



July 2018

Biodiversity Assessment,  
87-101 and 103-127 Ash Road, Leopold



Prepared for:

Ample Investments  
Group Pty Ltd

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Project number	1447b
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Report title	Biodiversity Assessment, 87-101 and 103-127 Ash Road, Leopold
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Mapping	Stuart Cooney
File name	1447b_Ash_Rd_Leopold_BA_Report_19072018

### Cover Photograph

A photograph of the study area taken during the current assessment.

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## Executive Summary

Ecolink Consulting Pty Ltd was commissioned to undertake a Biodiversity Assessment for a proposed residential rezoning of land located at 87-101 and 103-127 Ash Road, Leopold, Victoria. The properties are each approximately 8 ha in size and gently slope to the south-east. They are set within a rural landscape in Leopold, approximately 1km north of Lake Connewarre.

The vegetation within the study area has been heavily modified. The understorey vegetation was generally exotic dominated by species such as Rye Grass *Lolium perenne*, Cocksfoot *Dactylis glomerata*, Yorkshire Fog *Holcus lanatus*, Squirrel-tail Fescue *Vulpia bromoides*, Lucerne *Medicago sativa*, Burr Medic *Medicago polymorpha*, Soursob *Oxalis pes-caprae*, Annual Veldt-grass *Ehrharta longiflora* and Blanket Weed *Galenia pubescens* var. *pubescens*. Much of the overstorey vegetation included exotic Pines and plantations of Australian native and Victorian native Sugar Gums *Eucalyptus cladocalyx*, Lemon-scented Gum *Eucalyptus citriodora*, Blue Gums *Eucalyptus globulus*, and Southern Mahogany *Eucalyptus botryoides* were recorded. In the northern portion of the study area, Yellow Box *Eucalyptus melliodora*, and Red Ironbark *Eucalyptus tricarpa* trees, have also been planted along with the aforementioned species. Other ornamental trees were also planted around the dwellings, including a large ornamental fig tree.

Three patches of remnant vegetation were recorded: two of which were within the study area, and another that may be potentially impacted by works within the study area on a downstream creekline. These patches are generally of low quality. Remnant Patch 1 is located along the southern fenceline of 103-127 Ash Road and has a habitat hectare score of 18 (out of 100), while Remnant Patch 2 is associated with the aquatic vegetation surrounding the large dam at 103-127 Ash Road and has a habitat hectare score of 14 (out of 100).

Biodiversity offsets will be required for removal of native vegetation within the study. The study area contains patches equating to 0.278 hectares of native vegetation. The offset for the removal of this vegetation will be 0.053 General Habitat Units, with a minimum Strategic Biodiversity Score of 0.368, with the offsets to be located within the Corangamite CMA or the City of Greater Geelong municipality.

Sixteen fauna species were recorded within the study area (Table A2, Appendix 1). This included 15 native bird species and one native frog. One threatened species, Hardhead *Aythya australis* was recorded on the dam during the current assessment. It is also possible that Growling Grass Frogs *Litoria raniformis* may also have habitat within the dam. Hardheads are considered Vulnerable in Victoria, and are unlikely to be significantly impacted by the proposed rezoning and subsequent development of the study area. The impact to Growling Grass Frogs is less clear, however, and targeted surveys for this species are recommended to determine likely impacts under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth).

In this context, and based on the relevant legislation and policies, the following recommendations are made:

- Once rezoning is approved, offset for losses associated with native vegetation removal in accordance with the *Guidelines for the Removal, Destruction or Lopping of Native Vegetation*. This offset should comprise:
  - 0.053 General Habitat Units;

- With a minimum Strategic Biodiversity Score of 0.368;
- Located within the City of Greater Geelong Council municipality or the Corangamite Catchment Management Area.
- Undertake targeted Growling Grass Frog surveys at an appropriate time of year (Summer) to determine the requirement for a referral under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth);
- Ensure all noxious weeds are removed during the development and landscaping of the study area. If any remain after construction has been finalised, these species should be targeted and removed;
- Ensure the design of the development treats all water discharged from the study area to a standard such that it will be higher than is likely to be flowing from the property currently, by including biobasins and gross pollutant traps within the design;
- Prepare a Construction Environmental Management Plan that includes the following management actions prior, during and post construction:
  - Stormwater management and water treatment;
  - Soil containment, sediment and erosion measures;
  - Weed management prescriptions, targeting noxious weeds; and,
- A wildlife handler should be present when felling any trees.

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## Introduction

Ecolink Consulting was engaged by Tract Consultants Pty Ltd, on behalf of Ample Investments Group Pty Ltd, to undertake a Biodiversity (Flora and Fauna) Assessment of 87-101 and 103-127 Ash Road, Leopold, Victoria (Figure 1). The applicant is proposing to rezone these properties from Farming Zone to Residential Zone, to allow for subdivision and development of the study area.

In September 2017, Ecolink Consulting Pty Ltd undertook a 'due diligence' style assessment within the study area and neighbouring properties (Ecolink Consulting Pty Ltd 2017). That report focused primarily on the identification of constraints to the development of the study area and costs associated with achieving regulatory approval for the development (Ecolink Consulting Pty Ltd 2017). The current assessment will provide greater detail of the ecological values of the study area and, in particular, provide support an application to remove native vegetation under Clause 52.17 of the Planning Scheme for the development of the study area.

Therefore scope of the current Biodiversity Assessment is to:

- Determine the ecological values of the study area;
- Evaluate any impacts that are likely to occur to any ecological values as a result of the potential loss of vegetation at the study area;
- Evaluate the extent and quality of native vegetation within the study area, required under the *Guidelines for the removal, destruction or lopping of native vegetation* (Department of Environment Land Water and Planning 2017); and,
- Make recommendations to minimise or mitigate impacts to these ecological values, based on relevant legislation and policies.

## Methods

### Desktop Assessment

In order to determine the ecological values that have previously been recorded within the study area, and its vicinity, the following databases and literature were consulted:

- Planning Schemes Online (Department of Environment Land Water and Planning 2018d) to identify the planning zones and overlays relating to environmental matters e.g. Vegetation Protection Overlays, or Environmental Significance Overlays;
- The NatureKit webpage from the Department of Environment, Land, Water and Planning (DELWP) to identify the historic and current Ecological Vegetation Classes (EVCs) (Department of Environment Land Water and Planning 2018c);
- The Victorian Biodiversity Atlas (Department of Environment Land Water and Planning 2018e) for records of threatened<sup>1</sup> flora and fauna within 3 kms of the study area in the past 30 years;

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<sup>1</sup> Threatened flora and fauna includes species listed under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*, the Victorian *Flora and Fauna Guarantee Act 1988* and the DSE Advisory Lists (Department of Environment and Primary Industries (2009; 2013; 2014a).

- The Native Vegetation Information Management System (NVIM) to determine biodiversity offset requirements (Department of Environment Land Water and Planning 2018b);
- The 'Weeds of National Significance' database (Department of the Environment and Energy 2018b);
- The Protected Matters Search Tool from the Department of the Environment and Energy (DOEE) (Department of the Environment and Energy 2018a) to identify Matters of National Environmental Significance that may occur within five kilometres of the study area; and,
- Relevant legislation and policies (as required).

## Field Assessment

### Flora and Fauna Assessment

The study area was assessed by Principal Ecologist, Simon Scott on 20 September 2017 for the due diligence assessment (Ecolink Consulting Pty Ltd 2017). A more detailed site-assessment for the current Biodiversity Assessment was undertaken by Principal Ecologists Simon Scott, with Dr Stuart Cooney, on 18 July 2018. Both ecologists are suitably experienced at undertaking flora and fauna assessments and Simon holds a Vegetation Quality Assessors Accreditation from DELWP (No. 0015).

All flora species observed within the study area were recorded, with the exception of planted vegetation that was not considered a 'weed' (i.e. planted vegetation that was not spreading or reproducing). Where a species was not able to be confidently identified in the field, a sample was collected and later identified. Plants were identified to species level wherever possible, however, some plants that were planted, cultivars, hybrids, or plants that did not contain suitable fertile material used for identification were recorded to genus level.

Vegetation communities such as EVCs and nationally significant vegetation communities were recorded (if observed) and compared with their corresponding benchmarks or thresholds to ensure that they were accurately assigned.

A list of all fauna species observed within, and immediately surrounding, the study area was produced. This list consists of species seen, heard, or identified by other evidence of their presence (e.g. feathers, scats). Leica 12 X 50 binoculars and call mimicry/playback were used to assist in the identification species.

The presence of fauna habitat was noted, particularly in relation to potential habitats for threatened species. The greatest amount of time was spent surveying potential fauna habitats (e.g. trees, water bodies, crevices or under ground debris) during the assessment.

Biological features such as threatened flora and fauna species, vegetation communities, scattered indigenous trees, fauna habitats, or threatened species habitats were recorded onto an iPad mini tablet that has an internal Global Positioning System (GPS) and the GIS Pro application (accuracy +/- five metres).

### Guidelines for the removal, destruction or lopping of native vegetation

The *Guidelines for the removal, destruction or lopping of native vegetation* (the Guidelines) (Department of Environment Land Water and Planning 2017) are required to be addressed under

Clause 52.17 of the Planning Scheme. The Guidelines require that information regarding the biodiversity values of the site were obtained through:

- Site-based information that can be measured or observed at a site, including:
  - Extent of native vegetation patches;
  - Large trees;
  - Native vegetation condition assessed in accordance with the *Vegetation Quality Assessment Manual – Guidelines for Applying the Habitat Hectares Scoring Method* (Department of Sustainability and Environment 2004);
  - Ecological Vegetation Classes (EVC); and
  - Sensitive wetlands and coastal areas.
- Landscape scale information that cannot be measured or observed at the site and includes maps and models procured from DELWP.

The Guidelines require a Habitat Hectare assessment in instances where the impact is to be assessed under the Detailed Assessment Pathway. In this case, a Habitat Hectare assessment was completed as the extent of the required native vegetation removal remains unknown. The Habitat Hectare assessment was undertaken in accordance with the methodology prescribed within the *Vegetation Quality Assessment Manual – Guidelines for Applying the Habitat Hectares Scoring Method* (Department of Sustainability and Environment 2004) at patches<sup>2</sup> of vegetation.

In addition, the location and species of indigenous ‘scattered trees’<sup>3</sup>, and any ‘large trees’<sup>4</sup> that are proposed to be removed were also mapped. Once known, the location, extent of native vegetation (patches, scattered trees and large trees) that is proposed for removal is provided to DELWP who produce an offset report that provides details of the required offsets for impacts that vegetation.

## Limitations and Qualifications

The following limitations and qualifications apply to this report:

- The results of the desktop assessment are reliant on data obtained from various databases and other reports. The accuracy of these historical data and some of the results provided within these reports cannot be verified.
- Winter is not the preferred season to undertaking a detailed biodiversity assessment as some plants may only be visible during certain time (e.g. geophytes, orchids), and the plants have generally finished flowering or seeding. This fertile material is used for identification purposes, and without it, the identification of some plants is difficult or impossible. Where seasonality significantly affects the results, a further assessment is recommended. The results were also compared against the results of the Due Diligence assessment, which was undertaken in spring, and generally found to be consistent with those results, suggesting that this is unlikely to be a significant limitation to this report.

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<sup>2</sup> A ‘patch’ is defined as an area with at least 25% cover abundance of perennial native vegetation, or a group (i.e. three or more) trees forming a continuous canopy.

<sup>3</sup> Scattered trees are defined as a native canopy tree that does not form a patch

<sup>4</sup> Large trees are defined as meeting the size threshold specified in the bioregional EVC Benchmark

- Some flora and fauna species may only be recorded during certain times or seasons (e.g. plants that only contain above-ground biomass and are only visible annually, nocturnal mammals and birds, migratory birds, or fauna identified through seasonal breeding calls such as some frog species). The author has made an informed decision about the likely presence of threatened species that may be present, or that may utilise habitats within the study area, based on a detailed desktop assessment, a review of the species' biology, an understanding of the ecological values of the local area, and an assessment of flora and fauna as well as their habitats.
- As with all ecological assessments, a greater survey effort is likely to yield additional flora and fauna records. Where these additional flora and fauna records may alter the recommendations made within this report, (e.g. where additional threatened species may utilise habitats within the study area, or where threatened species may be impacted by the proposed development), further assessment may be recommended, depending on the implications of relevant policies and legislation.

Despite these limitations to the assessment, the results gained by both a desktop and a field assessments are adequate to address the purpose of this report.

## Results

### Study Area

The study area comprises two properties: 87-101 Ash Road (approximately 8.2 Ha), and 103-127 Ash Road (approximately 8.3 Ha) (Figure 1). It is generally gently undulating, sloping towards a drainage line and dam (Plate 1) in the approximate centre of 103-127 Ash Road, and to the south east. The drainage line and dam are an unnamed drainage line that terminates at Lake Connewarre, located approximately 1 km south of the study area.

87-101 Ash Road is dominated by exotic species, having been historically cleared of its native vegetation. Planted trees line the perimeter of the property, and the driveway (Plate 2). In the east of the property, plantations of Australian native and Victorian native Eucalypts have been thinned since the previous assessment (Ecolink Consulting Pty Ltd 2017). Evidence of trees lining a creekline near the middle of the property remain, however aerial photography shows that these trees were removed in, approximately November 2017 (Nearmap 2018). The property currently supports a house and associated sheds in the east of the property.

The western portion of 103-127 Ash Road has been cropped (Plate 3). Little native vegetation remains within this property. Planted Australian native and Victorian native Eucalypts line the fences. A large dam, approximately 1 ha in size is located adjacent to the house and a shed (Plate 1). This dam is located on a drainage line that extends down to Lake Connewarre which forms part of Port Phillip Bay (Western Shoreline) and Bellarine Peninsula Ramsar complex of international significance.

### Flora

#### Flora Species

A total of 62 flora species were recorded during the current assessment (excluding planted species that weren't naturally spreading). This comprised 19 indigenous, 42 exotic and one Australian native (but not naturally occurring within the study area: Sweet Pittosporum *Pittosporum undulatum*) plant species (Table A1).

The overstorey within the study area includes a range of plantations. This includes Pines *Pinus radiata* in the eastern boundary, Victorian native Sugar Gums *Eucalyptus cladocalyx* along the southern boundary as well as Lemon-scented Gum *Eucalyptus citriodora*, Blue Gums *Eucalyptus globulus*, and Southern Mahogany *Eucalyptus botryoides* were recorded along driveways and as ornamental trees. In the northern portion of the study area, north-east of the dwelling, Yellow Box *Eucalyptus melliodora*, and Red Ironbark *Eucalyptus tricarpa*, has also been planted along with the aforementioned species, presumably as a woodlot. Other exotic ornamental trees were also planted around the dwellings. No indigenous overstorey trees were recorded.

Shrubs have also been included within the plantations, including the indigenous Swamp Paperbark *Melaleuca ericifolia* along the 87-101 Ash Road frontage, and the exotic, environmental weed, Flax-leaf Broom *Genista linifolia* fronting 103-127 Ash Road.

The understorey vegetation was generally exotic dominated by species such as Rye Grass *Lolium perenne*, Cocksfoot *Dactylis glomerata*, Yorkshire Fog *Holcus lanatus*, Squirrel-tail Fescue *Vulpia*

*bromoides*, Lucerne *Medicago sativa*, Burr Medic *Medicago polymorpha*, Soursob *Oxalis pes-caprae*, Annual Veldt-grass *Ehrharta longiflora* and Blanket Weed *Galenia pubescens* var. *pubescens*.

Indigenous vegetation lines the banks of the large artificial dam. This includes Narrow-leaf Cumbungi *Typha domingensis*, Finger Rush *Juncus subsecundus*, Gold Rush *Juncus flavidus*, Common Spike-sedge *Eleocharis acuta* and Slender Knotweed *Persicaria decipiens*. Only isolated occurrences of indigenous understorey plants were recorded including Slender Wallaby Grass on the bund walls of the artificial dam, and Seaberry Saltbush *Rhagodia candolleana* subsp. *candolleana* along the southern boundary of the study area.

### Flora Habitat/Vegetation Communities

The vegetation within the study area was required to be assessed and classified against the policy and legislation stipulated by three tiers of government:

- *Local* – where various overlays and policies may apply pursuant to the City of Greater Geelong Council Planning Scheme (Department of Environment Land Water and Planning 2018d);
- *State* – which includes DELWP’s EVC mapping of vegetation communities (Department of Environment Land Water and Planning 2018a) and consideration under the *Guidelines for the Removal, Destruction or Lopping of Native Vegetation* (Department of Environment Land Water and Planning 2017); and,
- *Commonwealth* – where vegetation may meet ‘thresholds’ to be classified as a federally listed community under the *Commonwealth Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) (Department of Sustainability Environment Water Population and Communities 2011).

#### Local

The study area is located within the City of Greater Geelong Council municipality and it is zoned Farming Zone (Department of Environment Land Water and Planning 2018d). There are no Environmental Significance, Vegetation Protection, or Significant Landscape overlays that are applicable to the study area, or any other planning overlays pertinent to this report.

#### State

The study area falls within the Otway Plain bioregion of Victoria. Historically the vegetation within the study area was classified as Ecological Vegetation Class (EVC) 175: Grassy Woodland, which is listed as Endangered within the Otway Plain bioregion. Current EVC mapping shows remnants of this EVC located around the large dam in the approximate centre of the study area and to its east (off-site) (Department of Environment Land Water and Planning 2018c).

The current assessment however, found that only six small relics of this EVC remain within the study area (see below).

#### Commonwealth

Department of Environment and Energy (2018a) modelling suggests that that five nationally significant ecological communities may occur within the study area:

- White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland;
- Natural Damp Grassland of the Victorian Coastal Plains;
- Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains;
- Grassy Eucalypt Woodland of the Victorian Volcanic Plain; and
- Natural Temperate Grassland of the Victorian Volcanic Plain.

The vegetation within the study area is highly modified from its natural state. This has resulted in the removal of most of the native vegetation within the study area. This means that none of these significant ecological communities occur within the study area.

### Threatened Flora Species

Six threatened flora species have previously been recorded within 3 kms of the study area (Figure 2). A further nine species are predicted to occur within the study area based on the Protected Matters Search Tool (Department of the Environment and Energy 2018a). A consolidated list of these threatened flora species, as well as their conservation status, preferred habitats and likelihood of occurrence for each species is provided in Table A3.

No threatened flora species were recorded during the current assessment. It is unlikely that any threatened flora species occur within the study area as they were not recorded during the current assessment or previous assessment (Ecolink Consulting Pty Ltd 2017), and due to absence of suitable habitats and the high level of modification to their habitats over a long period of time (Table A3).

No flora species listed as 'protected' under the *Flora and Fauna Guarantee Act 1988* (Vic) were recorded.

### Habitat Hectare Assessment

Three remnant patches of native vegetation were recorded within the study area (Table 1):

- Patch 1 is an area of native vegetation along the fenceline of 87-101 Ash Road, extending into the neighbouring property to the south (Plate 4). It is dominated by indigenous Seaberry Saltbush *Rhagodia candolleana* subsp. *candolleana*, underneath an overstorey of Sugar Gums. Some indigenous Golden Wattle *Acacia pycnantha* were also recorded in this approximate location, however, insufficient cover abundance to qualify as a remnant patch of native vegetation. It is a highly modified remnant of EVC 175: Grassy Woodland.
- Patch 2 includes the native vegetation fringing the large dam located at 103-127 Ash Road (Plate 1). This was generally dominated by Cumbungi *Typha* sp. but also contained indigenous rushes and Common Spike-sedge *Eleocharis acuta*.
- Patch 3 is located to the east of the study area (off-site) but was assessed on the basis that it may be impacted by altered hydrology associated with development of the study area. Access to this site was not provided but it appeared to be dominated by indigenous Boobialla *Myoporum insulare* and Swamp Paperbark, a species favoured by the wet conditions associated with the drainage line south of the dam.

Patches 2 and 3 have been assigned to EVC 3: Damp-sands Herb-rich Woodland as they are modified remnants of vegetation that would have occurred along drainage lines, and are assigned as the "best fit" for artificial waterbodies.

**Table 1.** Habitat Hectare Score for the patches of native vegetation within the study area.

Remnant patch		Patch 1	Patch 2	Patch 3	
Bioregion		Otway Plain	Otway Plain	Otway Plain	
EVC name		Grassy Woodland	Damp-sands Herb-rich Woodland	Damp-sands Herb-rich Woodland	
EVC number		175	3	3	
Assessment Criteria		Maximum Score	Patch Score	Patch Score	Patch Score
Site Condition	a. Large old trees	10	0	0	0
	b. Canopy cover	5	0	0	0
	c. Understorey	25	5	5	5
	d. Lack of weeds	15	0	4	0
	e. Recruitment	10	0	0	0
	f. Organic litter	5	3	3	3
	g. Logs	5	0	0	0
	h. Total (sum of a-g)	75	8	12	8
Standardised Score			N/A	N/A	N/A
Landscape valve	i. Patch size	10	1	1	1
	j. Neighbourhood	10	2	2	2
	k. Distance to core	5	3	3	3
<b>I. Habitat Points (total)</b>		<b>100</b>	<b>14</b>	<b>18</b>	<b>14</b>
m. Habitat Hectares (I/100)		1.0	0.14	0.18	0.14
n. Total Patch area (ha)			0.103	0.244	0.117
<b>o. Total habitat hectares in study area (m × n)</b>			<b>0.014</b>	<b>0.044</b>	<b>0.016</b>
Large Old Trees			<b>0</b>	<b>0</b>	<b>0</b>

## Tree Assessment

No indigenous scattered trees were present within the study area, and no Large Old Trees were recorded from within the study area.

## Fauna

### Fauna Species

Sixteen species were recorded within the study area during the current assessment (Table A2, Appendix A). This included 15 native birds, and one native Amphibian. Other fauna species would be recorded if greater time was spent on-site. The bird species are all typical of peri-urban and rural areas in western Victoria or are common wetland birds. A discussion on the species and their habitat is provided below.

### Fauna Habitats

The highest quality habitats within the study area occur within the large dam located at 103-127 Ash Road. This dam is likely to attract a range of waterbird species, including Australasian Grebes *Tachybaptus novaehollandiae*, Chestnut Teal *Anas castanea* and Eurasian Coot *Fulica atra* which were observed during the current assessment. This dam and associated drainage line is also likely to

support a range of frogs, such as Eastern Common Froglet *Crinia signifera*, which was heard calling during the current assessment.

The planted trees within 87-101 Ash Road and around the perimeter of 103-127 Ash Road, are likely to provide habitat to a range of common bird and arboreal mammal species. This is likely to include gregarious bird species such as Rainbow Lorikeets *Trichoglossus haematodus*, Sulphur-crested Cockatoos *Cacatua galerita* and Red-rumped Parrots *Psephotus haematonotus*. Mammals such as Common Ringtail Possums *Pseudocheirus peregrinus* also likely to forage in the canopy of these trees, whilst micro-bats are likely to use the fissures and flaking bark as diurnal roosting locations. Mature trees may provide hollows and fissures, however none were observed in a number of trees.

The remainder of the study area supports highly modified, and simplified grasslands and open pastures, which were generally dominated by exotic grasses and provide limited fauna habitat. Nonetheless, these areas are expected to provide foraging habitat for a range of birds and potential dispersal habitat for ground-dwelling mammals, reptiles and frogs when moving between more suitable habitats.

### Threatened Fauna Species and Communities

A consolidated list of the 35 threatened fauna species previously recorded on, or within the vicinity of, the study area, as well as a further 32 species that may occur within the study area is provided in Table A4 (see also Figure 2). The conservation status, preferred habitats and likelihood of occurrence for each species is provided within this table.

One threatened species was recorded during the current assessment. A group of five Hardhead *Aythya australis* were recorded from the dam at 103-127 Ash Road. Hardhead are considered Vulnerable in Victoria. No other threatened species were recorded during the current assessment and none have previously been recorded within the study area, based on the data provided by the Victorian Biodiversity Atlas (Department of Environment Land Water and Planning 2018e).

The majority of the records of threatened fauna species are of wetland dependent species that have been recorded in Lake Connewarre to the south of the study area, and smaller wetlands within the landscape. The majority of the species that are modelled to occur are similar wetland dependant species or marine species such as Albatross. Although the study area does support an artificial dam, it is steep sided, relatively small and shallow, and therefore is unlikely to support the majority of these species, such as wading birds that require mudflats, or diving ducks that require deep water.

Despite this, it is likely some of the threatened species recorded within the vicinity of the study area do occasionally use the dam at 103-127 Ash Road. This includes species such as Eastern Great Egret *Ardea alba* and Little Egret *Egretta garzetta*, which may use terrestrial habitat adjacent to the dam, as well as the fringes of the dam. These species, along with the Hardhead that was recorded during the current assessment are unlikely to be significantly impacted by development of the study area, due to infrequent use of the habitats, and the abundance relatively higher quality habitats located nearby at Lake Connewarre.

In addition, it is possible that Growling Grass Frogs *Litoria raniformis* may occur in the dam area. Growling Grass Frogs are listed as 'Endangered' on the EPBC Act. It uses dams, such as the one within the study area for breeding, as well as dispersing. This species is largely associated with

permanent or semi-permanent still or slow flowing waterbodies (i.e. streams, lagoons, farm dams and old quarry sites) (Barker *et al.* 1995; Hero *et al.* 1991). It uses floating and emergent vegetation, such as that recorded within the dam (Plate 5), to call to females. As there is a moderate likelihood that Growling Grass Frogs use the dam within the study area, targeted surveys for these species are recommended.

No fauna communities listed under the Victorian *Flora and Fauna Guarantee Act 1988* were recorded within the study area and none are likely to occur.

## Discussion

A detailed summary of the legislation that was considered when preparing this report is provided in Appendix 2. The discussion presented in this section of the report does not re-iterate information provided in Appendix 2, but summarises the results and recommendations arising from the interpretation of this legislation.

### *Environment Protection and Biodiversity Conservation Act 1999 (Cth)*

The desktop assessment identified 10 threatened flora, 37 threatened fauna species and five threatened ecological communities, listed under the EPBC Act that may occur within the study area. The site assessment, however, confirmed that it is unlikely that any EPBC Act-listed flora or ecological communities occur within the study area. There is a moderate likelihood that Growling Grass Frog occurs within the study area, and it is recommended that further, targeted surveys for this species are undertaken in summer. Depending on the outcomes of the survey and determination of impacts, a referral to the Commonwealth Department of Energy and the Environment may be required to determine the project is a controlled action for impacts to this species.

To ensure that downstream impacts from future development associated with additional water discharge towards Lake Connewarre, which forms part of the Port Phillip Bay (Western Shoreline) and Bellarine Peninsula Ramsar complex, storm and surface water within the study area will require management.

It is recommended that water discharged from the entire study area be treated to a standard such that it will be higher than is likely to be flowing from the property currently, and will include biobasins and gross pollutant traps. The biobasins will be created at the start of construction and service water flows throughout the construction and development phase. A Construction and Environmental Management Plan will be prepared to mitigate on-site impacts associated with construction including off-site impacts.

### *Flora and Fauna Guarantee Act 1988 (Vic)*

The desktop assessment identified nine flora and 39 fauna species listed under the FFG Act that may occur within the study area (Tables A3 and A4). Of these, apart from Growling Grass Frogs, which are discussed above, only Little Egret and Eastern Great Egret are likely to occasionally occur within the study area, while other species are not likely to occur due to the absence, or modification, of suitable habitats.

In addition, the FFG Act also lists 'protected flora'. Protected flora includes whole families or genera, not just plant species, such as daisies, heaths, orchids, and most Acacias. These species and genera are not necessarily regarded as threatened, but require an approved 'protected flora licence or permit' from DELWP prior to their removal from *public* land. No protected flora species were recorded within the road reserve, therefore, a protected flora licence is not likely to be required.

## ***Planning and Environment Act 1987 (Vic)***

The proposed development will require a planning permit from the City of Greater Geelong Council for impacts to native vegetation within the study area, once rezoning is approved.

Native vegetation removal should follow the *Biodiversity guidelines for the prior to the removal, destruction or lopping of native vegetation* referenced in Clause 52.17 of the planning scheme (Department of Environment Land Water and Planning 2018d). This is discussed in greater detail below.

## ***Guidelines for the removal, destruction or lopping of native vegetation***

Clause 52.17 of the planning scheme references the *Biodiversity guidelines for the prior to the removal, destruction or lopping of native vegetation*. These Guidelines state that the removal of native vegetation should aim to meet the iterative three-step approach:

1. Avoid the removal, destruction or lopping of native vegetation.
2. Minimise impacts from the removal, destruction or lopping of native vegetation that cannot be avoided; and
3. Provide an offset to compensate for the biodiversity impact from the removal, destruction or lopping of native vegetation.

It is unlikely that any of the native vegetation within the study area will ultimately be retained, because the dam (Patch 2) is located centrally and will severely impact the viability of the development, and Patch 1 is of low quality and located on a steep incline.

Offsets required for the proposed development have been calculated using the DELWP NVIM tool (Appendix 3). The application will be assessed under the 'basic assessment pathway' because less than 0.5 hectares of vegetation from within Location 1 vegetation will be impacted. The removal of this vegetation will require an offset comprising:

- 0.053 General Habitat Units;
- With a minimum Strategic Biodiversity Score of 0.368;
- Located within the City of Greater Geelong Council municipality or the Corangamite Catchment Management Area.

It is expected that offsets will be achieved through a third party offset, through a vegetation broker. Ecolink can provide further assistance in this regard if required.

## ***Catchment and Land Protection Act 1994 (Vic)***

The primary considerations of the *Catchment and Land Protection Act 1994 (Vic)* relate to soil and water conservation, as well as the management of pest plants and animals.

Five weed species that are listed as 'noxious' within the Corangamite Catchment Management Area were present within the study area (Table A1). These include, Blackberry *Rubus fruticosus spp agg.* Bridal Creeper *Asparagus asparagoides*, Flax-leaf Broom *Genista linifolia* and Gorse *Ulex europaeus*, which are all listed as 'Regionally Controlled' within the catchment and Soursob *Oxalis pes-caprae*, which is listed as 'Restricted'. The former four of these species are also listed as 'Weeds of National

Significance'. The proponent is required to 'control the spread' of all 'regionally controlled' species from their property (Melville 2008).

The proposed development should aim to remove these plants when construction commences, and ensure they are removed during the future the landscaping and maintenance of the study area. It is expected that weed management would form part of Construction Environment Management Plan (or equivalent).

The Construction Environment Management Plan should manage the potential spread of noxious weeds during the development and remove any weeds that establish post-construction. As a minimum, this should include:

- Maintain vehicle hygiene and vehicle wash-down areas;
- Using clean fill (if required);
- Manage noxious that may establish post-construction through spraying with herbicide or hand-removal;
- Avoiding the use of noxious species during any landscaping of the property.
- Erosion and sediment control to EPA Standards in order to avoid impacts downslope.

### ***Wildlife Act 1975 (Vic)***

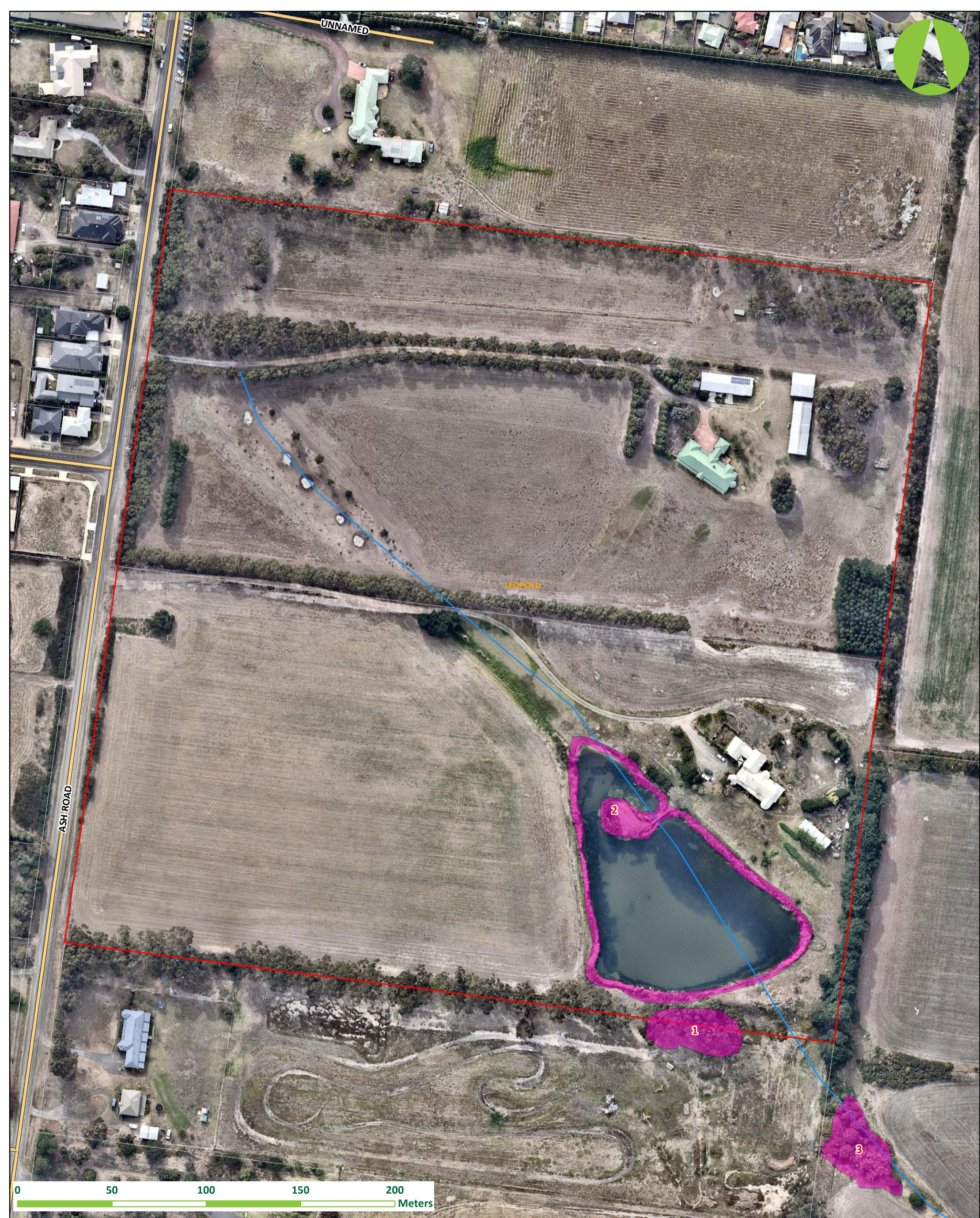
It is likely that some locally common species of fauna will be displaced by the proposed development. All native vertebrate wildlife is protected under the *Wildlife Act 1975 (Vic)*, and therefore contractors must use due care when removing vegetation from the study area. It is recommended that a zoologist or wildlife handler salvage any wildlife from trees prior to their removal. This could form part of the Construction Environment Management Plan that is prepared.

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## Figures

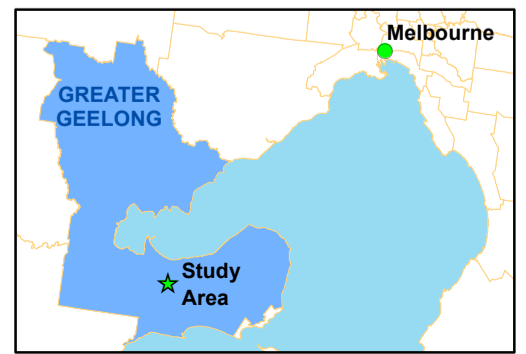


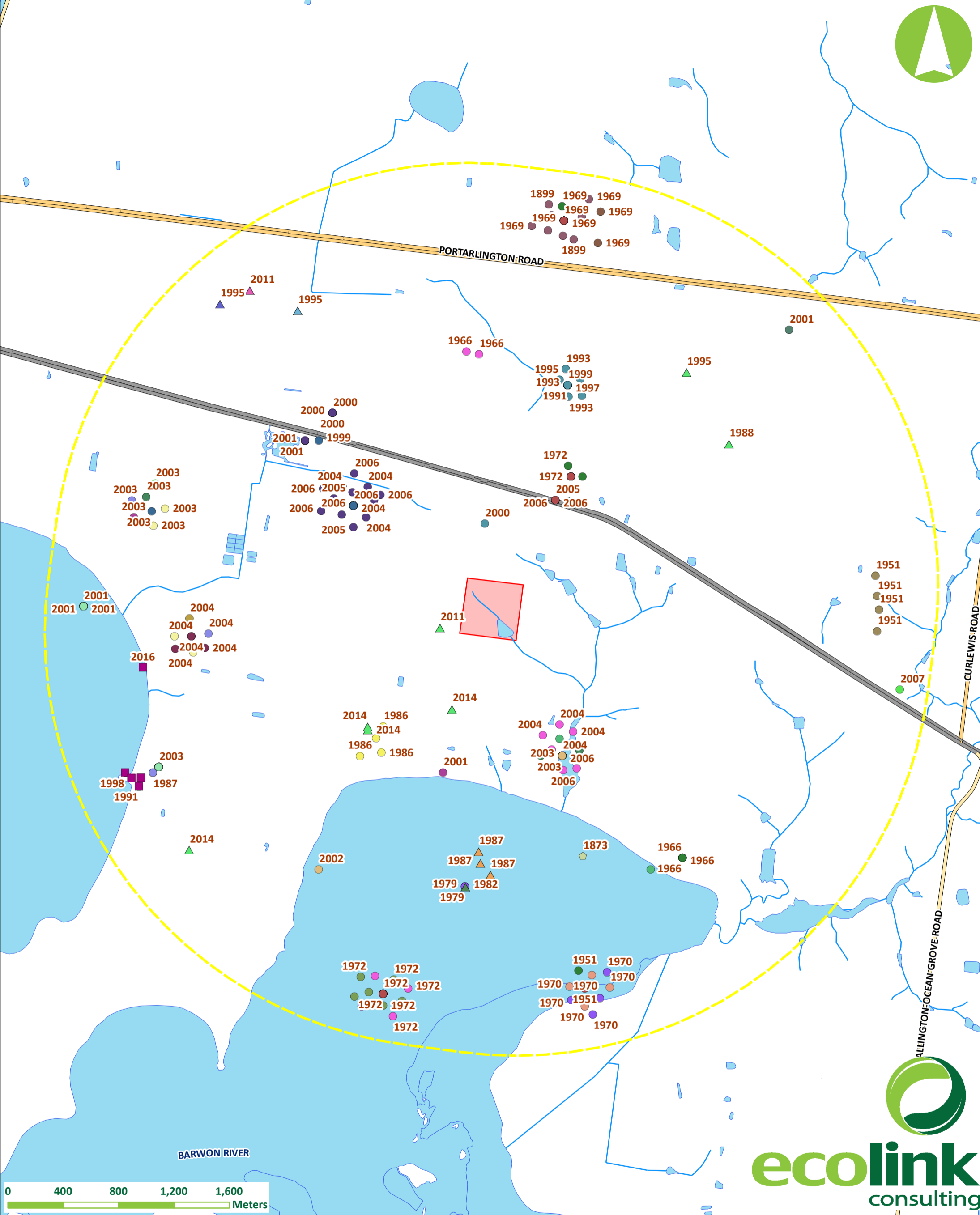
**Figure 1:** Results of the current assessment

87-101 and 103-127 Ash Road,  
Leopold

**Legend**

- Study Area
- Patches of Native Vegetation





**Figure 2: Threatened Flora and Fauna within 3kms of the study area**

87-101 and 103-127 Ash Road, Leopold

Legend	
	Study Area
	3km Study Area Buffer
Common Name	
	Australasian Bittern
	Australasian Shoveler
	Baillon's Crake
	Black Falcon
	Black-tailed Godwit
	Brolga
	Caspian Tern
	Common Greenshank
	Curlew Sandpiper
	Eastern Curlew
	Eastern Great Egret
	Fairy Tern
	Freckled Duck
	Hardhead
	Latham's Snipe
	Little Egret
	Little Tern
	Long-toed Stint
	Maggie Goose
	Marsh Sandpiper
	Glossy Ibis
	Musk Duck
	Nankeen Night Heron
	Pacific Golden Plover
	Pacific Gull
	Pectoral Sandpiper
	Pied Cormorant
	Royal Spoonbill
	Square-tailed Kite
	Swift Parrot
	Wandering Albatross
	Whiskered Tern
	White-bellied Sea-Eagle
	White-throated Needletail
	Growth Grass Frog
	Australian Grayling
	Arching Flax-lily
	Bellarine Yellow-gum
	Coast Bitter-bush
	Pale Swamp Everlasting
	Swamp Everlasting
	Water Tassel

## Plates



**Plate 1.** Large dam at 103-127 Ash Road, showing native fringing vegetation (Patch 2)



**Plate 2.** Tree lined driveway of 87-101 Ash Road, with exotic understory and cleared drainage line



**Plate 3.** Evidence of cropping at 103-127 Ash Road



**Plate 4.** Seaberry Saltbush dominated Patch 1



**Plate 5.** Floating and aquatic vegetation, potentially used by Growling Grass Frogs within the dam

## Appendices

### Appendix 1. Flora and Fauna Tables.

Table A1. Flora recorded within the study area

Origin	Common Name	Scientific Name	Weeds of National Significance	Noxious Weeds Classification
*	Agapanthus	<i>Agapanthus</i> sp.	-	-
*	Annual Veldt-grass	<i>Ehrharta longiflora</i>	-	-
	Arrowgrass	<i>Triglochin</i> sp.	-	-
	Black Wattle	<i>Acacia mearnsii</i>	-	-
*	Blackberry	<i>Rubus fruticosus</i> spp. agg.	Yes	Regionally Controlled
*	Bridal Creeper	<i>Asparagus asparagoides</i>	Yes	Regionally Controlled
*	Buck's-horn Plantain	<i>Plantago coronopus</i>	-	-
*	Burr Medic	<i>Medicago polymorpha</i>	-	-
*	Cape weed	<i>Arctotheca calendula</i>	-	-
*	Clustered Dock	<i>Rumex conglomeratus</i>	-	-
*	Cocksfoot	<i>Dactylis glomerata</i>	-	-
	Common Bog-sedge	<i>Schoenus apogon</i>	-	-
	Common Boobiella	<i>Myoporum insulare</i>	-	-
*	Common Mouse-ear Chickweed	<i>Cerastium glomeratum</i> s.l.	-	-
*	Common Sow-thistle	<i>Sonchus oleraceus</i>	-	-
	Common Spike-sedge	<i>Eleocharis acuta</i>	-	-
*	Common Vetch	<i>Vicia sativa</i> subsp. <i>sativa</i>	-	-
	Common Wallaby-grass	<i>Rytidosperma caespitosum</i>	-	-
*	Couch	<i>Cynodon dactylon</i> var. <i>dactylon</i>	-	-
*	Curled Dock	<i>Rumex crispus</i>	-	-
*	Fat Hen	<i>Chenopodium album</i>	-	-
	Finger Rush	<i>Juncus subsecundus</i>	-	-
*	Flatweed	<i>Hypochaeris radicata</i>	-	-
*	Flax-leaf Broom	<i>Genista linifolia</i>	Yes	Regionally Controlled
*	Galenia	<i>Galenia pubescens</i> var. <i>pubescens</i>	-	-
*	Garden Dandelion	<i>Taraxacum officinale</i> spp. agg.	-	-
	Gold Rush	<i>Juncus flavidus</i>	-	-
	Golden Wattle	<i>Acacia pycnantha</i>	-	-
*	Gorse	<i>Ulex europaeus</i>	Yes	Regionally Controlled
	Hedge Wattle	<i>Acacia paradoxa</i>	-	-

Origin	Common Name	Scientific Name	Weeds of National Significance	Noxious Weeds Classification
	Joint-leaf Rush	<i>Juncus holoschoenus</i>	-	-
*	Kikuyu	<i>Cenchrus clandestinus</i>	-	-
*	Large Quaking-grass	<i>Briza maxima</i>	-	-
*	Large-flower Wood-sorrel	<i>Oxalis purpurea</i>	-	-
*	Lesser Quaking-grass	<i>Briza minor</i>	-	-
*	Narrow-leaf Clover	<i>Trifolium angustifolium</i> var. <i>angustifolium</i>	-	-
	Narrow-leaf Cumbungi	<i>Typha domingensis</i>	-	-
*	Onion Grass	<i>Romulea rosea</i>	-	-
	Pale Rush	<i>Juncus pallidus</i>	-	-
*	Pampas Grass	<i>Cortaderia selloana</i>	-	-
*	Panic Veldt-grass	<i>Ehrharta erecta</i> var. <i>erecta</i>	-	-
*	Paspalum	<i>Paspalum dilatatum</i>	-	-
*	Perennial Rye-grass	<i>Lolium perenne</i>	-	-
*	Radiata Pine	<i>Pinus radiata</i>	-	-
*	Rat-tail Grass	<i>Sporobolus africanus</i>	-	-
*	Ribwort	<i>Plantago lanceolata</i>	-	-
	Seaberry Saltbush	<i>Rhagodia candolleana</i> subsp. <i>candolleana</i>	-	-
	Slender Knotweed	<i>Persicaria decipiens</i>	-	-
	Slender Wallaby-grass	<i>Rytidosperma racemosum</i> var. <i>racemosum</i>	-	-
*	Soursob	<i>Oxalis pes-caprae</i>	-	Restricted
*	Squirrel-tail Fescue	<i>Vulpia bromoides</i>	-	-
	Swamp Paperbark	<i>Melaleuca ericifolia</i>	-	-
#	Sweet Pittosporum	<i>Pittosporum undulatum</i>	-	-
*	Sweet Vernal-grass	<i>Anthoxanthum odoratum</i>	-	-
*	Toowoomba Canary-grass	<i>Phalaris aquatica</i>	-	-
*	Twiggy Turnip	<i>Brassica fruticulosa</i>	-	-
*	Water Buttons	<i>Cotula coronopifolia</i>	-	-
*	Water Couch	<i>Paspalum distichum</i>	-	-
	Water-milfoil sp.	<i>Myriophyllum</i> sp.	-	-
*	White Clover	<i>Trifolium repens</i> var. <i>repens</i>	-	-
	Wood Sorrel	<i>Oxalis</i> spp.	-	-
*	Yorkshire Fog	<i>Holcus lanatus</i>	-	-

**Table Notes:**

\* Exotic # Naturalised

This table does not include ornamental plants, trees or shrubs that were not spreading or reproducing beyond where they were planted.

**Table A2. Fauna recorded within the study area**

Origin	Common Name	Species Name
	Hardhead	<i>Aythya Australis</i>
	Chestnut Teal	<i>Anas castanea</i>
	Australasian Grebe	<i>Tachybaptus novaehollandiae</i>
	Hoary-headed Grebe	<i>Poliiocephalus poliocephalus</i>
	Eurasian Coot	<i>Fulica atra</i>
	Purple Swamphen	<i>Porphyrio melanotis</i>
	Masked Lapwing	<i>Vanellus miles</i>
	Swamp Harrier	<i>Circus approximans</i>
	Galah	<i>Eolophus roseicapilla</i>
	Superb Fairywren	<i>Malurus cyaneus</i>
	Red Wattlebird	<i>Anthochaera carunculata</i>
	New Holland Honeyeater	<i>Phylidonyris novaehollandiae</i>
	Little Raven	<i>Corvus mellori</i>
	Welcome Swallow	<i>Hirundo neoxena</i>
	Silvereye	<i>Zosterops lateralis</i>
<b>Amphibians</b>		
	Eastern Common Froglet	<i>Crinia signifera</i>

**Table A3. Threatened flora that has previously been recorded within, or in the vicinity of the study area (Department of Environment Land Water and Planning 2018e), or that has habitat that may occur within the vicinity of the study area (Department of the Environment and Energy 2018a)**

Common Name	Species Name	National Status	Victorian Status	Habitat Preferences	Most Recent Record (No. of records)	Habitat Present on Site	Likelihood of Presence*
Adamson's Blown-grass	<i>Lachnagrostis adamsonii</i>	Endangered	Vulnerable FFG Listed	Slow moving creeks, wetlands, depressions and drains on poorly drained soils	NPR	No	Unlikely
Arching Flax-lily	<i>Dianella</i> spp. aff. <i>longifolia</i> (Benambra)	-	Vulnerable	Lowland grasslands, grassy woodlands and grassy wetlands	2011 (1)	No	Unlikely
Bellarine Yellow Gum	<i>Eucalyptus leucoxylon</i> subsp. <i>bellarinensis</i>	-	Endangered FFG Listed	Heavy clay soils that are waterlogged in winter in dry coastal and near coastal habitats	2017 (7)	No	Unlikely
Clover Glycine	<i>Glycine latrobeana</i>	Vulnerable	Vulnerable FFG Listed	Grassy woodland; plains grassland; box woodland; dry sclerophyll forest.	NPR	No	Unlikely
Coast Bitter-bush	<i>Adriana quadripartita</i>	-	Vulnerable	Open primary dune scrub	1987 (3)	No	Unlikely
Green-striped Greenhood	<i>Pterostylis chlorogramma</i>	Vulnerable	Vulnerable	Open forest and woodland	NPR	No	Unlikely
Hoary Sunray	<i>Leucochrysum albicans</i> var. <i>tricolor</i>	Endangered	Endangered FFG Listed	Amongst rocks in dry sclerophyll forests	NPR	No	Unlikely
Leafy Greenhood	<i>Pterostylis cucullata</i>	Vulnerable	Endangered FFG Listed	Tea-tree heath	NPR	No	Unlikely

Common Name	Species Name	National Status	Victorian Status	Habitat Preferences	Most Recent Record (No. of records)	Habitat Present on Site	Likelihood of Presence*
Maroon Leek-orchid	<i>Prasophyllum frenchii</i>	Endangered	Endangered FFG Listed	Tea-tree heath; wattle tea-tree scrub; valley sclerophyll forest. Predominantly in or near coastal swamps. Rarely occupies sites more than 10 km inland	NPR	No	Unlikely
Metallic Sun-orchid	<i>Thelymitra epipactoides</i>	Endangered	Endangered FFG Listed	Mainly coastal areas, although occurs inland on fertile loams, scrubby heaths or near swampy depressions.	NPR	No	Unlikely
Pale Swamp Everlasting	<i>Coronidium gunnianum</i>	-	Vulnerable	Tea tree heath, sclerophyll woodland, dry sclerophyll forest	1995 (1)	No	Unlikely
River Swamp Wallaby-grass	<i>Amphibromus fluitans</i>	Vulnerable	-	Beside swamps in grassy low open forest, riparian scrub. Required moist soils, tolerates inundation.	NPR	No	Unlikely
Spiny Rice-flower	<i>Pimelea spinescens</i> subsp. <i>spinescens</i>	Critically Endangered	Vulnerable FFG Listed	Grassland or open shrubland on basalt-derived soils west of Melbourne.	NPR	No	Unlikely
Swamp Everlasting	<i>Xerochrysum palustre</i>	Vulnerable	Vulnerable FFG Listed	Seasonal or permanent wetlands	1995 (1)	No	Unlikely
Water Tassel	<i>Ruppia maritima</i> s.s.	-	Poorly Known	Tidal areas in depths up to two metres	1982 (1)	No	Unlikely

**\* Likelihood of Presence Definitions:**

*Unlikely* – Site does not contain habitat and/or it is outside the species' known, current distribution.

*Low* – Site contains some marginal habitat, but the species was not observed and has not been recently recorded in previous surveys in the area.

*Moderate* – Site contains preferred habitat that may support a population of the species. However, other factors, such as fragmentation, disturbance or predators may be impacting any local population.

*High* - Site contains the preferred habitat which is likely to support the species.

*Present* – Preferred habitat is present on the site, and the species was observed on the site, or recently recorded at the site.

NPR – No previous record, modelled presence only under the EPBC Protected Matters Search results (Department of the Environment and Energy 2018a).

Threatened status based on the Advisory List of Rare or Threatened Plants in Victoria (Department of Environment and Primary Industries 2014).

**Table A4. Threatened fauna that has previously been recorded within, or in the vicinity of the study site (Department of Environment Land Water and Planning 2018e), or that has habitat that may occur within the vicinity of the site (Department of the Environment and Energy 2018a), excluding Marine and Migratory species exclusively listed under the EPBC Act and will not occur within the study area**

Common Name	Species Name	National Status	Victorian Status	Habitat Preferences	Most Recent Record (No. of records)	Habitat Present on Site	Likelihood of Presence*
<b>Birds</b>							
Magpie Goose	<i>Anseranas semipalmata</i>	-	Near Threatened, FFG Listed	Large seasonal wetlands and well-vegetated dams, wet, grasslands	2003 (1)	No	Unlikely
Musk Duck	<i>Biziura lobata</i>	-	Vulnerable	Permanent swamps with dense vegetation, more open waters in non-breeding season.	2006 (8)	No	Unlikely
Australasian Shoveler	<i>Anas rhynchos</i>	-	Vulnerable	Heavily vegetated swamps and floodwaters.	2006 (12)	No	Unlikely
Hardhead	<i>Aythya australis</i>	-	Vulnerable	Deep, vegetated swamps, open water.	Current Assessment (29)	No	Unlikely
Freckled Duck	<i>Stictonetta naevosa</i>	-	Endangered, FFG Listed	Large seasonal wetlands and well-vegetated dams, wet, grasslands	2005 (1)	No	Unlikely
Fairy Prion	<i>Pachyptila turtur</i>	Vulnerable	Vulnerable	A non-breeding visitor, mostly to offshore waters. Largely pelagic in behaviour	NPR	No	Unlikely
Wandering Albatross	<i>Diomedea exulans</i>	Vulnerable	Endangered, FFG Listed	A non-breeding visitor, mostly to offshore waters. Largely pelagic in behaviour	1951 (1)	No	Unlikely
Antipodean Albatross	<i>Diomedea exulans antipodensis</i>	Vulnerable	Taxa not recognised	A non-breeding visitor, mostly to offshore waters. Largely pelagic in behaviour	NPR	No	Unlikely

Common Name	Species Name	National Status	Victorian Status	Habitat Preferences	Most Recent Record (No. of records)	Habitat Present on Site	Likelihood of Presence*
Campbell Albatross	<i>Thalassarche melanophris impavida</i>	Vulnerable	Taxa not recognised	A non-breeding visitor, mostly to offshore waters. Largely pelagic in behaviour	NPR	No	Unlikely
Black-browed Albatross	<i>Thalassarche melanophris melanophris</i>	Vulnerable	Vulnerable	A non-breeding visitor, mostly to offshore waters. Largely pelagic in behaviour	NPR	No	Unlikely
Southern Royal Albatross	<i>Diomedea epomophora epomophora</i>	Vulnerable	Vulnerable, FFG Listed	A non-breeding visitor, mostly to offshore waters. Largely pelagic in behaviour	NPR	No	Unlikely
Northern Royal Albatross	<i>Diomedea epomophora sanfordi</i>	Endangered	Vulnerable, FFG Listed	A non-breeding visitor, mostly to offshore waters. Largely pelagic in behaviour	NPR	No	Unlikely
Shy Albatross	<i>Thalassarche cauta cauta</i>	Vulnerable	Vulnerable, FFG Listed	A non-breeding visitor, mostly to offshore waters. Largely pelagic in behaviour	NPR	No	Unlikely
Salvin's Albatross	<i>Thalassarche cauta salvini</i>	Vulnerable	Vulnerable, FFG Listed	A non-breeding visitor, mostly to offshore waters. Largely pelagic in behaviour	NPR	No	Unlikely
White-capped Albatross	<i>Thalassarche cauta steadi</i>	Vulnerable	Vulnerable, FFG Listed	A non-breeding visitor, mostly to offshore waters. Largely pelagic in behaviour	NPR	No	Unlikely
Buller's Albatross	<i>Thalassarche bulleri</i>	Vulnerable	Vulnerable, FFG Listed	A non-breeding visitor, mostly to offshore waters. Largely pelagic in behaviour	NPR	No	Unlikely
Grey-headed Albatross	<i>Thalassarche chrysostoma</i>	Vulnerable	Vulnerable, FFG Listed	A non-breeding visitor, mostly to offshore waters. Largely pelagic in behaviour	NPR	No	Unlikely

Common Name	Species Name	National Status	Victorian Status	Habitat Preferences	Most Recent Record (No. of records)	Habitat Present on Site	Likelihood of Presence*
Southern Giant Petrel	<i>Macronectes giganteus</i>	Endangered	Vulnerable, FFG Listed	A non-breeding visitor, mostly to offshore waters. Largely pelagic in behaviour	NPR	No	Unlikely
Northern Giant Petrel	<i>Macronectes hallii</i>	Vulnerable	Near threatened, FFG Listed	A non-breeding visitor, mostly to offshore waters. Largely pelagic in behaviour	NPR	No	Unlikely
Glossy Ibis	<i>Plegadis falcinellus</i>	-	Near Threatened	Well vegetated wetlands, wet pastures, rice-fields and grasslands.	2004 (4)	No	Unlikely
Royal Spoonbill	<i>Platalea regia</i>	-	Near Threatened	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.	2006 (10)	No	Unlikely
Australasian Bittern	<i>Botaurus poiciloptilus</i>	Endangered	Endangered	Reed beds, dense vegetation of freshwater swamps and creeks.	2008 (8)	No	Unlikely
Nankeen Night Heron	<i>Nycticorax caledonicus</i>	-	Near Threatened	A wide range of wetlands.	1972 (2)	No	Unlikely
Eastern Great Egret	<i>Ardea modesta</i>	-	Vulnerable, FFG Listed	Floodwaters, rivers and shallows of wetlands, intertidal mud flats.	2006 (21)	No	Unlikely
Little Egret	<i>Egretta garzetta nigripes</i>	-	Endangered, FFG Listed	Tidal mudflats, saltmarshes, mangroves, freshwater wetlands.	2006 (9)	No	Unlikely
Pied Cormorant	<i>Phalacrocorax varius</i>	-	Near Threatened	Large freshwater and saline wetlands and tidal bays along the coast.	2005 (3)	No	Unlikely
White-bellied Sea-	<i>Haliaeetus</i>	-	Vulnerable, FFG	Oceanic / coastal and larger inland	2004 (2)	No	Unlikely

Common Name	Species Name	National Status	Victorian Status	Habitat Preferences	Most Recent Record (No. of records)	Habitat Present on Site	Likelihood of Presence*
Eagle	<i>leucogaster</i>		Listed	waterways.			
Square-tailed Kite	<i>Lophoictinia isura</i>	-	Vulnerable, FFG Listed	Heathlands, woodlands, forests.	2007 (1)	No	Unlikely
Black Falcon	<i>Falco subniger</i>	-	Vulnerable	Woodland, scrub, shrubland and grassland types in arid and semi-arid zones.	2005 (2)	No	Unlikely
Baillon's Crake	<i>Porzana pusilla</i>	-	Vulnerable, FFG Listed	Prefers thickly vegetated freshwater habitats, tends to occupy the shallows and margins of freshwater wetlands. Only ventures into deeper water when sufficient cover is present.	2001 (1)	No	Unlikely
Brolga	<i>Grus rubicuada</i>	-	Vulnerable, FFG Listed	Well vegetated wetlands, wet pastures, rice-fields, stubble, ploughed fields and grasslands.	2004 (2)	No	Unlikely
Australian Painted-Snipe	<i>Rostratula australis</i>	Vulnerable	Critically Endangered, FFG Listed	Uncommon summer migrant to Victoria. Lowlands on shallow freshwater swamps with emergent vegetation, and flooded salt marshes.	NPR	No	Unlikely
Pacific Golden Plover	<i>Pluvialis fulva</i>	-	Vulnerable	Estuaries, tidal mudflats, mangroves, shallow river margins, coastal or inland	1972 (3)	No	Unlikely
Lesser Sand Plover	<i>Charadrius mongolus</i>	-	Critically Endangered	Tidal mudflats and sandflats, beaches, saltmarsh, estuaries	NPR	No	Unlikely
Eastern Curlew	<i>Numenius madagascariensis</i>	Critically Endangered	Vulnerable, FFG Listed	Estuaries, tidal mudflats, mangroves, shallow river margins, coastal or inland	1972 (4)	No	Unlikely

Common Name	Species Name	National Status	Victorian Status	Habitat Preferences	Most Recent Record (No. of records)	Habitat Present on Site	Likelihood of Presence*
Common Greenshank	<i>Tringa nebularia</i>	-	Vulnerable	Estuaries, tidal mudflats, mangroves, shallow river margins, coastal or inland	2005 (19)	No	Unlikely
Black-tailed Godwit	<i>Limosa limosa</i>	-	Vulnerable	Estuaries, tidal mudflats, mangroves, shallow river margins	NPR	No	Unlikely
Bar-tailed Godwit	<i>Limosa lapponica</i>	Vulnerable	Vulnerable	Estuaries, tidal mudflats, mangroves, shallow river margins	NPR	No	Unlikely
Marsh Sandpiper	<i>Tringa stagnatilis</i>	-	Vulnerable	Estuaries, tidal mudflats, mangroves, shallow river margins, coastal or inland	2000 (2)	No	Unlikely
Pectoral Sandpiper	<i>Calidris melanotos</i>	-	Near Threatened	Estuaries, tidal mudflats, mangroves, shallow river margins, coastal or inland	1972 (1)	No	Unlikely
Curlew Sandpiper	<i>Calidris ferruginea</i>	Critically Endangered	Endangered, FFG Listed	Estuaries, tidal mudflats, mangroves, shallow river margins, coastal or inland	1979 (4)	No	Unlikely
Long-toed Stint	<i>Calidris subminuta</i>	-	Near Threatened	Estuaries, tidal mudflats, mangroves, shallow river margins, coastal or inland	1986 (1)	No	Unlikely
Red Knot	<i>Calidris canutus</i>	Endangered	Near Threatened	Estuaries, tidal mudflats, mangroves, shallow river margins, coastal or inland	NPR	No	Unlikely
Great Knot	<i>Calidris tenuirostris</i>	-	Endangered, FFG Listed	Estuaries, tidal mudflats, mangroves, shallow river margins, coastal or inland	NPR	No	Unlikely
Latham's Snipe	<i>Gallinago hardwickii</i>	-	Near Threatened	Wet grasslands, open and wooded swamps.	2006 (10)	No	Unlikely

Common Name	Species Name	National Status	Victorian Status	Habitat Preferences	Most Recent Record (No. of records)	Habitat Present on Site	Likelihood of Presence*
Plains-wanderer	<i>Pedionomus torquatus</i>	Vulnerable	Critically Endangered, FFG Listed	Sparse, treeless, lightly grazed native grasslands/herbfields with bare ground, old cereal crops, low shrubland.	NPR	No	Unlikely
Pacific Gull	<i>Larus pacificus</i>	-	Near Threatened	Intertidal mudflats, estuaries and beaches.	2005 (11)	No	Unlikely
Caspian Tern	<i>Sterna caspia</i>	-	Near Threatened	Coastal, offshore waters, beaches estuaries, some inland birds	2006 (12)	No	Unlikely
Fairy Tern	<i>Sternula nereis nereis</i>	Vulnerable	Endangered, FFG Listed	Coastal waters, bays, inlets, brackish lakes, sewerage ponds near coasts.	1972 (9)	No	Unlikely
Little Tern	<i>Sternula albifrons sinensis</i>	-	Vulnerable, FFG Listed	Coastal waters, bays, inlets, brackish lakes, sewerage ponds near coasts.	1972 (2)	No	Unlikely
Whiskered Tern	<i>Chlidonias hybridus javanica</i>	-	Vulnerable	Lakes, swamps with emergent or floating plants, low bushes in saltmarsh and estuaries.	2005 (7)	No	Unlikely
Orange-bellied Parrot	<i>Neophema chrysogaster</i>	Critically Endangered	Critically Endangered, FFG Listed	Saltmarsh, coastal pastures	NPR	No	Unlikely
Swift Parrot	<i>Lathamus discolor</i>	Endangered	Endangered, FFG Listed	Winter migrant from Tasmania. Generally prefers Box-Ironbark forests and woodlands inland of the Great Dividing Range during winter.	2000 (21)	No	Unlikely
White-throated Needletail	<i>Hirundapus caudacutus</i>	-	Vulnerable, FFG Listed	Aerial insectivore that rarely lands to perch, often sleeping on the wing	2006 (2)	No	Unlikely

Common Name	Species Name	National Status	Victorian Status	Habitat Preferences	Most Recent Record (No. of records)	Habitat Present on Site	Likelihood of Presence*
Regent Honeyeater	<i>Anthochaera phrygia</i>	Endangered	Critically Endangered, FFG Listed	Depends on nectar and insects from Box-Ironbark Eucalypt forests. Only breeding habitat lies in Northeast Victoria and central coast of NSW	NPR	No	Unlikely
Painted Honeyeater	<i>Grantiella picta</i>	Vulnerable	Vulnerable, FFG Listed	Open box-ironbark forests and woodlands, particularly where trees are infested with mistletoe.	NPR	No	Unlikely
<b>Mammals</b>							
Spotted-tail Quoll	<i>Dasyurus maculatus maculatus</i>	Vulnerable	Endangered, FFG Listed	Forests including large intact areas of vegetation for foraging.	NPR	No	Unlikely
Swamp Antechinus	<i>Antechinus minimus maritimus</i>	Vulnerable	Near Threatened, FFG Listed	Heathy forest, wetlands, heathland and coastal scrub.	NPR	No	Unlikely
Grey-headed Flying-fox	<i>Pteropus poliocephalus</i>	Vulnerable	Vulnerable, FFG Listed	Roost sites commonly occur in gullies, in vegetation with dense canopy cover and close to water.	NPR	No	Unlikely
<b>Frogs</b>							
Growling Grass Frog	<i>Litoria raniformis</i>	Vulnerable	Endangered, FFG Listed	Permanent lakes, swamps, dams and lagoons.	1994 (2)	No	Unlikely
<b>Reptiles</b>							
Leathery Turtle	<i>Dermochelys coriacea</i>	Vulnerable	Critically Endangered, FFG Listed	Pelagic, some breed in Queensland	NPR	No	Unlikely
Loggerhead Turtle	<i>Caretta caretta</i>	Endangered	-	Pelagic	NPR	No	Unlikely
Green Turtle	<i>Chelonia mydas</i>	Vulnerable	-	Pelagic	NPR	No	Unlikely
<b>Fish</b>							

Common Name	Species Name	National Status	Victorian Status	Habitat Preferences	Most Recent Record (No. of records)	Habitat Present on Site	Likelihood of Presence*
Australian Grayling	<i>Prototroctes maraena</i>	Vulnerable	Vulnerable, FFG Listed	Clear gravelly streams; deep slow flowing pools.	1873 (1)	No	Unlikely
Dwarf Galaxias	<i>Galaxiella pusilla</i>	Vulnerable	Vulnerable, FFG Listed	Slow moving waters, including ephemeral drains.	NPR	No	Unlikely
Yarra Pygmy Perch	<i>Nannoperca obscura</i>	Vulnerable	Vulnerable, FFG Listed	Slow flowing creeks or still lakes with abundant aquatic vegetation and log snags	NPR	No	Unlikely
Murray Cod	<i>Maccullochella peelii peelii</i>	Vulnerable	Endangered, FFG Listed	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.	NPR	No	Unlikely

**Table Notes:**

This table excludes species listed exclusively as 'migratory' or 'marine' under the EPBC Protected Matters Search results (Department of the Environment and Energy 2018a). Species listed in red may use the Maribyrnong River adjacent to the study area.

**\* Likelihood of Presence Definitions:**

Unlikely – Site does not contain habitat and/or it is outside the species' known, current distribution. Birds and bats may fly over.

Low – Site contains some marginal habitat, but the species was not observed and has not been recorded in previous recent surveys in the area. Birds and bats may fly over.

Moderate – Site contains preferred habitat that may support a population of the species. Birds and bats may opportunistically or seasonally forage at the site.

High – Site contains preferred habitat which is likely to support the species. Birds and bats are likely to regularly (at least seasonally) forage or roost at the site.

Present – Preferred habitat is present on the site, and the species was observed on the site, or recently recorded on the site.

NPR – No previous record, modelled presence only under the EPBC Protected Matters Search results (Department of the Environment and Energy 2018a).

Threatened status based on the Advisory List of Threatened Vertebrate Fauna in Victoria (Department of Sustainability and Environment 2013) and the Advisory List of Threatened Invertebrate Fauna in Victoria (Department of Sustainability and Environment 2009).

## Appendix 2. Legislation

### Commonwealth Legislation

#### ***Environment Protection and Biodiversity Conservation Act 1999 (Cth)***

The *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act) is to provide for the conservation of 'Matters of National Environmental Significance'. The Act defines nine Matters of National Environmental Significance:

- World Heritage properties;
- National Heritage Places;
- Ramsar wetlands of international significance;
- Nationally listed threatened species and ecological communities;
- Listed migratory species;
- Commonwealth marine areas;
- The Great Barrier Reef Marine Park;
- Nuclear actions; and
- A water resource, in relation to coal seam gas development and large coal mining development.

Under the Act, actions that are likely to have a significant impact upon Matters of National Environmental Significance require approval from the Federal Environment Minister. This approval is sought through a referral process for a particular action. An action includes any project, development, undertaking, activity or series of activities. Consideration of the requirement for an 'EPBC Referral' to the Minister has been made within this report.

### State Legislation

#### ***Flora and Fauna Guarantee Act 1988 (Vic)***

The *Flora and Fauna Guarantee Act 1998* (Vic) (FFG Act) provides 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 on public land. The Act lists native species, communities, and processes that threaten native flora and fauna, under Schedules of the Act. This enables the assessor and regulators to establish management measures to mitigate impacts on listed values within Victoria.

A 'Protected Flora and Fauna Licence or Permit' from DSE is required to 'take' listed flora species that are members of listed communities or protected flora from public land. 'Taking' flora is defined as any action which results in the removal or death of a native plant. 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.

An evaluation of the likelihood of the presence of significant flora and fauna species on the subject site, including those listed under the FFG Act that have previously been recorded in the vicinity of the site, has been undertaken.

### ***Planning and Environment Act 1987 (Vic)***

The *Planning and Environment Act 1987* (Vic) (P&E Act), later amended by the *Planning and Environment (Planning Schemes) Act 1996* (Vic) provides the foundation of planning schemes in Victoria. Planning schemes set out policies and provisions for the development and protection of land within each municipality in Victoria.

The *Planning and Environment (Planning Schemes) Act 1996* provides for the Minister for Planning to prepare a set of standard provisions for planning schemes called the Victoria Planning Provisions (VPP). The VPP is a state-wide reference document or template from which planning schemes are sourced and constructed. Incorporation of references such as the *Guidelines For the Removal, Destruction or Lopping of native vegetation* into Section 12 of the VPP ensures that all municipalities must consider this policy. Local zones and overlays, such as Environmental Significance Overlays, may be incorporated into Section 30 and 40 of the planning provisions by each Council, but only remain relevant within that municipality.

The objectives of the P&E Act are to integrate local land use, development planning and development policy with environmental, social, economic, conservation and resource management policies at State, regional and municipal levels through a set of planning schemes. The Act also establishes a clear procedure for public participation in decision making in amending planning schemes.

Some important sections of the planning scheme, in relation to the ecological values of a site, include:

- Section 12 of the State Planning Policy Framework, which identifies, and aims to protect, key biodiversity assets from inappropriate development;
- Clause 52.17 which identifies where native vegetation removal is exempt from requiring a planning permit; and
- Clause 66 which identifies all of the mandatory referral authorities. In particular, the Victorian Department of Environment, Land Water and Planning is identified as the recommending referral authority if a proponent proposes:
  - *'To remove, destroy or lop native vegetation in the Detailed Assessment Pathway as defined in the Guidelines for the removal, destruction or lopping of native vegetation;*
  - *To remove, destroy or lop native vegetation if a property vegetation plan applies to the site; and*
  - *To remove, destroy or lop native vegetation on Crown land which is occupied or managed by the responsible authority'* (Department of Environment Land Water and Planning 2018d).

### ***Catchment and Land Protection Act 1994 (Vic)***

The *Catchment and Land Protection Act 1994* (Vic) (CALP Act) is the principle legislation relating to the management of pest plants and animals in Victoria. Under this Act, landowners have a responsibility to avoid causing or contributing to land degradation. Where possible, landowners are required to conserve soil, protect water resources, eradicate 'regionally prohibited' weeds, prevent

the growth and spread of ‘regionally controlled’ weeds and control pest animals. The CALP Act lists the species that are considered weeds and pest animals.

### ***Wildlife Act 1975 (Vic)***

Victoria’s *Wildlife Act 1975 (Vic)* and the *Wildlife Regulations 2002 (Vic)* protect all indigenous vertebrate fauna, some non-indigenous vertebrate fauna, and some invertebrate fauna listed as ‘threatened’ under the FFG Act. The *Wildlife Act 1975 (Vic)* prevents intentional injury to wildlife, and stipulates that a licence should be granted where there is a possibility that wildlife are injured, or where wildlife is to be kept, relocated or traded.

In most cases, where the proponent is planning to develop a site, a planning permit approval provides this licencing approval, however, this report advises if an additional permit is required. Circumstances where this legislation may not be relevant is where fish are involved, on public land where additional regulatory approval is required, or where other permits are required (such as where fauna are required to undergo invasive procedures or installation of telemetry systems).

### ***Fisheries Act 1995 (Vic)***

The *Fisheries Act 1995 (Vic)* provides the legislative framework for the regulation, management conservation of Victorian fish species and their habitats. As with the Victorian *Wildlife Act 1975* described above, the key method to ensure compliance is through licencing. Where fish, or their habitats, are likely to be impacted, this report will identify additional requirements.

### ***Water Act 1989 (Vic)***

The purpose of the *Water Act 1989 (Vic)* is to manage and allocate surface and ground water throughout Victoria. This includes the sustainable use of water and activities on water, as well as the protection and enhancement of waterways and waterbodies. The Act empowers water authorities to authorise these activities through the works on waterways permit approval process.

Any construction or maintenance activity that affects beds, banks, associated vegetation, or water quality or quantity requires a licence from the responsible water authority pursuant to Section 67 (or related sections), or in accordance with relevant By Laws established in accordance with Sections 160 and 219 of the Act.

### ***Environment Protection Act 1970 (Vic) and State Environment Protection Policies***

The *Environment Protection Act 1970 (Vic)* establishes the State Environmental Protection Policies (SEPP), which are administered the by the Environment Protection Authority. These apply to all surface waters, and provide for the protection of waterways and waterbodies throughout Victoria. The SEPPS establish the “beneficial uses” of waterways and establishes environmental quality objectives to provide the protection of these uses.

### **Other relevant policy**

***Guidelines for the removal, destruction or lopping of native vegetation (Department of Environment Land Water and Planning 2017c)***

The *Guidelines for the removal, destruction or lopping of native vegetation* (Department of Environment Land Water and Planning 2017) were released by DELWP in December 2017. These guidelines supersede the Biodiversity Assessment Guidelines (Department of Environment and Primary Industries 2013).

A permit to remove native vegetation under clause 52.16 and 52.17 of the Victoria Planning Provisions is required unless:

- The table of exemptions to this clause specifically states that a permit is not required;
- It is native vegetation or an area specified in the schedule to the clause;
- A Native Vegetation Precinct Plan corresponding to the land is incorporated into the relevant planning scheme; or
- Bushfire exemptions apply in bushfire prone areas (Department of Environment Land Water and Planning 2017).

The Guidelines describe the permitting process for applications to remove native vegetation on private and public property within Victoria. A key strategy of the State Planning Policy Framework, relating to biodiversity, is to ensure that there is no net loss to biodiversity as a result of the removal, destruction or lopping of native vegetation. This is achieved through iteratively applying the three-step approach:

1. Avoiding the removal, destruction or lopping of native vegetation.
2. Minimising impacts from the removal, destruction or lopping of native vegetation that cannot be avoided.
3. Providing an offset to compensate for the biodiversity impact from the removal, destruction or lopping of native vegetation (Department of Environment Land Water and Planning 2017; p. 4).

Native vegetation is defined in the Victoria Planning Provisions as 'plants that are indigenous to Victoria, including trees, shrubs, herbs and grasses' (Department of Environment Land Water and Planning 2017).

Native vegetation is further classified into two categories (Department of Environment Land Water and Planning 2017):

- A remnant patch of native vegetation (measured in hectares) is either:
  - An area of vegetation where at least 25 per cent of the total perennial understorey plant cover is native, or
  - Any area with three or more native canopy trees where the drip line of each tree touches the drip line of at least one other tree, forming a continuous canopy, or
  - Any mapped wetland included in the *Current Wetlands Map*, available in DELWP systems and tools.

OR

- A scattered tree (measured in number of trees), is a native canopy tree that does not form a patch (Department of Environment Land Water and Planning 2017).

In addition, a canopy tree with a Diameter at Breast Height (DBH) greater than or equal to the large tree benchmark for the relevant bioregional EVC is defined as a large tree. Large trees can be either a large scattered tree or a large tree within a patch.

The contribution that is made by native vegetation to the biodiversity values of Victoria is determined through an assessment of both site-based information and landscape scale information.

At a site-based level, the contribution is determined through an assessment of:

- The extent of native vegetation;
- The number of large trees (either within a patch or scattered trees), relative to the appropriate EVC benchmark;
- The native vegetation condition, which is determined through a Habitat Hectare assessment
- The conservation status of the Ecological Vegetation Class (EVC) to which the vegetation can be classified; and,
- The presence of sensitive wetlands and coastal areas.

At a landscape scale, the value of the vegetation is determined with reference to its strategic context in the Victorian landscape (Department of Environment and Primary Industries 2013). This is determined by the vegetation's 'Strategic Biodiversity Score' (SBS) and its 'Habitat Importance Score' (HIS) for its value to rare and threatened species (Department of Environment Land Water and Planning 2017).

All native vegetation within Victoria has a SBS that has been determined through spatial modelling, based on its rarity, level of depletion, species habitats, and condition and connectivity (Department of Environment Land Water and Planning 2017). SBS scores are between 0 and 1 and are used to determine the offset required for the loss of that vegetation. Native vegetation only has a HIS score if it is habitat for a particular rare or threatened species<sup>5</sup> (Department of Environment Land Water and Planning 2017). There are two types of rare or threatened species habitats that may be provided by native vegetation:

- **Highly localised habitats for rare or threatened species** – where impact to this particular patch of native vegetation could result in a significant biodiversity impact, such as a breeding colony or species with a limited geographic extent.
- **Dispersed rare or threatened species habitats** – where habitat for the threatened species has become depleted or fragmented over time (Department of Environment Land Water and Planning 2017).

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<sup>5</sup> Rare or threatened species are species listed in:

- DELWP's Advisory List of Rare or Threatened Plants in Victoria (DEPI 2014a) as 'endangered', 'vulnerable', or 'rare', but does not include the 'poorly known' category.
- DELWP's Advisory List of Threatened Vertebrate Fauna in Victoria (DEPI 2013) as 'critically endangered', 'endangered' or 'vulnerable', but does not include 'near threatened' or 'data deficient' categories
- DELWP's Advisory List of Threatened Invertebrate Fauna in Victoria (DEPI 2009) as 'critically endangered', 'endangered' or 'vulnerable', but does not include 'near threatened' or 'data deficient' categories.

The HIS is used to apply the decision guidelines in relation to the removal of a patch of native vegetation and to determine offset requirements (Department of Environment Land Water and Planning 2017).

Applications to remove native vegetation are categorised against one of three assessment pathways. These pathways are categorised as:

- Basic – limited impacts on biodiversity.
- Intermediate – could impact on large trees, endangered EVCs, and sensitive wetlands and coastal areas.
- Detailed – could impact on large trees, endangered EVCs, sensitive wetlands and coastal areas, and could significantly impact on habitat for rare or threatened species (Department of Environment Land Water and Planning 2017).

This is initially determined in two ways, based on the ‘location map’ and the extent risk of the vegetation proposed to be removed. The location risk is determined with reference to the *Native Vegetation Location Risk* map available on DELWP’s website (Department of Environment Land Water and Planning 2018b). This map shows whether native vegetation is classified as Location 1, 2 or 3.

The extent risk is determined based on the amount of native vegetation that is proposed for removal and includes the area (in hectares) of impact to native vegetation, the number of scattered trees, and the number of large trees (Table A5).

**Table A5.** Assessment pathways for removal of remnant patches of native vegetation (Department of Environment Land Water and Planning 2017).

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

All applications to remove native vegetation must include the following information:

1. Information about the native vegetation to be removed, including:
  - a. The assessment pathway and reason for the assessment pathway;
  - b. A description of the native vegetation to be removed;
  - c. Maps showing the native vegetation and property in context;
  - d. The offset requirement, determined in accordance with section 5 of the Guidelines that will apply if the native vegetation is approved to be removed.
2. Topographic and land information relating to the native vegetation to be removed;
3. Recent, dated photographs of the native vegetation to be removed;

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 is lodged;
5. An 'Avoid and Minimise' statement;
6. A copy of any Property Vegetation Plan contained within an agreement made pursuant to section 69 of the *Conservation, Forests and Lands Act 1987* (Vic) that applies to the native vegetation to be removed;
7. Where the removal of native vegetation is to create defensible space, a written statement explaining why the removal of native vegetation is necessary;
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, and
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 (Department of Environment Land Water and Planning 2017; p. 20-21).

If the application will be assessed under the Detailed Assessment Methodology, the following additional requirements apply:

10. A site assessment report of the native vegetation to be removed, including:
  - a. A habitat hectare assessment of any patches of native vegetation, including the condition, extent (in hectares), Ecological Vegetation Class and bioregional conservation status.
  - b. The location, number, circumference (in centimetres measured at 1.3 metres above ground level) and species of any large trees within patches.
  - c. The location, number, circumference (in centimetres measured at 1.3 metres above ground level) and species of any scattered trees, and whether each tree is small or large.
11. Information about impacts on rare or threatened species habitat, including:
  - a. The relevant section of the Habitat importance map for each rare or threatened species requiring a species offset.
  - b. For each rare or threatened species that the native vegetation to be removed is habitat for, according to the Habitat importance maps: - the species' conservation status - the proportional impact of the removal of native vegetation on the total habitat for that species - whether their habitats are highly localised habitats, dispersed habitats, or important areas of habitat within a dispersed species habitat (Department of Environment Land Water and Planning 2017; p. 22).

Ten decisions guidelines are identified within the Guidelines that the responsible or referral authority must consider when deciding on an application to remove native vegetation. These are summarised as follows:

1. The degree to which the application avoids and minimises impacts to native vegetation, and where vegetation is proposed to be removed, the highest quality vegetation is avoided;
2. The role that the vegetation to be removed has in relation to landscape services such as erosion control, ground-water quality, waterway quality;
3. The role of the vegetation in the preservation of landscape features;
4. Whether any part of the native vegetation to be removed, destroyed or lopped is protected under the *Aboriginal Heritage Act 2006* (Vic);
5. The need to remove, destroy or lop native vegetation to create defensible space to reduce the risk of bushfire to life and property, having regard to other available bushfire risk mitigation measures;
6. Whether the native vegetation to be removed is in accordance with any Property Vegetation Plan that applies to the site;
7. Whether 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;
8. Whether the application is consistent with a Native Vegetation Precinct Plan (where relevant);
9. For applications in both the Intermediate and Detailed Assessment Pathway only, the impacts on biodiversity values that would occur as a result of vegetation removal; and,
10. For applications in the Detailed Assessment Pathway only, the impacts on habitat for rare or threatened species (Department of Environment Land Water and Planning 2017).

### *Offset requirements*

In all cases where native vegetation is approved for removal, the proponent is liable for the security of an offset site that meets the requirements under the Guidelines. An offset can be either a:

- First party offset – on the same property as the proposed removal of native vegetation, or on another property owned or managed (in the case of Crown land) by the party requiring the offset, or
- Third party offset – on another party’s property. Third party offsets are traded as native vegetation credits.

In most cases a third party offset is the simplest and most cost effective means of securing the required offset.

There are three components to offset requirements:

1. Offset type (general or species).
2. Offset amount (measured in general or species habitat units).
3. Offset attributes.

Two types of offset are identified: General Offsets and Specific Offsets. Specific Offsets may only be required if the native vegetation to be removed is habitat for rare or threatened species that are identified in an Intermediate or Detailed Assessment Pathway application (Department of Environment Land Water and Planning 2017). To determine this, a ‘Specific Biodiversity Equivalence Score’ is calculated by multiplying the habitat hectares with the HIS for each species that may be impacted. For each of the species, this figure is divided by the sum of all the Specific Biodiversity Value Scores calculated for the remaining vegetation under investigation to give a specific offset threshold for each species. If the amount of vegetation removed exceeds this threshold, then a Specific Offset is required. If it does not exceed the threshold, then only a General Habitat Offset is required (Table A6)(Department of Environment Land Water and Planning 2017).

Table A6 summarises the offset requirements for each of the Assessment Pathways and offset types.

**Table A6.** Offset requirements for the removal of native vegetation

Assessment Pathway	Offset Type	Offset amount		Offset attributes	
		Risk Adjusted Biodiversity Equivalence	Species Habitat Requirement	Vicinity	Strategic Biodiversity Score
Basic Assessment Pathway	General offset	1.5 times the general biodiversity equivalence score <sup>1</sup> of the native vegetation to be removed.	No restrictions.	In the same Catchment Management Authority boundary as the native vegetation to be removed.	At least 80 per cent of the SBS of the native vegetation to be removed.
Intermediate or Detailed Assessment Pathway	General offset	1.5 times the general biodiversity equivalence score of the native vegetation to be removed.	No restrictions.	In the same Catchment Management Authority boundary as the native vegetation to be removed.	At least 80 per cent of the SBS of the native vegetation to be removed.
	Specific offset	For each species impacted, 2 times the specific biodiversity equivalence score of the native vegetation to be removed.	Likely habitat for each rare or threatened species that a specific offset is required for, according to the specific-general offset test.	No restrictions.	No restrictions.

<sup>1</sup> The general biodiversity equivalence score is determined by multiplying the vegetation's habitat hectare score by its SBS.