree Number | Species Name | Common Name | Size Class | DBH |
|-------------|---|-------------|---------------------------|-----|
| 341 | <i>Eucalyptus viminalis</i> subsp. <i>pryoriana</i> | Manna Gum | Scattered Small Tree | 35 |
| 342 | <i>Eucalyptus viminalis</i> subsp. <i>pryoriana</i> | Manna Gum | Scattered Large Tree | 91 |
| 343 | <i>Eucalyptus viminalis</i> subsp. <i>pryoriana</i> | Manna Gum | Scattered Small Tree | 65 |
| 344 | <i>Eucalyptus viminalis</i> subsp. <i>pryoriana</i> | Manna Gum | Scattered Large Tree | 70 |
| 345 | <i>Eucalyptus viminalis</i> subsp. <i>pryoriana</i> | Manna Gum | Scattered Small Tree | 60 |
| 346 | <i>Eucalyptus viminalis</i> subsp. <i>pryoriana</i> | Manna Gum | Scattered Large Tree | 90 |
| 347 | <i>Eucalyptus viminalis</i> subsp. <i>pryoriana</i> | Manna Gum | Scattered Large Tree | 75 |
| 348 | <i>Eucalyptus yarraensis</i> | Yarra Gum | Large Tree within a patch | 70 |
| 349 | <i>Eucalyptus</i> species | - | Scattered Small Tree | 45 |
| 350 | <i>Eucalyptus</i> species | - | Scattered Large Tree | 75 |
| 351 | <i>Eucalyptus</i> species | - | Scattered Large Tree | 76 |
| 352 | <i>Eucalyptus</i> species | - | Scattered Small Tree | 60 |
| 353 | <i>Eucalyptus</i> species | - | Scattered Large Tree | 80 |
| 354 | Stag | - | Large Tree within a patch | 150 |
| 355 | Stag | - | Large Tree within a patch | 95 |
| 356 | Stag | - | Scattered Large Tree | 130 |
| 357 | Stag | - | Large Tree within a patch | 86 |
| 358 | Stag | - | Large Tree within a patch | 95 |
| 359 | Stag | - | Large Tree within a patch | 106 |
| 360 | Stag | - | Scattered Large Tree | 106 |
| 361 | Stag | - | Large Tree within a patch | 95 |
| 362 | Stag | - | Large Tree within a patch | 95 |
| 363 | Stag | - | Large Tree within a patch | 95 |
| 364 | Stag | - | Large Tree within a patch | 80 |
| 365 | Stag | - | Scattered Large Tree | 80 |
| 366 | Stag | - | Large Tree within a patch | 95 |
| 367 | Stag | - | Large Tree within a patch | 80 |
| 368 | Stag | - | Scattered Large Tree | 85 |
| 369 | Stag | - | Large Tree within a patch | 80 |
| 370 | Stag | - | Scattered Large Tree | 80 |

5.4 Appendix 1.2 – Significant Flora Species

Table A2.2 Significant flora recorded within 10 kilometres of the study area

Key:

EPBC *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act)

FFG *Flora and Fauna Guarantee Act 1988* (FFG Act)

DEPI Advisory List of Threatened Flora in Victoria (DEPI 2014)

EX Extinct

CR Critically endangered

EN Endangered

VU Vulnerable

K Poorly Known (Briggs and Leigh 1996)

Records identified from EPBC Act Protected Matters Search Tool.

* Records identified from the FIS

X Extinct

e Endangered

v Vulnerable

r Rare

k Poorly Known

L Listed

| | | |
|---|---------------------|---|
| 1 | Known occurrence | Recorded within the study area recently (i.e. within ten years) |
| 2 | High Likelihood | Previous records of the species in the local vicinity; and/or, The study area contains areas of high quality habitat. |
| 3 | Moderate Likelihood | Limited previous records of the species in the local vicinity; and/or, The study area contains poor or limited habitat. |
| 4 | Low Likelihood | Poor or limited habitat for the species however other evidence (such as a lack of records or environmental factors) indicates there is a very low likelihood of presence. |
| 5 | Unlikely | No suitable habitat and/or outside the species range. |

| Scientific name | Common name | Total # of documented records | Last documented record | EPBC | FFG | DEPI | Likely occurrence in study area |
|--|---------------------------|-------------------------------|------------------------|------|-----|------|---------------------------------|
| NATIONAL SIGNIFICANCE | | | | | | | |
| <i>Amphibromus fluitans</i> | River Swamp Wallaby-grass | 6 | 2003 | VU | X | - | 3 |
| <i>Caladenia tessellate</i> # | Thick-lip Spider-orchid | - | - | VU | - | - | 4 |
| <i>Callitris oblonga</i> subsp. <i>oblonga</i> | Dwarf Cypress-pine | 2 | 1998 | EN | - | - | 3 |
| <i>Dianella amoena</i> | Matted Flax-lily | 22 | 2012 | EN | L | e | 2 |
| <i>Prasophyllum frenchii</i> # | Maroon Leek-orchid | - | - | EN | L | e | 4 |
| <i>Eucalyptus strzeleckii</i> | Strzelecki Gum | 75 | 2012 | VU | L | v | 1 |
| <i>Glycine latrobeana</i> # | Clover Glycine | - | - | VU | L | v | 4 |
| <i>Pterostylis chlorogramma</i> # | Green-striped Greenhood | - | - | VU | L | v | 4 |
| <i>Xerochrysum palustre</i> # | Swamp Everlasting | - | - | VU | L | v | 4 |
| STATE SIGNIFICANCE | | | | | | | |
| <i>Acacia howittii</i> | Sticky Wattle | 1 | 2002 | - | - | r | 3 |
| <i>Austrostipa rudis</i> subsp. <i>australis</i> | Veined Spear-grass | 1 | 1982 | - | - | r | 4 |
| <i>Brachyscome salkiniae</i> | Elegant Daisy | 2 | 1989 | - | - | r | 4 |
| <i>Caladenia aurantiaca</i> | Orange-tip Finger-orchid | 2 | 1983 | - | - | r | 4 |
| <i>Caladenia australis</i> | Southern Spider-orchid | 2 | 2003 | - | - | k | 3 |
| <i>Caladenia vulgaris</i> | Slender Pink-fingers | 1 | 2004 | - | - | r | 3 |
| <i>Callitriche umbonata</i> | Winged Water-starwort | 1 | 1983 | - | X | r | 4 |
| <i>Cardamine paucijuga</i> s.s. | Annual Bitter-cress | 1 | 1999 | - | - | P | 4 |



| Scientific name | Common name | Total # of documented records | Last documented record | EPBC | FFG | DEPI | Likely occurrence in study area |
|--|--------------------------|-------------------------------|------------------------|------|-----|------|---------------------------------|
| <i>Cardamine tenuifolia</i> | Slender Bitter-cress | 2 | 1997 | - | - | P | 4 |
| <i>Chiloglottis jeanesii</i> | Mountain Bird-orchid | 2 | 2002 | - | - | r | 3 |
| <i>Craspedia canens</i> | Grey Billy-buttons | 1 | 2004 | - | L | e | 3 |
| <i>Cyathea cunninghamii</i> | Slender Tree-fern | 2 | 1997 | - | L | v | 4 |
| <i>Cymbonotus lawsonianus</i> | Bear's-ear | 1 | 2009 | - | - | r | 3 |
| <i>Desmodium varians</i> | Slender Tick-trefoil | 4 | 2003 | - | - | k | 3 |
| <i>Diuris X palachila</i> | Broad-lip Diuris | 1 | 1947 | - | - | r | 4 |
| <i>Eucalyptus fulgens</i> | Green Scentbark | 15 | 2008 | - | - | r | 3 |
| <i>Eucalyptus ignorabilis</i> s.s. | Grey Scentbark | 1 | 2012 | - | - | r | 3 |
| <i>Eucalyptus kitsoniana</i> | Bog Gum | 1 | 1979 | - | - | r | 4 |
| <i>Eucalyptus yarraensis</i> | Yarra Gum | 14 | 2011 | - | X | r | 3 |
| <i>Geranium solanderi</i> var. <i>solanderi</i> s.s. | Austral Crane's-bill | 1 | 2006 | - | - | v | 3 |
| <i>Grevillea rosmarinifolia</i> | Rosemary Grevillea | 1 | 1997 | - | - | P | 4 |
| <i>Lasiopetalum ferrugineum</i> | Rusty Velvet-bush | 1 | 1970 | - | - | P | 4 |
| <i>Leionema bilobum</i> subsp. <i>serrulatum</i> | Toothed Leionema | 1 | 1970 | - | - | r | 4 |
| <i>Marsilea mutica</i> | Smooth Nardoo | 1 | 1983 | - | - | k | 4 |
| <i>Melaleuca armillaris</i> subsp. <i>armillaris</i> | Giant Honey-myrtle | 3 | 2009 | - | - | r | 3 |
| <i>Oxalis thompsoniae</i> | Fluffy-fruit Wood-sorrel | 1 | 1999 | - | - | k | 4 |
| <i>Platysace ericoides</i> | Heath Platysace | 2 | 2003 | - | - | r | 3 |
| <i>Potamogeton australiensis</i> | Thin Pondweed | 3 | 1981 | - | - | k | 4 |
| <i>Pterostylis grandiflora</i> | Cobra Greenhood | 6 | 2011 | - | - | r | 3 |



| Scientific name | Common name | Total # of documented records | Last documented record | EPBC | FFG | DEPI | Likely occurrence in study area |
|----------------------------------|-------------------|-------------------------------|------------------------|------|-----|------|---------------------------------|
| <i>Pultenaea juniperina</i> s.s. | Prickly Beauty | 1 | 2003 | - | - | r | 3 |
| <i>Pultenaea prolifera</i> | Otway Bush-pea | 1 | 1989 | - | - | r | 4 |
| <i>Sowerbaea juncea</i> | Rush Lily | 2 | 2003 | - | - | r | 3 |
| <i>Thelymitra incurva</i> | Swamp Sun-orchid | 1 | 2000 | - | L | e | 3 |
| <i>Tmesipteris elongata</i> | Slender Fork-fern | 4 | 1983 | - | - | v | 4 |
| <i>Tmesipteris ovata</i> | Oval Fork-fern | 4 | 1983 | - | - | r | 4 |

Data source: Victorian Biodiversity Atlas (DELWP 2018); Protected Matters Search Tool (DoE 2015). Taxonomic order Alphabetical.

APPENDIX 2 – FAUNA

5.5 Appendix 2.1 – Fauna Species

A.2.1.1 Fauna recorded during the 2018/19 surveys and previous fauna records within 20 kilometres of the study area.

| Common name | Scientific name | EPBC Act | FFG Act | DSE 2013 | Most recent record | Recorded during current surveys |
|------------------------------|--------------------------------------|----------|---------|----------|--------------------|---------------------------------|
| Agile Antechinus | <i>Antechinus agilis</i> | - | - | - | 2016 | - |
| Australasian Grebe | <i>Tachybaptus novaehollandiae</i> | - | - | - | 2019 | Yes |
| Australasian Pipit | <i>Anthus novaeseelandiae</i> | - | - | - | 2012 | - |
| Australasian Shoveler | <i>Anas rhynchotis</i> | - | - | vu | 2007 | - |
| Australian Admiral Butterfly | <i>Vanessa itea</i> | - | - | - | 1939 | - |
| Australian Bass | <i>Macquaria novemaculeata</i> | - | X | - | 2002 | - |
| Australian Copperheads | <i>fam. Elapidae gen. Austrelaps</i> | - | - | - | 1978 | - |
| Australian Grayling | <i>Prototroctes maraena</i> | V | L | vu | 2010 | - |
| Australian Hobby | <i>Falco longipennis</i> | - | - | - | 2015 | - |
| Australian King-Parrot | <i>Alisterus scapularis</i> | - | - | - | 2019 | Yes |
| Australian Magpie | <i>Cracticus tibicen</i> | - | - | - | 2019 | Yes |
| Australian Owlet-nightjar | <i>Aegotheles cristatus</i> | - | - | - | 2015 | - |
| Australian Pelican | <i>Pelecanus conspicillatus</i> | - | - | - | 2014 | - |
| Australian Raven | <i>Corvus coronoides</i> | - | - | - | 2019 | Yes |
| Australian Shelduck | <i>Tadorna tadornoides</i> | - | - | - | 2011 | - |
| Australian Smelt | <i>Retropinna semoni</i> | - | - | - | 2017 | - |
| Australian Spotted Crake | <i>Porzana fluminea</i> | - | - | - | 1977 | - |
| Australian White Ibis | <i>Threskiornis molucca</i> | - | - | - | 2011 | - |
| Australian Wood Duck | <i>Chenonetta jubata</i> | - | - | - | 2019 | Yes |
| Azure Kingfisher | <i>Alcedo azurea</i> | - | - | nt | 2015 | - |



| Common name | Scientific name | EPBC Act | FFG Act | DSE 2013 | Most recent record | Recorded during current surveys |
|------------------------------|---------------------------------------|----------|---------|----------|--------------------|---------------------------------|
| Balonne Freshwater Mussel | <i>Velesunio ambiguus</i> | - | - | - | 2016 | - |
| Banded Lapwing | <i>Vanellus tricolor</i> | - | - | - | 1977 | - |
| Barking Owl | <i>Ninox connivens connivens</i> | - | L | en | 2007 | - |
| Bassian Thrush | <i>Zoothera lunulata</i> | - | - | - | 2016 | - |
| Beautiful Firetail | <i>Stagonopleura bella</i> | - | - | - | 2000 | - |
| Bell Miner | <i>Manorina melanophrys</i> | - | - | - | 2008 | - |
| Black Falcon | <i>Falco subniger</i> | - | N | vu | 2001 | - |
| Black Rat* | <i>Rattus rattus</i> | - | - | - | 2011 | - |
| Black Rock Skink | <i>Egernia saxatilis intermedia</i> | - | - | - | 1998 | - |
| Black Spot Moth | <i>Epicoma melanospila</i> | - | - | - | 1944 | - |
| Black Swan | <i>Cygnus atratus</i> | - | - | - | 2014 | - |
| Black-faced Cuckoo-shrike | <i>Coracina novaehollandiae</i> | - | - | - | 2015 | - |
| Black-faced Monarch | <i>Monarcha melanopsis</i> | - | - | - | 2006 | - |
| Black-fronted Dotterel | <i>Elseyornis melanops</i> | - | - | - | 2009 | - |
| Black-shouldered Kite | <i>Elanus axillaris</i> | - | - | - | 2014 | - |
| Black-tailed Native-hen | <i>Tribonyx ventralis</i> | - | - | - | 2009 | - |
| Black-tailed Wallaby | <i>Wallabia bicolor</i> | - | - | - | 2016 | - |
| Black-winged Stilt | <i>Himantopus himantopus</i> | - | - | - | 2009 | - |
| Blotched Blue-tongued Lizard | <i>Tiliqua nigrolutea</i> | - | - | - | 2015 | - |
| Blue Jewel Butterfly | <i>Hypochrysops delicia</i> | - | - | - | 2000 | - |
| Blue-billed Duck | <i>Oxyura australis</i> | - | L | en | 2017 | - |
| Blue-winged Parrot | <i>Neophema chrysostoma</i> | - | - | - | 2015 | - |
| Bright Copper Butterfly | <i>Paralucia aurifer</i> | - | - | - | 1939 | - |
| Brown Falcon | <i>Falco berigora</i> | - | - | - | 2014 | - |
| Brown Gerygone | <i>Gerygone mouki</i> | - | - | - | 2016 | - |
| Brown Goshawk | <i>Accipiter fasciatus</i> | - | - | - | 2015 | - |
| Brown Quail | <i>Coturnix ypsilophora australis</i> | - | - | - | 2000 | - |
| Brown Songlark | <i>Cincloramphus cruralis</i> | - | - | - | 2000 | - |
| Brown Thornbill | <i>Acanthiza pusilla</i> | - | - | - | 2019 | Yes |



| Common name | Scientific name | EPBC Act | FFG Act | DSE 2013 | Most recent record | Recorded during current surveys |
|--|---------------------------------------|----------|---------|----------|--------------------|---------------------------------|
| Brown Treecreeper (south-eastern ssp.) | <i>Climacteris picumnus victoriae</i> | - | - | nt | 1916 | - |
| Brown Trout* | <i>Salmo trutta</i> | - | - | - | 2017 | - |
| Brown-headed Honeyeater | <i>Melithreptus brevirostris</i> | - | - | - | 2013 | - |
| Brush Bronzewing | <i>Phaps elegans</i> | - | - | - | 2016 | - |
| Brush Cuckoo | <i>Cacomantis variolosus</i> | - | - | - | 2012 | - |
| Brush-tailed Phascogale | <i>Phascogale tapoatafa</i> | - | L | vu | 1967 | - |
| Buff-banded Rail | <i>Gallirallus philippensis</i> | - | - | - | 2010 | - |
| Buff-rumped Thornbill | <i>Acanthiza reguloides</i> | - | - | - | 2011 | - |
| Burrowing Crayfish | <i>fam. Parastacidae gen. Engaeus</i> | - | - | - | 2017 | - |
| Bush Rat | <i>Rattus fuscipes</i> | - | - | - | 2019 | Yes |
| Cabbage White Butterfly | <i>Pieris rapae</i> | - | - | - | 1941 | - |
| California Quail* | <i>Callipepla californicus</i> | - | - | - | 2002 | - |
| Caper White Butterfly | <i>Belenois java teutonia</i> | - | - | - | 1939 | - |
| Caspian Tern | <i>Hydroprogne caspia</i> | - | L | nt | 1978 | - |
| Central Highlands Spiny Crayfish | <i>Euastacus woiwuru</i> | - | - | - | 2017 | - |
| Chestnut Teal | <i>Anas castanea</i> | - | - | - | 2017 | - |
| Chestnut-rumped Heathwren | <i>Calamanthus pyrrhopygius</i> | - | L | vu | 1998 | - |
| Chocolate Wattled Bat | <i>Chalinolobus morio</i> | - | - | - | 2015 | - |
| Clamorous Reed Warbler | <i>Acrocephalus stentoreus</i> | - | - | - | 2014 | - |
| Climbing Galaxias | <i>Galaxias brevipinnis</i> | - | - | - | 2002 | - |
| Collared Sparrowhawk | <i>Accipiter cirrhocephalus</i> | - | - | - | 2004 | - |
| Common Bent-wing Bat | <i>Miniopterus schreibersii</i> | - | L | - | 1990 | - |
| Common Blackbird* | <i>Turdus merula</i> | - | - | - | 2019 | Yes |
| Common Blue-tongued Lizard | <i>Tiliqua scincoides</i> | - | - | - | 2014 | - |
| Common Bronzewing | <i>Phaps chalcoptera</i> | - | - | - | 2019 | Yes |
| Common Brown Butterfly | <i>Heteronympha merope</i> | - | - | - | 1941 | - |
| Common Brush-tailed Possum | <i>Trichosurus vulpecula</i> | - | - | - | 2018 | Yes |
| Common Cicadabird | <i>Coracina tenuirostris</i> | - | - | - | 2012 | - |
| Common Freshwater Shrimp | <i>Paratya australiensis</i> | - | - | - | 2017 | - |



| Common name | Scientific name | EPBC Act | FFG Act | DSE 2013 | Most recent record | Recorded during current surveys |
|--------------------------------|---------------------------------------|----------|---------|----------|--------------------|---------------------------------|
| Common Froglet | <i>Crinia signifera</i> | - | - | - | 2018 | Yes |
| Common Galaxias | <i>Galaxias maculatus</i> | - | - | - | 2014 | - |
| Common Imperial Blue Butterfly | <i>Jalmenus evagoras</i> | - | - | - | 1934 | - |
| Common Myna* | <i>Acridotheres tristis</i> | - | - | - | 2019 | Yes |
| Common Silver Xenica Butterfly | <i>Oreixenica lathoniella herceus</i> | - | - | - | 1949 | -- |
| Common Splendid Ghost Moth | <i>Aenetus ligniveren</i> | - | - | - | 1932 | - |
| Common Starling* | <i>Sturnus vulgaris</i> | - | - | - | 2019 | Yes |
| Common Wombat | <i>Vombatus ursinus</i> | - | - | - | 2019 | Yes |
| Convict Cichlid* | <i>Amatitlania nigrofasciata</i> | - | - | - | 1994 | - |
| Coventry's Skink | <i>Niveoscincus coventryi</i> | - | - | - | 1982 | - |
| Crescent Honeyeater | <i>Phylidonyris pyrrhoptera</i> | - | - | - | 2019 | Yes |
| Crested Pigeon | <i>Ocyphaps lophotes</i> | - | - | - | 2019 | Yes |
| Crested Shrike-tit | <i>Falcunculus frontatus</i> | - | - | - | 2015 | - |
| Crimson Rosella | <i>Platycercus elegans</i> | - | - | - | 2019 | Yes |
| Darter | <i>Anhinga novaehollandiae</i> | - | - | - | 2014 | - |
| Delicate Skink | <i>Lampropholis delicata</i> | - | - | - | 2015 | - |
| Dendys Toadlet | <i>Pseudophryne dendyi</i> | - | - | dd | 1973 | - |
| Diamond Firetail | <i>Stagonopleura guttata</i> | - | L | nt | 1998 | - |
| Donnysa Skipper Butterfly | <i>Hesperilla donnysa</i> | - | - | - | 1961 | - |
| Dull-purple Azure Butterfly | <i>Ogyris olane</i> | - | - | - | 1941 | - |
| Dusky Antechinus | <i>Antechinus swainsonii</i> | - | - | - | 2015 | - |
| Dusky Moorhen | <i>Gallinula tenebrosa</i> | - | - | - | 2017 | - |
| Dusky Woodswallow | <i>Artamus cyanopterus</i> | - | - | - | 2011 | - |
| Dwarf Galaxis | <i>Galaxiella pusilla</i> | Vul | L | en | 2012 | - |
| Eastern Australian Smelt | <i>Retropinna</i> sp. 2 | - | - | - | 1998 | - |
| Eastern Broad-nosed Bat | <i>Scotorepens orion</i> | - | - | - | 1998 | - |
| Eastern Brown Snake | <i>Pseudonaja textilis</i> | - | - | - | 2010 | - |
| Eastern False Pipistrelle | <i>Falsistrellus tasmaniensis</i> | - | - | - | 2015 | - |
| Eastern Gambusia* | <i>Gambusia holbrooki</i> | - | - | - | 2012 | - |



| Common name | Scientific name | EPBC Act | FFG Act | DSE 2013 | Most recent record | Recorded during current surveys |
|-----------------------------|---|----------|---------|----------|--------------------|---------------------------------|
| Eastern Great Egret | <i>Ardea modesta</i> | - | L | vu | 2017 | - |
| Eastern Grey Kangaroo | <i>Macropus giganteus</i> | - | - | - | 2018 | Yes |
| Eastern Quoll | <i>Dasyurus viverrinus</i> | En | L | ex | 1900 | |
| Eastern Ring-tailed Possum | <i>Pseudocheirus peregrinus</i> | - | - | - | 2018 | Yes |
| Eastern Rosella | <i>Platycercus eximius</i> | - | - | - | 2019 | Yes |
| Eastern Snake-necked Turtle | <i>Chelodina longicollis</i> | - | - | dd | 2014 | |
| Eastern Spinebill | <i>Acanthorhynchus tenuirostris</i> | - | - | - | 2019 | Yes |
| Eastern Whipbird | <i>Psophodes olivaceus</i> | - | - | - | 2019 | Yes |
| Eastern Yellow Robin | <i>Eopsaltria australis</i> | - | - | - | 2019 | Yes |
| Emu | <i>Dromaius novaehollandiae</i> | - | - | nt | 2000 | - |
| Eurasian Coot | <i>Fulica atra</i> | - | - | - | 2017 | - |
| Eurasian Tree Sparrow* | <i>Passer montanus</i> | - | - | - | 2000 | - |
| European Carp* | <i>Cyprinus carpio</i> | - | - | - | 2010 | - |
| European Goldfinch* | <i>Carduelis carduelis</i> | - | - | - | 2011 | - |
| European Greenfinch* | <i>Chloris chloris</i> | - | - | - | 2010 | - |
| European Hare* | <i>Lepus europeus</i> | - | - | - | 2018 | Yes |
| European Rabbit* | <i>Oryctolagus cuniculus</i> | - | - | - | 2018 | Yes |
| European Skylark* | <i>Alauda arvensis</i> | - | - | - | 2014 | - |
| Fairy Martin | <i>Petrochelidon ariel</i> | - | - | - | 2004 | - |
| Fallow Deer* | <i>Cervus dama</i> | - | - | - | 2018 | Yes |
| Fan-tailed Cuckoo | <i>Cacomantis flabelliformis</i> | - | - | - | 2016 | - |
| Feathertail Glider | <i>Acrobates pygmaeus</i> | - | - | - | 2012 | - |
| Flame Robin | <i>Petroica phoenicea</i> | - | - | - | 2019 | Yes |
| Flathead Gudgeon | <i>Philypnodon grandiceps</i> | - | - | - | 2014 | - |
| Flinders Pygmy Perch | <i>Nannoperca</i> sp. 1 | - | - | vu | 2006 | - |
| Forest Raven | <i>Corvus tasmanicus</i> | - | - | - | 2001 | - |
| Fork-tailed Swift | <i>Apus pacificus</i> | - | - | - | 2001 | - |
| Freckled Duck | <i>Stictonetta naevosa</i> | - | L | En | 2007 | - |
| Freshwater Blackfishes | <i>fam. Percichthyidae</i> gen. <i>Gadopsis</i> | | | | 1968 | |



| Common name | Scientific name | EPBC Act | FFG Act | DSE 2013 | Most recent record | Recorded during current surveys |
|------------------------------|--|----------|---------|----------|--------------------|---------------------------------|
| Freshwater Catfish | <i>Tandanus tandanus</i> | | L | en | 1993 | |
| Freshwater Eels | <i>fam. Anguillidae gen. Anguilla</i> | | | | 2007 | |
| Freshwater Mussel | <i>Hyridella (Hyridella) drapeta</i> | | | | 2016 | |
| Freshwater Snail | <i>Victodrobia victoriensis</i> | | | | 1988 | |
| Galah | <i>Eolophus roseicapillus</i> | | | | 2019 | Yes |
| Gang-gang Cockatoo | <i>Callocephalon fimbriatum</i> | | | | 2013 | |
| Garden Skink | <i>Lampropholis guichenoti</i> | | | | 2015 | |
| Gippsland Burrowing Crayfish | <i>Engaeus hemicirratulus</i> | | | en | 2017 | |
| Gippsland Spiny Crayfish | <i>Euastacus kershawi</i> | | X | | 2017 | |
| Glossy Grass Skink | <i>Pseudemoia rawlinsoni</i> | | | vu | 2008 | |
| Glossy Ibis | <i>Plegadis falcinellus</i> | | | nt | 2019 | Yes |
| Goat (feral)* | <i>Capra hircus</i> | | | | 2006 | |
| Golden Whistler | <i>Pachycephala pectoralis</i> | | | | 2019 | Yes |
| Golden-headed Cisticola | <i>Cisticola exilis</i> | | | | 2014 | |
| Goldfish* | <i>Carassius auratus</i> | | | | 2006 | |
| Gould's Long-eared Bat | <i>Nyctophilus gouldi</i> | | | | 2000 | |
| Gould's Wattled Bat | <i>Chalinolobus gouldii</i> | | | | 2015 | |
| Granular Burrowing Crayfish | <i>Engaeus cunicularius</i> | | | | 1999 | |
| Great Cormorant | <i>Phalacrocorax carbo</i> | | | | 2017 | |
| Great Crested Grebe | <i>Podiceps cristatus</i> | | | | 2002 | |
| Greater Glider | <i>Petauroides volans</i> | V | L | vu | 2012 | |
| Grey Butcherbird | <i>Cracticus torquatus</i> | | | | 2019 | Yes |
| Grey Currawong | <i>Strepera versicolor</i> | | | | 2019 | Yes |
| Grey Fantail | <i>Rhipidura albiscapa</i> | | | | 2019 | Yes |
| Grey Goshawk | <i>Accipiter novaehollandiae novaehollandiae</i> | | L | vu | 2000 | |
| Grey Shrike-thrush | <i>Colluricincla harmonica</i> | | | | 2019 | Yes |
| Grey Teal | <i>Anas gracilis</i> | | | | 2014 | |
| Grey-headed Flying-fox | <i>Pteropus poliocephalus</i> | V | L | vu | 1982 | |
| Growling Grass Frog | <i>Litoria raniformis</i> | V | L | en | 2018 | Yes |



| Common name | Scientific name | EPBC Act | FFG Act | DSE 2013 | Most recent record | Recorded during current surveys |
|----------------------------|---|----------|---------|----------|--------------------|---------------------------------|
| Gull-billed Tern | <i>Gelochelidon nilotica macrotarsa</i> | | L | en | 1978 | |
| Hardhead | <i>Aythya australis</i> | | | vu | 2017 | |
| Heath Ochre Butterfly | <i>Trapezites phigalia</i> | | | | 1939 | |
| Helmeted Guinea Fowl* | <i>Numida meleagris</i> | | | | 2000 | |
| Highland Copperhead | <i>Austrelaps ramsayi</i> | | | | 1994 | |
| Hoary-headed Grebe | <i>Poliocephalus poliocephalus</i> | | | | 2014 | |
| Hog Deer* | <i>Cervus porcinus</i> | | | | 1950 | |
| Hooded Robin | <i>Melanodryas cucullata cucullata</i> | | L | nt | 1999 | |
| Horsfield's Bronze-Cuckoo | <i>Chrysococcyx basalis</i> | | | | 2014 | |
| Horsfield's Bushlark | <i>Mirafra javanica</i> | | | | 2000 | |
| House Mouse* | <i>Mus musculus</i> | | | | 2011 | |
| House Sparrow* | <i>Passer domesticus</i> | | | | 2011 | |
| Imperial Jezebel Butterfly | <i>Delias harpalyce</i> | | | | 1954 | |
| Indian Peafowl* | <i>Pavo cristatus</i> | | | | 2001 | |
| Intermediate Egret | <i>Ardea intermedia</i> | | L | en | 2019 | Yes |
| Jack Dempsey Cichlid | <i>Rocio octofasciata</i> | | | | 1979 | |
| Jacky Winter | <i>Microeca fascians</i> | | | | 2001 | |
| Koala | <i>Phascolarctos cinereus</i> | | | | 2018 | Yes |
| Lace Monitor | <i>Varanus varius</i> | | | en | 2016 | |
| Large Forest Bat | <i>Vespadelus darlingtoni</i> | | | | 2015 | |
| Large-billed Scrubwren | <i>Sericornis magnirostris</i> | | | | 2016 | |
| Latham's Snipe | <i>Gallinago hardwickii</i> | | | nt | 2014 | |
| Laughing Kookaburra | <i>Dacelo novaeguineae</i> | | | | 2019 | Yes |
| Leaden Flycatcher | <i>Myiagra rubecula</i> | | | | 2010 | |
| Leaf Green Tree Frog | <i>Litoria nudidigitus</i> | | | | 2012 | |
| Lesser Long-eared Bat | <i>Nyctophilus geoffroyi</i> | | | | 2015 | |
| Lesueur's Frog | <i>Litoria lesueuri</i> | | | | 1965 | |
| Letter-winged Kite | <i>Elanus scriptus</i> | | | | 2019 | Yes |
| Lewin's Honeyeater | <i>Meliphaga lewinii</i> | | | | 2016 | |



| Common name | Scientific name | EPBC Act | FFG Act | DSE 2013 | Most recent record | Recorded during current surveys |
|---------------------------------|--|----------|---------|----------|--------------------|---------------------------------|
| Lewin's Rail | <i>Lewinia pectoralis pectoralis</i> | | L | vu | 2010 | |
| Little Bittern | <i>Ixobrychus minutus dubius</i> | | L | en | 2014 | |
| Little Black Cormorant | <i>Phalacrocorax sulcirostris</i> | | | | 2017 | |
| Little Corella | <i>Cacatua sanguinea</i> | | | | 2019 | Yes |
| Little Eagle | <i>Hieraaetus morphnoides</i> | | | | 2004 | |
| Little Egret | <i>Egretta garzetta nigripes</i> | | L | en | 2000 | |
| Little Forest Bat | <i>Vespadelus vulturnus</i> | | | | 2015 | |
| Little Grassbird | <i>Megalurus grammurus</i> | | | | 2017 | |
| Little Lorikeet | <i>Glossopsitta pusilla</i> | | | | 2009 | |
| Little Pied Cormorant | <i>Microcarbo melanoleucos</i> | | | | 2019 | Yes |
| Little Raven | <i>Corvus mellori</i> | | | | 2019 | Yes |
| Little Wattlebird | <i>Anthochaera chrysopetra</i> | | | | 2019 | Yes |
| Long-billed Corella | <i>Cacatua tenuirostris</i> | | | | 2011 | |
| Long-eared bats | <i>fam. Vespertilionidae gen. Nyctophilus</i> | | | | 2014 | |
| Longfin Eel | <i>Anguilla reinhardtii</i> | | | | 2007 | |
| Lowland Burrowing Crayfish | <i>Engaeus quadrimanus</i> | | | | 1999 | |
| Lowland Copperhead | <i>Austrelaps superbus</i> | | | | 2014 | Yes |
| Macleay's Swallowtail Butterfly | <i>Graphium macleayanum moggana</i> | | | | 1949 | |
| Macquarie Perch | <i>Macquaria australasica</i> | E | L | en | 1959 | |
| Magpie-lark | <i>Grallina cyanoleuca</i> | | | | 2019 | Yes |
| Mainland Dusky Antechinus | <i>Antechinus mimetes</i> | | | | 2003 | |
| Masked Lapwing | <i>Vanellus miles</i> | | | | 2014 | |
| Masked Owl | <i>Tyto novaehollandiae novaehollandiae</i> | | L | en | 2006 | |
| Masked Woodswallow | <i>Artamus personatus</i> | | | | 1977 | |
| Mayflies | <i>subf. Atalophlebiinae gen. Atalophlebia</i> | | | | 1998 | |
| McCoy's Skink | <i>Anepischtos maccayi</i> | | | | 2015 | |
| Metallic Skink | <i>Niveoscincus metallicus</i> | | | | 2014 | |
| Microcaddisflies | <i>fam. Hydroptilidae gen. Acritoptila</i> | | | | 1998 | |
| Mirror Carp* | <i>Cyprinus carpio var. mirror</i> | | | | 1999 | |



| Common name | Scientific name | EPBC Act | FFG Act | DSE 2013 | Most recent record | Recorded during current surveys |
|----------------------------------|--|----------|---------|----------|--------------------|---------------------------------|
| Mistletoebird | <i>Dicaeum hirundinaceum</i> | | | | 2015 | |
| Mites and Ticks | <i>subc. Micrura infc. Acarina</i> | | | | 1998 | |
| Monarch Butterfly | <i>Danaus plexippus</i> | | | | 1953 | |
| 'Morwell' Galaxias | <i>Galaxias</i> sp. 15 | | | | 2017 | |
| Mountain Brush-tailed Possum | <i>Trichosurus cunninghami</i> | | | | 2016 | |
| Mountain Dragon | <i>Rankinia diemensis</i> | | | | 2015 | |
| Mountain Galaxias complex | <i>Galaxias olidus complex</i> | | | | 1988 | |
| Murray Cod | <i>Maccullochella peelii</i> | V | L | vu | 1992 | |
| Muscovy Duck | <i>Cairina moschata</i> | | | | 2015 | |
| Musk Duck | <i>Biziura lobata</i> | | | vu | 2001 | |
| Musk Lorikeet | <i>Glossopsitta concinna</i> | | | | 2017 | |
| Nankeen Kestrel | <i>Falco cenchroides</i> | | | | 2011 | |
| Nankeen Night Heron | <i>Nycticorax caledonicus hillii</i> | | | nt | 2014 | |
| Narracan River Corrugated Mussel | <i>Hyridella (Hyridella) narracanensis</i> | | | | 1889 | |
| New Holland Honeyeater | <i>Phylidonyris novaehollandiae</i> | | | | 2019 | Yes |
| New Zealand Mudsail | <i>Potamopyrgus antipodarum</i> | | | | 1991 | |
| Noisy Friarbird | <i>Philemon corniculatus</i> | | | | 1916 | |
| Noisy Miner | <i>Manorina melanocephala</i> | | | | 2019 | Yes |
| Non-parasitic Lamprey | <i>Mordacia praecox</i> | | | | 1983 | |
| Northern Mallard* | <i>Anas platyrhynchos</i> | | | | 2015 | |
| Olive Whistler | <i>Pachycephala olivacea</i> | | | | 2015 | |
| Olive-backed Oriole | <i>Oriolus sagittatus</i> | | | | 2017 | |
| Oriental Weatherloach* | <i>Misgurnus anguillicaudatus</i> | | | | 2012 | |
| Ornate Mountain Galaxias | <i>Galaxias ornatus</i> | | | | 2002 | |
| Ostrich* | <i>Struthio camelus</i> | | | | 1999 | |
| Owlet moth | <i>Proteuxoa marginalis</i> | | | | 1944 | |
| Pacific Barn Owl | <i>Tyto javanica</i> | | | | 1997 | |
| Pacific Black Duck | <i>Anas superciliosa</i> | | | | 2017 | Yes |
| Painted Button-quail | <i>Turnix varia</i> | | | | 2012 | |



| Common name | Scientific name | EPBC Act | FFG Act | DSE 2013 | Most recent record | Recorded during current surveys |
|-------------------------|---|----------|---------|----------|--------------------|---------------------------------|
| Pale-headed Rosella | <i>Platycercus adscitus</i> | | | | 1977 | |
| Pallid Cuckoo | <i>Cacomantis pallidus</i> | | | | 2012 | |
| Pea Clam | <i>Pisidium (Euglesa) etheridgei</i> | | | | 1995 | |
| Peaceful Dove | <i>Geopelia striata</i> | | | | 2001 | |
| Peregrine Falcon | <i>Falco peregrinus</i> | | | | 2015 | |
| Peron's Tree Frog | <i>Litoria peronii</i> | | | | 2014 | |
| Pied Cormorant | <i>Phalacrocorax varius</i> | | | nt | 2000 | |
| Pied Currawong | <i>Strepera graculina</i> | | | | 2019 | Yes |
| Pig (feral)* | <i>Sus scrofa</i> | | | | 1982 | |
| Pill Clam | <i>fam. Sphaeriidae gen. Pisidium</i> | | | | 1987 | |
| Pilotbird | <i>Pycnoptilus floccosus</i> | | | | 2015 | |
| Pink Robin | <i>Petroica rodinogaster</i> | | | | 2003 | |
| Pink-eared Duck | <i>Malacorhynchus membranaceus</i> | | | | 2009 | |
| Plate-thigh beetles | <i>supf. Scirtoidea fam. Eucinetidae</i> | | | | 1998 | |
| Platypus | <i>Ornithorhynchus anatinus</i> | | | | 2017 | |
| Plumed Whistling-Duck | <i>Dendrocygna eytoni</i> | | | | 2007 | |
| Pobblebonk Frog | <i>Limnodynastes dumerilii dumerilii</i> | | | | 2018 | Yes |
| Pouched Lamprey | <i>Geotria australis</i> | | | | 1982 | |
| Powerful Owl | <i>Ninox strenua</i> | | L | vu | 2014 | |
| Purple Swampphen | <i>Porphyrio porphyrio</i> | | | | 2019 | Yes |
| Rainbow Bee-eater | <i>Merops ornatus</i> | | | | 1978 | |
| Rainbow Lorikeet | <i>Trichoglossus haematodus</i> | | | | 2019 | Yes |
| Rainbow Trout* | <i>Oncorhynchus mykiss</i> | | | | 1988 | |
| Ramshorn snail | <i>Ferrissia (Pettancylus) tasmanicus</i> | | | | 1998 | |
| Red Fox* | <i>Vulpes vulpes</i> | | | | 2018 | Yes |
| Red Wattlebird | <i>Anthochaera carunculata</i> | | | | 2019 | Yes |
| Red-bellied Black Snake | <i>Pseudechis porphyriacus</i> | | | | 2011 | |
| Red-browed Finch | <i>Neochmia temporalis</i> | | | | 2019 | Yes |
| Red-browed Treecreeper | <i>Climacteris erythrops</i> | | | | 2015 | |



| Common name | Scientific name | EPBC Act | FFG Act | DSE 2013 | Most recent record | Recorded during current surveys |
|---------------------------|--|----------|---------|----------|--------------------|---------------------------------|
| Redfin* | <i>Perca fluviatilis</i> | | | | 2010 | |
| Red-kneed Dotterel | <i>Erythrogonyx cinctus</i> | | | | 2009 | |
| Red-rumped Parrot | <i>Psephotus haematonotus</i> | | | | 1998 | |
| Red-whiskered Bulbul* | <i>Pycnonotus jocosus</i> | | | | 1977 | |
| Regent Honeyeater | <i>Anthochaera phrygia</i> | CE | L | cr | 1970 | |
| Restless Flycatcher | <i>Myiagra inquieta</i> | | | | 2011 | |
| Riffle beetle | <i>Simsonia wilsoni</i> | | | | 1998 | |
| Riffle bug | <i>Microvelia (Austromicrovelia) peramoena</i> | | | | 1998 | |
| Ringed Xenica | <i>Geitoneura acantha</i> | | | | 1950 | |
| River Blackfish | <i>Gadopsis marmoratus</i> | | | | 2017 | |
| Rock Dove* | <i>Columba livia</i> | | | | 2001 | |
| Rose Robin | <i>Petroica rosea</i> | | | | 2015 | |
| Rosella species | <i>Platycercus</i> sp. | | | | 2001 | |
| Rove beetles | <i>supf. Staphylinidea</i> fam. <i>Staphylinidae</i> | | | | 1998 | |
| Royal Spoonbill | <i>Platalea regia</i> | | | nt | 2007 | |
| Rufous Fantail | <i>Rhipidura rufifrons</i> | | | | 2015 | |
| Rufous Songlark | <i>Cincloramphus mathewsi</i> | | | | 2000 | |
| Rufous Whistler | <i>Pachycephala rufiventris</i> | | | | 2015 | |
| Rufous-bellied Pademelon | <i>Thylogale billardieri</i> | | L | rx | 1830 | |
| Sacred Kingfisher | <i>Todiramphus sanctus</i> | | | | 2017 | |
| Sambar* | <i>Cervus unicolor</i> | | | | 2016 | |
| Satin Bowerbird | <i>Ptilonorhynchus violaceus</i> | | | | 2014 | |
| Satin Flycatcher | <i>Myiagra cyanoleuca</i> | | | | 2015 | |
| Satin-green Forester Moth | <i>Pollanisus viridipulverulenta</i> | | | | 1947 | |
| Scarlet Honeyeater | <i>Myzomela sanguinolenta</i> | | | | 2015 | |
| Scarlet Robin | <i>Petroica boodang</i> | | | | 2013 | |
| Sharp-tailed Sandpiper | <i>Calidris acuminata</i> | | | | 2009 | |
| Sheep (feral)* | <i>Ovis aries</i> | | | | 2006 | |
| Shield bug | <i>Lubentius marginellus</i> | | | | 1982 | |



| Common name | Scientific name | EPBC Act | FFG Act | DSE 2013 | Most recent record | Recorded during current surveys |
|----------------------------------|---|----------|---------|----------|--------------------|---------------------------------|
| Shining Bronze-Cuckoo | <i>Chrysococcyx lucidus</i> | | | | 2014 | |
| Short-beaked Echidna | <i>Tachyglossus aculeatus</i> | | | | 2018 | Yes |
| Shorthead Lamprey | <i>Mordacia mordax</i> | | | | 2017 | |
| Shouldered Brown Butterfly | <i>Heteronympha penelope penelope</i> | | | | 2016 | |
| Silky Hairstreak Butterfly | <i>Pseudalmenus chlorinda</i> | | | | 1927 | |
| Silky Hairstreak Butterfly | <i>Pseudalmenus chlorinda zephyrus</i> | | X | vu | 1954 | |
| Silver Gull | <i>Chroicocephalus novaehollandiae</i> | | | | 2002 | |
| Silvereye | <i>Zosterops lateralis</i> | | | | 2017 | |
| Skinks | <i>infp. Scincomorpha</i> fam. <i>Scincidae</i> | | | | 1997 | |
| Soldier Flies | <i>Stratiomyidae</i> sp. 3 (EPA) | | | | 1998 | |
| Song Thrush* | <i>Turdus philomelos</i> | | | | 2000 | |
| Sooty Owl | <i>Tyto tenebricosa tenebricosa</i> | | L | vu | 2012 | |
| South Gippsland Spiny Crayfish | <i>Euastacus neodiversus</i> | | L | en | 2014 | |
| Southern Boobook | <i>Ninox novaeseelandiae</i> | | | | 2019 | Yes |
| Southern Brown Bandicoot | <i>Isodon obesulus obesulus</i> | E | L | nt | 1978 | |
| Southern Brown Tree Frog | <i>Litoria ewingii</i> | | | | 2017 | |
| Southern Bullfrog (ssp. unknown) | <i>Limnodynastes dumerilii</i> | | | | 2015 | |
| Southern Dung Beetle | <i>Onthophagus australis</i> | | | | 1963 | |
| Southern Emu-wren | <i>Stipiturus malachurus</i> | | | | 1981 | |
| Southern Forest Bat | <i>Vespadelus regulus</i> | | | | 2014 | |
| Southern Long-nosed Bandicoot | <i>Perameles nasuta</i> | | | | 2014 | |
| Southern Myotis | <i>Myotis macropus</i> | | | nt | 2013 | |
| Southern Pygmy Perch | <i>Nannoperca australis</i> | | | | 2017 | |
| Southern Shortfin Eel | <i>Anguilla australis</i> | | | | 2017 | |
| Southern Toadlet | <i>Pseudophryne semimarmorata</i> | | | vu | 1993 | |
| Southern Water Skink | <i>Eulamprus tympanum tympanum</i> | | | | 2013 | |
| Spencer's Skink | <i>Pseudemoia spenceri</i> | | | | 1897 | |
| Spiny Crayfish | fam. <i>Parastacidae</i> gen. <i>Euastacus</i> | | | | 2017 | |
| Spotless Crake | <i>Porzana tabuensis</i> | | | | 1992 | |



| Common name | Scientific name | EPBC Act | FFG Act | DSE 2013 | Most recent record | Recorded during current surveys |
|--------------------------|---------------------------------------|----------|---------|----------|--------------------|---------------------------------|
| Spot-tailed Quoll | <i>Dasyurus maculatus maculatus</i> | E | L | en | 2016 | |
| Spotted Galaxias | <i>Galaxias truttaceus</i> | | | | 1979 | |
| Spotted Harrier | <i>Circus assimilis</i> | | | nt | 2003 | |
| Spotted Marsh Frog | <i>Limnodynastes tasmaniensis</i> | | | | 2018 | Yes |
| Spotted Pardalote | <i>Pardalotus punctatus punctatus</i> | | | | 2019 | Yes |
| Spotted Quail-thrush | <i>Cinclosoma punctatum</i> | | | nt | 2016 | |
| Spotted Tilapia* | <i>Pelmatolapia mariae</i> | | | | 1994 | |
| Spotted Turtle-Dove* | <i>Streptopelia chinensis</i> | | | | 2017 | |
| Straw-necked Ibis | <i>Threskiornis spinicollis</i> | | | | 2014 | |
| Striated Fieldwren | <i>Calamanthus fuliginosus</i> | | | | 1981 | |
| Striated Pardalote | <i>Pardalotus striatus</i> | | | | 2019 | Yes |
| Striated Thornbill | <i>Acanthiza lineata</i> | | | | 2019 | Yes |
| Striped Marsh Frog | <i>Limnodynastes peronii</i> | | | | 2018 | Yes |
| Stubble Quail | <i>Coturnix pectoralis</i> | | | | 2001 | |
| Sugar Glider | <i>Petaurus breviceps</i> | | | | 2018 | Yes |
| Sulphur-crested Cockatoo | <i>Cacatua galerita</i> | | | | 2017 | |
| Superb Fairy-wren | <i>Malurus cyaneus</i> | | | | 2019 | Yes |
| Superb Lyrebird | <i>Menura novaehollandiae</i> | | | | 2019 | Yes |
| Swamp Harrier | <i>Circus approximans</i> | | | | 2014 | Yes |
| Swamp Rat | <i>Rattus lutreolus</i> | | | | 2014 | |
| Swamp Skink | <i>Lissolepis coventryi</i> | | L | vu | 2007 | |
| Swift Parrot | <i>Lathamus discolor</i> | CE | L | en | 1980 | |
| Tawny Frogmouth | <i>Podargus strigoides</i> | | | | 2019 | Yes |
| Tench* | <i>Tinca tinca</i> | | | | 1913 | |
| Tiger Snake | <i>Notechis scutatus</i> | | | | 2014 | |
| Tree Martin | <i>Petrochelidon nigricans</i> | | | | 2010 | |
| Varied Sittella | <i>Daphoenositta chrysoptera</i> | | | | 2015 | |
| Varied Swordgrass Brown | <i>Tisiphone abeona</i> | | | | 2012 | |
| Verreaux's Tree Frog | <i>Litoria verreauxii verreauxii</i> | | | | 2018 | Yes |



| Common name | Scientific name | EPBC Act | FFG Act | DSE 2013 | Most recent record | Recorded during current surveys |
|--|---|----------|---------|----------|--------------------|---------------------------------|
| Victorian Smooth Froglet | <i>Geocrinia victoriana</i> | | | | 2016 | |
| Water Dragon | <i>Intellagama lesueurii</i> | | | | 2005 | |
| Water Rat | <i>Hydromys chrysogaster</i> | | | | 2013 | |
| Water Snipe-flies | <i>supf. Tabanoidea</i> fam. <i>Athericidae</i> | | | | 1998 | |
| Weasel Skink | <i>Saproscincus mustelinus</i> | | | | 2015 | |
| Wedge-tailed Eagle | <i>Aquila audax</i> | | | | 2015 | |
| Weebill | <i>Smicrornis brevirostris</i> | | | | 2001 | |
| Welcome Swallow | <i>Hirundo neoxena</i> | | | | 2017 | Yes |
| Western Carp Gudgeon (Species Complex) | <i>Hypseleotris klunzingeri</i> | | | | 1999 | |
| Whirligig beetle | <i>Macrogyrus (Tribologyrus) australis</i> | | | | 1980 | |
| Whistling Kite | <i>Haliastur sphenurus</i> | | | | 2014 | |
| White-backed Swallow | <i>Cheramoeca leucosternus</i> | | | | 1942 | |
| White-bellied Cuckoo-shrike | <i>Coracina papuensis</i> | | | | 1999 | |
| White-bellied Sea-Eagle | <i>Haliaeetus leucogaster</i> | | L | vu | 2014 | |
| White-browed Scrubwren | <i>Sericornis frontalis</i> | | | | 2019 | Yes |
| White-browed Treecreeper | <i>Climacteris affinis</i> | | L | vu | 2004 | |
| White-browed Woodswallow | <i>Artamus superciliosus</i> | | | | 1978 | |
| White-eared Honeyeater | <i>Lichenostomus leucotis</i> | | | | 2017 | |
| White-faced Heron | <i>Egretta novaehollandiae</i> | | | | 2017 | |
| White-footed Dunnart | <i>Sminthopsis leucopus</i> | | L | nt | 2017 | |
| White-fronted Chat | <i>Epthianura albifrons</i> | | | | 2009 | |
| White-lipped Snake | <i>Drysdalia coronoides</i> | | | | 2014 | |
| White-naped Honeyeater | <i>Melithreptus lunatus</i> | | | | 2016 | |
| White-necked Heron | <i>Ardea pacifica</i> | | | | 2011 | |
| White-plumed Honeyeater | <i>Lichenostomus penicillatus</i> | | | | 2019 | Yes |
| White's Skink | <i>Liopholis whitii</i> | | | | 2013 | |
| White-striped Freetail Bat | <i>Tadarida australis</i> | | | | 2018 | Yes |
| White-throated Gerygone | <i>Gerygone olivacea</i> | | | | 1978 | |
| White-throated Needletail | <i>Hirundapus caudacutus</i> | | | vu | 2007 | |



| Common name | Scientific name | EPBC Act | FFG Act | DSE 2013 | Most recent record | Recorded during current surveys |
|------------------------------|---------------------------------|----------|---------|----------|--------------------|---------------------------------|
| White-throated Nightjar | <i>Eurostopodus mystacalis</i> | | | | 2015 | |
| White-throated Treecreeper | <i>Cormobates leucophaeus</i> | | | | 2019 | Yes |
| White-winged Chough | <i>Corcorax melanorhamphos</i> | | | | 2000 | |
| White-winged Triller | <i>Lalage sueurii</i> | | | | 2010 | |
| Willie Wagtail | <i>Rhipidura leucophrys</i> | | | | 2019 | Yes |
| Wonga Pigeon | <i>Leucosarcia melanoleuca</i> | | | | 2016 | |
| Yellow Thornbill | <i>Acanthiza nana</i> | | | | 2019 | Yes |
| Yellow-bellied Glider | <i>Petaurus australis</i> | | | | 2012 | |
| Yellow-billed Spoonbill | <i>Platalea flavipes</i> | | | | 2019 | Yes |
| Yellow-faced Honeyeater | <i>Lichenostomus chrysops</i> | | | | 2019 | Yes |
| Yellow-rumped Thornbill | <i>Acanthiza chrysorrhoa</i> | | | | 2019 | Yes |
| Yellow-tailed Black-Cockatoo | <i>Calyptorhynchus funereus</i> | | | | 2019 | Yes |
| Yellow-tufted Honeyeater | <i>Lichenostomus melanops</i> | | | | 2004 | |

5.6 Appendix 2.2 – Significant Fauna Species

Table A3.2. Significant fauna within 10 kilometres of the study area.

Habitat characteristics of significant fauna species previously recorded within 10 kilometres of the study area, or that may potentially occur within the study area were assessed to determine their likelihood of occurrence. The likelihood of occurrence rankings for each of the threatened species are:

| | | |
|---|---------------------|---|
| 1 | High Likelihood | <ul style="list-style-type: none"> Known resident in the study area based on site observations, database records, or expert advice; and/or, Recent records (i.e. within five years) of the species in the local area (VBA 2011); and/or, The study area contains the species' preferred habitat. |
| 2 | Moderate Likelihood | <ul style="list-style-type: none"> The species is likely to visit the study area regularly (i.e. at least seasonally); and/or, Previous records of the species in the local area (DSE 2011b); and/or, The study area contains some characteristics of the species' preferred habitat. |
| 3 | Low Likelihood | <ul style="list-style-type: none"> The species is likely to visit the study area occasionally or opportunistically whilst en route to more suitable sites; and/or, There are only limited or historical records of the species in the local area (i.e. more than 20 years old); and/or, The study area contains few or no characteristics of the species' preferred habitat. |
| 4 | Unlikely | <ul style="list-style-type: none"> No previous records of the species in the local area; and/or, The species may fly over the study area when moving between areas of more suitable habitat; and/or, Out of the species' range; and/or, No suitable habitat present. |

EPBC Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)

FFG Flora and Fauna Guarantee Act 1988 (FFG Act)

DSE Advisory List of Threatened Vertebrate Fauna in Victoria (DSE 2013); Advisory List of Threatened Invertebrate Fauna in Victoria (DSE 2009)

NAP National Action Plan (Cogger et al 1993; Duncan et al. 1999; Garnet and Crowley 2000; Lee 1995; Maxwell et al. 1996; Sands and New 2002; Tyler 1997)

| | | | |
|----|------------------------|----|--|
| EX | Extinct | DD | Data deficient (insufficiently or poorly known) |
| RX | Regionally extinct | L | Listed as threatened under FFG Act |
| CR | Critically endangered | I | Invalid or ineligible for listing under the FFG Act |
| EN | Endangered | # | Listed on the Protected Matters Search Tool |
| VU | Vulnerable | * | Additional information from the Victorian Fauna Database |
| RA | Rare | | |
| NT | Near threatened | | |
| CD | Conservation dependent | | |
| LC | least concern | | |

| Common Name | Scientific Name | Last Documented Record (VBA) | # Records (VBA) | EPBC Act | FFG ACT | DSE (2013) | Likelihood |
|------------------------------|-------------------------------------|------------------------------|-----------------|----------|---------|------------|------------|
| NATIONAL SIGNIFICANCE | | | | | | | |
| Australasian Bittern | <i>Botaurus poiciloptilus</i> # | - | 1 | EN | L | EN | 3 |
| Australian Grayling | <i>Prototroctes maraena</i> | 1981 | 2 | VU | L | VU | 3 |
| Australian Painted Snipe | <i>Rostratula australis</i> # | - | 1 | VU | L | CR | 3 |
| Broad-toothed Rat | <i>Mastacomys fuscus mordicus</i> # | - | 1 | VU | L | EN | 3 |

| Common Name | Scientific Name | Last Documented Record (VBA) | # Records (VBA) | EPBC Act | FFG ACT | DSE (2013) | Likelihood |
|--|--|------------------------------|-----------------|----------|---------|------------|------------|
| Curlew Sandpiper | <i>Calidris ferruginea</i> # | - | 1 | CR | - | EN | 4 |
| Dwarf Galaxias | <i>Galaxiella pusilla</i> | 2012 | 7 | VU | L | EN | 2-3 |
| Eastern Curlew | <i>Numenius madagascariensis</i> # | - | 1 | CR | - | VU | 4 |
| Eastern Quoll | <i>Dasyurus viverrinus</i> | - | 1 | EN | L | RX | 4 |
| Greater Glider | <i>Petauroides Volans</i> | 2012 | 25 | VU | - | VU | 2-3 |
| Grey-headed Flying-fox | <i>Pteropus poliocephalus</i> # | - | - | VU | L | VU | 2 |
| Growling Grass Frog | <i>Litoria raniformis</i> | 2010 | 15 | VU | L | EN | 1 |
| Long-nosed Potoroo | <i>Potorous tridactylus tridactylus</i> | - | 1 | VU | L | NT | 4 |
| Painted Honeyeater | <i>Grantiella picta</i> # | - | 1 | VU | L | VU | 4 |
| Regent Honeyeater | <i>Anthochaera phrygia</i> # | - | 1 | CR | L | CR | 4 |
| Smoky Mouse | <i>Pseudomys fumeus</i> # | - | 1 | EN | L | EN | 4 |
| Southern Brown Bandicoot | <i>Isodon obesulus obesulus</i> | 1978 | 4 | EN | L | NT | 3 |
| Spot-tailed Quoll | <i>Dasyurus maculatus maculatus</i> # | - | 3 | EN | L | EN | 4 |
| Swift Parrot | <i>Lathamus discolor</i> | 1977 | 3 | CR | L | EN | 3 |
| STATE SIGNIFICANCE | | | | | | | |
| Australasian Shoveler | <i>Anas rhynchos</i> | 2007 | 25 | - | - | VU | 2 |
| Black Falcon | <i>Falco subniger</i> | 2000 | 4 | - | - | VU | 2 |
| Blue-billed Duck | <i>Oxyura australis</i> | 2014 | 26 | - | L | EN | 2 |
| Brown Treecreeper (south-eastern ssp.) | <i>Climacteris picumnus victoriae</i> | 1916 | 1 | - | - | NT | 4 |
| Brush-tailed Phascogale | <i>Phascogale tapoatafa</i> | 1932 | 3 | - | L | VU | 4 |
| Caspian Tern | <i>Hydroprogne caspia</i> | 1978 | 2 | - | L | NT | 4 |
| Chestnut-rumped Heathwren | <i>Calamanthus pyrrhopygius</i> | 1998 | 1 | - | L | VU | 3 |
| Common Bent-wing Bat | <i>Miniopterus schreibersii</i> GROUP | 1971 | 2 | - | L | - | 3 |
| Common Sandpiper | <i>Actitis hypoleucos</i> | # | 1 | - | - | VU | 4 |
| Diamond Firetail | <i>Stagonopleura guttata</i> | 1998 | 2 | - | L | NT | 3 |
| Eastern Great Egret | <i>Ardea modesta</i> | 2013 | 54 | - | L | VU | 2 |
| Freshwater Catfish | <i>Tandanus tandanus</i> | 1993 | 1 | - | L | EN | 3 |
| Gippsland Burrowing Crayfish | <i>Engaeus hemircirratulus</i> | 1999 | 1 | - | - | EN | 2 |
| Glossy Grass Skink | <i>Pseudemoia rawlinsoni</i> | 2008 | 2 | - | - | VU | 2 |
| Grey Goshawk | <i>Accipiter novaehollandiae novaehollandiae</i> | 2000 | 8 | - | L | VU | 2 |
| Gull-billed Tern | <i>Gelochelidon nilotica macrotarsa</i> | 1978 | 1 | - | L | EN | 3 |
| Hardhead | <i>Aythya australis</i> | 2014 | 51 | - | - | VU | 2 |

| Common Name | Scientific Name | Last Documented Record (VBA) | # Records (VBA) | EPBC Act | FFG ACT | DSE (2013) | Likelihood |
|--------------------------------|---|------------------------------|-----------------|----------|---------|------------|------------|
| Hooded Robin | <i>Melanodryas cucullata cucullata</i> | 1999 | 1 | - | L | NT | 3 |
| Intermediate Egret | <i>Ardea intermedia</i> | 1980 | 4 | - | L | EN | 2 |
| Lace Goanna | <i>Varanus varius</i> | 2016 | 11 | - | - | EN | 2 |
| Lewin's Rail | <i>Lewinia pectoralis pectoralis</i> | 1997 | 2 | - | L | VU | 2 |
| Little Bittern | <i>Ixobrychus minutus dubius</i> | 2014 | 1 | - | L | EN | 2 |
| Little Egret | <i>Egretta garzetta nigripes</i> | 1999 | 5 | - | L | EN | 2 |
| Masked Owl | <i>Tyto novaehollandiae novaehollandiae</i> | 2006 | 1 | - | L | EN | 2 |
| Musk Duck | <i>Biziura lobata</i> | 2001 | 23 | - | - | VU | 2 |
| Narracan Burrowing Crayfish | <i>Engaeus phyllocercus</i> | 2011 | 1 | - | L | EN | 3 |
| Powerful Owl | <i>Ninox strenua</i> | 2013 | 22 | - | L | VU | 2 |
| South Gippsland Spiny Crayfish | <i>Euastacus neodiversus</i> | 2012 | 1 | - | L | EN | 2 |
| Southern Toadlet | <i>Pseudophryne semimarmorata</i> | 1977 | 6 | - | - | VU | 3 |
| Strzelecki Burrowing Crayfish | <i>Engaeus rostrigaleatus</i> | 1999 | 1 | - | L | EN | 2-3 |
| Swamp Skink | <i>Lissolepis coventryi</i> | 2007 | 1 | - | L | VU | 2 |
| White-bellied Sea-Eagle | <i>Haliaeetus leucogaster</i> | 2014 | 6 | - | L | VU | 2 |
| White-browed Treecreeper | <i>Climacteris affinis</i> | 2004 | 1 | - | L | VU | 2 |
| White-throated Needletail | <i>Hirundapus caudacutus</i> | 2001 | 64 | - | - | VU | 2 |
| REGIONAL SIGNIFICANCE | | | | | | | |
| Azure Kingfisher | <i>Alcedo azurea</i> | 2015 | 5 | - | - | NT | 2 |
| Emu | <i>Dromaius novaehollandiae</i> | 2000 | 6 | - | - | NT | 2 |
| Latham's Snipe | <i>Gallinago hardwickii</i> | 2014 | 11 | - | - | NT | 2 |
| Nankeen Night Heron | <i>Nycticorax caledonicus hillii</i> | 2014 | 7 | - | - | NT | 2 |
| Pectoral Sandpiper | <i>Calidris melanotos</i> | # | 1 | - | - | NT | 4 |
| Pied Cormorant | <i>Phalacrocorax varius</i> | 2000 | 20 | - | - | NT | 2 |
| Royal Spoonbill | <i>Platalea regia</i> | 2007 | 13 | - | - | NT | 2 |
| Spotted Harrier | <i>Circus assimilis</i> | 2003 | 2 | - | - | NT | 2 |
| Spotted Quail-thrush | <i>Cinlosoma punctatum</i> | 1979 | 4 | - | - | NT | 3 |