

Final Report

# **Biodiversity Assessment: Elaine Solar Farm, Elaine, Victoria**

Prepared for  
**Urbis Pty Ltd**

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**Ecology and Heritage Partners Pty Ltd**

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## SUMMARY OF CLAUSE 52.17 APPLICATION REQUIREMENTS

Clause 52.17 Native Vegetation outlines the requirements for a permit to remove, destroy or lop native vegetation, including dead vegetation, under the Victoria Planning Provisions. There are 11 application requirements that must be met in order to satisfy this clause (Table S1).

**Table S1.** Application requirements for a permit to remove native vegetation (Victoria Planning Provisions Clause 52.17; DELWP 2017)

No.	Application Requirement	Response
Application requirements under the Detailed Assessment Pathway		
1	Information about the native vegetation to be removed, including: <ul style="list-style-type: none"> <li>The assessment pathway and reason for the assessment pathway;</li> <li>A description of the native vegetation to be removed;</li> <li>Maps showing the native vegetation and property in context; and</li> <li>The offset requirement that will apply if the native vegetation is approved to be removed.</li> </ul>	Refer to Section 3.1, Section 3.3, Section 4.2, Figure 1, Figure 2 and Appendix 3 (NVR Report)
2	Topographic and land information relating to the native vegetation to be removed, showing ridges, crests and hilltops, wetlands and waterways, slopes of more than 20 percent, drainage lines, low lying areas, saline discharge areas, and areas of existing erosion, as appropriate.	Refer to Section 1.2 and Figure 1
3	Recent dated photographs of the native vegetation to be removed.	Refer to Section 3.1
4	Details of any other native vegetation that was permitted to be removed on the same property with the same ownership as the native vegetation to be removed, where the removal occurred in the five-year period before the application to remove native vegetation is lodged.	No removal of native vegetation has been removed by the proponent within the property within the past five years
5	An avoid and minimise statement. The statement describes any efforts to avoid the removal of and minimise the impacts on the biodiversity and other values of native vegetation, and how these efforts focussed on areas of native vegetation that have the most value.	Refer to Section 4.1
6	A copy of any Property Vegetation Plan contained within an agreement made pursuant to section 69 of the <i>Conservation, Forests and Lands Act 1987</i> that applies to the native vegetation to be removed.	Not applicable
7	Where the removal of native vegetation is to create defensible space, a written statement explaining why the removal of native vegetation is necessary. This statement must have regard to other available bushfire risk mitigation measures. This statement is not required when the creation of defensible space is in conjunction with an application under the Bushfire Management Overlay.	Not applicable as the vegetation clearance is not for defensible space
8	If the application is under Clause 52.16, a statement that explains how the proposal responds to the Native Vegetation Precinct Plan considerations at decision guideline 8.	Not applicable as the application responds to Clause 52.17
9	An offset statement providing evidence that an offset that meets the offset requirements for the native vegetation to be removed has been identified and can be secured in accordance with the Guidelines.	Refer to Section 4.3

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No.	Application Requirement	Response
10	<p>A site assessment report of the native vegetation to be removed, including:</p> <ul style="list-style-type: none"> <li>• A habitat hectare assessment of any patches of native vegetation, including the condition, extent (in hectares), Ecological Vegetation Class and bioregional conservation status.</li> <li>• The location, number, circumference (in centimetres measured at 1.3 metres above ground level) and species of any large trees within patches.</li> <li>• The location, number, circumference (in centimetres measured at 1.3 metres above ground level) and species of any scattered trees, and whether each tree is small or large.</li> </ul>	Refer to Figure 2, Appendix 1.2 (habitat hectares assessment) and Appendix 1.3 (tree information)
11	Information about impacts on rare or threatened species habitat, including the relevant section of the Habitat importance map for each rare or threatened species requiring a species offset.	Refer to Section 3.3 and Appendix 3 (NVR Report)

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# 1 INTRODUCTION

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## 1.1 Background

Ecology and Heritage Partners Pty Ltd was commissioned by Urbis Pty Ltd to provide a Biodiversity Assessment for the proposed Elaine Solar Farm, Victoria.

We understand that Urbis is proposing to submit a planning application in order to facilitate future development works for a solar farm, including solar panels, associated infrastructure and an access road into the development.

The purpose of this assessment was to identify the extent and type of native vegetation present within the study area and to determine the likely presence of significant flora and fauna species and/or ecological communities. This report presents the results of the assessment and discusses the potential ecological and legislative implications associated with the proposed action.

## 1.2 Study Area

The study area is located at Elaine Solar Farm and is approximately 85 kilometres west of Melbourne's CBD (Figure 1). The study area covers approximately 247.5 hectares in area and comprised two land parcels, one located adjacent to Midland Highway (approximately 170.90 hectares), the other located adjacent to Woolshed Road (approximately 76.2 hectares). It is bound by agricultural land to the north, east, south and west, with Williamson Creek located approximately 600 metres north of the study area.

The study area is currently used for cropped agricultural land. It is generally flat, with no ridges, crests or waterways within or immediately adjacent to the site. A modelled wetland is located in the north western side of the study area (Figure 2).

According to the Victorian Department of Energy, Environment and Climate Action (DEECA) NatureKit Map (DEECA 2023a), the study area is located within the Victorian Volcanic Plains, Central Victorian Uplands bioregion, Corangamite Catchment Management Authority (CMA) and Moorabool Shire Council municipality.

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## 2 METHODS

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### 2.1 Relevant State and Commonwealth Legislation

Throughout the assessment process, consideration has been given to the following Commonwealth and Victorian environmental policy and legislation.

- *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act);
- *Environmental Effects Act 1978* (EE Act);
- *Flora and Fauna Guarantee Act 1988* (FFG Act);
- *Planning and Environment Act 1987* (P&E Act);
  - Guidelines for the removal, destruction and lopping of native vegetation (DELWP 2017);
- Moorabool Planning Scheme, including;
  - Clause 12.01-1S Protection of Biodiversity;
  - Clause 12.01-2S Native Vegetation Management;
  - Clause 52.17 Native Vegetation; and,
  - Clause 53.13 Renewable Energy Facility (Other Than Wind Energy Facility).
- Solar Energy Facilities Design and Development Guidelines (DELWP 2019a);
- *Wildlife Act 1975* (Wildlife Act); and,
- *Catchment and Land Protection Act 1994* (CaLP Act).

### 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 DEECA NatureKit Map (DEECA 2023a) and Native Vegetation Information Management (NVIM) Tool (DEECA 2023b) for:
  - Modelled data for location risk, native vegetation patches, scattered trees and habitat for rare or threatened species; and,
  - The extent of historic and current Ecological Vegetation Classes (EVCs).
- EVC benchmarks (DEECA 2023c) for descriptions of EVCs within the relevant bioregion;
- The Victorian Biodiversity Atlas (VBA) for previously documented flora and fauna records within the project locality (DEECA 2023d);

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- The Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW) Protected Matters Search Tool (PMST) for matters of National Environmental Significance (NES) protected under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) (DCCEEW 2023);
- Relevant listings under the Victorian *Flora and Fauna Guarantee Act 1988* (FFG Act), including the latest Threatened (DEECA 2023e) and Protected (Department of Environment, Land, Water and Planning [DELWP] 2019a) Lists;
- The online VicPlan Map (Department of Transport and Planning [DTP] 2023) 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;
  - Summary of Ecological Values for the proposed Elaine Solar Farm, Elaine, Victoria. Ecology and Heritage Partners 2023.

## 2.3 Field Assessment

A field assessment was undertaken by a habitat hectare assessor, who is accredited by DEECA in the habitat hectare assessment methodology, on 30 July and 9 September 2022, and 6 July 2023 to obtain information on flora and fauna values within the study area. The study area was walked, with all commonly observed vascular flora and fauna species recorded, significant records mapped, and the overall condition of vegetation and habitats noted. Ecological Vegetation Classes (EVCs) were determined with reference to DEECA pre-1750 and extant EVC mapping (DEECA 2023a) and their published descriptions (DEECA 2023c).

Where native vegetation was identified a habitat hectare assessment was undertaken following methodology described in the Vegetation Quality Assessment Manual (Department of Sustainability and Environment (DSE) 2004).

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

Under the *Planning and Environment Act 1987*, Clause 52.17 of the Moorabool Planning Scheme requires a planning permit 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*' (the Guidelines) (DELWP 2017). The '*Assessor's handbook: Applications to remove, destroy or lop native vegetation*' (Assessor's handbook) (DELWP 2018) provides clarification regarding the application of the Guidelines (DELWP 2017).

### 2.4.1 Assessment Pathway

The Guidelines manage the impacts on biodiversity from native vegetation removal using an assessment-based approach. Two factors – extent risk and location category – are used to determine the risk associated with an application for a permit to remove native vegetation. The location category (1, 2 or 3) has been determined

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for all areas in Victoria and is available on DEECA's NVIM Tool (DEECA 2023b). Determination of assessment pathway is summarised in Table 1.

**Table 1.** Assessment pathways for applications to remove, destroy or lop native vegetation (DELWP 2017).

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

**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.

#### 2.4.2 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 habitat hectare assessment.

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

Category	Definition	Extent	Condition
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; OR any mapped wetland included in the <i>Current Wetlands map</i> , available in DEECA systems and tools.	Measured in hectares. Based on hectare area of the native patch.	Vegetation Quality Assessment Manual (DSE 2004).  Modelled condition for <i>Current Wetlands</i> .
Scattered tree	A native canopy tree that does not form part of a native patch.	Measured in hectares. Each Large scattered tree is assigned an extent of 0.071 hectares (15m radius). Each Small scattered tree is assigned a default extent of 0.031 hectares (10 metre radius)	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'.

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#### 2.4.3 *Current Wetlands (DEECA)*

Wetlands can be difficult to map and assess accurately as they respond quite quickly to changes in environmental condition, especially rainfall. After a period of no or low rainfall they can disappear or appear very degraded. They do, however, recover rapidly after periods of increased rainfall. As a result, under the Guidelines (DELWP 2017) all mapped wetlands (based on 'Current Wetlands' layer in the DEECA NatureKit Map) that are to be impacted must be included as native vegetation, with the modelled condition score assigned to them (DEECA 2023b).

Note that mapped wetlands do not apply if they are covered by a hardened, man-made surface, for example, a roadway. If covered by any vegetation including crops, bare soil, a mapped wetland must be treated as a native patch.

#### 2.4.4 *Impact Avoidance and Minimisation*

All applications to remove native vegetation must demonstrate the three-step approach of avoid, minimise and offset. This is a precautionary approach that aims to ensure that the removal of native vegetation is restricted to what is reasonably necessary, and that biodiversity is appropriately compensated for any native vegetation removal that is approved.

#### 2.4.5 *Offsets*

Biodiversity offsets are required to compensate for the permitted removal of native vegetation. Offset obligations and offset site criteria are determined in accordance with the Guidelines (DELWP 2017) and are divided into two categories, being General Habitat Units and Species Habitat Units.

The offset requirements for native vegetation removal are calculated by DEECA and presented in a Native Vegetation Removal (NVR) Report, which are based on the vegetation condition scores determined during the biodiversity assessment.

### 2.5 **Assessment Qualifications and Limitations**

This report has been written based on the quality and extent of the ecological values and habitat considered to be present or absent at the time of the desktop and/or field assessments being undertaken.

The field assessment was undertaken during a sub-optimal season for the identification of flora and fauna species (i.e. autumn/winter). The 'snapshot' nature of a standard biodiversity assessment, along with sub-optimal timing of the survey, meant that migratory, transitory or uncommon fauna species may have been absent from typically occupied habitats at the time of the field assessment. In addition, annual or cryptic flora species such as those that persist via underground tubers may also be absent.

A comprehensive list of all terrestrial flora and fauna present within the study area was not undertaken as this was not the objective of the assessment. Rather a list of commonly observed species was recorded to inform the habitat hectare assessment and assist in determining the broader biodiversity values present within the study area.

Ecological values identified within the study area were recorded using a hand-held GPS or tablet with an accuracy of +/-3 metres. This level of accuracy is considered to provide an accurate assessment of the

ecological values present within the study area; however, this data should not be used for detailed surveying purposes.

The terrestrial flora and fauna data collected during the field assessment and information obtained from relevant desktop sources is considered to inform an accurate assessment of the ecological values present within the study area.

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## 3 RESULTS

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### 3.1 Vegetation Condition

Several patches of native vegetation and scattered native trees were recorded within the study area, with native vegetation patches primarily recorded along road reserves, and scattered trees mostly within modified agricultural paddocks (Figure 2). The remainder of the study area comprised cropped agricultural land and planted vegetation, present as pasture grass.

Twenty-nine (29) flora species were observed within the study area, including 16 indigenous and 13 non-indigenous species. A list of all flora species recorded during the field assessment are provided in Appendix 1.1.

Specific details relating to observed EVCs are provided below.

#### 3.1.1 Patches of Native Vegetation

Native vegetation in the study area is representative of one EVC: Plains Grassy Woodland (EVC 55). The presence of this EVC is generally consistent with the modelled extant (2005) native vegetation mapping (DEECA 2023a).

The results of the habitat hectare assessment are provided in Appendix 1.2.

#### Plains Grassy Woodland EVC

Plains Grassy Woodland (PGW) is characterised by an open, eucalypt woodland to 15-metres tall which occupies poorly drained, fertile soils on flat or gently undulating plains. The understorey typically contains a few sparse shrubs over a grassy and herbaceous ground layer (DEECA 2023c).

Plains Grassy Woodland was mapped within road reserves and within fenced linear areas, generally present in a modified state. Areas of revegetation which were fenced within the study area often contained a low to moderate cover of native understorey species, such as Variable Willow-herb *Epilobium billardioreanum* (Plate 1). Patches along Horsehill Road, Woolshed Road and the Midland Highway contained a mixture of native species, such as Prickly Moses *Acacia verticillata*, Prickly Tea-tree *Leptospermum continentale*, Sweet Bursaria *Bursaria spinosa*, Kangaroo Grass *Themeda triandra* and Spear-grass *Austrostipa* sp. (Plate 2).

This EVC generally supported an immature canopy of Manna Gum *Eucalyptus viminalis* or Yarra Gum *Eucalyptus yarraensis*, with Blackwood *Acacia melanoxylon* and Black Wattle *Acacia mearnsii* also present (Plate 3; Plate 4).

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**Plate 1.** A patch of Plains Grassy Woodland dominated by Variable Willow-herb in a revegetation corridor (Ecology and Heritage Partners Pty Ltd 05/06/2023).



**Plate 2.** A patch of Plains Grassy Woodland along Horsehill Road (PGW9 on Figure 2) (Ecology and Heritage Partners Pty Ltd 05/06/2023).



**Plate 3.** A patch of Plains Grassy Woodland present within the north of the study area (PGW13 on Figure 2) (Ecology and Heritage Partners Pty Ltd 05/06/2023).



**Plate 4.** A patch of Plains Grassy Woodland adjacent to Midland Highway with Blackwood, Sifton Bush and Eucalyptus regrowth present (Ecology and Heritage Partners Pty Ltd 05/06/2023).

### 3.1.2 Large Trees in Patches

A total of seven Large Trees (LTs) in Plains Grassy Woodland patches were present (Figure 2). Most of these specimens were Yarra Gum, with the occasional Messmate *Eucalyptus obliqua* present (Plate 5; Appendix 1.3).

### 3.1.3 Scattered Trees

A total of 15 remnant scattered trees (Yarra Gum and Narrow-leaved Peppermint *Eucalyptus radiata*) were recorded within the study area, which consisted of 13 large and two small scattered trees (Figure 2; Appendix 1.3). These trees would have once formed part of the Plains Grassy Woodland EVC; however, the understorey

vegetation contained predominantly introduced species (mainly exotic pasture grasses) and the trees no longer formed a patch of native vegetation (Plate 6).



**Plate 5.** Large Tree (Yarra Gum) in PGW13 (Ecology and Heritage Partners Pty Ltd 05/06/2023).



**Plate 6.** One scattered tree (Yarra Gum) located within the study area (Trees 12 on Figure 2) (Ecology and Heritage Partners Pty Ltd 05/06/2023).

#### 3.1.4 Introduced and Planted Vegetation

Areas not supporting native vegetation had a high cover (>90%) of exotic grass species, many of which were direct-seeded for use as pasture. Scattered native grasses were generally present in these areas, however they did not have the required 25% relative cover to be considered a patch (Plate 7).

Planted non-local and non-native vegetation was scattered around the study area, with Pine *Pinus radiata*, commonly planted as a wind break. Several deciduous trees occurred around the farm dams, and plantings of native species were within fenced off protected areas, some established through Landcare grants.

Non-native areas were dominated by environmental weeds such as Brown Top Bent *Agrostis capillaris*, Sow thistle *Sonchus oleraceus*, Cat Grass *Dactylis glomerata*, Cats Ear *Hypochaeris radicata*, Spiny Rush *Juncus acutus* (Plate 8), Rye-grass *Lolium sp.*, Toowoomba Canary-grass *Phalaris aquatica*, Pine, Blackberry *fruticosus spp. agg.*, Nightshade *Solanaceae sp.*, Clover *Trifolium sp.*

Noxious weeds, as defined under the *Catchment and Land Protection Act 1994* (CaLP Act), were present within the study area, including Spiny Rush, Spear Thistle *Cirsium vulgare* and Blackberry. Blackberry is also a Weed of National Significance (WoNS).

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**Plate 7.** Most of the study area contained modified pasture paddocks, used for livestock grazing (Ecology and Heritage Partners Pty Ltd 30/07/2022).



**Plate 8.** Spiny Rush present within the study area (Ecology and Heritage Partners Pty Ltd 05/06/2023).

### 3.2 Fauna Habitat

Most of the study area consists of paddocks which contain improved exotic pastures, likely to be used as a foraging resource by common generalist bird species which are tolerant of modified open areas. Fauna species observed using this habitat included; Australian Magpie *Cracticus tibicen*, Common Blackbird *Turdus merula*, Little Raven *Corvus mellori*, Magpie-lark *Grallina cyanoleuca*, House Sparrow *Passer domesticus*, Willie Wagtail *Rhipidura leucophrys*, Red Fox *Vulpes vulpes* and European Rabbit *Oryctolagus cuniculus*. The Red Fox and European Rabbit are listed as pest animals under the CaLP Act.

Woodland and scattered remnant trees occur throughout the study area and provide an important resource for arboreal fauna. Several of the eucalypts are mature, providing an array of small, medium, large and very large hollows, bark fissures and crevices ( Plate 9). These are likely to be used for shelter and nesting by a range of hollow-dependent fauna including parrots, microbats, possums, gliders and owls. Scattered trees provide habitat for more mobile fauna species, vantage points and nesting areas for diurnal and nocturnal raptors, as well as steppingstones for more mobile fauna moving through the study area, enhancing landscape permeability for native fauna.

The farm dams present within the study area provided limited habitat value, with no floating vegetation present and many being degraded due to use by cattle ( Plate 10).

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**Plate 9.** Large scattered tree containing several hollows within the study area (Ecology and Heritage Partners Pty Ltd 30/07/2022).



**Plate 10.** Degraded farm dam with no aquatic vegetation within the study area (Ecology and Heritage Partners Pty Ltd 05/06/2023).

### 3.3 DEECA Modelled 'Current Wetland'

One DEECA modelled 'current wetland' is mapped to occur in the north of the western study area (Figure 2). The location of modelled wetlands within Victoria are shown on DEECA's NVIM tool, with further information provided in Section 2.4.3. The area modelled to support the wetland was assessed during the site assessment and was not found to support native vegetation. The lowest point of the wetland was dominated by the noxious weed Spiny Rush, and the surrounding verges contained grazed exotic pasture grass ( Plate 11; Plate 12). A limited amount of water was present in the central area, which is likely to dry up over summer/dry periods.



**Plate 11.** Exotic vegetation dominated the DEECA modelled 'Current Wetland' (Ecology and Heritage Partners Pty Ltd 08/06/2023).



**Plate 12.** Spiny Rush within the DEECA modelled 'Current Wetland' (Ecology and Heritage Partners Pty Ltd 08/06/2023).

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### 3.4 Significance Assessment

#### 3.4.1 Flora

The VBA contains records of nine nationally significant (i.e. under the EPBC Act) and 14 State significant (i.e. under the FFG Act) flora species previously recorded within 10 kilometres of the study area (DEECA 2023d) (Figure 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 (DCCEEW 2023) (Appendix 1.4).

18 specimens of the State significant Yarra Gum *Eucalyptus yarraensis* which is listed as Endangered under the FFG Act (DEECA 2023e), were recorded within the study area. Most of these were scattered trees, retained within the agricultural paddock in the north east (Figure 2; Appendix 1.3).

The study area predominately consisted of modified agricultural paddocks, subject to extensive past land use for livestock grazing (cattle and sheep), with the paddocks over sown with pasture grass species. Within the areas of private land, the native vegetation values were limited to a few scattered trees in the north eastern portion of the study area, and linear bands of revegetation that contained native herbs in the understorey. Higher quality habitat for significant grassland species such as Matted Flax-lily *Dianella amoena* and Spiny Rice-flower *Pimelea spinescens* subsp. *spinescens* was incidentally observed along the Midland Highway road reserve, where a Kangaroo Grass dominated understorey was present. This area is not within the proposed works footprint. No suitable habitat for these species was observed within the study area, as the understorey was modified, either as a result of the use for grazing or during the preparation works for the revegetation strips (e.g. soil tilling).

Based on the modified nature of the study area, landscape context and the proximity of previous records, additional significant flora species are considered unlikely to occur within the study area due to the and high levels of disturbance and absence of suitable habitat.

#### 3.4.2 Fauna

The VBA contains records of eight nationally significant (i.e. under the EPBC Act) and 16 State significant (i.e. under the FFG Act) fauna species previously recorded within 10 kilometres of the study area (DEECA 2023d) (Figure 4). The PMST nominated an additional 22 nationally significant species which have not been previously recorded but have the potential to occur in the locality (DCCEEW 2023) (Appendix 2.1).

Two nationally significant fauna species were considered to have a moderate likelihood of occurrence within the study area; Growling Grass Frog *Litoria raniformis* and Blue-winged Parrot *Neophema chrysostoma*. These species were considered to have a moderate likelihood of occurrence due to the presence of past nearby records within the local area and the presence of suitable habitat within or directly adjacent to the study area.

#### Growling Grass Frog

Growling Grass Frog is largely associated with permanent or semi-permanent still or slow flowing waterbodies (i.e. streams, lagoons, farm dams and old quarry sites) (Hero *et al.* 1991; Barker *et al.* 1995; Cogger 1996; Ashworth 1998). This species can also utilise temporarily inundated waterbodies for breeding purposes providing they contain water over the breeding season (Organ 2003).

Based on previous investigations there is a strong correlation between the presence of the species and key habitat attributes at a given waterbody. For example, the species is typically associated with waterbodies supporting an extensive cover of emergent, submerged and floating vegetation (Robertson et al. 2002, Organ 2004, 2005). Emergent vegetation provides basking sites for frogs and protection from predators, while floating vegetation provides suitable calling stages for adult males and breeding and oviposition (egg deposition) sites. Terrestrial vegetation (grasses, sedges), rocks and other ground debris around wetland perimeters also provide foraging, dispersal and over-wintering sites for frogs.

Recent studies have revealed that the spatial orientation of waterbodies across the landscape is one of the most important habitat determinants influencing the presence of the species at a given site (Robertson et al. 2002; Heard et al. 2004; Hamer and Organ 2008). For example, studies have shown there is a positive correlation between the presence of the species and the distance of freestanding waterbodies to another occupied site. This is comparable to the spatial dynamics of many amphibian populations, including the closely related Green and Golden Bell Frog *Litoria aurea* (Hamer et al. 2002).

A population of Growling Grass Frog is located approximately 1.8 kilometres south west of the eastern study area along Williamson Creek. This creek runs approximately 500 meters along the northern boundary of the study area, with minor tributaries running towards the study area. One tributary ended at the modelled current wetland that is mapped in the northern area of the western study area (Figure 2). This wetland was partially dominated by Spiny Rush, with the remaining areas containing low pasture grass, with little ecological value present. The wetland is unlikely to support water year round, given the shallow nature of the waterbody. No other waterways were observed within the study area during the site assessment, and the farm dams within the study area did not contain any emergent or semi-aquatic vegetation. The nearby population to the south west provides the possibility that Growling Grass Frog may enter the study area on occasion, but are unlikely to use habitat within the study area for extensive foraging or breeding purposes, due to the modified nature of the habitat and limited values present that are associated with the species (i.e. lack of aquatic vegetation and surrounding terrestrial habitat [basking sites, rocks etc.]).

### **Blue-winged Parrot**

Blue-winged Parrot breed within south eastern Australia in tree hollows or stumps between October to February, generally within woodland or forested areas (DCCEEW 2023b). They forage on grasses and herbs (DCCEEW 2023b) and are likely to forage within more open areas within the study area (e.g. agricultural paddocks).

The species has the potential to breed within surrounding habitat to the study area, within forested areas approximately two kilometres north. The habitat within the study area is unlikely to provide preferred breeding habitat, due to the general lack of canopy species and minimal presence of hollow bearing trees.

Six large Yarra Gum are proposed for removal (four that contained hollows) which have a low potential to be used by the species for nesting and roosting. Mitigation measures to reduce impacts to the species are provided in Section 6.

No additional National or State significant fauna species were recorded during the site assessment, and based on the modified nature of the study area, landscape context and the proximity of previous records, significant fauna species are considered unlikely to rely on habitat within the study area for foraging or breeding purposes due to the lack of suitable and/or important habitat features

### 3.4.3 Ecological Communities

Five nationally listed ecological communities are predicted to occur within 10 kilometres of the study area (DCCEEW 2023):

- Grassy Eucalypt Woodland of the Victorian Volcanic Plain;
- Grey Box (*Eucalyptus microcarpa*) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia;
- Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains;
- White Box – Yellow Box – Blakely’s Red Gum Grassy Woodland; and,
- Natural Temperate Grassland of the Victorian Volcanic Plains.

Vegetation within the study area did not meet the condition thresholds that define any National or State-significant communities due to the absence of key indicator species, the low diversity of native flora and high cover of exotic vegetation.

The only patches of native vegetation recorded within the study area were modified patches representative of the Plains Grassy Woodland EVC. These patches contained components of the EVC, however were generally lacking at least one key stratum, such as a canopy layer or a diverse understorey. For example, PGW3 and PGW4 contained an understorey represented by one native herb and few scattered native grasses, with no canopy trees present, where as PGW12 and PGW13 contained canopy species with a relatively modified understorey.

Areas of Natural Temperate Grassland of the Victorian Volcanic Plain were observed along the Midland Highway, however were not within the project footprint so were not assessed in detail or included within the study area (shown as Plains Grassland (PG1) – PG3 on Figure 2).

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## 4 REMOVAL, DESTRUCTION OR LOPPING OF NATIVE VEGETATION (THE GUIDELINES)

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### 4.1 Avoid and Minimise Statement

The development footprint for the proposed Elaine Solar Farm has undergone several revisions, with consideration given to the ecological values present within the study area and bushfire implications. There were no specific strategic planning processes that either promote or restrict the use of the land for the proposed use as a solar farm.

This report highlights that much of the study area is devoid of native vegetation, through use of much of the study area for livestock grazing. The paddocks were dominated by exotic pasture grasses, with over sowing evident in most paddocks. Scattered native trees remained in the north eastern portion of the study area and bordering the study area within road reserves or revegetation plantings along boundaries.

Prior to finalising the development plan for the site, detailed mapping of the existing ecological values present within the study area was completed. The results of this mapping were provided to the client, along with a Preliminary Biodiversity Assessment, to aid in selecting a site layout that minimised impacts on the ecological values present. The main areas of ecological value were identified along the Midland Highway road reserve as patches of moderate to high quality Plains Grassland (EVC 132) and within some farm dams in an earlier, larger study area, where aquatic and semi-aquatic vegetation was present. These areas were subsequently excluded from the refined study area, with the identified values avoided.

Within the current footprint, measures to avoid or minimise impacts to ecological value have been achieved by relocating internal access roads and shifting the site access points to reduce impacts to native vegetation.

Avoiding impacts to the vegetation located along the roadsides was also recommended and has been achieved, with no impacts proposed within the higher quality vegetation located along the Midland Highway. An above ground power line will run along Woolshed Road, with the primary impact being the result of the power pole installation. These will be micro-sited to minimise impacts to native vegetation, with no trees proposed for removal (minor pruning may be required).

#### Strategic Biodiversity Value

The Strategic Biodiversity Value (SBV) score is a ranking system created by DEECA to determine a locations complementary contribution to Victoria's biodiversity, relative to other areas across the state (DEECA 2023b). The ranking is on a scale between 0 and 1.

The entire study area contains an SBV score between 0.21 – 0.4 (DEECA 2023b), which is relatively low. This generally corresponds to areas that have been cleared for grazing.

Further avoidance of native vegetation was not achievable based on the proposed use of the study area as a solar farm, where the infrastructure and minimum megawatt output required to make the project feasible had to be met. The solar photovoltaic panels require full solar access, meaning scattered individual trees have a disproportionate overshadowing impact, resulting in the loss of six scattered trees within the proposed

location of the solar panels. Based on the proposed use of the study area as a solar farm, there are no further opportunities to avoid or minimise impacts on native vegetation.

## 4.2 Residual Impacts to Native Vegetation

The below clearing scenario is based on the site development plan provided on 15<sup>th</sup> September 2023. The native vegetation impacts associated with the solar farm are limited to the following:

- 2.153 hectares of impact to a modelled current wetland in the western block (with no native vegetation observed during the site assessment);
- 0.031 hectares of Plains Grassy Woodland along Woolshed Road for the installation of power;
- Six large scattered trees within the north eastern corner of the study area (Tree ID's 12 – 15, 20 and 25 on Figure 2);
- 0.876 hectares of Plains Grassy Woodland removed that falls within the proposed panel location (PGW1b, PGW3 and PGW4 on Figure 2); and,
- 0.105 hectares impacted of PGW3 for the creation of the internal security fence (PGW3a on Figure 2).

### 4.2.1 Vegetation proposed to be removed

The study area is within Location 2, with 3.565 hectares of native vegetation proposed to be removed (0.9022 hectares Plains Grassy Woodland, 2.153 hectares of current wetland and 6 large scattered trees). As such, the permit application falls under the Detailed assessment pathway (Table 3).

Condition scores for vegetation proposed to be removed are provided in Appendix 1.2.

**Table 3.** Removal of Native Vegetation (the Guidelines) (DELWP 2017).

Assessment pathway	Detailed
Location Category	2
Total Extent (past and proposed) (ha)	3.565
Extent of past removal (ha)	0.000
Extent of proposed removal (ha)	3.565
Large Trees (scattered and in patches) to be removed (no.)	6
Small scattered trees to be removed (no.)	0
EVC Conservation Status of vegetation to be removed	Endangered (Plains Grassy Woodland)

### 4.2.2 Offset Targets

The offset requirements for native vegetation removal for the proposed development are 0.650 General Habitat Units and 6 Large Trees.

A summary of proposed vegetation losses and associated offset requirements is presented in Table 4 and the Native Vegetation Removal (NVR) report is presented in Appendix 3.

**Table 4.** Offset Targets.

General Offsets Required	0.650 General Habitat Units
Large Trees	6
Vicinity (catchment/council)	Corangamite CMA / Moorabool Shire Council
Minimum Strategic Biodiversity Value*	0.239

\*The minimum Strategic Biodiversity Value is 80% of the weighted average score across habitat zones where a General offset is required.

### 4.3 Offset Strategy

According to DEECAs Native Vegetation Offset Register (DEECA 2023f), there are eight offset sites within the Corangamite CMA or Moorabool Shire Council municipality that can be used to satisfy the General Habitat Unit and Large tree offset requirements.

An offset register search statement identifying the relevant offsite sites is provided in Appendix 4, which provides evidence that the offset obligation can be secured without any difficulty should a permit be provided for the project.

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## 5 LEGISLATIVE AND POLICY IMPLICATIONS

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### 5.1 *Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth)

The EPBC Act establishes a Commonwealth process for the assessment of proposed actions likely to have a significant impact on any matters of National Environment Significance (NES).

The proposed action is highly unlikely to have a significant impact on any matter of NES. As such, a referral to the Commonwealth Environment Minister is unlikely to be required regarding matters listed under the EPBC Act.

### 5.2 *Flora and Fauna Guarantee Act 1988* (Victoria)

There are confirmed records of one species listed as Threatened under the FFG Act within the study area, Yarra Gum, and one protected flora species, Sifton Bush. However, all impacts to Yarra Gum occur within the areas of private land, and as such a permit under the FFG Act is not required. No impacts to Sifton Bush are anticipated, as this species was recorded along the road reserve, outside of the impact area.

### 5.3 *Planning and Environment Act 1987* (Victoria)

The *Planning and Environment Act 1987* outlines the legislative framework for planning in Victoria and for the development and administration of planning schemes. All planning schemes contain native vegetation provisions at Clause 52.17, which requires a planning permit from the relevant local Council to remove, destroy or lop native vegetation, unless an exemption at Clause 52.17-7 of the Victoria Planning Provisions applies.

#### 5.3.1 *Local Planning Scheme*

The study area is located within the Moorabool Shire Council. The following zoning and overlays apply (DTP 2023):

- Farming Zone (FZ)
- Design and Development Overlay – Schedule 2 (DDO2)

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#### 5.3.2 *The Guidelines*

The State Planning Policy Framework and the decision guidelines at Clause 12.01 Biodiversity and Clause 52.17 Native Vegetation require Planning and Responsible Authorities to have regard for the Guidelines (DELWP 2017).

#### 5.3.3 *Implications*

The study area is within Location 2, with 3.565 hectares of native vegetation proposed to be removed from the impact area. As such, the permit application falls under the Detailed assessment pathway. The offset requirement for native vegetation removal is 0.650 General Habitat Units and 6 Large Trees. A planning permit

from the Moorabool Shire Council is required to remove, destroy or lop any native vegetation under Clause 52.17.

In this instance, the application is required to be referred to DEECA because of being within the Detailed assessment pathway.

#### **5.3.4 Renewable Energy Facility (other than Wind Facility) (Clause 53.13)**

The Renewable Energy Facility Clause of the Moorabool Planning Scheme seeks to facilitate the establishment and expansion of renewable energy facilities in appropriate locations, with minimal impact on the amenity of the area. Any applications must consider the Solar Energy Facilities Design and Development Guideline (DELWP 2019), which includes the following considerations related to ecology for any application:

- Existing vegetation types and their condition and coverage;
- Species of flora and fauna listed under the FFG Act and EPBC Act;
- Sites of flora and fauna listed under the FFG Act and EPBC Act, including significant habitat corridors, and movement corridors for these fauna;
- National parks, state parks, coastal reserves and other land subject to the *National Parks Act 1975*; and,
- Land declared a Ramsar wetland as defined under section 17 of the EPBC Act.

#### **Implications**

The study area consisted of both native and exotic vegetation, with several native scattered trees recorded. One state significant species was recorded within the study area, Yarra Gum. Impacts to all native vegetation will require consideration under Clause 53.13.

No land subject to the *National Parks Act 1975* is within proximity or likely to be impacted by the Proposal. One Ramsar site, the 'Port Phillip Bay Ramsar site', is approximately 30 - 40 kilometres downstream from the development footprint, and will not be impacted by the development.

A permit is required under Clause 53.13 of the Moorabool Planning Scheme to develop a renewable energy facility (other than a wind energy facility). In accordance with Clause 72.01 of the Moorabool Planning Scheme, the Minister for Planning is the Responsible Authority for renewable energy facilities.

### **5.4 Catchment and Land Protection Act 1994 (Victoria)**

Three weeds listed as noxious under the CaLP Act were recorded during the assessment; Blackberry, Spear Thistle and Spiny Rush. Similarly, there is evidence that the study area is currently occupied by one pest fauna species listed under the CaLP Act, European Rabbit. Red Fox *Vulpes vulpes* are also likely to use the study area on occasion. Listed noxious weeds and pests should be appropriately controlled throughout the study area.

### **5.5 Wildlife Act 1975 and Wildlife Regulations 2013 (Victoria)**

Any persons engaged to remove, salvage, hold or relocate native fauna during construction must hold a current Management Authorisation under the *Wildlife Act 1975* or under any other Act issued by DEECA.

## 6 MITIGATION MEASURES

### 6.1 Solar Energy Facility Design and Development Guidelines

The *Solar Energy Facility Design and Development Guidelines* (DELWP 2019a) recommend the following items for consideration and minimisation of impacts:

- Flora and fauna implications;
- Native vegetation and biodiversity implications;
- Landscape value implications;
- Bushfire management – Within rural and regional areas, a proponent should consult the CFAs (2019) *Guidelines for Renewable Energy Installations* for information about bushfire risk management and other risk management matters;
- Glint and glare management; and
- Environmental Management Plan (EMP) – Where a planning permit is granted for a solar energy facility, the responsible authority will require several construction and operation matters to be addressed as part of an EMP. The requirement for an EMP will be a permit condition, and it must be submitted to, and approved by, the responsible authority before an activity starts on the site. The EMP can include:
  - An overview of construction methods including management of construction zones, site preparation, schedule and timing of works;
  - The management structure and site roles including any environmental audit processed needed under any applicable planning or legislative requirements; and
  - The management of environmental matters or mitigation requirements for erosion or sediment, surface water pollution, dust, odour noise, waste/hazardous materials handling, natural hazard management, terrestrial or aquatic ecology.

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### 6.2 Best Practice Mitigation Measures

Recommended measures to mitigate impacts upon terrestrial and aquatic values present within the study area include:

- Minimise impacts to native vegetation and habitats through construction and micro-siting techniques, including fencing retained areas of native vegetation during construction. If indeed necessary, trees should be lopped or trimmed rather than removed. Similarly, soil disturbance and sedimentation within and adjacent to wetlands should be avoided or kept to a minimum, to avoid, or minimise impacts to fauna habitats;
- All contractors should be aware of ecologically sensitive areas to minimise the likelihood of inadvertent disturbance to areas marked for retention. Native vegetation (areas of sensitivity) should be included as a mapping overlay on any construction plans;

- Tree Protection Zones (TPZs) must be implemented to prevent indirect losses of native vegetation during construction activities (DSE 2011). A TPZ applies to a tree and is a specific area above and below the ground, with a radius 12 x the Diameter at Breast Height (DBH). At a minimum standard a TPZ should consider the following:
  - A TPZ of trees should be a radius no less than two metres or greater than 15 metres;
  - Construction, related activities and encroachment (i.e. earthworks such as trenching that disturb the root zone) should be excluded from the TPZ;
  - Where encroachment is 10% or more of the total area of the TPZ, the tree should be considered as lost and offset accordingly (unless an arboricultural report specifies otherwise);
  - Directional drilling may be used for works within the TPZ without being considered encroachment. The directional bore should be at least 600 millimetres deep;
  - The above guidelines may be varied if a qualified arborist confirms the works will not significantly damage the tree (including stags / dead trees). In this case the tree would be retained, and no offset would be required; and,
  - Where the minimum standard for a TPZ has not been met an offset may be required.
- Removal of any habitat trees or shrubs (particularly hollow-bearing trees or trees/shrubs with nests) should be undertaken between February and September to avoid the breeding season for most fauna species. If any habitat trees or shrubs are proposed to be removed, this should be undertaken under the supervision of an appropriately qualified zoologist to salvage and translocate any displaced fauna. A Fauna Management Plan may be required to guide the salvage and translocation process;
- Retain the timber from removed trees within the study area as habitat (such as placing in a revegetation area in consultation with the landholder);
- Supplement the loss of hollows from the removed large trees by placing nesting boxes in the retained scattered trees in the north east;
- Where possible, construction stockpiles, machinery, roads, and other infrastructure should be placed away from areas supporting native vegetation, Large Trees and/or wetlands;
- Ensure that best practice sedimentation and pollution control measures are undertaken at all times, in accordance with Environment Protection Authority (EPA) guidelines (EPA 2020a; EPA 2020b; Victorian Stormwater Committee 1999) to prevent offsite impacts to waterways and wetlands; and,
- As indigenous flora provides valuable habitat for indigenous fauna, it is recommended that any landscape plantings that are undertaken as part of the proposed works are conducted using indigenous species sourced from a local provenance, rather than exotic deciduous trees and shrubs.

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## 7 SUMMARY OF PLANNING IMPLICATIONS

Further requirements associated with development of the study area, as well as additional studies or reporting that may be required, are provided in Table 5.

**Table 5.** Further requirements associated with development of the study area.

Relevant Legislation	Implications	Further Action
<i>Environment Protection and Biodiversity Conservation Act 1999</i>	The proposed action is highly unlikely to have a significant impact on any matter of NES. As such, a referral to the Commonwealth Environment Minister is unlikely to be required regarding matters listed under the EPBC Act.	No further action required.
<i>Flora and Fauna Guarantee Act 1988</i>	There are confirmed records of one species listed as Threatened under the FFG Act within the study area, Yarra Gum, and one protected flora species, Sifton Bush. However, all impacts to Yarra Gum occur within the areas of private land, and as such a permit under the FFG Act is not required. No impacts to Sifton Bush are anticipated, as this species was recorded along the road reserve, outside of the impact area.	No further action required.
<i>Planning and Environment Act 1987</i>	<p>The study area is within Location 2, with 3.565 hectares of native vegetation proposed to be removed from the impact area. As such, the permit application falls under the Detailed assessment pathway. The offset requirement for native vegetation removal is 0.650 General Habitat Units and 6 Large Trees.</p> <p>A permit is required under Clause 53.13 of the Moorabool Planning Scheme to use to develop a renewable energy facility (other than a wind energy facility).</p> <p>In accordance with Clause 72.01 of the Moorabool Planning Scheme, the Minister for Planning is the Responsible Authority for the use and development of land for a Solar Energy facility.</p>	Prepare and submit a Planning Permit application.
<i>Catchment and Land Protection Act 1994</i>	Three weeds listed as noxious under the CaLP Act were recorded during the assessment; Blackberry, Spear Thistle and Spiny Rush. Similarly, there is evidence that the study area is likely occupied by two pest fauna species listed under the CaLP Act, European Rabbit and Red Fox. Listed noxious weeds and pests should be appropriately controlled throughout the study area.	Listed noxious weeds and pests should be appropriately controlled throughout the study area.
<i>Wildlife Act 1975</i>	Any persons engaged to conduct salvage and translocation or general handling of terrestrial fauna species must hold a current Management Authorisation.	Ensure wildlife specialists hold a current Management Authorisation.

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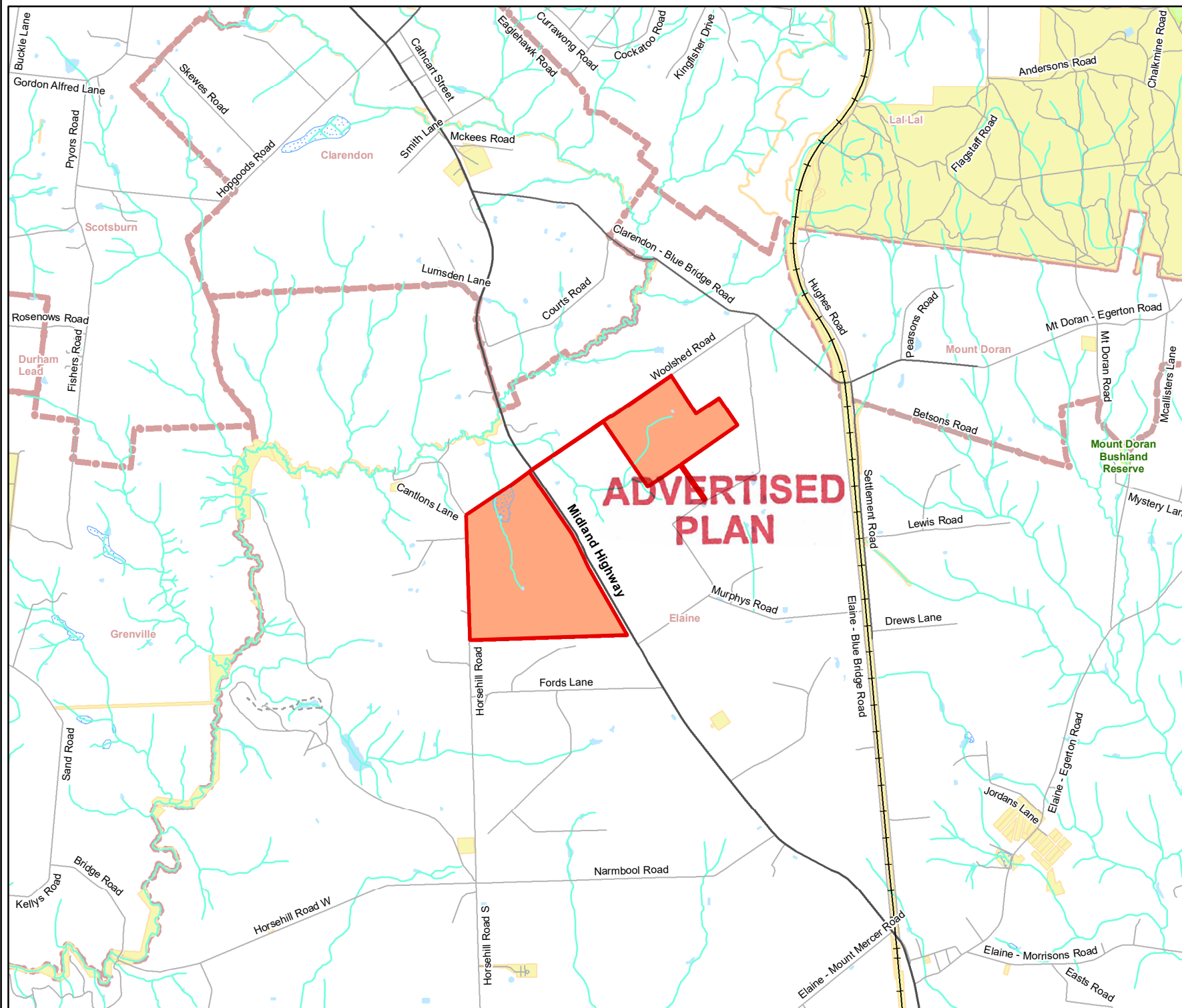
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## FIGURES

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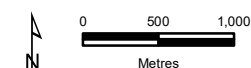
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- Legend**
- Study Area
  - Railway
  - Major Road
  - Collector Road
  - Minor Road
  - Proposed Road
  - Minor Watercourse
  - Permanent Waterbody
  - Land Subject to Inundation
  - Parks and Reserves
  - Crown Land
  - Localities



**Figure 1**  
**Location of the study area**  
*Biodiversity Assessment for Elaine Solar Farm*



Map Scale: 1:50,000 @ A4  
 Coordinate System: GDA 1994 MGA Zone 55



VicMap Data: The State of Victoria does not warrant the accuracy or completeness of information in this publication and any person using or relying upon such information does so on the basis that the State of Victoria shall bear no responsibility or liability whatsoever for any errors, faults, defects or omissions in the information.





## Legend

- Study Area
- Current Wetlands
- Large Tree in patch

## Vegetation

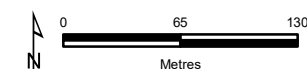
- Plains Grassy Woodland (EVC 55)
- Impacted vegetation

## Development plan

- Development area to be filled with panels
- Exclusion area/zone
- Inverters
- Passing bay
- Switch room
- Dams removed
- Dams retained
- Internal Roads
- SECV line POC
- Security Fence

**Figure 2a**

**Ecological features**  
Biodiversity Assessment for  
Elaine Solar Farm



Map Scale: 1:4,200 @ A4  
Coordinate System: GDA 1994 MGA Zone 55



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## Legend

Study Area

## Vegetation

Planted

## Development plan

Development area to be filled with panels

Inverters

Passing bay

Dams removed

Dams retained

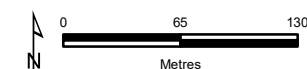
Internal Roads

Security Fence

**Figure 2b**

## Ecological features

*Biodiversity Assessment for Elaine Solar Farm*

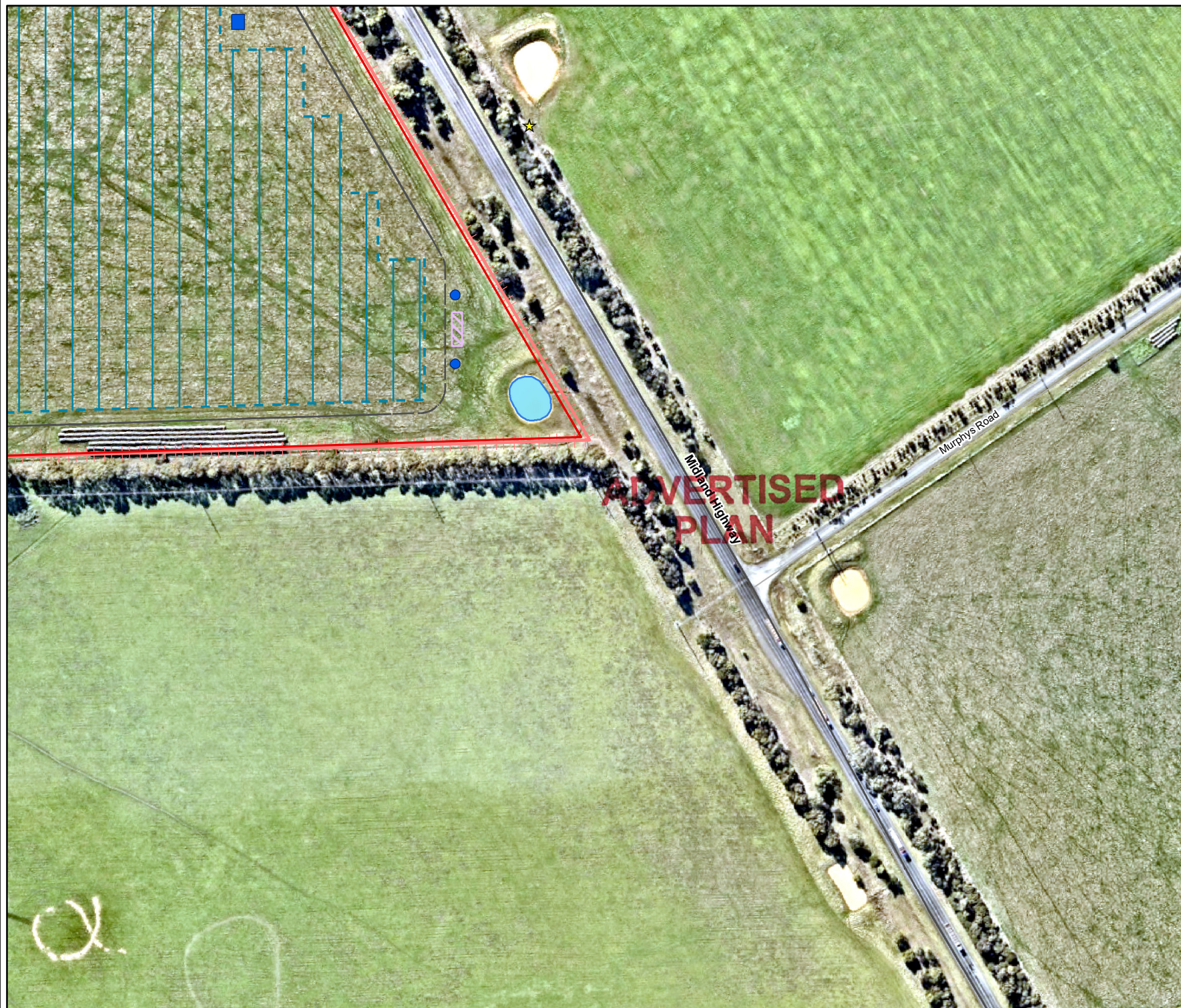


Map Scale: 1:4,200 @ A4  
Coordinate System: GDA 1994 MGA Zone 55



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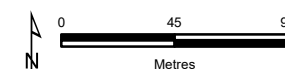


## Legend

- Study Area
- ★ FFG Act Protected Flora
- Development plan**
- Development area to be filled with panels
- Inverters
- Passing bay
- Dams retained
- Internal Roads
- Security Fence

**Figure 2c**

**Ecological features**  
*Biodiversity Assessment for Elaine Solar Farm*

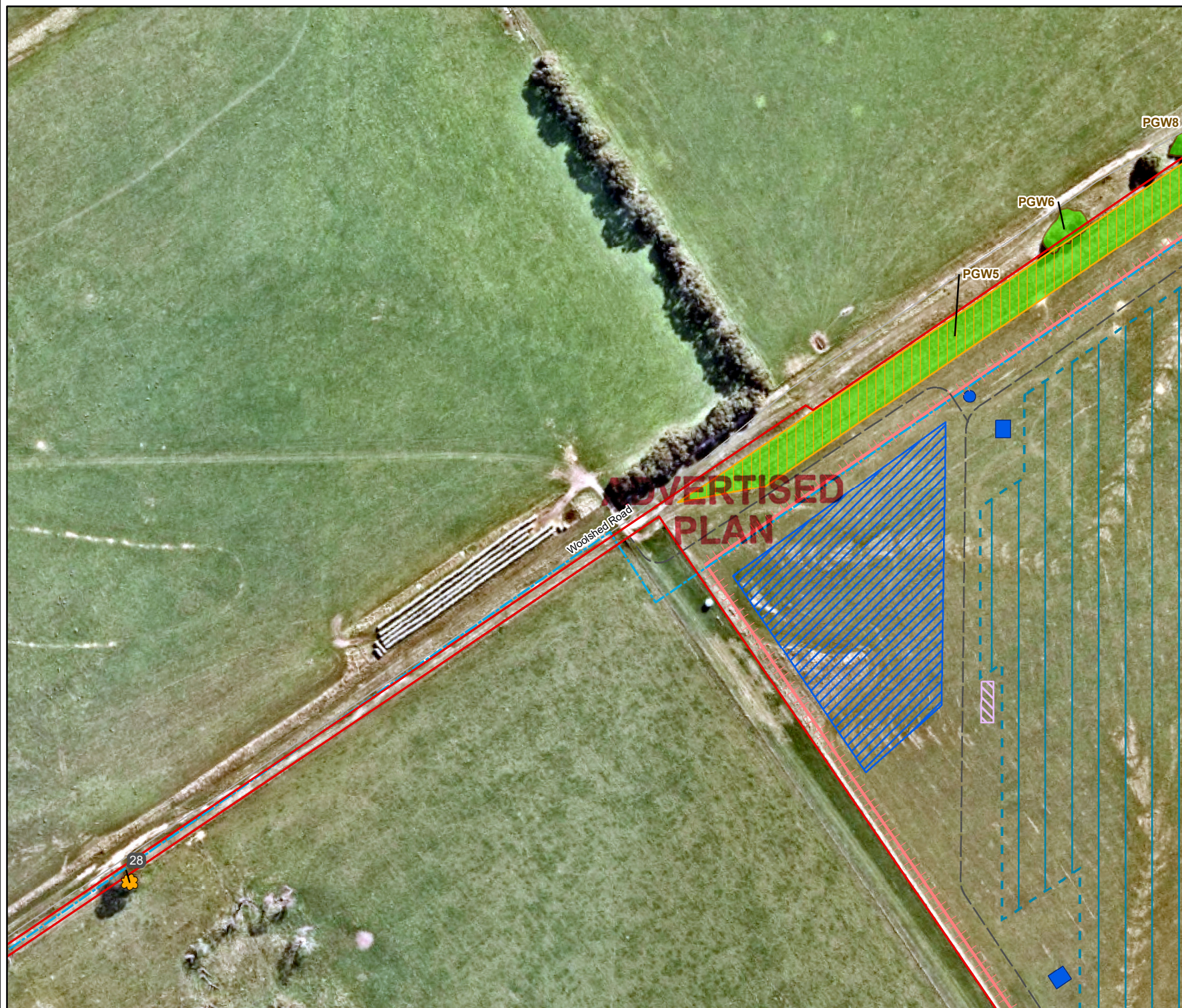


Map Scale: 1:3,000 @ A4  
 Coordinate System: GDA 1994 MGA Zone 55



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16674\_Fig02\_EcoFeatMB 15/09/2023 melsley

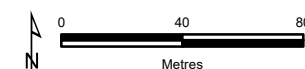


## Legend

- Study Area
- ✿ Scattered Small Tree
- Revegetation
- Vegetation**
- Plains Grassy Woodland (EVC 55)
- Development plan**
- Development area to be filled with panels
- Exclusion area/zone
- Inverters
- Passing bay
- Internal Roads
- SECV line POC
- Security Fence

**Figure 2d**

**Ecological features**  
Biodiversity Assessment for  
Elaine Solar Farm



Map Scale: 1:2,500 @ A4  
Coordinate System: GDA 1994 MGA Zone 55



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16674\_Fig02\_EcoFeatMB 15/09/2023 melsley

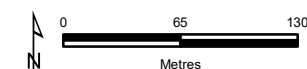


## Legend

- Study Area
- ✱ Scattered Large Tree
- ✱ Scattered Small Tree
- Large Tree in patch
- ✕ Tree - Direct impact
- Revegetation
- Vegetation**
  - Plains Grassy Woodland (EVC 55)
  - Planted
  - Impacted vegetation
- Development plan**
  - Development area to be filled with panels
  - Inverters
  - Passing bay
  - Substation and battery area
  - Dams removed
  - Internal Roads
  - SECV line POC
  - Security Fence

**Figure 2e**

**Ecological features**  
Biodiversity Assessment for  
Elaine Solar Farm



Map Scale: 1:4,200 @ A4  
Coordinate System: GDA 1994 MGA Zone 55



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16674 Fig02\_EcoFeatMB 15/09/2023 melsley

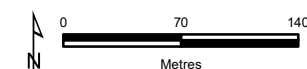


## Legend

- Study Area
- ✱ Scattered Large Tree
- ✱ Tree - Direct impact
- Revegetation
- Vegetation**
- Plains Grassy Woodland (EVC 55)
- Planted
- Impacted vegetation
- Development plan**
- Development area to be filled with panels
- Inverters
- Passing bay
- Substation and battery area
- Dams removed
- Dams retained
- Internal Roads
- Security Fence

**Figure 2f**

**Ecological features**  
*Biodiversity Assessment for Elaine Solar Farm*



Map Scale: 1:4,500 @ A4  
 Coordinate System: GDA 1994 MGA Zone 55



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16674 Fig02\_EcoFeatMB 15/09/2023 melsley

Legend

Study Area

Significant flora

Australian Anchor Plant

Basalt Peppercross

Bog Gum

Brisbane Range Grevillea

Brock Knawel

Brooker's Gum

Button Wrinklewort

Buxton Gum

Clover Glycine

Giant Honey-myrtle

Grey Billy-buttons

Matted Flax-lily

Pale Swamp Everlasting

Plains Yam-daisy

Southern Blue-gum

Spiny Rice-flower

Spotted Gum

Sticky Wattle

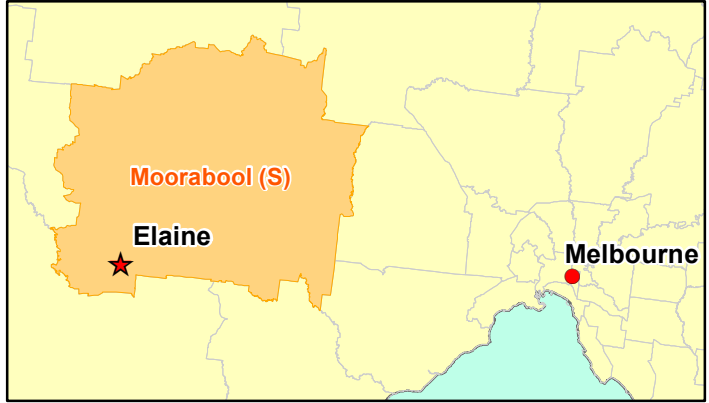
Swamp Everlasting

Swamp Fireweed

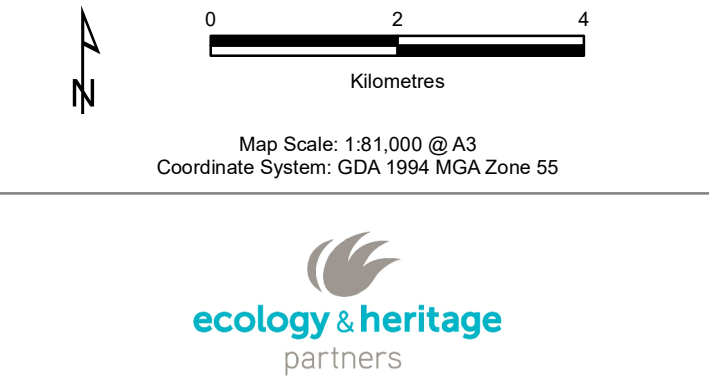
Violet Westringia

Yarra Gum

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**Figure 3**  
**Previously documented significant flora within 10km of the study area**  
*Biodiversity Assessment for Elaine Solar Farm*



Victorian Biodiversity Atlas (VBA) // Sourced from: 'VBA\_FLORA25', 'VBA\_FLORA100', 'VBA\_FAUNA25' and 'VBA\_FAUNA100'. Updated May 2023 © The State of Victoria, Department of Energy, Environment and Climate Action. Records prior to 1949 not shown.

VicMap Data: The State of Victoria does not warrant the accuracy or completeness of information in this publication and any person using or relying upon such information does so on the basis that the State of Victoria shall bear no responsibility or liability whatsoever for any errors, faults, defects or omissions in the information.

16674 Flg03\_SigFlora 5/07/2023 psorenson

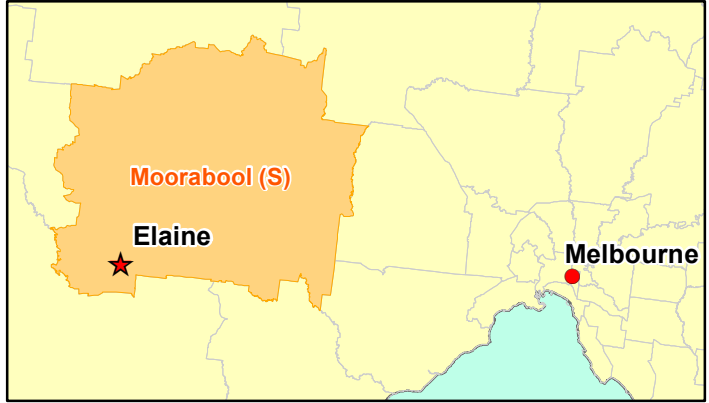
Legend

Study Area

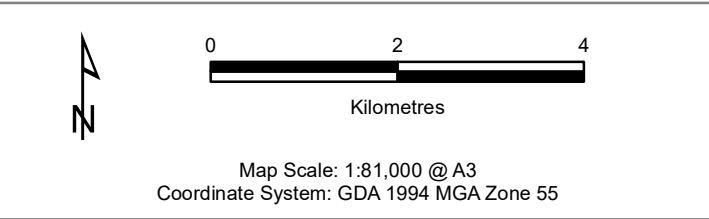
Significant fauna

- Australasian Shoveler
- Blue-billed Duck
- Blue-winged Parrot
- Brolga
- Brown Toadlet
- Brown Treecreeper
- Brush-tailed Phascogale
- Common Dunnart
- Diamond Dove
- Freckled Duck
- Golden Sun Moth
- Growing Grass Frog
- Hardhead
- Hooded Robin
- Musk Duck
- Platypus
- ▲ Powerful Owl
- ▲ Southern Greater Glider
- ▲ White-throated Needletail

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**Figure 4**  
**Previously documented significant fauna within 10km of the study area**  
*Biodiversity Assessment for Elaine Solar Farm*



Victorian Biodiversity Atlas (VBA) // Sourced from: 'VBA\_FLORA25', 'VBA\_FLORA100', 'VBA\_FAUNA25' and 'VBA\_FAUNA100'. Updated May 2023 © The State of Victoria, Department of Energy, Environment and Climate Action. Records prior to 1949 not shown.

VicMap Data: The State of Victoria does not warrant the accuracy or completeness of information in this publication and any person using or relying upon such information does so on the basis that the State of Victoria shall bear no responsibility or liability whatsoever for any errors, faults, defects or omissions in the information.

## APPENDIX 1 FLORA

### Appendix 1.1 Flora Results

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**Legend:**

L Listed as Threatened under the FFG Act (DEECA 2023e)

I Listed as Protected under the FFG Act (DELWP 2019a)

- Naturally growing (i.e. non-planted) indigenous species to the study area

+ Naturally growing indigenous species that also occurs as planted indigenous vegetation to the study area

\*\* Planted indigenous species to the study area

# Planted Victorian (non-indigenous) and Australian species

\* Listed as a noxious weed under the CaLP Act

w Weed of National Significance

**Table A1.1.** Flora species observed within and adjacent to the study area.

Scientific Name	Common Name	Notes
<b>INDIGENOUS SPECIES</b>		
<i>Acacia melanoxylon</i>	Blackwood	+
<i>Acacia verticillata</i>	Prickly Moses	I
<i>Acacia mearnsii</i>	Black Wattle	+
<i>Acaena novae-zelandiae</i>	Bidgee-widgee	-
<i>Allocasuarina verticillata</i>	Drooping Sheoak	+
<i>Austrostipa</i> sp.	Spear-grass	-
<i>Bursaria spinosa</i>	Sweet Bursaria	+
<i>Cassinia sifton</i>	Sifton bush	I
<i>Epilobium billardioreanum</i>	Variable Willow herb	-
<i>Eucalyptus radiata</i>	Narrow-leaf Peppermint	-
<i>Eucalyptus</i> spp.	Gum	-
<i>Eucalyptus yarraensis</i>	Yarra Gum	L
<i>Eucalyptus obliqua</i>	Messmate	-
<i>Leptospermum continentale</i>	Prickly Tea-tree	-
<i>Themeda triandra</i>	Kangaroo Grass	-
<i>Triglochin procerum</i>	Water Ribbons	-
<b>NON-INDIGENOUS OR INTRODUCED SPECIES</b>		
<i>Agrostis capillaris</i>	Brown Top Bent	-
<i>Cirsium vulgare</i>	Spear Thistle	*
<i>Dactylis glomerata</i>	Cat Grass	-
<i>Dodonaea</i> sp.	Hop Bush	#

Scientific Name	Common Name	Notes
<i>Hypochaeris radicata</i>	Cats Ear	-
<i>Juncus acutus</i>	Spiny Rush	*
<i>Lolium sp.</i>	Rye	-
<i>Phalaris aquatica</i>	Toowoomba Canary-grass	-
<i>Pinus radiata</i>	Pine	-
<i>Rubus fruticosus</i> spp. agg.	Blackberry	w*
<i>Solanaceae</i> sp.	Nightshade	-
<i>Sonchus oleraceus</i>	Sow thistle	-
<i>Trifolium sp.</i>	Clover	-

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## Appendix 1.2 Habitat Hectare Assessment

**Table A1.2.** Habitat Hectare Assessment Table.

Vegetation Zone		PGW <sub>1</sub>	PGW <sub>2</sub>	PGW <sub>3</sub> , PGW <sub>11</sub> , PGW <sub>12</sub>	PGW <sub>4</sub>	PGW <sub>5</sub> , PGW <sub>13</sub>	PGW <sub>6</sub>
Bioregion		CVU	CVU	CVU	CVU	CVU	CVU
EVC		PGW	PGW	PGW	PGW	PGW	PGW
EVC Number		55	55	55	55	55	55
EVC Conservation Status		En	En	En	En	En	En
<b>Patch Condition</b>	Large Old Trees /10	0	0	0	0	5	2
	Canopy Cover /5	0	0	0	0	2	2
	Under storey /25	5	10	10	5	5	5
	Lack of Weeds /15	4	4	6	2	2	0
	Recruitment /10	0	0	0	0	0	0
	Organic Matter /5	0	0	3	0	3	0
	Logs /5	0	0	0	0	3	0
	Treeless EVC Multiplier	1.00	1.00	1.00	1.00	1.00	1.00
	Subtotal =	9.00	14.00	19.00	7.00	21.00	9.00
Landscape Value /25		2	2	2	2	2	2
Habitat Points /100		11	16	21	9	23	11
<b>Habitat Score</b>		<b>0.11</b>	<b>0.16</b>	<b>0.21</b>	<b>0.09</b>	<b>0.23</b>	<b>0.11</b>

**Note:** CVU = Central Victorian Uplands; PGW = Plains Grassy Woodland; Vu = Vulnerable.

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## Appendix 1.3 Scattered Trees and Large Trees in Patches

**Table A1.3.** Scattered Trees and Large Trees in Patches.

Tree # (Figure 2)	Species Name	Common Name	DBH (cm)	Size Class	Scattered / Patch	Status
12	<i>Eucalyptus yarraensis</i>	Yarra Gum	112	Large Tree	Scattered	Impacted
13	<i>Eucalyptus yarraensis</i>	Yarra Gum	116	Large Tree	Scattered	Impacted
14	<i>Eucalyptus yarraensis</i>	Yarra Gum	142	Large Tree	Scattered	Impacted
15	<i>Eucalyptus yarraensis</i>	Yarra Gum	101	Large Tree	Scattered	Impacted
16	<i>Eucalyptus yarraensis</i>	Yarra Gum	115	Large Tree	Scattered	Retained
17	<i>Eucalyptus yarraensis</i>	Yarra Gum	99	Large Tree	Scattered	Retained
18	<i>Eucalyptus</i> sp.	Stag	121	Large Tree	Scattered	Retained
19	<i>Eucalyptus yarraensis</i>	Yarra Gum	105	Large Tree	Scattered	Retained
20	<i>Eucalyptus</i> sp.	Stag	90	Large Tree	Scattered	Impacted
21	<i>Eucalyptus yarraensis</i>	Yarra Gum	102	Large Tree	Scattered	Retained
22	<i>Eucalyptus yarraensis</i>	Yarra Gum	121	Large Tree	Scattered	Retained
23	<i>Eucalyptus yarraensis</i>	Yarra Gum	117	Large Tree	Scattered	Retained
24	<i>Eucalyptus yarraensis</i>	Yarra Gum	47	Small Tree	Scattered	Retained
25	<i>Eucalyptus yarraensis</i>	Yarra Gum	107	Large Tree	Scattered	Impacted
26	<i>Eucalyptus yarraensis</i>	Yarra Gum	95	Large Tree	Patch	Retained
27	<i>Eucalyptus yarraensis</i>	Yarra Gum	90	Large Tree	Patch	Retained
28	<i>Eucalyptus radiata</i>	Narrow-leaf Peppermint	64	Small Tree	Scattered	Retained
31	<i>Eucalyptus yarraensis</i>	Yarra Gum	75	Large Tree	Patch	Retained
32	<i>Eucalyptus yarraensis</i>	Yarra Gum	82	Large Tree	Patch	Retained

Tree # (Figure 2)	Species Name	Common Name	DBH (cm)	Size Class	Scattered / Patch	Status
33	<i>Eucalyptus yarraensis</i>	Yarra Gum	98	Large Tree	Patch	Retained
34	<i>Eucalyptus yarraensis</i>	Yarra Gum	102	Large Tree	Patch	Retained
35	<i>Eucalyptus obliqua</i>	Messmate Stringybark	85	Large Tree	Patch	Retained

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## Appendix 1.4 Significant Flora Species

Significant flora within 10 kilometres of the study area is provided in the Table A1.4.3 at the end of this section, with Tables A1.4.1 and A1.4.2 below providing the background context for the values in Table 1.4.3.

**Table A1.4.1** Conservation status of each species for each Act/policy. The values in this table correspond to Columns 5 to 7 in Table A1.4.3.

EPBC Act ( <i>Environment Protection and Biodiversity Conservation Act 1999</i> ):		FFG Act ( <i>Flora and Fauna Guarantee Act 1988</i> ):	
EX	Extinct	L	Listed as threatened
CR	Critically endangered	N	Nominated for listing as threatened
EN	Endangered	D	Delisted as threatened
VU	Vulnerable	I	Rejected for listing as threatened; taxon invalid
#	Listed on the Protected Matters Search Tool	X	Rejected for listing as threatened; taxon ineligible

**Table A1.4.2** Likelihood of occurrence rankings: Habitat characteristics assessment of significant flora species previously recorded within 10 kilometres of the study area, or that may potentially occur within the study area to determine their likelihood of occurrence. The values in this table correspond to Column 8 in Table A1.4.3.

1	Known Occurrence	<ul style="list-style-type: none"> <li>Recorded within the study area recently (i.e. within ten years).</li> </ul>
2	High Likelihood	<ul style="list-style-type: none"> <li>Previous records of the species in the local vicinity; and/or,</li> <li>The study area contains areas of high-quality habitat.</li> </ul>
3	Moderate Likelihood	<ul style="list-style-type: none"> <li>Limited previous records of the species in the local vicinity; and/or</li> <li>The study area contains poor or limited habitat.</li> </ul>
4	Low Likelihood	<ul style="list-style-type: none"> <li>Poor or limited habitat for the species, however other evidence (such as lack of records or environmental factors) indicates there is a very low likelihood of presence.</li> </ul>
5	Unlikely	<ul style="list-style-type: none"> <li>No suitable habitat and/or outside the species range.</li> </ul>

**Table A1.4.3** Significant flora recorded within 10 kilometres of the study area.

Scientific name	Common name	Last documented record	Total # of documented records	EPBC	FFG	Likely occurrence in study area
<b>NATIONAL SIGNIFICANCE</b>						
<i>Amphibromus fluitans</i>	River Swamp Wallaby-grass	-	-	VU	-	5
<i>Caladenia ornata</i>	Ornate Pink Fingers	-	-	VU	en	5
<i>Dianella amoena</i>	Matted Flax-lily	2015	12	EN	cr	4
<i>Dodonaea procumbens</i>	Trailing Hop-bush	-	-	VU	-	5
<i>Eucalyptus aggregata</i>	Black Gum	-	-	VU	vu	5
<i>Eucalyptus crenulata</i>	Buxton Gum	2015	10	EN	en	4
<i>Glycine latrobeana</i>	Clover Glycine	2010	6	VU	vu	4
<i>Lachnagrostis adamsonii</i>	Adamson's Blown-grass	-	-	EN	en	5
<i>Lepidium aschersonii</i>	Spiny Peppercross	-	-	VU	en	5
<i>Lepidium hyssopifolium</i> s.s.	Basalt Peppercross	2017	1	EN	en	4
<i>Leucochrysum albicans</i> subsp. <i>tricolor</i>	White Sunray	-	-	EN	en	5
<i>Pimelea spinescens</i> subsp. <i>spinescens</i>	Spiny Rice-flower	2010	5	CR	cr	4
<i>Prasophyllum frenchii</i>	Maroon Leek-orchid	1992	1	EN	en	5
<i>Pterostylis chlorogramma</i>	Green-striped Greenhood	-	-	VU	en	5
<i>Rutidosia leptorhynchoidea</i>	Button Wrinklewort	1984	2	EN	en	5
<i>Senecio behrianus</i>	Stiff Groundsel	-	-	EN	cr	5
<i>Senecio macrocarpus</i>	Large-fruit Fireweed	-	-	VU	cr	5
<i>Senecio psilocarpus</i>	Swamp Fireweed	1996	6	VU	-	5
<i>Swainsona murrayana</i>	Slender Darling-pea	-	-	VU	en	5

Scientific name	Common name	Last documented record	Total # of documented records	EPBC	FFG	Likely occurrence in study area
<i>Xerochrysum palustre</i>	Swamp Everlasting	2008	10	VU	cr	4
STATE SIGNIFICANCE						
<i>Acacia howittii</i>	Sticky Wattle	2014	3	-	vu	4
<i>Coronidium gunnianum</i>	Pale Swamp Everlasting	2003	2	-	cr	4
<i>Corymbia maculata</i>	Spotted Gum	2014	1	-	vu	5
<i>Craspedia canens</i>	Grey Billy-buttons	1991	1	-	cr	5
<i>Discaria pubescens</i>	Australian Anchor Plant	2014	14	-	cr	3
<i>Eucalyptus brookeriana</i>	Brooker's Gum	2012	3	-	en	5
<i>Eucalyptus globulus subsp. globulus</i>	Southern Blue-gum	2006	1	-	en	5
<i>Eucalyptus kitsoniana</i>	Bog Gum	2015	6	-	cr	5
<i>Eucalyptus yarraensis</i>	Yarra Gum	2016	94	-	cr	1
<i>Grevillea steiglitziana</i>	Brisbane Range Grevillea	1977	2	-	en	5
<i>Melaleuca armillaris subsp. armillaris</i>	Giant Honey-myrtle	2015	2	-	en	5
<i>Microseris scapigera s.s.</i>	Plains Yam-daisy	2010	1	-	cr	5
<i>Scleranthus brockiei</i>	Brock Knawel	2014	1	-	en	5
<i>Westringia glabra</i>	Violet Westringia	1996	3	-	en	5

**Data Sources:** Victorian Biodiversity Atlas (DEECA 2023d); Protected Matters Search Tool (DCCEEW 2023).

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## APPENDIX 2 FAUNA

### Appendix 2.1 Significant Fauna Species

Significant fauna within 10 kilometres of the study area is provided in the Table A2.1.3 at the end of this section, with Tables A2.1.1 and A2.1.2 below providing the background context for the values in Table 2.1.3.

**Table A2.1.1** Conservation status of each species for each Act/policy. The values in this table correspond to Columns 5 to 8 in Table A2.1.3.

EPBC Act ( <i>Environment Protection and Biodiversity Conservation Act 1999</i> ):				FFG Act ( <i>Flora and Fauna Guarantee Act 1988</i> ):			
EX	Extinct	VU	Vulnerable	ex	Extinct	vu	Vulnerable
CR	Critically endangered	CD	Conservation Dependent	cr	Critically endangered	cd	Conservation Dependent
EN	Endangered	#	Listed on the Protected Matter Search Tool	en	Endangered		

**Table A2.1.2** Likelihood of occurrence rankings: Habitat characteristics assessment of significant fauna species previously recorded within 10 kilometres of the study area, or that may potentially occur within the study area to determine their likelihood of occurrence. The values in this table correspond to Column 9 in Table A2.1.3.

1	High Likelihood	<ul style="list-style-type: none"> <li>Known resident in the study area based on site observations, database records, or expert advice; and/or,</li> <li>Recent records (i.e. within five years) of the species in the local area (DEECA 2023d); and/or,</li> <li>The study area contains the species' preferred habitat.</li> </ul>
2	Moderate Likelihood	<ul style="list-style-type: none"> <li>The species is likely to visit the study area regularly (i.e. at least seasonally); and/or,</li> <li>Previous records of the species in the local area (DEECA 2023d); and/or,</li> <li>The study area contains some characteristics of the species' preferred habitat.</li> </ul>
3	Low Likelihood	<ul style="list-style-type: none"> <li>The species is likely to visit the study area occasionally or opportunistically whilst en route to more suitable sites; and/or,</li> <li>There are only limited or historical records of the species in the local area (i.e. more than 20 years old); and/or,</li> <li>The study area contains few or no characteristics of the species' preferred habitat.</li> </ul>
4	Unlikely	<ul style="list-style-type: none"> <li>No previous records of the species in the local area; and/or,</li> <li>The species may fly over the study area when moving between areas of more suitable habitat; and/or,</li> <li>Out of the species' range; and/or,</li> <li>No suitable habitat present.</li> </ul>

**Table A2.1.3** Significant fauna recorded within 10 kilometres of the study area.

Scientific name	Common name	Total # of documented records	Last documented record	EPBC	FFG	Likely occurrence in study area
<b>NATIONAL SIGNIFICANCE</b>						
<i>Anthochaera phrygia</i>	Regent Honeyeater	-	-	CR	cr	4
<i>Aphelocephala leucopsis</i>	Southern Whiteface	-	-	VU	-	4
<i>Aprasia parapulchella</i>	Pink-tailed Worm-lizard	-	-	VU	En	4
<i>Botaurus poiciloptilus</i>	Australasian Bittern	-	-	EN	cr	4
<i>Calidris ferruginea</i>	Curlew Sandpiper	-	-	CR	cr	4
<i>Callocephalon fimbriatum</i>	Gang-gang Cockatoo	-	-	CR	-	4
<i>Climacteris picumnus</i>	Brown Treecreeper	2000	6	VU	-	4
<i>Dasyurus maculatus maculatus</i>	Spot-tailed Quoll	-	-	EN	en	4
<i>Delma impar</i>	Striped Legless Lizard	-	-	VU	en	4
<i>Falco hypoleucos</i>	Grey Falcon	-	-	VU	vu	4
<i>Galaxiella pusilla</i>	Eastern Dwarf Galaxias	-	-	VU	en	4
<i>Grantiella picta</i>	Painted Honeyeater	-	-	VU	vu	4
<i>Hirundapus caudacutus</i>	White-throated Needletail	1999	2	VU	vu	4
<i>Lathamus discolor</i>	Swift Parrot	-	-	CR	cr	4
<i>Liopholis montana</i>	Mountain Skink	-	-	EN	en	4
<i>Lissolepis coventryi</i>	Swamp Skink	-	-	EN	en	4
<i>Litoria raniformis</i>	Growling Grass Frog	2017	15	VU	vu	2
<i>Melanodryas cucullata</i>	Hooded Robin	1975	1	EN	vu	4
<i>Melanodryas cucullata cucullata</i>	South-eastern Hooded Robin	-	-	EN	-	4

Scientific name	Common name	Total # of documented records	Last documented record	EPBC	FFG	Likely occurrence in study area
<i>Nannoperca obscura</i>	Yarra Pygmy Perch	-	-	VU	vu	4
<i>Neophema chrysostoma</i>	Blue-winged Parrot	2016	3	VU	-	2
<i>Numenius madagascariensis</i>	Eastern Curlew	-	-	CR	cr	4
<i>Pedionomus torquatus</i>	Plains-wanderer	1911	1	CR	cr	4
<i>Pedionomus torquatus</i>	Plains-wanderer			CR	cr	4
<i>Petauroides volans</i>	Southern Greater Glider	1969	2	EN	vu	4
<i>Petaurus australis australis</i>	Yellow-bellied Glider	-	-	VU	vu	4
<i>Prototroctes maraena</i>	Australian Grayling	-	-	VU	en	4
<i>Pseudomys novaehollandiae</i>	New Holland Mouse	-	-	VU	en	4
<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox	-	-	VU	vu	4
<i>Rostratula australis</i>	Australian Painted Snipe	-	-	EN	cr	4
<i>Stagonopleura guttata</i>	Diamond Firetail	-	-	VU	vu	4
<i>Synemon plana</i>	Golden Sun Moth	2017	2	VU	vu	4
STATE SIGNIFICANCE						
<i>Antigone rubicunda</i>	Brolga	2013	1	-	en	4
<i>Aythya australis</i>	Hardhead	2019	19	-	vu	2
<i>Biziura lobata</i>	Musk Duck	2017	7	-	vu	2
<i>Engaeus fultoni</i>	Otway Burrowing Crayfish	1963	1	-	vu	4
<i>Engaeus sericatus</i>	Hairy Burrowing Crayfish	1982	2	-	vu	4
<i>Geopelia cuneata</i>	Diamond Dove	2017	1	-	vu	4
<i>Ninox strenua</i>	Powerful Owl	2009	3	-	vu	4

Scientific name	Common name	Total # of documented records	Last documented record	EPBC	FFG	Likely occurrence in study area
<i>Oreoica gutturalis</i>	Crested Bellbird	1800	1	-	en	4
<i>Ornithorhynchus anatinus</i>	Platypus	2021	5	-	vu	4
<i>Oxyura australis</i>	Blue-billed Duck	2019	3	-	vu	2
<i>Phascogale tapoatafa</i>	Brush-tailed Phascogale	2018	2	-	vu	2
<i>Pseudemoia pagenstecheri</i>	Tussock Skink	2009	4	-	en	3
<i>Pseudophryne bibronii</i>	Brown Toadlet	2003	2	-	en	4
<i>Sminthopsis murina murina</i>	Common Dunnart	2011	1	-	vu	4
<i>Spatula rhynchotis</i>	Australasian Shoveler	2019	2	-	vu	2
<i>Stictonetta naevosa</i>	Freckled Duck	2019	4	-	en	2

**Data Sources:** Victorian Biodiversity Atlas (DEECA 2023d); Protected Matters Search Tool (DCCEW 2023).

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## **APPENDIX 3 NATIVE VEGETATION REMOVAL (NVR) REPORT**

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## Offset requirements if a permit is granted

Any approval granted will include a condition to obtain an offset that meets the following requirements:

<b>General offset amount<sup>1</sup></b>	0.650 general habitat units
Vicinity	Corangamite Catchment Management Authority (CMA) or Moorabool Shire Council
Minimum strategic biodiversity value score <sup>2</sup>	0.239
Large trees	6 large trees

NB: values within tables in this document may not add to the totals shown above due to rounding

Appendix 1 includes information about the native vegetation to be removed

Appendix 2 includes information about the rare or threatened species mapped at the site.

Appendix 3 includes maps showing native vegetation to be removed and extracts of relevant species habitat importance maps

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<sup>1</sup> The general offset amount required is the sum of all general habitat units in Appendix 1.

<sup>2</sup> Minimum strategic biodiversity score is 80 per cent of the weighted average score across habitat zones where a general offset is required

## Next steps

Any proposal to remove native vegetation must meet the application requirements of the Detailed Assessment Pathway and it will be assessed under the Detailed Assessment Pathway.

If you wish to remove the mapped native vegetation you are required to apply for a permit from your local council. Council will refer your application to DELWP for assessment, as required. **This report is not a referral assessment by DELWP.**

This *Native vegetation removal report* must be submitted with your application for a permit to remove, destroy or lop native vegetation.

Refer to the *Guidelines for the removal, destruction or lopping of native vegetation* (the Guidelines) for a full list of application requirements. This report provides information that meets the following application requirements:

- The assessment pathway and reason for the assessment pathway
- A description of the native vegetation to be removed (partly met)
- Maps showing the native vegetation and property (partly met)
- Information about the impacts on rare or threatened species.
- The offset requirements determined in accordance with section 5 of the Guidelines that apply if approval is granted to remove native vegetation.

Additional application requirements must be met including:

- Topographical and land information
- Recent dated photographs
- Details of past native vegetation removal
- An avoid and minimise statement
- A copy of any Property Vegetation Plan that applies
- A defensible space statement as applicable
- A statement about the Native Vegetation Precinct Plan as applicable
- A site assessment report including a habitat hectare assessment of any patches of native vegetation and details of trees
- An offset statement that explains that an offset has been identified and how it will be secured.

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Authorised by the Victorian Government, 8 Nicholson Street, East Melbourne.

For more information contact the DELWP Customer Service Centre 136 186

[www.delwp.vic.gov.au](http://www.delwp.vic.gov.au)

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Obtaining this publication does not guarantee that an application will meet the requirements of Clauses 52.16 or 52.17 of the Victoria Planning Provisions and Victorian planning schemes or that a permit to remove native vegetation will be granted.

Notwithstanding anything else contained in this publication, you must ensure that you comply with all relevant laws, legislation, awards or orders and that you obtain and comply with all permits, approvals and the like that affect, are applicable or are necessary to undertake any action to remove, lop or destroy or otherwise deal with any native vegetation or that apply to matters within the scope of Clauses 52.16 or 52.17 of the Victoria Planning Provisions and Victorian planning schemes.

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## Appendix 1: Description of native vegetation to be removed

The species-general offset test was applied to your proposal. This test determines if the proposed removal of native vegetation has a proportional impact on any rare or threatened species habitats above the species offset threshold. The threshold is set at 0.005 per cent of the mapped habitat value for a species. When the proportional impact is above the species offset threshold a species offset is required. This test is done for all species mapped at the site. Multiple species offsets will be required if the species offset threshold is exceeded for multiple species.

Where a zone requires species offset(s), the species habitat units for each species in that zone is calculated by the following equation in accordance with the Guidelines:

$$\text{Species habitat units} = \text{extent} \times \text{condition} \times \text{species landscape factor} \times 2, \text{ where the species landscape factor} = 0.5 + (\text{habitat importance score}/2)$$

The species offset amount(s) required is the sum of all species habitat units per zone

Where a zone does not require a species offset, the general habitat units in that zone is calculated by the following equation in accordance with the Guidelines:

$$\text{General habitat units} = \text{extent} \times \text{condition} \times \text{general landscape factor} \times 1.5, \text{ where the general landscape factor} = 0.5 + (\text{strategic biodiversity value score}/2)$$

The general offset amount required is the sum of all general habitat units per zone.

### Native vegetation to be removed

Information provided by or on behalf of the applicant in a GIS file							Information calculated by EnSym					
Zone	Type	BioEVC	BioEVC conservation status	Large tree(s)	Partial removal	Condition score	Polygon Extent	Extent without overlap	SBV score	HI score	Habitat units	Offset type
12-T	Scattered Tree	cvu_0055	Endangered	1	no	0.200	0.070	0.070	0.270		0.013	General
13-T	Scattered Tree	cvu_0055	Endangered	1	no	0.200	0.070	0.070	0.277		0.013	General
14-T	Scattered Tree	cvu_0055	Endangered	1	no	0.200	0.070	0.070	0.280		0.013	General
15-T	Scattered Tree	cvu_0055	Endangered	1	no	0.200	0.070	0.070	0.270		0.013	General
20-T	Scattered Tree	cvu_0055	Endangered	1	no	0.200	0.070	0.048	0.270		0.009	General
25-T	Scattered Tree	cvu_0055	Endangered	1	no	0.200	0.070	0.070	0.280		0.013	General
1-CW	Patch	wetland	Vulnerable	0	no	0.210	2.142	2.142	0.312		0.443	General
2-CW	Patch	wetland	Vulnerable	0	no	0.360	0.001	0.001	0.340		0.000	General

Information provided by or on behalf of the applicant in a GIS file							Information calculated by EnSym					
Zone	Type	BioEVC	BioEVC conservation status	Large tree(s)	Partial removal	Condition score	Polygon Extent	Extent without overlap	SBV score	HI score	Habitat units	Offset type
3-CW	Patch	wetland	Vulnerable	0	no	0.240	0.011	0.011	0.317		0.002	General
7-A	Patch	cvu_0055	Endangered	0	no	0.210	0.110	0.110	0.299		0.023	General
9-B	Patch	cvu_0055	Endangered	0	no	0.160	0.009	0.009	0.380		0.002	General
8-C	Patch	cvu_0055	Endangered	0	no	0.160	0.004	0.004	0.380		0.001	General
10-D	Patch	cvu_0055	Endangered	0	no	0.230	0.010	0.010	0.373		0.002	General
11-E	Patch	cvu_0055	Endangered	0	no	0.160	0.008	0.008	0.360		0.001	General
4-F	Patch	cvu_0055	Endangered	0	no	0.110	0.688	0.688	0.272		0.072	General
6-G	Patch	cvu_0055	Endangered	0	no	0.210	0.106	0.106	0.280		0.021	General
5-H	Patch	cvu_0055	Endangered	0	no	0.090	0.077	0.077	0.280		0.007	General

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## Appendix 2: Information about impacts to rare or threatened species' habitats on site

This table lists all rare or threatened species' habitats mapped at the site.

Species common name	Species scientific name	Species number	Conservation status	Group	Habitat impacted	% habitat value affected
Grey Billy-buttons	<i>Craspedia canens</i>	504643	Endangered	Dispersed	Habitat importance map	0.0000
Plump Swamp Wallaby-grass	<i>Amphibromus pithogastrus</i>	503624	Endangered	Dispersed	Habitat importance map	0.0000
Swamp Everlasting	<i>Xerochrysum palustre</i>	503763	Vulnerable	Dispersed	Habitat importance map	0.0000
Snowy Mint-bush	<i>Prostanthera nivea</i> var. <i>nivea</i>	502746	Rare	Dispersed	Habitat importance map	0.0000
Wavy Swamp Wallaby-grass	<i>Amphibromus sinuatus</i>	503625	Vulnerable	Dispersed	Habitat importance map	0.0000
Matted Flax-lily	<i>Dianella amoena</i>	505084	Endangered	Dispersed	Habitat importance map	0.0000
Pale-flower Crane's-bill	<i>Geranium</i> sp. 3	505344	Rare	Dispersed	Habitat importance map	0.0000
Yarra Gum	<i>Eucalyptus yarraensis</i>	501326	Rare	Dispersed	Habitat importance map	0.0000
Purple Diuris	<i>Diuris punctata</i>	501084	Vulnerable	Dispersed	Habitat importance map	0.0000
Purple Blown-grass	<i>Lachnagrostis punicea</i> subsp. <i>filifolia</i>	504222	Rare	Dispersed	Habitat importance map	0.0000
Small-flower Mat-rush	<i>Lomandra micrantha</i> subsp. <i>tuberculata</i>	504711	Rare	Dispersed	Habitat importance map	0.0000
Enfield Grevillea	<i>Grevillea bedggoodiana</i>	503743	Vulnerable	Dispersed	Habitat importance map	0.0000
Common Pipewort	<i>Eriocaulon scariosum</i>	501218	Rare	Dispersed	Habitat importance map	0.0000
Clover Glycine	<i>Glycine latrobeana</i>	501456	Vulnerable	Dispersed	Habitat importance map	0.0000
Pale Swamp Everlasting	<i>Coronidium gunnianum</i>	504655	Vulnerable	Dispersed	Habitat importance map	0.0000
Melbourne Yellow-gum	<i>Eucalyptus leucoxylon</i> subsp. <i>connata</i>	504484	Vulnerable	Dispersed	Habitat importance map	0.0000
Golden Sun Moth	<i>Synemon plana</i>	15021	Critically endangered	Dispersed	Habitat importance map	0.0000

Annual Fireweed	<i>Senecio glomeratus subsp. longifructus</i>	507144	Rare	Dispersed	Habitat importance map	0.0000
Growling Grass Frog	<i>Litoria raniformis</i>	13207	Endangered	Dispersed	Habitat importance map	0.0000
Arching Flax-lily	<i>Dianella sp. aff. longifolia (Benambra)</i>	505560	Vulnerable	Dispersed	Habitat importance map	0.0000
Swamp Flax-lily	<i>Dianella callicarpa</i>	505086	Rare	Dispersed	Habitat importance map	0.0000
Golden Cowslips	<i>Diuris behrii</i>	501061	Vulnerable	Dispersed	Habitat importance map	0.0000
Black Falcon	<i>Falco subniger</i>	10238	Vulnerable	Dispersed	Habitat importance map	0.0000

#### Habitat group

- Highly localised habitat means there is 2000 hectares or less mapped habitat for the species
- Dispersed habitat means there is more than 2000 hectares of mapped habitat for the species

#### Habitat impacted

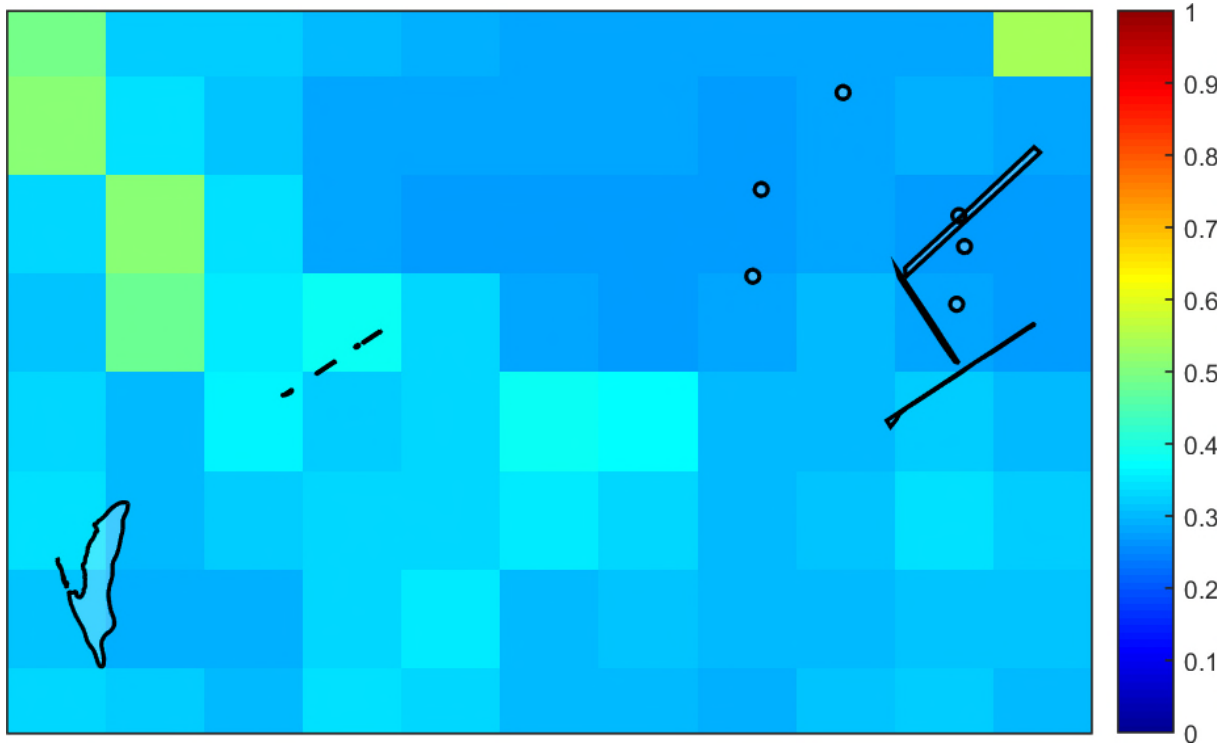
- Habitat importance maps are the maps defined in the Guidelines that include all the mapped habitat for a rare or threatened species
- Top ranking maps are the maps defined in the Guidelines that depict the important areas of a dispersed species habitat, developed from the highest habitat importance scores in dispersed species habitat maps and selected VBA records
- Selected VBA record is an area in Victoria that represents a large population, roosting or breeding site etc.

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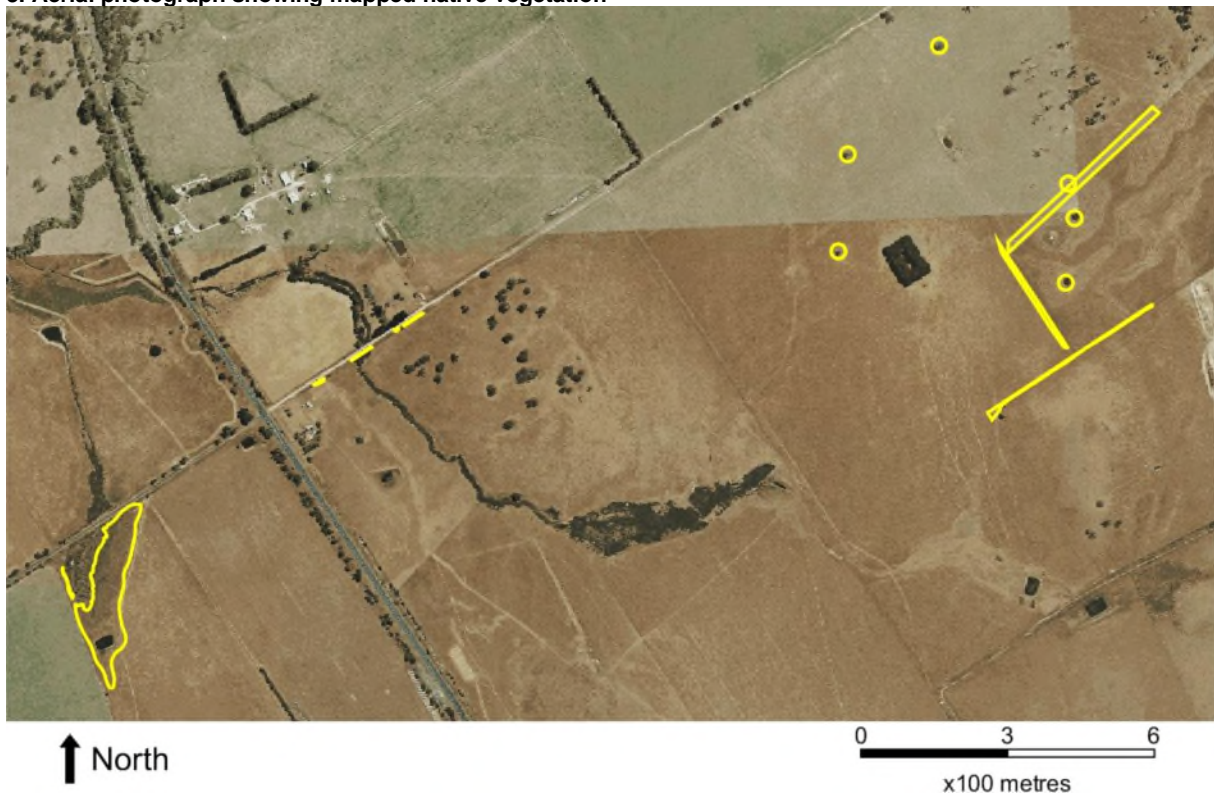
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## Appendix 3 – Images of mapped native vegetation

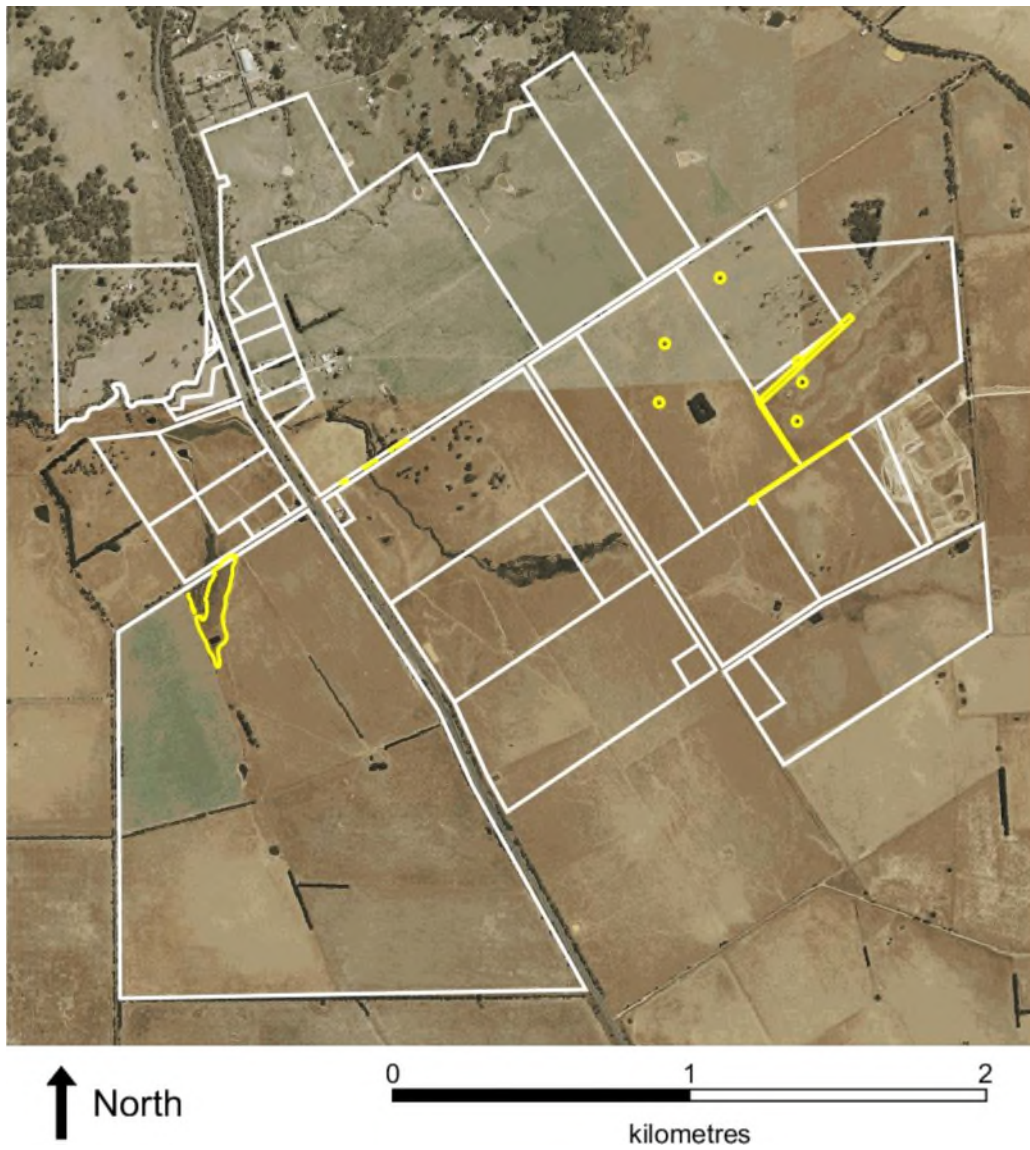
### 2. Strategic biodiversity values map



### 3. Aerial photograph showing mapped native vegetation



#### 4. Map of the property in context



Yellow boundaries denote areas of proposed native vegetation removal.

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# Native vegetation removal report

This report provides information to support an application to remove, destroy or lop native vegetation in accordance with the *Guidelines for the removal, destruction or lopping of native vegetation*. The report is **not an assessment by DELWP** of the proposed native vegetation removal. Native vegetation information and offset requirements have been determined using spatial data provided by the applicant or their consultant.

Date of issue: 18/09/2023

Report ID: EHP\_2023\_164

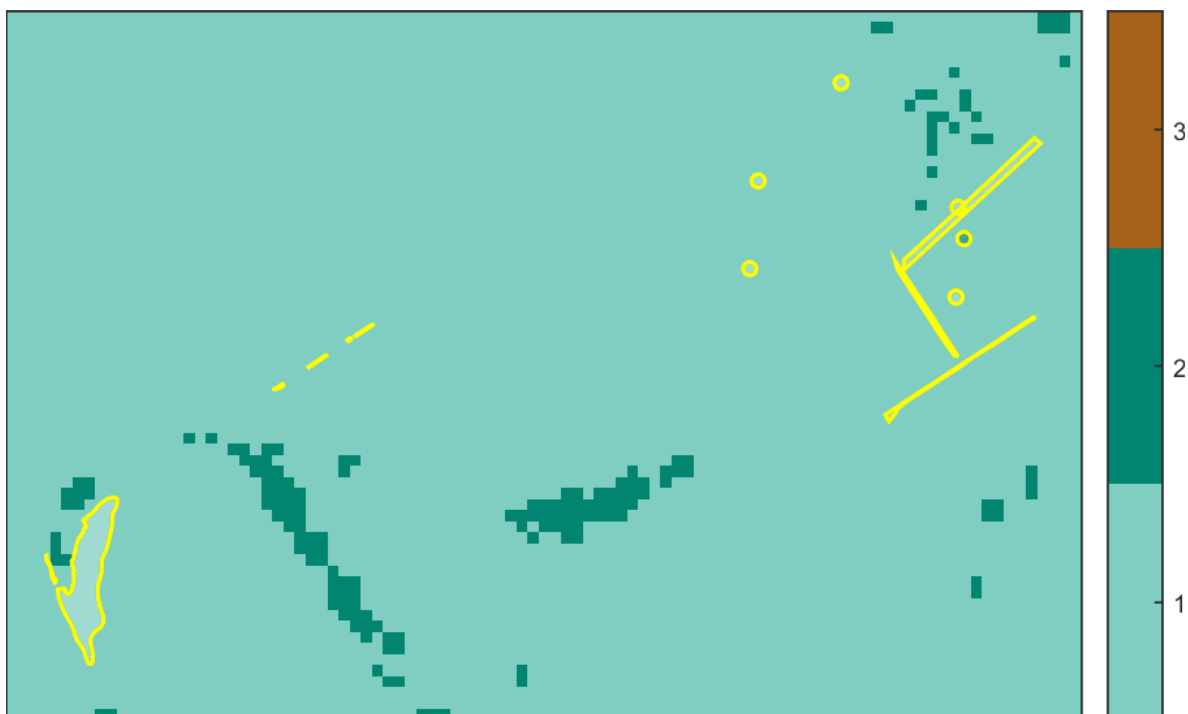
Time of issue: 12:51 am

Project ID	EHP16674_Elaine_VG94
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## Assessment pathway

Assessment pathway	Detailed Assessment Pathway
Extent including past and proposed	3.565 ha
Extent of past removal	0.000 ha
Extent of proposed removal	3.565 ha
No. Large trees proposed to be removed	6
Location category of proposed removal	Location 2 The native vegetation is in an area mapped as an endangered Ecological Vegetation Class (as per the statewide EVC map). Removal of less than 0.5 hectares of native vegetation in this location will not have a significant impact on any habitat for a rare or threatened species.

### 1. Location map



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## **APPENDIX 4 AVAILABLE NATIVE VEGETATION CREDITS**

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# Report of available native vegetation credits

This report lists native vegetation credits available to purchase through the Native Vegetation Credit Register.

This report is **not evidence** that an offset has been secured. An offset is only secured when the units have been purchased and allocated to a permit or other approval and an allocated credit extract is provided by the Native Vegetation Credit Register.

Date and time: 17/09/2023 08:56

Report ID: 20787

## What was searched for?

### General offset

General habitat units	Strategic biodiversity value	Large trees	Vicinity (Catchment Management Authority or Municipal district)	
0.65	0.239	6	CMA	Corangamite
			or LGA	Moorabool Shire

## Details of available native vegetation credits on 17 September 2023 08:56

### These sites meet your requirements for general offsets.

Credit Site ID	GHU	LT	CMA	LGA	Land owner	Trader	Fixed price	Broker(s)
BBA-0126	0.760	6	Corangamite	Moorabool Shire	Yes	Yes	No	Contact NVOR
VC_CFL-3080_01	6.019	101	Corangamite	Golden Plains Shire	Yes	Yes	No	Bio Offsets
VC_CFL-3699_01	1.834	45	Corangamite	Colac Otway Shire	Yes	Yes	No	Contact NVOR
VC_CFL-3718_01	9.375	918	Corangamite	Corangamite Shire	Yes	Yes	No	Bio Offsets
VC_CFL-3739_01	5.729	279	Corangamite	Colac Otway Shire	Yes	Yes	No	Bio Offsets
VC_CFL-3786_01	3.112	609	Corangamite	Corangamite Shire	Yes	Yes	No	VegLink
VC_CFL-3787_01	9.579	895	Corangamite	Colac Otway Shire	Yes	Yes	No	VegLink
VC_CFL-3798_01	2.368	232	Corangamite	Colac Otway Shire	Yes	Yes	No	Contact NVOR

### These sites meet your requirements using alternative arrangements for general offsets.

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Credit Site ID	GHU	LT	CMA	LGA	Land owner	Trader	Fixed price	Broker(s)
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There are no sites listed in the Native Vegetation Credit Register that meet your offset requirements when applying the alternative arrangements as listed in section 11.2 of the Guidelines for the removal, destruction or lopping of native vegetation.

**These potential sites are not yet available, land owners may finalise them once a buyer is confirmed.**

Credit Site ID	GHU	LT	CMA	LGA	Land owner	Trader	Fixed price	Broker(s)
----------------	-----	----	-----	-----	------------	--------	-------------	-----------

There are no potential sites listed in the Native Vegetation Credit Register that meet your offset requirements.

LT - Large Trees

CMA - Catchment Management Authority

LGA - Municipal District or Local Government Authority

## Next steps

### If applying for approval to remove native vegetation

Attach this report to an application to remove native vegetation as evidence that your offset requirement is currently available.

### If you have approval to remove native vegetation

Below are the contact details for all brokers. Contact the broker(s) listed for the credit site(s) that meet your offset requirements. These are shown in the above tables. If more than one broker or site is listed, you should get more than one quote before deciding which offset to secure.

## Broker contact details

Broker Abbreviation	Broker Name	Phone	Email	Website
Abezco	Abzeco Pty. Ltd.	(03) 9431 5444	offsets@abzeco.com.au	www.abzeco.com.au
Baw Baw SC	Baw Baw Shire Council	(03) 5624 2411	bawbaw@bawbawshire.vic.gov.au	www.bawbawshire.vic.gov.au
Bio Offsets	Biodiversity Offsets Victoria	0452 161 013	info@offsetsvictoria.com.au	www.offsetsvictoria.com.au
Contact NVOR	Native Vegetation Offset Register	136 186	nativevegetation.offsetregister@delwp.vic.gov.au	www.environment.vic.gov.au/native-vegetation
Ecocentric	Ecocentric Environmental Consulting	0410 564 139	ecocentric@me.com	Not available
Ethos	Ethos NRM Pty Ltd	(03) 5153 0037	offsets@ethosnrm.com.au	www.ethosnrm.com.au
Nillumbik SC	Nillumbik Shire Council	(03) 9433 3316	offsets@nillumbik.vic.gov.au	www.nillumbik.vic.gov.au
TFN	Trust for Nature	8631 5888	offsets@tfn.org.au	www.trustfornature.org.au
VegLink	Vegetation Link Pty Ltd	(03) 8578 4250 or 1300 834 546	offsets@vegetationlink.com.au	www.vegetationlink.com.au
Yarra Ranges SC	Yarra Ranges Shire Council	1300 368 333	biodiversityoffsets@yarraranges.vic.gov.au	www.yarraranges.vic.gov.au

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For more information contact the DEECA Customer Service Centre 136 186 or the Native Vegetation Credit Register at [nativevegetation.offsetregister@delwp.vic.gov.au](mailto:nativevegetation.offsetregister@delwp.vic.gov.au)

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