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Final Report

Biodiversity Assessment and Targeted Flora and Fauna surveys for the proposed Bendigo Regional Employment Precinct, Marong, Victoria

Prepared for

City of Greater Bendigo

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Ecology and Heritage Partners Pty Ltd

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Introduction

Ecology and Heritage Partners Pty Ltd was commissioned by City of Greater Bendigo to undertake a Biodiversity Assessment and Targeted Flora and Fauna surveys for the proposed Bendigo Regional Employment Precinct (BREP), Marong, Victoria.

The purpose of this assessment was to identify the extent and type of native vegetation present within the study area and to determine the presence/absence 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.

Methods

A field assessment was undertaken from 6-10 December 2021 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).

Targeted flora surveys were undertaken by two experienced botanists, to coincide with the known flowering period for the species:

- Spiny Rice-flower (11-15 July 2022 and 9-10 August 2022);
- Late-flower Flax-lily (5-9 December 2022);
- Pale Flax-lily (5-9 December 2022);
- Ausfeld's Wattle (3-7 October 2022); and,
- Cane Spear-grass (3-7 October 2022 and 5-9 December 2022).

Targeted fauna surveys were undertaken by two experienced ecologists for the following species:

- Growling Grass frog (20 and 21 December 2022 and 12 January 2023);
- Golden Sun Moth (21 December 2022 and 11, 13 and 16 January 2023);
- Swift Parrot (11-15 July 2022)
- Fixed Point Bird Count and Roaming Surveys (Diurnal) (10 August and 1 December 2022);
- Nocturnal Bird Surveys (Call-Playback) (2 December 2022);
- Lace Monitor (concurrent with other flora and fauna surveys); and,
- Brushtail Phascogale (4 April [camera deployment] to 2 May 2023 [camera collection]).

Detailed descriptions of survey methods are provided in Section 3.

Results

The desktop and field assessments identified several ecological features within the study area and surrounding landscape; and these are summarised below (Table S1).

Table S1. Summary of the ecological values within the Study Area.

Native Vegetation	• 68.81 hectares of Plains Woodland (EVC 803) • 146 Scattered Trees; and, • 532 Large Trees in patches of vegetation.
Ramsar Wetlands	There are no Ramsar wetlands within or adjacent to the study area.
Significant ecological communities	While considered unlikely to be present based on the survey effort completed to date, due to the ongoing livestock grazing within the study area during the ecological surveys it is recommended that additional surveys be undertaken from mid-late spring within patches PW8 and PW9 and grassland patches of PW4 that are greater than 0.5 hectares in area, a minimum of three months after the cessation of grazing to confirm presence or absence of the nationally significant Grey Box Grassy Woodland and Derived Native Grasslands. No State significant ecological communities were recorded within the study area.
Significant flora species	Two State significant flora species listed as under the FFG Act were observed during the site assessment: • Late-flower Flax-lily *Dianella tarda* (Critically Endangered) • Ausfeld's Wattle (Endangered) Six flora species listed as 'protected' under the FFG Act in Family/genera Acacia and Asteraceae were also recorded, including: • Gold-dust Wattle *Acacia acinacea* • Black Wattle *Acacia mearnsii* • Lemon Beauty-heads *Calocephalus citreus* • Sifton Bush *Cassinia sifton* • Fuzzy New Holland Daisy *Vittadinia cuneata* • Shiny Everlasting *Xerochrysum viscosum*
Significant fauna species	Two State significant flora species listed as under the FFG Act were observed during the site assessment: • Brush-tailed Phascogale (Vulnerable) • Squirrel Glider (Vulnerable)

1 INTRODUCTION

1.1 Background

Ecology and Heritage Partners Pty Ltd was commissioned by City of Greater Bendigo to undertake a Biodiversity Assessment and Targeted Flora and Fauna surveys for the proposed Bendigo Regional Employment Precinct (BREP), Marong, Victoria.

We understand that City of Greater Bendigo is seeking to develop a Precinct Structure Plan (PSP) that will guide the future development of the land. The study area for the biodiversity assessment (excludes targeted surveys) extends beyond the proposed BREP boundary to also include areas associated with the proposed Marong Western Freight Corridor.

The purpose of this assessment was to identify the extent and type of native vegetation present within the study area and to determine the presence/absence 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 approximately 14 kilometres west of Bendigo's CBD and 140 kilometres north-west of Melbourne's CBD (Figure 1). The study area covers approximately 392 hectares, inclusive of the proposed Marong Western Freight Corridor (BREP approximately 304 hectares), and is bound by Calder Highway to the north, Cemetery Road to the south, Calder Alternative Highway to the east and Wimmera Highway to the west. Targeted surveys were undertaken within areas of suitable habitat within BREP only.

The study area is currently used predominantly for agricultural purposes, primarily grazing, with several rural residential properties also present. It is generally flat, with some gentle undulations throughout. The Wilson Hill Channel enters the study area in the south, running in a north-west direction and exiting the study area in the north-west.

According to the Victorian Department of Energy, Environment and Climate Action (DEECA) NatureKit Map (DEECA 2023a), the study area is located within the Goldfields and Victorian Riverina bioregion, North Central Catchment Management Authority (CMA) and City of Greater Bendigo municipality.

2 TARGET SPECIES DESCRIPTIONS

2.1 Nationally Significant Species

2.1.1 *Spiny Rice-flower Pimelea spinescens subsp. spinescens*

EPBC Act Conservation Status: Critically Endangered

FFG Act Conservation Status: Critically Endangered

Spiny Rice-flower is endemic to Victoria and occurs in grasslands and open shrublands (Plate 1). It is known to occur in several locations west of Melbourne, with some very significant occurrences on roadsides in Golden Plains Shire.

Plate 1. Spiny Rice-flower (Ecology and Heritage Partners Pty Ltd)

It has been depleted historically by land clearance for settlement, industry and agriculture but is also threatened by grazing and inappropriate fire regimes.

According to VBA records of Spiny Rice-flower (DEECA 2023d), four records of the species have been identified within ten kilometres of the study area, with the most recent record occurring in 2014. Despite the lack of records in the surrounding area, the initial Biodiversity Assessment for the Bendigo Regional Employment Precinct determined there to be a moderate likelihood of it occurring within the study area due to the presence of suitable habitat being present on site, and the proximity of records (i.e. 1.3 kilometres to the south). The species has the potential to occur in areas of relatively undisturbed Plains Woodland within the study area.

The species is slow-growing and reaches up to 30 centimetres in height. Plants are mostly dioecious (male and female flowers on separate plants) but some plants are monoecious (male and female flower on same plant). It bears small yellow flowers between April and August (DEWHA 2009).

2.1.2 *Swift Parrot Lathamus Discolor*

EPBC Act Conservation Status: Critically Endangered

FFG Act Conservation Status: Endangered

Swift Parrot (Plate 4) is a small, vibrant parrot species that is about 23-25 centimetres long, with a wingspan of 40-45 centimetres. The males and females have similar plumage, with bright green feathers on their backs and wings, red faces and throats, and distinctive blue markings on their wings and tails.

Plate 2. Swift Parrot (Ecology and Heritage Partners Pty Ltd)

Swift Parrot breeds in Tasmania only, particularly along the east coast, from September to April (Higgins 1999). Nests are made in tree hollows, often in close proximity to flowering Tasmanian Blue Gum, being their main food source. This species then migrates north through Bass Strait to mainland Australia for the winter (Garnett et al. 2011).

During the winter migration period, flowering eucalypts in woodlands and forests (particularly box-ironbark forests through central Victoria), provide suitable foraging habitat for this species, including the threatened ecological community Grey Box (*Eucalyptus microcarpa*) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia. Swift Parrot is typically found feeding on flowering trees (and lerp), particularly mature eucalypts such as Grey Box *Eucalyptus microcarpa*, Red Ironbark *Eucalyptus tricarpa*, Mugga Ironbark *Eucalyptus sideroxylon*, Yellow Gum *Eucalyptus leucoxylon*, White Box *Eucalyptus albens* and Red Gum *Eucalyptus camaldulensis* (Higgins 1999). Swift Parrots are migratory birds that spend the winter months in Tasmania and the summer months in south-eastern Australia, including Victoria (Garnett et al., 2011). They are highly dependent on the flowering and fruiting of certain eucalypt species for their survival.

2.1.3 *Growling Grass Frog Litoria raniformis major*

EPBC Act Conservation Status: Vulnerable

FFG Act Conservation Status: Vulnerable

Although formerly widely distributed across southern eastern Australia, including Tasmania (Hero *et al.* 1991), Growling Grass Frog (Plate 2) populations have declined markedly over the past two decades in many areas, particularly in south and central Victoria where some populations have experienced local extinction.

Plate 3. Growling Grass Frog *Litoria raniformis* (Ecology and Heritage Partners Pty Ltd)

Growling Grass Frog are 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). The species can also utilise temporarily inundated waterbodies during breeding season, to facilitate reproduction (Organ 2003). The presence of key habitat attributes, primarily an extensive cover of emergent,

submerged and floating vegetation (Robertson *et al*. 2002, Organ 2004, 2005), and the spatial orientation of waterbodies (Robertson *et al*. 2002; Heard *et al*. 2004; Hamer and Organ 2008) are strong determinants of the species' presence. Terrestrial vegetation such as grasses and sedges, rocks and other ground debris around wetland perimeters also provide important foraging, dispersal and overwintering sites. Dispersal is thought to occur primarily along drainage lines or other low-lying areas between waterbodies, and unhindered movement between and within waterbodies is considered important for population viability.

2.1.4 Golden Sun Moth Synemon plana

EPBC Act Conservation Status: Vulnerable

FFG Act Conservation Status: Vulnerable

Golden Sun Moth (Plate 3) typically occurs in native grassland, grassy woodland, dominated by greater than 40% cover of wallaby-grass, in particular *Rytidosperma* spp. (Brown and Tolsma 2010; DSE 2004a), but may also inhabit areas dominated by Kangaroo Grass *Themeda triandra* (Endersby and Koehler 2006) and introduced grassland dominated by Chilean Needle-grass (*Nassella neesiana*) and other introduced species. Male flight is typically low, to about a metre above the ground, fast and can be prolonged, but they are generally not recorded flying more than 100 metres from suitable habitat (Clarke and O'Dwyer 1999).

Plate 4. Golden Sun Moth (Ecology and Heritage Partners Pty Ltd)

Prior to European settlement, the Golden Sun Moth was widespread and relatively continuous throughout its range, inhabiting grassy open woodlands and grassland, although it now mainly inhabits small, isolated sites (DSE 2004a). The species is threatened by habitat loss, disturbance and fragmentation due to agricultural expansion and urbanisation. Many populations are isolated and fragmented, impeding the ability of the relatively immobile females to recolonise areas, thereby reducing the likelihood of genetic exchange (DSE 2004a). Such populations are therefore vulnerable as there is little likelihood of recolonisation in the event of a local extinction.

2.2 State Significant Species

2.2.1 *Late-flower Flax-lily Dianella tarda*

FFG Act Conservation Status: Critically Endangered

Late-flower Flax-lily *Dianella tarda* is a perennial herbaceous plant that is native to the eastern coast of Australia, where it can be found growing in a variety of habitats including rainforests, woodlands, and heathlands. The plant typically grows to a height of 0.3 to 0.5 metres and has long, narrow leaves that are arranged in a basal rosette. The leaves are typically blue-green in colour and can grow up to 60 cm in length.

Plate 5. Late-flower Flax-lily (Ecology and Heritage Partners)

Dianella tarda produces clusters of small, star-shaped flowers that are typically purple in colour, although they can also be white or blue. The flowers are followed by small, spherical berries that are blue or purple in colour and contain small, black seeds. The flowering period for this species typically occurs from November to January.

2.2.2 *Pale Flax-lily Dianella longifolia var. grandis*

FFG Act Conservation Status: Critically Endangered

Pale Flax-lily is a perennial, tufted lily that grows in solitary patches up to 40cm wide, to a height of 1.3 metres. The species' range was once widespread across Victoria's volcanic plains; however land clearing and agriculture have reduced the current population to isolated patches.

Typically occurring in lowland plains grassland and grassy woodlands, it can also be found around rocky outcrops at higher altitudes than the common variant, *Dianella longifolia* var. *longifolia*. The leaves of the Pale Flax-lily are glaucous, textured and firm with a blue-green colour. Pale Flax-lily generally flowers between November and December, producing fragrant blue-purple flowers.

2.2.3 *Ausfeld's Wattle Acacia ausfeldii*

FFG Act Conservation Status: Endangered

Ausfeld's Wattle *Acacia ausfeldii* is a species of small tree or shrub native to eastern Australia, including parts of Victoria. It typically grows up to five metres in height and has a weeping habit with finely divided leaves, which are narrowly elliptic of linear-oblong shaped approximately 2-7 centimetres long dotted with resin glands. The bark is smooth and grey, and the flowers are yellow. This species flowers from August to October. This species grows in dry forest and mallee communities scattered throughout north-central Victoria particularly around Bendigo municipality (Entwisle et al. 1996).

Plate 6. Ausfeld's Wattle (Ecology and Heritage Partners)

2.2.4 *Cane Spear-grass Austrostipa breviglumis*

EPBC Act Conservation Status: Not Listed

FFG Act Conservation Status: Endangered

Cane Spear-grass *Austrostipa breviglumis* is a perennial grass species that is native to Australia. It typically grows in dense clumps, reaching heights of up to 1.5 metres, with stems that can be up to 8 mm thick. The Leaves of the plant are narrow, up to 20 centimetres long and are glabrous or finely scabrous with a flat or in-rolled blade (Walsh 1994).

Between September to December, Cane Spear-grass produces its characteristic seed heads, which are large and fluffy. The seed heads are made up of numerous individual spikelets, which contain small, brownish-coloured seeds that are dispersed by wind and animals. Cane Spear-grass is found in a variety of habitats, including grasslands, woodlands, and forests, and is typically found in well-drained soils.

2.2.5 *Brushtailed Phascogale Phascogale tapoatafa*

EPBC Act Conservation Status: Not Listed

FFG Act Conservation Status: Endangered

The Brush-tailed Phascogale *Phascogale tapoatafa* (Plate 6*)* is a small (100-300g) carnivorous, arboreal, marsupial (Plate 1) from the Dasyurid Family. It is nocturnal with a sharp snout, dark grey fur on its head and neck, creamy white fur on its underside and grey-pink naked ears (VBA 2010). The distinctive 'bottle-brush' tail, is approximately the same length as head-body length, and has black hairs up to 55 centimetres long, and short, dark grey hairs near the base (Menkhorst and Knight 2004, VBA 2010).

Plate 7. Brushtail Phascogale *Phascogale tapoatafa* (Ecology and Heritage Partners).

The species has been recorded in dry forest and woodland, predominantly with box, iron-bark, and stringy-bark eucalypts, in wetter habitats, farmland and roadsides with remnant tree cover (Menkhorst 1995). Traill and Coates (1993) recorded Brush-tailed Phascogale foraging primarily in arboreal habitats. The diet consists predominantly of large insects, spiders and centipedes, found on trunks, branches and fallen logs of rough-barked trees, as well as nectar of flowering iron-bark and box eucalypts (Traill and Coates 1993).

Mating usually occurs between May and June, after which all the males die within a few days of each other at about one year old (Menkhorst 1995). Females give birth to a litter of 5-8 young (Jun - Aug), which are carried for about seven weeks, and then left in a tree-hollow nest until weaned (DSE 1997).

The Brush-tailed Phascogale nests in numerous sites each year, with a trend over time for a continued increase in nest trees identified by Van der Ree *et al.* (2006). Nests are constructed in tree hollows, stumps and under flaking bark.

2.2.6 Lace Monitor Varanus varius

EPBC Act Conservation Status: Not Listed

FFG Act Conservation Status: Endangered

Lace Monitor (Plate 5) is a State significant species (listed as endangered under the FFG Act). Lace Monitor is a large reptile with a length of up to two metres long with a dull bluish black scale pattern and numerous scattered, cream coloured spots or bands (Hoser 1998). This species has been recorded across central, northeast and east of Victoria, and its distribution extends north to the Cape York Peninsula of Queensland (Cogger 1994).

Plate 8. State significant Lace Monitor (Ecology and Heritage Partners.

Lace Monitor prefers dry sclerophyll forests and woodlands and frequents both open and closed forests. They frequent river basins and wetland and frequently transverse adjacent areas, are often found in tree hollows, under fallen trees and large rocks.

3 METHODS

3.1 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);
- 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,
    - Bendigo Regional Employment Precinct Arboricultural Assessment – ENSPEC 2023

3.2 Field Assessment

A field assessment was undertaken from 6-10 December 2021 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).

3.2.1 *Targeted Flora Surveys*

Targeted flora surveys were undertaken by two experienced botanists, to coincide with the known flowering period for the species:

- Spiny Rice-flower (11-15 July 2022 and 9-10 August 2022);
- Late-flower Flax-lily (5-9 December 2022);
- Pale Flax-lily (5-9 December 2022);
- Ausfeld's Wattle (3-7 October 2022); and,
- Cane Spear-grass (3-7 October 2022 and 5-9 December 2022).

Surveys were undertaken using the following standards as outlined in the *Biodiversity Precinct Structure Planning Kit* (DSE 2010):

- Targeted surveys were conducted by people familiar with recognising the species;
- The survey effort was directed to all potential habitat areas (i.e. remnant grassland/woodland and the degraded grassy areas surrounding the remnant patches);
- Transects were walked at five-metre grid intervals through high quality potential habitat; and,
- Where found, locations of the species' were recorded by GPS (accuracy of +/- three metres) and the number of plants per land parcel was totalled.

Areas of suitable habitat within the study area were systematically traversed at approximately five-metre intervals, with any significant records mapped. In areas where there was little to no cover of native grasses and/or the understorey was highly disturbed through soil disturbance from cropping or other land uses, the transect intervals were increased to over five metres, as there was considered to be very low to no likelihood of significant species' occurring in these areas.

A reference site (approximately 1.3 Kilometres south of the study area) known to support a population of the Spiny Rice-flower was used to confirm that the species was flowering at the time of the surveys, providing evidence that the survey was conducted at a suitable time to maximise the likelihood of detection of the species within the study area. Additionally, all surveys were conducted during the suitable survey period (i.e. when they were flowering) for relevant flora species'.

3.2.2 *Targeted Fauna Surveys*

Targeted fauna surveys were undertaken by two experienced ecologists for the following species:

- Growling Grass frog (20 and 21 December 2022 and 12 January 2023);
- Golden Sun Moth (21 December 2022 and 11, 13 and 16 January 2023);
- Swift Parrot (11-15 July 2022)
- Fixed Point Bird Count and Roaming Surveys (Diurnal) (10 August and 1 December 2022);
- Nocturnal Bird Surveys (Call-Playback) (2 December 2022); and,
- Brushtail Phascogale (4 April [camera deployment] to 2 May 2023 [camera collection]).

Growling Grass Frog

Nocturnal Growling Grass Frog surveys were undertaken across the proposal area along the edges of dams and inundated areas by two experienced zoologists (Figure 7). A habitat assessment was undertaken in conjunction with targeted surveys on 20 and 21 December 2022, and 12 January 2023.

Three nights of surveying occurred (20 and 21 December 2022, and 12 January 2023); however, the entire study area was only surveyed twice. Surveys took place during weather conditions considered suitable for Growling Grass Frog activity (Table 1). The surveys were conducted with reference to the prescribed methodology detailed in the following guidelines:

- Significant Impact Guidelines for the Vulnerable Growling Grass Frog (*Litoria raniformis*) *EPBC Act* Policy Statement 3.14 (DEWHA 2009d)
- Survey Guidelines for Australia's Threatened Frogs (DEWHA 2010).

Based on the survey protocols adhered to for this assessment, this would achieve a probability detection threshold of 0.95 as per the probability thresholds specified by DELWP (Heard *et al*., 2010).

Each survey involved spotlighting surveys, call identification, and active searching for adults and metamorphs. More specifically:

- An initial period of five minutes was spent listening to any calling frogs (all species) in and adjacent to habitats;
- Following the initial period, the advertisement call was broadcast to elicit a response from any adult males present;
- Surveyors used “Olight” LED hand-held spotlights (up to 1020 lumens/8.4 volts) to locate any calling males on floating vegetation in the waterbody and around the perimeter of waterbodies;
- Surveyors actively searched ground-level habitat including surface rocks, underneath hard litter, and at the base of vegetation for frogs; and,
- Surveyors used the resulting information to determine the significance of any recorded Growling Grass Frog populations.

Golden Sun Moth

Surveys for Golden Sun Moth were undertaken in accordance with the recommended survey guidelines detailed in the significant impact guidelines for the species (DEWHA 2009).

Targeted surveys for Golden Sun Moth were undertaken on the 21 December 2022, and 11, 13 and 16 January 2023. Surveys were conducted by zoologists experienced in the detection and identification of the species. Surveys covered the entire proposal area, concentrating on areas of grasslands identified as potential Golden Sun Moth habitat due to being dominated by Wallaby-grass and Spear-grass, which are a known food source for Golden Sun Moth (Figure 8).

Golden Sun Moth were detected at reference sites on all survey days, confirming the suitability of survey conditions at the time the surveys were undertaken across the study area.

Areas of suitable habitat were walked by qualified zoologists over three separate days during the known flight season (i.e. November to early January). Surveys were undertaken at a time which is considered suitable for detecting the species (i.e. between 10am and 3pm on warm (over 20°C by 10am) days with minimal cloud cover and still conditions).

Fixed Point Bird Counts and Roaming Surveys (Diurnal bird surveys)

Two zoologists, experienced in bird identification, undertook fixed-point counts (Figure 10) on 10 August and 1 December 2022 to the specifications outlined below.

The following was undertaken as part of fixed-point bird counts and roaming surveys targeting flowering eucalypts:

- Several fixed-point locations were established prior to surveying. The locations were chosen to ensure that the entire study area is sampled appropriately and located in areas of flowering eucalypts where Swift parrot and other woodland species are likely to occur. A full range of habitat types represented in that sample will be captured;
- 10 × 42 binoculars were used to identify species';
- The search radius from the point included at least 100 metres for small birds and up to 800 metres for large birds (e.g. birds of prey, waterbirds), or further, if accurate identification to species level was achievable, using prominent landmarks;
- The duration of each fixed-point count was approximately 20 minutes;
- Observers undertook roaming surveys which involved driving slowly through the study area, stopping periodically to search for woodland birds and significant species such as Swift Parrot; and,
- Roaming surveys enable the detection of significant species and species with specialised habitat requirements.

Swift Parrot

Eucalypts known to provide a food source for Swift Parrot in Victoria include Yellow Gum *Eucalyptus leucoxylon*, Red Ironbark *Eucalyptus tricarpa*, Mugga *Eucalyptus sideroxylon*, Yellow Box *Eucalyptus melliodora*, White Box *Eucalyptus albens*, and Grey Box *Eucalyptus microcarpa.* To determine the extent of potential site utilisation within the study area, a series of roaming and spot surveys were undertaken between 11 and 15 July 2022.

Roaming surveys focussed on areas supporting preferred habitat characteristics (i.e. woodlands supporting typical foraging species including Yellow Gum, Grey Box and Yellow Box. The assessment noted the presence of any flowering eucalypts, budding of flowers, presence of lerps or congregations of other nectar-feeding birds. Results from roaming surveys demarked suitable areas to conduct spot surveys.

Spot surveys consisted of actively listening and searching for Swift Parrot for 20 minutes at five locations. All spot survey locations are shown below (Figure 9).

The timing of the surveys (dusk and dawn), as well as the weather conditions in which they were undertaken were considered to be suitable for detecting the species (if present), and to assess the suitability of habitat within the Assessment Area and adjacent areas.

Nocturnal Bird Surveys (Call-Playback)

Nocturnal birds (i.e. Barking Owl, Powerful Owl) were surveyed on 2 December 2022 using call playback, whereby recordings of the vocalisations of animals are broadcast in order to elicit a response, either vocal or behavioural.

Call playback was employed at the start of each spotlighting transect (Figure 10). Call playback methodology followed DELWP survey guidelines, using a full playback sequence of each forest owl species (Barking and Powerful Owls) possibly occurring in the area. Calls were played through a hand–held megaphone (10-watt) to attract them to the survey site or to elicit a response. Spotlight transects were repeated at identified survey locations to improve detection probability.

Transects were completed within suitable habitat for forest owl species. The following was undertaken for Nocturnal Bird Surveys:

- The transects were a minimum of one hour in length; however, the time spent depended on conditions at each site. This enabled relative abundance of species (i.e. number of individuals observed per person-hour and per kilometre) to be determined, if present;
- Where possible (within logistic constraints), transects aimed to include a range of habitats.
- Transect locations were recorded by GPS for accurate reporting;
- Two experienced Zoologists utilised 50-watt spotlights along each transect;
- GPS locations were recorded for all individuals identified during spotlight surveys, along with their microhabitat;
- Forest owls were the target of these surveys, but this technique is also likely to result in the incidental detection of other species including nocturnal mammals, nightjars and frogs;
- Spotlighting surveys were conducted after call playback was performed; and,
- Weather and environmental conditions (e.g. temperature, wind speed, cloud cover and moon phase) were recorded at the commencement of each transect, and unfavourable weather, such as heavy rain or high winds, were avoided where possible.

Lace Monitor

Roaming surveys for Lace Monitor *Varanus varius* were undertaken during over multiple survey events when completing other targeted flora and fauna surveys.

Brush-tailed Phascogale

Brush-tailed Phascogale spotlighting surveys within the study area were undertaken concurrently with the nocturnal bird surveys (Section 3.3.4), with surveys also using remote infrared cameras in accordance with the Survey Guidelines for Australia's Threatened Species (DSEWPaC 2013).

Targeted Brush-tailed Phascogale surveys using remote infrared cameras were undertaken over a four-week period between 4 April and 2 May. A total of 6 cameras (Reconyx®) were deployed, baited and fastened in the branching area of trees. The study area was inspected prior to setting the cameras to define areas of suitable habitat for Brush-tailed Phascogale throughout the study area. The hair tubes were orientated along a branch

approximately two metres in front of the camera. Cameras were set to record an image each time the motion sensor was triggered, both day and night. The remote camera locations are illustrated in Figure 6. Surveys were conducted after rainfall events (i.e. cameras placed out a day after rain). Images from the cameras were uploaded to a computer and a qualified zoologist examined all images individually to record the fauna species present.

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

Under the *Planning and Environment Act 1987,* Clause 52.17 of the Greater Bendigo 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).

3.3.1 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 for all areas in Victoria and is available on DEECA's NVIM Tool (DEEECA 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.

3.3.2 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 *Current Wetlands map*, available in DELWP systems and tools.	Measured in hectares. Based on hectare area of the native patch.	Vegetation Quality Assessment Manual (DSE 2004b). Modelled condition for *Current Wetlands*.
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'.

3.3.3 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.

3.3.4 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 (GHUs) and Species Habitat Units (SHUs).

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.

3.4 Assessment Qualifications and Limitations

3.4.1 Biodiversity Assessment

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. summer). 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, areas of native and exotic pasture were being grazed by livestock at the time of the site assessment. 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 +/-5 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 adequately inform an accurate assessment of the ecological values present within the study area.

3.4.2 Targeted Surveys

Data and information held within the ecological databases and mapping programs reviewed as part of the desktop assessment are unlikely to represent all observations of the target species that have occurred within, and surrounding, the study area. Further, the primary limitation of using remote sensing cameras for monitoring populations is that they provide data on the presence of a species, as opposed to the absence, or any details on population size. In addition, areas of native and exotic pasture were being grazed by livestock at the time of the targeted surveys; however, data collected during the field assessment and targeted surveys, and information obtained from relevant sources (e.g. biological databases and relevant literature) are considered adequate to provide an accurate assessment of the presence/absence of the target significant flora and fauna species within the study area.

The 2022/23 Golden Sun Moth season presented some unforeseen challenges, and Ecology and Heritage Partners closely monitored the emergence, distribution, and abundance of the species at reference sites across Victoria. Likely due to unseasonably wet and cool conditions through November and December, the species were not observed to be actively flying until mid-late December 2022. Typically, Golden Sun Moth emergence declines in the lead up to and in early January, whereby surveying for this species in February is unprecedented as historically the species' flight season is completed by this stage. In temperate regions, insect larvae often face a decision between development into their adult stage, or ongoing growth for emergence in the subsequent season (DEWHA 2009). We therefore expected a truncated emergence period for the species once conditions became suitable. However, in order to complete all four survey efforts while the species was known to be flying, surveys were undertaken slightly outside of the guideline's timing constraints, (i.e. surveys being conducted a week apart). As such, three surveys were conducted within a week (11, 13 and 16 of January), to take advantage of a favourable weather window. Despite the above, it is considered that the survey effort, timing and results presented meet the objectives of the surveys and provide sufficient

information to support the approvals processes. The species was also known to be flying at other sites in the broader locality (i.e. reference sites north and north east of the study areas) on the days of the survey. Given the species presence on site and the experience of surveyors, the results of this assessment are considered suitable for the purposes of assessing the works against the objectives of the project.

All fieldwork was carried out under the appropriate licences, including a Research Permit (10009538) and Scientific Procedures Fieldwork Licence (SPFL 20005) issued by DEECA under the Victorian *Wildlife Act 1975,* and an Animal Research permit issued by the Wildlife and Small Institutions Animal Ethics Committee (05.17).

4 RESULTS

4.1 Vegetation Condition

Most of the study area was highly modified due to past and current agricultural practices and was dominated by pasture supporting non-indigenous grasses and weeds. Native vegetation, where present, was highly modified, with vegetation communities generally lacking structure and exhibiting a low diversity of native species.

Grey Box *Eucalyptus microcarpa* was the dominant tree species within the study area, with Yellow Box *Eucalyptus melliodora*, White Box *Eucalyptus albens* and Yellow Gum *Eucalyptus leucoxylon* also common. Several non-indigenous planted eucalypt species also occurred within the study area, predominantly around dwellings and farm sheds/maintenance areas.

A list of commonly observed flora species recorded during the field assessment is provided in Appendix 1.1.

4.1.1 Patches of Native Vegetation

Native vegetation in the study area is representative of Plains Woodland (EVC 803). The presence of this EVC is generally consistent with the modelled pre-1750s native vegetation mapping (DEECA 2023a). Specific details relating to the observed EVC are provided below.

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

Plains Woodland

Plains Woodland is described as an open eucalypt woodland to 15 metres tall occurring on a number of geologies and soil types. This EVC typically occurs on fertile clays and clay loam soils on flat or gently undulating plains at low elevations in areas with less than 600 millimetres annual rainfall. The understorey typically consists of a few sparse shrubs over a species-rich grassy and herbaceous ground layer, with chenopods are often present.

Plains Woodland occurred throughout the study area, varying from woodland vegetation to areas largely comprised of Plains Woodland-derived grassland vegetation (Figure 2). Grey Box was typically the dominant canopy species, with Yellow Gum and Yellow Box also present. The understorey was generally sparse, with Sifton Bush *Cassinia sifton* and Gold-dust Wattle *Acacia acinacae* the most common shrub species recorded, predominantly within roadside vegetation. Within patches of Plains Woodland with a canopy layer, the understorey was highly modified and largely dominated by exotic pasture grasses, with indigenous species such as wallaby grass *Rytidosperma* spp. and Spear Grass *Austrostipa* spp. sporadically recorded (Plate 9). Plains Woodland-derived grassland vegetation was predominantly restricted to several large patches within the north-west and south-west of the proposed BREP. Patches of derived grassland were of low species diversity, with wallaby grass and spear grass were the dominant species (Plate 10).

Plate 9. Plains Woodland within the study area (Ecology and Heritage Partners Pty Ltd 07/12/2021).

Plate 10. A patch Plains Woodland-derived native grassland within the study area (Ecology and Heritage Partners Pty Ltd 09/12/2021).

4.1.2 Large Trees in Patches

A total of 532 Large Trees (LTs) in Plains Woodland patches were present (Figure 2). Grey Box was the dominant canopy species, White Box, Yellow Gum and Yellow Box also commonly observed (Plate 11; Plate 12; Appendix 1.3).

Plate 11. Two Large Trees (Yellow Gums) within a patch of Plains Woodland along the eastern boundary of the study area (Ecology and Heritage Partners Pty Ltd 06/12/2021).

Plate 12. A large Grey Box within a patch of Plains Woodland along the eastern boundary of the study area (Ecology and Heritage Partners Pty Ltd 06/12/2021).

4.1.3 Scattered Trees

A total of 146 scattered trees were recorded within the study area, which consisted of 111 large and 35 small scattered trees (Figure 2; Appendix 1.3). These trees would have once formed part of the Plains 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 13; Plate 14).

Plate 13. A large scattered tree within the study area (Ecology and Heritage Partners Pty Ltd 07/12/2021).

Plate 14. A dead eucalypt stag (large scattered tree) within the study area (Ecology and Heritage Partners Pty Ltd 09/12/2021).

4.1.4 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 or cereal crop. Planted native and non-native trees and shrubs were present around dwellings and outbuildings (Plate 15), with exotic grasses manages as lawn also present (Plate 16). Scattered native grasses were occasionally present in these areas, however they did not have the required 25% relative cover to be considered a patch.

Non-native areas were dominated by environmental weeds such as Toowoomba Canary-grass *Phalaris aquatica*, Rye-grass *Lolium* spp., Ribwort *Plantago lanceolate* and Wild Oat *Avena fatua* (Plate 17).

Noxious weeds, as defined under the CaLP Act, were present within the study area, with Artichoke Thistle *Cynara cardunculus* subsp. *flavescens*, Bathurst Burr *Xanthium spinosum,* Bridal Creeper *Asparagus asparagoides,* Chilean Needle-grass *Nassella neesiana,* Montpellier Broom *Genista monspessulana* and Spear Thistle *Cirsium vulgare* present within the study area (Plate 18). Bridal Creeper, Chilean Needle-grass and Montpellier Broom are also Weeds of National Significance (WoNS).

Plate 15. Planted trees in the vicinity of a private dwelling within the study area (Ecology and Heritage Partners Pty Ltd 09/12/2021).

Plate 16. Mown exotic vegetation adjacent to an industrial facility within the study area (Ecology and Heritage Partners Pty Ltd 08/12/2021).

Plate 17. Exotic pasture grasses dominate most of the study area (Ecology and Heritage Partners Pty Ltd 09/12/2021).

Plate 18. Spear Thistle within the study area (Ecology and Heritage Partners Pty Ltd 07/12/2021).

4.2 Fauna Habitat

Native and Introduced Grasslands

The majority 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 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*.

Patches of native grassland occur throughout the study area. These vary in quality and floristic composition according to grazing regimes and historical land use. Habitat attributes of the native grassland are suitable for an array of common native fauna, including snakes, lizards and skinks, and grassland birds. Diurnal and nocturnal raptors are also likely to forage across these areas, with Wedge-Tailed Eagle *Aquila audax*, observed

during the field assessment. A mob of Eastern Grey Kangaroo *Macropus giganteus* was also observed foraging in grassland areas.

Areas of native grassland, particularly those with a high cover of Wallaby-grasses *Rytidosperma* spp. may provide habitat for the nationally significant Golden Sun Moth *Synemon plana*.

Woodland and Scattered Trees

Woodland and scattered remnant trees occur throughout the study area and provide an important resource for arboreal fauna. The majority of the eucalypts are mature, providing an array of small, medium, large and very large hollows, bark fissures and crevices (Plate 19). 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 (Plate 20), as well as stepping-stones for more mobile fauna moving through the study area, enhancing landscape permeability for native fauna.

Planted Vegetation

Planted vegetation is located throughout the study area as windrows or as ornamental plantings around dwellings. These areas provide foraging, roosting and nesting habitat for mobile generalist fauna including locally common birds and microbats.

Plate 19. A large hollow-bearing tree within the study area (Ecology and Heritage Partners Pty Ltd 07/12/2021).

Plate 20. A large nest (likely Wedge-tailed Eagle) within the study area (Ecology and Heritage Partners Pty Ltd 07/12/2021).

4.3 Significance Assessment

4.3.1 Flora

The VBA contains records of one nationally significant and 19 State significant flora species previously recorded within 10 kilometres of the study area (DEECA 2023d) (Figure 3). The PMST nominated an additional 17 nationally significant species which have not been previously recorded but have the potential to occur in the locality (DCCEEW 2023) (Appendix 1.4).

Of these species, there is suitable habitat within the study area for nationally significant Spiny Rice-flower and State-significant Late-flowered Flax-lily, Flax-lily, Ausfeld's Wattle and Cane Spear-grass. Targeted surveys were undertaken within areas of potential habitat for the aforementioned species within BREP, with the results presented in Section 4.4.1.

The likelihood of any other nationally significant species occurring within the study area is considered low due to the absence of suitable habitat and/or lack of records near the study area.

Gold-dust Wattle *Acacia acinacea*, Black Wattle *Acacia mearnsii* (planted), Lemon Beauty-heads *Calocephalus citreus,* Sifton Bush *Cassinia sifton,* Fuzzy New Holland Daisy *Vittadinia cuneate* and Shiny Everlasting *Xerochrysum viscosum* are listed as Protected under the FFG Act (DELWP 2019) and were recorded within the study area.

4.3.2 Fauna

The VBA contains records of 12 nationally significant and 20 State significant fauna species previously recorded within 10 kilometres of the study area (DEECA 2023d) (Figure 4). The PMST nominated an additional 17 nationally significant species which have not been previously recorded but have the potential to occur in the locality (DCCEEW) (Appendix 2.1).

Of these species, there is suitable habitat within the study area for nationally significant Golden Sun Moth and Growling Grass Frog and the State-significant Brush-tailed Phascogale, Squirrel Glider and Lace Monitor. Several artificial waterbodies (dams) within the study area provide potential habitat for Growling Grass Frog, while areas of Plains Woodland provide potential habitat for Brush-tailed Phascogale, Squirrel Glider and Lace Monitor.

In addition to the species above, there is suitable habitat for several national and State-significant avifauna species, listed in Table 3.

Table 3. Significant avifauna with potential habitat within the study area.

Common Name	Scientific Name	Suitable Habitat
NATIONALLY SIGNIFICANT		
Painted Honeyeater	*Grantiella picta*	Areas of Plains Woodland provide suitable/potential habitat for the species within in the study area.
Regent Honeyeater	*Anthochaera phrygia*	
Gang-gang Cockatoo	*Callocephalon fimbriatum*	
Diamond Firetail	*Stagonopleura guttata*	
Hooded Robin	*Melanodryas cucullata*	
White-throated Needletail	*Hirundapus caudacutus*	
Brown Treecreeper	*Climacteris picumnus*	
Grey Falcon	*Falco hypoleucos*	
Swift Parrot	*Lathamus discolor*	
STATE SIGNIFICANT		
Black Falcon	*Falco subniger*	Areas of Plains Woodland provide suitable/potential habitat for the species within in the study area.
Crested Bellbird	*Oreoica gutturalis*	
Little Eagle	*Hieraaetus morphnoides*	
Square-tailed Kite	*Lophoictinia isura*	
Barking Owl	*Ninox connivens*	
Powerful Owl	*Ninox strenua*	

Targeted surveys were undertaken within areas of potential habitat for the aforementioned species within BREP, with the results presented in Section 4.4.2.

4.3.3 Ecological Communities

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

- Buloke Woodlands of the Riverina and Murray-Darling Depression Bioregions
- Grey Box (*Eucalyptus microcarpa*) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia;
- White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland; and,
- Natural Grasslands of the Murray Valley Plains.

Vegetation within the study area contained several flora species characteristic of two nationally significant ecological communities: Grey Box (*Eucalyptus microcarpa*) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia (GBGW) and White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland (WB-YB-BRGGW). WB-YB-BRGGW was considered absent from the study area as

areas dominated by characteristic canopy species (i.e. White Box and Yellow Box) contained a highly modified understorey dominated by exotic species (i.e. greater than 50% cover of perennial exotic species).

Similarly, GBGW was considered unlikely to occur within the study area as Plains Woodland patches did not meet the condition thresholds that define the ecological community at the time of the assessment. Specifically, numerous patches did not meet the minimum size threshold of 0.5 hectares, while woodland and derived grassland patches that met condition thresholds 1a-c and/or 2a did not meet the relevant subsequent specified thresholds relating to species diversity within the understorey (2b and 5c), tree density (3a and 4a) and/or perennial understorey native vegetation cover (4b and 5b); however, while considered unlikely to be present based on the survey effort completed to date, due to the ongoing livestock grazing within the study area during the ecological surveys it is recommended that additional surveys be undertaken from mid-late spring within patches PW8 and PW9 and grassland patches of PW4 that are greater than 0.5 hectares in area, a minimum of three months after the cessation of grazing to confirm presence or absence of GBGW. The key diagnostic characteristics of GBGW are provided in Table 4.

Table 4. Key diagnostic characteristics of GBGW (Threatened Species Scientific Committee 2010).

Category and rationale	Thresholds
Criteria that are broadly applicable	**1a.** The minimum patch size is 0.5 hectare; AND **1b.** The canopy layer contains Grey Box as the dominant or co-dominant tree species; AND **1c.** The vegetative cover of non-grass weed species in the ground layer is less than 30% at any time of the year.
Additional criteria that apply to smaller woodland patches (0.5 to <2ha) with tree crown cover >10%	**2a.** At least 50% of the vegetative cover in the ground layer comprises perennial native species at any time of the year; AND **2b.** 8 or more perennial native species (six or more in the Flinders Lofty Block Bioregion of South Australia) are present in the mid and ground layers at any time of the year.
Additional criteria that apply to larger woodland patches with a well-developed canopy (2 ha or more in area)	**3a.** At least eight trees/ha are hollow bearing or have a diameter at breast height of 60 cm or more; AND **3b.** at least 10% of the vegetative ground cover comprises perennial native grasses at any time of the year;
	OR
	4a. At least 20 trees/ha have a diameter at breast height of 12 cm or more; AND **4b.** at least 50% of the vegetative cover in the ground layer comprises perennial native species.

Category and rationale	Thresholds
<u>Additional criteria</u> that apply to patches where the canopy is less developed (<10% tree crown cover) or absent (derived grassland) (≥0.5 ha in area)	5a. Woodland density does not meet criteria 3a or 4a, or is a derived grassland with clear evidence that the site formerly was a woodland with a tree canopy dominated or co-dominated by Grey Box; AND 5b. At least 50% of the vegetative cover in the ground layer is made up of perennial native species at any time of the year; AND 5c. 12 or more native species are present in the ground layer at any time of the year.

Plains Woodland vegetation supports suitable habitat for a number of woodland bird species associated with the FFG Act-listed Victorian Temperate Woodland Bird Community; however, none of the 24 bird species that make up this community were observed during the targeted surveys, therefore the community is unlikely to be present.

4.4 Targeted Surveys

4.4.1 Targeted Flora Surveys

Spiny Rice-flower

There are four documented records (the most recent being in 2014) of Spiny Rice-flower from within 10 kilometres surrounding the study area (DEECA 2023e). Targeted surveys were conducted for Spiny Rice-flower within the study area from 11-15 July 2022 and 9-10 August 2022, when the species was known to be flowering, however the species was not observed within the study area. The habitat present in the study area showed signs of historical clearing and fragmentation, with high cover of weeds such as exotic pasture grass. As a result, the habitat is now considered marginal, and it is deemed unlikely for Spiny Rice-flower to occur within the study area.

Late-flower Flax-lily

There is one documented record (from 2014) of Late-flower Flax-lily from within 10 kilometres surrounding the study area (DEECA 2023e). Targeted surveys for Late-flower Flax-lily were undertaken from 5-9 December 2022, with 30 individuals of the Late-flower Flax-lily identified within the study area (Plate 21; Figure 5). These individuals were identified within the road reserve, suggesting that this area may be an important habitat for the species.

Pale Flax-lily

There are seven documented records (the most recent being in 2012) of Pale Flax-lily from within 10 kilometres surrounding the study area (DEECA 2023e). Pale Flax-lily is known to occur in a variety of habitats, including heathlands, woodlands, and forests, and is widely distributed throughout south-eastern Australia. Targeted surveys were undertaken from 5-9 December 2022, during the known flowering period, however the species was not observed within the study area. This may be due to a range of factors, including low population density or spatial variability in habitat suitability. The results of the desktop assessment and targeted surveys suggest that the species may be relatively rare in the region.

Ausfeld's Wattle

There are 50 documented records (the most recent being in 2021) of Ausfeld's Wattle from within 10 kilometres surrounding the study area (DEECA 2023e). To verify the presence of Ausfeld's Wattle in the study area, targeted surveys were conducted during the known flowering season for the species, from 3-7 October 2022. These surveys were carried out in areas that are considered to have suitable habitat for the species and in publicly accessible areas such as road reserves. Based on the outcome of the surveys, four individuals were identified within the study area, along the road reserves (Plate 22; Figure 5).

Plate 21. Late-flower Flax-lily within the study area (Ecology and Heritage Partners Pty Ltd 06/12/2022).

Plate 22. Ausfeld's Wattle within the study area (Ecology and Heritage Partners Pty Ltd 03/10/2022).

Cane Spear-grass

There are four documented records (the most recent being in 2018) of Cane Spear-grass from within 10 kilometres surrounding the study area (DEECA 2023e). Targeted surveys were conducted for Cane Spear-grass during the known flowering season for the species from 3-7 October 2022 and 5-9 December 2022. These surveys were carried out in areas that are considered to have suitable habitat for the species and in publicly accessible areas such as road reserves. Despite the presence of suitable habitat, Cane Spear-grass was not identified within the study area.

4.4.2 Targeted Fauna Surveys

Brush-tailed Phascogale

There are 18 documented records (the most recent being in 2008) of Brush-tailed Phascogale from within 10 kilometres surrounding the study area (DEECA 2023e). Brush-tailed Phascogale is listed as Vulnerable under the FFG Act. Arboreal cameras for targeted Brush-tailed Phascogale surveys were set over a four-week period between 4 April and 2 May 2023. A total of 6 cameras (Reconyx®) were deployed, baited and fastened in the branching area of trees in defined suitable habitat for the species. The hair tubes were orientated along a branch approximately two metres in front of the camera. Camera locations are shown on Figure 6. The remote camera surveys identified 14 distinct species, including: Brush-tailed Phascogale (4), Squirrel Glider (3), Australian Magpie (4), Noisy Myna (2), Feral Cat *Felis catus* (9), House Mouse *Mus musculus* (10), Bush Rat *Rattus fuscipes* (2), Common Brushtail Possum (4), Common Ring-tailed Possum (4) and Red Fox *Vulpes vulpes* (8).

Brush-tailed Phascogale were detected along O'Sullivans Road, near the intersection with Cemetery Road, by Camera 3 – F43 (Figure 6). Brush-tailed Phascogale were captured by the arboreal camera on four separate occasions on 5 April, 18 April (twice) and 21 April 2023 (Plate 23 - 26).

Plate 23. Brush-tailed Phascogale captured with arboreal camera 3 – F43 on 5 April 2023 (Ecology and Heritage Partners Pty Ltd 05/04/2023).

Plate 24. Brush-tailed Phascogale captured with arboreal camera 3 – F43 on 18 April 2023 (Ecology and Heritage Partners Pty Ltd 18/04/2023).

Plate 25. Brush-tailed Phascogale captured with arboreal camera 3 – F43 on 18 April 2023 (Ecology and Heritage Partners Pty Ltd 18/04/2023).

Plate 26. Brush-tailed Phascogale captured with arboreal camera 3 – F43 on 21 April 2023 (Ecology and Heritage Partners Pty Ltd 21/04/2023).

As this species was detected on multiple occasions, the resident population of Brush-tailed Phascogale likely rely upon these roadside trees for nesting, food and/or as an important movement corridor.

Squirrel Glider

There are no previous records of Squirrel Glider from within 10 kilometres surrounding the study area (DEECA 2023e). Squirrel Glider is listed as Vulnerable under the FFG Act. Squirrel Glider were detected at two locations (Camera 2 – F48 and Camera 3 – F43) during arboreal camera deployment (Plate 27 - 29). Camera 2 – F48 detected Squirrel Glider on one occasion (12 April 2023) whereas Camera 3 – F43 detected Squirrel Glider on two occasions (23 April and 25 April 2023).

Additionally, a hollow-bearing tree was noted directly adjacent to tree hosting Camera 3 – F43 (Figure 6). During spotlight surveys, a Squirrel Glider was observed leaving the hollow and photographed by Ecology and Heritage Partners staff (Plate 30). It is extremely likely Squirrel Glider are using this hollow to nest.

Plate 27. Squirrel Glider captured with arboreal camera 2 – F48 on 12 April 2023 (Ecology and Heritage Partners Pty Ltd 12/04/2023).

Plate 28. Squirrel Glider captured with arboreal camera 3 – F43 on 23 April 2023 (Ecology and Heritage Partners Pty Ltd 23/04/2023).

Plate 29. Squirrel Glider captured with arboreal camera 3 – F43 on 25 April 2023 (Ecology and Heritage Partners Pty Ltd 25/04/2023).

Plate 30. Squirrel Glider recorded in tree hollow adjacent camera 3 – F43 (Ecology and Heritage Partners Pty Ltd 11/05/2023).

Swift Parrot

There are 57 documented records (the most recent being in 2018) of Swift Parrot from within 10 kilometres surrounding the study area (DEECA 2023e). No Swift Parrot were seen or heard during roaming or spot surveys (Figure 9).

Avifauna Surveys (Diurnal and Nocturnal)

A total of six point-count locations were chosen for diurnal bird surveys across the study area (Figure 10). Surveys occurred at dawn and dusk, the optimal time for bird activity. A total of 31 bird species were recorded, consisting of 28 indigenous species and three non-indigenous species. A total of 251 individuals were recorded during the fixed-point bird counts. Three introduced species were recorded, including Common Starling *Sturnus vulgaris*, Common Blackbird *Turdus merula* and Indian Myna *Acridotheres tristis.* The most frequently recorded species, include Australian Magpie *Gymnorhina tibicen*, Little Raven *Corvus mellori,* Noisy Myna *Manorina melanocephala* and Galah *Eolophus roseicapilla.*

The majority of species recorded include generalist bird species or woodland bird species which utilised linear patches of native and non-native vegetation along roadsides and other bushland areas. No National or State-

listed species were recorded during the bird surveys. A complete list of species from the bird surveys is found in Appendix 2.2.

Nocturnal bird surveys (i.e. Barking Owl, Powerful Owl) occurred on the 1 December 2022. Call playback was employed at the start of each spotlighting transect (Figure 10). Following Call playback, spotlight transects undertaken to identify nocturnal bird species, such as Barking Owl and Powerful. Transects were a minimum of one hour in length. Despite surveys being conducted in accordance with the DELWP guidelines, no Federal or State-listed species were found during the survey period, with Common Brushtail Possum *Trichosurus vulpecula* and Common Ring-tailed Possum *Pseudocheirus peregrinus* observed during the surveys.

Lace Monitor

There are four documented records (the most recent being in 2015) of Lace Monitor from within 10 kilometres surrounding the study area (DEECA 2023e). Roaming surveys for Lace Monitor were undertaken over multiple survey events when completing other targeted flora and fauna surveys. Two experienced personnel systematically covered the study area, utilising transects. The survey effort focussed on areas dominated by Plains Woodland. Lace Monitor are known to utilise forest and woodland habitat, which contain suitable tree hollows, logs or natural cavities for nesting. Despite the systematic survey effort, Lace Monitor was not identified within the study area.

Growling Grass Frog

There are three documented records (the most recent being in 1788) of Growling Grass Frog from within 10 kilometres surrounding the study area (DEECA 2023e). The study area is highly modified, containing exotic pasture grass and weeds throughout the property and surrounding the periphery of the dams. A habitat assessment was conducted across 18 dams, scattered throughout the study area (Figure 7; Appendix 2.3). Emergent, fringing and submergent vegetation was present in varying levels around the dams; however, dams typically lacked habitat characteristics suitable for Growling Grass Frog (Plate 31; Plate 32).

Plate 31. Fringing and emergent vegetation at Site 2 (Ecology and Heritage Partners Pty Ltd 20/12/2022).

Plate 32. Poor quality habitat at Site 13, lacking fringing and emergent vegetation (Ecology and Heritage Partners Pty Ltd 20/12/2022).

Targeted surveys for Growling Grass Frog were undertaken on the 20-21 December 2022 and 12 January 2023 in accordance with survey guidelines, during weather conditions conducive for frogs to be active. Despite

surveys being undertaken during the active calling period for Growling Grass Frog, extra consideration was given to the survey effort, timing and methods. Active searches were employed to determine the presence/absence of the species.

Growling Grass Frog was not detected within the study area during the surveys. Several other common native frog species were heard calling within the proposal area during the targeted surveys, including Spotted Marsh Frog *Limnodynastes tasmaniensis,* Eastern Banjo Frog *Limnodynastes dumerilii* and Peron's Tree Frog *Litoria peronii.*

Golden Sun Moth

Suitable habitat for Golden Sun Moth exists in the study area in the form of treeless Plains Woodland (EVC 803), in areas dominated by native grasses, such as Kangaroo Grass, Wallaby Grass and Spear-grass.

Targeted surveys were conducted for Golden Sun Moth in accordance with the survey guidelines, during suitable environmental conditions. Golden Sun Moth was not detected within the study area during the survey effort (Table 5).

The species was also known to be flying at other sites in the broader locality (i.e. reference sites north and south of the study area) on the days of the survey.

Table 5. Golden Sun Moth survey site weather conditions and results

Date	Survey times	Temperature (°C) (start and end of survey)		Wind (km/hr)	Cloud cover (%)	No. of days since rain	No. Golden Sun Moth recorded within the proposal area
21/12/2022	10:00-15:00	21	26.6	9	50	6	0
11/01/2023	10:00-15:00	23.6	33.0	2	0	9	0
13/01/2023	10:00-15:00	24.1	31.9	11	0	11	0
16/01/2023	10:00-15:00	21.2	27.6	4	80	14	0

5 LEGISLATIVE AND POLICY IMPLICATIONS

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), described in Table 6.

Table 6. Potential impacts to matters of National Environmental Significance (NES)

Matter of NES	Potential Impacts
World Heritage properties	The proposed action will not impact any properties listed for World Heritage.
National heritage places	The proposed action will not impact any places listed for national heritage.
Ramsar wetlands of international significance	The proposed action is unlikely to impact any Ramsar wetlands of international significance
Threatened species and ecological communities	While considered unlikely to be present based on the survey effort completed to date, due to the ongoing livestock grazing within the study area during the ecological surveys it is recommended that additional surveys be undertaken from mid-late spring within patches PW8 and PW9 and grassland patches of PW4 that are greater than 0.5 hectares in area, a minimum of three months after the cessation of grazing to confirm presence or absence of GBGW.
Migratory and marine species	While a number of species may occasionally forage or fly over habitat within the PSP, the study area would not be classed as an 'important habitat' as defined under the EPBC Act Policy Statement 1.1 Principal Significant Impact Guidelines (DoE 2013).
Commonwealth marine area	The proposed action will not impact any Commonwealth marine areas.
Nuclear actions (including uranium mining)	The proposed action is not a nuclear action.
Great Barrier Reef Marine Park	The proposed action will not impact the Great Barrier Reef Marine Park.
Water resources impacted by coal seam gas or mining development	The proposed action is not a coal seam gas or mining development.

Targeted surveys for Spiny Rice-flower, and several fauna species (Golden Sun Moth, Growling Grass Frog, avifauna listed in Table 3) have been undertaken within areas of potential habitat within the BREP area, with no significant flora or fauna species recorded. While considered unlikely to be present based on the survey effort completed to date, due to the ongoing livestock grazing within the study area during the ecological surveys it is recommended that additional surveys be undertaken within patches PW8 and PW9 a minimum of three months after the cessation of grazing to confirm presence or absence of GBGW.

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

The FFG Act is the primary legislation dealing with biodiversity conservation and sustainable use of native flora and fauna in Victoria. Proponents are required to apply for an FFG Act Permit to 'take' threatened and/or protected flora species, listed vegetation communities and listed fish species in areas of public land (e.g. within road reserves, drainage lines and public reserves/parks). An FFG Act permit is generally not required for

removal of species or communities on private land, or for the removal of habitat for a listed terrestrial fauna species.

As of 1 June 2020, the *FFG Amendment Act 2019* came into effect in order to provide a modern and strengthened framework for the protection of Victoria's biodiversity. The Amendment Act (DELWP 2021f):

- Introduces principles to guide the implementation of the FFG act;
- Requires consideration of biodiversity across government;
- Clarifies existing powers to determine critical habitat and improves their protection by encouraging cooperative management;
- Gives effect to a consistent national approach to assessing and listing threatened species using the Common Assessment Method (CAM); and,
- Modernises the FFG Act's enforcement framework including stringer penalties.

Two flora species (Late-flower Flax-lily and Ausfeld's Wattle) and two fauna species (Brush-tailed Phascogale and Squirrel Glider) listed as threatened under the FFG Act were recorded during the targeted surveys within the BREP area. Six flora species (Appendix 1) listed as protected under the FFG Act were also recorded within the study area.

An FFG Act permit will be required for impacts to state listed and protected flora species and communities within road and rail reserves. An FFG Act permit is not required for their removal within private property. Any ministers and public authority must give proper consideration to the act's objectives, so far as is consistent with the proper exercising of their functions and additional matters area also specified to be considered to clarify the objectives (DELWP 2021).

5.3 *Planning and Environment Act 1987*

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 require a planning permit from the relevant local Council to remove, destroy or lop native vegetation, unless an exemption applies.

Clause 12. 01 requires planning authorities to consider Protecting Victoria's Environment – Biodiversity 2037 (DELWP 2017b) and the Flora and Fauna Guarantee Strategy under section 17 of the FFG Act when preparing a PSP and associated Native Vegetation Precinct Plan (NVPP).

5.3.1 Native Vegetation Precinct Plan

An NVPP provides for the strategic management of native vegetation for a defined area or precinct. It is established via a planning scheme amendment to incorporate the NVPP and list it in the schedule to Clause 52.16.

An NVPP identifies the native vegetation that can be removed and the vegetation to be protected, based on the conservation significance and land protection role of the vegetation, the identified values of vegetation within the planning scheme such as amenity and landscape, and the broader strategic planning objectives for

the precinct (DELWP 2017c). An NVPP must consider the values of native vegetation described in the Guidelines (DELWP 2017a):

- Biodiversity value of native vegetation:
  - Extent of native vegetation
  - Large trees
  - Native vegetation condition
  - Ecological Vegetation Class
  - Sensitive wetlands and coastal areas
  - Strategic biodiversity value
  - Habitat for rare or threatened species.
- Other values of native vegetation:
  - Land and water protection
  - Identified landscape values
  - Native vegetation protected under the *Aboriginal Heritage Act 2006*.

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

Six weeds listed as noxious under the *Catchment and Land Protection Act 1994* were recorded during the assessment (Artichoke Thistle, Bathurst Burr, Bridal Creeper, Chilean Needle-grass and Spear Thistle). Similarly, there is evidence that the study area is currently occupied by several pest fauna species listed under the CaLP Act (Red Fox and European Rabbit). Listed noxious weeds/pests should be appropriately controlled throughout the study area.

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

The *Wildlife Act 1975* (and associated Wildlife Regulations 2013) is the primary legislation in Victoria providing for protection and management of wildlife. Authorisation for habitat removal may be obtained under the *Wildlife Act 1975* through a licence granted under the *Forests Act 1958*, or under any other Act such as the *Planning and Environment Act 1987*. Any persons engaged to remove, salvage, hold or relocate native fauna during construction must hold a current Management Authorisation under the *Wildlife Act 1975*, issued by DELWP.

5.6 *Water Act 1989* (Victoria)

A 'works on waterways' permit from the North Central CMA is likely to be required where any action impacts on waterways within the study area. Additionally, where structures are installed within or across waterways that potentially interfere with the passage of fish or the quality of aquatic habitat, these activities should be referred to DEECA with the North Central CMA included for comment.

6 MITIGATION MEASURES

As outlined in both Commonwealth and State policy, a project should be designed to take into consideration the three-step approach, which is:

- Avoid environmental impacts;
- Minimise impacts; and,
- Where impacts cannot be avoided or minimised, compensate for the residual impacts using other mitigation measures such as offsets.

6.1 Precinct Design Principles

At a broad scale, the following measures should be considered as part of the detailed design process for BREP:

- Retain areas of high conservation value;
- Large areas of native vegetation should be protected in habitat nodes;
- Retain hollow-bearing trees, particularly along the roadsides where there is the highest quality habitat for Brushtail Phascogale and Squirrel Glider.
- Provide a variety of flora and fauna habitats to promote and retain biodiversity;
- Undertake habitat creation (i.e. waterways, drainage lines and designated revegetation areas);
- Provide linear corridors of vegetation along walking/cycling tracks, ideally through the retention of existing native vegetation;
- Create linear habitat corridors along waterways/drainage lines/tributaries whilst implementing Water Sensitive Urban Design whilst ensuring no off-site impacts;
- Incorporating drainage lines into habitat corridors and open public spaces;
- Interpret/educate residents about values of grasslands through signage;
- Undertaken feral pest animal and plant control;
- Retain native trees in urban active and passive open space areas;
- Feature waterways/landscaping combination of a series of smaller connected basins rather than one large isolated basin.
- Investigate methods to interconnect spaces through Open Space Links to create more complete habitat;
- Rehabilitate and protect significant native vegetation;
- Ensure stormwater treatment is designed to provide habitat(s) for significant flora and fauna species;
- Investigate options to achieve high canopy coverage on public and private land (for example 40-50%); and,

- Connect biodiversity sites with parks/open spaces so they are separated from development.

6.2 Best Practice Mitigation Measures

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

- Control of noxious weeds within the study area should be an immediate priority to reduce further degrading impacts to the existing remnant ecological values present within the study area and surrounds;
- Consideration of Water Sensitive Urban Design techniques such as stormwater treatment wetlands, bio-retention systems, porous paving or swales;
- Minimise impacts to native vegetation and habitats through construction and micro-siting techniques, including fencing retained areas of native vegetation. If indeed necessary, trees should be lopped or trimmed rather than removed. Similarly, soil disturbance and sedimentation within wetlands should be avoided or kept to a minimum, to avoid, or minimise impacts to fauna habitats;
- Tree Retention Zones (TRZs) should be implemented to prevent indirect losses of native vegetation during construction activities (DSE 2011). A TRZ applies to a tree and is a specific area above and below the ground, with a radius 12 x the DBH. At a minimum standard a TRZ should consider the following:
    - A TRZ 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 TRZ;
    - Where encroachment exceeds 10% of the total area of the TRZ, the tree should be considered as lost and offset accordingly;
    - Directional drilling may be used for works within the TRZ 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 TRZ has not been met an offset may be required.
- 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.

In addition to these measures, the following documents should be prepared and implemented prior to any construction activities:

- Construction Environmental Management Plan (CEMP). The CEMP should include specific species/vegetation conservation strategies, daily monitoring, sedimentation management, site specific rehabilitation plans, weed and pathogen management measures, etc.;
- A Kangaroo Management Plan (KMP). The KMP provides a long-term, adaptable strategy for the management of Eastern Grey Kangaroos, and may be required to be prepared to the satisfaction of DELWP.

6.3 Protection of Retained Ecological Values

Retained ecological values should be enhanced and managed to assist in creating a more diverse, connected and resilient natural environment through improving ecosystem health, and develop a more ecologically connected urban landscape. It is important that the enhancement of ecological values within the study area are not undermined through unrestricted and uncontrolled public access throughout retained areas.

Public access should be restricted to clearly defined shared community facilities (i.e. BBQ areas, play equipment etc) that are accessible via a connected network of shared paths (walking and cycling shared paths). Access to all other areas of retained high value native vegetation, revegetated areas and/or wetlands should be discouraged, and demarcated with informal signage and/or fencing where practical.

7 SUMMARY OF ECOLOGICAL FEATURES

The study area is representative of many areas within the broader areas west of Bendigo in that it has been previously disturbed, is highly modified, and possesses large areas of exotic pasture with scattered patches of native vegetation and regrowth from past clearing.

Much of the indigenous vegetation and terrestrial fauna habitat remaining within the study area is confined to areas less affected by past land clearing and sustained agricultural land use. Native vegetation, where present, is highly modified with most vegetation communities lacking structure and exhibiting a low diversity of native species.

Targeted surveys for the nationally significant Spiny Rice-flower and several fauna species (Golden Sun Moth, Growling Grass Frog, avifauna listed in Table 3) have been undertaken within areas of potential habitat within the BREP area, with no nationally significant flora or fauna species recorded. Two flora species (Late-flower Flax-lily and Ausfeld's Wattle) and two fauna species (Brush-tailed Phascogale and Squirrel Glider) listed as threatened under the FFG Act were recorded during the targeted surveys within the BREP area. While considered unlikely to be present based on the survey effort completed to date, due to the ongoing livestock grazing within the study area during the ecological surveys it is recommended that additional surveys be undertaken from mid-late spring within patches PW8 and PW9 and grassland patches of PW4 that are greater than 0.5 hectares in area, a minimum of three months after the cessation of grazing to confirm presence or absence of GBGW.

Low to moderate quality fauna habitat is present in the form of woodlands, derived native grasslands and artificial waterbodies located throughout the study area. However, the majority of these waterbodies lack the habitat structure most preferred by a range of fauna due to low levels of submerged, emergent and fringing vegetation, and provide limited dispersal opportunities between waterbodies due to the fragmented occurrences of woody vegetation along these habitats.

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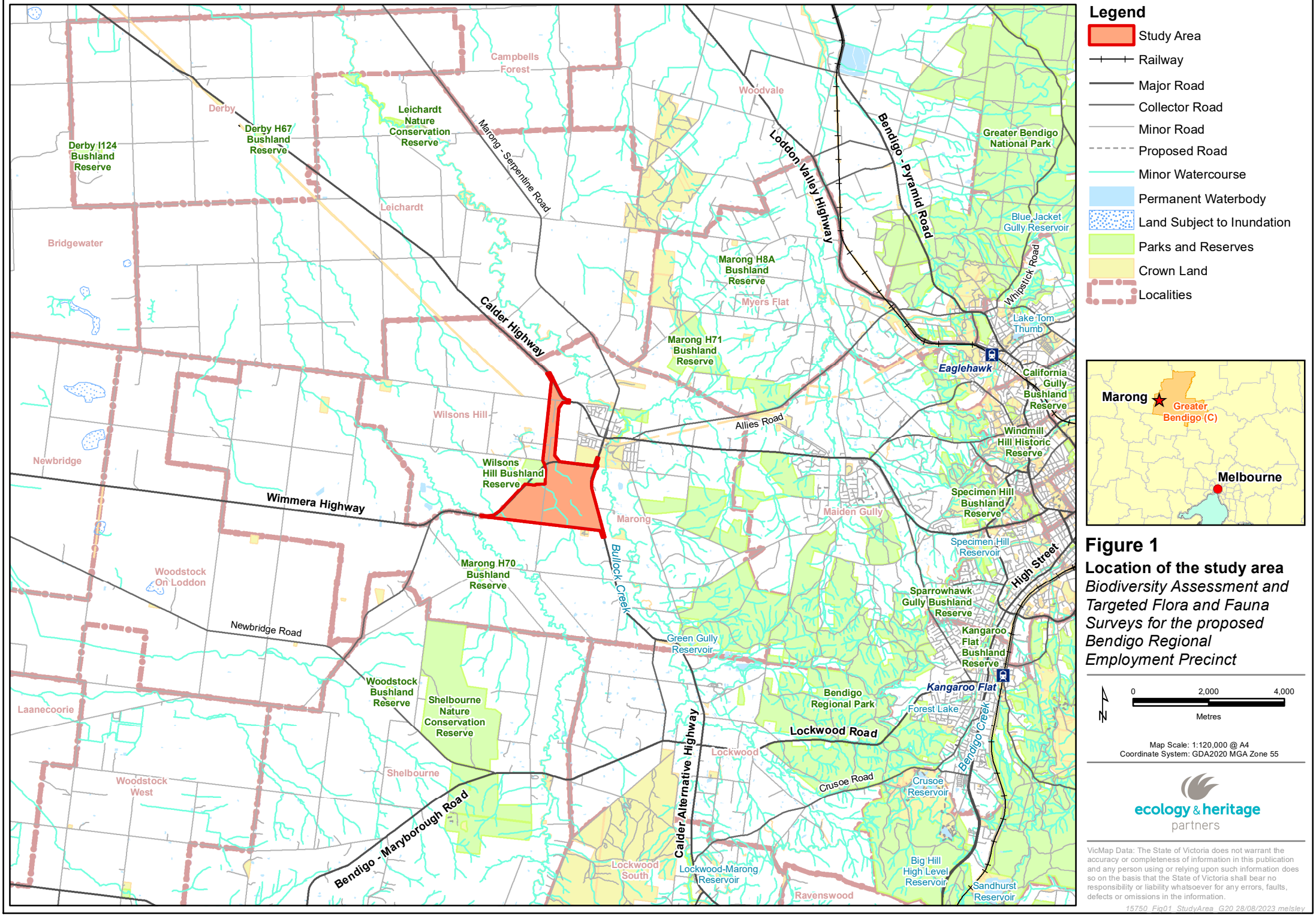


Figure 1

Location of the study area

Biodiversity Assessment and Targeted Flora and Fauna Surveys for the proposed Bendigo Regional Employment Precinct

Map Scale: 1:120,000 @ A4
Coordinate System: GDA2020 MGA Zone 55

ecology & heritage partners

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.

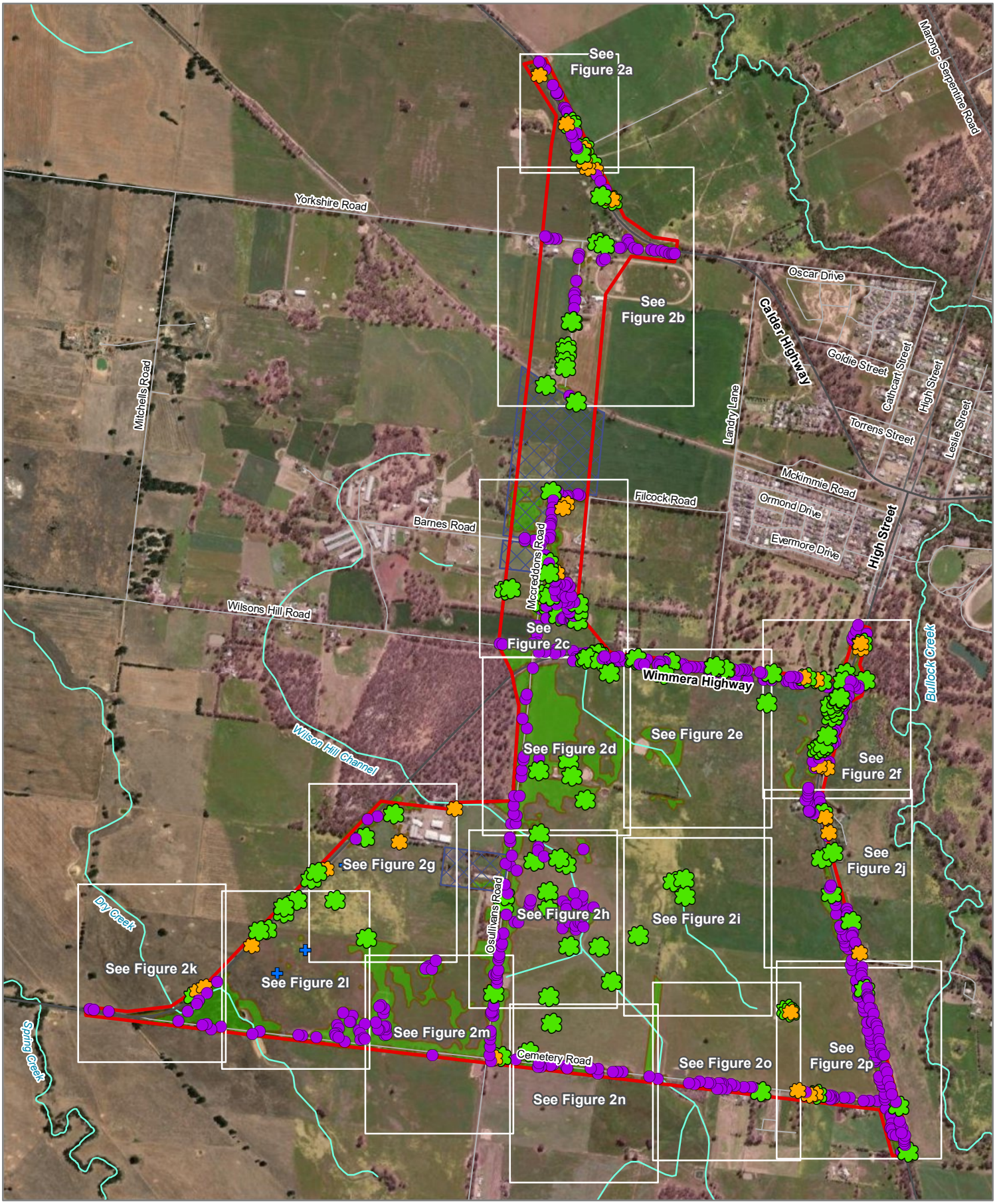


Figure 2 Overview

Ecological features

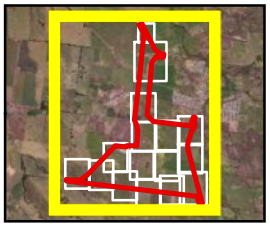
Biodiversity Assessment and Targeted Flora and Fauna Surveys for the proposed Bendigo Regional Employment Precinct

Legend

- Study Area
- No access
- Scattered Large Tree
- Scattered Small Tree
- Large Tree in patch
- Weeds

Ecological Vegetation Class

- Plains Woodland (EVC 803)



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0 200 400

Metres

Map Scale: 1:20,000 @ A4
Coordinate System:
GDA2020 MGA Zone 55

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Service Layer Credits: Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

Figure 2a

Ecological features

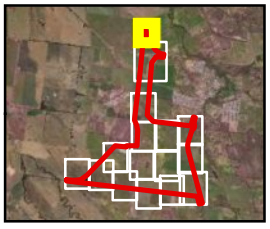
Biodiversity Assessment and Targeted Flora and Fauna Surveys for the proposed Bendigo Regional Employment Precinct

Legend

- Study Area
- Scattered Large Tree
- Scattered Small Tree
- Large Tree in patch
- Presence of hollows

Ecological Vegetation Class

- Plains Woodland (EVC 803)



N

0 20 40

Metres

Map Scale: 1:2,000 @ A4
Coordinate System:
GDA2020 MGA Zone 55

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Figure 2b

Ecological features

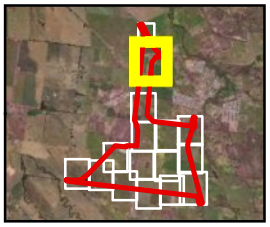
Biodiversity Assessment and Targeted Flora and Fauna Surveys for the proposed Bendigo Regional Employment Precinct

Legend

- Study Area
- No access
- Scattered Large Tree
- Scattered Small Tree
- Large Tree in patch

Ecological Vegetation Class

- Plains Woodland (EVC 803)



N

0 40 80

Metres

Map Scale: 1:4,000 @ A4
Coordinate System:
GDA2020 MGA Zone 55

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Figure 2c

Ecological features

Biodiversity Assessment and Targeted Flora and Fauna Surveys for the proposed Bendigo Regional Employment Precinct

Legend

- Study Area
- No access
- Scattered Large Tree
- Scattered Small Tree
- Large Tree in patch
- Presence of hollows

Ecological Vegetation Class

- Plains Woodland (EVC 803)

N

0 30 60

Metres

Map Scale: 1:3,000 @ A4
Coordinate System:
GDA2020 MGA Zone 55

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Figure 2d

Ecological features

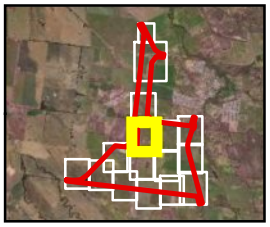
Biodiversity Assessment and Targeted Flora and Fauna Surveys for the proposed Bendigo Regional Employment Precinct

Legend

- Study Area
- Scattered Large Tree
- Large Tree in patch

Ecological Vegetation Class

- Plains Woodland (EVC 803)



N

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Metres

Map Scale: 1:3,000 @ A4
Coordinate System:
GDA2020 MGA Zone 55

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Service Layer Credits: Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

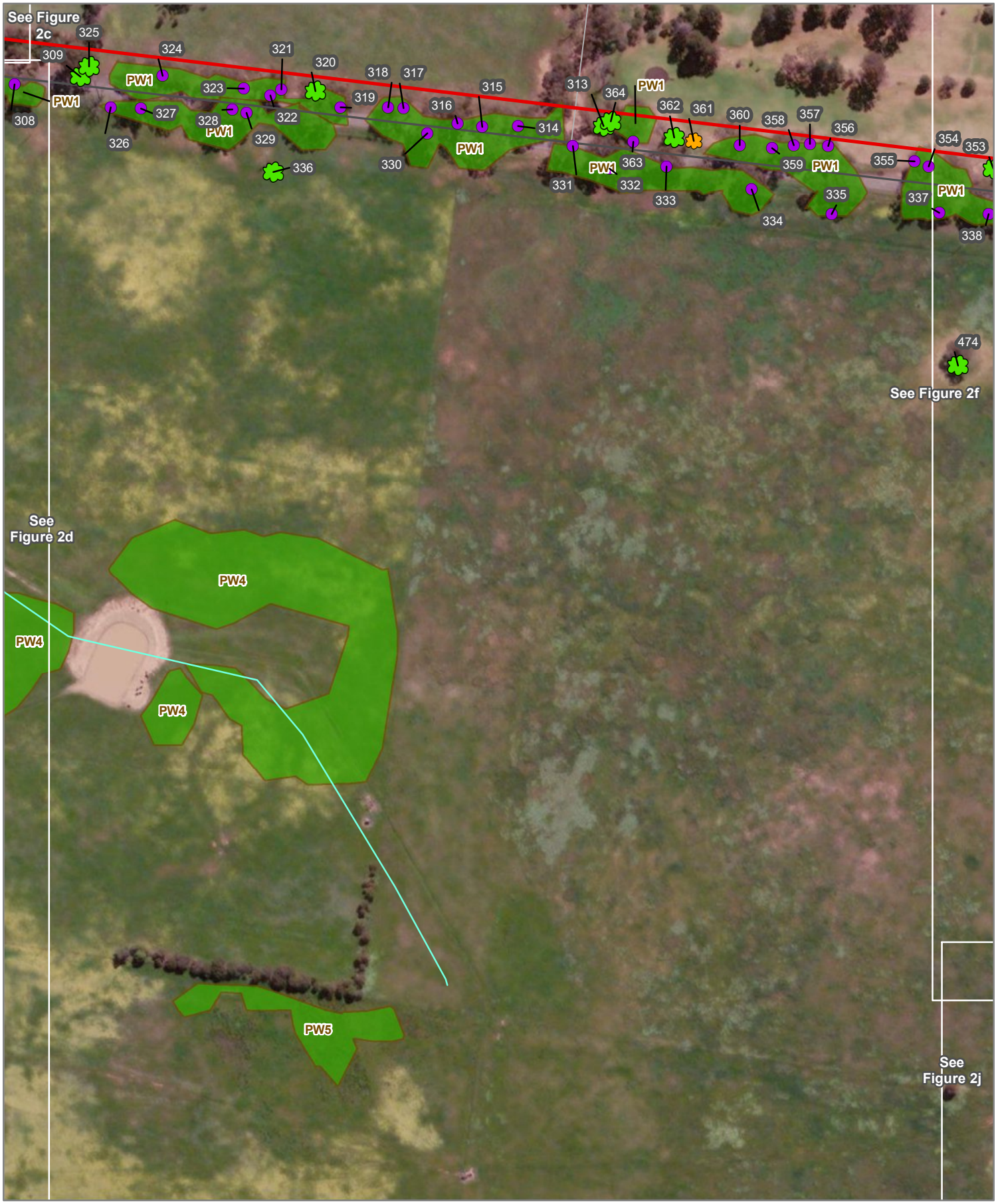


Figure 2e

Ecological features

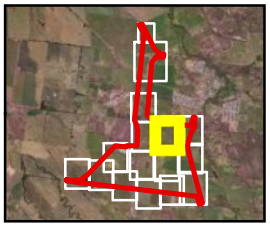
Biodiversity Assessment and Targeted Flora and Fauna Surveys for the proposed Bendigo Regional Employment Precinct

Legend

- Study Area
- Scattered Large Tree
- Scattered Small Tree
- Large Tree in patch

Ecological Vegetation Class

- Plains Woodland (EVC 803)



N

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Metres

Map Scale: 1:3,000 @ A4
Coordinate System:
GDA2020 MGA Zone 55

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Service Layer Credits: Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

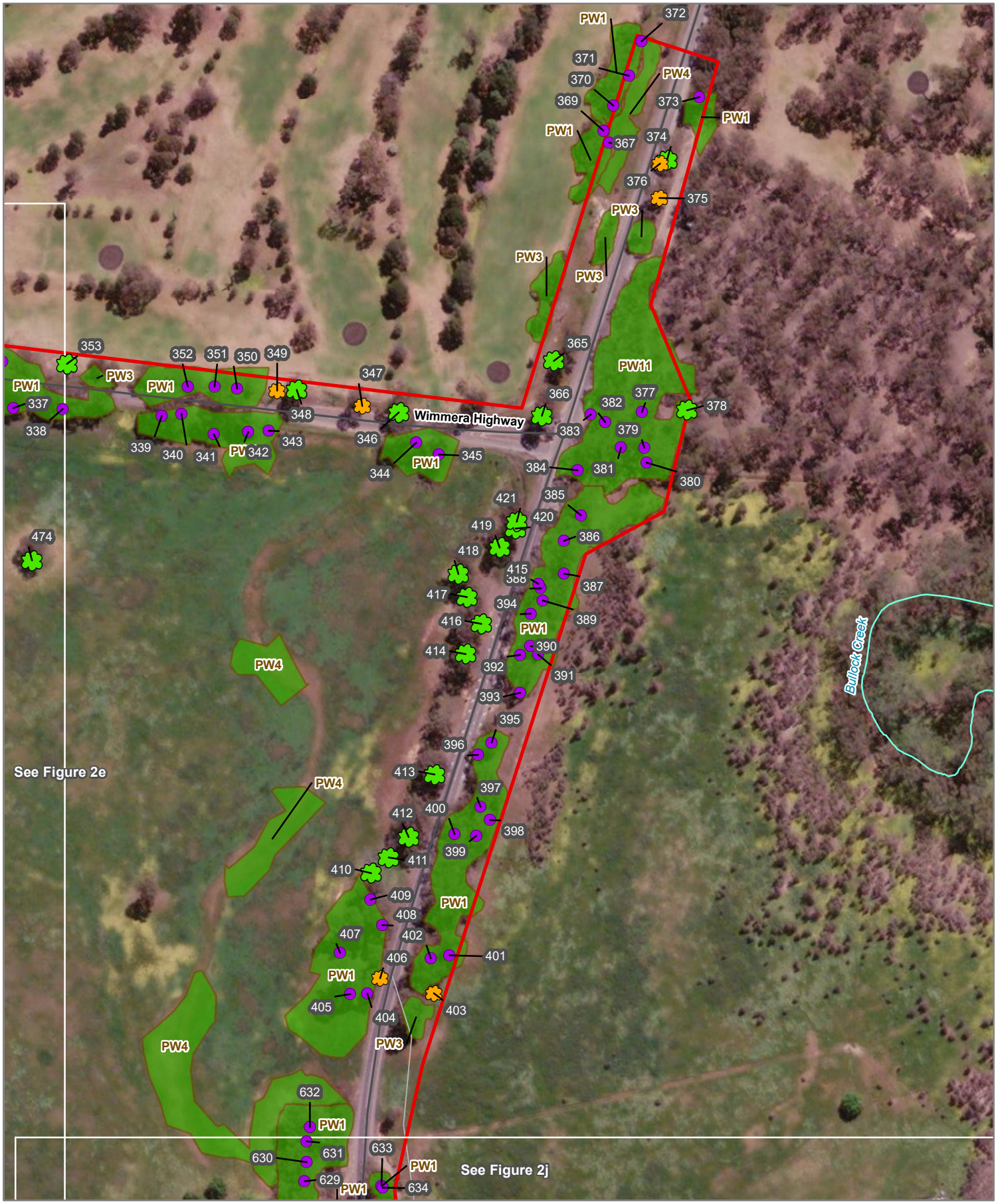


Figure 2f

Ecological features

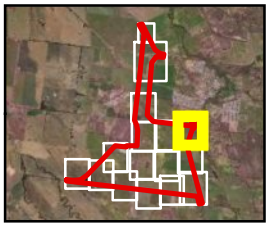
Biodiversity Assessment and Targeted Flora and Fauna Surveys for the proposed Bendigo Regional Employment Precinct

Legend

- Study Area
- Scattered Large Tree
- Scattered Small Tree
- Large Tree in patch

Ecological Vegetation Class

- Plains Woodland (EVC 803)



N

0 30 60

Metres

Map Scale: 1:3,000 @ A4
Coordinate System:
GDA2020 MGA Zone 55

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Service Layer Credits: Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

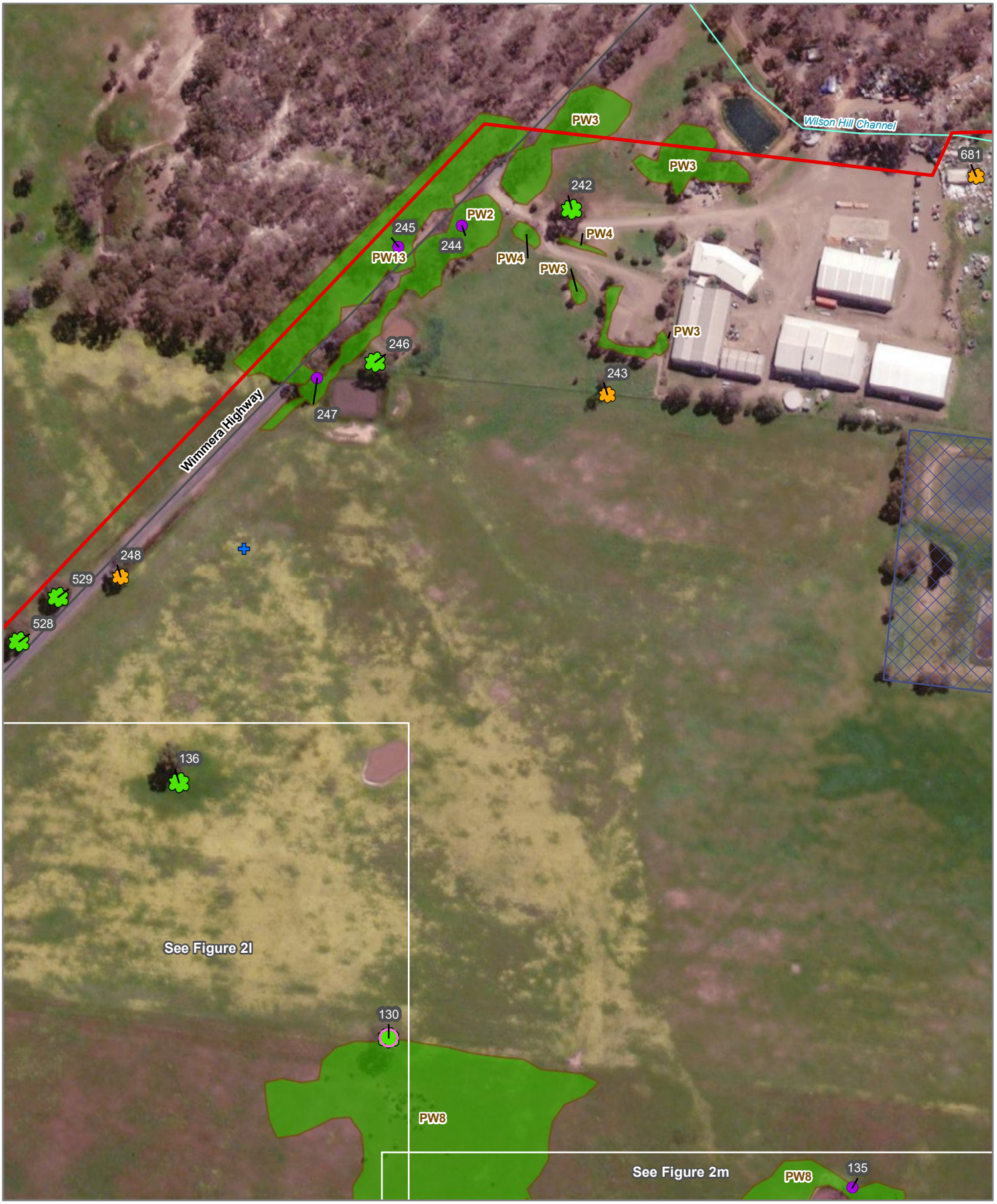


Figure 2g

Ecological features

Biodiversity Assessment and Targeted Flora and Fauna Surveys for the proposed Bendigo Regional Employment Precinct

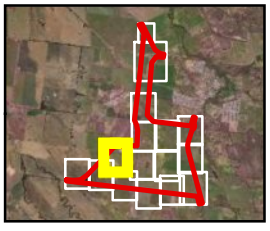
ecology & heritage partners

Legend

- Study Area
- No access
- Scattered Large Tree
- Scattered Small Tree
- Large Tree in patch
- Presence of hollows
- Weeds

Ecological Vegetation Class

- Plains Woodland (EVC 803)



N

0 30 60

Metres

Map Scale: 1:3,000 @ A4
Coordinate System:
GDA2020 MGA Zone 55

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Figure 2h

Ecological features

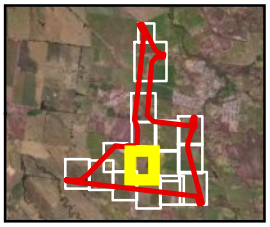
Biodiversity Assessment and Targeted Flora and Fauna Surveys for the proposed Bendigo Regional Employment Precinct

Legend

- Study Area
- No access
- Scattered Large Tree
- Large Tree in patch
- ★ Presence of nests
- Presence of hollows

Ecological Vegetation Class

- Plains Woodland (EVC 803)



N

0 30 60

Metres

Map Scale: 1:3,000 @ A4
Coordinate System:
GDA2020 MGA Zone 55

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Figure 2k

Ecological features

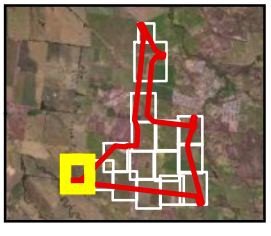
Biodiversity Assessment and Targeted Flora and Fauna Surveys for the proposed Bendigo Regional Employment Precinct

Legend

- Study Area
- Scattered Large Tree
- Scattered Small Tree
- Large Tree in patch
- Presence of hollows

Ecological Vegetation Class

- Plains Woodland (EVC 803)



N

0 30 60

Metres

Map Scale: 1:3,000 @ A4
Coordinate System:
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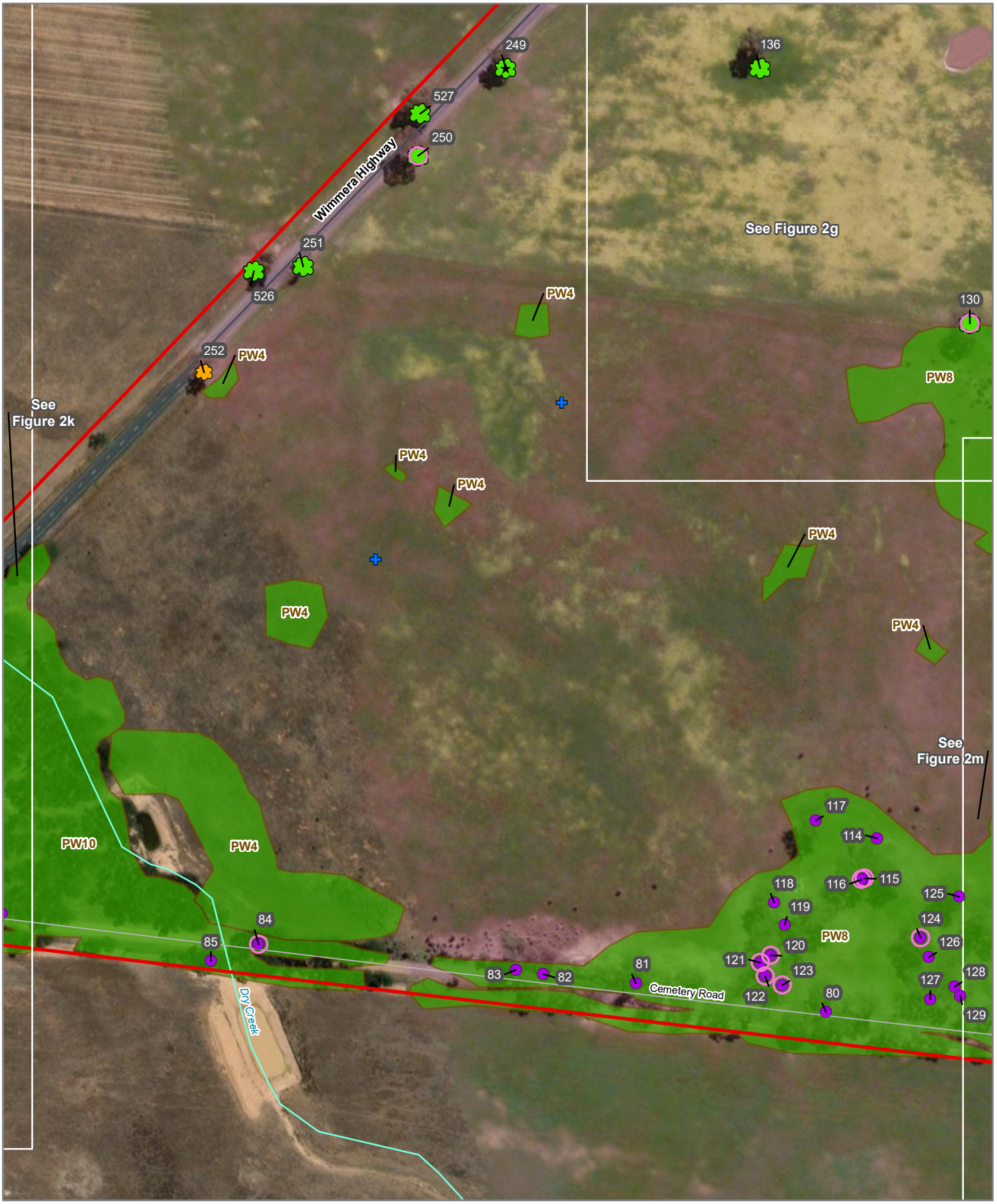


Figure 2l

Ecological features

Biodiversity Assessment and Targeted Flora and Fauna Surveys for the proposed Bendigo Regional Employment Precinct

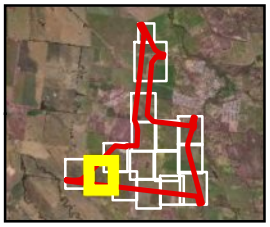
ecology & heritage partners

Legend

- Study Area
- Scattered Large Tree
- Scattered Small Tree
- Large Tree in patch
- Presence of nests
- Presence of hollows
- Weeds

Ecological Vegetation Class

- Plains Woodland (EVC 803)



N

0 30 60

Metres

Map Scale: 1:3,000 @ A4
Coordinate System: GDA2020 MGA Zone 55

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Figure 2m

Ecological features

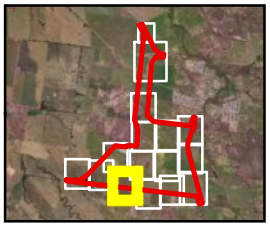
Biodiversity Assessment and Targeted Flora and Fauna Surveys for the proposed Bendigo Regional Employment Precinct

Legend

- Study Area
- Scattered Large Tree
- Scattered Small Tree
- Large Tree in patch
- Presence of hollows

Ecological Vegetation Class

- Plains Woodland (EVC 803)



N

0 30 60

Metres

Map Scale: 1:3,000 @ A4
Coordinate System:
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Figure 2n

Ecological features

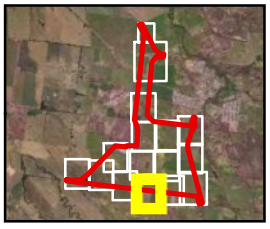
Biodiversity Assessment and Targeted Flora and Fauna Surveys for the proposed Bendigo Regional Employment Precinct

Legend

- Study Area
- Scattered Large Tree
- Large Tree in patch
- Presence of hollows

Ecological Vegetation Class

- Plains Woodland (EVC 803)



N

0 30 60

Metres

Map Scale: 1:3,000 @ A4
Coordinate System:
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Figure 2o

Ecological features

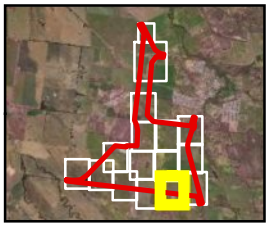
Biodiversity Assessment and Targeted Flora and Fauna Surveys for the proposed Bendigo Regional Employment Precinct

Legend

- Study Area
- Scattered Large Tree
- Scattered Small Tree
- Large Tree in patch
- Presence of hollows

Ecological Vegetation Class

- Plains Woodland (EVC 803)



N

0 30 60

Metres

Map Scale: 1:3,000 @ A4
Coordinate System:
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Figure 2i

Ecological features

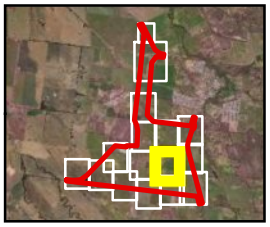
Biodiversity Assessment and Targeted Flora and Fauna Surveys for the proposed Bendigo Regional Employment Precinct

Legend

- Study Area
- Scattered Large Tree
- Presence of hollows

Ecological Vegetation Class

- Plains Woodland (EVC 803)



N

0 30 60

Metres

Map Scale: 1:3,000 @ A4
Coordinate System:
GDA2020 MGA Zone 55

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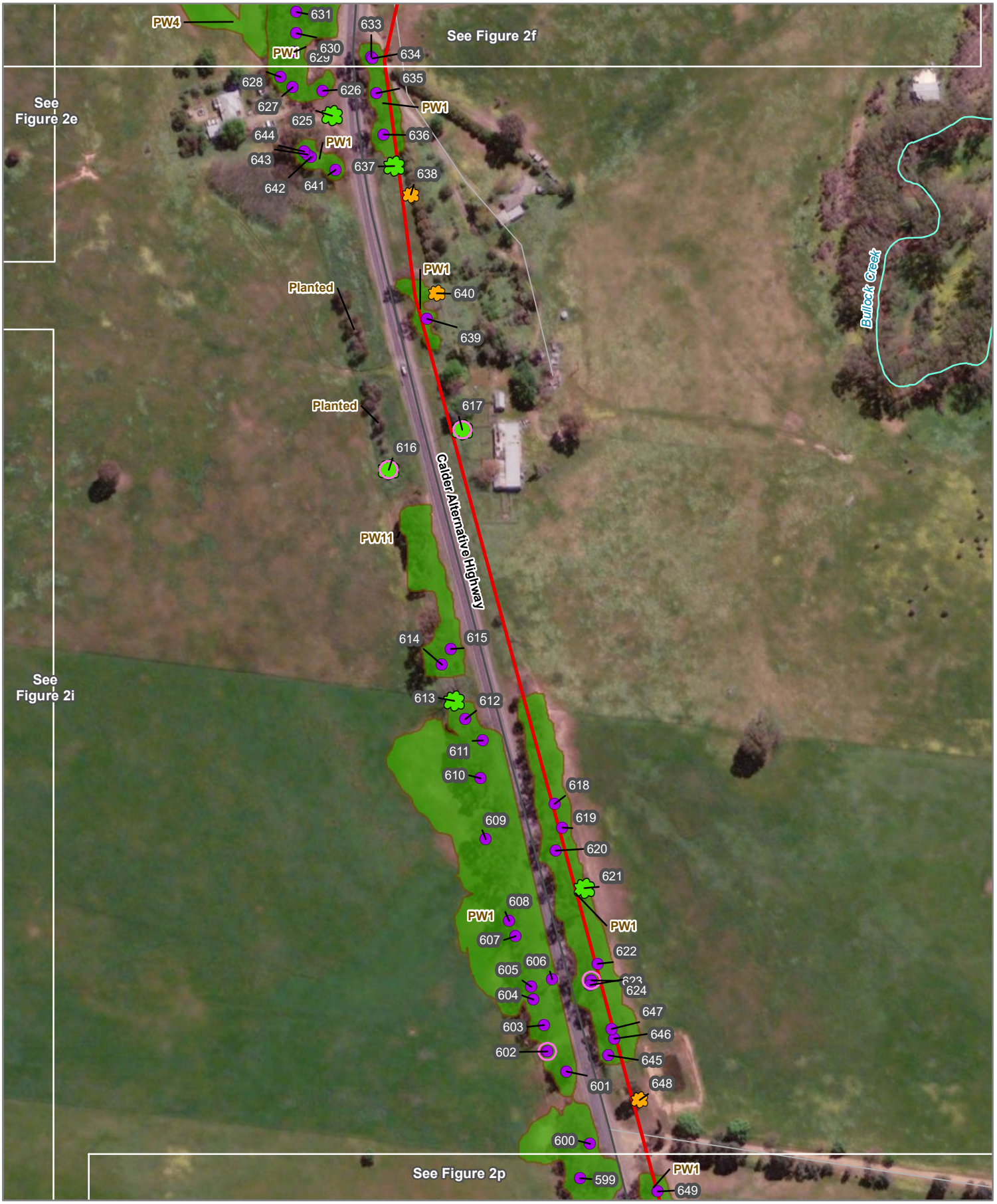


Figure 2j

Ecological features

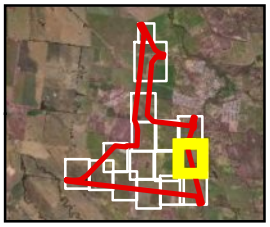
Biodiversity Assessment and Targeted Flora and Fauna Surveys for the proposed Bendigo Regional Employment Precinct

Legend

- Study Area
- Scattered Large Tree
- Scattered Small Tree
- Large Tree in patch
- Presence of hollows

Ecological Vegetation Class

- Plains Woodland (EVC 803)



N

0 30 60

Metres

Map Scale: 1:3,000 @ A4
Coordinate System:
GDA2020 MGA Zone 55

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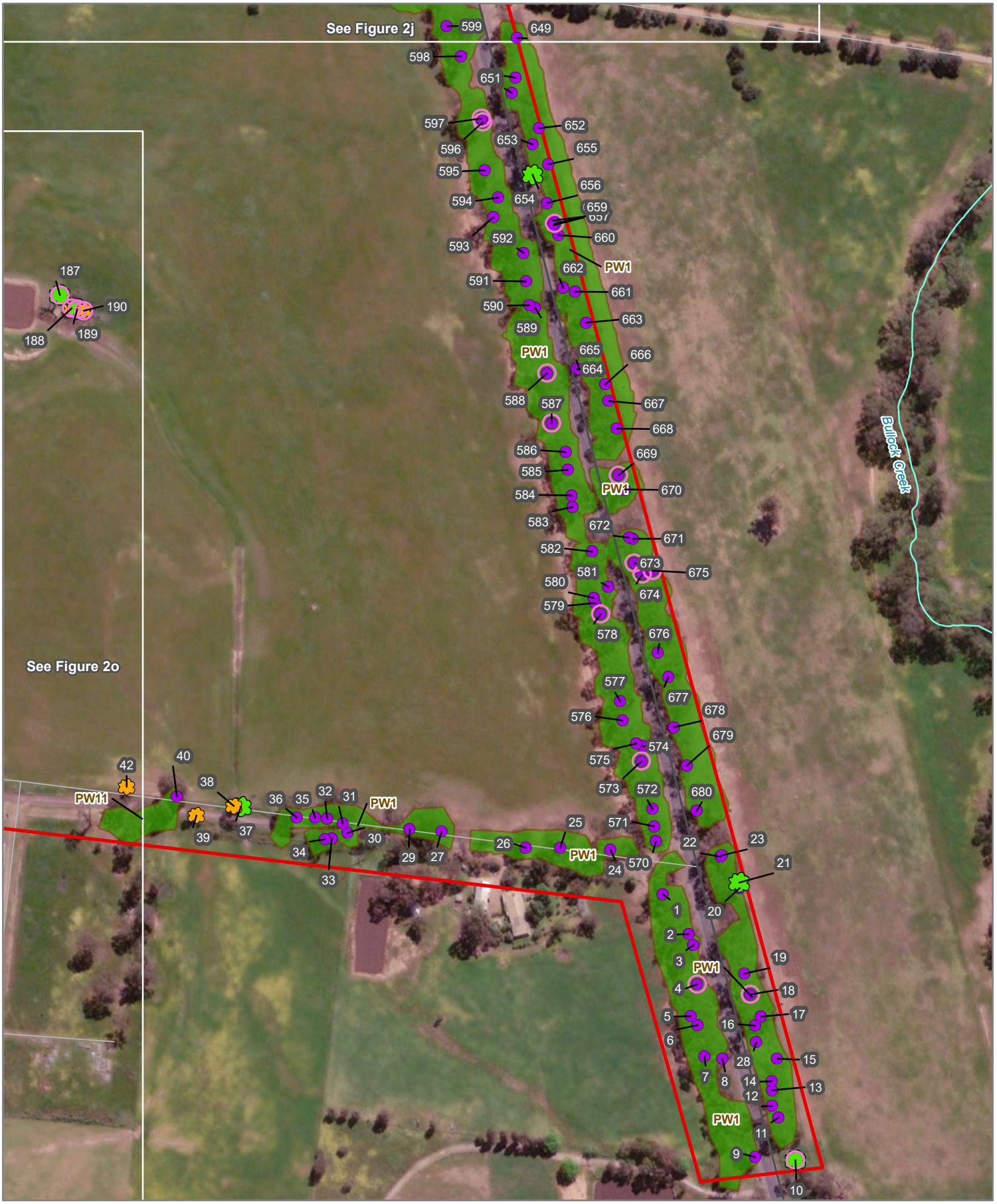


Figure 2p

Ecological features

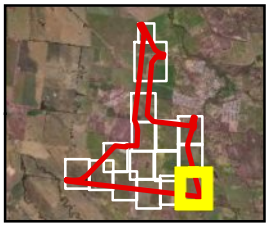
Biodiversity Assessment and Targeted Flora and Fauna Surveys for the proposed Bendigo Regional Employment Precinct

Legend

- Study Area
- Scattered Large Tree
- Scattered Small Tree
- Large Tree in patch
- Presence of hollows

Ecological Vegetation Class

- Plains Woodland (EVC 803)



N

0 30 60

Metres

Map Scale: 1:3,300 @ A4
Coordinate System:
GDA2020 MGA Zone 55

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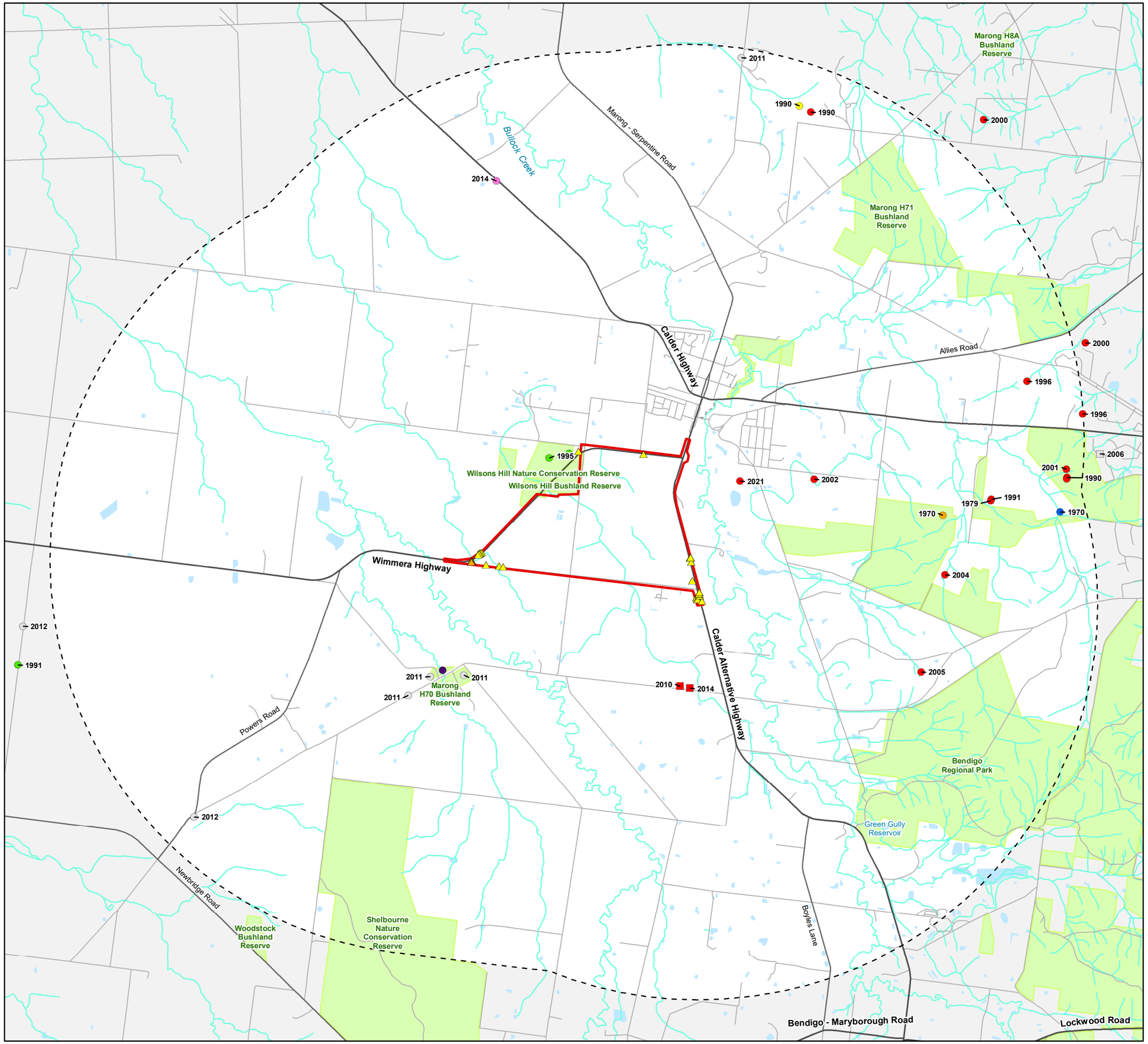

Legend

- Study Area

Significant flora

- Arching Flax-lily
- Ausfeld's Wattle
- Bristly Greenhood
- Buloke
- Cane Spear-grass
- Large Rustyhood
- Late-flower Flax-lily
- Small-flower Wallaby-grass
- Snowy Mint-bush
- Spiny Rice-flower

Ecology and Heritage Partners (2022/23)

- Ausfeld's Wattle
- Late-flower Flax-lily

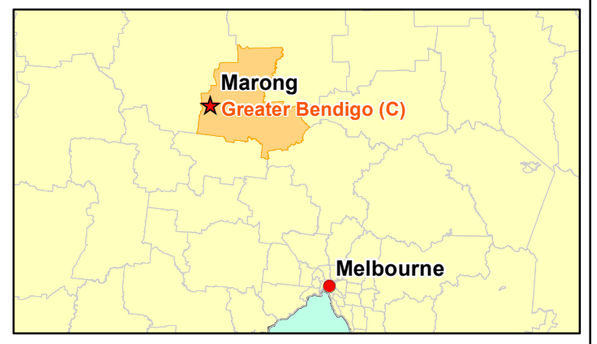

Figure 3

Previously documented significant flora within 5km of the study area

Biodiversity Assessment and Targeted Flora and Fauna Surveys for the proposed Bendigo Regional Employment Precinct

N

0 1 2

Kilometres

Map Scale: 1:46,000 @ A3
Coordinate System: GDA2020 MGA Zone 55

ecology & heritage partners

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.

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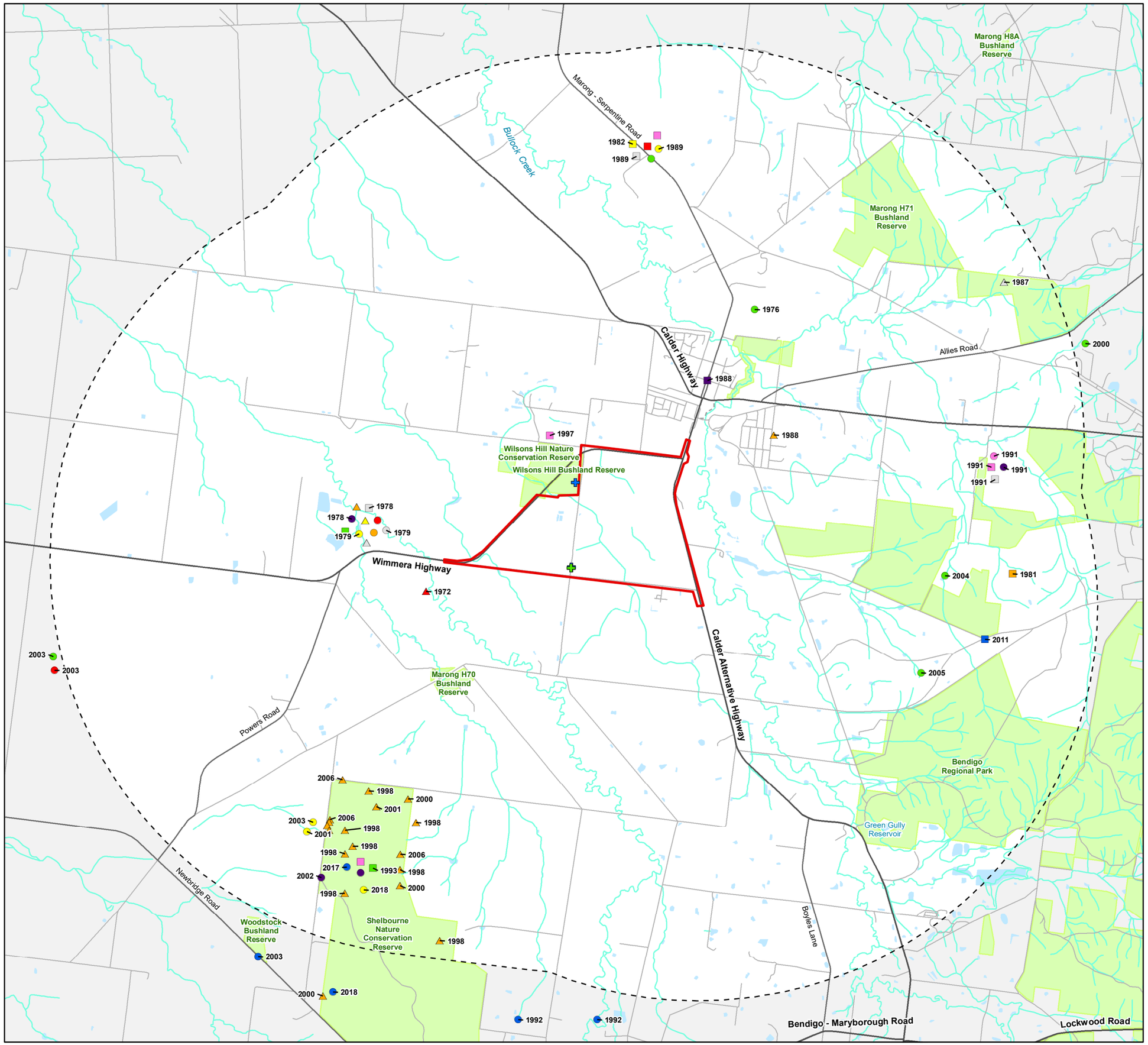

Legend

Study Area

Significant fauna

- Barking Owl
- Black Falcon
- Blue-winged Parrot
- Brown Treecreeper
- Brush-tailed Phascogale
- Bush Stone-curlew
- Common Dunnart
- Crested Bellbird
- Diamond Firetail
- Fat-tailed Dunnart
- Grey-headed Flying-fox
- Growling Grass Frog
- Hooded Robin
- Lace Monitor
- Little Eagle
- Regent Honeyeater
- Southern Whiteface
- Spot-tailed Quoll
- Swift Parrot
- White-throated Needletail

Ecology and Heritage Partners (2022/23)

- Brushtail Phascogale and Squirrel Glider
- Squirrel Glider

Figure 4

Previously documented significant fauna within 5km of the study area

Biodiversity Assessment and Targeted Flora and Fauna Surveys for the proposed Bendigo Regional Employment Precinct

N

0 1 2

Kilometres

Map Scale: 1:46,000 @ A3
Coordinate System: GDA2020 MGA Zone 55

ecology & heritage partners

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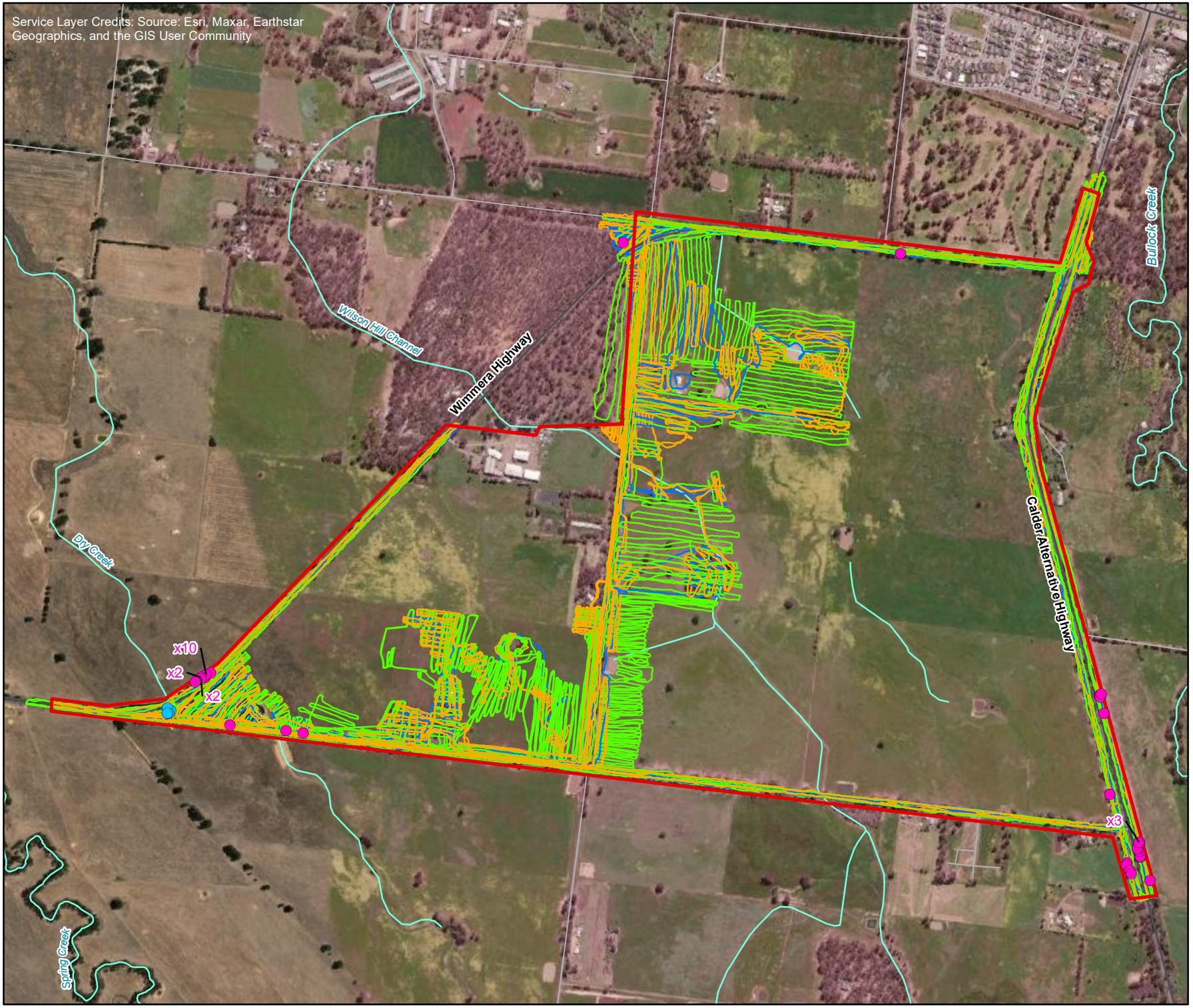


Legend

- Study Area
- Winter Survey tracks (11/07 - 10/08/2022)
- Spring Survey tracks (03/10 - 06/10/2022)
- Summer Survey tracks (05/12 - 08/12/2022)

Species observed

- Ausfeld's Wattle
- Late-flower Flax-lily

Figure 5

Targeted Flora Surveys

Biodiversity Assessment and Targeted Flora and Fauna Surveys for the proposed Bendigo Regional Employment Precinct

N

0 250 500

Metres

Map Scale: 1:15,000 @ A4
Coordinate System: GDA2020 MGA Zone 55

ecology & heritage partners

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

Survey locations

- Cameras

Species observed

- Brushtail Phascogale
- Squirrel Glider
- Squirrel Glider habitat tree

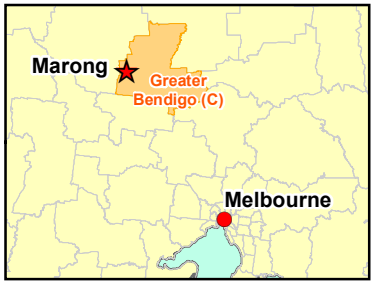


Figure 6

Arboreal fauna survey locations

Biodiversity Assessment and Targeted Flora and Fauna Surveys for the proposed Bendigo Regional Employment Precinct

N

0 200 400

Metres

Map Scale: 1:15,300 @ A4
Coordinate System: GDA2020 MGA Zone 55

ecology & heritage partners

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
- Growling Grass Frog survey locations

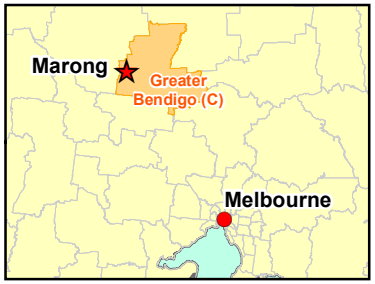


Figure 7

Growling Grass Frog survey locations

Biodiversity Assessment and Targeted Flora and Fauna Surveys for the proposed Bendigo Regional Employment Precinct

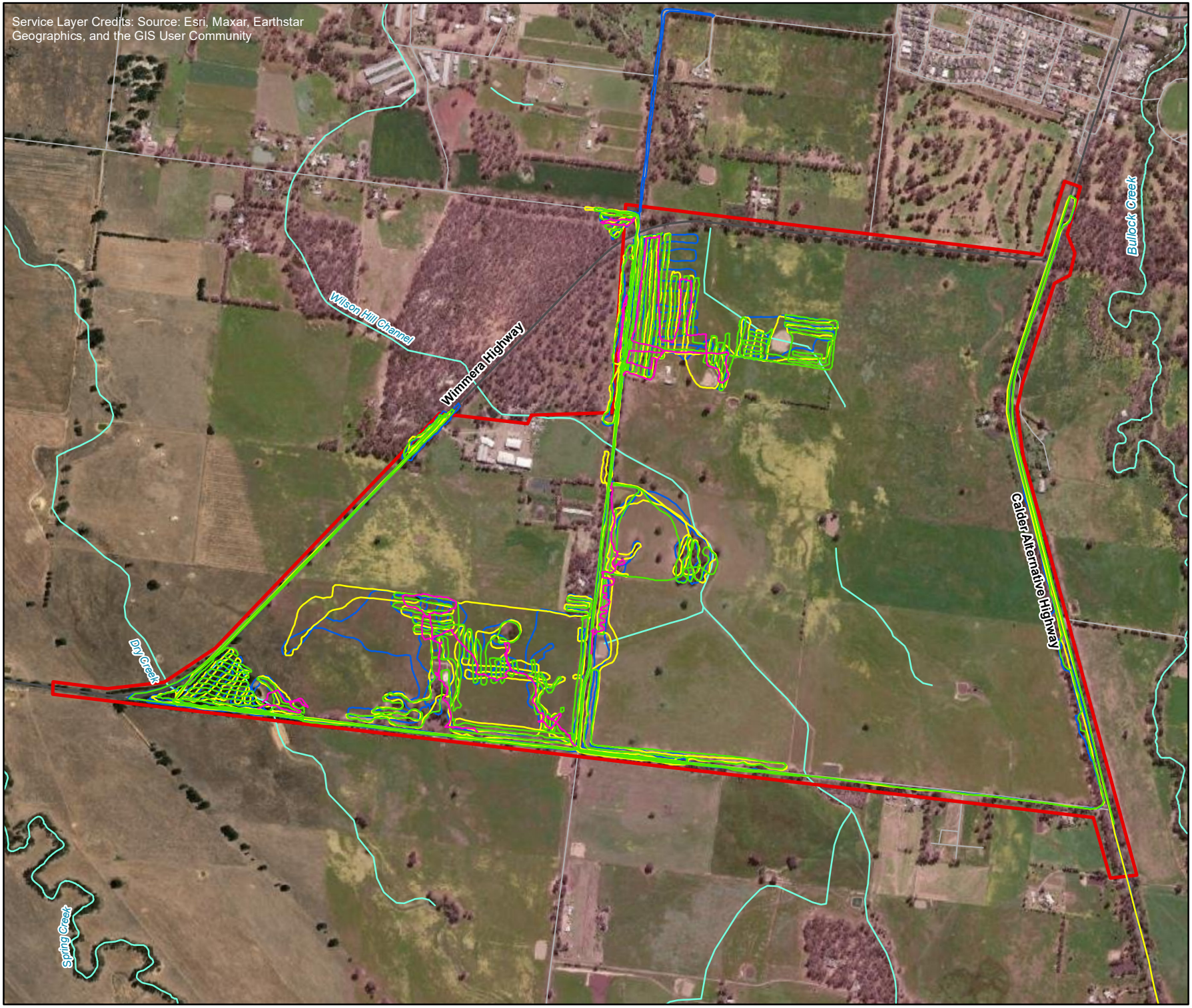
0 200 400
Metres

Map Scale: 1:15,300 @ A4
Coordinate System: GDA2020 MGA Zone 55

ecology & heritage partners

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.

15750_Fig07_GGF_Survey_G20 28/08/2023 melsley



Legend

- Study Area
- Survey track (21/12/2022)
- Survey track (11/01/2023)
- Survey track (13/01/2023)
- Survey track (16/01/2023)

Figure 8

Golden Sun Moth survey tracks

Biodiversity Assessment and Targeted Flora and Fauna Surveys for the proposed Bendigo Regional Employment Precinct

N

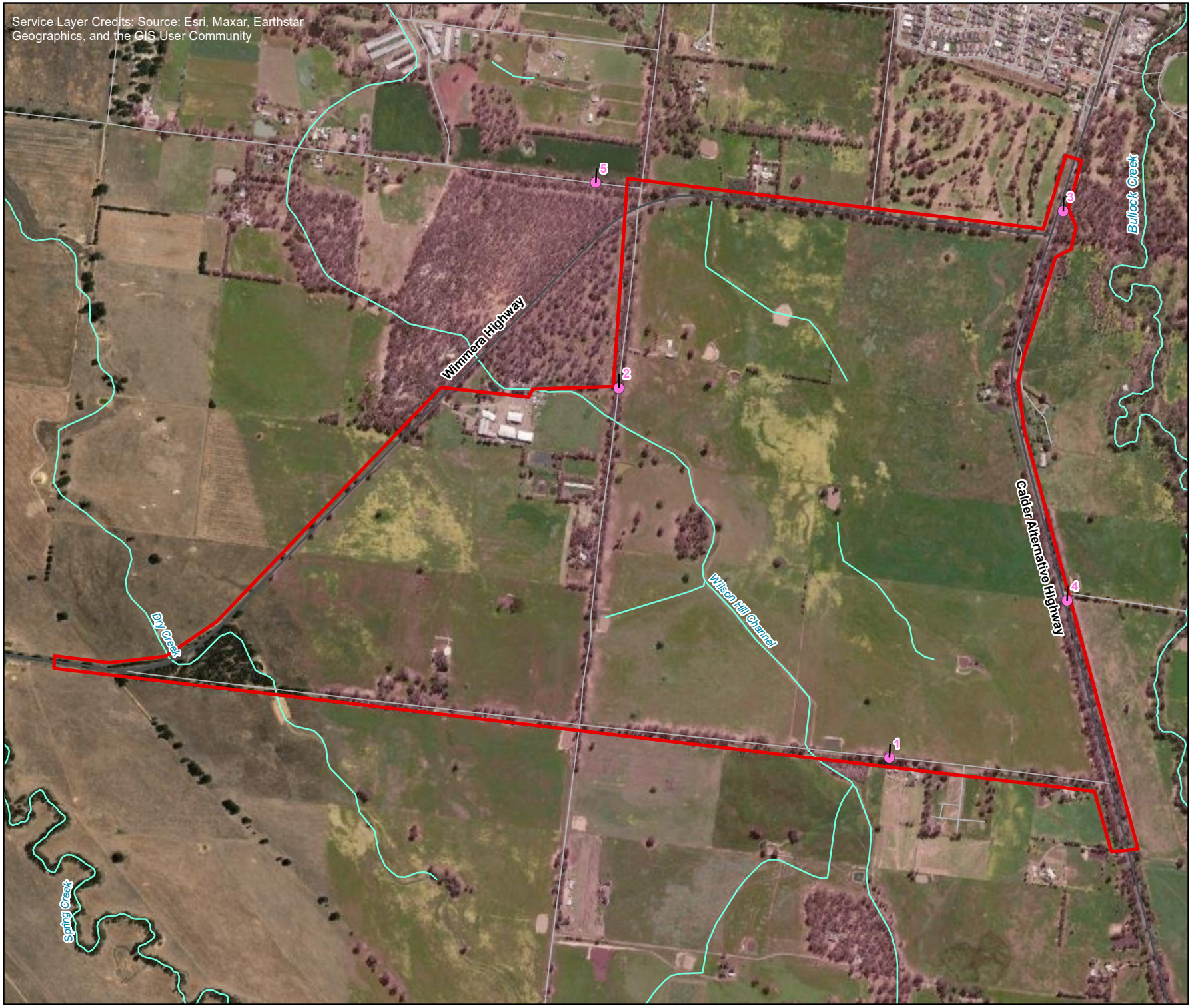
0 200 400

Metres

Map Scale: 1:15,300 @ A4
Coordinate System: GDA2020 MGA Zone 55

ecology & heritage partners

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
- Swift Parrot survey locations

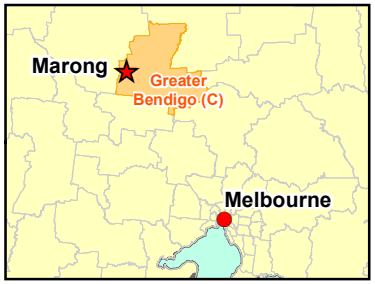


Figure 9

Swift Parrot survey locations

Biodiversity Assessment and Targeted Flora and Fauna Surveys for the proposed Bendigo Regional Employment Precinct

N

0 200 400

Metres

Map Scale: 1:15,300 @ A4
Coordinate System: GDA2020 MGA Zone 55

ecology & heritage partners

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Legend

- Study Area
- Diurnal bird survey locations
- Nocturnal bird survey transects

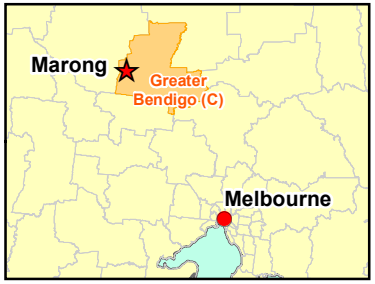

Figure 10

Bird spot survey locations

Biodiversity Assessment and Targeted Flora and Fauna Surveys for the proposed Bendigo Regional Employment Precinct

0 200 400
Metres

Map Scale: 1:15,300 @ A4
Coordinate System: GDA2020 MGA Zone 55

ecology & heritage partners

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

Legend:

I Protected under the FFG Act (DELWP 2019);
ce/e/v Listed as critically endangered/endangered/vulnerable under the FFG Act (DELWP 2021);
***** Listed as a noxious weed under the CaLP Act;
w Weed of National Significance;
****** Planted indigenous species in the study area;
+ Planted indigenous species that also occur in native vegetation in the study area;
# Planted Victorian and non-Victorian species.

Table A1.1. Flora within the study area.

Scientific Name	Common Name	Notes
INDIGENOUS SPECIES		
Acacia acinacea	Gold-dust Wattle	**I +**
Acacia mearnsii	Black Wattle	**I ****
Acacia paradoxa	Hedge Wattle	**+**
Amphibromus nervosus	Common Swamp Wallaby-grass	-
Anthosachne scabra	Common Wheat-grass	-
Austrostipa scabra	Rough Spear-grass	-
Austrostipa semibarbata	Fibrous Spear-grass	-
Austrostipa spp.	Spear Grass	-
Calocephalus citreus	Lemon Beauty-heads	**I**
Cassinia sifton	Sifton Bush	**I**
Dianella revoluta	Black-anther Flax-lily	-
Eleocharis acuta	Common Spike-sedge	-
Eucalyptus albens	White Box	-
Eucalyptus leucoxylon	Yellow Gum	-
Eucalyptus microcarpa	Grey Box	-
Eucalyptus tricarpa	Red Ironbark	******
Gonocarpus tetragynus	Common Raspwort	-
Juncus spp.	Rush	-
Lomandra filiformis	Wattle Mat-rush	-
Poa sieberiana	Grey Tussock-grass	-
Rytidosperma caespitosum	Common Wallaby-grass	-

Scientific Name	Common Name	Notes
Rytidosperma setaceum	Bristly Wallaby-grass	-
Rytidosperma spp.	Wallaby Grass	-
Vittadinia cuneata	Fuzzy New Holland Daisy	I
Wahlenbergia fluminalis	River Bluebell	-
Xerochrysum viscosum	Shiny Everlasting	I
NON-INDIGENOUS OR INTRODUCED SPECIES		
Arctotheca calendula	Cape weed	-
Asparagus asparagoides	Bridal Creeper	w*
Avena barbata	Bearded Oat	-
Avena fatua	Wild Oat	-
Brassica spp.	Turnip	-
Briza maxima	Large Quaking-grass	-
Cirsium vulgare	Spear Thistle	*
Cynara cardunculus subsp. flavescens	Artichoke Thistle	*
Dactylis glomerata	Cocksfoot	-
Ehrharta erecta var. *erecta*	Panic Veldt-grass	-
Gazania linearis	Gazania	-
Genista monspessulana	Montpellier Broom	w*
Hypochaeris glabra	Smooth Cat's-ear	-
Lolium spp.	Rye Grass	-
Melaleuca spp.	Honey-myrtle	#
Nassella neesiana	Chilean Needle-grass	w*
Opuntia spp.	Prickly pear	*
Phalaris aquatica	Toowoomba Canary-grass	-
Plantago lanceolata	Ribwort	-
Schinus molle	Pepper Tree	#
Xanthium spinosum	Bathurst Burr	*

Appendix 1.2 - Habitat Hectare Assessment

Table A1.2. Habitat Hectare Assessment Table.

Vegetation Zone		PW1	PW2	PW3	PW4	PW5	PW6	PW7	PW8	PW9	PW10	PW11	PW12	PW13	PW14
Bioregion		VR, GF	VR, GF	VR, GF	VR, GF	VR, GF	GF	GF	VR, GF	GF	VR, GF	VR, GF	VR	GF	GF
EVC / Tree		PW	PW	PW	PW	PW	PW	PW	PW	PW	PW	PW	PW	PW	PW
EVC Number		803	803	803	803	803	803	803	803	803	803	803	803	803	803
EVC Conservation Status		En	En	En	En	En	En	En	En	En	En	En	En	En	En
Patch Condition	Large Old Trees /10	10	8	0	0	0	4	0	3	3	3	8	4	3	4
	Canopy Cover /5	5	5	5	0	0	5	5	3	3	5	5	5	5	5
	Under storey /25	5	5	5	5	5	10	10	5	5	5	5	5	5	5
	Lack of Weeds /15	0	2	2	6	2	2	2	6	4	2	0	0	0	2
	Recruitment /10	5	5	5	0	0	5	5	0	0	5	5	5	5	5
	Organic Matter /5	3	3	3	5	5	5	5	5	5	3	3	3	3	3
	Logs /5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Treeless EVC Multiplier	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	Subtotal =	28.00	28.00	20.00	16.00	12.00	31.00	27.00	22.00	20.00	23.00	26.00	22.00	21.00	24.00
Landscape Value /25		4	4	4	5	4	5	4	9	9	5	4	4	4	4
Habitat Points /100		32	32	24	21	16	36	31	31	29	28	30	26	25	28
Habitat Score		0.32	0.32	0.24	0.21	0.16	0.36	0.31	0.31	0.29	0.28	0.30	0.26	0.25	0.28

Note: PW = Plains Woodland; GF = Goldfields; VR = Victorian Riverina.

Appendix 1.3 - Scattered Trees and Large Trees in Patches

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

Tree #	*Species name*	Common name	DBH (cm)	Size Class	Scattered/Patch	Comment
1	*Eucalyptus melliodora*	Yellow Box	91	Large	Patch	-
2	*Eucalyptus microcarpa*	Grey Box	96	Large	Patch	-
3	*Eucalyptus microcarpa*	Grey Box	107	Large	Patch	-
4	*Eucalyptus microcarpa*	Grey Box	129	Large	Patch	Hollows
5	*Eucalyptus leucoxylon*	Yellow Gum	102	Large	Patch	-
6	*Eucalyptus leucoxylon*	Yellow Gum	108	Large	Patch	-
7	*Eucalyptus leucoxylon*	Yellow Gum	79	Large	Patch	-
8	*Eucalyptus leucoxylon*	Yellow Gum	175	Large	Patch	-
9	*Eucalyptus leucoxylon*	Yellow Gum	89	Large	Patch	-
10	*Eucalyptus* sp.	Stag	125	Large	Scattered	Hollows
11	*Eucalyptus microcarpa*	Grey Box	94	Large	Patch	-
12	*Eucalyptus microcarpa*	Grey Box	91	Large	Patch	-
13	*Eucalyptus melliodora*	Yellow Box	84	Large	Patch	-
14	*Eucalyptus melliodora*	Yellow Box	89	Large	Patch	-
15	*Eucalyptus* sp.	Stag	120	Large	Patch	-
16	*Eucalyptus leucoxylon*	Yellow Gum	166	Large	Patch	-
17	*Eucalyptus leucoxylon*	Yellow Gum	106	Large	Patch	-
18	*Eucalyptus leucoxylon*	Yellow Gum	195	Large	Patch	Hollows
19	*Eucalyptus leucoxylon*	Yellow Gum	136	Large	Patch	-
20	*Eucalyptus microcarpa*	Grey Box	74	Large	Patch	-
21	*Eucalyptus microcarpa*	Grey Box	76	Large	Scattered	-
22	*Eucalyptus leucoxylon*	Yellow Gum	109	Large	Patch	-
23	*Eucalyptus microcarpa*	Grey Box	82	Large	Patch	-
24	*Eucalyptus microcarpa*	Grey Box	166	Large	Patch	-
25	*Eucalyptus melliodora*	Yellow Box	75	Large	Patch	-
26	*Eucalyptus melliodora*	Yellow Box	81	Large	Patch	-
27	*Eucalyptus microcarpa*	Grey Box	111	Large	Patch	-
28	*Eucalyptus melliodora*	Yellow Box	115	Large	Patch	-
29	*Eucalyptus melliodora*	Yellow Box	115	Large	Patch	-
30	*Eucalyptus melliodora*	Yellow Box	131	Large	Patch	-
31	*Eucalyptus melliodora*	Yellow Box	194	Large	Patch	-
32	*Eucalyptus melliodora*	Yellow Box	127	Large	Patch	-
33	*Eucalyptus melliodora*	Yellow Box	95	Large	Patch	-

Tree #	*Species name*	Common name	DBH (cm)	Size Class	Scattered/Patch	Comment
34	*Eucalyptus melliodora*	Yellow Box	71	Large	Patch	-
35	*Eucalyptus melliodora*	Yellow Box	88	Large	Patch	-
36	*Eucalyptus microcarpa*	Grey Box	112	Large	Patch	-
37	*Eucalyptus microcarpa*	Grey Box	81	Large	Scattered	-
38	*Eucalyptus melliodora*	Yellow Box	21	Small	Scattered	-
39	*Eucalyptus melliodora*	Yellow Box	38	Small	Scattered	-
40	*Eucalyptus melliodora*	Yellow Box	132	Large	Patch	-
42	*Eucalyptus microcarpa*	Grey Box	43	Small	Scattered	-
43	*Eucalyptus melliodora*	Yellow Box	162	Large	Scattered	-
44	*Eucalyptus melliodora*	Yellow Box	103	Large	Patch	-
45	*Eucalyptus melliodora*	Yellow Box	71	Large	Patch	-
46	*Eucalyptus melliodora*	Yellow Box	84	Large	Patch	-
47	*Eucalyptus melliodora*	Yellow Box	75	Large	Patch	-
48	*Eucalyptus melliodora*	Yellow Box	123	Large	Patch	-
49	*Eucalyptus leucoxylon*	Yellow Gum	159	Large	Patch	-
50	*Eucalyptus leucoxylon*	Yellow Gum	87	Large	Patch	-
51	*Eucalyptus leucoxylon*	Yellow Gum	873	Large	Patch	-
52	*Eucalyptus leucoxylon*	Yellow Gum	105	Large	Patch	-
53	*Eucalyptus microcarpa*	Grey Box	73	Large	Patch	-
54	*Eucalyptus leucoxylon*	Yellow Gum	160	Large	Patch	-
55	*Eucalyptus leucoxylon*	Yellow Gum	83	Large	Patch	-
56	*Eucalyptus melliodora*	Yellow Box	99	Large	Patch	-
57	*Eucalyptus leucoxylon*	Yellow Gum	135	Large	Patch	-
58	*Eucalyptus melliodora*	Yellow Box	115	Large	Patch	-
59	*Eucalyptus leucoxylon*	Yellow Gum	107	Large	Patch	-
60	*Eucalyptus microcarpa*	Grey Box	78	Large	Patch	-
61	*Eucalyptus microcarpa*	Grey Box	79	Large	Patch	-
62	*Eucalyptus microcarpa*	Grey Box	98	Large	Patch	-
63	*Eucalyptus microcarpa*	Grey Box	80	Large	Patch	-
64	*Eucalyptus microcarpa*	Grey Box	80	Large	Patch	-
65	*Eucalyptus microcarpa*	Grey Box	83	Large	Patch	-
66	*Eucalyptus microcarpa*	Grey Box	117	Large	Patch	-
67	*Eucalyptus microcarpa*	Grey Box	92	Large	Patch	-
68	*Eucalyptus microcarpa*	Grey Box	71	Large	Patch	-
69	*Eucalyptus microcarpa*	Grey Box	716	Large	Patch	-
70	*Eucalyptus leucoxylon*	Yellow Gum	85	Large	Patch	-
71	*Eucalyptus leucoxylon*	Yellow Gum	74	Large	Patch	-

Tree #	*Species name*	Common name	DBH (cm)	Size Class	Scattered/Patch	Comment
72	*Eucalyptus leucoxylon*	Yellow Gum	86	Large	Patch	-
73	*Eucalyptus microcarpa*	Grey Box	79	Large	Patch	-
74	*Eucalyptus leucoxylon*	Yellow Gum	71	Large	Patch	-
75	*Eucalyptus* sp.	Stag	121	Large	Patch	Hollows
76	*Eucalyptus* sp.	Stag	97	Large	Scattered	-
77	*Eucalyptus* sp.	Stag	65	Small	Scattered	-
78	*Eucalyptus microcarpa*	Grey Box	85	Large	Patch	-
79	*Eucalyptus microcarpa*	Grey Box	71	Large	Patch	-
80	*Eucalyptus microcarpa*	Grey Box	78	Large	Patch	-
81	*Eucalyptus microcarpa*	Grey Box	109	Large	Patch	-
82	*Eucalyptus melliodora*	Yellow Box	113	Large	Patch	-
83	*Eucalyptus melliodora*	Yellow Box	119	Large	Patch	-
84	*Eucalyptus microcarpa*	Grey Box	152	Large	Patch	Hollows
85	*Eucalyptus microcarpa*	Grey Box	91	Large	Patch	-
86	*Eucalyptus microcarpa*	Grey Box	82	Large	Patch	-
87	*Eucalyptus microcarpa*	Grey Box	91	Large	Patch	-
88	*Eucalyptus microcarpa*	Grey Box	91	Large	Patch	-
89	*Eucalyptus microcarpa*	Grey Box	108	Large	Patch	-
90	*Eucalyptus microcarpa*	Grey Box	87	Large	Patch	Hollows
91	*Eucalyptus microcarpa*	Grey Box	94	Large	Patch	Hollows
92	*Eucalyptus* sp.	Stag	92	Large	Scattered	-
93	*Eucalyptus microcarpa*	Grey Box	48	Small	Scattered	-
94	*Eucalyptus microcarpa*	Grey Box	53	Small	Scattered	-
95	*Eucalyptus microcarpa*	Grey Box	95	Large	Patch	-
96	*Eucalyptus microcarpa*	Grey Box	72	Large	Patch	-
97	*Eucalyptus microcarpa*	Grey Box	79	Large	Patch	-
98	*Eucalyptus microcarpa*	Grey Box	91	Large	Patch	Hollows
99	*Eucalyptus camaldulensis*	River Red-gum	79	Large	Patch	-
100	*Eucalyptus camaldulensis*	River Red-gum	90	Large	Patch	-
101	*Eucalyptus microcarpa*	Grey Box	78	Large	Patch	-
102	*Eucalyptus microcarpa*	Grey Box	147	Large	Patch	Hollows
103	*Eucalyptus leucoxylon*	Yellow Gum	78	Large	Patch	-
104	*Eucalyptus* sp.	Stag	74	Large	Patch	-
105	*Eucalyptus microcarpa*	Grey Box	107	Large	Patch	-
106	*Eucalyptus microcarpa*	Grey Box	80	Large	Patch	-
107	*Eucalyptus microcarpa*	Grey Box	118	Large	Patch	-
108	*Eucalyptus microcarpa*	Grey Box	89	Large	Patch	-

Tree #	*Species name*	Common name	DBH (cm)	Size Class	Scattered/Patch	Comment
109	*Eucalyptus microcarpa*	Grey Box	128	Large	Patch	-
110	*Eucalyptus microcarpa*	Grey Box	93	Large	Patch	-
111	*Eucalyptus microcarpa*	Grey Box	100	Large	Patch	-
112	*Eucalyptus microcarpa*	Grey Box	89	Large	Patch	-
113	*Eucalyptus microcarpa*	Grey Box	91	Large	Patch	-
114	*Eucalyptus microcarpa*	Grey Box	117	Large	Patch	-
115	*Eucalyptus microcarpa*	Grey Box	111	Large	Patch	Hollows
116	*Eucalyptus microcarpa*	Grey Box	92	Large	Patch	Hollows
117	*Eucalyptus microcarpa*	Grey Box	139	Large	Patch	-
118	*Eucalyptus microcarpa*	Grey Box	98	Large	Patch	-
119	*Eucalyptus microcarpa*	Grey Box	73	Large	Patch	-
120	*Eucalyptus microcarpa*	Grey Box	73	Large	Patch	Hollows
121	*Eucalyptus microcarpa*	Grey Box	119	Large	Patch	Hollows
122	*Eucalyptus microcarpa*	Grey Box	91	Large	Patch	Hollows
123	*Eucalyptus microcarpa*	Grey Box	103	Large	Patch	Hollows
124	*Eucalyptus microcarpa*	Grey Box	94	Large	Patch	Hollows
125	*Eucalyptus microcarpa*	Grey Box	129	Large	Patch	-
126	*Eucalyptus microcarpa*	Grey Box	106	Large	Patch	-
127	*Eucalyptus microcarpa*	Grey Box	121	Large	Patch	-
128	*Eucalyptus microcarpa*	Grey Box	95	Large	Patch	-
129	*Eucalyptus microcarpa*	Grey Box	82	Large	Patch	-
130	*Eucalyptus microcarpa*	Grey Box	133	Large	Scattered	Hollows
131	*Eucalyptus microcarpa*	Grey Box	160	Large	Patch	-
132	*Eucalyptus microcarpa*	Grey Box	91	Large	Patch	-
133	*Eucalyptus* sp.	Stag	82	Large	Patch	-
134	*Eucalyptus* sp.	Stag	127	Large	Patch	-
135	*Eucalyptus* sp.	Stag	108	Large	Patch	-
136	*Eucalyptus microcarpa*	Grey Box	120	Large	Scattered	-
137	*Eucalyptus microcarpa*	Grey Box	74	Large	Patch	-
138	*Eucalyptus microcarpa*	Grey Box	119	Large	Patch	Hollows
139	*Eucalyptus microcarpa*	Grey Box	79	Large	Patch	Hollows
140	*Eucalyptus microcarpa*	Grey Box	90	Large	Patch	-
141	*Eucalyptus microcarpa*	Grey Box	132	Large	Patch	-
142	*Eucalyptus microcarpa*	Grey Box	130	Large	Patch	Hollows
143	*Eucalyptus microcarpa*	Grey Box	93	Large	Patch	-
144	*Eucalyptus microcarpa*	Grey Box	70	Large	Patch	-
145	*Eucalyptus microcarpa*	Grey Box	78	Large	Patch	-

Tree #	*Species name*	Common name	DBH (cm)	Size Class	Scattered/Patch	Comment
146	*Eucalyptus microcarpa*	Grey Box	157	Large	Patch	Hollows
147	*Eucalyptus microcarpa*	Grey Box	153	Large	Patch	-
148	*Eucalyptus microcarpa*	Grey Box	92	Large	Scattered	-
149	*Eucalyptus microcarpa*	Grey Box	116	Large	Patch	-
150	*Eucalyptus* sp.	Stag	94	Large	Patch	Hollows
151	*Eucalyptus microcarpa*	Grey Box	78	Large	Patch	-
152	*Eucalyptus microcarpa*	Grey Box	113	Large	Patch	-
153	*Eucalyptus microcarpa*	Grey Box	76	Large	Patch	-
154	*Eucalyptus microcarpa*	Grey Box	76	Large	Patch	-
155	*Eucalyptus microcarpa*	Grey Box	79	Large	Patch	-
156	*Eucalyptus microcarpa*	Grey Box	70	Large	Patch	-
157	*Eucalyptus microcarpa*	Grey Box	99	Large	Patch	-
158	*Eucalyptus microcarpa*	Grey Box	93	Large	Patch	-
159	*Eucalyptus microcarpa*	Grey Box	83	Large	Patch	-
160	*Eucalyptus leucoxylon*	Yellow Gum	78	Large	Patch	-
161	*Eucalyptus melliodora*	Yellow Box	80	Large	Scattered	-
162	*Eucalyptus microcarpa*	Grey Box	85	Large	Patch	-
163	*Eucalyptus albens*	White Box	75	Large	Scattered	-
164	*Eucalyptus microcarpa*	Grey Box	113	Large	Patch	-
165	*Eucalyptus albens*	White Box	90	Large	Patch	-
166	*Eucalyptus microcarpa*	Grey Box	98	Large	Patch	-
167	*Eucalyptus microcarpa*	Grey Box	82	Large	Patch	-
168	*Eucalyptus albens*	White Box	82	Large	Patch	-
169	*Eucalyptus microcarpa*	Grey Box	73	Large	Patch	-
170	*Eucalyptus microcarpa*	Grey Box	79	Large	Patch	-
171	*Eucalyptus microcarpa*	Grey Box	71	Large	Patch	-
172	*Eucalyptus albens*	White Box	79	Large	Patch	-
173	*Eucalyptus microcarpa*	Grey Box	73	Large	Patch	-
174	*Eucalyptus microcarpa*	Grey Box	86	Large	Patch	-
175	*Eucalyptus albens*	White Box	75	Large	Patch	-
176	*Eucalyptus microcarpa*	Grey Box	89	Large	Patch	-
177	*Eucalyptus leucoxylon*	Yellow Gum	159	Large	Patch	-
178	*Eucalyptus leucoxylon*	Yellow Gum	87	Large	Patch	-
179	*Eucalyptus microcarpa*	Grey Box	74	Large	Patch	-
180	*Eucalyptus albens*	White Box	81	Large	Patch	-
181	*Eucalyptus albens*	White Box	72	Large	Patch	-
182	*Eucalyptus albens*	White Box	84	Large	Patch	-

Tree #	*Species name*	Common name	DBH (cm)	Size Class	Scattered/Patch	Comment
183	*Eucalyptus microcarpa*	Grey Box	132	Large	Patch	-
184	*Eucalyptus albens*	White Box	100	Large	Patch	-
185	*Eucalyptus albens*	White Box	87	Large	Patch	-
186	*Eucalyptus microcarpa*	Grey Box	83	Large	Patch	-
187	*Eucalyptus* sp.	Stag	139	Large	Scattered	Hollows
188	*Eucalyptus* sp.	Stag	69	Small	Scattered	Hollows
189	*Eucalyptus* sp.	Stag	151	Large	Scattered	Hollows
190	*Eucalyptus* sp.	Stag	63	Small	Scattered	Hollows
191	*Eucalyptus melliodora*	Yellow Box	115	Large	Scattered	Hollows
192	*Eucalyptus melliodora*	Yellow Box	152	Large	Scattered	Hollows
193	*Eucalyptus melliodora*	Yellow Box	220	Large	Scattered	Hollows
194	*Eucalyptus melliodora*	Yellow Box	164	Large	Scattered	-
195	*Eucalyptus albens*	White Box	100	Large	Scattered	-
196	*Eucalyptus microcarpa*	Grey Box	85	Large	Scattered	Hollows
197	*Eucalyptus albens*	White Box	95	Large	Patch	-
198	*Eucalyptus leucoxylon*	Yellow Gum	107	Large	Patch	Hollows
199	*Eucalyptus leucoxylon*	Yellow Gum	106	Large	Patch	-
200	*Eucalyptus albens*	White Box	91	Large	Patch	-
201	*Eucalyptus leucoxylon*	Yellow Gum	104	Large	Patch	-
202	*Eucalyptus leucoxylon*	Yellow Gum	123	Large	Patch	-
203	*Eucalyptus microcarpa*	Grey Box	108	Large	Scattered	-
204	*Eucalyptus leucoxylon*	Yellow Gum	142	Large	Scattered	Hollows
205	*Eucalyptus microcarpa*	Grey Box	79	Large	Patch	-
206	*Eucalyptus leucoxylon*	Yellow Gum	79	Large	Patch	-
207	*Eucalyptus microcarpa*	Grey Box	78	Large	Patch	-
208	*Eucalyptus microcarpa*	Grey Box	76	Large	Patch	-
209	*Eucalyptus albens*	White Box	80	Large	Patch	-
210	*Eucalyptus leucoxylon*	Yellow Gum	78	Large	Patch	-
211	*Eucalyptus microcarpa*	Grey Box	99	Large	Patch	-
212	*Eucalyptus microcarpa*	Grey Box	95	Large	Patch	Hollows
213	*Eucalyptus microcarpa*	Grey Box	83	Large	Patch	-
214	*Eucalyptus microcarpa*	Grey Box	93	Large	Patch	-
215	*Eucalyptus microcarpa*	Grey Box	162	Large	Patch	Hollows
216	*Eucalyptus microcarpa*	Grey Box	99	Large	Patch	-
217	*Eucalyptus leucoxylon*	Yellow Gum	146	Large	Patch	-
218	*Eucalyptus leucoxylon*	Yellow Gum	85	Large	Patch	Hollows
219	*Eucalyptus microcarpa*	Grey Box	85	Large	Patch	-

Tree #	*Species name*	Common name	DBH (cm)	Size Class	Scattered/Patch	Comment
220	*Eucalyptus leucoxylon*	Yellow Gum	151	Large	Patch	Hollows
221	*Eucalyptus leucoxylon*	Yellow Gum	74	Large	Patch	Hollows
222	*Eucalyptus leucoxylon*	Yellow Gum	124	Large	Patch	-
223	*Eucalyptus leucoxylon*	Yellow Gum	117	Large	Patch	Nest
224	*Eucalyptus microcarpa*	Grey Box	94	Large	Patch	-
225	*Eucalyptus leucoxylon*	Yellow Gum	83	Large	Patch	Hollows
226	*Eucalyptus leucoxylon*	Yellow Gum	83	Large	Patch	-
227	*Eucalyptus* sp.	Stag	135	Large	Scattered	-
228	*Eucalyptus* sp.	Stag	141	Large	Scattered	Hollows
229	*Eucalyptus melliodora*	Yellow Box	139	Large	Scattered	-
230	*Eucalyptus microcarpa*	Grey Box	122	Large	Scattered	-
231	*Eucalyptus* sp.	Stag	96	Large	Scattered	-
232	*Eucalyptus microcarpa*	Grey Box	162	Large	Scattered	-
233	*Eucalyptus microcarpa*	Grey Box	85	Large	Scattered	-
234	*Eucalyptus microcarpa*	Grey Box	78	Large	Scattered	-
235	*Eucalyptus microcarpa*	Grey Box	91	Large	Scattered	-
236	*Eucalyptus leucoxylon*	Yellow Gum	150	Large	Patch	Hollows
237	*Eucalyptus microcarpa*	Grey Box	100	Large	Patch	-
238	*Eucalyptus microcarpa*	Grey Box	117	Large	Patch	Hollows
239	*Eucalyptus microcarpa*	Grey Box	79	Large	Patch	-
240	*Eucalyptus leucoxylon*	Yellow Gum	178	Large	Patch	-
241	*Eucalyptus microcarpa*	Grey Box	76	Large	Patch	-
242	*Eucalyptus microcarpa*	Grey Box	126	Large	Scattered	-
243	*Eucalyptus microcarpa*	Grey Box	66	Small	Scattered	-
244	*Eucalyptus microcarpa*	Grey Box	122	Large	Patch	-
245	*Eucalyptus microcarpa*	Grey Box	125	Large	Patch	-
246	*Eucalyptus microcarpa*	Grey Box	127	Large	Scattered	-
247	*Eucalyptus microcarpa*	Grey Box	196	Large	Patch	-
248	*Eucalyptus microcarpa*	Grey Box	60	Small	Scattered	-
249	*Eucalyptus microcarpa*	Grey Box	126	Large	Scattered	Nest
250	*Eucalyptus microcarpa*	Grey Box	93	Large	Scattered	Hollows
251	*Eucalyptus microcarpa*	Grey Box	70	Large	Scattered	-
252	*Eucalyptus microcarpa*	Grey Box	67	Small	Scattered	-
253	*Eucalyptus microcarpa*	Grey Box	90	Large	Patch	-
254	*Eucalyptus microcarpa*	Grey Box	78	Large	Patch	-
255	*Eucalyptus microcarpa*	Grey Box	96	Large	Patch	-
256	*Eucalyptus microcarpa*	Grey Box	80	Large	Patch	-

Tree #	*Species name*	Common name	DBH (cm)	Size Class	Scattered/Patch	Comment
257	*Eucalyptus microcarpa*	Grey Box	131	Large	Patch	-
258	*Eucalyptus microcarpa*	Grey Box	181	Large	Patch	Hollows
259	*Eucalyptus microcarpa*	Grey Box	78	Large	Scattered	Hollows
260	*Eucalyptus microcarpa*	Grey Box	83	Large	Patch	Hollows
261	*Eucalyptus microcarpa*	Grey Box	100	Large	Patch	Hollows
262	*Eucalyptus microcarpa*	Grey Box	74	Large	Patch	Hollows
263	*Eucalyptus microcarpa*	Grey Box	70	Large	Patch	Hollows
264	*Eucalyptus leucoxylon*	Yellow Gum	96	Large	Patch	Hollows
265	*Eucalyptus leucoxylon*	Yellow Gum	124	Large	Patch	Hollows
266	*Eucalyptus leucoxylon*	Yellow Gum	98	Large	Patch	Hollows
267	*Eucalyptus leucoxylon*	Yellow Gum	74	Large	Patch	Hollows
268	*Eucalyptus camaldulensis*	River Red-gum	183	Large	Patch	Hollows
269	*Eucalyptus leucoxylon*	Yellow Gum	191	Large	Patch	Hollows
270	*Eucalyptus leucoxylon*	Yellow Gum	209	Large	Patch	Hollows
271	*Eucalyptus melliodora*	Yellow Box	92	Large	Patch	-
272	*Eucalyptus melliodora*	Yellow Box	82	Large	Patch	-
273	*Eucalyptus melliodora*	Yellow Box	74	Large	Patch	-
274	*Eucalyptus leucoxylon*	Yellow Gum	156	Large	Patch	-
275	*Eucalyptus leucoxylon*	Yellow Gum	114	Large	Patch	-
276	*Eucalyptus leucoxylon*	Yellow Gum	82	Large	Patch	-
277	*Eucalyptus microcarpa*	Grey Box	78	Large	Patch	-
278	*Eucalyptus melliodora*	Yellow Box	80	Large	Scattered	-
279	*Eucalyptus microcarpa*	Grey Box	80	Large	Patch	-
280	*Eucalyptus microcarpa*	Grey Box	70	Large	Patch	-
281	*Eucalyptus microcarpa*	Grey Box	92	Large	Patch	-
282	*Eucalyptus melliodora*	Yellow Box	100	Large	Patch	-
283	*Eucalyptus microcarpa*	Grey Box	129	Large	Patch	-
284	*Eucalyptus microcarpa*	Grey Box	71	Large	Patch	-
285	*Eucalyptus microcarpa*	Grey Box	91	Large	Patch	-
286	*Eucalyptus microcarpa*	Grey Box	92	Large	Patch	-
287	*Eucalyptus microcarpa*	Grey Box	74	Large	Patch	-
288	*Eucalyptus melliodora*	Yellow Box	93	Large	Patch	-
289	*Eucalyptus leucoxylon*	Yellow Gum	128	Large	Scattered	-
290	*Eucalyptus leucoxylon*	Yellow Gum	115	Large	Scattered	-
291	*Eucalyptus leucoxylon*	Yellow Gum	210	Large	Patch	-
292	*Eucalyptus leucoxylon*	Yellow Gum	84	Large	Patch	-
293	*Eucalyptus leucoxylon*	Yellow Gum	142	Large	Patch	-

Tree #	*Species name*	Common name	DBH (cm)	Size Class	Scattered/Patch	Comment
294	*Eucalyptus leucoxylon*	Yellow Gum	91	Large	Patch	-
295	*Eucalyptus leucoxylon*	Yellow Gum	128	Large	Patch	-
296	*Eucalyptus leucoxylon*	Yellow Gum	94	Large	Patch	-
297	*Eucalyptus leucoxylon*	Yellow Gum	185	Large	Patch	-
298	*Eucalyptus leucoxylon*	Yellow Gum	120	Large	Scattered	-
299	*Eucalyptus leucoxylon*	Yellow Gum	86	Large	Scattered	-
300	*Eucalyptus leucoxylon*	Yellow Gum	120	Large	Patch	-
301	*Eucalyptus leucoxylon*	Yellow Gum	104	Large	Scattered	-
302	*Eucalyptus leucoxylon*	Yellow Gum	92	Large	Patch	-
303	*Eucalyptus* sp.	Stag	86	Large	Patch	-
304	*Eucalyptus* sp.	Stag	91	Large	Patch	-
305	*Eucalyptus leucoxylon*	Yellow Gum	105	Large	Patch	-
306	*Eucalyptus leucoxylon*	Yellow Gum	72	Large	Patch	-
307	*Eucalyptus leucoxylon*	Yellow Gum	73	Large	Patch	-
308	*Eucalyptus leucoxylon*	Yellow Gum	78	Large	Patch	-
309	*Eucalyptus microcarpa*	Grey Box	100	Large	Scattered	-
310	*Eucalyptus microcarpa*	Grey Box	97	Large	Patch	-
311	*Eucalyptus microcarpa*	Grey Box	72	Large	Patch	-
312	*Eucalyptus leucoxylon*	Yellow Gum	126	Large	Patch	-
313	*Eucalyptus leucoxylon*	Yellow Gum	91	Large	Scattered	-
314	*Eucalyptus microcarpa*	Grey Box	73	Large	Patch	-
315	*Eucalyptus leucoxylon*	Yellow Gum	90	Large	Patch	-
316	*Eucalyptus microcarpa*	Grey Box	123	Large	Patch	-
317	*Eucalyptus microcarpa*	Grey Box	113	Large	Patch	-
318	*Eucalyptus microcarpa*	Grey Box	90	Large	Patch	-
319	*Eucalyptus microcarpa*	Grey Box	77	Large	Patch	-
320	*Eucalyptus microcarpa*	Grey Box	74	Large	Scattered	-
321	*Eucalyptus microcarpa*	Grey Box	99	Large	Patch	-
322	*Eucalyptus microcarpa*	Grey Box	104	Large	Patch	-
323	*Eucalyptus microcarpa*	Grey Box	109	Large	Patch	-
324	*Eucalyptus microcarpa*	Grey Box	95	Large	Patch	-
325	*Eucalyptus microcarpa*	Grey Box	86	Large	Scattered	-
326	*Eucalyptus* sp.	Stag	103	Large	Patch	-
327	*Eucalyptus microcarpa*	Grey Box	90	Large	Patch	-
328	*Eucalyptus microcarpa*	Grey Box	136	Large	Patch	-
329	*Eucalyptus microcarpa*	Grey Box	71	Large	Patch	-
330	*Eucalyptus microcarpa*	Grey Box	95	Large	Patch	-

Tree #	*Species name*	Common name	DBH (cm)	Size Class	Scattered/Patch	Comment
331	*Eucalyptus microcarpa*	Grey Box	75	Large	Patch	-
332	*Eucalyptus microcarpa*	Grey Box	130	Large	Patch	-
333	*Eucalyptus leucoxylon*	Yellow Gum	98	Large	Patch	-
334	*Eucalyptus microcarpa*	Grey Box	99	Large	Patch	-
335	*Eucalyptus microcarpa*	Grey Box	98	Large	Patch	-
336	*Eucalyptus microcarpa*	Grey Box	91	Large	Scattered	-
337	*Eucalyptus microcarpa*	Grey Box	76	Large	Patch	-
338	*Eucalyptus microcarpa*	Grey Box	105	Large	Patch	-
339	*Eucalyptus microcarpa*	Grey Box	72	Large	Patch	-
340	*Eucalyptus microcarpa*	Grey Box	114	Large	Patch	-
341	*Eucalyptus melliodora*	Yellow Box	113	Large	Patch	-
342	*Eucalyptus leucoxylon*	Yellow Gum	73	Large	Patch	-
343	*Eucalyptus leucoxylon*	Yellow Gum	82	Large	Patch	-
344	*Eucalyptus melliodora*	Yellow Box	140	Large	Patch	-
345	*Eucalyptus leucoxylon*	Yellow Gum	124	Large	Patch	-
346	*Eucalyptus melliodora*	Yellow Box	122	Large	Scattered	-
347	*Eucalyptus microcarpa*	Grey Box	66	Small	Scattered	-
348	*Eucalyptus melliodora*	Yellow Box	73	Large	Scattered	-
349	*Eucalyptus* sp.	Stag	56	Small	Scattered	-
350	*Eucalyptus leucoxylon*	Yellow Gum	78	Large	Patch	-
351	*Eucalyptus microcarpa*	Grey Box	80	Large	Patch	-
352	*Eucalyptus microcarpa*	Grey Box	133	Large	Patch	-
353	*Eucalyptus* sp.	Stag	158	Large	Scattered	-
354	*Eucalyptus microcarpa*	Grey Box	91	Large	Patch	-
355	*Eucalyptus microcarpa*	Grey Box	74	Large	Patch	-
356	*Eucalyptus microcarpa*	Grey Box	74	Large	Patch	-
357	*Eucalyptus leucoxylon*	Yellow Gum	144	Large	Patch	-
358	*Eucalyptus microcarpa*	Grey Box	81	Large	Patch	-
359	*Eucalyptus microcarpa*	Grey Box	90	Large	Patch	-
360	*Eucalyptus microcarpa*	Grey Box	101	Large	Patch	-
361	*Eucalyptus* sp.	Stag	64	Small	Scattered	-
362	*Eucalyptus melliodora*	Yellow Box	76	Large	Scattered	-
363	*Eucalyptus microcarpa*	Grey Box	93	Large	Patch	-
364	*Eucalyptus leucoxylon*	Yellow Gum	96	Large	Scattered	-
365	*Eucalyptus melliodora*	Yellow Box	99	Large	Scattered	-
366	*Eucalyptus leucoxylon*	Yellow Gum	109	Large	Scattered	-
367	*Eucalyptus* sp.	Stag	125	Large	Patch	-

Tree #	*Species name*	Common name	DBH (cm)	Size Class	Scattered/Patch	Comment
369	*Eucalyptus microcarpa*	Grey Box	78	Large	Patch	-
370	*Eucalyptus microcarpa*	Grey Box	105	Large	Patch	-
371	*Eucalyptus microcarpa*	Grey Box	146	Large	Patch	-
372	*Eucalyptus microcarpa*	Grey Box	78	Large	Patch	-
373	*Eucalyptus microcarpa*	Grey Box	75	Large	Patch	-
374	*Eucalyptus leucoxylon*	Yellow Gum	103	Large	Scattered	-
375	*Eucalyptus microcarpa*	Grey Box	48	Small	Scattered	-
376	*Eucalyptus leucoxylon*	Yellow Gum	52	Small	Scattered	-
377	*Eucalyptus leucoxylon*	Yellow Gum	116	Large	Patch	-
378	*Eucalyptus microcarpa*	Grey Box	113	Large	Scattered	-
379	*Eucalyptus leucoxylon*	Yellow Gum	109	Large	Patch	-
380	*Eucalyptus leucoxylon*	Yellow Gum	79	Large	Patch	-
381	*Eucalyptus leucoxylon*	Yellow Gum	73	Large	Patch	-
382	*Eucalyptus leucoxylon*	Yellow Gum	99	Large	Patch	-
383	*Eucalyptus leucoxylon*	Yellow Gum	100	Large	Patch	-
384	*Eucalyptus leucoxylon*	Yellow Gum	94	Large	Patch	-
385	*Eucalyptus leucoxylon*	Yellow Gum	89	Large	Patch	-
386	*Eucalyptus leucoxylon*	Yellow Gum	90	Large	Patch	-
387	*Eucalyptus leucoxylon*	Yellow Gum	157	Large	Patch	-
388	*Eucalyptus leucoxylon*	Yellow Gum	100	Large	Patch	-
389	*Eucalyptus leucoxylon*	Yellow Gum	99	Large	Patch	-
390	*Eucalyptus microcarpa*	Grey Box	86	Large	Patch	-
391	*Eucalyptus melliodora*	Yellow Box	85	Large	Patch	-
392	*Eucalyptus melliodora*	Yellow Box	79	Large	Patch	-
393	*Eucalyptus melliodora*	Yellow Box	100	Large	Patch	-
394	*Eucalyptus melliodora*	Yellow Box	100	Large	Patch	-
395	*Eucalyptus leucoxylon*	Yellow Gum	166	Large	Patch	-
396	*Eucalyptus melliodora*	Yellow Box	84	Large	Patch	-
397	*Eucalyptus melliodora*	Yellow Box	216	Large	Patch	-
398	*Eucalyptus melliodora*	Yellow Box	78	Large	Patch	-
399	*Eucalyptus melliodora*	Yellow Box	112	Large	Patch	-
400	*Eucalyptus melliodora*	Yellow Box	70	Large	Patch	-
401	*Eucalyptus microcarpa*	Grey Box	111	Large	Patch	-
402	*Eucalyptus microcarpa*	Grey Box	73	Large	Patch	-
403	*Eucalyptus* sp.	Stag	59	Small	Scattered	-
404	*Eucalyptus melliodora*	Yellow Box	83	Large	Patch	-
405	*Eucalyptus melliodora*	Yellow Box	171	Large	Patch	-

Tree #	*Species name*	Common name	DBH (cm)	Size Class	Scattered/Patch	Comment
406	*Eucalyptus melliodora*	Yellow Box	64	Small	Scattered	-
407	*Eucalyptus leucoxylon*	Yellow Gum	227	Large	Patch	-
408	*Eucalyptus melliodora*	Yellow Box	82	Large	Patch	-
409	*Eucalyptus melliodora*	Yellow Box	93	Large	Patch	-
410	*Eucalyptus melliodora*	Yellow Box	172	Large	Scattered	-
411	*Eucalyptus* sp.	Stag	90	Large	Scattered	-
412	*Eucalyptus* sp.	Stag	152	Large	Scattered	-
413	*Eucalyptus melliodora*	Yellow Box	100	Large	Scattered	-
414	*Eucalyptus leucoxylon*	Yellow Gum	195	Large	Scattered	-
415	*Eucalyptus leucoxylon*	Yellow Gum	195	Large	Patch	-
416	*Eucalyptus leucoxylon*	Yellow Gum	91	Large	Scattered	-
417	*Eucalyptus leucoxylon*	Yellow Gum	86	Large	Scattered	-
418	*Eucalyptus leucoxylon*	Yellow Gum	129	Large	Scattered	-
419	*Eucalyptus leucoxylon*	Yellow Gum	102	Large	Scattered	-
420	*Eucalyptus leucoxylon*	Yellow Gum	96	Large	Scattered	-
421	*Eucalyptus leucoxylon*	Yellow Gum	74	Large	Scattered	-
422	*Eucalyptus microcarpa*	Grey Box	108	Large	Patch	-
423	*Eucalyptus microcarpa*	Grey Box	103	Large	Patch	-
424	*Eucalyptus melliodora*	Yellow Box	94	Large	Patch	-
425	*Eucalyptus melliodora*	Yellow Box	80	Large	Patch	-
426	*Eucalyptus leucoxylon*	Yellow Gum	186	Large	Patch	-
427	*Eucalyptus* sp.	Stag	80	Large	Patch	-
429	*Eucalyptus microcarpa*	Grey Box	85	Large	Patch	-
430	*Eucalyptus microcarpa*	Grey Box	74	Large	Patch	-
431	*Eucalyptus microcarpa*	Grey Box	76	Large	Patch	-
432	*Eucalyptus microcarpa*	Grey Box	78	Large	Patch	-
433	*Eucalyptus microcarpa*	Grey Box	80	Large	Patch	-
434	*Eucalyptus microcarpa*	Grey Box	79	Large	Patch	-
435	*Eucalyptus microcarpa*	Grey Box	111	Large	Patch	-
436	*Eucalyptus microcarpa*	Grey Box	78	Large	Patch	-
437	*Eucalyptus microcarpa*	Grey Box	143	Large	Scattered	-
438	*Eucalyptus microcarpa*	Grey Box	102	Large	Patch	-
439	*Eucalyptus melliodora*	Yellow Box	124	Large	Patch	-
440	*Eucalyptus melliodora*	Yellow Box	109	Large	Patch	-
441	*Eucalyptus microcarpa*	Grey Box	119	Large	Patch	-
442	*Eucalyptus melliodora*	Yellow Box	109	Large	Patch	-
443	*Eucalyptus leucoxylon*	Yellow Gum	242	Large	Scattered	-

Tree #	*Species name*	Common name	DBH (cm)	Size Class	Scattered/Patch	Comment
444	*Eucalyptus leucoxylon*	Yellow Gum	84	Large	Patch	-
445	*Eucalyptus leucoxylon*	Yellow Gum	70	Large	Patch	-
446	*Eucalyptus leucoxylon*	Yellow Gum	98	Large	Patch	-
447	*Eucalyptus microcarpa*	Grey Box	80	Large	Patch	-
448	*Eucalyptus microcarpa*	Grey Box	114	Large	Patch	-
449	*Eucalyptus microcarpa*	Grey Box	93	Large	Patch	-
450	*Eucalyptus microcarpa*	Grey Box	132	Large	Patch	-
451	*Eucalyptus leucoxylon*	Yellow Gum	89	Large	Patch	-
452	*Eucalyptus leucoxylon*	Yellow Gum	104	Large	Patch	-
453	*Eucalyptus microcarpa*	Grey Box	113	Large	Patch	-
454	*Eucalyptus microcarpa*	Grey Box	75	Large	Patch	-
455	*Eucalyptus microcarpa*	Grey Box	134	Large	Patch	-
456	*Eucalyptus* sp.	Stag	75	Large	Scattered	-
457	*Eucalyptus* sp.	Stag	131	Large	Scattered	-
458	*Eucalyptus microcarpa*	Grey Box	94	Large	Scattered	-
459	*Eucalyptus microcarpa*	Grey Box	102	Large	Scattered	-
460	*Eucalyptus microcarpa*	Grey Box	85	Large	Scattered	-
461	*Eucalyptus microcarpa*	Grey Box	112	Large	Scattered	-
462	*Eucalyptus microcarpa*	Grey Box	85	Large	Patch	-
463	*Eucalyptus microcarpa*	Grey Box	72	Large	Scattered	-
464	*Eucalyptus microcarpa*	Grey Box	83	Large	Scattered	-
465	*Eucalyptus microcarpa*	Grey Box	835	Large	Patch	-
466	*Eucalyptus leucoxylon*	Yellow Gum	84	Large	Patch	-
467	*Eucalyptus leucoxylon*	Yellow Gum	147	Large	Scattered	-
468	*Eucalyptus* sp.	Stag	149	Large	Scattered	-
469	*Eucalyptus microcarpa*	Grey Box	87	Large	Patch	-
470	*Eucalyptus microcarpa*	Grey Box	111	Large	Patch	-
471	*Eucalyptus albens*	White Box	117	Large	Patch	-
472	*Eucalyptus microcarpa*	Grey Box	128	Large	Patch	-
473	*Eucalyptus* sp.	Stag	86	Large	Scattered	-
474	*Eucalyptus melliodora*	Yellow Box	105	Large	Scattered	-
475	*Eucalyptus microcarpa*	Grey Box	67	Small	Scattered	-
476	*Eucalyptus microcarpa*	Grey Box	74	Large	Scattered	-
477	*Eucalyptus* sp.	Stag	57	Small	Scattered	-
478	*Eucalyptus microcarpa*	Grey Box	73	Large	Patch	-
479	*Eucalyptus microcarpa*	Grey Box	134	Large	Patch	-
480	*Eucalyptus microcarpa*	Grey Box	98	Large	Patch	-

Tree #	*Species name*	Common name	DBH (cm)	Size Class	Scattered/Patch	Comment
481	*Eucalyptus microcarpa*	Grey Box	93	Large	Scattered	-
482	*Eucalyptus melliodora*	Yellow Box	93	Large	Patch	-
483	*Eucalyptus melliodora*	Yellow Box	82	Large	Patch	-
484	*Eucalyptus leucoxylon*	Yellow Gum	98	Large	Patch	-
485	*Eucalyptus melliodora*	Yellow Box	70	Large	Patch	-
486	*Eucalyptus melliodora*	Yellow Box	81	Large	Patch	Hollows
487	*Eucalyptus melliodora*	Yellow Box	72	Large	Patch	-
488	*Eucalyptus melliodora*	Yellow Box	120	Large	Patch	-
489	*Eucalyptus melliodora*	Yellow Box	105	Large	Patch	Hollows
490	*Eucalyptus melliodora*	Yellow Box	107	Large	Scattered	Hollows
491	*Eucalyptus melliodora*	Yellow Box	134	Large	Patch	Hollows
492	*Eucalyptus* sp.	Stag	77	Large	Scattered	Hollows
493	*Eucalyptus melliodora*	Yellow Box	124	Large	Patch	-
494	*Eucalyptus leucoxylon*	Yellow Gum	75	Large	Patch	-
495	*Eucalyptus leucoxylon*	Yellow Gum	100	Large	Scattered	-
496	*Eucalyptus* sp.	Stag	76	Large	Patch	Hollows
497	*Eucalyptus leucoxylon*	Yellow Gum	92	Large	Patch	-
498	*Eucalyptus leucoxylon*	Yellow Gum	87	Large	Patch	-
499	*Eucalyptus leucoxylon*	Yellow Gum	88	Large	Patch	-
500	*Eucalyptus microcarpa*	Grey Box	82	Large	Patch	-
501	*Eucalyptus microcarpa*	Grey Box	77	Large	Patch	-
502	*Eucalyptus microcarpa*	Grey Box	144	Large	Scattered	-
503	*Eucalyptus microcarpa*	Grey Box	83	Large	Scattered	-
504	*Eucalyptus microcarpa*	Grey Box	76	Large	Patch	-
505	*Eucalyptus microcarpa*	Grey Box	72	Large	Patch	Hollows
506	*Eucalyptus microcarpa*	Grey Box	71	Large	Patch	-
507	*Eucalyptus microcarpa*	Grey Box	79	Large	Patch	-
508	*Eucalyptus microcarpa*	Grey Box	75	Large	Patch	-
509	*Eucalyptus microcarpa*	Grey Box	152	Large	Patch	-
510	*Eucalyptus microcarpa*	Grey Box	81	Large	Patch	-
511	*Eucalyptus leucoxylon*	Yellow Gum	78	Large	Patch	-
512	*Eucalyptus* sp.	Stag	72	Large	Patch	-
513	*Eucalyptus microcarpa*	Grey Box	122	Large	Patch	-
514	*Eucalyptus microcarpa*	Grey Box	80	Large	Patch	-
515	*Eucalyptus microcarpa*	Grey Box	76	Large	Patch	-
516	*Eucalyptus microcarpa*	Grey Box	84	Large	Patch	-
517	*Eucalyptus microcarpa*	Grey Box	79	Large	Patch	-

Tree #	*Species name*	Common name	DBH (cm)	Size Class	Scattered/Patch	Comment
518	*Eucalyptus melliodora*	Yellow Box	33	Small	Scattered	-
519	*Eucalyptus* sp.	Stag	84	Large	Scattered	-
520	*Eucalyptus microcarpa*	Grey Box	126	Large	Patch	-
521	*Eucalyptus microcarpa*	Grey Box	79	Large	Scattered	-
522	*Eucalyptus microcarpa*	Grey Box	136	Large	Scattered	-
523	*Eucalyptus microcarpa*	Grey Box	105	Large	Scattered	-
524	*Eucalyptus melliodora*	Yellow Box	40	Small	Scattered	-
525	*Eucalyptus melliodora*	Yellow Box	35	Small	Scattered	-
526	*Eucalyptus microcarpa*	Grey Box	131	Large	Scattered	-
527	*Eucalyptus microcarpa*	Grey Box	103	Large	Scattered	-
528	*Eucalyptus microcarpa*	Grey Box	109	Large	Scattered	-
529	*Eucalyptus microcarpa*	Grey Box	119	Large	Scattered	-
530	*Eucalyptus microcarpa*	Grey Box	116	Large	Patch	-
531	*Eucalyptus leucoxylon*	Yellow Gum	115	Large	Scattered	-
532	*Eucalyptus leucoxylon*	Yellow Gum	129	Large	Scattered	-
533	*Eucalyptus leucoxylon*	Yellow Gum	143	Large	Scattered	-
534	*Eucalyptus camaldulensis*	River Red-gum	77	Large	Scattered	-
535	*Eucalyptus microcarpa*	Grey Box	83	Large	Patch	-
536	*Eucalyptus microcarpa*	Grey Box	72	Large	Patch	-
537	*Eucalyptus microcarpa*	Grey Box	78	Large	Patch	-
538	*Eucalyptus microcarpa*	Grey Box	86	Large	Patch	-
539	*Eucalyptus microcarpa*	Grey Box	72	Large	Patch	-
540	*Eucalyptus microcarpa*	Grey Box	101	Large	Patch	-
541	*Eucalyptus microcarpa*	Grey Box	88	Large	Patch	-
542	*Eucalyptus microcarpa*	Grey Box	38	Small	Scattered	-
543	*Eucalyptus leucoxylon*	Yellow Gum	88	Large	Patch	-
544	*Eucalyptus microcarpa*	Grey Box	88	Large	Patch	-
545	*Eucalyptus leucoxylon*	Yellow Gum	104	Large	Patch	Hollows
546	*Eucalyptus leucoxylon*	Yellow Gum	70	Large	Patch	-
547	*Eucalyptus leucoxylon*	Yellow Gum	85	Large	Scattered	-
548	*Eucalyptus leucoxylon*	Yellow Gum	124	Large	Scattered	-
549	*Eucalyptus leucoxylon*	Yellow Gum	74	Large	Patch	-
550	*Eucalyptus microcarpa*	Grey Box	87	Large	Scattered	-
551	*Eucalyptus* sp.	Stag	54	Small	Scattered	-
552	*Eucalyptus microcarpa*	Grey Box	85	Large	Scattered	-
553	*Eucalyptus melliodora*	Yellow Box	45	Small	Scattered	-
554	*Eucalyptus microcarpa*	Grey Box	94	Large	Patch	-

Tree #	*Species name*	Common name	DBH (cm)	Size Class	Scattered/Patch	Comment
555	*Eucalyptus microcarpa*	Grey Box	83	Large	Patch	-
556	*Eucalyptus microcarpa*	Grey Box	108	Large	Patch	-
557	*Eucalyptus microcarpa*	Grey Box	89	Large	Scattered	-
558	*Eucalyptus melliodora*	Yellow Box	36	Small	Scattered	-
559	*Eucalyptus microcarpa*	Grey Box	104	Large	Scattered	-
560	*Eucalyptus melliodora*	Yellow Box	36	Small	Scattered	-
561	*Eucalyptus melliodora*	Yellow Box	23	Small	Scattered	-
562	*Eucalyptus melliodora*	Yellow Box	25	Small	Scattered	-
563	*Eucalyptus melliodora*	Yellow Box	89	Large	Scattered	-
564	*Eucalyptus microcarpa*	Grey Box	104	Large	Patch	-
565	*Eucalyptus microcarpa*	Grey Box	75	Large	Patch	-
566	*Eucalyptus microcarpa*	Grey Box	83	Large	Patch	-
567	*Eucalyptus leucoxylon*	Yellow Gum	74	Large	Patch	-
568	*Eucalyptus microcarpa*	Grey Box	80	Large	Patch	-
569	*Eucalyptus leucoxylon*	Yellow Gum	41	Small	Scattered	-
570	*Eucalyptus albens*	White Box	129	Large	Patch	-
571	*Eucalyptus microcarpa*	Grey Box	72	Large	Patch	-
572	*Eucalyptus leucoxylon*	Yellow Gum	85	Large	Patch	-
573	*Eucalyptus microcarpa*	Grey Box	83	Large	Patch	Hollows
574	*Eucalyptus leucoxylon*	Yellow Gum	81	Large	Patch	-
575	*Eucalyptus microcarpa*	Grey Box	93	Large	Patch	-
576	*Eucalyptus leucoxylon*	Yellow Gum	90	Large	Patch	-
577	*Eucalyptus leucoxylon*	Yellow Gum	113	Large	Patch	-
578	*Eucalyptus microcarpa*	Grey Box	82	Large	Patch	Hollows
579	*Eucalyptus microcarpa*	Grey Box	86	Large	Patch	-
580	*Eucalyptus microcarpa*	Grey Box	76	Large	Patch	-
581	*Eucalyptus microcarpa*	Grey Box	90	Large	Patch	-
582	*Eucalyptus microcarpa*	Grey Box	100	Large	Patch	-
583	*Eucalyptus microcarpa*	Grey Box	98	Large	Patch	-
584	*Eucalyptus leucoxylon*	Yellow Gum	83	Large	Patch	-
585	*Eucalyptus leucoxylon*	Yellow Gum	83	Large	Patch	-
586	*Eucalyptus leucoxylon*	Yellow Gum	89	Large	Patch	-
587	*Eucalyptus leucoxylon*	Yellow Gum	86	Large	Patch	Hollows
588	*Eucalyptus microcarpa*	Grey Box	118	Large	Patch	Hollows
589	*Eucalyptus leucoxylon*	Yellow Gum	88	Large	Patch	-
590	*Eucalyptus leucoxylon*	Yellow Gum	85	Large	Patch	-
591	*Eucalyptus leucoxylon*	Yellow Gum	85	Large	Patch	-

Tree #	*Species name*	Common name	DBH (cm)	Size Class	Scattered/Patch	Comment
592	*Eucalyptus leucoxylon*	Yellow Gum	80	Large	Patch	-
593	*Eucalyptus microcarpa*	Grey Box	86	Large	Patch	-
594	*Eucalyptus melliodora*	Yellow Box	81	Large	Patch	-
595	*Eucalyptus leucoxylon*	Yellow Gum	73	Large	Patch	-
596	*Eucalyptus microcarpa*	Grey Box	99	Large	Patch	Hollows
597	*Eucalyptus microcarpa*	Grey Box	86	Large	Patch	Hollows
598	*Eucalyptus microcarpa*	Grey Box	71	Large	Patch	-
599	*Eucalyptus leucoxylon*	Yellow Gum	87	Large	Patch	-
600	*Eucalyptus leucoxylon*	Yellow Gum	73	Large	Patch	-
601	*Eucalyptus microcarpa*	Grey Box	90	Large	Patch	-
602	*Eucalyptus* sp.	Stag	86	Large	Patch	Hollows
603	*Eucalyptus microcarpa*	Grey Box	88	Large	Patch	-
604	*Eucalyptus microcarpa*	Grey Box	71	Large	Patch	-
605	*Eucalyptus microcarpa*	Grey Box	105	Large	Patch	-
606	*Eucalyptus microcarpa*	Grey Box	73	Large	Patch	-
607	*Eucalyptus microcarpa*	Grey Box	98	Large	Patch	-
608	*Eucalyptus microcarpa*	Grey Box	93	Large	Patch	-
609	*Eucalyptus microcarpa*	Grey Box	84	Large	Patch	-
610	*Eucalyptus leucoxylon*	Yellow Gum	70	Large	Patch	-
611	*Eucalyptus leucoxylon*	Yellow Gum	81	Large	Patch	-
612	*Eucalyptus* sp.	Stag	83	Large	Patch	-
613	*Eucalyptus* sp.	Stag	163	Large	Scattered	-
614	*Eucalyptus microcarpa*	Grey Box	104	Large	Patch	-
615	*Eucalyptus melliodora*	Yellow Box	80	Large	Patch	-
616	*Eucalyptus* sp.	Stag	139	Large	Scattered	Hollows
617	*Eucalyptus* sp.	Stag	106	Large	Scattered	Hollows
618	*Eucalyptus melliodora*	Yellow Box	74	Large	Patch	-
619	*Eucalyptus melliodora*	Yellow Box	97	Large	Patch	-
620	*Eucalyptus leucoxylon*	Yellow Gum	85	Large	Patch	-
621	*Eucalyptus leucoxylon*	Yellow Gum	111	Large	Scattered	-
622	*Eucalyptus microcarpa*	Grey Box	89	Large	Patch	-
623	*Eucalyptus microcarpa*	Grey Box	73	Large	Patch	Hollows
624	*Eucalyptus microcarpa*	Grey Box	91	Large	Patch	-
625	*Eucalyptus* sp.	Stag	76	Large	Scattered	-
626	*Eucalyptus melliodora*	Yellow Box	97	Large	Patch	-
627	*Eucalyptus melliodora*	Yellow Box	84	Large	Patch	-
628	*Eucalyptus melliodora*	Yellow Box	91	Large	Patch	-

Tree #	*Species name*	Common name	DBH (cm)	Size Class	Scattered/Patch	Comment
629	*Eucalyptus melliodora*	Yellow Box	116	Large	Patch	-
630	*Eucalyptus melliodora*	Yellow Box	170	Large	Patch	-
631	*Eucalyptus melliodora*	Yellow Box	84	Large	Patch	-
632	*Eucalyptus leucoxylon*	Yellow Gum	127	Large	Patch	-
633	*Eucalyptus microcarpa*	Grey Box	73	Large	Patch	-
634	*Eucalyptus microcarpa*	Grey Box	72	Large	Patch	-
635	*Eucalyptus microcarpa*	Grey Box	81	Large	Patch	-
636	*Eucalyptus leucoxylon*	Yellow Gum	122	Large	Patch	-
637	*Eucalyptus* sp.	Stag	74	Large	Scattered	-
638	*Eucalyptus* sp.	Stag	69	Small	Scattered	-
639	*Eucalyptus melliodora*	Yellow Box	78	Large	Patch	-
640	*Eucalyptus* sp.	Stag	69	Small	Scattered	-
641	*Eucalyptus microcarpa*	Grey Box	96	Large	Patch	-
642	*Eucalyptus microcarpa*	Grey Box	77	Large	Patch	-
643	*Eucalyptus microcarpa*	Grey Box	105	Large	Patch	-
644	*Eucalyptus microcarpa*	Grey Box	87	Large	Patch	-
645	*Eucalyptus* sp.	Stag	128	Large	Patch	-
646	*Eucalyptus microcarpa*	Grey Box	71	Large	Patch	-
647	*Eucalyptus microcarpa*	Grey Box	87	Large	Patch	-
648	*Eucalyptus melliodora*	Yellow Box	69	Small	Scattered	-
649	*Eucalyptus microcarpa*	Grey Box	81	Large	Patch	-
650	*Eucalyptus microcarpa*	Grey Box	94	Large	Patch	-
651	*Eucalyptus leucoxylon*	Yellow Gum	116	Large	Patch	-
652	*Eucalyptus microcarpa*	Grey Box	81	Large	Patch	-
653	*Eucalyptus melliodora*	Yellow Box	83	Large	Patch	-
654	*Eucalyptus microcarpa*	Grey Box	94	Large	Scattered	-
655	*Eucalyptus* sp.	Stag	87	Large	Patch	-
656	*Eucalyptus* sp.	Stag	73	Large	Patch	-
657	*Eucalyptus melliodora*	Yellow Box	71	Large	Patch	-
658	*Eucalyptus leucoxylon*	Yellow Gum	130	Large	Patch	Hollows
659	*Eucalyptus melliodora*	Yellow Box	77	Large	Patch	-
660	*Eucalyptus* sp.	Stag	85	Large	Patch	-
661	*Eucalyptus microcarpa*	Grey Box	126	Large	Patch	-
662	*Eucalyptus microcarpa*	Grey Box	97	Large	Patch	-
663	*Eucalyptus microcarpa*	Grey Box	89	Large	Patch	-
664	*Eucalyptus microcarpa*	Grey Box	83	Large	Patch	-
665	*Eucalyptus microcarpa*	Grey Box	74	Large	Patch	-

Tree #	*Species name*	Common name	DBH (cm)	Size Class	Scattered/Patch	Comment
666	*Eucalyptus leucoxylon*	Yellow Gum	99	Large	Patch	-
667	*Eucalyptus leucoxylon*	Yellow Gum	79	Large	Patch	-
668	*Eucalyptus microcarpa*	Grey Box	104	Large	Patch	-
669	*Eucalyptus leucoxylon*	Yellow Gum	131	Large	Patch	Hollows
670	*Eucalyptus microcarpa*	Grey Box	82	Large	Patch	-
671	*Eucalyptus microcarpa*	Grey Box	93	Large	Patch	-
672	*Eucalyptus microcarpa*	Grey Box	71	Large	Patch	-
673	*Eucalyptus leucoxylon*	Yellow Gum	107	Large	Patch	Hollows
674	*Eucalyptus microcarpa*	Grey Box	70	Large	Patch	Hollows
675	*Eucalyptus melliodora*	Yellow Box	102	Large	Patch	Hollows
676	*Eucalyptus microcarpa*	Grey Box	79	Large	Patch	-
677	*Eucalyptus leucoxylon*	Yellow Gum	95	Large	Patch	-
678	*Eucalyptus microcarpa*	Grey Box	94	Large	Patch	-
679	*Eucalyptus leucoxylon*	Yellow Gum	85	Large	Patch	-
680	*Eucalyptus leucoxylon*	Yellow Gum	92	Large	Patch	-
681	*Eucalyptus albens*	White Box	26	Small	Scattered	-

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 (*Environment Protection and Biodiversity Conservation Act 1999*):		FFG (*Flora and Fauna Guarantee Act 1988*):	
EX	Extinct	cr	Critically endangered
CR	Critically endangered	en	Endangered
EN	Endangered	vu	Vulnerable
VU	Vulnerable		
#	Listed on the Protected Matters Search Tool		

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

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

Scientific name	Common name	Total # of documented records	Last documented record	EPBC	FFG	Likelihood of occurrence in study area	Rationale for occurrence likelihood
NATIONAL SIGNIFICANCE							
Amphibromus fluitans	River Swamp Wallaby-grass	-	#	VU	-	5	Potential habitat, but very unlikely due to agricultural disturbance and no previous records within 10km of the study area
Caladenia audasii	McIvor Spider-orchid	-	#	EN	cr	4	Potential habitat, but very unlikely due to agricultural disturbance and no previous records within 10km of the study area
Caladenia ornata	Ornate Pink Fingers	-	#	VU	en	5	Outside of known distribution
Caladenia tensa	Greencomb Spider-orchid	-	#	EN	-	5	Outside of known distribution
Caladenia versicolor	Candy Spider-orchid	-	#	VU	en	5	Outside of known distribution
Dodonaea procumbens	Trailing Hop-bush	-	#	VU	-	4	Potential habitat, but very unlikely due to agricultural disturbance and no previous records within 10km of the study area
Glycine latrobeana	Clover Glycine, Purple Clover	-	#	VU	vu	4	Potential habitat, but very unlikely due to agricultural disturbance and no previous records within 10km of the study area
Lachnagrostis adamsonii	Adamson's Blown-grass, Adamson's Blowngrass	-	#	EN	en	5	Outside of known distribution

Scientific name	Common name	Total # of documented records	Last documented record	EPBC	FFG	Likelihood of occurrence in study area	Rationale for occurrence likelihood
Lepidium aschersonii	Spiny Pepper-cress	-	#	VU	en	5	Outside of known distribution
Lepidium monoplocoides	Winged Pepper-cress	-	#	EN	en	5	Outside of known distribution
Pimelea spinescens subsp. *spinescens*	Spiny Rice-flower	4	2014	CR	cr	4	Potential habitat, several records within 5km of the study area; however, not detected during targeted surveys
Prasophyllum validum	Sturdy Leek-orchid, Mount Remarkable Leek-orchid	-	#	VU	-	5	Outside of known distribution
Pterostylis chlorogramma	Green-striped Greenhood	-	#	VU	en	5	No suitable habitat and no previous records within 10km of the study area
Sclerolaena napiformis	Turnip Copperburr	-	#	EN	cr	5	Outside of known distribution
Senecio macrocarpus	Large-fruit Fireweed, Large-fruit Groundsel	-	#	VU	cr	5	Outside of known distribution
Thelymitra mackibbinii	Brilliant Sun-orchid	-	#	VU	cr	4	Potential habitat, but very unlikely due to agricultural disturbance and no previous records within 10km of the study area
Thelymitra matthewsii	Spiral Sun-orchid	-	#	VU	en	5	Outside of known distribution

Scientific name	Common name	Total # of documented records	Last documented record	EPBC	FFG	Likelihood of occurrence in study area	Rationale for occurrence likelihood
Westringia crassifolia	Whipstick Westringia	-	#	EN	en	4	Outside of highly localised known distribution. Very unlikely due to agricultural disturbance and no previous records within 10km of the study area.
STATE SIGNIFICANCE							
Acacia ausfeldii	Ausfeld's Wattle	50	2021	-	en	1	Identified within the study area during targeted surveys
Allocasuarina luehmannii	Buloke	4	1997	-	vu	4	Potential habitat within the study area. Lack of recent records. Not detected during site assessment and targeted surveys
Austrostipa breviglumis	Cane Spear-grass	4	2018	-	en	3	Suitable habitat, several records within the vicinity of the study area, predominantly within the Wilsons Hill Bushland Reserve; however, species not detected during targeted surveys.
Austrostipa hemipogon	Half-bearded Spear-grass	2	2011	-	vu	4	Potential habitat within the study area; however, species not detected during targeted surveys.
Boronia anemonifolia subsp. *aurifodina*	Goldfield Boronia	1	1921	-	en	5	No suitable habitat. Known from mallee communities

Scientific name	Common name	Total # of documented records	Last documented record	EPBC	FFG	Likelihood of occurrence in study area	Rationale for occurrence likelihood
Calotis anthemoides	Cut-leaf Burr-daisy	1	1996	-	cr	4	Limited potential habitat; very unlikely due to agricultural disturbance and no recent records (<10yrs) within 10km of the study area
Cassinia diminuta	Dwarf Cassinia	6	1998	-	en	4	Limited potential habitat; very unlikely due to agricultural disturbance and no recent records (<10yrs) within 10km of the study area
Cassinia ozothamnoides	Cottony Cassinia	3	2000	-	en	4	Limited potential habitat; very unlikely due to agricultural disturbance and no recent records (<10yrs) within 10km of the study area
Dianella longifolia var. *grandis* (formerly *Dianella* sp. aff. *longifolia* [Benambra])	Flax-lily	7	2012	-	cr	4	Suitable habitat within the study area; however not detected despite targeted surveys
Dianella tarda	Late-flower Flax-lily	1	2014	-	cr	1	Identified within the study area during targeted surveys
Diuris behrii	Golden Cowslips	1	2014	-	en	4	Limited potential habitat; very unlikely due to agricultural disturbance.
Eryngium paludosum	Long Eryngium	1	1894	-	en	5	Limited potential habitat; very unlikely due to agricultural disturbance and no recent records (<10yrs) within 10km of the study area

Scientific name	Common name	Total # of documented records	Last documented record	EPBC	FFG	Likelihood of occurrence in study area	Rationale for occurrence likelihood
Eucalyptus leucoxylon subsp. *connata*	Melbourne Yellow-gum	1	2001	-	en	5	Outside of natural range
Goodia medicaginea	Western Golden-tip	1	1980	-	en	4	Limited potential habitat; very unlikely due to agricultural disturbance and no recent records (<10yrs) within 10km of the study area
Olearia tubuliflora	Rayless Daisy-bush	2	2013	-	en	4	Limited potential habitat; unlikely due to agricultural disturbance and lack of preferred habitat. Not detected during site assessment and targeted surveys
Prostanthera nivea var. *nivea*	Snowy Mint-bush	1	2006	-	vu	4	No suitable habitat within the study area.
Pterostylis maxima	Large Rustyhood	3	2013	-	cr	4	Limited potential habitat; very unlikely due to agricultural disturbance.
Pterostylis setifera	Bristly Greenhood	2	1981	-	en	4	Limited potential habitat; very unlikely due to agricultural disturbance.
Rytidosperma monticola	Small-flower Wallaby-grass	1	2011	-	en	4	Potential habitat; unlikely due to agricultural disturbance and lack of records.
Tripogonella loliiformis	Rye Beetle-grass	2	2002	-	en	4	Limited potential habitat; very unlikely due to agricultural disturbance and no recent

Scientific name	Common name	Total # of documented records	Last documented record	EPBC	FFG	Likelihood of occurrence in study area	Rationale for occurrence likelihood
							records (<10yrs) within 10km of the study area
Vittadinia cuneata var. *morrisii*	Fuzzy New Holland Daisy	1	2011	-	en	4	Potential habitat; low likelihood due to agricultural disturbance. Not detected during site assessment and targeted surveys

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

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 (*Environment Protection and Biodiversity Conservation Act 1999*):		FFG (*Flora and Fauna Guarantee Act 1988*):	
EX	Extinct	cr	Critically endangered
CR	Critically endangered	en	Endangered
EN	Endangered	vu	Vulnerable
VU	Vulnerable	cd	Conservation dependent
CD	Conservation dependent		
#	Listed on the Protected Matters Search Tool		

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	• Known resident in the study area based on site observations, database records, or expert advice; and/or, • Recent records (i.e. within five years) of the species in the local area (DELWP 2018); and/or, • The study area contains the species' preferred habitat.
2	Moderate Likelihood	• The species is likely to visit the study area regularly (i.e. at least seasonally); and/or, • Previous records of the species in the local area (DEECA 2023d); and/or, • The study area contains some characteristics of the species' preferred habitat.

3	Low Likelihood	• The species is likely to visit the study area occasionally or opportunistically whilst en route to more suitable sites; and/or, • There are only limited or historical records of the species in the local area (i.e. more than 20 years old); and/or, • The study area contains few or no characteristics of the species' preferred habitat.
4	Unlikely	• No previous records of the species in the local area; and/or, • The species may fly over the study area when moving between areas of more suitable habitat; and/or, • Out of the species' range; and/or, • No suitable habitat present.

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

Common Name	Scientific Name	# Records (VBA)	Last Documented Record (VBA)	EPBC Act	FFG ACT	Likelihood of occurrence in the study area	Rationale for occurrence likelihood
NATIONAL SIGNIFICANCE							
Australasian Bittern	*Botaurus poiciloptilus*	-	#	EN	cr	4	No suitable habitat
Australian Painted Snipe	*Rostratula australis*	-	#	EN	cr	4	No suitable habitat
Blue-winged Parrot	*Neophema chrysostoma*	2	2000	VU	-	3	Suitable habitat for the species in the study area. however not detected during bird surveys
Brown Treecreeper	*Climacteris picumnus*	34	2018	-	vu	3	Suitable habitat for the species in the study area. however not detected during bird surveys
Curlew Sandpiper	*Calidris ferruginea*	-	#	CR	cr	4	No suitable habitat
Diamond Firetail	*Stagonopleura guttata*	15	2001	-	vu	3	Suitable habitat for the species in the study area. however not detected during bird surveys

Common Name	Scientific Name	# Records (VBA)	Last Documented Record (VBA)	EPBC Act	FFG ACT	Likelihood of occurrence in the study area	Rationale for occurrence likelihood
Eastern Curlew	*Numenius madagascariensis*	-	#	CR	cr	4	No suitable habitat
Eltham Copper Butterfly	*Paralucia pyrodiscus lucida*	-	#	EN	en	4	No suitable habitat
Flathead Galaxias	*Galaxias rostratus*	-	#	CR	vu	4	No suitable habitat
Gang-gang Cockatoo	*Callocephalon fimbriatum*	-	#	EN	-	3	Potential habitat. May visit the study area occasionally or on an opportunistic basis
Golden Sun Moth	*Synemon plana*	-	#	VU	vu	4	Suitable habitat for the species in the study area; however, not detected despite targeted surveys
Grey Falcon	*Falco hypoleucos*	-	#	VU	vu	3	Unlikely to occupy habitats within the study area
Grey-headed Flying-fox	*Pteropus poliocephalus*	2	1981	VU	vu	4	Likely to visit the study area occasionally or on an opportunistic basis (the main Grey-headed Flying-fox camp is at Rosalind Park, Bendigo
Growling Grass Frog	*Litoria raniformis*	3	1788	VU	vu	3	Potentially suitable habitat for the species within the study area; however, not detected despite targeted surveys
Hooded Robin	*Melanodryas cucullata*	9	2002	EN	vu	3	Suitable habitat for the species in the study area. however not detected during bird surveys

Common Name	Scientific Name	# Records (VBA)	Last Documented Record (VBA)	EPBC Act	FFG ACT	Likelihood of occurrence in the study area	Rationale for occurrence likelihood
Murray Cod	*Maccullochella peelii*	-	#	VU	en	4	No suitable habitat
Painted Honeyeater	*Grantiella picta*	-	#	VU	vu	3	May visit the study area occasionally or on an opportunistic basis
Pink-tailed Worm-Lizard	*Aprasia parapulchella*	2	1991	VU	en	4	Potential habitat, but very unlikely due to agricultural disturbance. Records also not recent
Plains-wanderer	*Pedionomus torquatus*	-	#	CR	cr	4	Very unlikely due to agricultural disturbance and lack of suitable habitats
Regent Honeyeater	*Anthochaera phrygia*	5	1988	CR	cr	3	May visit the study area as a vagrant visitor. The main population is located in north east Victoria at Chiltern-Mt Pilot National Park
Sloane's Froglet	*Crinia sloanei*	-	#	EN	en	4	No recent or nearby records
Southern Pygmy Perch (Murray-Darling Basin lineage)	*Nannoperca australis*	-	#	VU	vu	4	No suitable habitat
Southern Whiteface	*Aphelocephala leucopsis*	8	2000	VU	-	3	Suitable habitat for the species in the study area. however not detected during bird surveys
Spot-tailed Quoll	*Dasyurus maculatus maculatus*	1	1972	EN	en	4	Very unlikely due to agricultural disturbance and lack of suitable habitat. No recent or nearby records

Common Name	Scientific Name	# Records (VBA)	Last Documented Record (VBA)	EPBC Act	FFG ACT	Likelihood of occurrence in the study area	Rationale for occurrence likelihood
Striped Legless Lizard	*Delma impar*	-	#	VU	en	4	Potential habitat, but very unlikely due to agricultural disturbance. Records also not recent
Superb Parrot	*Polytelis swainsonii*	-	#	VU	en	4	Unlikely. Outside of the species range and no suitable habitat
Swift Parrot	*Lathamus discolor*	57	2018	CR	cr	2-3	Suitable habitat for the species in the study area and recent nearby records, but more likely to frequent larger forested areas north and east of the study area. Not detected during targeted surveys.
Trout Cod	*Maccullochella macquariensis*	-	#	EN	en	4	No suitable habitat
White-throated Needletail	*Hirundapus caudacutus*	5	1991	VU	vu	3	May visit the study area occasionally or on an opportunistic basis
STATE SIGNIFICANCE							
Barking Owl	*Ninox connivens*	2	1990	-	cr	3	Suitable habitat for the species in the study area; however no recent records and not detected during bird surveys
Black Falcon	*Falco subniger*	4	2018	-	cr	3	Suitable habitat for the species in the study area. Recent records nearby; however not detected during bird surveys

Common Name	Scientific Name	# Records (VBA)	Last Documented Record (VBA)	EPBC Act	FFG ACT	Likelihood of occurrence in the study area	Rationale for occurrence likelihood
Brown Toadlet	*Pseudophryne bibronii*	2	2007	-	en	2-3	Recently recorded (unpublished) east of the study area in Bullock Creek, however the study area contains low quality habitat for the species.
Brush-tailed Phascogale	*Phascogale tapoatafa*	18	2008	-	vu	1	Identified within the study area
Bush Stone-curlew	*Burhinus grallarius*	9	2018	-	cr	3	Potential habitat, but unlikely due to agricultural disturbance.
Chestnut-rumped Heathwren	*Calamanthus pyrrhopygius*	1	1968	-	vu	4	Potential habitat however no recent records
Common Dunnart	*Sminthopsis murina murina*	1	1991	-	vu	4	Potential habitat, however no recent records
Crested Bellbird	*Oreoica gutturalis*	22	2018	-	en	3	Suitable habitat for the species in the study area. Recent records nearby
Diamond Dove	*Geopelia cuneata*	1	1984	-	vu	4	May visit the study area occasionally or on an opportunistic basis
Fat-tailed Dunnart	*Sminthopsis crassicaudata*	3	2004	-	vu	3	Marginal habitat, however no recent records
Grey Goshawk	*Accipiter novaehollandiae*	1	1984	-	en	4	May visit the study area occasionally or on an opportunistic basis
Grey-crowned Babbler	*Pomatostomus temporalis*	2	1933	-	vu	4	May visit the study area occasionally or on an opportunistic basis

Common Name	Scientific Name	# Records (VBA)	Last Documented Record (VBA)	EPBC Act	FFG ACT	Likelihood of occurrence in the study area	Rationale for occurrence likelihood
Lace Monitor	*Varanus varius*	4	2015	-	en	3	Suitable habitat for the species in the study area. Small number may use the study area on occasions.
Little Eagle	*Hieraaetus morphnoides*	6	2006	-	vu	3	Suitable habitat for the species in the study area. Recent records nearby
Platypus	*Ornithorhynchus anatinus*	1	2021	-	vu	4	No suitable habitat
Powerful Owl	*Ninox strenua*	1	2015	-	vu	3	Suitable habitat for the species in the study area. Recent records nearby; however not detected during nocturnal bird surveys
Southern Purple-spotted Gudgeon	*Mogurnda adspersa*	1	2023	-	cr	4	No suitable habitat
Square-tailed Kite	*Lophoictinia isura*	1	2018	-	vu	3	Suitable habitat for the species in the study area. Recent records nearby; however not detected during bird surveys
White-bellied Sea-Eagle	*Haliaeetus leucogaster*	1	1992	-	en	4	May visit the study area occasionally or on an opportunistic basis
Wood Sandpiper	*Tringa glareola*	1	1987	-	en	4	May visit the study area occasionally or on an opportunistic basis

Appendix 2.2 – Bird Survey Results

Legend:

- No species listing

Table A2.2. Birds identified within the study area during surveys

Species Name	Common Name	Notes
INDIGENOUS SPECIES		
Gymnorhina tibicen	Australian Magpie	-
Chenonetta jubata	Australian Wood Duck	-
Coracina novaehollandiae	Black-faced Cuckoo Shrike	-
Entomyzon cyanotis	Blue-faced Honeyeater	-
Ocyphaps lophotes	Crested Pigeon	-
Platycercus elegans	Crimson Rosella	-
Platycercus eximius	Eastern Rosella	-
Eolophus roseicapilla	Galah	-
Colluricincla harmonica	Grey Shrike-thrush	-
Cracticus torquatus	Grey Butcherbird	-
Dacelo novaeguineae	Kookaburra	-
Cacatua sanguinea	Little Corella	-
Corvus mellori	Little Raven	-
Cacatua tenuirostris	Long-billed Corella	-
Trichoglossus sp.	Lorikeet sp.	-
Grallina cyanoleuca	Magpie Lark	-
Manorina melanocephala	Noisy Miner	-
Anas superciliosa	Pacific Black Duck	-
Psephotus haematonotus	Red-rumped Parrot	-
Anthochaera carunculata	Red Wattlebird	-
Pardalotus striatus	Striated Pardalote	-
Cacatua galerita	Sulphur-crested Cockatoo	-
Malurus cyaneus	Superb Fairywren	-
Aquila audax	Wedge-tail Eagle	-
Hirundo neoxena	Welcome Swallow	-
Egretta novaehollandiae	White-faced Heron	-
Lichenostomus penicillatus	White-plumed Honeyeater	-
Rhipidura leucophrys	Willy Wagtail	-
NON-INDIGENOUS OR INTRODUCED SPECIES		

Species Name	Common Name	Notes
Acridotheres tristis	Indian Myna	-
Sturnus vulgaris	Common Starling	-
Turdus merula	Common Blackbird	-

Appendix 2.3 – Growling Grass Frog habitat assessment

Table A2.3. Growling Grass Frog habitat assessment

Dam/Pond Number (Figure 5)	Aquatic Vegetation Type				Habitat Features			
	Emergent (%)	Floating (%)	Open Water (%)	Fringing (%)	Water Depth	Hydrology	Water Flow	Introduced Species
1	50	50	90	10	High	Permanent	Still	Not observed
2	70	30	80	20	High	Permanent	Still	Not observed
3	95	5	100	0	High	Permanent	Still	Not observed
4	1	99	100	0	High	Permanent	Still	Not observed
5	90	10	85	15	High	Permanent	Still	Not observed
6	100	0	85	15	High	Permanent	Still	Not observed
7	80	20	95	5	High	Permanent	Still	Not observed
8	60	40	99	1	High	Permanent	Still	Not observed
8a	90	10	75	25	High	Permanent	Still	Not observed
9	60 (dead)	40	60	10	High	Permanent	Still	Not observed
10	60	40	90	10	High	Permanent	Still	Not observed
11	10	90	95	5	High	Permanent	Still	Not observed
12	10	90	9	1	High	Permanent	Still	Not observed
13	10	90	100	0	High	Permanent	Still	Not observed
14	0	0	100	5	High	Permanent	Still	Not observed
15	0	0	0	40	High	Permanent	Still	Not observed
16	0	0	100	30	High	Permanent	Still	Not observed
17	0	0	100	10	High	Permanent	Still	Not observed
18	40	0	60	100	High	Permanent	Still	Not observed