

Flora and Fauna Assessment Report

Goorambat East Solar Farm



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Table of Contents

Executive Summary	i
1.0 Introduction	1
1.1 Project Background	1
1.2 Assessment Objectives	1
1.3 Project Area	1
1.4 Relevant State and National Policy and Legislation	1
2.0 Methods	2
2.1 Desktop assessment	2
2.1.1 Literature	2
2.1.2 Database searches	2
2.2 Field survey techniques	2
2.2.1 General Flora Survey	2
2.2.2 Native Vegetation (Habitat Hectare Assessment)	2
2.2.3 General Fauna Survey	3
2.3 Likelihood of occurrence assessment for threatened species	3
2.4 Nomenclature and definitions	4
2.4.1 Flora and fauna	4
2.4.2 Vegetation communities	4
2.4.3 Fauna communities	4
2.4.4 Native vegetation	4
2.5 Limitations	5
3.0 Results	6
3.1 Literature & dataset review	6
3.1.1 EPBC Act Protected Matters Search Tool	6
3.1.2 Victorian Biodiversity Atlas Data	7
3.1.3 NaturePrint	7
3.1.4 Literature relevant to the Project Area	7
3.2 Field assessment	8
3.2.1 Ecological features of the Project Area	8
3.2.2 Threatened species	8
3.2.3 Ecological Vegetation Classes	10
3.2.4 Vegetation Quality	10
4.0 Legislation and policy implications	13
4.1 Commonwealth	13
4.1.1 Environmental Protection and Biodiversity Conservation Act 1999	13
4.1.2 Weeds of National Significance (WoNS)	13
4.2 State	14
4.2.1 Planning and Environment Act 1987	14
4.2.2 Flora and Fauna Guarantee Act 1988	16
4.2.3 Environmental Effects Act 1978	16
4.2.4 Catchment and Land Protection Act 1994	17
4.2.5 <i>Wildlife Act</i> 1975	19
4.3 Other standards and guidelines	19
4.3.1 DELWP Victorian Advisory Lists	19
5.0 Conclusion	20
5.1 Summary	20
5.2 Recommendations	20
6.0 References	21
Appendix A	
Figures	
Appendix B	
Threatened flora species likelihood of occurrence	
Appendix C	
Threatened fauna species likelihood of occurrence	

Appendix D	
Clause 52.17 Permit Application	
Appendix E	
Wildlife Friendly Fence	
Appendix F	
Recommended Revegetation Species	
Appendix G	
Plates	

Figure Index

Figure 1	Site location	A-1
Figure 2	Desktop assessment results	A-1
Figure 3	Ecological values at the site	A-1
Figure 4	Goorambat Solar Farm – Eastern Front showing the impacted native vegetation	A-1

Abbreviations

Acronym / Term	Explanation
Assessment Area	Project Area plus additional survey buffer (radius of 10 km or 1 km).
BCS	Biodiversity Conservation Status
CaLP Act	<i>Catchment and Land Protection Act 1994</i>
DBH	Diameter at Breast Height
DEDJTR	Department of Economic Development, Jobs, Transport and Resources
DELWP	Department of Environment, Land, Water and Planning
DEE	Department of the Environment and Energy
EE Act	<i>Environment Effects Act 1978</i>
EMP	Environmental Management Plan
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
EVC	Ecological Vegetation Class
FFG Act	<i>Flora and Fauna Guarantee Act 1988</i>
FIS	Flora Information System
HHa	Habitat Hectare
HZ	Habitat Zone
MNES	Matters of National Environmental Significance
MW	Megawatt
NVIM	Native Vegetation Information Management
P&E Act	<i>Planning and Environment Act 1987</i>
PMST	Protected Matters Search Tool
SPFF	State Planning Policy Framework
VQA	Vegetation Quality Assessment
VBA	Victorian Biodiversity Atlas
VROTS	Advisory list of threatened species in Victoria (flora and fauna)
WONS	Weeds of national significance

Executive Summary

AECOM Australia (AECOM) was engaged by the Neoen Australia Pty Ltd to undertake a detailed ecological assessment for the proposed Goorambat East Solar Farm ('the Project'), located at Goorambat, Victoria. The project area is located approximately 12 kilometres north of the township of Benalla, Victoria and 500 meters south of the township of Goorambat. The development being considered is a photovoltaic solar energy facility.

The purpose of this assessment was to identify and quantify flora and fauna values in line with Victorian and Commonwealth policy and legislation. A field assessment was undertaken by two ecologists between the 21 and 23 November 2018. A further field assessment was undertaken on 26 July 2019 to assess additional land in the south-east corner of the Project Area.

This report provides the results of the flora and fauna assessment and discusses the relevant legislation and approvals associated with any proposed impacts to flora and fauna values.

The summary of the legislative implications for the project is provided below:

Legislation / Policy	Relevant on-site finding	Permit requirement	Recommendation
Commonwealth			
<i>Environment Protection and Biodiversity Conservation Act 1999</i> (EPBC Act)	No listed flora species, or threatened ecological communities recorded, and none are considered likely to occur. Potential for Swift Parrot, Regent Honeyeater, Painted Honeyeater and/or Grey-headed Flying-fox to occasionally and/or seasonally utilise resources (trees).	The number of trees requiring removal will influence the level of impact on EPBC Act listed bird species.	Avoid loss of hollow bearing habitat trees where practicable. No further recommendations.
State			
<i>Flora and Fauna Guarantee Act 1988</i> (FFG Act)	One listed threatened flora species recorded- Buloke <i>Allocasuarina luehmannii</i> and two protected flora species recorded. Potential habitat for several FFG Act-listed woodland-dependant fauna species observed. One listed ecological community present: Victorian Temperate Woodland Bird Community Potential for an FFG Act threatening process to occur - 'loss of hollow-bearing trees from Victorian native forests and woodlands' - subject to number of hollow bearing trees requiring	Should removal of listed and/or protected flora species be required on crown land, a permit will be required.	Where possible, avoid loss of threatened and protected flora and fauna species and ecological communities where practicable. Unless the land has been designated as critical habitat, or an interim conservation order has been granted for the land, a permit under the FFG Act is not required for private land. A permit would be required if any impacts are proposed on crown land.

Legislation / Policy	Relevant on-site finding	Permit requirement	Recommendation
	removal.		
Guidelines for the removal, destruction or lopping of native vegetation (DELWP 2017) (<i>Planning and Environment Act 1987</i> (P&E Act))	A total of 67 scattered trees (incorporating 66 Large trees) are proposed to be removed. 67 trees represent a vegetation extent of 4.376 hectares.	Permit to remove native vegetation under clause 52.17	Seek planning permit under the P&E Act (Clause 52.17). Subject to the issuing of a planning permit, an offset of 0.796 General Habitat Units (incorporating 66 Large trees) will need to be sought. This offset must be within the Goulburn Broken CMA and/or the Benalla Rural City Council jurisdiction. The offset site must have a minimum strategic biodiversity score of 0.170.
<i>Catchment and Land Protection Act 1994</i> (CaLP Act)	Declared Noxious Weeds present (Controlled).	No permit required.	The proponent must comply with requirements to limit the spread and growth of declared noxious weeds within and outside of the Project Area, via vehicle hygiene procedures listed in an Environmental Management Plan (EMP).
<i>Wildlife Act 1975</i>	Potential for construction-related impacts on fauna species, particularly through the removal of hollow-bearing trees	Habitat clearance may require a permit from DELWP to wilfully disturb or destroy protected wildlife. Management Authorisation from DELWP if salvage of wildlife is required by DELWP.	Liaise with DELWP to determine expectations in relation to permit requirements.
<i>Environment Effects Act 1978</i> (EE Act)	Native vegetation present.	Unlikely to satisfy any of the ecological triggers for referral under the EE Act.	No further recommendations.

1.0 Introduction

1.1 Project Background

AECOM Australia (AECOM) was engaged by the Neoen Australia Pty Ltd (Neoen) to undertake a detailed ecological assessment for the proposed Goorambat East Solar Farm ('the Project'), located in Goorambat, Victoria. The development being considered includes a photovoltaic solar energy facility which will have an installed capacity of up to 250 megawatts (MW) within a project footprint of around 630 hectares. The site area is predominately made up of freehold agricultural land utilised for cropping and grazing activities ('the Project Area').

1.2 Assessment Objectives

The purpose of this assessment was to identify and quantify ecological values in line with Victorian and Commonwealth policy and legislation and to advise Neoen on the next steps for progressing the proposed development. This report aims to:

- Present a review and analysis of existing reports relating to the Project Area;
- Document the flora and fauna values present within the Project Area as identified during the survey, including identifying and mapping the vegetation quality and extent (applying the habitat hectares method) the location and size of any scattered trees, and fauna habitat present. The conservation significance of any flora and fauna present will also be determined;
- Detail potential ecological impacts resulting from the development within the Project Area, in the context of relevant Victorian and Commonwealth policy and legislation and provide recommendations for avoiding or minimising such impacts; and
- Provide Neoen with guidance as to how the development could be undertaken to avoid impact to flora and fauna values.

1.3 Project Area

The Project Area is located approximately 12 kilometres north of the township of Benalla in Victoria and 500 meters south of the Goorambat Township. The Project Area is located on the boundary of the Northern Inland Slopes and Victorian Riverina bioregions, is within the Benalla Local Government Area and the Goulburn Broken Catchment Management Authority area. The Project Area has frontages to a number of sealed and unsealed roads including Goorambat-Thoona Road, Saunders Road, Benalla – Tocumwal Road, Goorambat-Chesney Road, Hooper Road and Spinks Lane. Figure 1 in Appendix A shows the Project location in relation to surrounding geographical features.

1.4 Relevant State and National Policy and Legislation

Throughout the assessment process consideration has been given to the following biodiversity legislation and policies:

- Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act);
- Victorian Flora and Fauna Guarantee Act 1988 (FFG Act);
- Victorian Catchment and Land Protection Act 1994 (CaLP Act);
- Victorian Wildlife Act 1975;
- Victorian Planning and Environment Act 1987 (P&E Act); and
- Guidelines for the removal, destruction or lopping of native vegetation (Department of Environment, Land, Water and Planning (DELWP) 2017a) (the Guidelines) and related policy documents.

An introduction to the above biodiversity legislation and policy and the implications on the project development is provided in **Section 4.0** of this report.

2.0 Methods

2.1 Desktop assessment

2.1.1 Literature

Three ecological reports/strategies that cover sections of the Project Area were reviewed as part of the desktop assessment:

- Benalla Rural City *Environment Strategy 2016 – 2020* (Benalla Rural City Undated);
- Benalla Rural City Council Roadside Vegetation Management Plan (Benalla Rural City 2014); and
- Conservation Plan for the Chesney Landscape Zone (DSE 2007).

2.1.2 Database searches

The following State and Commonwealth-curated biodiversity datasets were reviewed and synthesised:

- EPBC Act Protected Matters Search Tool (PMST) administered by the Australian Government Department of the Environment and Energy (DEE);
- Victorian Biodiversity Atlas 2018 (VBA) administered by DELWP;
- Native Vegetation Information Management (NVIM) tool administered by DELWP;
- NatureKit biodiversity mapping tool administered by DELWP; and
- Aerial photograph and topographic map interpretation.

Review of spatial datasets included a 10 km buffer around the investigation area to capture mobile fauna species, and to account for the possibility of a lack of past survey effort in the investigation area.

2.2 Field survey techniques

The field survey aims to validate the findings from the desktop assessment and identify the conservation significance of any native vegetation or flora or fauna species present on site. The Project Area was surveyed over three days from 21 Nov 2018 to the 23 Nov 2018. This falls within spring which is generally considered to be the optimal period for ecological surveys given many plants are in flower and many animals are more active at this time of year. An additional parcel of land was added to the site after this survey was undertaken and subsequently, an additional ecological field survey was conducted on 26 July 2019.

2.2.1 General Flora Survey

The Random Meander Method (Cropper 1993) was adopted to search for the presence of native flora. Where flora identification was difficult in the field, a sample of the species was taken to aid in later identification. A number of authoritative texts and databases were utilized to identify flora samples. Each of these is documented in the reference section of this report.

2.2.2 Native Vegetation (Habitat Hectare Assessment)

Significant habitats identified during the desktop assessment were targeted during the field assessment. Where present, native vegetation within the Project Area was mapped according to the prescriptions of Victoria's *Guidelines for the removal, destruction or lopping of native vegetation 2017* (DELWP, 2017a). The definition of native vegetation as per the Guidelines is provided in **Section 2.4.4** below.

A Vegetation Quality Assessment (VQA) was undertaken for all patches of native vegetation using the Habitat Hectares methodology as described in the *Vegetation Quality Assessment Manual – guidelines for applying the habitat hectare scoring method* (DSE 2004) and scattered trees assessed using the criteria outlined in the Guidelines (DELWP 2017a). Native vegetation was assessed using version 1.3 of the 'Vegetation Quality Field Assessment Sheet' and Ecological Vegetation Class (EVC) benchmarks for the Northern Inland Slopes and Victorian Riverina Bioregion. Vegetation was

classified based on the biophysical characteristics outlined in the EVC benchmarks such as geology, vegetation structure and species composition.

The location of remnant patches and scattered trees was mapped using a Samsung tablet which has a spatial accuracy of approximately ± 7 metres depending on access to satellites.

The Diameter at Breast Height (DBH) was measured for all scattered trees and large trees in patches to determine whether they meet the EVC benchmark of a large tree or small tree.

The conservation significance of any native vegetation or flora species present on site was determined in line with Victorian and Commonwealth policy and legislation, including the Framework.

2.2.3 General Fauna Survey

The assessment for vertebrate fauna at the site involved recording incidental records of all vertebrate fauna observed during the site assessment. This also involved identifying and examining habitat resources available within the Project Area and assessing the site for its potential to provide habitat for significant fauna species.

2.3 Likelihood of occurrence assessment for threatened species

A likelihood of species (and communities) occurrence assessment was completed for each threatened species identified in the desktop study as either occurring or having the potential to occur within the field investigation extent. For the purposes of this report 'threatened species' refers to those species that are considered 'threatened' in Victoria or Australia. This includes species that are:

- Rare, vulnerable or endangered in Victoria as defined by DEPI 2014, DSE 2009 and 2013a;
- Listed under the FFG Act; or
- Vulnerable, endangered or critically endangered under the EPBC Act.

Victorian Rare or Threatened (VROT), near-threatened, poorly known or data deficient species have no legislative protection beyond that afforded by the application of the Guidelines.

A number of species were eliminated from the VBA list and are not considered further in this report. This included:

- Records older than 30 years (pre-1987) as it is considered that these records would not be reflective of current site conditions considering the degree of change likely to have occurred over the time period from 1987 to present;
- Fauna species considered 'data deficient' in the VROTS list unless they are also recognised under the EPBC Act and/or FFG Act;
- Flora listed as 'poorly known' in the VROTS list as the current knowledge of their distribution and abundance is not sufficient to determine whether these species should be considered as rare or threatened in Victoria;
- Some threatened flora species which are outside their natural range but are commonly used for landscaping and amenity, including Spotted Gum *Corymbia maculata* and Giant Honey-myrtle *Melaleuca armillaris*; and
- Fauna reliant on marine environments as no habitat for these species is present in the Project Area.

The likelihood of occurrence assessment was based on the number of VBA records, year of most recent VBA record, species ecology and the habitat values observed during the field assessment. The likelihood assessment is presented in **Appendix B** and **Appendix C**.

The following likelihood categories were used to rate each species' likelihood of occurrence:

- **Unlikely:** No preferred habitat in the Project Area. Species unlikely to be present on the site at any time or during any season.
- **Possible:** Habitat is available in the Project Area which partially meets the requirements of the species. In the case of fauna, the species may infrequently visit for foraging but would not reside,

roost or otherwise depend on habitats in the Project Area for their survival. Migratory and aerial foraging birds may overfly the site.

- **Likely:** Species has historically been recorded in the Project Area (or within very close proximity). The Project Area contains habitat that meets their habitat requirements and is likely to support a population of the species.
- **Present:** Species confirmed to be present within the Project Area during site assessment or has regularly been observed in recent times.

2.4 Nomenclature and definitions

2.4.1 Flora and fauna

Common and scientific names for flora and fauna species follow the VBA database (2018 version).

The conservation significance of ecological values was determined in accordance with the EPBC Act, FFG Act, and DELWP's Advisory List of rare or threatened plants in Victoria (VROTS) (DEPI 2014).

2.4.2 Vegetation communities

Native vegetation in Victoria is classified into units known as Ecological Vegetation Classes (EVCs), which are described according to a combination of floristic, life form and ecological characteristics, and through an inferred fidelity to particular environmental attributes. Each EVC occurs under a common regime of ecological processes within a given biogeographic range and may contain multiple floristic communities (DNRE 2002).

Other vegetation types that may occur in Victoria include flora communities listed as threatened under the Commonwealth EPBC Act and/or the Victorian FFG Act. These two Acts both have vegetation classification systems that are separate to each other and separate to the EVC classification system. As such, any single patch of native vegetation would be classifiable as a particular EVC, and it may also be separately classified as a different vegetation community under the EPBC Act, and/or as another vegetation community under the FFG Act.

2.4.3 Fauna communities

Unlike flora and the use of EVCs, there is no official widespread classification system for fauna communities in Victoria. Both the EPBC Act and the FFG Act list a small number of fauna communities that are considered to be threatened, at a national or state scale, respectively. Fauna communities known, or potentially occurring within the study site or surrounds, are only considered in this report if they are listed under either of these two Acts.

2.4.4 Native vegetation

Native vegetation is defined in the Victoria Planning Provisions as 'plants that are indigenous to Victoria, including trees, shrubs, herbs and grasses'. Under the *Guidelines for the removal, destruction or lopping of native vegetation 2017* (DELWP, 2017a), native vegetation is classified as either a patch or scattered tree, where:

A patch of native vegetation is defined as:

- An area of vegetation where at least 25 per cent of the total perennial understory plant cover is native; or
- Any area with three or more native canopy tree 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.

A scattered tree is:

- A native canopy tree that does not form part of a patch.

Scattered trees can be classified as large or small. Large scattered tree DBH is specified in the relevant EVC benchmark description. Small scattered trees are those smaller than large tree DBH.

The term indigenous is used throughout this report to refer to native plant species that naturally occur within the relevant bioregion of Victoria.

2.5 Limitations

This assessment has been undertaken to provide a broad overview of biodiversity assets within the Project Area. The study effort, combined with information available from other sources, is considered suitable to assess the overall ecological values within the Project Area. However, the following limitations apply:

- The spatial analysis of biodiversity attributes is complex and has significant limitations when it is driven by historical record data such as the VBA. The timing of surveys and incidental observations may not correspond with ideal sampling periods; there may be limited survey effort in the area if it is extensively private land; and some species have naturally low detectability rates. Regardless, the information contained within this report is considered sufficient to allow a determination to be made of the impact of this project on biodiversity values within the project area.
- This ecological assessment is restricted to terrestrial vascular plant species (ferns, conifers and flowering plants) and terrestrial vertebrate fauna (mammals, birds, reptiles and frogs). Non-vascular flora (e.g. mosses, liverworts, lichens), fungi and terrestrial invertebrates have not been considered as part of this assessment, except where listed threatened species are known or suspected to occur, or where bryophytes comprise part of the EVC benchmark used for the habitat hectare assessment (e.g. cover of bryophytes).
- Mapping was conducted using hand-held Samsung tablets and aerial photo interpretation. The accuracy of uncorrected GPS points is subject to the accuracy of the unit and access to satellite information (generally less than seven metres). As such, the accuracy of this spatial information should not be relied on for design purposes. Detailed feature surveys may be necessary to accurately determine landscape features, particularly with regard to habitat zones, scattered trees and their Tree Protection Zones.
- Some land within the Project Area was not assessed at the land manager's request due to the presence of standing wheat crops at the time of assessment (November). Native vegetation within these areas consisted of remnant scattered trees. In the case that access was not achievable, scattered trees were assessed via binoculars from the closest accessible point to assign a scattered tree size class, species (where possible) and potential fauna habitat attributes. Where the size class could not be determined, a conservative approach was taken and the large tree size class was assigned. If the species could not be determined, trees were ascribed a genus only.

3.0 Results

3.1 Literature & dataset review

3.1.1 EPBC Act Protected Matters Search Tool

Matters of National Environmental Significance (MNES) were analysed on the 27 Nov 2018 using the DEE *EPBC Act* Protected Matters Search Tool (PMST). This tool lists those species or species habitat and vegetation communities that may occur, or are likely to occur, within the buffered area. Matters of National Environmental Significance identified as occurring within the buffered area are identified in **Table 1**.

Table 1 Summary of PMST results

MNES	Number of occurrences
World Heritage Properties	None
National Heritage Places	None
Wetlands of International Significance (Ramsar Sites)	7 Ramsar sites: <ul style="list-style-type: none"> • Banrock station wetland complex 500 - 600km upstream • Barmah forest 50 - 100km upstream • Gunbower forest 100 - 150km upstream • Hattah-Kulkyne lakes 300 - 400km upstream • NSW central Murray state forests 50 - 100km upstream • Riverland 500 - 600km upstream • The Coorong, and Lakes Alexandrina and Albert wetland 500 - 600km upstream
Listed threatened ecological communities	4 threatened ecological communities: <ul style="list-style-type: none"> • Buloke Woodlands of the Riverina and Murray-Darling; • Grey Box (<i>Eucalyptus microcarpa</i>) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains; • Natural Grasslands of the Murray Valley Plains; and • White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland.
Listed threatened species	30 listed threatened species made up of: <ul style="list-style-type: none"> • 17 listed fauna species; and • 13 listed flora species.
Listed migratory species	12
Commonwealth Marine Areas	None

3.1.2 Victorian Biodiversity Atlas Data

The VBA database search for records within 10 km of the Project Area identified:

- Nine EPBC Act-listed threatened species (no flora and 9 fauna);
- Two EPBC Act-listed migratory (but not threatened) bird species;
- Twenty-four FFG Act-listed terrestrial species (8 flora and 16 fauna); and
- Fifteen species listed by DELWP as VROTS¹ (7 flora and 8 fauna).

3.1.3 NaturePrint

The presence and distribution of mapped EVCs were assessed using NaturePrint (DELWP 2018c) available on the DELWP website. The Project Area is located within the Northern Inland Slopes and Victoria Riverina bioregions. Investigation of current EVC mapping illustrates that 11 EVC's have been modelled as occurring across two bioregions, and within a 1 km radius of the Project Area. These EVCs are presented in **Table 2**.

Table 2 EVC mapping derived from DELWP (2018)

Bioregion	EVC No.	EVC Name	BCS
Northern Inland Slopes	55	Plains Grassy Woodland	Endangered
	61	Box Ironbark Forest	Vulnerable
	67	Alluvial Terraces Herb-rich Woodland	Endangered
	175	Grassy Woodland	Endangered
	235	Plains Woodland/Herb-rich Gilgai Wetland Mosaic	Endangered
	803	Plains Woodland	Endangered
Victoria Riverina	68	Creekline Grassy Woodland	Endangered
	74	Wetland Formation	Endangered
	175	Grassy Woodland	Endangered
	235	Plains Woodland/Herb-rich Gilgai Wetland Mosaic	Endangered
	292	Red Gum Swamp	Vulnerable
	297	Billabong Wetland/Red Gum Swamp Mosaic	Endangered
	803	Plains Woodland	Endangered
	867	Shallow Sands Woodland/Plains Woodland Mosaic	Endangered

3.1.4 Literature relevant to the Project Area

A brief outline of previous environmental assessments, documents and policies relevant to the Project Area is provided below.

Benalla Rural City Environment Strategy 2016 – 2020

The Environment Strategy aims to provide a proactive and strategic approach to environmental matters and identifies priorities for management for the municipality within the four-year Strategy timeframe.

¹ Excludes extinct species and near-threatened fauna (DEPI 2013) and rare, or poorly-known flora (DEPI 2014)

Benalla Rural City Council Roadside Vegetation Management Plan

The Roadside Vegetation Management Plan seeks to identify roadside vegetation values across the municipality and provide a tool to assist the community, landholders, Council staff and contractors to manage roadside vegetation.

Conservation Plan for the Chesney Landscape Zone

The Chesney Landscape Zone Conservation Plan aims to identify priorities for the conservation of native biodiversity across the region. There are 326 priority environmental sites that have been identified within the Chesney Landscape Zone. The priority sites have been determined and ranked (low, medium, high or very high) based on factors such as, size, vegetation quality, Ecological Vegetation Class (EVC) conservation status, threatened species, landscape context and field survey results. These sites contain remnant vegetation and vary greatly in size from a stand of paddock trees, to the Warby Ranges.

Within the Chesney Zone, seven focal species have been identified as focal species for the Chesney Landscape Zone Conservation Plan. These include: Squirrel Glider *Petaurus norfolcensis*, Jacky Winter *Microeca fascians*, Grey-crowned Babbler *Pomatostomus temporalis*, Rufous Whistler *Pachycephala rufiventris*, Brown Treecreeper *Climacteris pecumnus*, Brolga *Grus rubicunda* and Carpet Python *Morelia spilota metcalfei*. Several of these species were recorded in the desktop assessment as occurring within 10km of the Project Area.

3.2 Field assessment

3.2.1 Ecological features of the Project Area

In general, the Project Area has been significantly modified by past and current agricultural land uses including cropping and grazing. The Project Area has been historically cleared of native vegetation for the above land uses with the exception of 22 patches of native vegetation and 203 remnant canopy trees (scattered trees) that have been retained in the landscape (see plates in **Appendix G**). These scattered trees are significant as they are generally large (ranging in DBH from 90 – 250 cm) and offer a range of faunal habitat values including hollows. In addition to providing a shelter and foraging resource for fauna, these trees are also likely to facilitate the movement of wildlife through the landscape by providing ‘stepping stones’ of habitat through an otherwise cleared environment.

The tree species are characteristic of species found within the Plains Woodland EVC’s for the Northern Inland Slopes and Victorian Riverina bioregion including Grey Box *Eucalyptus microcarpa*, White Box *Eucalyptus albens*, Yellow Box *Eucalyptus melliodora*, River Red-gum *Eucalyptus camaldulensis* and Buloke *Allocasuarina Luehmannii*. The trees within the Project Area occur as either isolated scattered trees, or clusters of trees which were assessed as remnant patches in accordance with the Guidelines.

Road and rail reserves containing modified Plains Woodland vegetation surround and run through the Project Area including an undeveloped section of Spinks Lane (see **Appendix A**). A further description of the flora and fauna characteristic of the site is provided in **Section 3.2.2.1 – Section 3.2.2.2**.

3.2.2 Threatened species

A likelihood of presence rating has been assigned to each threatened species identified during the desktop assessment. The rating has been assigned based on the current assessment, number of records within close proximity to the Project Area, appraisal of the species’ habitat requirements, and availability of suitable habitat as recorded during the habitat assessment. An assessment of the likelihood of threatened species is presented in **Appendix B** (flora) and **Appendix C** (fauna), and those species assigned likelihood of moderate or above are discussed below.

3.2.2.1 Flora

One threatened flora species was recorded during the field assessment. This includes a canopy tree species Buloke which is listed under the FFG Act. Twelve mature Buloke were recorded within the central part of the Project Area as shown in **Appendix A**. Due to the history of vegetation modification and ongoing presence of grazing it is considered unlikely that the Project Area contains suitable habitat for other threatened flora species.

3.2.2.2 Fauna

VBA records of EPBC Act listed bird species from an area of privately-owned bushland approximately 850 metres north east of the Project Area. These species are:

- Painted Honeyeater *Grantiella picta*;
- Regent Honeyeater *Anthochaera phrygia*; and
- Swift Parrot *Lathamus discolor*.

Based on the proximity of these records and the mobility of these species it is possible they could forage in the trees within the Project Area and use those trees to move through the landscape. The Project Area is not an area of core breeding or foraging habitat for these species but may be utilised at varying regularity or intensity over time. Other EPBC Act listed species which could possibly utilise habitat within the Project Area are:

- Grey-headed Flying-fox *Pteropus poliocephalus* which is a wide roaming species and could forage in the trees of the Project Area during movements from their camp at Cussen Park in Tatura (anecdotal evidence suggests that this species has been seen in the area within the last six months); and
- Fork-tailed Swift *Apus pacificus* and White-throated Needletail *Hirundapus caudacutus* are listed as migratory under the EPBC Act. These species are aerial foragers over a range of habitats when in Australia and could therefore forage over the Project Area on occasion.

Several FFG Act-listed woodland species could utilise the scattered woodland tree habitat of the Project Area (refer to **Appendix C**). However, the relatively isolated nature of the Project Area and lack of contiguous linkages to larger remnant blocks reduces the likelihood of arboreal species such as Brush-tailed phascogale *Phascogale tapoatafa* and Squirrel Glider *Petaurus norfolcensis* making regular use of the site or being reliant on the resources within the Project Area.

Another species not listed under the EPBC Act or FFG Act but that is considered to be threatened in Victoria (DSE 2013) is the Lace Monitor *Varanus varius* (endangered). This species could utilise the hollow-bearing trees within the Project Area.

3.2.2.3 Nationally threatened ecological communities

Four EPBC Act-listed ecological communities were identified in the PMST search of the assessment area:

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

None of the indigenous vegetation that was present within the Project Area is considered to represent any of these communities. The quality triggers that would otherwise identify the presence of these species were compromised by the high percentage cover of exotic grasses, and poor species richness.

3.2.2.4 State Threatened Ecological Communities

Historically it is considered likely that two FFG Act listed ecological communities would have been present within the Project Area including Grey Box - Buloke Grassy Woodland Community, and Victorian Temperate Woodland Bird Community. Although both Grey Box and Buloke are present within the Project Area, the Project Area is highly modified and the trees exist as isolated scattered trees and therefore are not considered to meet the ecological community description. All remnant patches of Plains Woodland are considered synonymous with the FFG Act listed Victorian Temperate Woodland Bird Community (DELWP undated) adding further significance to these areas.

3.2.3 Ecological Vegetation Classes

Two EVC's were recorded within the Project Area (see **Appendix A** for locations of patches):

- Plains Woodland (EVC 803): This EVC is widespread across both the Northern Inland Slopes and Victorian Riverina bioregions and is typically characterised by an open eucalypt woodland consisting of a sparse scattering of shrubs and a species rich grassy and herbaceous understory.
- Alluvial Terraces Herb-rich Woodland (EVC 67) present within the Northern Inland Slopes bioregion, and like Plains Woodland is characterised by an open woodland but is found on alluvial plains and along ephemeral drainage lines. This EVC typically has very high species richness in the ground layer.

Both of these EVC's present within the study area as highly modified, typically identifiable only by a eucalypt overstorey. Both are classified as endangered within the Northern Inland Slopes and Victorian Riverina bioregions.

Although no patches of Grassy Woodland (EVC 175) were assessed within the Project Area, this community was historically been present within the Project Area, and as such, a number of scattered trees are considered to have originally been a component of that EVC.

3.2.4 Vegetation Quality

The following section provides more details regarding the vegetation present on site in the context of the Guidelines.

3.2.4.1 Vegetation Quality Assessment (Habitat Hectares)

As stated within the methods section of this report, a habitat zone or remnant patch is defined as:

- An area of vegetation, with or without trees, where less than 75% of the total understorey plant cover is weeds or non-native plants (bare ground not included). That is at least 25% of the understorey is native; or
- A group (3 or more) of trees where the canopy cover is at least 20% (DSE 2006b).

Vegetation quality scores for each of the habitat zones was based on the assessment of the floral characteristics within each habitat zone and consideration of the extent of native vegetation within the surrounding landscape as detailed under the Habitat Hectare methodology (DSE 2004c). Across the Project Area, 6.1 hectares of land was considered to be 'habitat zones' containing a total of 1.88 habitat hectares. A summary of the calculation of the vegetation quality scores for each habitat zone is presented in **Table 3**.

Table 3 Quantification Patches of Native Vegetation located on the Site

ATHW = Alluvial Terraces Herb-rich Woodland

Habitat Zone			HZ1	HZ2	HZ3	HZ4	HZ5	HZ6	HZ7	HZ8	HZ9	HZ10	HZ11	HZ 12	HZ13	HZ14	HZ 15	HZ16	HZ17	HZ18	HZ19	HZ20	HZ21	HZ22
EVC			Plains Woodland (803)																					67 ATHW*
Bioregion			VR	NIS	VR	VR	VR	NIS	NIS	VR	VR	VR	VR	VR	VR	VR	VR	VR	VR	VR	VR	VR	VR	NIS
Bioregional Conservation Status (BCS)			E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Site Condition	Large Old Trees	10	10	9	0	5	7	5	9	9	9	10	10	6	9	9	9	9	9	9	9	7	9	0
	Tree Canopy Cover	5	3	3	3	4	4	4	4	4	2	3	3	3	3	2	2	2	2	2	2	4	2	4
	Lack of Weeds	15	4	7	4	2	2	2	2	4	2	4	4	4	2	4	2	4	2	4	4	4	0	2
	Understorey	25	0	0	5	5	5	5	5	0	0	0	0	5	0	0	0	0	0	0	0	5	0	0
	Recruitment	10	0	0	5	6	6	6	5		0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Organic Litter	5	3	3	3	5	5	5	3	3	2	0	0	2	2	3	2	2	2	2	2	2	2	4
	Logs	5	0	5	0	5	5	5	5	5	5	0	0	4	5	5	5	4	5	0	0	3	5	0
	Total Site Score	75	20	27	20	32	34	33	33	25	20	17	17	24	21	23	20	21	20	17	17	25	18	10
Standardiser		-	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Landscape Context	Patch Size	10	2	2	2	4	4	4	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1
	Distance to Core Area	5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Neighbourhood	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total Landscape Score	25	3	3	3	5	5	5	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2
Habitat Score		100	23	30	23	37	39	37	36	28	23	20	20	27	24	25	23	24	23	20	20	28	21	12
Habitat Points = Score/100		1	0.23	0.3	0.23	0.37	0.39	0.37	0.36	0.28	0.23	0.20	0.2	0.27	0.24	0.26	0.23	0.24	0.23	0.20	0.2	0.28	0.21	0.12
Total area of Habitat Zone (ha)			0.08	0.17	0.03	0.51	0.85	2.34	0.11	0.07	0.08	0.18	0.11	0.13	0.13	0.11	0.45	0.16	0.21	0.07	0.04	0.22	0.02	0.02
Habitat Hectares (Hha)			0.02	0.05	0.01	0.19	0.33	0.87	0.04	0.02	0.02	0.04	0.02	0.04	0.03	0.03	0.1	0.04	0.05	0.01	0.01	0.06	0.00	0.00

3.2.4.2 Status of Indigenous Trees

A total of 203 'Scattered Trees' were identified across the Project Area. A complete map of scattered trees is presented in **Appendix A**. The dominant tree species across the Project Area was Grey Box with White Box, Yellow Box and Buloke sub-dominant. The size class of scattered indigenous trees was determined by the EVC benchmark for Plains Woodland (EVC 803) and Alluvial Terraces Herb-rich Woodland (EVC 67) as per methods prescribed by DELWP. Size categories are provided below:

- Large Tree
 - *Eucalyptus* spp. (≥ 70 cm); and
 - *Allocasuarina* spp. (≥ 40 cm).
- Small Tree
 - *Eucalyptus* spp. (< 70 cm); and
 - *Allocasuarina* spp. (< 40 cm).

A summary of the trees encountered within the Project Area, their species and size classification are presented in **Table 4**. Of the 203 scattered trees across the Project Area there were a total of 189 large trees and 14 small trees, as defined by the Guidelines. Additionally, 117 large trees were recorded within habitat zones which are recorded as 'Large Trees in Patches' as defined by the guidelines. Large Trees in Patches are considered in biodiversity offset calculations for remnant patches of vegetation.

Table 4 Summary of scattered trees within the Project Area

Location (Habitat Zone)	Lot Size Class		
	Small Scattered Tree	Large Scattered Tree	Large Trees in Patch
Grey Box <i>Eucalyptus microcarpa</i>	10	121	101
White Box <i>Eucalyptus albens</i>	1	6	-
Yellow Box <i>Eucalyptus melliodora</i>	-	5	7
Buloke <i>Allocasuarina luehmannii</i>	-	9	2
River Red-gum <i>Eucalyptus camaldulensis</i>	-	5	1
No species available (<i>Eucalyptus</i> spp.)	3	43	6
Total	14	189	117

*Size categories defined by the relevant EVC benchmark.

4.0 Legislation and policy implications

4.1 Commonwealth

4.1.1 Environmental Protection and Biodiversity Conservation Act 1999

One of the main aims of the EPBC Act is to provide for the conservation of biodiversity and the protection of the environment, particularly those aspects that are considered to be Matters of National Environmental Significance (MNES). The EPBC Act defines nine MNES as follows:

- World heritage properties;
- National heritage places;
- Wetlands of international importance (listed under the Ramsar Convention);
- Listed threatened species and ecological communities;
- Migratory species protected under international agreements (JAMBA, CAMBA, ROKAMBA);
- Commonwealth marine environment;
- Great Barrier Reef Marine Park;
- Nuclear actions (including uranium mines); and
- A water resource, in relation to coal seam gas development and large coal mining development.

Under the EPBC Act, actions² that are likely³ to have a significant impact upon MNES are required to be referred to the Environment Minister for approval.

Implications:

The MNES listed above are considered either not relevant or will not be significantly impacted by the Project and therefore have not been considered further.

No EPBC Act-listed flora and fauna species or vegetation communities were considered to have greater than a 'possible' chance of persisting within the Project Area, and no further survey for these values is considered necessary.

4.1.2 Weeds of National Significance (WoNS)

Currently there are 32 species classified as Weeds of National Significance (WONS). These have been agreed by Australian governments based on an assessment process that prioritised these weeds based on their invasiveness, potential for spread, and environmental, social, and economic impacts. Consideration was also given to their ability to be successfully managed.

Under the CaLP Act certain plants are declared as noxious weeds in Victoria. These plants cause environmental or economic harm, or have the potential to cause such harm, and in some cases can also present risks to human health (DEDJTR 2016). The CaLP Act defines four categories of noxious weeds in Victoria. These include; State Prohibited Weeds (listed under Schedule 1), Regionally Prohibited Weeds (listed under Schedule 2); Regionally Controlled Weeds (listed under Schedule 2); Restricted Weeds (listed under Schedule 2). Other than State Prohibited weeds, the level of noxious weed declaration varies according to the CMA.

Implications:

One high threat environmental weed was observed within the Project Area - Horehound *Marrubium vulgare* which is listed as a Regionally Controlled Weed within the Goulburn Broken CMA region.

No WONS were recorded within the Project Area.

² Under the EPBC Act an 'action' includes any project, development, undertaking, activity or series of activities.

³ Under the EPBC Act 'likely' refers to when the potential for a significant impact on the environment to be real or not a remote chance or possibility.

4.2 State

4.2.1 Planning and Environment Act 1987

The *Planning and Environment Act 1987* (P&E Act) establishes the framework for the use, development and protection of land in Victoria. The P&E Act provides the standard provisions for planning schemes administered by local government.

4.2.1.1 Native vegetation removal regulations

The *Guidelines for the removal, destruction or lopping of native vegetation* (DELWP 2017a) are incorporated into the Victoria Planning Provisions and all planning schemes in Victoria. The Guidelines replace the previous incorporated document titled *Permitted clearing of native vegetation – biodiversity assessment guidelines* (Department of Environment and Primary Industries, 2013). The Guidelines provide instructions on how an application for a permit to remove native vegetation is to be assessed under the P&E Act. This includes requirements to undertake a site assessment and specific conditions that may form part of a granted permit, such as offsetting.

Under the Guidelines, there are three pathways under which an application to remove native vegetation can be assessed including - Basic, Intermediate or Detailed assessment pathways. The assessment pathway determines the types of offsets that are required to be implemented for the removals. This is determined via an assessment of location and whether any large trees are to be removed and an assessment of risk to biodiversity by a particular project:

- Location risk is determined by assessing the likelihood that the removal of a small amount of native vegetation may impact the persistence of a rare or threatened species. Location risk has been determined for all of Victoria with areas being categorised into three categories which indicate potential risk to biodiversity from removing a small amount of native vegetation:
 - Location 3 – includes locations where the removal of less than 0.5 hectares of native vegetation could have a significant impact on habitat for a rare or threatened species;
 - Location 2 – includes locations that are mapped as endangered EVCs and/or sensitive wetlands and coastal areas (section 3.2.1) and are not included in Location 3; and
 - Location 1 – includes all remaining locations in Victoria.
- The higher category is used if the native vegetation to be removed includes more than one location category;
- The location risk of a particular site is determined using the native vegetation location risk map available from the NVIM tool found on the DELWP website; and
- Extent risk is determined by the extent of the native vegetation including the presence or absence of large trees that is proposed to be removed. Together, these two types of risk are used to determine the assessment pathway for a permit application to remove native vegetation (DELWP 2017a). The assessment pathway of an application is determined in accordance with **Table 5**.

Table 5 Native vegetation risk-based pathways

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

The assessment based pathway determines the process to be followed when applying to remove native vegetation:

- Basic or Intermediate assessment pathway: A habitat hectare assessment is not required and modelled site condition scores can be used to assess basic and intermediate pathway applications. However, if a habitat hectare assessment report is available, then this can be used in place of modelled data for determining general offset requirements if a permit is granted.
- Detailed assessment pathway applications: A habitat hectare assessment report must be included and accompanied by a statement outlining the steps that have been taken to ensure that impacts on biodiversity from the removal of native vegetation has been minimised. Offsets required for detailed assessment pathway applications may trigger a *species offset requirement* (if the native vegetation to be removed is habitat for rare or threatened species).

Refer also to the *Applicant's guide Applications to remove, destroy or lop native vegetation* prepared by DELWP to assist applications to remove native vegetation (DELWP 2017b).

Implications:

Clause 52.17 of the relevant council planning scheme enacts the Guidelines. Any removal of native vegetation associated with the project is required to satisfy Clause 52.17 by submitting an application to the relevant planning authority for a permit to remove native vegetation.

In accordance to the Guidelines, the assessment area contains location categories 1 and 2 and greater than 0.5 hectares of native vegetation. Subsequently the application to remove native vegetation was assessed under the *detailed* pathway of assessment. The total extent of native vegetation recorded within the assessment area is 6.1 ha of native vegetation patches (of which 22 were recorded) and 203 scattered trees.

The finalised design for the development has protected all 22 patches of remnant vegetation that have been assessed and has also protected 136 of the 203 trees that fall within the project area. A total of 67 scattered trees are proposed to be removed to facilitate the development. The NVR report provided in Appendix D states that an offset requirement of **0.796 general habitat units** incorporating 66 large trees will be required within the Goulburn Broken Catchment Management Authority and/or Benalla Rural City Council region. The proposed project does not trigger the requirement for species habitat units.

4.2.1.2 Planning overlays

Planning overlays are part of municipal planning schemes and are applied over areas of land to control development. Overlays may be applied to protect areas from adverse impacts or to allow easy identification of constraints in developments on that area. One or more overlays may be applied to an area and most overlays also have schedules which specify municipal objectives and requirements.

For the purpose of this report, consideration of planning overlays is limited to those of particular relevance to flora and fauna values, which include:

- Environmental Significance Overlays (ESOs). The broad intent of an ESO is to identify areas where the development of land may be affected by environmental constraints, and to ensure that if development does happen, it is compatible with the values that are highlighted in any schedule to the identified ES;
- Vegetation Protection Overlays (VPOs). A VPO is specific to the removal of vegetation that has been deemed to be significant, and protects this vegetation against inappropriate development; and
- Significant Landscape Overlay (SLOs). A SLO identifies significant landscapes and conserves and enhances the character of significant landscapes.

A schedule to these overlays contains a statement of the significance of the environmental, vegetation or landscape value that is protected by the overlay, and the objective to be achieved. Approval is typically required to remove native vegetation within an ESO, VPO or SLO, and the application for an approval for vegetation removal must show that the proponent has been cognisant of the intent of each overlay.

Implications:

No planning overlays relevant to flora and fauna values are located within the Project Area.

4.2.2 Flora and Fauna Guarantee Act 1988

The FFG Act was established to provide a legal framework for enabling and promoting the conservation of all Victoria's native flora and fauna, and to enable management of potentially threatening processes. One of the main features of the Act is the listing process, whereby native species and communities of flora and fauna, and the processes that threaten native flora and fauna are listed in the schedules of the Act. This assists in identifying those species and communities that require management to survive and identifies the potentially threatening processes that require management to minimise the threat to native flora and fauna species and communities within Victoria.

Implications:

One FFG Act listed flora species were recorded during the field assessment. This includes a canopy tree species Buloke *Allocasuarina Luehmannii*. Twelve mature Buloke were recorded in the central part of Project Area and are shown in Figure 3. These Buloke are significant in size and likely to be of considerable age. The final design has identified that two Bulokes will require removal.

Two FFG Act protected species were identified within the Project Area. These species were Longwood *Acacia implexa* and Buloke.

A single FFG Act listed ecological community was recorded in the Project Area - the Victorian Temperate Woodland Bird Community. This community has been defined as a suite of bird species primarily associated with drier woodlands north of the Great Dividing Range. Many of the species have been recorded in the vicinity of the Project Area on the VBA. All remnant patches of Plains Woodland and Alluvial Terraces Herb-rich Woodland are considered synonymous with habitat for the FFG Act listed Victorian Temperate Woodland Bird Community and are shown in **Appendix A**. No specific approvals are required under the FFG Act in relation to this community, but consideration should be given to avoiding and minimising loss of habitat during the design phase.

The presence of hollow-bearing trees within the Project Area means the project has the potential to exacerbate a potentially threatening process listed under the FFG Act. This process - *loss of hollow-bearing trees from Victorian native forests and woodlands* – identifies the loss of scattered live or dead hollow-bearing trees on farms as one of the factors influencing the loss of hollow-bearing trees in Victoria (DSE 2003). An Action Statement has been prepared which set out the actions to conserve and manage hollow-bearing trees (DSE 2003). The objectives include significantly reducing the loss of hollow-bearing trees from private land. No specific approvals are required under the FFG Act, but consideration should be given to avoiding and minimising loss of hollow-bearing trees during the design phase which is consistent with the requirements under the P&E Act in relation to loss of native vegetation.

A permit from DELWP is required to 'take' listed flora species that are members of listed communities or protected flora from public land. A permit is not required under the FFG Act for private land, unless listed species are present and the land is declared 'critical habitat' for the species. No critical habitat has been identified in Victoria to date.

4.2.3 Environmental Effects Act 1978

Under Victoria's *Environmental Effects Act 1978* (EE Act), projects that could have a 'significant effect' on Victoria's environment can potentially require an Environmental Effect Statement (EES). This Act applies to any public works 'reasonably considered to have or be capable of having a significant effect on the environment'. The Minister for Planning and Environment is the responsible person for assessing whether this Act applies. Before commencing any public works to which this Act applies, the proponent must cause an EES to be prepared and submit it to the Minister for the Minister's assessment of the environmental effects of the works.

Implications:**Table 6 Ecology-specific EES referral criteria applicable to the Project (DSE 2006)**

Referral criteria	Implications
Referral criteria: individual potential environmental effects	
<p>Potential clearing of 10 ha or more of native vegetation from an area that:</p> <ul style="list-style-type: none"> – is of an Ecological Vegetation Class identified as endangered by the Department of Sustainability and Environment (in accordance with Appendix 2 of Victoria's Native Vegetation Management Framework); or – is, or is likely to be, of very high conservation significance (as defined in accordance with Appendix 3 of Victoria's Native Vegetation Management Framework); and – is not authorised under an approved Forest Management Plan or Fire Protection Plan 	<p>A total 6.1 hectares of remnant vegetation patches and 203 scattered trees were recorded across the Project Area. This vegetation is considered endangered within the Northern Inland Slopes and Victorian Riverina Bioregions.</p> <p>A total of 67 scattered trees, representing 4.376 hectares of vegetation are proposed to be impacted.</p> <p>Trigger not met</p>
<p>Potential long-term loss of a significant proportion (e.g. 1 to 5 percent depending on the conservation status of the species) of known remaining habitat or population of a threatened species within Victoria</p>	<p>The project will not impact a significant proportion of known remaining habitat or population of a threatened species within Victoria</p> <p>An EnSym report indicated that under a worst-case scenario of total vegetation loss within the Project Area would not result in a loss of >0.0003% of listed species modelled habitat.</p> <p>Trigger not met</p>

A referral to the Victorian Minister for Planning is not likely to be required for this project.

4.2.4 Catchment and Land Protection Act 1994

The CaLP Act establishes a framework for management and protection of catchments through the management of land and water resources. The CaLP Act is the principal legislation relating to the management of pest plants and animals in Victoria.

Under the CaLP Act, landowners have a number of responsibilities including:

- Avoiding causing or contributing to land degradation;
- Taking all reasonable steps to conserve soil;
- Protecting water resources;
- Eradicating regionally prohibited weeds;
- Preventing the growth and spread of regionally controlled weeds; and
- Where possible eradicating established pest animals declared under the CaLP Act.

Invasive species can, or have the potential to, cause environmental and economic harm. They can also present risks to human health (DEDJTR 2016). The CaLP Act defines four categories of noxious weeds in Victoria:

- State prohibited weeds (SP);
- Regionally prohibited weeds (RP);
- Regionally controlled weeds (RC); and
- Restricted weeds (R).

These categories are described in **Table 7**. Other than State Prohibited weeds, the level of noxious weed declaration varies according to the CMA.

Table 7 Noxious weed classifications under the CaLP Act (DEDJTR 2016)

Noxious weed category	Definition	Requirement under the CaLP Act
State Prohibited Weeds (listed under Schedule 1)	State prohibited weeds are the highest category of declared noxious weeds in Victoria. By definition they are either not yet in Victoria, or are here in small numbers, where their eradication is still possible. The Department of Economic Development, Jobs, Transport and Resources (DEDJTR) aims to prevent the introduction of State prohibited weeds into Victoria, and to detect and eradicate any infestations before they become widespread.	The Victorian Government (DEDJTR) is responsible for their eradication, but under Section 70(1) of the CaLP Act, it may direct land owners to prevent their growth and spread. It is an offence to buy, sell, display or transport a State prohibited weed within Victoria.
Regionally Prohibited Weeds (listed under Schedule 2)	Regionally prohibited weeds are not widely distributed in a region but are capable of spreading further. It is reasonable to expect that they can be eradicated from a region and they must be managed with that goal.	Land owners, including public authorities responsible for crown land management, must take all reasonable steps to eradicate regionally prohibited weeds on their land.
Regionally Controlled Weeds (listed under Schedule 2)	These invasive plants are usually widespread in a region. To prevent their spread, ongoing control measures are required.	Land owners have the responsibility to take all reasonable steps to prevent the growth and spread of Regionally controlled weeds on their land.
Restricted Weeds (listed under Schedule 2)	This category includes plants that pose an unacceptable risk of spreading in this State and are a serious threat to another State or Territory of Australia.	Trade in these weeds and their propagules, either as plants, seeds or contaminants in other materials is prohibited.

Implications:

One high threat environmental weed was observed within the Project Area - Horehound *Marrubium vulgare* which is listed as Regionally Controlled within the Goulburn – Broken CMA region. Measures should be put in place during and post construction of this development to prevent further spread and growth of this weed.

4.2.5 **Wildlife Act 1975**

The *Wildlife Act* 1975 forms the procedural, administrative and operational basis for the protection and conservation of native wildlife within Victoria. The purposes of the Act are:

1. to establish procedures in order to promote
 - the protection and conservation of wildlife; and
 - the prevention of taxa of wildlife from becoming extinct; and
 - the sustainable use of and access to wildlife; and
2. to prohibit and regulate the conduct of persons engaged in activities concerning or related to wildlife.

This Act often sits as the default reference for other associated policies regarding wildlife management. For example, the operation of the FFG Act often needs to be considered in conjunction with the provisions and procedures of the Wildlife Act as some wildlife will be both protected wildlife under the Wildlife Act and listed threatened species under the FFG Act.

With the exception of pest animals declared under the CaLP Act or wildlife declared to be unprotected wildlife, all fauna species indigenous to Victoria are listed as protected under the Wildlife Act. Protected wildlife may be declared to be 'threatened wildlife' which is defined as any wildlife listed under the FFG Act. The Wildlife Act makes it an offence to wilfully disturb or destroy protected or threatened wildlife without authorisation.

Translocation of wildlife requires approval under the Wildlife Act. Salvage and translocation of non-threatened native wildlife from an area to be disturbed to an area reserved or protected from future development is generally not supported by DELWP for wildlife welfare reasons (DELWP 2017e).

Translocation of threatened species requires authorisation. Applicants must apply for a scientific permit under the Wildlife Act which will not be issued unless a Translocation Plan is approved by the Threatened Fauna Translocation Evaluation Panel (TEP).

Implications:

Any potential for impact to protected wildlife requires authorisation from DELWP under the Wildlife Act. DELWP will need to be consulted to ascertain their expectations in relation to activities requiring authorisation under the Wildlife Act.

4.3 **Other standards and guidelines**

4.3.1 **DELWP Victorian Advisory Lists**

The presence, or likely presence, of a species listed on the DELWP Victorian Advisory Lists is used to determine whether species-specific habitat is required to be offset, rather than statutory lists of species for which conservation management is recommended. As such, any advisory listed species will be offset following the process described in **Section 4.2.1**.

5.0 Conclusion

5.1 Summary

AECOM was engaged by Neoen to undertake an ecological assessment of a proposed solar farm site, located approximately 400 metres south of the township of Goorambat. This assessment identified;

- 22 'Habitat Zones' of EVC 803 Plains Woodland equating to 6.1 hectares (1.88 habitat hectares);
- 203 'Scattered Trees' including Grey Box, White Box, Yellow Box and Buloke (189 large trees and 14 small trees);
- The presence of one FFG Act-listed flora species (Buloke) of which two individual trees are proposed to be removed;
- An FFG Act listed ecological community was considered present - Victorian Temperate Woodland Bird Community on the basis of the presence of EVC 803 Plains Woodland and EVC 67 Alluvial Terraces Herb-rich Woodland which is considered synonymous with the Victorian Temperate Woodland Bird Community; and
- That no EPBC-act listed species and communities are considered likely to have a greater than 'possible' likelihood of occurrence within the project area.

Through sensitive design of the solar farm, no patches of native vegetation will be impacted. Of the 203 scattered trees located within the Project Area, 136 are proposed to be retained.

Legislative implications of this assessment indicate that there is:

- a requirement under Clause 52.17 of the Benalla planning scheme to offset native vegetation proposed to be impacted (67 scattered trees);
- A requirement to consider the CaLP Act during development; and
- Potential need for salvage works under the Wildlife Act.

5.2 Recommendations

- Whilst the sensitive design of the proposed solar farm has avoided impacts to the most significant ecological values at the site, the construction of the facility (if and when approved) should be undertaken under the guidance of a detailed Construction Environment Management Plan (CEMP) or similar to ensure that there are no unintended impacts to the values that are to be protected at the site.
- Should the current design be approved, an offset of 0.796 general habitat units is considered sufficient to compensate for the ecological impact of this project as per the Guidelines. A requirement for such an offset will likely become a condition on any future permit for the development.
- Strongly consider the design principles highlighted in Appendix F for the installation of wildlife friendly fencing for the development.
- Priority species for revegetation at the site should be given to those species considered to be representative of the dominant EVC that existed across the local area- see Appendix G for a species list.
- Consideration should be given to the replacement of every hollow removed with a nest box to be installed within the trees to be retained on the property. This may assist with minimising the impacts of the removals on birds and arboreal species that may utilise this habitat.

6.0 References

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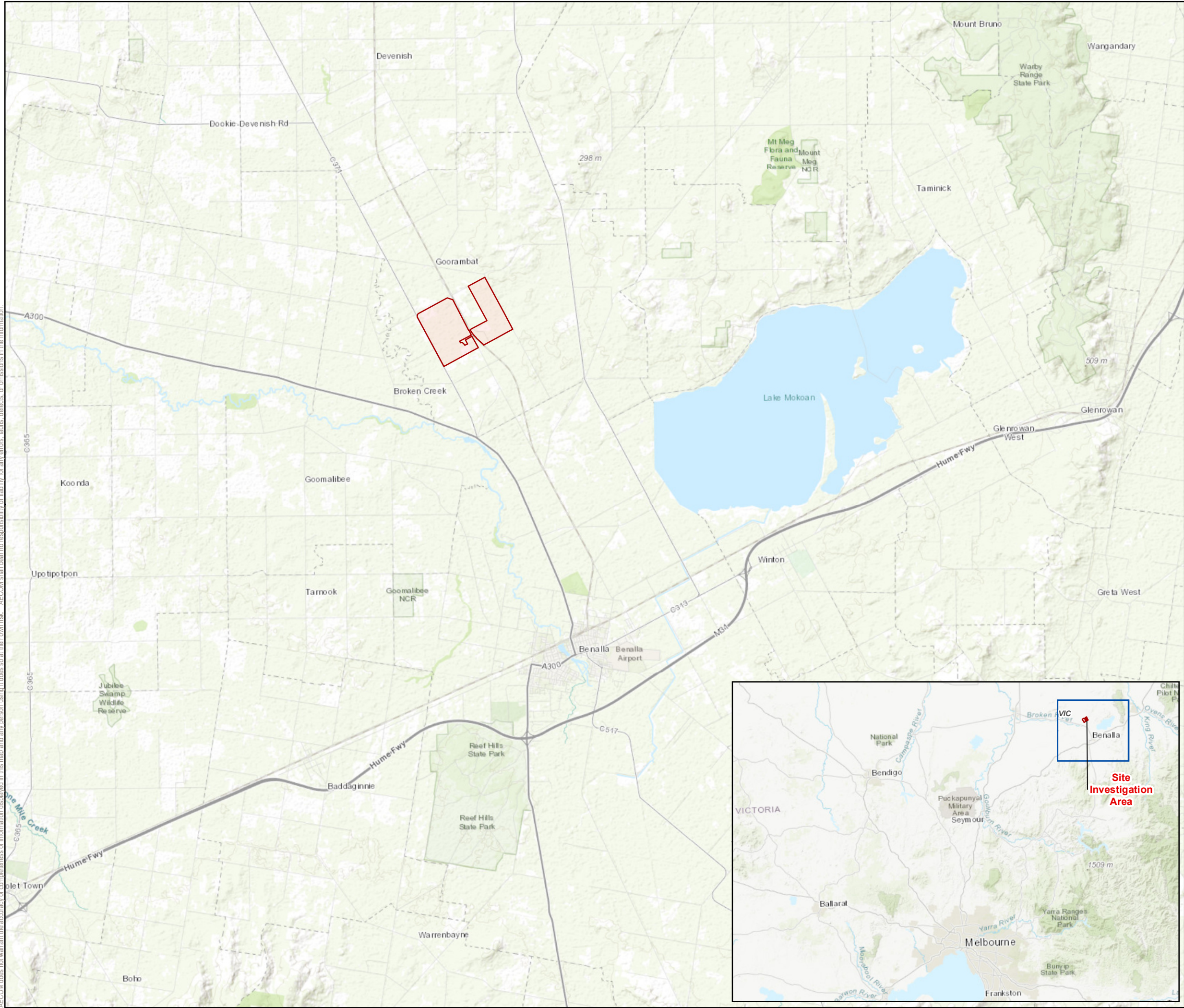
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Appendix A

Figures

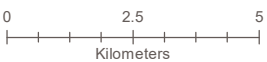
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Coordinate System: GDA 1994 MGA Zone 55



1:150,000 (when printed at A3)

Legend

Site Investigation Area

Data Sources:
Locality, Railway, Drainage Line, Streets, Features © VICMAP - 2018

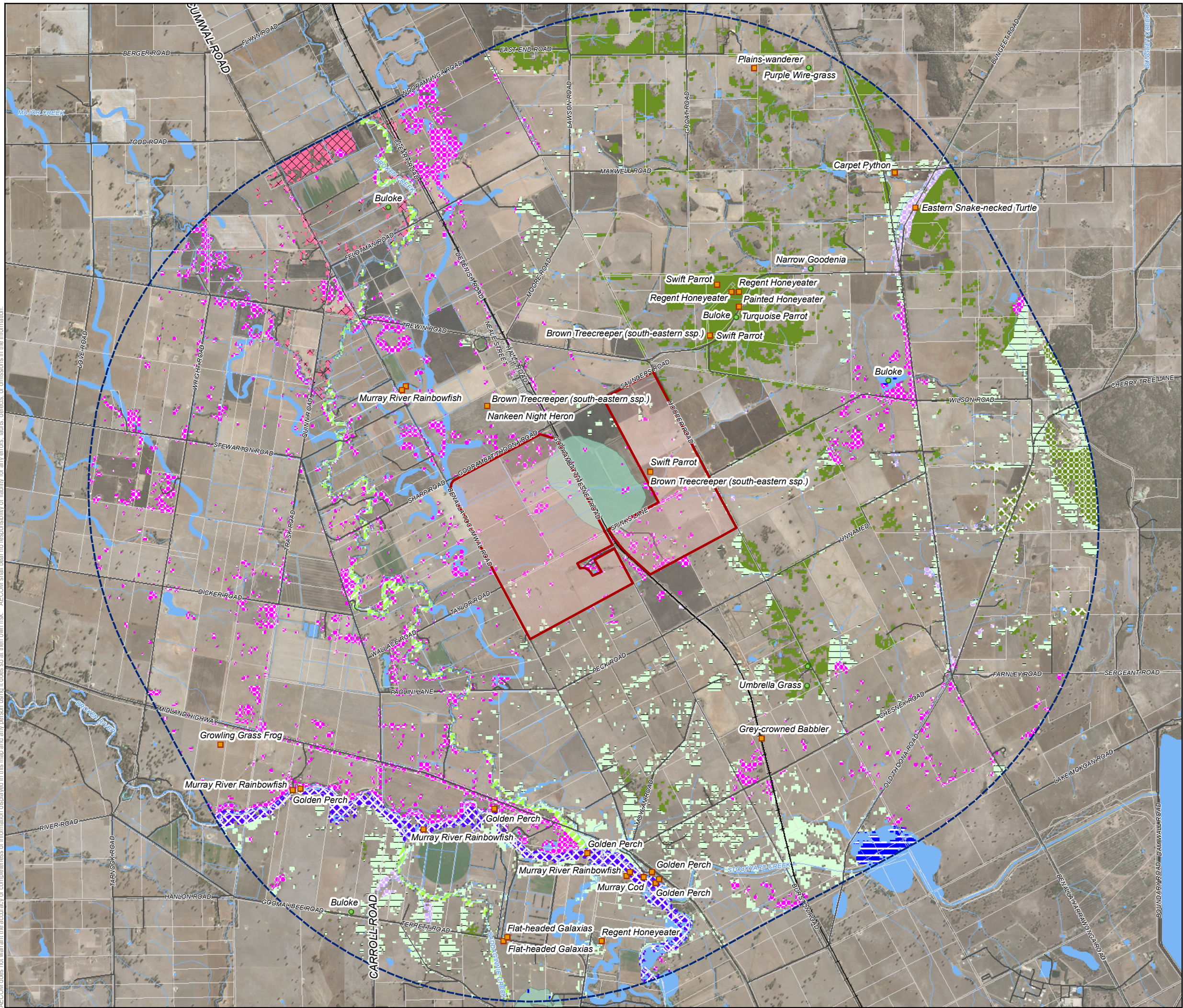
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Goorambat East Solar Farm

SITE LOCATION

PROJECT #: 60591336
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Figure
1



Legend

- Site Investigation Area
- 5km Buffer
- Threatened Flora Records
- Threatened Fauna Records
- Roads
- Railway
- Watercourses
- Cadastre
- Waterbodies
- Wetlands
- Ecological Vegetation Classes**
 - 175 Grassy Woodland
 - 186 Plains Grassy Woodland/Floodplain Riparian Woodland Complex
 - 20 Healthy Dry Forest
 - 235 Plains Woodland/Herb-rich Gilgai Wetland Mosaic
 - 247 Box Ironbark Forest/Grassy Woodland Complex
 - 292 Red Gum Swamp
 - 55 Plains Grassy Woodland
 - 56 Floodplain Riparian Woodland
 - 61 Box Ironbark Forest
 - 67 Alluvial Terraces Herb-rich
 - 68 Creekline Grassy Woodland
 - 72 Granitic Hills Woodland
 - 74 Wetland Formation
 - 80 Spring Soak Woodland
 - 803 Plains Woodland
 - 81 Alluvial Terraces Herb-rich Woodland/Creekline Grassy Woodland Mosaic
 - 867 Shallow Sands Woodland/Plains Woodland Mosaic

Data Sources:
Locality, Railway, Drainage Line, Streets, Features © VICMAP - 2018

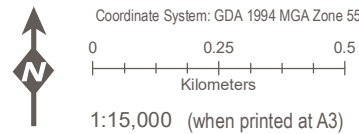
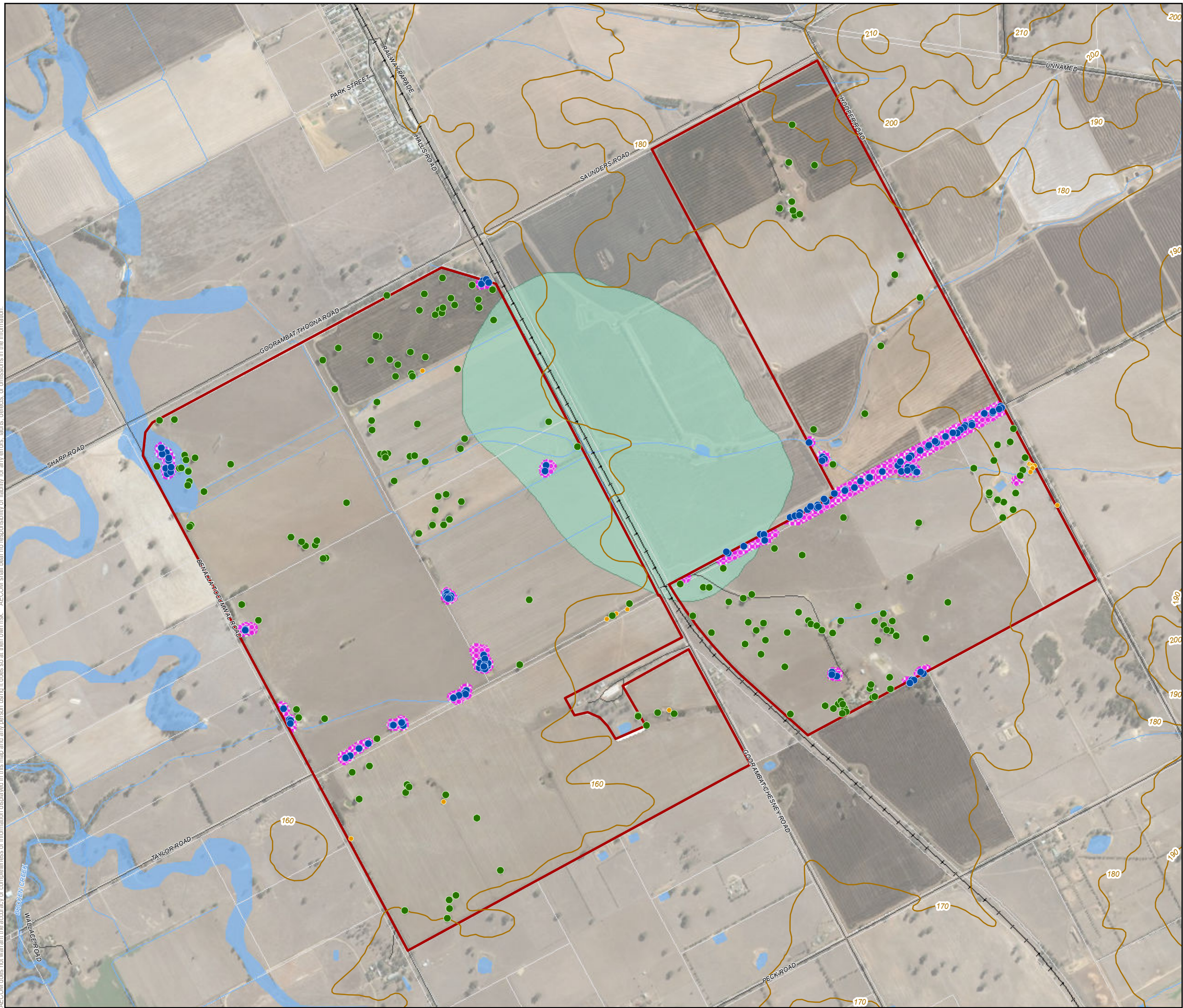
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Goorambat East Solar Farm

DESKTOP ASSESSMENT RESULTS

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VERSION: 1

Figure
2



- Legend**
- Site Investigation Area
 - Large Scattered Trees
 - Small Scattered Trees
 - Large Tree in Patches
 - 803 Plains Woodland (including 15 metre buffer)
 - Roads
 - Railway
 - Watercourses
 - Contours (m)
 - Cadastre
 - Waterbodies
 - Wetlands

Note:
- 20 metre railway buffer to be confirmed with VicTrack

Data Sources:
Locality, Railway, Drainage Line, Streets, Features © VICMAP - 2018

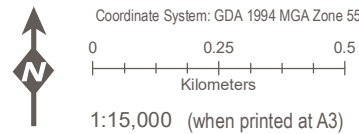
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Goorambat East Solar Farm

**ECOLOGICAL VALUES WITHIN
THE STUDY AREA**

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VERSION: 1

**Figure
3**



- Legend**
- Site Investigation Area
 - Grid Connection
 - Site Access
 - Fence
 - External Road - 7 metres wide
 - Internal Road - 4 metres wide
 - Single Axis Tracking Solar
 - Existing 220kV Overhead Transmission Lines
 - Roads
 - Railway
 - Watercourses
 - Operation and Maintenance Facilities
 - Designated Terminal Substation
 - Large Scattered Trees to be Retained
 - Small Scattered Trees to be Retained
 - Small Scattered Trees to be Removed
 - Large Scattered Trees to be Removed
 - Habitat Zones to be Removed
 - Cadastre
 - Waterbodies
 - Wetlands

Note:
- 20 metre railway buffer to be confirmed with VicTrack

Data Sources:
Locality, Railway, Drainage Line, Streets, Features © VICMAP - 2018

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Goorambat East Solar Farm

**IMPACTED ECOLOGICAL VALUES
WITHIN STUDY AREA**

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LAST MODIFIED: brierej: 22/08/2019
VERSION: 1

**Figure
4**

Appendix B

Threatened flora species
likelihood of occurrence

Appendix B Threatened flora species likelihood of occurrence

Table 8 Likelihood of occurrence assessment for threatened flora species

Scientific Name	Common Name	Conservation Status			(Year)	FFG Protected	Source	Habitat Preference	Likelihood of Occurrence
		EPBC	FFG	VROT					Post-field Assessment
<i>Acacia decora</i>	Western Silver Wattle			v	2008	P	VBA	Restricted to roadside and railway remnants of open woodland. Known to occur around Dookie, Thoona and Wodonga. (Flora of Victoria)	Unlikely
<i>Acacia melvillei</i>	Yarran			v	2006	P	VBA	Scattered through north-western Victoria, mostly along Murray River and its flood-plain, often in woodland. (Flora of Victoria)	Unlikely
<i>Allocasuarina luehmannii</i>	Buloke		L	e	2008	P	VBA	Usually found growing in woodland with Grey Box on a range of on non-calcareous soils types, mainly sandy loams. It is usually found on lower parts of the landscape mainly north and west of the Great Dividing Range and within the Murray-Darling Basin.	Present
<i>Aristida personata</i>	Purple Wire-grass		L	e	1995	P	VBA	Known from very few collections near Benalla and Ouyen, in dry grassland or open shrubland.	Possible
<i>Corymbia maculata</i>	Spotted Gum			v	2006		VBA	Suited to temperate to tropical areas but will grow satisfactorily in drier climates if water is available. It adapts to a wide range of soils provided they are not waterlogged. Isolated population believed to exist in East Gippsland.	Unlikely

Scientific Name	Common Name	Conservation Status			(Year)	FFG Protected	Source	Habitat Preference	Likelihood of Occurrence
		EPBC	FFG	VROT					Post-field Assessment
<i>Digitaria divaricatissima</i> var. <i>divaricatissima</i>	Umbrella Grass			v	2010		VBA	Suited to temperate to tropical areas but will grow satisfactorily in drier climates if water is available. It adapts to a wide range of soils provided they are not waterlogged. Isolated population believed to exist in East Gippsland. (AusGrass2)	Possible
<i>Dipodium hamiltonianum</i>	Yellow Hyacinth-orchid		L	e	1992	P	VBA	Very rare and restricted to dry open-forest or woodland in the north-east between Wangaratta and Wodonga, and near Wulgulmerang in the east.	Unlikely
<i>Diuris punctata</i>	Purple Diuris		L	v	1991		VBA	Moist areas in box, red gum and sclerophyll woodlands, grassy low open forest.	Unlikely
<i>Fimbristylis dichotoma</i>	Common Fringe-sedge			v	2007		VBA	Widespread in a variety of habitats; north from Griffith area. Rare or sporadic in Victoria, collected only from near Benalla, Euroa and Boort (pre-1950 records).	Unlikely
<i>Goodenia macbarronii</i>	Narrow Goodenia		L	v	2011	P	VBA	Rare in Victoria, confined to forests and grassy areas between Wedderburn and Euroa north to the Murray River, usually in damp sandy soils. (Flora of Victoria)	Unlikely
<i>Prasophyllum</i> aff. <i>validum</i> B	Woodland Leek-orchid			e	2000		VBA	Apparently endemic to Victoria where scattered across northern and western open forest and woodland communities on stony and sandy soils. (Flora of Victoria)	Unlikely

Scientific Name	Common Name	Conservation Status			(Year)	FFG Protected	Source	Habitat Preference	Likelihood of Occurrence
		EPBC	FFG	VROT					Post-field Assessment
<i>Prasophyllum gilgai</i>	Gilgai Leek-orchid		L	e	2003	P	VBA	Endemic to Victoria where found in Gilgai formations in seasonally inundated Eucalyptus camaldulensis grassy woodland on heavy grey clay loam. (Flora of Victoria)	Unlikely
<i>Rytidosperma richardsonii</i>	Straw Wallaby-grass			v	1995		VBA	Recorded from grassy woodlands in a few localities in north-east Victoria (e.g. Barnawartha, Dookie, Rutherglen, Springhurst and Yarrawonga). The type specimen of this species was from a plant propagated from wild-collected seed purportedly from Werribee (Vickery 1956). However, the only specimen of <i>Rytidosperma richardsonii</i> at MEL from southern Victoria is from the grounds of Geelong Grammar School at Corio (where possibly cultivated) and not known from there since 1961. (Flora of Victoria)	Possible
<i>Swainsona sericea</i>	Silky Swainson-pea		L	v	2002	P	VBA	Occurs on semi-arid lowland grasslands and grassy woodland, on sparsely vegetated, acidic, sodic, and well drained red clay rises.	Unlikely
<i>Xanthorrhoea glauca</i> subsp. <i>angustifolia</i>	Grey Grass-tree		L	e	2003	P	PMST	There are two subspecies, only <i>X. glauca</i> subsp. <i>angustifolia</i> occurs in Victoria. The typical subspecies occurs from central New South Wales to southern Queensland, mostly east of the Dividing Range. (Flora of Victoria)	Unlikely

Scientific Name	Common Name	Conservation Status			(Year)	FFG Protected	Source	Habitat Preference	Likelihood of Occurrence
		EPBC	FFG	VROT					Post-field Assessment
<i>Amphibromus fluitans</i>	River Swamp Wallaby-grass	VU			PMST		PMST	Inhabits both natural and man-made water-bodies, including swamps, lagoons, billabongs and dams.	Unlikely
<i>Brachyscome muelleroides</i>	Mueller Daisy	VU	L	e	PMST	P	PMST	Generally come from open positions on the Murray River floodplain, swampy River Red Gum Forest and damp depressions	Unlikely
<i>Glycine latrobeana</i>	Clover Glycine	VU	L	v	PMST	P	PMST	Endemic in Victoria and sporadically dispersed. Grows mainly in grasslands and grassy woodlands. Native grasslands, dry sclerophyll forests, woodlands and low open woodlands with a grassy ground layer	Possible
<i>Prasophyllum validum</i>	Sturdy Leek-orchid				PMST		PMST	Scattered across northern and western open forest and woodland communities on stony and sandy soils	Unlikely
<i>Swainsona recta</i>	Mountain Swainson-pea	EN	L	e	PMST	P	PMST	Grassland and open woodland, often on stony hillsides. Found in grassy understorey of woodlands and open-forests dominated by Blakely's Red-gum, Yellow Box, Candlebark and Bundy. Grows in association with understorey dominants that include Kangaroo Grass, <i>Poa</i> tussocks and spear-grasses.	Unlikely

Legend:

EPBC Act

CR – Critically Endangered

EN – Endangered

VU – Vulnerable

FFG Act

L – Listed

N – Nominated for listing

I – Invalid or ineligible

D – Delisted

VROTS

c – Critically Endangered

e – Endangered

v – Vulnerable

r – Rare

Records

(####) – VBA results: (year of last record)

PMST – Protected Matters Search Tool

Appendix C

Threatened fauna
species likelihood of
occurrence

Appendix C Threatened fauna species likelihood of occurrence

Table 9 Likelihood of occurrence assessment for threatened fauna species

Scientific Name	Common Name	Conservation Status			Record	Source	Habitat Preference	Likelihood of occurrence
		EPBC	FFG	VROT				
BIRDS								
<i>Actitis hypoleucos</i>	Common Sandpiper	Mi			PMST	PMST	Edges of saltwater to fresh waterbodies and wetlands, including estuaries, lakes, drainage lines, tidal watercourses and mudflats; occasionally beaches and rocky headlands; mainly spring-summer non-breeding migrant	Unlikely
<i>Anas rhynchos</i>	Australasian Shoveler			vu	1999	VBA	Inhabits various wetlands, preferring large, well-vegetated freshwater swamps and wetlands. Also estuaries, coastal inlets and artificial waterbodies (e.g. dams, sewage ponds).	Unlikely
<i>Anthochaera phrygia</i>	Regent Honeyeater	CR	L	cr	1990, PMST	VBA, PMST	Widespread but with an extremely patchy distribution. In Victoria, most sightings originate from a few sites in north-east Victoria and includes breeding habitat (Chiltern-Albury).	Possible
<i>Apus pacificus</i>	Fork-tailed Swift	Mi			PMST	PMST	Aerial over a wide range of habitats, from inland to coast; spring-summer non-breeding migrant	Possible (overhead)
<i>Ardea modesta</i>	Eastern Great Egret		L	vu	1999	VBA	Freshwater and brackish wetlands and watercourses, intertidal mudflats, inland lakes, swamps and rivers; also farm dams, irrigation drainages and artificial wetlands.	Unlikely
<i>Aythya australis</i>	Hardhead			vu	1995	VBA	Deep, permanent open freshwater wetlands and waterbodies with dense fringing vegetation. Sometimes artificial wetlands (dams, sewage ponds), especially during dry periods inland.	Unlikely

Scientific Name	Common Name	Conservation Status			Record	Source	Habitat Preference	Likelihood of occurrence
		EPBC	FFG	VROT				
<i>Biziura lobata</i>	Musk Duck			vu	1995	VBA	Permanent freshwater and brackish swamps and wetlands with dense vegetation, more open waters in non-breeding season; occasionally coastal areas and estuaries.	Unlikely
<i>Botaurus poiciloptilus</i>	Australasian Bittern	EN	L	en	PMST		Occurs mainly in densely vegetated freshwater wetlands and, rarely, in estuaries or tidal wetlands.	Unlikely
<i>Burhinus grallarius</i>	Bush Stone-curlew		L	en	2004	VBA	In south-eastern Australia, occur in open grassy woodlands, including box-ironbark and Buloke woodlands, often near watercourses and areas with dense leaf litter and fallen timber; sometimes on farmlands. Occupy a wider variety of habitats in northern Australia.	Possible
<i>Calidris acuminata</i>	Sharp-tailed Sandpiper	Mi			PMST	PMST	Margins of brackish waterbodies with emergent sedges grassland, saltmarsh or similar vegetation.	Unlikely
<i>Calidris ferruginea</i>	Curlew Sandpiper	CR, Mi		en	PMST	PMST	Coastal estuaries, bays and shallow wetlands, tidal mudflats and sandflats; mainly spring-summer non-breeding migrant	Unlikely
<i>Calidris melanotos</i>	Pectoral Sandpiper	Mi		nt	PMST	PMST	Shallow freshwater or brackish wetlands, including swamps, flooded grasslands, sewage ponds, occasionally tidal flats and saltmarshes	Unlikely
<i>Ceyx azureus</i>	Azure Kingfisher			nt	1977	VBA	The Azure Kingfisher prefers areas close to water including freshwater rivers and creeks as well as billabongs, lakes, swamps and dams, usually in shady overhanging vegetation. It is sometimes seen in parks on rivers, as well as duck or goldfish ponds in urban areas.	Unlikely
<i>Chalcites osculans</i>	Black-eared Cuckoo			nt	2000	VBA	Generally widespread but avoids wet, heavily forested areas. Usually found in drier areas of mulga and mallee open woodlands and shrublands.	Possible

Scientific Name	Common Name	Conservation Status			Record	Source	Habitat Preference	Likelihood of occurrence
		EPBC	FFG	VROT				
<i>Chlidonias hybrida</i>	Whiskered Tern			nt	2017	VBA	Prefers shallow terrestrial freshwater wetlands and swamps, brackish lakes, sewage farms and large dams.	Unlikely
<i>Chthonicola sagittata</i>	Speckled Warbler		L	vu	2001	VBA	Eucalypt-dominated open forests and grassy woodlands, including box-ironbark forests, dense shrublands on rocky ridges or in gullies.	Unlikely
<i>Circus assimilis</i>	Spotted Harrier			nt	2011	VBA	Open grassland, open grassy woodlands, crops, open shrublands and occasionally heathland or scrublands.	Possible
<i>Climacteris picumnus victoriae</i>	Brown Treecreeper (south-eastern ssp.)			nt	2013	VBA	Prefers open eucalypt woodland, often along watercourses and drainages, typically lacking a dense understorey but with substantial fallen timber and logs. Sometimes also margins of wooded areas. Forages on tree trunks and on or near ground.	Possible
<i>Coracina maxima</i>	Ground Cuckoo-shrike		L	vu	1991	VBA	Open arid and semi-arid mallee and mulga woodland, savanna and scrublands; also timbered watercourses, open grasslands and claypans. Feed entirely on the ground.	Possible
<i>Falco subniger</i>	Black Falcon		L	vu	1991	VBA	Woodland, scrub, shrubland and grassland types in arid and semi-arid zones.	Possible
<i>Gallinago hardwickii</i>	Latham's Snipe	Mi	N	nt	PMST	PMST	Wet grasslands and pastures, open and wooded swamps; spring-summer non-breeding migrant.	Unlikely
<i>Geopelia cuneata</i>	Diamond Dove		L	nt	1977	VBA	Arid and semi-arid grassy woodlands, wooded watercourses and scrublands close to water.	Possible
<i>Grantiella picta</i>	Painted Honeyeater	VU	L	vu	2001, PMST	VBA, PMST	Open box-ironbark forests, eucalypt and casuarina woodlands and well vegetated watercourses, particularly where trees are infested with mistletoe; mainly spring-summer migrant to south-eastern Australia	Possible

Scientific Name	Common Name	Conservation Status			Record	Source	Habitat Preference	Likelihood of occurrence
		EPBC	FFG	VROT				
<i>Grus rubicunda</i>	Brolga		L	vu	2008	VBA	Largely associated with ephemeral freshwater and brackish wetlands, grasslands, floodplains, irrigated pastures and saltmarsh.	Unlikely
<i>Haliaeetus leucogaster</i>	White-bellied Sea-Eagle		L	vu	2016	VBA	Occupies all coastal areas extending inland through main waterways, coastal islands, coastal lakes and along some inland rivers. It forages primarily for fish over large areas of open water.	Unlikely
<i>Hirundapus caudacutus</i>	White-throated Needletail	Mi		vu	2000, PMST	VBA, PMST	Aerial, mainly eastern Australia often associated with coastal and mountain regions; spring-summer non-breeding migrant.	Possible (overhead)
<i>Lathamus discolor</i>	Swift Parrot	CR	L	en	2006, PMST	VBA, PMST	Breeds in Tasmania, late spring-summer; occurs as non-breeding migrant to mainland south-eastern Australia mainly autumn-early spring. Generally prefers Box-Ironbark forests and woodlands inland of the Great Dividing Range; sometimes also other forests and woodlands in coastal and sub-coastal areas.	Possible
<i>Melanodryas cucullata</i>	Hooded Robin		L	nt	2009	VBA	Lowlands and foothills. Inhabits a range of vegetation, particularly with fallen timber and logs, including open eucalypt forests and box-ironbark woodlands, mallee and mulga woodlands, cypress pine woodlands, mallee heaths with scattered trees and often clearings adjacent to woodlands and forests.	Possible
<i>Motacilla flava</i>	Yellow Wagtail	Mi			PMST	PMST	Grassland habitat subject to inundation.	Unlikely
<i>Myiagra cyanoleuca</i>	Satin Flycatcher	Mi			PMST	PMST	Mainly in wet forests and dense woodlands, particularly with tall canopy of eucalypts with an understorey of tea-trees and wattles along streams. Seasonal visitor (mainly spring) to drier inland woodlands, coastal areas and occasionally gardens and parklands.	Unlikely

Scientific Name	Common Name	Conservation Status			Record	Source	Habitat Preference	Likelihood of occurrence
		EPBC	FFG	VROT				
<i>Neophema pulchella</i>	Turquoise Parrot		L	nt	2001	VBA	Inhabits arid to semi-arid areas within mallee and acacia (Mulga) scrublands/open woodlands with spinifex and saltbush ground covers. Occurs in both recently burnt and older growth mallee. Known to occur within the Lower Murray/Darling and Western catchment management authority regions.	Possible
<i>Numenius madagascariensis</i>	Eastern Curlew	CR, Mi		vu	PMST	PMST	Coastal lakes, estuaries, tidal mudflats and sandflats, mangroves and saltmarshes; occasionally fresh or brackish lakes near coast; mainly spring-summer non-breeding migrant.	Unlikely
<i>Nycticorax caledonicus hillii</i>	Nankeen Night Heron			nt	2017	VBA	Found throughout Australia where it frequents area of permanent water, particularly well vegetated wetlands. Can also be encountered along river margins, mangroves, swamps and some parks and gardens.	Unlikely
<i>Oxyura australis</i>	Blue-billed Duck		L	en	1991	VBA	Well vegetated freshwater swamps, large dams, lakes. Typically found on more open waters in winter.	Unlikely
<i>Pandion cristatus</i>	Eastern Osprey	Mi			PMST	PMST	Littoral and coastal habitats, and terrestrial wetlands generally preferring coastal cliffs.	Unlikely
<i>Pedionomus torquatus</i>	Plains-wanderer	CR	L	cr	1974, PMST	VBA, PMST	Low, open native grasslands, typically with sward less than 1m high, with extensive inter-tussock spaces and high diversity of small herbs; sometimes in unimproved pastures or crops.	Unlikely
<i>Platalea regia</i>	Royal Spoonbill			nt	1988	VBA	Larger shallow waters (inland and coastal), well vegetated shallow freshwater wetlands, floodplains, billabongs, sewage ponds, irrigation storages, tidal mudflats, estuaries, salt marshes, salt fields, mangroves, islands.	Unlikely

Scientific Name	Common Name	Conservation Status			Record	Source	Habitat Preference	Likelihood of occurrence
		EPBC	FFG	VROT				
<i>Plegadis falcinellus</i>	Glossy Ibis	Mi		nt	1991	VBA	Mainly margins of freshwater wetlands and nearby grasslands and pastures; sometimes estuaries and brackish lakes. Mainly spring-summer breeding migrant to south-eastern Australia.	Unlikely
<i>Polytelis swainsonii</i>	Superb Parrot	VU	L	en	PMST	PMST	River Red Gum, Black Box and other eucalypt woodlands and timbered watercourses; sometimes in pastures, stubbles, clearings and wooded farmland and often killed on roads when feeding on spilt grain.	Unlikely
<i>Pomatostomus temporalis</i>	Grey-crowned Babbler		L	en	2010	VBA	Inland open forests, woodlands and scrublands, particularly with an open shrub layer, little ground cover and plenty of fallen timber and leaf litter, including along roadsides and around better vegetated farms. Serious declines in settled areas of south-eastern Australia.	Possible
<i>Porzana pusilla</i>	Baillon's Crake		L	vu	1988	VBA	Well vegetated freshwater to brackish swamps, typically with dense floating vegetation (e.g. Triglochin, Potamogeton).	Unlikely
<i>Rhipidura rufifrons</i>	Rufous Fantail	Mi			PMST	PMST	Typically a fantail of dense forests such as rainforests, wet sclerophyll forests, monsoon forests, mangroves and riparian vegetation with a common preference for a shrubby understorey. Inhabits and breeds in wet eucalypt forests and rainforests, particularly gullies and in dense undergrowth. Seasonal (mainly autumn-winter) dispersal to more open habitat (e.g. woodlands, parklands with areas of dense undergrowth, box ironbark forests).	Unlikely
<i>Rostratula australis</i>	Australian Painted Snipe	EN	L	cr	PMST	PMST	Has been recorded from wetlands in all Australian states, however is most common in eastern Australia, especially the Murray-	Unlikely

Scientific Name	Common Name	Conservation Status			Record	Source	Habitat Preference	Likelihood of occurrence
		EPBC	FFG	VROT				
							Darling Basin. Individuals are nomadic, and there is some evidence of partial migration from south-eastern wetlands to coastal central and northern Queensland in autumn and winter. Inhabits shallow, well vegetated, temporary or infrequently filled wetlands, which may have associated trees, shrubs or samphire. Occasionally inhabits brackish wetlands, saltmarsh or claypans. Typical sites include those with rank emergent tussocks of grass, sedges, rushes, reeds or samphire, sometimes Melaleuca. Feeds on seeds and invertebrates from the water's edge.	
<i>Stagonopleura guttata</i>	Diamond Firetail		L	nt	2011	VBA	Open grassy eucalypt or cypress pine woodlands, acacia shrublands and edges of farmland or grassland close to wooded or lightly timbered areas. Often in wooded areas close to watercourses.	Possible
<i>Turnix velox</i>	Little Button-quail			nt	2017	VBA	Arid and semi-arid open and grassy woodlands and grasslands, sometimes dispersing to near-coastal areas during dry inland periods.	Possible
MAMMALS								
<i>Dasyurus maculatus maculatus</i> (SE mainland population)	Spot-tailed Quoll	EN	L	en	PMST	PMST	Coastal heath and scrub, dry and wet sclerophyll forest, rainforest. Generally a forest dependent species requiring large intact areas of vegetation.	Unlikely
<i>Myotis macropus</i>	Large-footed Myotis			nt	2007	VBA	Found in caves, mines, tunnels, tree hollows and within dense foliage. Never occur far from bodies of water where they feed on aquatic insects.	Possible
<i>Petauroides volans</i>	Greater Glider	VU		vu	PMST	PMST	Eucalypt forests and woodlands. Typically found in old growth, hollow bearing, montane, moist diverse eucalypt forests.	Unlikely

Scientific Name	Common Name	Conservation Status			Record	Source	Habitat Preference	Likelihood of occurrence
		EPBC	FFG	VROT				
<i>Petaurus norfolcensis</i>	Squirrel Glider		L	en	2009	VBA	Inhabits mature of old grown Box, Box-Ironbark woodlands and River Red Gum forest west of the Great Dividing Range and Blackbutt-Bloodwood forest with health understorey in coastal areas. Prefers mixed species stands with a shrub or Acacia understorey and requires abundant tree hollows for nest sites.	Possible
<i>Phascogale tapoatafa tapoatafa</i>	Brush-tailed Phascogale		L	vu	2003	VBA	Prefers open forest and woodland with sparse ground cover, but historically utilized habitats ranging from rainforest to the fringe of the mallee.	Possible
<i>Pseudomys fumeus</i>	Smoky Mouse	EN	L	cr	PMST	PMST	A variety of vegetation communities, ranging from coastal heath to dry ridgeline forest, sub-alpine heath and, occasionally, wetter gullies. Except for the wetter sites, a consistent feature of Smoky Mouse habitats is the diversity of heath and bush-pea species present, combined with potential shelter sites in the form of woody debris or rocks. The vegetation at capture sites varies widely in age post-fire.	Unlikely
<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox	VU	L	vu	PMST	PMST	Requires foraging resources and roost sites which differ in their characteristics and therefore location. Roost sites commonly occur in gullies, in vegetation with dense canopy cover and close to water. Foraging resources include blossom from eucalypts (preferred food) and a range of rainforest fruits, commercial fruit crops and introduced trees in urban areas. The species is highly mobile and commutes daily from roost sites to foraging areas.	Possible
REPTILES								

Scientific Name	Common Name	Conservation Status			Record	Source	Habitat Preference	Likelihood of occurrence
		EPBC	FFG	VROT				
<i>Aprasia parapulchella</i>	Pink-tailed Worm-Lizard	VU	L	en	PMST	PMST	Inhabits sloping, open woodland areas with predominantly grassy ground layer and rocky outcrops, particularly those dominated by Kangaroo Grass.	Unlikely
<i>Delma impar</i>	Striped Legless Lizard	VU	L	en	1992, PMST	VBA, PMST	Native grasslands and grassy woodland, within grass tussocks, cracks in the ground or under rocks. Has been recorded in exotic pasture.	Unlikely
<i>Emydura macquarii</i>	Murray Short-necked Turtle			vu	2009	VBA	Restricted to the Murray-Darling River system in south-eastern Australia, inhabiting larger rivers and permanent lakes in this region.	Unlikely
<i>Morelia spilota metcalfei</i>	Carpet Python		L	en	2009	VBA	Generally associated with large eucalypts along rivers in the Murray/Darling basin.	Unlikely
<i>Ramphotyphlops proximus</i>	Woodland Blind Snake			nt	1992	VBA	Variety of habitats in Victoria, NSW and Qld. Generally restricted to north of Great Dividing Range in Victoria.	Unlikely
<i>Varanus varius</i>	Lace Monitor			en	2015	VBA	Occurs in well-timbered areas from dry woodlands to cool temperate forests.	Possible
AMPHIBIANS								
<i>Litoria raniformis</i>	Growling Grass Frog	VU	L	en	1788, PMST	VBA, PMST	Permanent lakes, swamps, dams and lagoons or very wet areas in woodland and shrubland; often in waterbodies with dense standing and floating vegetation.	Unlikely
INVERTEBRATES								
<i>Synemon plana</i>	Golden Sun Moth	CR	L	cr	PMST	PMST	Native grasslands and grassy woodlands, particularly where Wallaby-grasses dominant. Now recognised to occur also in exotic grasslands dominated by Chilean Needle Grass.	Unlikely
FISH								
<i>Galaxias rostratus</i>	Flat-headed	CR	I	vu	1990,	VBA,	Shoals in mid-water. Usually below 150 m	Unlikely

Scientific Name	Common Name	Conservation Status			Record	Source	Habitat Preference	Likelihood of occurrence
		EPBC	FFG	VROT				
	Galaxias				PMST	PMST	altitude in Murray system in still or gently flowing waters, lakes, billabongs and backwaters. Depth 1 m, substrate of coarse sand and mud, and debris.	
<i>Maccullochella peelii peelii</i>	Murray Cod	VU	L	en	2013, PMST	VBA, PMST	Small clear, rocky, upland streams with riffle and pool structure on the upper western slopes of the Great Dividing Range to large, meandering, slow flowing, often silty rivers in the alluvial lowland reaches of the Murray Darling Basin.	Unlikely
<i>Macquaria ambigua</i>	Golden Perch			vu	2009	VBA	Variety of environments, but most frequently occurs in warm, turbid, sluggish inland waters and associated backwaters and billabongs. A tolerant fish able to withstand water temperatures of 4 to 37°C, and salinities up to 33,000 parts per million (almost that of sea-water).	Unlikely
<i>Macquaria australasica</i>	Macquarie Perch	EN	L	en	1917, PMST	VBA, PMST	Deep, rocky holes with considerable cover and flowing water over unsilted cobble and gravel substrate.	Unlikely
<i>Melanotaenia fluviatilis</i>	Crimson-spotted Rainbowfish		L	vu	2009	VBA	Inhabits streams, backwaters of larger rivers, drainage ditches, overflow ponds and reservoirs. Usually congregates along grassy banks or around submerged logs and branches.	Unlikely

*Indicates exotic species

Legend:

EPBC Act

CR – Critically Endangered

EN – Endangered

VU – Vulnerable

FFG Act

L – Listed

N – Nominated for listing

I – Invalid or ineligible

VROTS

cr – Critically Endangered

e – Endangered

vu – Vulnerable

Record

Year – Most recent VBA record

PMST – Protected Matters Search Tool (prediction)

Source

Mi – Migratory

D – Delisted

nt – Near Threatened

VBA – Victorian Biodiversity Atlas and/or PMST

Sources for habitat preferences descriptions: Birds Australia, 2003; Churchill, 2008; Cogger 1990; DPI NSW, 2008; Emison et al., 1987; Gray and Knight, 2001; HANZAB, 1990-2006; Hero et al., 1991; Inland Fisheries Service, 2000; NSW DEC, 2005; Menkhorst and Knight, 2001; Robinson, 2005; Strahan 1995; Wilson and Swan 2008; Tyler and Knight, 2009; Viridans Just a Minute 2005 and the Australian Government Department of Environment and Energy Species Profiles and Threats (SPRaT) Database [y](#)

Appendix D

Clause 52.17 Permit Application

Appendix D Clause 52.17 Permit Application

The following pages provide the information necessary to submit to the responsible Authority in order to seek a permit to remove the native vegetation present at the site.

Application to remove native vegetation

The tables below provide the necessary information to inform the application under the 'Detailed' pathway.

Number	Application requirement
1	<p>Information about the native vegetation to be removed, including:</p> <ul style="list-style-type: none"> The assessment pathway and reason for the assessment pathway. This includes the location category of the native vegetation to be removed. A description of the native vegetation to be removed that includes: <ul style="list-style-type: none"> whether it is a patch or a scattered tree (or both); the extent (in hectares); the number and circumference (in centimetres measured at 1.3 metres above ground level) of any large trees within a patch; the number and circumference (in centimetres measured at 1.3 metres above ground level) of any scattered trees, and whether each tree is small or large; the strategic biodiversity value score; the condition score; if it includes endangered Ecological Vegetation Classes; and if it includes sensitive wetland or coastal areas. Maps showing the native vegetation and property in context and containing: <ul style="list-style-type: none"> scale, north point and property boundaries; location of any patches of native vegetation and the number of large trees within the patch proposed to be removed; and location of scattered trees proposed to be removed, including their size. The offset requirement, determined in accordance with section 5 of the Guidelines, that will apply if the native vegetation is approved to be removed.
Response	See Attachment A .

Number	Application requirement
2	<p>Topographic and land information relating to the native vegetation to be removed, showing ridges, crests and hilltops, wetlands and waterways, slopes of more than 20 percent, drainage lines, low lying areas, saline discharge areas, and areas of existing erosion, as appropriate. This may be represented in a map or plan.</p>
Response	<p>See Attachment B.</p> <p>It is noted the assessment area is generally of very low relief which is characteristic of land located within the Victoria Riverina bioregion and represented by contours within Attachment B. Low-lying areas, DELWP mapped wetlands and drainage lines are also represented in Attachment B. The assessment area does not contain steep slopes, existing erosion and</p>

Number	Application requirement
	saline discharge areas.

Number	Application requirement
3	Recent, dated photographs of the native vegetation to be removed
Response	See below for a representative sample of the vegetation to be removed- all photos were taken during the field assessments of the site (November 2018).



Large scattered trees within cropped paddock



Large scattered trees within cropped paddock



Large scattered trees within cropped paddock

Number	Application requirement
4	Details of any other native vegetation approved to be removed, or that was removed without the required approvals, on the same property or on contiguous land in the same ownership as the applicant in the five-year period before the application for a permit was lodged
Response	There has been no removal of vegetation within the property in the 5 years preceding this permit application

Number	Application requirement
5	<p>An avoid and minimise statement. The statement describes any efforts to avoid the removal of and minimise the impacts on the biodiversity and other values of native vegetation, and how these efforts focused on areas of native vegetation that have the most value. The statement should include a description of the following:</p> <ul style="list-style-type: none"> • Strategic level planning – any regional or landscape scale strategic planning process that the site has been subject to that avoided and minimised impacts on native vegetation across a region or landscape • Site level planning – how the proposed use or development has been sited or designed to avoid and minimise impacts on native vegetation. • That no feasible opportunities exist to further avoid and minimise impacts on native vegetation without undermining the key objectives of the proposal.
Response	<p>The proponent for this development has invested significant effort in ensuring that the ultimate design of the facility has avoided and minimised ecological impact to those areas of the site that have been revealed through detailed survey to be of higher biodiversity value.</p> <p>Initially, a desktop assessment was undertaken to determine whether any past records of significant flora, vegetation communities or fauna species had been recorded from within the site, or within close proximity to the property boundaries.</p> <p>This assessment informed the due diligence of the suitability of the site for a solar farm, informed the early design of the proposed facility, and informed the scope of the detailed site assessments that followed.</p> <p>It was considered after the desktop review that the longer-term history of intense agricultural land use on the property may preclude the site from supporting significant ecological value beyond the scattered trees that were highlighted during the desktop assessment.</p> <p>Consequently, the initial design for the facility utilised far more of the site than the final design that is presented in this report. A change in the final site design was warranted as the site assessment revealed a number of patches of EVC 803 Plains Woodland as well as 203 scattered indigenous trees, the vast majority of which were large.</p> <p>Significant redesign of the facility occurred in close consultation with AECOM ecologists. Neoen commissioned AECOM to undertake a 'habitat connectivity assessment' to determine those trees on the site that should be a higher priority for retention based on their regional habitat connectivity. This assessment incorporated a review of relevant literature published on habitat</p>

connectivity, and resulted in the development of a framework for retention priority:

- **Threatened species utilisation assessment** – based on arbitrary assumptions on dispersal of threatened species that may utilise the area and proximity to ‘core habitat’
- **Total foliage cover** of a given patch
- **Habitat complexity** – trees within proximity to one another, distance to waterbodies, rivers, corridors, remnant patches, elevation in landscape etc.

The distance of trees from one another defined the ‘habitat complexity’ and the assumption that fauna species favour high habitat complexity was adopted.

AECOM then developed a set of retention rules to guide solar grid layout. The literature review identified that large trees in patches and more connected LSTs provide increased habitat complexity and are desirable to a range of fauna species. This is compared to more isolated trees that provide also habitat value, but to fewer fauna groups. These retention rules are provided below:

Cat.	Description	Implementation	Retention rules	Rational
1	All remnant patches containing a canopy component within Habitat Hectare Assessment.	Identify all patches that have a value in the tree canopy component as informed by the Habitat Hectare score sheet.	Retain Category 1 trees.	Suitable habitat for bat species. Increased habitat complexity desirable for a range of fauna species.
2	Large Scattered Trees (LST) within 75 m of a remnant patch, two or more LST or other habitat feature(s).	Identify all patches that have a value in the tree canopy component as informed by the Habitat Hectare score sheet. Also identify other habitat features that occur within the assessment area including waterways and waterbodies. Use this to conduct proximity analysis of LST within 75m of habitat features and other LSTs.	Retain Category 2 trees.	75 m is the threshold for Gliding marsupials.
3	LST >75 m from other LST or habitat feature and, is not in Category 2.	Identify all patches that have a value in the tree canopy component as informed by the Habitat Hectare score sheet. Also identify other habitat features that occur within the assessment area including waterways and waterbodies. Use this to	Retain up to 30% of trees >75 m from other LST or habitat features.	Suitable for woodland bird species. Less than 10% foliage cover in a landscape would result in a significant reduction in species

		conduct proximity analysis of LST greater than 75m of habitat features and other LSTs.		richness.
<p>Through the application of these principles, AECOM ecologists worked with Neoen to design a development plan that sought to retain as many of the valuable, connected scattered trees as possible. Through the application of this process, 67% of the scattered trees on site were retained, with 67 proposed to be removed. All habitat zones have been retained.</p> <p>The table below provides the results of each stage of the redesign of the facility, articulating the impact of the minimisation strategies adopted.</p>				
Design option	Extent of proposed vegetation removal (ha)	Number of large trees in patches and large scattered trees (LST) proposed to be removed	Number of small scattered trees (ST) proposed to be removed	
Option 1 (19/12/2018)	20.733 ha	343	9	
Option 2 (31/07/2019)	5.523 ha	83	1	
Option 3 (07/08/2019)	4.376 ha	66	1	
<p>No further opportunities exist to further avoid and minimise impacts on native vegetation without undermining the key objectives of the proposal.</p> <p>Note:</p> <p>A <i>Mapped Current Wetland</i> was identified within the site during the desktop study (Wetland ID 66914). A site assessment of vegetation within the areas mapped as a wetland was undertaken against the <i>Benchmarks for wetland Ecological Vegetation Classes in Victoria</i> (DELWP 2016) and <i>Wetland Vegetation Quality Field Assessment Sheet</i> (DSE 2006). The site assessment did not identify any vegetation present as belonging to any of the EVCs within the wetland benchmarks and therefore such vegetation was unable to be assessed using the wetland field assessment sheet. In addition, the land mapped as a wetland did not meet the definition of a wetland within Victoria being ‘<i>natural, modified, or artificial, subject to permanent, periodic or intermittent inundation, which hold static or very slowly moving water, and develop or have the potential to develop, biota adapted to inundation and the aquatic environment</i>’ (DSE 2005). Rather, where vegetation overlapped Wetland 66914 it was identified as either cropped paddocks, and/or supporting scattered trees considered representative of EVC 803 – Plains Woodland. The land was also considered to be free draining, as is typically required of cropping land. Number of farms dams are also present within the area mapped as a wetland, suggesting that historical modification of the natural hydrology of the area has occurred probably to encourage the dryland cropping and grazing activities that occur across the area today.</p> <p>Therefore whilst the area of the site is mapped as a current wetlands on</p>				

	DELWP's MapshareVic platform, and is not covered by a manmade surface, it does not meet the definition of a wetland within Victoria and is not therefore considered in this application to be wetlands. Subsequently, the mandated 30 meter buffer has not been applied to this wetland.
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Number	Application requirement
6	A copy of any Property Vegetation Plan contained within an agreement made pursuant to section 69 of the <i>Conservation, Forests and Lands Act 1987</i> that applies to the native vegetation to be removed.
Response	No Property Vegetation Plan applies to the site

Number	Application requirement
7	Where the removal of native vegetation is to create defensible space, a written statement explaining why the removal of native vegetation is necessary. This statement must have regard to other available bushfire risk mitigation measures. This statement is not required when the creation of defensible space is in conjunction with an application under the Bushfire Management Overlay.
Response	Not applicable

Number	Application requirement
8	If the application is under Clause 52.16, a statement that explains how the proposal responds to the Native Vegetation Precinct Plan considerations at decision guideline 8.
Response	Not applicable

Number	Application requirement
9	An offset statement providing evidence that an offset that meets the offset requirements for the native vegetation to be removed has been identified and can be secured in accordance with the Guidelines. A suitable statement includes evidence that the required offset: <ul style="list-style-type: none"> • is available to purchase from a third party, or • will be established as a new offset and has the agreement of the proposed offset provider, or • can be met by a first party offset.
Response	An offset statement has been obtained and can be provided on request

Number	Application requirement
10	A site assessment report of the native vegetation to be removed, including: <ul style="list-style-type: none"> • A habitat hectare assessment of any patches of native vegetation, including the condition, extent (in hectares), Ecological Vegetation Class and Bioregional Conservation Status; • The location, number, circumference (in cm measured at 1.3 metres above ground level) and species of large trees within patches;

	<ul style="list-style-type: none"> The location, number, circumference (in cm measured at 1.3 metres above ground level) and species of scattered trees and whether each tree is small or large.
Response	<p>No patches of native vegetation are proposed to be removed.</p> <p>66 large trees and one small tree are proposed to be removed for the development.</p>

#	Common Name	Species Name	DBH (cm)	Easting MGA55	Northing MGA55
1	Grey Box	Eucalyptus microcarpa	151	404883.7482	5967829.6125
2	Grey Box	Eucalyptus microcarpa	155	404966.7514	5967706.0065
3	Grey Box	Eucalyptus microcarpa	162	405001.8273	5967721.5755
4	Grey Box	Eucalyptus microcarpa	141	404757.5695	5967633.1455
5	Grey Box	Eucalyptus microcarpa	100	404834.8465	5967563.5594
6	Grey Box	Eucalyptus microcarpa	83	404974.1899	5967516.2535
7	Grey Box	Eucalyptus microcarpa	168	403526.7232	5968623.8731
8	Grey Box	Eucalyptus microcarpa	162	403650.0405	5968703.7652
9	N/A	Eucalyptus spp.	100	404080.2761	5967699.5014
10	Grey Box	Eucalyptus microcarpa	15	403638.4599	5968646.9225
11	Grey Box	Eucalyptus microcarpa	160	403592.2489	5968634.9971
12	Grey Box	Eucalyptus microcarpa	176	403458.8960	5968788.7849
13	Grey Box	Eucalyptus microcarpa	100	403275.3814	5968571.0265
14	Grey Box	Eucalyptus microcarpa	144	403093.4687	5967958.4869
15	Grey Box	Eucalyptus microcarpa	150	403812.8076	5968366.2442
16	Grey Box	Eucalyptus microcarpa	168	403536.0725	5968672.1701
17	Grey Box	Eucalyptus microcarpa	190	403423.2702	5968690.0351
18	Grey Box	Eucalyptus microcarpa	110	403193.8593	5967925.6628
19	Grey Box	Eucalyptus microcarpa	103	403445.7850	5968791.8646
20	Grey Box	Eucalyptus microcarpa	127	403200.8760	5967943.6938
21	Grey Box	Eucalyptus microcarpa	160	403289.6121	5968741.2874
22	River Red Gum	Eucalyptus camaldulensis	191	402958.7042	5967614.5546
23	Stag	Stag	100	403750.2377	5966421.7117
24	Stag	Stag	100	403741.0628	5966381.8484
25	Grey Box	Eucalyptus microcarpa	125	403932.6740	5968856.8730
26	Grey Box	Eucalyptus microcarpa	141	403596.6873	5968624.2586
27	Grey Box	Eucalyptus microcarpa	174	403153.7051	5967922.6650
28	River Red Gum	Eucalyptus camaldulensis	217	403125.4559	5967212.1298
29	Grey Box	Eucalyptus microcarpa	100	403323.7952	5968100.9364
30	Grey Box	Eucalyptus microcarpa	100	403960.5133	5966580.0132
31	Grey Box	Eucalyptus microcarpa	84	403238.4486	5967872.4631
32	N/A	Eucalyptus spp.	100	403748.5005	5966457.7064
33	Grey Box	Eucalyptus microcarpa	100	403449.7072	5968517.3564
34	Stag	Stag	100	403574.2899	5966934.7825
35	N/A	Eucalyptus spp.	100	403783.2264	5968654.4643
36	Grey Box	Eucalyptus microcarpa	202	403226.8503	5967870.4570
37	Grey Box	Eucalyptus microcarpa	100	403617.1977	5968426.9631
38	Stag	Stag	100	403568.7074	5966901.9288

39	N/A	Eucalyptus spp.	100	403776.8820	5966476.4970
40	Grey Box	Eucalyptus microcarpa	100	403863.4407	5966796.0931
41	Grey Box	Eucalyptus microcarpa	219	403137.2806	5967939.6183
42	Stag	Stag	100	403583.0200	5966924.9779
43	Stag	Stag	100	405261.5469	5969497.5904
44	Grey Box	Eucalyptus microcarpa	149	405180.1318	5969289.9981
45	Buloke	Allocasuarina luehmannii	53	405599.5068	5967552.7732
46	Stag	Stag	100	405169.0111	5969664.8536
47	Stag	Stag	100	405594.0911	5969044.6056
48	Grey Box	Eucalyptus microcarpa	128	405167.5411	5969346.9411
49	Buloke	Allocasuarina luehmannii	71	405600.2441	5967550.2082
50	Grey Box	Eucalyptus microcarpa	105	405172.3543	5969310.3139
51	N/A	Eucalyptus spp.	100	405210.4756	5967884.4075
52	N/A	Eucalyptus spp.	102	405148.5341	5967563.7814
53	Grey Box	Eucalyptus microcarpa	100	405470.0973	5968469.4290
54	N/A	Eucalyptus spp.	122	405138.5759	5967421.9941
55	Yellow Box	Eucalyptus melliodora	124	405524.1609	5967530.7690
56	Stag	Stag	80	405200.3816	5969294.8703
57	N/A	Eucalyptus spp.	114	405058.4041	5967532.2685
58	White Box	Eucalyptus albens	100	405155.1626	5969509.1192
59	Grey Box	Eucalyptus microcarpa	132	405116.7966	5969319.3614
60	Grey Box	Eucalyptus microcarpa	121	405723.1360	5967539.6305
61	<Null>	Eucalyptus spp.	135	405040.0870	5967474.0874
62	Grey Box	Eucalyptus microcarpa	122	406041.3616	5968039.5687
63	N/A	Eucalyptus spp.	140	406045.0143	5968103.5848
64	Grey Box	Eucalyptus microcarpa	163	406019.5385	5968113.3284
65	Grey Box	Eucalyptus microcarpa	124	405985.2616	5968133.6294
66	Grey Box	Eucalyptus microcarpa	122	405985.1508	5968142.4149
67	N/A	Eucalyptus spp.	90	406084.1729	5968072.2300

Number	Application requirement
11	<p>Information about impacts on rare or threatened species habitat, including:</p> <ul style="list-style-type: none"> The relevant section of the <i>habitat importance map</i> for each rare or threatened species requiring a species offset For each rare or threatened species that the native vegetation to be removed is habitat for, according to the Habitat importance maps: <ul style="list-style-type: none"> The species' conservation status The proportional impact of the removal of native vegetation on the total habitat for that species Whether their habitat are highly localized habitats, dispersed habitats, or important areas of habitat within a dispersed species habitat.
Response	As per Attachment A, there are no species present on the site that require a species offset. Offsets necessary for the removals are general offsets only.

Attachment A - Native Vegetation Removal Report

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

Date of issue: 13/08/2019

Report ID: ACM_2019_008

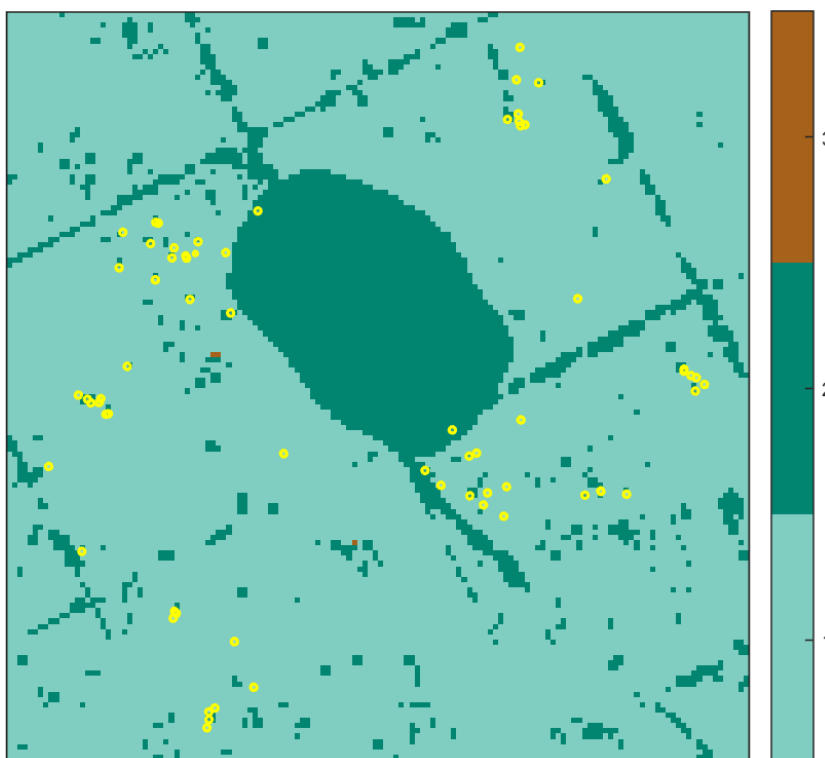
Time of issue: 2:23 pm

Project ID	Goorambat_East_NVR
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Assessment pathway

Assessment pathway	Detailed Assessment Pathway
Extent including past and proposed	4.376 ha
Extent of past removal	0.000 ha
Extent of proposed removal	4.376 ha
No. Large trees proposed to be removed	66
Location category of proposed removal	Location 2 The native vegetation is in an area mapped as an endangered Ecological Vegetation Class (as per the statewide EVC map). Removal of less than 0.5 hectares of native vegetation in this location will not have a significant impact on any habitat for a rare or threatened species.

1. Location map



Offset requirements if a permit is granted

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

General offset amount¹	0.796 general habitat units
Vicinity	Goulburn Broken Catchment Management Authority (CMA) or Benalla Rural City Council
Minimum strategic biodiversity value score ²	0.170
Large trees	66 large trees

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

Appendix 1 includes information about the native vegetation to be removed

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

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

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

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

Next steps

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

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

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

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

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

Additional application requirements must be met including:

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

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Melbourne 2019

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

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

Appendix 1: Description of native vegetation to be removed

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

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

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

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

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

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

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

Native vegetation to be removed

Information provided by or on behalf of the applicant in a GIS file							Information calculated by EnSym					
Zone	Type	BioEVC	BioEVC conservation status	Large tree(s)	Partial removal	Condition score	Polygon Extent	Extent without overlap	SBV score	HI score	Habitat units	Offset type
1-A	Scattered Tree	vriv0803	Endangered	0	no	0.200	0.031	0.031	0.180		0.006	General
2-A	Scattered Tree	vriv0803	Endangered	1	no	0.200	0.070	0.070	0.570		0.017	General
3-A	Scattered Tree	vriv0803	Endangered	1	no	0.200	0.070	0.070	0.160		0.012	General
4-A	Scattered Tree	vriv0803	Endangered	1	no	0.200	0.070	0.070	0.160		0.012	General
5-A	Scattered Tree	vriv0803	Endangered	1	no	0.200	0.070	0.070	0.670		0.018	General
6-A	Scattered Tree	vriv0803	Endangered	1	no	0.200	0.070	0.070	0.230		0.013	General
7-A	Scattered Tree	vriv0803	Endangered	1	no	0.200	0.070	0.070	0.180		0.012	General
8-A	Scattered Tree	vriv0803	Endangered	1	no	0.200	0.070	0.070	0.171		0.012	General

Information provided by or on behalf of the applicant in a GIS file							Information calculated by EnSym					
Zone	Type	BioEVC	BioEVC conservation status	Large tree(s)	Partial removal	Condition score	Polygon Extent	Extent without overlap	SBV score	HI score	Habitat units	Offset type
9-A	Scattered Tree	vriv0803	Endangered	1	no	0.200	0.070	0.070	0.200		0.013	General
10-A	Scattered Tree	vriv0803	Endangered	1	no	0.200	0.070	0.070	0.100		0.012	General
11-A	Scattered Tree	vriv0803	Endangered	1	no	0.200	0.070	0.052	0.180		0.009	General
12-A	Scattered Tree	vriv0803	Endangered	1	no	0.200	0.070	0.055	0.200		0.010	General
13-A	Scattered Tree	vriv0803	Endangered	1	no	0.200	0.070	0.070	0.330		0.014	General
14-A	Scattered Tree	vriv0803	Endangered	1	no	0.200	0.070	0.070	0.241		0.013	General
15-A	Scattered Tree	vriv0803	Endangered	1	no	0.200	0.070	0.070	0.100		0.012	General
16-A	Scattered Tree	vriv0803	Endangered	1	no	0.200	0.070	0.070	0.185		0.012	General
17-A	Scattered Tree	vriv0803	Endangered	1	no	0.200	0.070	0.070	0.200		0.013	General
18-A	Scattered Tree	vriv0803	Endangered	1	no	0.200	0.070	0.062	0.100		0.010	General
19-A	Scattered Tree	vriv0803	Endangered	1	no	0.200	0.070	0.055	0.200		0.010	General
20-A	Scattered Tree	vriv0803	Endangered	1	no	0.200	0.070	0.062	0.100		0.010	General
21-A	Scattered Tree	vriv0803	Endangered	1	no	0.200	0.070	0.070	0.580		0.017	General
22-A	Scattered Tree	nis_0175	Endangered	1	no	0.200	0.070	0.070	0.102		0.012	General
23-A	Scattered Tree	nis_0175	Endangered	1	no	0.200	0.070	0.070	0.100		0.012	General

Information provided by or on behalf of the applicant in a GIS file							Information calculated by EnSym					
Zone	Type	BioEVC	BioEVC conservation status	Large tree(s)	Partial removal	Condition score	Polygon Extent	Extent without overlap	SBV score	HI score	Habitat units	Offset type
24-A	Scattered Tree	vriv0803	Endangered	1	no	0.200	0.070	0.070	0.640		0.017	General
25-A	Scattered Tree	vriv0803	Endangered	1	no	0.200	0.070	0.052	0.180		0.009	General
26-A	Scattered Tree	vriv0803	Endangered	1	no	0.200	0.070	0.066	0.100		0.011	General
27-A	Scattered Tree	vriv0803	Endangered	1	no	0.200	0.070	0.070	0.408		0.015	General
28-A	Scattered Tree	vriv0803	Endangered	1	no	0.200	0.070	0.070	0.280		0.014	General
29-A	Scattered Tree	vriv0803	Endangered	1	no	0.200	0.070	0.070	0.100		0.012	General
30-A	Scattered Tree	vriv0803	Endangered	1	no	0.200	0.070	0.052	0.100		0.009	General
31-A	Scattered Tree	nis_0803	Endangered	1	no	0.200	0.070	0.070	0.110		0.012	General
32-A	Scattered Tree	vriv0803	Endangered	1	no	0.200	0.070	0.070	0.170		0.012	General
33-A	Scattered Tree	vriv0803	Endangered	1	no	0.200	0.070	0.054	0.110		0.009	General
34-A	Scattered Tree	vriv0803	Endangered	1	no	0.200	0.070	0.070	0.550		0.016	General
35-A	Scattered Tree	vriv0803	Endangered	1	no	0.200	0.070	0.052	0.100		0.009	General
36-A	Scattered Tree	vriv0803	Endangered	1	no	0.200	0.070	0.070	0.130		0.012	General
37-A	Scattered Tree	vriv0803	Endangered	1	no	0.200	0.070	0.069	0.113		0.012	General
38-A	Scattered Tree	nis_0803	Endangered	1	no	0.200	0.070	0.070	0.110		0.012	General

Information provided by or on behalf of the applicant in a GIS file							Information calculated by EnSym					
Zone	Type	BioEVC	BioEVC conservation status	Large tree(s)	Partial removal	Condition score	Polygon Extent	Extent without overlap	SBV score	HI score	Habitat units	Offset type
39-A	Scattered Tree	vriv0803	Endangered	1	no	0.200	0.070	0.070	0.100		0.012	General
40-A	Scattered Tree	vriv0803	Endangered	1	no	0.200	0.070	0.066	0.100		0.011	General
41-A	Scattered Tree	vriv0803	Endangered	1	no	0.200	0.070	0.053	0.101		0.009	General
42-A	Scattered Tree	nis_0175	Endangered	1	no	0.200	0.070	0.070	0.200		0.013	General
43-A	Scattered Tree	nis_0803	Endangered	1	no	0.200	0.070	0.058	0.470		0.013	General
44-A	Scattered Tree	nis_0803	Endangered	1	no	0.200	0.070	0.039	0.100		0.006	General
45-A	Scattered Tree	nis_0175	Endangered	1	no	0.200	0.070	0.070	0.250		0.013	General
46-A	Scattered Tree	nis_0803	Endangered	1	no	0.200	0.070	0.070	0.100		0.012	General
47-A	Scattered Tree	nis_0175	Endangered	1	no	0.200	0.070	0.070	0.470		0.016	General
48-A	Scattered Tree	nis_0803	Endangered	1	no	0.200	0.070	0.039	0.100		0.006	General
49-A	Scattered Tree	nis_0803	Endangered	1	no	0.200	0.070	0.065	0.470		0.014	General
50-A	Scattered Tree	vriv0803	Endangered	1	no	0.200	0.070	0.070	0.100		0.012	General
51-A	Scattered Tree	vriv0803	Endangered	1	no	0.200	0.070	0.070	0.220		0.013	General
52-A	Scattered Tree	nis_0803	Endangered	1	no	0.200	0.070	0.070	0.120		0.012	General
59-A	Scattered Tree	vriv0803	Endangered	1	no	0.200	0.070	0.070	0.203		0.013	General

Information provided by or on behalf of the applicant in a GIS file							Information calculated by EnSym					
Zone	Type	BioEVC	BioEVC conservation status	Large tree(s)	Partial removal	Condition score	Polygon Extent	Extent without overlap	SBV score	HI score	Habitat units	Offset type
60-A	Scattered Tree	vriv0803	Endangered	1	no	0.200	0.070	0.070	0.100		0.012	General
61-A	Scattered Tree	nis_0803	Endangered	1	no	0.200	0.070	0.064	0.470		0.014	General
62-A	Scattered Tree	vriv0803	Endangered	1	no	0.200	0.070	0.070	0.180		0.012	General
63-A	Scattered Tree	nis_0175	Endangered	1	no	0.200	0.070	0.070	0.200		0.013	General
64-A	Scattered Tree	nis_0175	Endangered	1	no	0.200	0.070	0.070	0.470		0.016	General
65-A	Scattered Tree	nis_0803	Endangered	1	no	0.200	0.070	0.070	0.100		0.012	General
66-A	Scattered Tree	vriv0803	Endangered	1	no	0.200	0.070	0.070	0.180		0.012	General
67-A	Scattered Tree	vriv0803	Endangered	1	no	0.200	0.070	0.070	0.100		0.012	General
53-A	Scattered Tree	nis_0803	Endangered	1	no	0.200	0.070	0.070	0.100		0.012	General
54-A	Scattered Tree	nis_0803	Endangered	1	no	0.200	0.070	0.070	0.100		0.012	General
55-A	Scattered Tree	nis_0803	Endangered	1	no	0.200	0.070	0.069	0.100		0.011	General
56-A	Scattered Tree	nis_0803	Endangered	1	no	0.200	0.070	0.069	0.100		0.011	General
57-A	Scattered Tree	nis_0803	Endangered	1	no	0.200	0.070	0.049	0.100		0.008	General
58-A	Scattered Tree	nis_0803	Endangered	1	no	0.200	0.070	0.049	0.100		0.008	General

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

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

Species common name	Species scientific name	Species number	Conservation status	Group	Habitat impacted	% habitat value affected
Mueller Daisy	<i>Brachyscome muelleroides</i>	500465	Endangered	Dispersed	Habitat importance map	0.0003
Euroa Guinea-flower	<i>Hibbertia humifusa subsp. erigens</i>	505083	Vulnerable	Dispersed	Habitat importance map	0.0002
Yarran Wattle	<i>Acacia omalophylla</i>	500069	Endangered	Dispersed	Habitat importance map	0.0002
Western Silver Wattle	<i>Acacia decora</i>	500027	Vulnerable	Dispersed	Habitat importance map	0.0002
Narrow Goodenia	<i>Goodenia macbarronii</i>	501513	Vulnerable	Dispersed	Habitat importance map	0.0001
Northern Sandalwood	<i>Santalum lanceolatum</i>	503005	Endangered	Dispersed	Habitat importance map	0.0001
Bent-leaf Wattle	<i>Acacia flexifolia</i>	500035	Rare	Dispersed	Habitat importance map	0.0001
Cottony Cassinia	<i>Cassinia ozothamnoides</i>	501560	Vulnerable	Dispersed	Habitat importance map	0.0001
Plump Windmill Grass	<i>Chloris ventricosa</i>	500757	Vulnerable	Dispersed	Habitat importance map	0.0001
Mugga	<i>Eucalyptus sideroxylon subsp. sideroxylon</i>	504493	Rare	Dispersed	Habitat importance map	0.0001
Ausfeld's Wattle	<i>Acacia ausfeldii</i>	500013	Vulnerable	Dispersed	Habitat importance map	0.0001
Rugose Toadlet	<i>Uperoleia rugosa</i>	13151	Endangered	Dispersed	Habitat importance map	0.0001
Umbrella Grass	<i>Digitaria divaricatissima var. divaricatissima</i>	501045	Vulnerable	Dispersed	Habitat importance map	0.0001
Pepper Grass	<i>Panicum laevinode</i>	504808	Vulnerable	Dispersed	Habitat importance map	0.0001
Spiny Rice-flower	<i>Pimelea spinescens subsp. spinescens</i>	504823	Endangered	Dispersed	Habitat importance map	0.0001
Yellow-tongue Daisy	<i>Brachyscome chrysoglossa</i>	503654	Vulnerable	Dispersed	Habitat importance map	0.0000
Jericho Wire-grass	<i>Aristida jerichoensis var. subspinulifera</i>	504631	Endangered	Dispersed	Habitat importance map	0.0000
Western Golden-tip	<i>Goodia medicaginea</i>	501518	Rare	Dispersed	Habitat importance map	0.0000

Broom Bitter-pea	<i>Daviesia genistifolia s.s.</i>	503813	Rare	Dispersed	Habitat importance map	0.0000
Purple Diuris	<i>Diuris punctata</i>	501084	Vulnerable	Dispersed	Habitat importance map	0.0000
Small Scurf-pea	<i>Cullen parvum</i>	502773	Endangered	Dispersed	Habitat importance map	0.0000
Rosemary Grevillea	<i>Grevillea rosmarinifolia subsp. rosmarinifolia</i>	504066	Rare	Dispersed	Habitat importance map	0.0000
Southern Swainson-pea	<i>Swainsona behriana</i>	504944	Rare	Dispersed	Habitat importance map	0.0000
Late-flower Flax-lily	<i>Dianella tarda</i>	505085	Vulnerable	Dispersed	Habitat importance map	0.0000
Golden Cowslips	<i>Diuris behrii</i>	501061	Vulnerable	Dispersed	Habitat importance map	0.0000
Pale Swamp Everlasting	<i>Coronidium gunnianum</i>	504655	Vulnerable	Dispersed	Habitat importance map	0.0000
Dookie Daisy	<i>Brachyscome gracilis</i>	505494	Vulnerable	Dispersed	Habitat importance map	0.0000
Slender Club-sedge	<i>Isolepis congrua</i>	501773	Vulnerable	Dispersed	Habitat importance map	0.0000
Fuzzy New Holland Daisy	<i>Vittadinia cuneata var. morrisii</i>	505060	Rare	Dispersed	Habitat importance map	0.0000
Long Eryngium	<i>Eryngium paludosum</i>	501238	Vulnerable	Dispersed	Habitat importance map	0.0000
Grey-crowned Babbler	<i>Pomatostomus temporalis temporalis</i>	10443	Endangered	Dispersed	Habitat importance map	0.0000
Brolga	<i>Grus rubicunda</i>	10177	Vulnerable	Dispersed	Habitat importance map	0.0000
Branching Groundsel	<i>Senecio cunninghamii var. cunninghamii</i>	503104	Rare	Dispersed	Habitat importance map	0.0000
Velvet Daisy-bush	<i>Olearia pannosa subsp. cardiophylla</i>	502317	Vulnerable	Dispersed	Habitat importance map	0.0000
Silky Swainson-pea	<i>Swainsona sericea</i>	504946	Vulnerable	Dispersed	Habitat importance map	0.0000
Pale Flax-lily	<i>Dianella sp. aff. longifolia (Riverina)</i>	507399	Vulnerable	Dispersed	Habitat importance map	0.0000
Common Fringe-sedge	<i>Fimbristylis dichotoma</i>	501368	Vulnerable	Dispersed	Habitat importance map	0.0000
Smooth Minuria	<i>Minuria integerrima</i>	502201	Rare	Dispersed	Habitat importance map	0.0000
Dwarf Brooklime	<i>Gratiola pumilo</i>	503753	Rare	Dispersed	Habitat importance map	0.0000
Dwarf Cassinia	<i>Cassinia diminuta</i>	507664	Rare	Dispersed	Habitat importance map	0.0000
Waterbush	<i>Myoporum montanum</i>	502240	Rare	Dispersed	Habitat importance map	0.0000

Bush Stone-curlew	<i>Burhinus grallarius</i>	10174	Endangered	Dispersed	Habitat importance map	0.0000
Hairy Tails	<i>Ptilotus erubescens</i>	502825	Vulnerable	Dispersed	Habitat importance map	0.0000
Kamarooka Mallee	<i>Eucalyptus froggattii</i>	501279	Rare	Dispersed	Habitat importance map	0.0000
Clover Glycine	<i>Glycine latrobeana</i>	501456	Vulnerable	Dispersed	Habitat importance map	0.0000
Dark Wire-grass	<i>Aristida calycina</i> var. <i>calycina</i>	503630	Rare	Dispersed	Habitat importance map	0.0000
Buloke Mistletoe	<i>Amyema linophylla</i> subsp. <i>orientalis</i>	500217	Vulnerable	Dispersed	Habitat importance map	0.0000
Buloke	<i>Allocasuarina luehmannii</i>	500678	Endangered	Dispersed	Habitat importance map	0.0000
Australasian Shoveler	<i>Anas rhynchos</i>	10212	Vulnerable	Dispersed	Habitat importance map	0.0000
Grey Grass-tree	<i>Xanthorrhoea glauca</i> subsp. <i>angustifolia</i>	507229	Endangered	Dispersed	Habitat importance map	0.0000
Bearded Dragon	<i>Pogona barbata</i>	12177	Vulnerable	Dispersed	Habitat importance map	0.0000
Dwarf Bitter-creed	<i>Rorippa eustylis</i>	502944	Rare	Dispersed	Habitat importance map	0.0000
Delicate Crane's-bill	<i>Geranium</i> sp. 6	505347	Vulnerable	Dispersed	Habitat importance map	0.0000
Blue Burr-daisy	<i>Calotis cuneifolia</i>	500594	Rare	Dispersed	Habitat importance map	0.0000
Australian Painted Snipe	<i>Rostratula australis</i>	10170	Critically endangered	Dispersed	Habitat importance map	0.0000
Stiff Groundsel	<i>Senecio behrianus</i>	503101	Endangered	Dispersed	Habitat importance map	0.0000
Black Falcon	<i>Falco subniger</i>	10238	Vulnerable	Dispersed	Habitat importance map	0.0000
Hardhead	<i>Aythya australis</i>	10215	Vulnerable	Dispersed	Habitat importance map	0.0000
Rye Beetle-grass	<i>Tripogon loliiformis</i>	503455	Rare	Dispersed	Habitat importance map	0.0000
Lanky Buttons	<i>Leptorhynchus elongatus</i>	501941	Endangered	Dispersed	Habitat importance map	0.0000
Ridged Water-milfoil	<i>Myriophyllum porcatum</i>	502257	Vulnerable	Dispersed	Habitat importance map	0.0000
Striped Water-milfoil	<i>Myriophyllum striatum</i>	503869	Vulnerable	Dispersed	Habitat importance map	0.0000
Deane's Wattle	<i>Acacia deanei</i> subsp. <i>paucijuga</i>	504201	Rare	Dispersed	Habitat importance map	0.0000
Painted Honeyeater	<i>Grantiella picta</i>	10598	Vulnerable	Dispersed	Habitat importance map	0.0000

Floodplain Fireweed	<i>Senecio campylocarpus</i>	507136	Rare	Dispersed	Habitat importance map	0.0000
Veiled Fringe-sedge	<i>Fimbristylis velata</i>	501369	Rare	Dispersed	Habitat importance map	0.0000
Riverina Bitter-cress	<i>Cardamine moirensis</i>	505032	Rare	Dispersed	Habitat importance map	0.0000
Dense Mint-bush	<i>Prostanthera decussata</i>	502739	Rare	Dispersed	Habitat importance map	0.0000
Small Burr-grass	<i>Tragus australianus</i>	503418	Rare	Dispersed	Habitat importance map	0.0000
Silky Umbrella-grass	<i>Digitaria ammophila</i>	501041	Vulnerable	Dispersed	Habitat importance map	0.0000
Squirrel Glider	<i>Petaurus norfolcensis</i>	11137	Endangered	Dispersed	Habitat importance map	0.0000
Lace Monitor	<i>Varanus varius</i>	12283	Endangered	Dispersed	Habitat importance map	0.0000

Habitat group

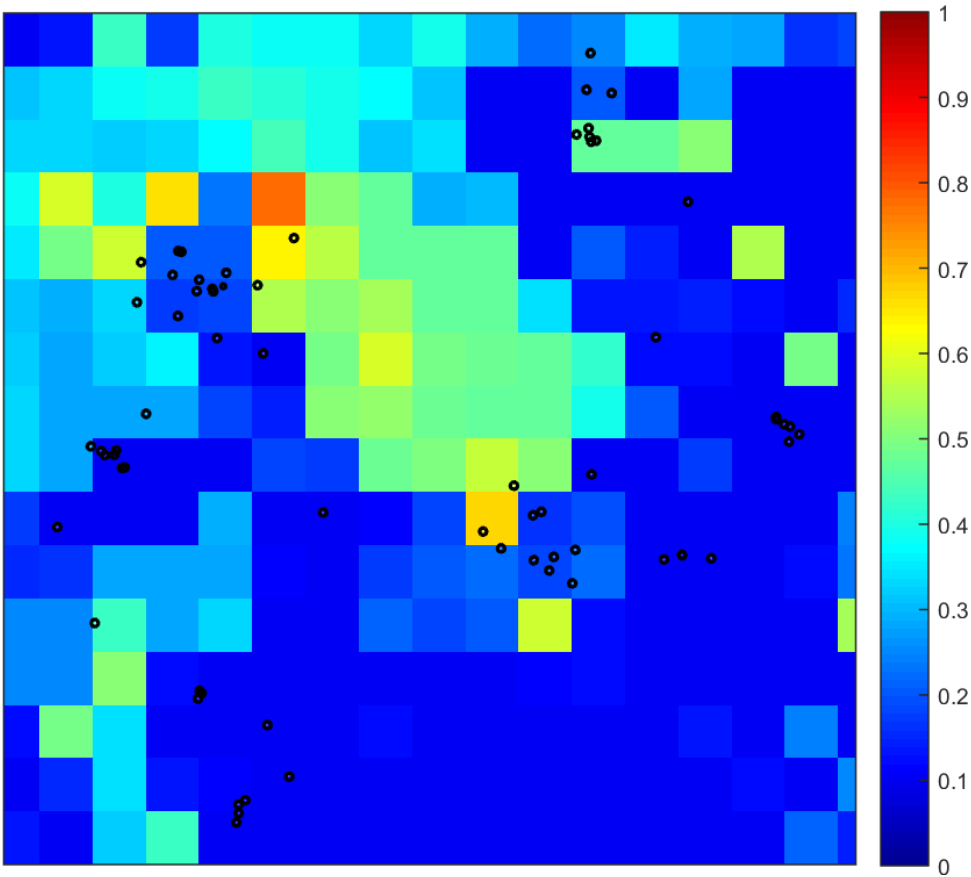
- Highly localised habitat means there is 2000 hectares or less mapped habitat for the species
- Dispersed habitat means there is more than 2000 hectares of mapped habitat for the species

Habitat impacted

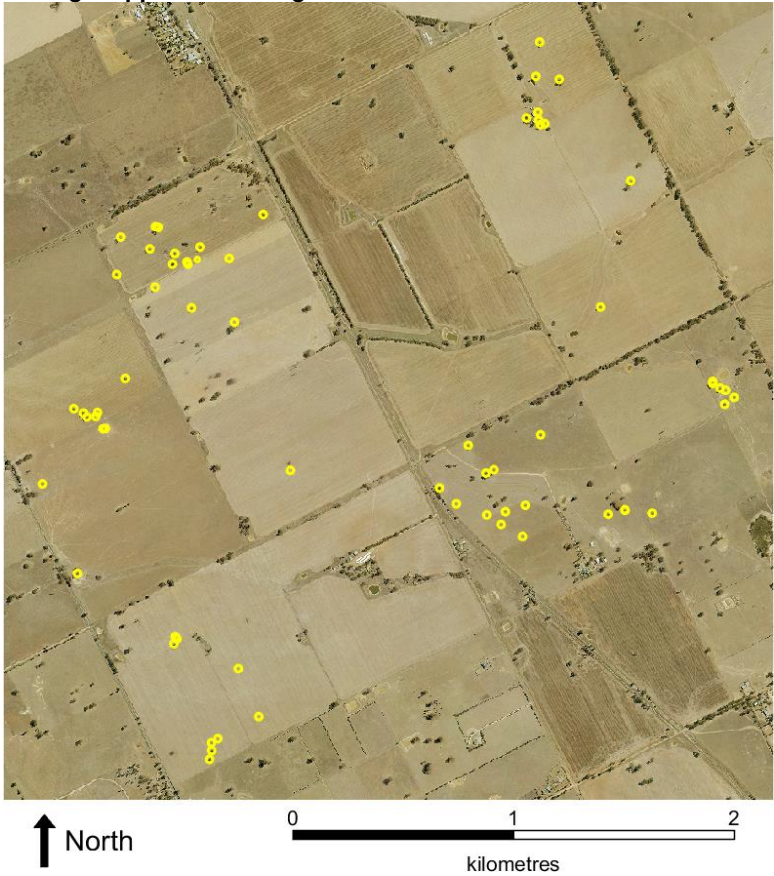
- Habitat importance maps are the maps defined in the Guidelines that include all the mapped habitat for a rare or threatened species
- Top ranking maps are the maps defined in the Guidelines that depict the important areas of a dispersed species habitat, developed from the highest habitat importance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

Appendix 3 – Images of mapped native vegetation

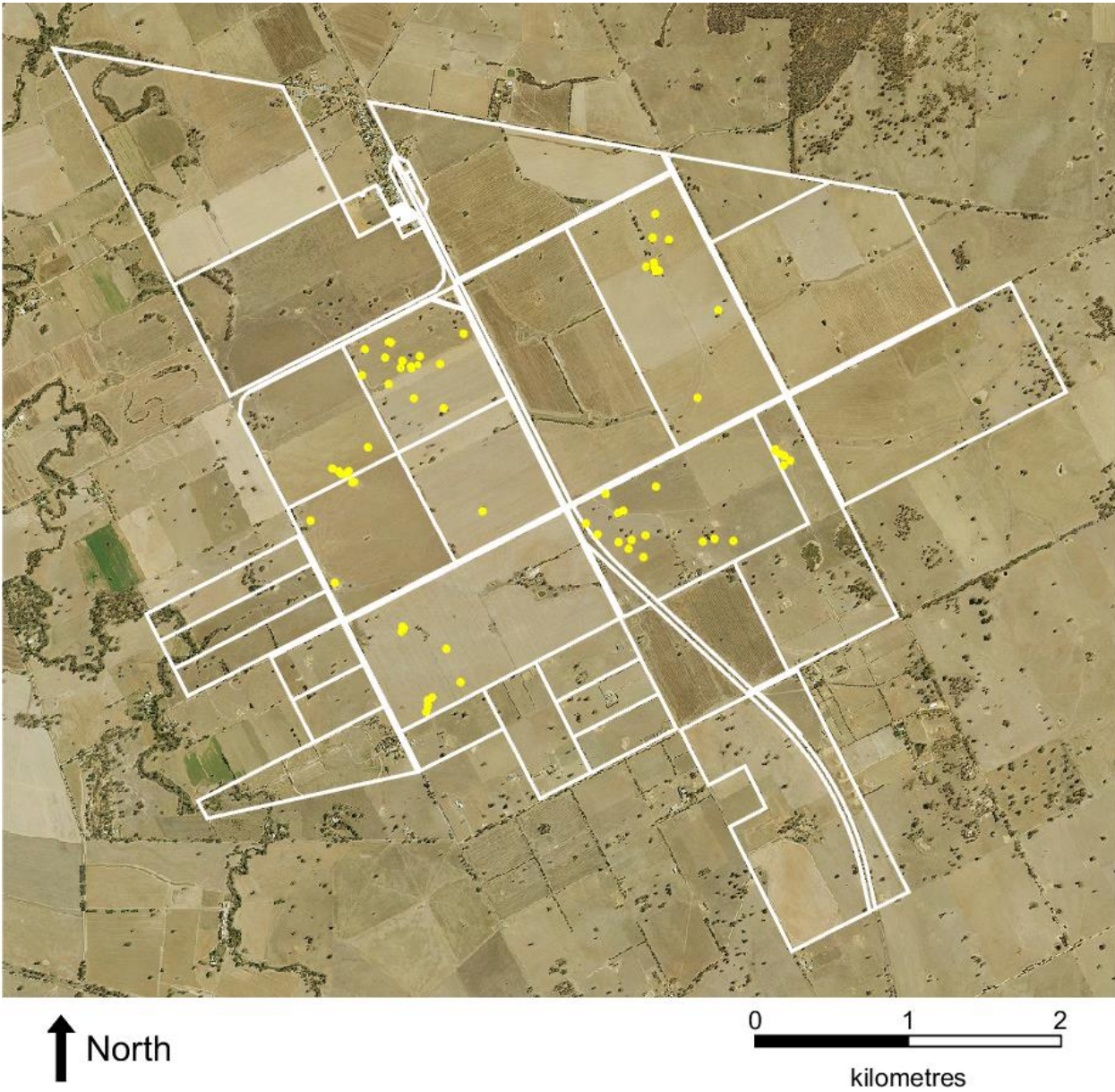
2. Strategic biodiversity values map



3. Aerial photograph showing mapped native vegetation

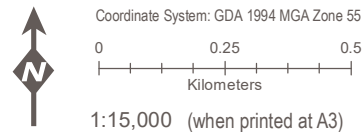
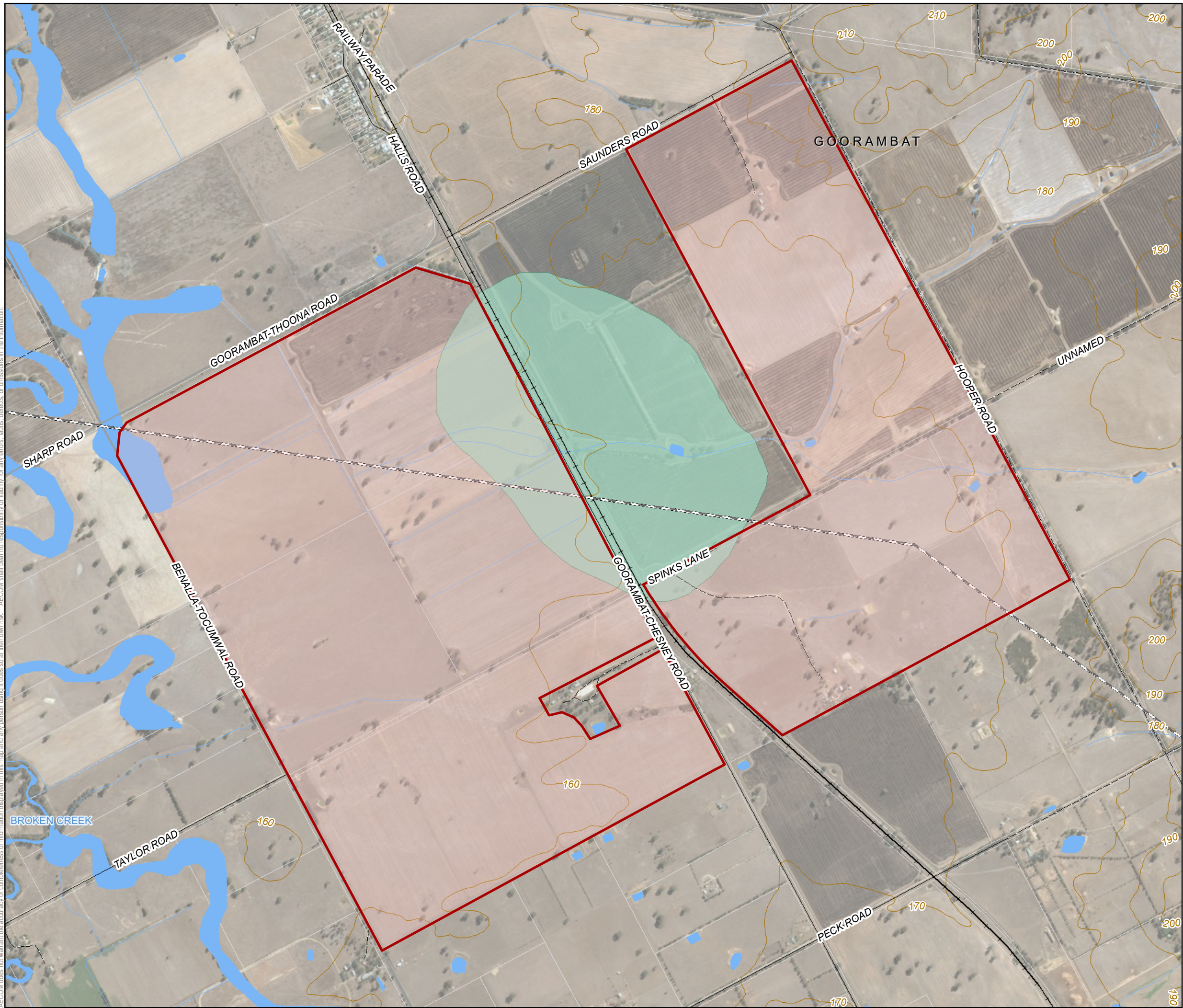


4. Map of the property in context



Yellow boundaries denote areas of proposed native vegetation removal.

Attachment B - Map showing topographic and land information



Legend

- Site Investigation Area
- Existing 220kV Overhead Transmission Line
- Arterial
- Sub-Arterial
- Local
- 2WD
- Railway
- Contours (m)
- Watercourses
- Cadastre
- Wetlands
- Waterbodies

Data Sources:
Locality, Railway, Drainage Line, Streets, Features © VICMAP - 2018

Disclaimer:
Victoria State Government - Environment, Land, Water and Planning © (VICMAP) 2018
Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Goorambat East Solar Farm

TOPOGRAPHY AND
LAND INFORMATION

PROJECT #:	60591336	Attachment B
CREATED BY:	JB	
LAST MODIFIED:	brirej: 15/08/2019	
VERSION:	1	

AECOM does not warrant the accuracy or completeness of information displayed in this map and any person using it does so at their own risk. AECOM shall bear no responsibility or liability for any errors, faults, defects, or omissions in the information.

Appendix E

Wildlife Friendly Fence

Appendix E Wildlife Friendly Fence

The following information is provided for informing the use of wildlife friendly fences within the Project Area. DELWP have communicated their preference for incorporation of fauna sensitive fencing within the design of the solar facility.

Macedon Ranges Shire Council - Victoria

The Macedon Ranges Wildlife Network has partnered with the Macedon Ranges Shire Council to design effective wildlife friendly fencing. Barb wire fencing is typically used in agricultural settings however this has resulted in many gliding possums such as the threatened Greater Glider and the locally common Sugar Glider being found deceased on barbed wire fences. Kangaroos are regularly injured following collision or entanglement with barbed wire fences. Animals can also be caught in the fence temporarily but will later die from the injuries caused by escaping from the barbed wire.

The design of wildlife friendly fencing developed by the Macedon Ranges Wildlife Network and the Macedon Ranges Shire Council incorporates nine recommendations:

1. Design a fence to allow for animals to pass underneath. Leave a minimum of 40cm between the ground and the bottom wire.
2. Choose a plain high-tensile fencing wire. If this is tensioned correctly, the fencing material can contain most stock.
3. If barbed wire has to be used, avoid placing the wire on the top two or three or the bottom strands of the fence.
4. Keep the fence low with a maximum height of 1.2m. This will allow larger animals such as kangaroos to easily pass over the top.
5. In high-risk areas such as high-quality vegetation and near water, use plain wire or place the barbed wire inside split pipe to protect animals from the barbs.
6. Consider retrofitting your existing fence with reflective materials such as CDs and aluminium plant tags. Alternatively, add a white wire to the top. Place these items on the top wire to make it easier for wildlife to see the obstruction.
7. Consider if you really need a fence or if you could define your title using vegetation. Internal fences could also potentially be removed to improve wildlife movement.
8. Electric fencing can be used with caution. Remember to keep the hot wire above 40cm to allow for small animals to pass under with ease.
9. Avoid the use of ringlock fencing as kangaroos can get their legs caught.

Examples of wildlife friendly fencing are below in **Plate 1**.

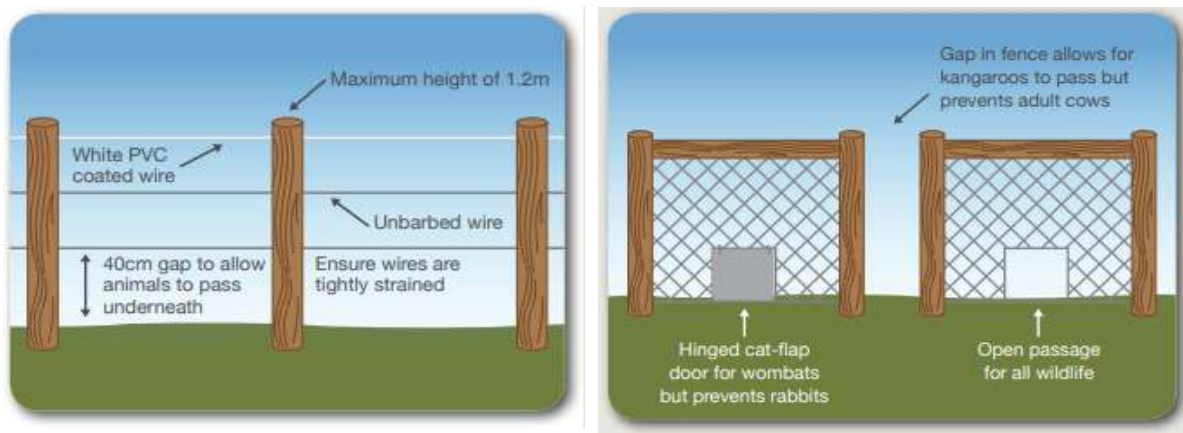


Plate 1 Wildlife friendly fencing suggestions made by Macedon Ranges Shire Council

Redland City Council - Queensland

Redland City Council in Queensland has also begun to provide fauna friendly fencing for use in developments in their municipality.

The Redland City Council considers a fence to be fauna friendly and not a barrier to most native fauna if a kangaroo, koala or bandicoot can easily negotiate it. According to Redland City Council, a fauna friendly fence should have:

1. A 30cm gap between ground level and the first rail or strand. Spacing above this level is at the owner's discretion. The gap should be 50cm if you have kangaroos living in your area.
2. A series of 30cm gaps between the rails or strands (the first gap should be no higher than 30cm above ground level)
3. A 30cm gap between ground level and the first rail or strand followed by a series of 30cm gaps
4. Box wire mesh may be used provided that there is a 30cm gap between the ground level and the mesh, and provided the fence is not more than 1.2m in height. A capping rail along the top allows for easy movement.
5. Rails should not be in excess of 15cm wide. Wire strands should not be too tightly strung.

The material of fencing should also be taken into consideration when choosing a fence. Wood, brick, metals and wire can be combined in a variety of designs to create an effective and unique fence while maintaining the character of the area. Slight variations in the materials and design of these fences can create an individual look for your property. Some native plants can be planted to form a dense living hedge line which gives privacy and security and is wildlife friendly.

Barbed wire and high voltage electric fences are not fauna friendly and should be avoided.

The movement of animals via security fences can be managed in a number of ways. Below is a picture of a security fence that has utilised barbed wire but has also provided a climbing pole for wildlife to safely pass over the fence (see **Plate 2**).



Plate 2 Example of fauna friendly security fence that could be adapted for the climbing fauna species.

Wildlife Friendly Fencing Project

The wildlife friendly fencing project (WFFP) is raising awareness of the impact of fencing on Australian wildlife and developing guidelines for good practice. Many of the fencing options suggest avoiding the use of barbed wire or at least not using it on the top and bottom strands. Where barbed wire is to be used, areas of common passage of wildlife should be covered with split polypipe (see **Plate 3**). This will ensure the safety of wildlife at this section of the fence whilst also providing security for the remaining extent of the fence.

Small passage ways have also been utilised in fences to allow small animals to pass under the fence (see **Plate 4**).

A number of wildlife friendly fencing options have been laid out by WFFP below.



Plate 3 Split polypipe placed over barbed wire to protect wildlife.



Plate 4 Small passageways placed at the bottom of fences.

Appendix F

Recommended Revegetation Species

Appendix F Recommended Revegetation Species

The species in the table below are native to *803 Plains Woodland* EVC in the Victorian Riverina Bioregion and The Northern Inland Slopes Bioregion (DELWP 2019). They are recommended for use in the planting that will be undertaken to screen the solar farm development.

Table 10 Recommended species for screening plantings

Scientific name	Common name	Life Form
<i>Eucalyptus camaldulensis</i>	River Red-gum	Tree
<i>Eucalyptus albens</i>	White Box	Tree
<i>Eucalyptus largiflorens</i>	Black Box	Tree
<i>Eucalyptus leucoxylon</i>	Yellow gum	Tree
<i>Eucalyptus melliodora</i>	Yellow Box	Tree
<i>Eucalyptus microcarpa</i>	Grey Box	Tree
<i>Acacia montana</i>	Mallee Wattle	Medium Shrub
<i>Acacia acinacea s.l</i>	Gold-dust Wattle	Medium Shrub
<i>Acacia pycnantha</i>	Golden Wattle	Medium Shrub

Appendix G

Plates

Appendix G Plates

**Plate 5 Cultivated paddock****Plate 6 Large hollows in Grey box****Plate 7 Habitat Zone 5 in Spinks Lane****Plate 8 Habitat Zone 10****Plate 9 Scattered trees in cultivated paddock****Plate 10 Large hollow in Grey box**



Plate 11 Fallen timber providing vermin habitat



Plate 12 Habitat Zone 6 in Spinks Lane



Plate 13 Transmission powerline easement (facing north-west)



Plate 14 Transmission powerline easement (facing south-east)



Plate 15 Scattered trees amongst farm outbuildings



Plate 16 Rail easement adjacent to Project Area