

Final Report

# Biodiversity Assessment for a Proposed Residential Development at 21 Lobbs Lane, Nagambie, Victoria

Prepared for  
**Urbis Pty Ltd**

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**Ecology and Heritage Partners Pty Ltd**

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## SUMMARY OF CLAUSE 52.17 APPLICATION REQUIREMENTS

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

No.	Application Requirement	Response
<b>Application requirements under the Detailed Assessment Pathway</b>		
1	Information about the native vegetation to be removed, including: <ul style="list-style-type: none"> <li>The assessment pathway and reason for the assessment pathway;</li> <li>A description of the native vegetation to be removed;</li> <li>Maps showing the native vegetation and property in context; and</li> <li>The offset requirement that will apply if the native vegetation is approved to be removed.</li> </ul>	Refer to Section 3.1, Section 3.3 and Appendix 3 (NVR Report)
2	Topographic and land information relating to the native vegetation to be removed, showing ridges, crests and hilltops, wetlands and waterways, slopes of more than 20 percent, drainage lines, low lying areas, saline discharge areas, and areas of existing erosion, as appropriate.	Refer to Section 1.2 and Figure 1
3	Recent dated photographs of the native vegetation to be removed.	Refer to Section 3.1
4	Details of any other native vegetation that was permitted to be removed on the same property with the same ownership as the native vegetation to be removed, where the removal occurred in the five year period before the application to remove native vegetation is lodged.	No removal of native vegetation has been removed by the proponent within the property within the past five years
5	An avoid and minimise statement. The statement describes any efforts to avoid the removal of and minimise the impacts on the biodiversity and other values of native vegetation, and how these efforts focussed on areas of native vegetation that have the most value.	Refer to Section 5.1
6	A copy of any Property Vegetation Plan contained within an agreement made pursuant to section 69 of the <i>Conservation, Forests and Lands Act 1987</i> that applies to the native vegetation to be removed.	Not applicable
7	Where the removal of native vegetation is to create defensible space, a written statement explaining why the removal of native vegetation is necessary. This statement must have regard to other available bushfire risk mitigation measures. This statement is not required when the creation of defensible space is in conjunction with an application under the Bushfire Management Overlay.	Not applicable as the vegetation clearance is not for defensible space
8	If the application is under Clause 52.16, a statement that explains how the proposal responds to the Native Vegetation Precinct Plan considerations at decision guideline 8.	Not applicable as the application responds to Clause 52.17
9	An offset statement providing evidence that an offset that meets the offset requirements for the native vegetation to be removed has been identified and can be secured in accordance with the Guidelines.	Refer to Section 5.3

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

# 1 INTRODUCTION

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## 1.1 Background

Ecology and Heritage Partners Pty Ltd was commissioned by Urbis Pty Ltd to undertake a biodiversity assessment for a proposed residential development at 21 Lobbs Lane, Nagambie, Victoria.

We understand that the study area is proposed to be subdivided and is located in the Low-Density Residential Zone (LDRZ). The study area is covered by a Development Plan Overlay – Schedule 3 (DPO3). Ecology and Heritage Partners previously conducted a Flora, Fauna and Net Gain Assessment of the site (Ecology and Heritage Partners 2013).

A requirement of the Development Plan Overlay is that an updated ecological assessment is completed. This assessment is required before a Planning Permit can be issued, and the assessment will address the requirements of Clauses 52.17 and the *'Guidelines for the removal, lopping or destruction of native vegetation'* (the Guidelines) (DELWP 2017). These guidelines have replaced the previous *'Permitted clearing of native vegetation – Biodiversity assessment guidelines'* (DEPI 2013) which are referred to in Development Plan Overlay – Schedule 3.

The purpose of this assessment was to identify the ecological values known to, or likely to occur within the study area and determine the potential regulatory and legislative implications associated with the proposed action. An assessment of the suitability of the study area for the State significant Brolga *Grus rubicunda* was also undertaken to address concerns raised by Strathbogie Shire Council regarding the potential use of the site by the species.

## 1.2 Study Area

The study area, known as Box Grove Estate, is located at 21 Lobbs Lane, Nagambie and is approximately one kilometre north-east of the township of Nagambie, which is approximately 141 kilometres north of Melbourne (Figure 1). The study area covers approximately 135 hectares and is bound by Lobbs Lane to the east, open agricultural land to the south, the Goulburn River and open agricultural land along the northern and eastern boundaries.

The study area is currently used for mixed agricultural activities (cropping and grazing). It is generally flat, with no ridges, crests or waterways within or immediately adjacent to the site. There is a Department of Environment, Land, Water and Planning (DELWP) modelled wetland meandering approximately two kilometers through the middle of the study area.

According to DELWP NatureKit Map (DELWP 2021a), the study area is located within the Victorian Riverina bioregion, Goulburn Broken Catchment Management Authority (CMA) and Strathbogie Shire Council.

## 2 METHODS

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### 2.1 Desktop Assessment

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

- The DELWP NatureKit Map (DELWP 2021a) and Native Vegetation Information Management (NVIM) Tool (DELWP 2021b) for:
  - Modelled data for location risk, native vegetation patches, scattered trees and habitat for rare or threatened species; and,
  - The extent of historic and current Ecological Vegetation Classes (EVCs).
- EVC benchmarks (DELWP 2021c) for descriptions of EVCs within the relevant bioregion;
- The Victorian Biodiversity Atlas (VBA) for previously documented flora and fauna records within the project locality (DELWP 2021d);
- Atlas of Living Australia (ALA) (ALA 2021) for assistance with the distribution and identification of flora species;
- The Commonwealth Department of Agriculture, Water and the Environment (DAWE) Protected Matters Search Tool (PMST) for matters of National Environmental Significance (NES) protected under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) (DAWE 2021);
- Relevant listings under the Victorian *Flora and Fauna Guarantee Act 1988* (FFG Act), including the latest Threatened (DELWP 2019a) and Protected (DELWP 2019b) Lists;
- The online VicPlan Map (DELWP 2021e) to ascertain current zoning and environmental overlays in the study area;
- Aerial photography of the study area; and
- Previous ecological assessments relevant to the study area, including the previous Flora, Fauna and Net Gain Assessment at Box Grove, Nagambie, Victoria (Ecology and Heritage Partners 2013).

### 2.2 Field Assessment

A field assessment was undertaken on 15 and 16 of June 2021 to obtain information on flora and fauna values within the study area. The study area was walked, with all commonly observed vascular flora and fauna species recorded, significant records mapped and the overall condition of vegetation and habitats noted. Ecological Vegetation Classes (EVCs) were determined with reference to DELWP pre-1750 and extant EVC mapping (DELWP 2021a) and their published descriptions (DELWP 2021c).

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



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

Under the *Planning and Environment Act 1987*, Clause 52.17 of the Strathbogie Planning Scheme requires a planning permit to remove, destroy or lop native vegetation. The assessment process for the clearing of vegetation follows the ‘*Guidelines for the removal, destruction or lopping of native vegetation*’ (the Guidelines) (DELWP 2017). The ‘*Assessor’s handbook: Applications to remove, destroy or lop native vegetation*’ (Assessor’s handbook) (DELWP 2018) provides clarification regarding the application of the Guidelines (DELWP 2017).

### 2.3.1 Assessment Pathway

The Guidelines manage the impacts on biodiversity from native vegetation removal using an assessment-based approach. Two factors – extent risk and location category – are used to determine the risk associated with an application for a permit to remove native vegetation. The location category (1, 2 or 3) has been determined for all areas in Victoria and is available on DELWP’s NVIM Tool (DELWP 2021b). Determination of assessment pathway is summarised in Table 1.

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

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

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

### 2.3.2 Vegetation Assessment

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

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

Category	Definition	Extent	Condition
<b>Patch of native vegetation</b>	<p>An area of vegetation where at least 25 per cent of the total perennial understorey plant cover is native;</p> <p>OR</p> <p>An area with three or more native canopy trees where the drip line of each tree touches the drip line of at least one other tree, forming a continuous canopy;</p> <p>OR</p> <p>any mapped wetland included in the <i>Current Wetlands map</i>, available in DELWP systems and tools.</p>	<p>Measured in hectares.</p> <p>Based on hectare area of the native patch.</p>	<p>Vegetation Quality Assessment Manual (DSE 2004).</p> <p>Modelled condition for <i>Current Wetlands</i>.</p>
<b>Scattered tree</b>	<p>A native canopy tree that does not form part of a native patch.</p>	<p>Measured in hectares.</p> <p>Each Large scattered tree is assigned an extent of 0.071 hectares (15 metre radius).</p> <p>Each Small scattered tree is assigned a default extent of 0.031 hectares (10 metre radius)</p>	<p>Scattered trees are assigned a default condition score of 0.2 (outside a patch).</p>

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

### 2.3.3 *Current Wetlands (DELWP)*

Wetlands can be difficult to map and assess accurately as they respond quite quickly to changes in environmental condition, especially rainfall. After a period of no or low rainfall they can disappear or appear very degraded. They do, however, recover rapidly after periods of increased rainfall. As a result, under the Guidelines (DELWP 2017) all mapped wetlands (based on ‘Current Wetlands’ layer in the DELWP NatureKit Map) that are to be impacted must be included as native vegetation, with the modelled condition score assigned to them (DELWP 2021b).

Note that if mapped wetlands are covered by any vegetation including crops, bare soil, a mapped wetland must be treated as a native patch.

### 2.3.4 *Impact Avoidance and Minimisation*

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

### 2.3.5 *Offsets*

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

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

## 2.4 Assessment Qualifications and Limitations

This report has been written based on the quality and extent of the ecological values and habitat considered to be present or absent at the time of the desktop and/or field assessments being undertaken. The area surrounding Box Grove Homestead was excluded from this assessment, as it is understood it will not be disturbed as part of the proposed subdivision and development.

The field assessment was undertaken during a sub-optimal season for the identification of flora and fauna species (i.e. winter). The 'snapshot' nature of a standard biodiversity assessment, along with sub-optimal timing of the survey, meant that migratory, transitory or uncommon fauna species may have been absent from typically occupied habitats at the time of the field assessment. In addition, annual or cryptic flora species such as those that persist via underground tubers may also be absent. However, given the highly modified condition of the study area there is unlikely to be a large number of additional flora and fauna species present within the study area.

A comprehensive list of all terrestrial flora and fauna present within the study area was not undertaken as this was not the objective of the assessment and under the relevant Clauses of the planning scheme (e.g. Clause 52.17). Rather a list of commonly observed species was recorded to inform the habitat hectare assessment and assist in determining the broader biodiversity values present within the study area.

Ecological values identified within the study area were recorded using a hand-held dGPS with an accuracy of +/-1 metre. This level of accuracy is considered to provide an accurate assessment of the ecological values present within the study area; however, this data should not be used for detailed surveying purposes.

The terrestrial flora and fauna data collected during the field assessment and information obtained from relevant desktop sources is considered to adequately inform an accurate assessment of the ecological values present within the study area and to determine likely or potential impacts associated with the proposed development.

## 3 RESULTS

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### 3.1 Vegetation Condition

Native vegetation within the study area comprises scattered large Grey Box *Eucalyptus microcarpa* with an exotic pasture/crop ground layer. Several small patches of Riverina Plains Grassy Woodland were also recorded within the study area. Remaining vegetation within the study area was planted native and non-native specimens for windrow or amenity plantings.

A list of all flora species recorded during the field assessment are provided in Appendix 1.1.

#### 3.1.1 Patches of Native Vegetation

Native vegetation in the study area is representative of one EVC: Riverina Plains Grassy Woodland (EVC 55\_62). The presence of this EVC is consistent with the modelled pre-1750s native vegetation mapping (DELWP 2021c) and previous ecological assessment undertaken across the study area (Ecology and Heritage Partners 2013).

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

#### Riverina Plains Grassy Woodland

Plains Grassy Woodland is an open eucalypt woodland to 15 metres tall occurring in a number of geologies and soil types. The community occurs across fertile clays and clay loam soils on flat or gently undulating plains on low elevations in areas with less than 600 millilitres of annual rainfall. The understory consists of a few sparse shrubs over a species-rich grassy and herbaceous ground layer and chenopods are often present (DELWP 2021c).

Riverina Plains Grassy woodland was scattered throughout the eastern half of the study area with several isolated patches. It predominantly comprises a canopy of mature Grey Box *Eucalyptus macrocarpa* and Yellow Box *Eucalyptus melliodora*, with an exotic pasture/crop understory. The shrub layer was absent. (Plate 1; Plate 2).



**Plate 1.** Riverina Plains Grassy Woodland north of the homestead within the study area (Ecology and Heritage Partners Pty Ltd 16/06/2021).



**Plate 2.** Riverina Plains Grassy Woodland in the south-eastern corner of the study area (Ecology and Heritage Partners Pty Ltd 16/06/2021).

### 3.1.2 Large Trees in Patches

Twenty Large Trees (LTs) were recorded in Riverina Plains Grassy Woodland patches (Figure 2). Most of these specimens were Grey Box and Yellow Box, with occasional Yellow Gum *Eucalyptus leucoxylon* and River Red-gum *Eucalyptus camaldulensis* specimens (Plate 1 and 2) (Appendix 1.3).

### 3.1.3 Scattered Trees

A total of 54 scattered trees (Grey Box, Yellow Gum, Yellow Box and River Red-gum) were recorded within the study area, all are scattered large trees (Figure 2; Appendix 1.3). These trees would have once formed part of the Plains Grassy Woodland EVC; however, the understorey vegetation contained predominantly introduced pasture and cropping species and the trees no longer formed a patch of native vegetation (Plate 3; Plate 4).



**Plate 3.** Scattered large Grey Boxes in the north-east corner of the study area (Trees 2, 3, 4, 5, 6 and 7, Figure 2) (Ecology and Heritage Partners Pty Ltd 15/06/2021).



**Plate 4.** Scattered large Yellow Box in the south-eastern corner of the study area (Trees 38, 39 and 40, Figure 2) (Ecology and Heritage Partners Pty Ltd 15/06/2021).

### 3.1.4 Introduced and Planted Vegetation

Areas not supporting native vegetation had a high cover (>90%) of exotic grass species, many of which were direct-seeded for use as pasture and/or cropping (Plate 7). The study area supported native and non-native windrow plantings. A native species windrow planting extending north of the homestead area supported Yellow Gum, Yellow box and Ironbark *Eucalyptus sideroxylon* (Plate 6) Amenity plantings around the homestead supported exotic species including Birch *Betula* sp

Noxious weeds, as defined under the CaLP Act, were present on the study area boundary, with Blackberry *Rubus fruticosus* spp. agg. and Spear Thistle *Cirsium vulgare* recorded (Plate 8). Blackberry and Spear Thistle are also Weeds of National Significance (WoNS).



**Plate 5.** Exotic pasture/crop area that dominated the study area (Ecology and Heritage Partners Pty Ltd 16/06/2021).



**Plate 6.** Native species windrow planting extending north from homestead (Ecology and Heritage Partners Pty Ltd 16/06/2021).



**Plate 7.** Exotic amenity tree planting within the study area (Ecology and Heritage Partners Pty Ltd 16/06/2021).



**Plate 8.** Blackberry along the study area boundary west of the homestead (Ecology and Heritage Partners Pty Ltd 16/06/2021).

### 3.2 Fauna Habitat

Most of the study area consisted of paddocks, which contained improved exotic pastures, likely to be used as a foraging resource by common generalist bird species that are tolerant of modified open areas. Eighteen fauna species (All mammals (birds) except one reptile (common Froglet *Crinia signifera*) were recorded during the site assessment. Most of the species were common in the type and quality of habitat present within the study area. Fauna observed using terrestrial habitat included Australian Magpie *Cracticus tibicen*, Common Blackbird *Turdus merula*, Little Raven *Corvus mellori*, House Sparrow *Passer domesticus*, Galah *Eolophus roseicapilla*, Willie Wagtail *Rhipidura leucophrys* and Sulphur-crested Cockatoo *Cacatua galerita*. Species observed along the Goulburn River included Australian White Ibis *Threskiornis Molucca*, Purple Swamphen *Porphyrio porphyrio*, Masked lapwing *Vanellus miles*, Black Swan *Cygnus atratus*. While not observed during the site assessment there was evidence Red Fox *Vulpes vulpes* and European Rabbit *Oryctolagus cuniculus* occupy the study area, and both of these species are listed as pest animals under the CaLP Act.

Brolga *Grus rubicunda* has previously been recorded during the site assessment. There are additional recording of one Brolga within the study area (2000) in the Atlas of Living Australia (ALA 2021). Based on the study areas proximity to the Goulburn River and Lake Nagambie it is likely the Brolga and other wetland birds would use habitat within the study area opportunistically as it is seek more suitable habitat with fringing and riparian vegetation, and are considered unlikely to rely on habitat within the study area for foraging or breeding purposes due to the lack of suitable habitat features.

Numerous scattered large trees within the study area supported hollows. Some trees supported small and medium sized hollows and spouts which could be used as nesting or roosting sites for a variety of native arboreal animals and birds, particularly possums, gliders, microbats, owls, parrots and lorikeets.

### 3.2.1 DELWP Modelled Wetland

The DELWP modelled wetland meanders across the study are from the centre to the south-eastern corner, extending approximately two kilometres (Plate 9). It is likely to flood periodically and provide foraging habitat for waterbirds, as they make their way to adjacent higher quality habitat on the Goulburn River and anabranches if Lake Nagambie.



**Plate 9.** DELWP modelled wetland north of the homestead looking north-east (Ecology and Heritage Partners Pty Ltd 16/06/2021).

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

The below clearing scenario is based on the development design dated 9 June 2021 provided by the client. The proposed development design details total loss of native vegetation within the study area, with the protection and retention of riparian habitat along Goulburn River and anabranches of Lake Nagambie.

### 3.3.1 Vegetation proposed to be removed

The study area is within Location 2, with 11.781 hectares of native vegetation and modelled wetlands are proposed to be removed. As such, the permit application falls under the Detailed Assessment Pathway (Table 3). Condition scores for vegetation proposed to be removed are provided in Appendix 1.2.

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

Assessment pathway	Detailed
Location Category	2
Total Extent (past and proposed) (ha)	11.781
Extent of past removal (ha)	0.108
Extent of proposed removal (ha)	11.673
Large Trees (scattered and in patches) to be removed (no.)	68
Small scattered trees to be removed (no.)	3
EVC Conservation Status of vegetation to be removed	Vulnerable (Riverina Plains Grassy Woodland)

### 3.3.2 Offset Targets

The offset requirement for native vegetation removal is 2.964 General Habitat Units and 68 Large Trees.

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

**Table 4.** Offset Targets.

General Offsets Required	2.964 General Habitat Units
Large Trees	68
Vicinity (catchment/council)	Goulburn Broken CMA / Strathbogie Shire Council
Minimum Strategic Biodiversity Value*	0.211

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

## 3.4 Significance Assessment

### 3.4.1 Flora

The VBA contains records of one nationally significant and eight State significant flora species previously recorded within 10 kilometres of the study area (DELWP 2021d) (Figure 3). The PMST nominated an additional seven nationally significant species which have not been previously recorded but have the potential to occur in the locality (DAWE 2021) (Figure 3; Appendix 1.4).



No national or State significant flora species were recorded during the site assessment. However, the VBA (DELWP 2021d) records three records of Water Shield 300 meters to the north of the study area and Swamp Leek-orchid four kilometres to the North East (Figure 3).

## State

### **Water Shield *Brasenia schreberi***

Water Shield is listed as Threatened under the FFG Act (DSE 2013). Although this species was not observed during the site assessment, there are four previously documented records of the species within a 10-kilometre radius of the study area (DELWP 2021d) (Figure 3). The records of Water Shield are within Baxters Island to the north of the site (Figure 3) and potential habitat has been observed to within 100 meters to the north west of the site at 82 Kirwans Bridge, Nagambie (Nature Advisory 2021).

Water Shield requires permeant submersion in freshwater, it is typically found within 30 centimetres to two meters of water round and flowers during the Spring to Summer months of the year (Entwise 1996). Based on the lack of permeant freshwater it is unlikely to occur within the study area due to the absence of suitable habitat.

### **Swamp Leek-orchid *Prasophyllum hygrophilum***

Swamp Leek-orchid is listed as Threatened under the FFG Act (DSE 2013). While this species was not observed during the site visit, there is one documented record of Swamp Leek-orchid within a 10-kilometre radius of the study area (DELWP 2021d) (Figure 3). The records of Water Shield are within Reedy Lake, Nagambie Wildlife Reserve four kilometres to the north west of the site (Figure 3) and potential habitat has been observed to within 100 meters to the north west of the site at 82 Kirwans Bridge, Nagambie (Nature Advisory 2021).

Swamp Leek-orchid is generally found in open sedge swampland or in wet grassland and wet heathland generally bordering swampy regions. Areas the Swamp Leek-orchid occur in are generally low altitude, flat and moist with moderately rich damp sandy or black clay loams (Rouse 2002). Swamp Leek-orchid populations are prone to overgrazing and heavy soil disturbances and based on the historical cropping and grazing activities across the study area it is unlikely that the Swamp Leek-orchid occurs within the study area.

## 3.4.2 Fauna

The VBA contains records of 13 nationally significant and 33 State significant fauna species previously recorded within 10 kilometres of the study area (DELWP 2021d) (Figure 4). The PMST nominated an additional 10 nationally significant species which have not been previously recorded but have the potential to occur in the locality (DAWE 2021) (Figure 4) (Appendix 2.1). The likelihood of these species occurring within the study area is presented in Appendix 2.1. This likelihood is based on the number and location of recent records, the landscape context and habitat present within the study area and the habitat requirements of these nationally significant species. Most species are considered unlikely to reside in, rely upon or regularly use the study area.

No nationally listed fauna species were recorded within or adjacent to the study area during the site assessment. However, the VBA (DELWP 2021d) contains 36 records of Swift Parrot within a 10-kilometre radius of the study area (Appendix 3.2), the most recent record of which is from 2018 (Figure 4).

## National

### **Swift Parrot *Lathamus discolor***

Swift Parrot is listed as Critically Endangered under the EPBC Act, Threatened under the FFG Act and Endangered in the *Advisory List of Threatened Vertebrate Fauna in Victoria* (DSE 2013).

Swift Parrots breed in Tasmania in spring-summer then migrate north and spend the non-breeding season spread across a large portion of south-eastern Australia (Higgins 1999). During the non-breeding season, birds are essentially nomadic and move in response to flowering of their preferred food sources – including both Yellow and Grey Box, the two species present in the study area. It is most likely that Swift Parrots use the scattered trees during movements through the landscape and would only be present when trees were in flower. Even when in flower, Swift Parrots may not visit trees on site if there are better quality resources elsewhere. While being nomadic, some feeding sites are used repeatedly over many years (Saunders and Heinsohn 2008). Although a small number of Swift Parrot may reside within the study area on rare occasions (i.e. when the eucalypts are in flower) the study area does not constitute a significant foraging resource (no important or limited habitat present) for this species.

## State

One state significant fauna species (Brolga *Grus rubicunda*) was recorded within or adjacent to the study area during the site assessment. According to the VBA (DELWP 2021d) records only one State significant fauna species (Brolga) has previously been recorded within the study area in Figure 4. However, 25 additional State significant species have been documented within a 10 kilometre radius (Figure 4).

### **Brolga *Grus rubicunda***

Brolga is listed as Threatened under the FFG Act, and Vulnerable in the *Advisory List of Threatened Vertebrate Fauna in Victoria* (DSE 2013). This species was seen during the site visit, and 16 VBA (DELWP 2021d) records of Brolga exist within a 10-kilometre radius of the study area (Figure 4). These records are distributed throughout the local area, especially in the Goulburn River floodplain (Figure 4).

The Brolga is commonly found in open wetlands, grassy plains, well-watered farmlands and sometimes coastal mudflats. They often inhabit shallow marshes during breeding season where they can build nests using grasses, sticks and mud (DELWP 2017).

Four Brolga were observed foraging within the Homestead area in open pasture habitat. No nests were observed on the anabranches of Lake Nagambie or the Goulburn River during the site assessment. Brolgas can range widely. The Brolga have been known to wade the grain for livestock, it is unlikely that foraging habitat in the study area represents a significant site for the species.

### **Brown Treecreeper *Climacteris picumnus victoriae***

There is also habitat within the study area for the State significant Brown Treecreeper. The scattered Yellow Box and Grey Box within the study area are considered suitable habitat for Brown Treecreeper, although isolated trees are less preferred to those in remnant patches (Walters *et al* 1998). As the species is known to be resident in the local area, trees in the study area may form part of one or more Brown Treecreeper group home ranges. Trees may also act as habitat for dispersing individuals, however with the number of trees in the

study area relative to that which is available and secure in the local area, it is unlikely that the species' or individuals thereof will be significantly affected by the proposed development.

### 3.4.3 *Ecological Communities*

Five nationally listed ecological communities are predicted to occur within 10 kilometres of the study area (DAWE 2021):

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

Grey Box and Yellow Box dominated Riverina Plain Grassy Woodland mapped within the study area did not meet the condition thresholds to be considered Grey Box (*Eucalyptus microcarpa*) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia or White Box-Yellow Box Blakely's Red-Gum Grassy Woodland and Derived Native Grassland, due to the small patch size and the absence of indigenous vegetation in the understory.

## 4 LEGISLATIVE AND POLICY IMPLICATIONS

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

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

- World Heritage properties;
- National heritage places;
- Ramsar wetlands of international significance;
- Threatened species and ecological communities;
- Migratory and marine species;
- Commonwealth marine area;
- Nuclear actions (including uranium mining);
- Great Barrier Reef Marine Park; or,
- Water resources impacted by coal seam gas or mining development.

No EPBC Act-listed species or ecological communities were recorded within the study area. There is the potential for the Swift Parrot to use habitat within the area opportunistically, however it would not be relied upon for important foraging or breeding habitat (breeds in south eastern Tasmania), and therefore the proposed subdivision and future development of the study area will not have a significant impact on Swift Parrot.

The PMST (DAWE 2021) identifies six wetlands of international importance within the Goulburn region. However, as the nearest recorded wetland is 50-100 kilometres away, it is unlikely the proposed development will have an impact any wetland of international importance.

The proposed action is highly unlikely to have a significant impact on any matter of NES. As such, an EPBC Act referral to the Commonwealth Environment Minister for the proposed development is not required.

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

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

There are no confirmed records of flora species or ecological communities listed as threatened and/or protected under the FFG Act being within the study area. One fauna species (Brolga) listed as threatened and/or protected under the FFG Act was recorded within the study area. However, the study area is privately owned, and as such a permit under the FFG Act is not required.

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

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

As part of Clause 52.17, all native vegetation is considered lost as part of a subdivision development where the lots are 0.4 hectares or less in area, which must be offset at the time of subdivision.

#### **4.3.1 *Local Planning Scheme***

The study area is located within the Strathbogie Shire Council. The following zoning and overlays apply (DELWP 2021e):

- Low Density Residential Zone (LDRZ)
- Development Plan Overlay – Schedule 3 (DPO3)

#### **4.3.2 *The Guidelines***

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

#### **4.3.3 *Implications***

The study area is within Location 2, with 11.781 hectares of native vegetation and modelled wetlands proposed to be removed. As such, the permit application falls under the Detailed Assessment Pathway.

The offset requirement for native vegetation removal is 2.964 General Habitat Units and 68 Large Trees.

A planning permit from the Strathbogie Shire Council is required to remove, destroy or lop any native vegetation under Clause 52.17 of the Planning Scheme. In this instance, the application is required to be referred to DELWP as it falls under the Details Assessment Pathway.

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

The *Catchment and Land Protection Act 1994* (CaLP Act) contains provisions relating to catchment planning, land management, noxious weeds and pest animals. The Act also provides a legislative framework for the management of private and public land and sets out the responsibilities of land managers, stating that they must take all reasonable steps to:

- Avoid causing or contributing to land degradation which causes or may cause damage to land of another land owner;
- Protect water resources;
- Conserve soil;
- Eradicate regionally prohibited weeds;
- Prevent the growth and spread of regionally controlled weeds; and
- Prevent the spread of, and as far as possible eradicate, established pest animals.

Essentially, the CaLP Act established the framework for the integrated management and protection of catchments and aims to ensure the quality of the State's land and water resources and their associated plant and animal life are maintained and enhanced. Landowners are responsible for the control of any infestations of noxious weeds and pest fauna species to minimise their spread and impact on ecological values.

Two weeds listed as noxious under the *Catchment and Land Protection Act 1994* were recorded during the assessment (Spear Thistle and Blackberry). Similarly, there is evidence that the study area is currently occupied by several pest fauna species listed under the CaLP Act (European Rabbit and European fox). Listed noxious weeds/pests should be appropriately controlled throughout the study area.

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

The *Wildlife Act 1975* (and associated *Wildlife Regulations 2013*) is the primary legislation in Victoria providing for protection and management of wildlife. Authorisation for habitat removal may be obtained under the *Wildlife Act 1975* through a licence granted under the *Forests Act 1958*, or under any other Act such as the *Planning and Environment Act 1987*. Pre harvest habitat survey is recommended to be undertaken before the felling of trees and a suitability qualified person that can remove, salvage, hold or relocate native fauna must be present during the removal of habitat trees. This person must hold a current Management Authorisation under the *Wildlife Act 1975*, issued by DELWP.

## 5 MITIGATION MEASURES

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### 5.1 Avoid and Minimise Statement

The current proposal considers all patches of native vegetation and scattered trees on Figure 2 as being lost, except for LTs that will be retained along the riparian corridor (Figure 2). This is due to the infrastructure construction and the subdivision lay-out.

The following items have been incorporated into the development design in an effort to reduce impacts to ecological values within the study area:

- The development footprint has excluded the homestead area, and therefore Riverina Plains Grassy Woodland and several large scattered trees will be retained;
- A riparian corridor (green space) has been incorporated into the design and this will result in the retention five large scattered trees (Figure 2);
- The proposed residential development has been located as far as possible in existing highly modified areas (e.g. agricultural paddocks). Although small patches of native vegetation are proposed to be removed in these areas, they consist of small, isolated, and lower quality patches of Riverina Plains Grassy Woodland and scattered trees across paddocks; and
- Although scattered trees located within proposed residential lots are deemed 'lost' under the provisions of the Guidelines (DELWP 2017) (i.e. lots under 0.4 hectares) and accounted for as part of the biodiversity offsets for the project (Table 3 and 4), there are opportunities to avoid the direct removal of these trees through the provision of building envelopes in those lots that support native trees.

In the context of the development, the modified condition of ecological values proposed to be impacted, and the extent of native vegetation proposed to be retained and enhanced within the study area, it is considered that the proposed avoidance and minimisation measures that have been achieved as part of the development meet the objectives of Guidelines (DELWP 2017).

### 5.2 Best Practice Mitigation Measures

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

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

- Tree Protection Zones (TPZs) should be implemented to prevent indirect losses of native vegetation during construction activities (DSE 2011). A TPZ applies to a tree and is a specific area above and below the ground, with a radius 12 x the Diameter at Breast Height (DBH). At a minimum standard a TPZ should consider the following:
  - A TPZ of trees should be a radius no less than two metres or greater than 15 metres;
  - Construction, related activities and encroachment (i.e. earthworks such as trenching that disturb the root zone) should be excluded from the TPZ;
  - Where encroachment is 10% or more of the total area of the TPZ, the tree should be considered as lost and offset accordingly (unless an arboricultural report specifies otherwise);
  - Directional drilling may be used for works within the TPZ without being considered encroachment. The directional bore should be at least 600 millimetres deep;
  - The above guidelines may be varied if a qualified arborist confirms the works will not significantly damage the tree (including stags / dead trees). In this case the tree would be retained, and no offset would be required; and,
  - Where the minimum standard for a TPZ has not been met an offset may be required.
- Removal of any habitat trees or shrubs (particularly hollow-bearing trees or trees/shrubs with nests) should be undertaken between February and September to avoid the breeding season for most fauna species. If any habitat trees or shrubs are proposed to be removed, this should be undertaken under the supervision of an appropriately qualified zoologist to salvage and translocate any displaced fauna. A Fauna Management Plan may be required to guide the salvage and translocation process;
- Where possible, construction stockpiles, machinery, roads, and other infrastructure should be placed away from areas supporting native vegetation, Large Trees and/or wetlands;
- Ensure that best practice sedimentation and pollution control measures are undertaken at all times, in accordance with Environment Protection Authority guidelines (EPA 1991; EPA 1996; Victorian Stormwater Committee 1999) to prevent offsite impacts to the anabranches of Lake Nagambie, Goulburn River and associated habitat; and,
- As indigenous flora provides valuable habitat for indigenous fauna, it is recommended that indigenous species sourced from a local provenance, rather than exotic deciduous trees and shrubs are planted as part of the landscape plantings (e.g. along the riparian corridors and other open space areas) and along roadsides as part of the future residential subdivision .

### 5.3 Offset Impacts and Strategy

According to DELWPs Native Vegetation Offset Register (DELWP 2021e), there is one offset site within the Goulburn Broken CMA or Strathbogie Shire Council region that can be used to satisfy the General Habitat Unit and Large tree offset requirements.

An offset register search statement identifying the relevant offsite sites is provided in Appendix 4.



## 6 FURTHER REQUIREMENTS

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

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

Relevant Legislation	Implications	Further Action
<i>Environment Protection and Biodiversity Conservation Act 1999</i>	The EPBC Act establishes a Commonwealth process for the assessment of proposed actions likely to have a significant Impact on any matters of National Environmental Significance (NES). The proposed action is unlikely to have a significant impact on any matter of NES. As such, an EPBC Act referral to the Commonwealth Environment Minister is not required for the proposed subdivision and future residential development.	No action required.
<i>Flora and Fauna Guarantee Act 1988</i>	There are no confirmed records of flora species or ecological communities listed as threatened and/or protected under the FFG Act being within the study area. One fauna species (Brolga) listed as threatened and/or protected under the FFG Act was recorded within the study area. However, the study area is privately owned, and as such a permit under the FFG Act is not required.	No action required.
<i>Planning and Environment Act 1987</i>	The study area is within Location 2, with 11.781 hectares of native vegetation proposed to be removed. As such, the permit application falls under the Detailed Assessment Pathway.  The offset requirement for native vegetation removal is 2.964 General Habitat Units and 68 Large Trees.  A planning permit from the Strathbogie Shire Council is required to remove, destroy or lop any native vegetation under Clause 52.17 of the Planning Scheme. In this instance, the application is required to be referred to DELWP.	Prepare and submit a Planning Permit application.
<i>Catchment and Land Protection Act 1994</i>	Two weed species (Spear Thistle and Blackberry) and two pest species (European Rabbit and European Fox) listed under the CaLP Act were recorded within the study area. To meet requirements under the CaLP Act, listed noxious weeds and pests should be appropriately controlled throughout the study area.	Listed noxious weeds and pests should be appropriately controlled throughout the study area
<i>Wildlife Act 1975</i>	Any persons engaged to conduct salvage and translocation or general handling of terrestrial fauna species must hold a current Management Authorisation.	Ensure wildlife specialists hold a current Management Authorisation.

## REFERENCES

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- ALA 2021. Atlas of Living Australia. URL: <https://www.ala.org.au/>. Atlas of Living Australia, Canberra, ACT.
- Cogger, H.G., Cameron, E.E., Sadler, R.A. and Egglar, P 1993. *The Action Plan for Australian Reptiles*. Australian Nature conservation Agency, Canberra, ACT.
- DAWE 2021. Protected Matters Search Tool. [www Document] URL: <http://www.environment.gov.au/epbc/pmst/index.html>. Commonwealth Department of Agriculture, Water and the Environment, Canberra, ACT.
- DELWP 2017. *Guidelines for the removal, destruction or lopping of native vegetation*. December 2017. Victorian Department of Environment, Land, Water and Planning, Melbourne, Victoria.
- DELWP 2018. *Assessor's handbook: Applications to remove, destroy or lop native vegetation*. October 2018. Victorian Department of Environment, Land, Water and Planning, Melbourne, Victoria.
- DELWP 2019a. *Flora and Fauna Guarantee Act 1988 Threatened List – November 2019* [www Document]. URL: [https://www.environment.vic.gov.au/\\_data/assets/pdf\\_file/0024/115827/20191114-FFG-Threatened-List.pdf](https://www.environment.vic.gov.au/_data/assets/pdf_file/0024/115827/20191114-FFG-Threatened-List.pdf). Victorian Department of Environment, Land, Water and Planning, Melbourne, Victoria.
- DELWP 2019b. *Flora and Fauna Guarantee Act 1988 Protected Flora List – November 2019* [www Document]. URL: [https://www.environment.vic.gov.au/\\_data/assets/pdf\\_file/0011/50420/20191114-FFG-protected-flora-list.pdf](https://www.environment.vic.gov.au/_data/assets/pdf_file/0011/50420/20191114-FFG-protected-flora-list.pdf). Victorian Department of Environment, Land, Water and Planning, Melbourne, Victoria.
- DELWP 2021a. NatureKit Map [www Document]. URL: <https://maps2.biodiversity.vic.gov.au/html5viewer/index.html?viewer=NatureKit>. Victorian Department of Environment, Land, Water and Planning, Melbourne, Victoria.
- DELWP 2021b. Native Vegetation Information Management Tool [www Document]. URL: <https://nvim.delwp.vic.gov.au>. Victorian Department of Environment, Land, Water and Planning, Melbourne, Victoria.
- DELWP 2021c. Ecological Vegetation Class (EVC) Benchmarks for each Bioregion [www Document]. URL: <https://www.environment.vic.gov.au/biodiversity/bioregions-and-evc-benchmarks>. Victorian Department of Environment, Land, Water and Planning, Melbourne, Victoria.
- DELWP 2021d. Victorian Biodiversity Atlas. Sourced from GIS layers: “VBA\_FLORA25”, “VBA\_FLORA100”, “VBA\_FAUNA25”, “VBA\_FAUNA100”. October 2020. Victorian Department of Environment, Land, Water and Planning, Melbourne, Victoria.
- DELWP 2021e. VicPlan Map [www Document]. URL: <https://mapshare.maps.vic.gov.au/vicplan/>. Victorian Department of Environment, Land, Water and Planning, Melbourne, Victoria.
- DELWP 2021e. Search for Native Vegetation Credit Register [www Document]. URL: <https://nvcr.delwp.vic.gov.au/Home/Index>. Victorian Department of Environment, Land, Water and Planning, Melbourne, Victoria.

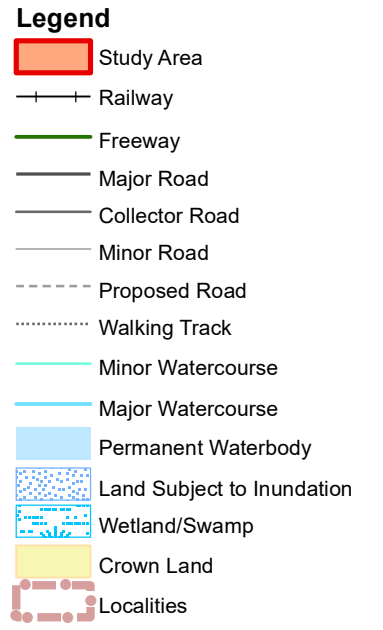
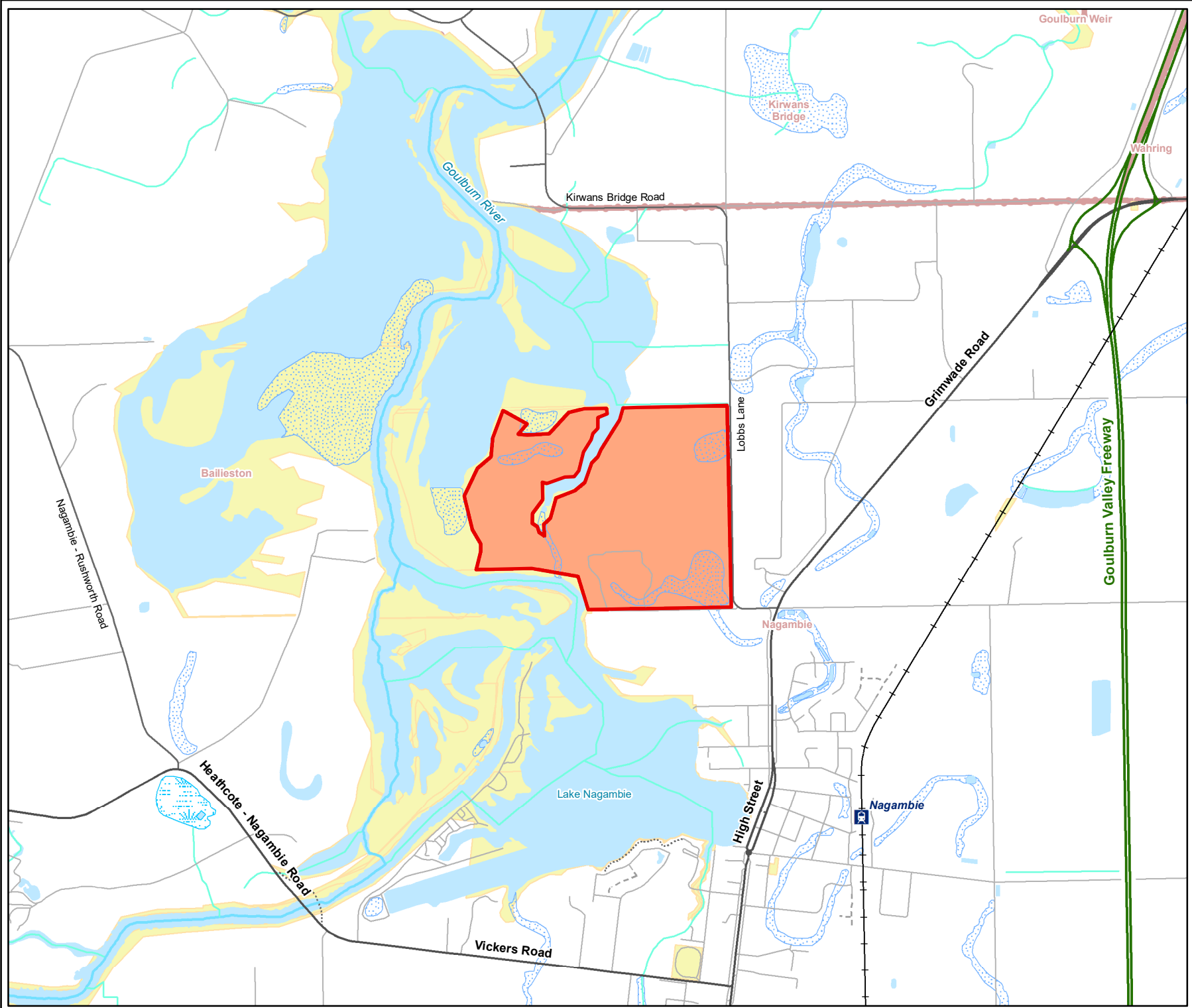
- DELWP 2017. Brolga: Our Wildlife Factsheet. Victorian Department of Environment, Land, Water and Planning, Melbourne, Victoria.
- DEPI 2014. *Advisory List of Rare or Threatened Plants in Victoria*. Victorian Department of Environment and Primary Industries, Melbourne, Victoria.
- DEPI 2013. *Advisory list of Threatened Vertebrate Fauna in Victoria – 2013*. Department Environment and Primary Industries, Victoria.
- DSE 2009. *Advisory list of Threatened Invertebrate Fauna in Victoria – 2009*. Department of Sustainability and Environment, Victoria.
- DSE 2004. *Vegetation quality assessment manual: Guidelines for applying the habitat hectares scoring method*. Version 1.3. Victorian Department of Sustainability and Environment, Melbourne Victoria.
- DSE 2011. *Native Vegetation Technical information sheet: Defining an acceptable distance for tree retention during construction works*. Victorian Department of Sustainability and Environment, Melbourne, Victoria.
- DSE 2013. *Advisory list of Threatened Vertebrate Fauna in Victoria – 2013*. Victorian Department of Sustainability and Environment, Melbourne, Victoria.
- Duncan, A., Baker, G.B. and Montgomery, N. (Eds) 1999. *The Action Plan for Australian Bats*. Environment Australia, Canberra, ACT.
- Entwisle, T.J (1996). Cabombaceae. In: Walsh, N.G.; Entwisle, T.J (eds), *Flora of Victoria* Vol.3, *Dicotyledons winteraceae to myraceae*, Inkata Press, Melbourne.
- EPA 1991. *Construction Techniques for Sediment Pollution Control*. Published document prepared by the Victorian Environment Protection Authority, Melbourne, Victoria.
- EPA 1996. *Environmental Guidelines for Major Construction Sites*. Published document prepared by the Victorian Environmental Protection Authority, Melbourne, Victoria.
- Higgins. P. 1999. *Handbook of Australian, New Zealand and Antarctic Birds. Volume 4: Parrots to Dollarbird*. Oxford University Press, Melbourne.
- Nature Advisory. 2021. *82 Kirwans Bridge Road, Victoria. Flora and Fauna Assessment*. Nature Advisory Camberwell, Victoria.
- Rouse. D. 2002. *Report on the taxonomic, ecological and conservation status of taxa in the genus Prasophyllum R.Br. in south-eastern Australia*. RSBS ANU. Canberra ACT.
- Sands, D.P.A. and New, T.R. 2002. *The Action Plan for Australian Butterflies*. Environment Australia, Canberra, ACT.
- Saunders, D. and R. Heinsohn. 2008. Winter habitat use by the endangered, migratory Swift Parrot (*Lathamus discolor*) in New South Wales. *Emu* **108**: 81-89.
- Tyler, M.J. 1997. *The Action Plan for Australian Frogs*. Wildlife Australia, Canberra, ACT.
- Victorian Urban Stormwater Committee 1999. *Urban Stormwater: Best Practice Environmental Management Guidelines*. CSIRO, Collingwood, Victoria.

Walters, J., Ford, H. and C. Cooper. 1999. The ecological basis of sensitivity of brown treecreepers to habitat fragmentation: a preliminary assessment. *Biological Conservation* **90**: 13-20.

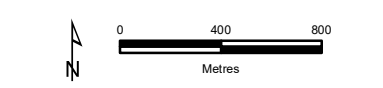
Woinarski, J., Burbidge, A. and Harrison, P. 2014. *The Action Plan for Australian Mammals 2012*. CSIRO Publishing, Melbourne, Victoria.

## FIGURES

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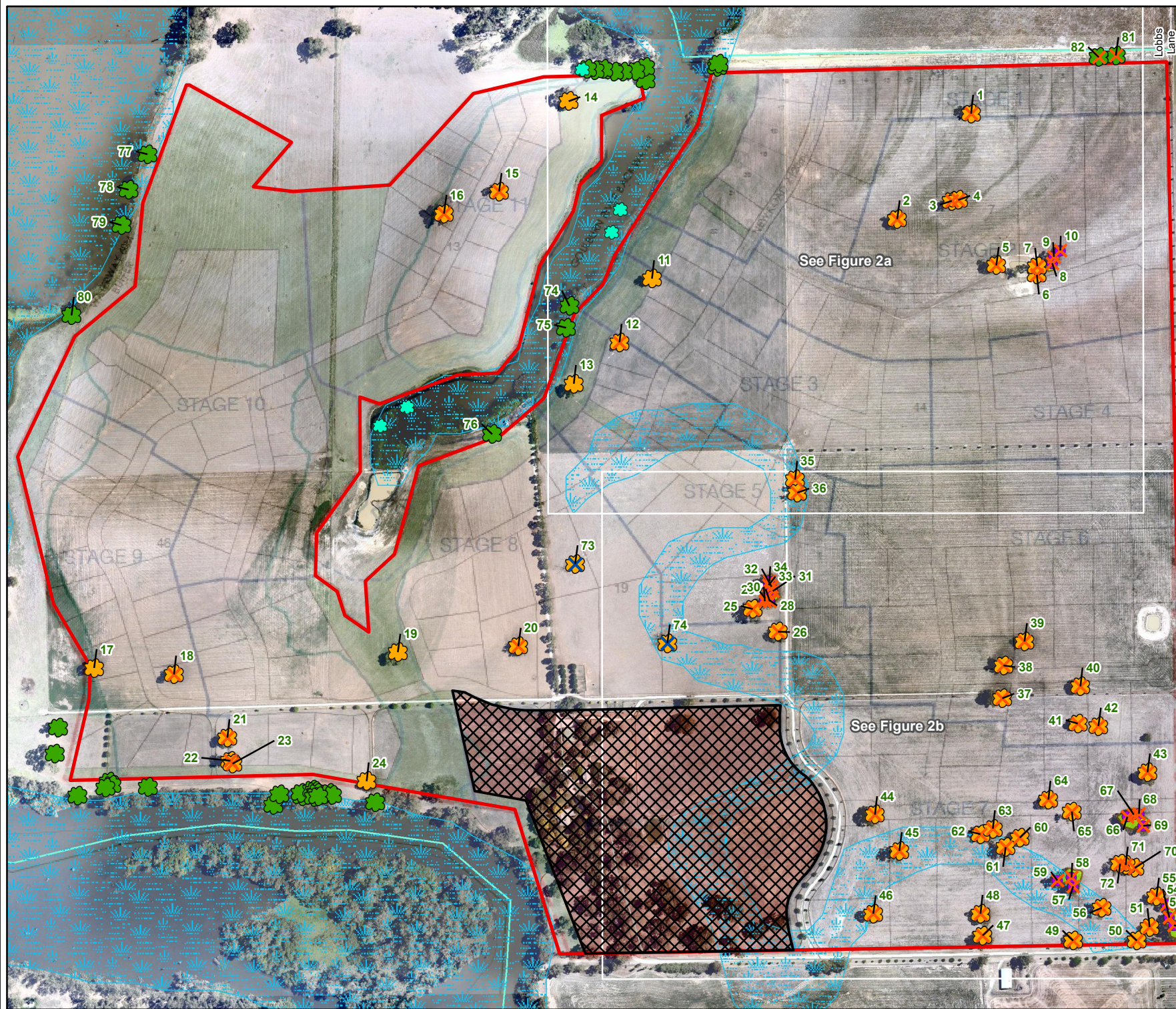


**Figure 1**  
**Location of the study area**  
*Updated Flora and Fauna Assessment for the proposed Box Grove Development Plan, Nagambie*



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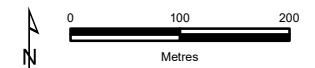
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- Legend**
- Study Area
  - Excluded (homestead area)
  - Current Wetlands
  - ✿ Scattered Large Tree
  - ✿ LOT in patch
  - ✿ Small Tree in patch
  - ✕ Tree impacted
  - ✕ Past removals within 5 years
- Tree outside development footprint**
- ✿ Scattered Large Tree
  - ✿ Scattered Small Tree
- Ecological Vegetation Class**
- Plains Grassy Woodland (Riverina) (EVC 55\_62)

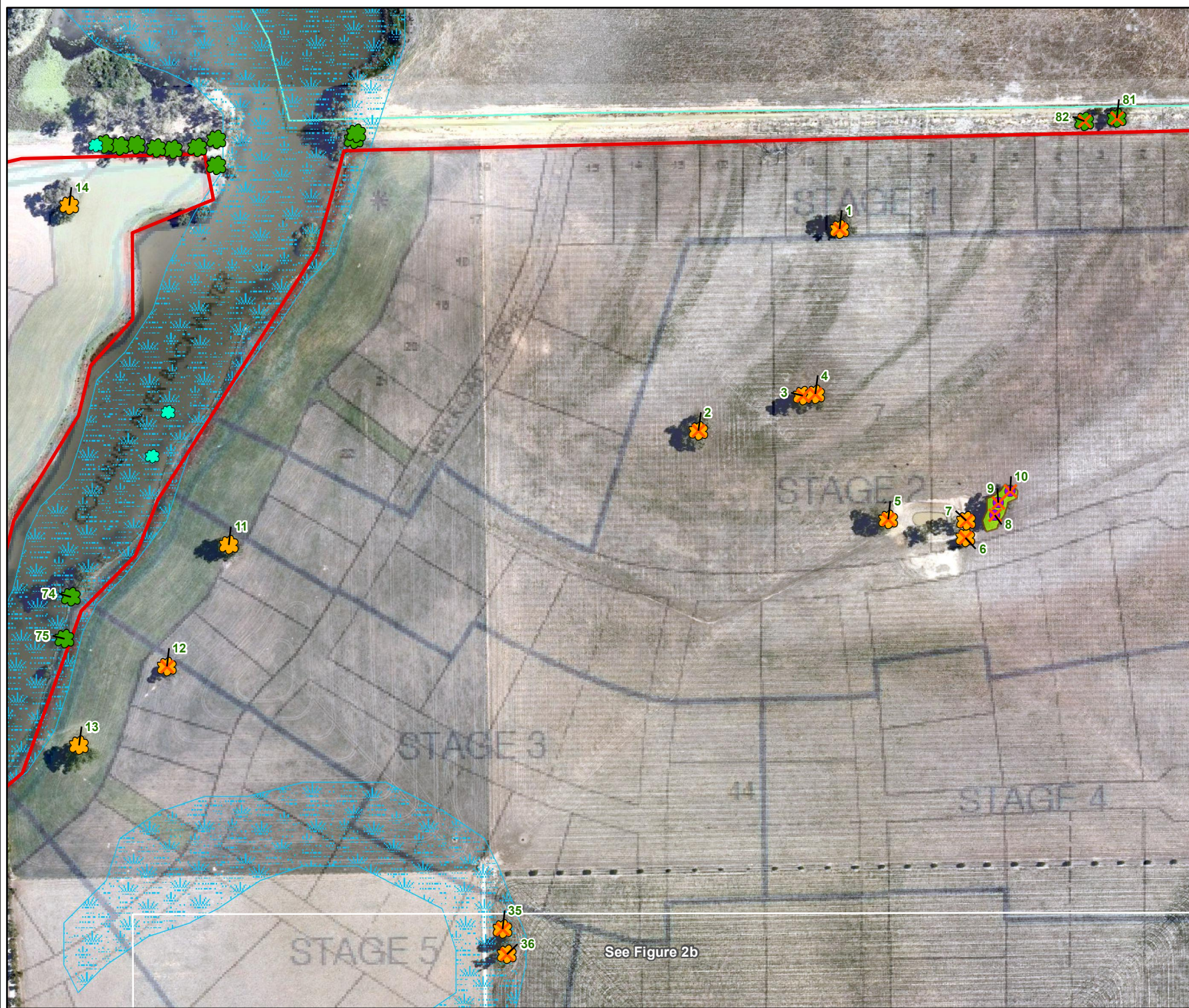


**Figure 2 Overview**  
**Ecological features**  
*Updated Flora and Fauna Assessment for the proposed Box Grove Development Plan, Nagambie*



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14424 Fig02 EcoFeat\_MB\_G94 14/09/2021 spannitiya



**Legend**

- Study Area
- Current Wetlands
- ✿ Scattered Large Tree
- LOT in patch
- ✕ Tree impacted

**Tree outside development footprint**

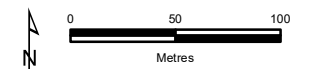
- ✿ Scattered Large Tree
- ✿ Scattered Small Tree

**Ecological Vegetation Class**

- Plains Grassy Woodland (Riverina) (EVC 55\_62)



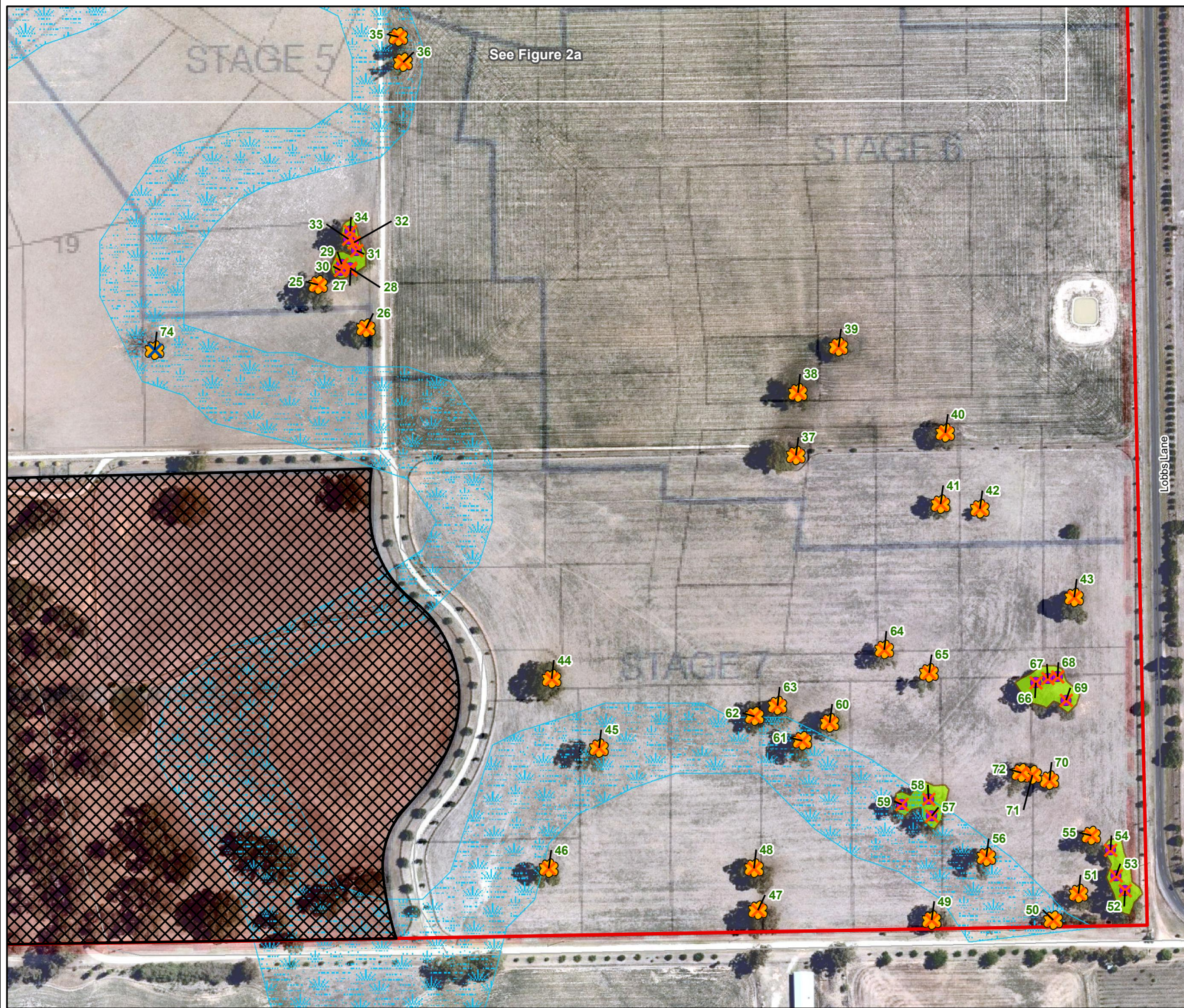
**Figure 2a**  
**Ecological features**  
*Updated Flora and Fauna Assessment for the proposed Box Grove Development Plan, Nagambie*



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See Figure 2b





**Legend**

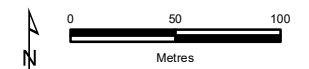
- Study Area
- Excluded (homestead area)
- Current Wetlands
- ✿ Scattered Large Tree
- LOT in patch
- Small Tree in patch
- ✕ Tree impacted
- ✕ Past removals within 5 years

**Ecological Vegetation Class**

- Plains Grassy Woodland (Riverina) (EVC 55\_62)

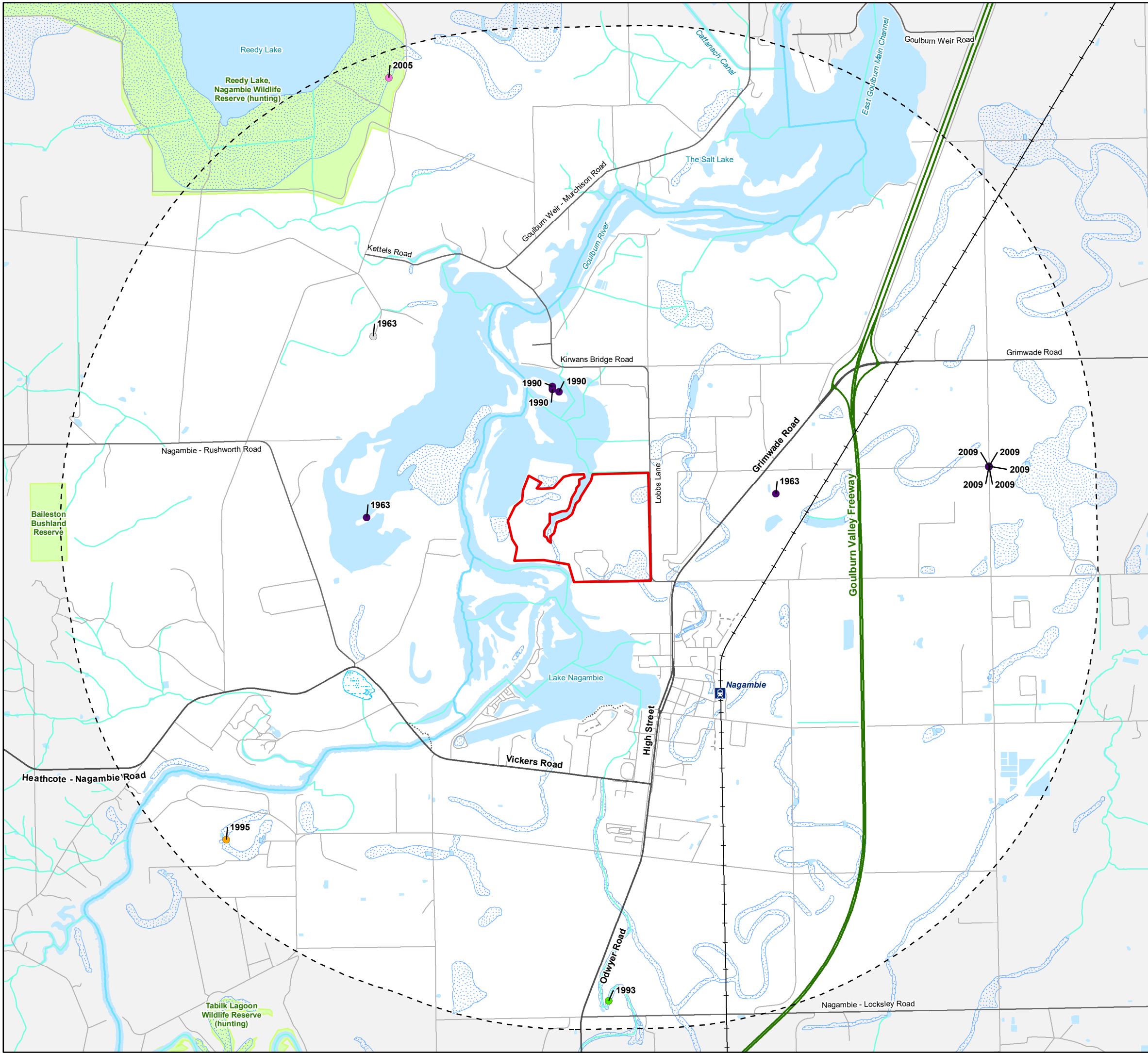


**Figure 2b**  
**Ecological features**  
*Updated Flora and Fauna Assessment for the proposed Box Grove Development Plan, Nagambie*



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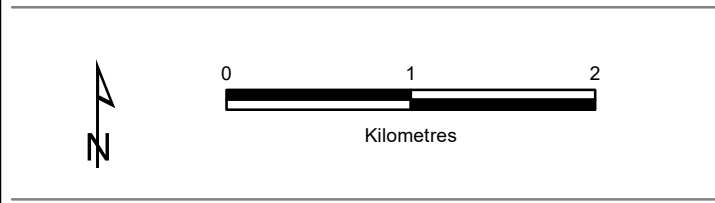
14424 Fig02 EcoFeat\_MB\_G94 14/09/2021 spannitiya



- Legend**
- Study Area
- Significant flora**
- Bent-leaf Wattle
  - Buloke
  - Buloke Mistletoe
  - River Swamp Wallaby-grass
  - Small Milkwort
  - Swamp Leek-orchid
  - Water Shield



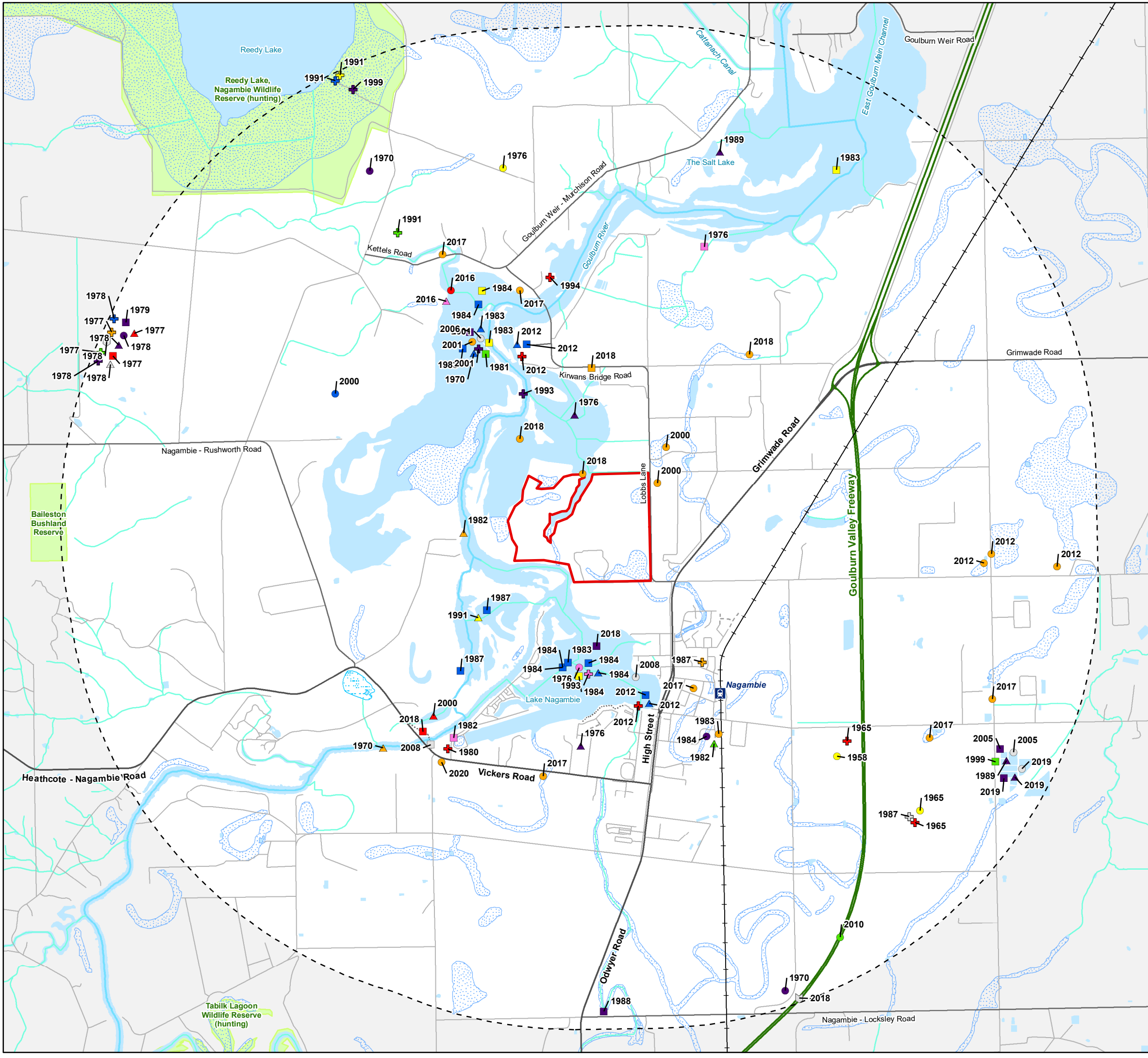
**Figure 3**  
**Previously documented significant flora within 5km of the study area**  
*Updated Flora and Fauna Assessment for the proposed Box Grove Development Plan, Nagambie*



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14424 Fig03 SpFlora 8/09/2021 spanipitva



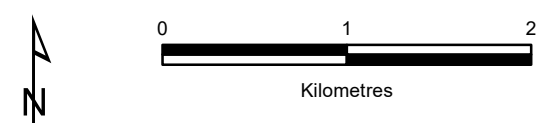
**Legend**

**Study Area**  
 Study Area

**Significant fauna**

○ Australasian Shoveler	△ Hooded Robin
● Broad-shelled Turtle	▲ Little Eagle
● Brilga	▲ Macquarie Perch
● Brown Toadlet	▲ Magpie Goose
● Brush-tailed Phascogale	▲ Marsh Sandpiper
● Caspian Tern	▲ Murray Cod
● Centropagid copepod	▲ Murray River Turtle
● Crested Bellbird	▲ Musk Duck
■ Diamond Dove	⊕ Painted Honeyeater
■ Diamond Firetail	⊕ Platypus
■ Eastern Great Egret	⊕ Plumed Egret
■ Flat-headed Galaxias	⊕ Sloane's Froglet
■ Freckled Duck	⊕ Speckled Warbler
■ Freshwater Catfish	⊕ Swift Parrot
■ Growling Grass Frog	⊕ Trout Cod
■ Hardhead	⊕ White-bellied Sea-Eagle
	⊕ White-throated Needletail

**Figure 4**  
**Previously documented significant fauna within 5km of the study area**  
*Updated Flora and Fauna Assessment for the proposed Box Grove Development Plan, Nagambie*



Victorian Biodiversity Atlas (VBA) // Sourced from: 'VBA\_FLORA25', 'VBA\_FLORA100', 'VBA\_FAUNA25' and 'VBA\_FAUNA100'. Updated August 2021 © The State of Victoria, Department of Environment, Land, Water and Planning. Records prior to 1949 not shown.

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## APPENDIX 1 – FLORA

### Appendix 1.1 - Flora Results

**Legend:**

- \* Listed as a noxious weed under the CaLP Act;
- w Weed of National Significance;
- \*\* Planted indigenous species in the study area;
- + Planted indigenous species that also occur in native vegetation in the study area;

**Table A1.1.** Flora within the study area.

Scientific Name	Common Name	Notes
<b>INDIGENOUS SPECIES</b>		
<i>Carex spp.</i>	Sedge	-
<i>Chloris truncata</i>	Windmill Grass	-
<i>Eleocharis acuta</i>	Common Spike-sedge	-
<i>Epilobium hirsutum</i>	Hairy Willow-herb	-
<i>Eucalyptus camaldulensis</i>	River Red-gum	+
<i>Eucalyptus leucoxydon</i>	Yellow Gum	+
<i>Eucalyptus melliodora</i>	Yellow Box	+
<i>Eucalyptus microcarpa</i>	Grey Box	-
<i>Eucalyptus sideroxylon</i>	Red Ironbark	**
<i>Juncus sp.</i>	Rush	-
<i>Lachnagrostis filiformis</i>	Common Blow-grass	-
<b>NON-INDIGENOUS OR INTRODUCED SPECIES</b>		
<i>Agrostis capillaris</i>	Brown-top Bent	-
<i>Arctotheca calendula</i>	Capeweed	-
<i>Avena fatua</i>	Wild Oat	-
<i>Brassica spp.</i>	Turnip	-
<i>Chenopodium sp</i>	Chenopod	-
<i>Cirsium vulgare</i>	Spear Thistle	*w
<i>Cynodon dactylon</i>	Couch	-
<i>Dactylis glomerata</i>	Cocksfoot	-
<i>Eucalyptus cladocalyx</i>	Sugar Gum	-
<i>Helminthotheca echioides</i>	Ox-tongue	-
<i>Hordeum spp.</i>	Barley Grass	-

Scientific Name	Common Name	Notes
<i>Holcus lanatus</i>	Yorkshire Fog	-
<i>Hypochaeris radicata</i>	Flatweed	-
<i>Lactuca serriola</i>	Prickly Lettuce	-
<i>Lepidium africanum</i>	Common Peppergrass	-
<i>Malva sp</i>	Mallow	-
<i>Medicago sativa subsp. sativa</i>	Lucerne	-
<i>Myriophyllum aquaticum</i>	Parrot's Feather	-
<i>Paspalum distichum</i>	Water Couch	-
<i>Phalaris aquatica</i>	Toowoomba Canary-grass	-
<i>Plantago coronopus</i>	Buck's-horn Plantain	-
<i>Plantago lanceolata</i>	Ribwort	-
<i>Rubus fruticosus spp. agg.</i>	Blackberry	<b>*w</b>
<i>Trifolium spp.</i>	Clover	-

## Appendix 1.2 - Habitat Hectare Assessment

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

Vegetation Zone	RPGW <sub>1</sub>	
Bioregion	VRiv	
EVC / Tree	RPGW	
EVC Number	55_63	
EVC Conservation Status	Vu	
<b>Patch Condition</b>	Large Old Trees /10	10
	Canopy Cover /5	5
	Under storey /25	0
	Lack of Weeds /15	2
	Recruitment /10	0
	Organic Matter /5	2
	Logs /5	0
	Treeless EVC Multiplier	1.00
	Subtotal =	19.00
	Landscape Value /25	4
Habitat Points /100	23	
<b>Habitat Score</b>	<b>0.23</b>	

**Note:** RPGW = Riverina Plains Grassy Woodland; Vu = Vulnerable; VRiv = Victorian Riverina.

## Appendix 1.3 - Scattered Trees and Large Trees in Patches

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

Tree # (Figure 2)	Species Name	Common Name	DBH (cm)	Size Class	Scattered / Parch	Status
1	<i>Eucalyptus microcarpa</i>	Grey Box	112	Large	Scattered	Removed (Direct impact)
2	<i>Eucalyptus microcarpa</i>	Grey Box	125	Large	Scattered	Removed (Direct impact)
3	<i>Eucalyptus leucoxylon</i>	Yellow Gum Stag	117	Large	Scattered	Removed (Direct impact)
4	<i>Eucalyptus leucoxylon</i>	Yellow Gum	108	Large	Scattered	Removed (Direct impact)
5	<i>Eucalyptus microcarpa</i>	Grey Box	130	Large	Scattered	Removed (Direct impact)
6	<i>Eucalyptus microcarpa</i>	Grey Box	74	Large	Scattered	Removed (Direct impact)
7	<i>Eucalyptus microcarpa</i>	Grey Box	67	Large	Scattered	Removed (Direct impact)
8	<i>Eucalyptus microcarpa</i>	Grey Box	97	Large	Patch	Removed (Direct impact)
9	<i>Eucalyptus microcarpa</i>	Grey Box	139	Large	Patch	Removed (Direct impact)
10	<i>Eucalyptus microcarpa</i>	Grey Box	84	Large	Patch	Removed (Direct impact)
11	<i>Eucalyptus melliodora</i>	Yellow Box	140	Large	Scattered	Retained
12	<i>Eucalyptus melliodora</i>	Yellow Box	119	Large	Scattered	Removed (Direct impact)
13	<i>Eucalyptus camaldulensis</i>	River Red-gum	214	Large	Scattered	Retained
14	<i>Eucalyptus melliodora</i>	Yellow Box	162	Large	Scattered	Retained)
15	<i>Eucalyptus melliodora</i>	Yellow Box	84	Large	Scattered	Removed (Direct impact)
16	<i>Eucalyptus melliodora</i>	Yellow Box	174	Large	Scattered	Removed (Direct impact)
17	<i>Eucalyptus camaldulensis</i>	River Red-gum	142	Large	Scattered	Retained
18	<i>Eucalyptus microcarpa</i>	Grey Box	252	Large	Scattered	Removed (Direct impact)
19	<i>Eucalyptus camaldulensis</i>	River Red-gum	205	Large	Scattered	Retained

Tree # (Figure 2)	Species Name	Common Name	DBH (cm)	Size Class	Scattered / Parch	Status
20	<i>Eucalyptus melliodora</i>	Yellow Box	171	Large	Scattered	Removed (Direct impact)
21	<i>Eucalyptus melliodora</i>	Yellow Box	60	Large	Scattered	Removed (Direct impact)
22	<i>Eucalyptus microcarpa</i>	Grey Box	137	Large	Scattered	Removed (Direct impact)
23	<i>Eucalyptus microcarpa</i>	Grey Box	132	Large	Scattered	Retained
24	<i>Eucalyptus microcarpa</i>	Grey Box	111	Large	Scattered	Removed (Direct impact)
25	<i>Eucalyptus melliodora</i>	Yellow Box	130	Large	Scattered	Removed (Direct impact)
26	<i>Eucalyptus microcarpa</i>	Grey Box	149	Large	Patch	Removed (Direct impact)
27	<i>Eucalyptus microcarpa</i>	Grey Box	125	Large	Patch	Removed (Direct impact)
28	<i>Eucalyptus microcarpa</i>	Grey Box	104	Large	Patch	Removed (Direct impact)
29	<i>Eucalyptus microcarpa</i>	Grey Box	87	Large	Patch	Removed (Direct impact)
30	<i>Eucalyptus microcarpa</i>	Grey Box	98	Large	Patch	Removed (Direct impact)
31	<i>Eucalyptus microcarpa</i>	Grey Box	62	Large	Patch	Removed (Direct impact)
32	<i>Eucalyptus microcarpa</i>	Grey Box	99	Large	Patch	Removed (Direct impact)
33	<i>Eucalyptus microcarpa</i>	Grey Box	59	Large	Scattered	Removed (Direct impact)
34	<i>Eucalyptus sp.</i>	Stag	106	Large	Scattered	Removed (Direct impact)
35	<i>Eucalyptus microcarpa</i>	Grey Box	82	Large	Scattered	Removed (Direct impact)
36	<i>Eucalyptus melliodora</i>	Yellow Box	105	Large	Scattered	Removed (Direct impact)
37	<i>Eucalyptus sp.</i>	Stag	90	Large	Scattered	Removed (Direct impact)
38	<i>Eucalyptus melliodora</i>	Yellow Box	178	Large	Scattered	Removed (Direct impact)
39	<i>Eucalyptus sp.</i>	Stag	165	Large	Scattered	Removed (Direct impact)
40	<i>Eucalyptus melliodora</i>	Yellow Box	110	Large	Scattered	Removed (Direct impact)
41	<i>Eucalyptus microcarpa</i>	Grey Box	146	Large	Scattered	Removed (Direct impact)



Tree # (Figure 2)	Species Name	Common Name	DBH (cm)	Size Class	Scattered / Parch	Status
42	<i>Eucalyptus sp.</i>	Stag	119	Large	Scattered	Removed (Direct impact)
43	<i>Eucalyptus melliodora</i>	Yellow Box	70	Large	Scattered	Removed (Direct impact)
44	<i>Eucalyptus melliodora</i>	Yellow Box	131	Large	Scattered	Removed (Direct impact)
45	<i>Eucalyptus camaldulensis</i>	River Red-gum	187	Large	Scattered	Removed (Direct impact)
46	<i>Eucalyptus microcarpa</i>	Grey Box	150	Large	Scattered	Removed (Direct impact)
47	<i>Eucalyptus melliodora</i>	Yellow Box	120	Large	Scattered	Removed (Direct impact)
48	<i>Eucalyptus melliodora</i>	Yellow Box	138	Large	Scattered	Removed (Direct impact)
49	<i>Eucalyptus melliodora</i>	Yellow Box	148	Large	Scattered	Removed (Direct impact)
50	<i>Eucalyptus microcarpa</i>	Grey Box	88	Large	Scattered	Removed (Direct impact)
51	<i>Eucalyptus microcarpa</i>	Grey Box	107	Large	Scattered	Removed (Direct impact)
52	<i>Eucalyptus microcarpa</i>	Grey Box	108	Large	Scattered	Removed (Direct impact)
53	<i>Eucalyptus microcarpa</i>	Grey Box	142	Large	Scattered	Removed (Direct impact)
54	<i>Eucalyptus microcarpa</i>	Grey Box	87	Large	Scattered	Removed (Direct impact)
55	<i>Eucalyptus microcarpa</i>	Grey Box	115	Large	Scattered	Removed (Direct impact)
56	<i>Eucalyptus melliodora</i>	Yellow Box	155	Large	Scattered	Removed (Direct impact)
57	<i>Eucalyptus microcarpa</i>	Grey Box	123	Large	Scattered	Removed (Direct impact)
58	<i>Eucalyptus microcarpa</i>	Grey Box	92	Large	Scattered	Removed (Direct impact)
59	<i>Eucalyptus microcarpa</i>	Grey Box	163	Large	Scattered	Removed (Direct impact)
60	<i>Eucalyptus microcarpa</i>	Grey Box	115	Large	Scattered	Removed (Direct impact)
61	<i>Eucalyptus microcarpa</i>	Grey Box	151	Large	Scattered	Removed (Direct impact)
62	<i>Eucalyptus microcarpa</i>	Grey Box	128	Large	Scattered	Removed (Direct impact)
63	<i>Eucalyptus microcarpa</i>	Grey Box	116	Large	Scattered	Removed (Direct impact)

Tree # (Figure 2)	Species Name	Common Name	DBH (cm)	Size Class	Scattered / Parch	Status
64	<i>Eucalyptus microcarpa</i>	Grey Box	123	Large	Scattered	Removed (Direct impact)
65	<i>Eucalyptus microcarpa</i>	Grey Box	109	Large	Scattered	Removed (Direct impact)
66	<i>Eucalyptus</i> sp.	Stag	124	Large	Scattered	Removed (Direct impact)
67	<i>Eucalyptus microcarpa</i>	Grey Box	135	Large	Scattered	Removed (Direct impact)
68	<i>Eucalyptus microcarpa</i>	Grey Box	112	Large	Scattered	Removed (Direct impact)
69	<i>Eucalyptus</i> sp.	Stag	85	Large	Scattered	Removed (Direct impact)
70	<i>Eucalyptus microcarpa</i>	Grey Box	127	Large	Scattered	Removed (Direct impact)
71	<i>Eucalyptus microcarpa</i>	Grey Box	106	Large	Scattered	Removed (Direct impact)
72	<i>Eucalyptus microcarpa</i>	Grey Box	124	Large	Scattered	Removed (Direct impact)
73	<i>Eucalyptus microcarpa</i>	Grey Box	104	Large	Scattered	Removed (Direct impact)
81	<i>Eucalyptus microcarpa</i>	Grey Box	72	Large	Scattered	Removed (Direct impact)
82	<i>Eucalyptus</i> sp.	Stag	48	Small	Scattered	Removed (Direct impact)

## Appendix 1.4 - Significant Flora Species

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

**Table A1.4.1** Conservation status of each species for each Act. The values in this table correspond to Columns 5 and 6 in Table A1.4.3.

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

**Table A1.4.2** Likelihood of occurrence rankings: Habitat characteristics assessment of significant flora species previously recorded within 10 kilometres of the study area, or that may potentially occur within the study area to determine their likelihood of occurrence. The values in this table correspond to Column 7 in Table A1.4.3.

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

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

Scientific name	Common name	Total # of documented records	Last documented record	EPBC	FFG	Likely occurrence in study area
<b>NATIONAL SIGNIFICANCE</b>						
<i>Amphibromus fluitans</i>	River Swamp Wallaby-grass	2009	2	VU	VU	4
<i>Brachyscome muelleroides</i> #	Mueller Daisy	-	-	VU	EN	4
<i>Dodonaea procumbens</i> #	Trailing Hop-bush	-	-	VU	-	4
<i>Glycine latrobeana</i> #	Clover Glycine	-	-	VU	VU	4
<i>Prasophyllum validum</i> #	Sturdy Leek-orchid	-	-	VU	-	4
<i>Senecio macrocarpus</i> #	Large-headed Fireweed	-	-	VU	CR	4
<i>Lepidium monolocoides</i> #	Winged Peppergrass	-	-	EN	EN	4
<i>Pimelea spinescens subsp. spinescens</i> #	Spiny Rice-flower	-	-	CR	CR	4
<b>STATE SIGNIFICANCE</b>						
<i>Allocasuarina luehmannii</i>	Buloke	2017	11	-	VU	4
<i>Brasenia schreberi</i>	Water Shield	2009	17	-	CR	4
<i>Comesperma polygaloides</i>	Small Milkwort	2009	2	-	EN	4
<i>Cullen parvum</i>	Small Scurf-pea	2008	1	-	EN	4
<i>Eucalyptus camaldulensis</i>	River Red-gum	1995	1	-	EN	3
<i>Prasophyllum hygrophilum</i>	Swamp Leek-orchid	2005	4	-	CR	4
<i>Pultenaea graveolens</i>	Scented Bush-pea	1928	2	-	EN	4
<i>Xanthorrhoea glauca subsp. angustifolia</i>	Grey Grass-tree	2017	11	-	CR	4

**Data source:** Victorian Biodiversity Atlas (DELWP 2021); Protected Matters Search Tool (DAWE 2021).

**Taxonomic order:** Alphabetical.

## APPENDIX 2 – FAUNA

### Appendix 2.1 - Significant Fauna Species

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

**Table A2.1.1** Conservation status of each species for each Act/Plan. The values in this table correspond to Columns 5 to 7 in Table A2.1.3.

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

**Table A2.1.2** Likelihood of occurrence rankings: Habitat characteristics assessment of significant fauna species previously recorded within 10 kilometres of the study area, or that may potentially occur within the study area to determine their likelihood of occurrence. The values in this table correspond to Column 7 in Table A2.1.3.

1	High Likelihood	<ul style="list-style-type: none"> <li>Known resident in the study area based on site observations, database records, or expert advice; and/or,</li> <li>Recent records (i.e. within five years) of the species in the local area (DELWP 2018); and/or,</li> <li>The study area contains the species' preferred habitat.</li> </ul>
2	Moderate Likelihood	<ul style="list-style-type: none"> <li>The species is likely to visit the study area regularly (i.e. at least seasonally); and/or,</li> <li>Previous records of the species in the local area (DELWP 2021); and/or,</li> <li>The study area contains some characteristics of the species' preferred habitat.</li> </ul>
3	Low Likelihood	<ul style="list-style-type: none"> <li>The species is likely to visit the study area occasionally or opportunistically whilst en route to more suitable sites; and/or,</li> <li>There are only limited or historical records of the species in the local area (i.e. more than 20 years old); and/or,</li> <li>The study area contains few or no characteristics of the species' preferred habitat.</li> </ul>

4	Unlikely	<ul style="list-style-type: none"> <li>• No previous records of the species in the local area; and/or,</li> <li>• The species may fly over the study area when moving between areas of more suitable habitat; and/or,</li> <li>• Out of the species' range; and/or,</li> <li>• No suitable habitat present.</li> </ul>
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**Table A2.1.3** Significant fauna recorded within 10 kilometres of the study area.

Scientific name	Common name	Total # of documented records	Last documented record	EPBC	FFG	Likely occurrence in study area
<b>NATIONAL SIGNIFICANCE</b>						
<i>Anthochaera Phrygia</i>	Regent Honeyeater	1998	7	CR	CR	4
<i>Aprasia parapulchella</i> #	Pink-tailed Worm-lizard	-	-	VU	EN	4
<i>Bidyanus bidyanus</i>	Silver Perch	2020	4	CR	EN	4
<i>Botaurus poiciloptilus</i> #	Australasian Bittern	-	-	EN	CR	4
<i>Calidris ferruginea</i> #	Curlew Sandpiper	-	-	CR	CR	4
<i>Crinia sloanei</i>	Sloane's Froglet	1993	4	EN	-	4
<i>Dasyurus maculatus maculatus</i> #	Spot-tailed Quoll	-	-	EN	EN	4
<i>Delma impar</i> #	Striped Legless Lizard	-	-	VU	EN	4
<i>Falco hypoleucos</i> #	Grey Falcon	-	-	VU	VU	4
<i>Galaxias rostratus</i>	Flat-headed Galaxias	1989	11	CR	VU	4
<i>Grantiella picta</i>	Painted Honeyeater	2017	12	VU	CR	4
<i>Hirundapus caudacutus</i>	White-throated Needle-tail	2018	11	VU	VU	4
<i>Lathamus discolor</i>	Swift Parrot	2018	36	CR	EN	3
<i>Litoria raniformis</i>	Growling Grass Frog	1976	9	VU	VU	4

Scientific name	Common name	Total # of documented records	Last documented record	EPBC	FFG	Likely occurrence in study area
<i>Maccullochella macquariensis</i>	Trout Cod	2020	9	EN	EN	4
<i>Maccullochella peelii</i>	Murray Cod	2020	21	VU	CR	4
<i>Macquaria australasica</i>	Macquarie Perch	1986	8	EN	L	4
<i>Numenius madagascariensis</i> #	Eastern Curlew	-	-	CR	CR	4
<i>Pedionomus torquatus</i> #	Plains-wanderer	-	-	CR	CR	4
<i>Polytelis swainsonii</i> #	Superb Parrot	-	-	VU	EN	4
<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox	2010	1	VU	EN	4
<i>Rostratula australis</i>	Australian Painted-snipe	1931	1	EN	CR	4
<i>Synemon plana</i>	Golden Sun Moth	-	-	CR	VU	4
<b>STATE SIGNIFICANCE</b>						
<i>Accipiter novaehollandiae</i>	Grey Goshawk	2000	1	-	EN	4
<i>Anseranas semipalmata</i>	Magpie Goose	1991	1	-	VU	3
<i>Antigone rubicunda</i>	Brolga	2018	39	-	EN	2
<i>Ardea alba</i>	Great Egret	2012	39	-	VU	4
<i>Ardea alba modesta</i>	Eastern Great Egret	2018	3	-	VU	3
<i>Ardea intermedia plumifera</i>	Plumed Egret	1987	2	-	CR	3
<i>Burhinus grallarius</i>	Bush Stone-curlew	2005	11	-	CR	4
<i>Calamanthus pyrrhopygius</i>	Chestnut-rumped Heathwren	2019	7	-	VU	4
<i>Chelodina expansa</i>	Broad-shelled Turtle	2016	1	-	EN	4
<i>Craterocephalus stercusmuscarum fulvus</i>	Unspecked Hardyhead	2019	1	-	CR	4
<i>Egretta garzetta</i>	Little Egret	1984	1	-	EN	4

Scientific name	Common name	Total # of documented records	Last documented record	EPBC	FFG	Likely occurrence in study area
<i>Euastacus armatus</i>	Murray Spiny Crayfish	2017	2	-	CD	4
<i>Geopelia cuneata</i>	Diamond Dove	2008	2	-	VU	3
<i>Haliaeetus leucogaster</i>	White-bellied Sea-Eagle	2001	17	-	EN	4
<i>Hydroprogne caspia</i>	Caspian Tern	2000	1	-	VU	4
<i>Lophoictinia isura</i>	Square-tailed Kite	2017	5	-	VU	4
<i>Macquaria ambigua</i>	Golden Perch	2020	50	-	VU	4
<i>Melanodryas cucullata</i>	Hooded Robin	2019	29	-	VU	3
<i>Melanotaenia fluviatilis</i>	Murray-Darling Rainbowfish	2009	4	-	EN	3
<i>Ninox connivens</i>	Barking Owl	2012	3	-	CR	3
<i>Ninox strenua</i>	Powerful Owl	2018	4	-	VU	3
<i>Oreoica gutturalis</i>	Crested Bellbird	2019	49	-	CR	3
<i>Ornithorhynchus anatinus</i>	Platypus	2012	37	-	VU	4
<i>Petaurus norfolcensis</i>	Squirrel Glider	1994	10	-	VU	4
<i>Phascogale tapoatafa</i>	Brush-tailed Phascogale	2018	7	-	VU	4
<i>Pomatostomus temporalis</i>	Grey-crowned Babbler	2010	25	-	VU	3
<i>Pseudophryne bibronii</i>	Brown Toadlet	1994	7	-	EN	3
<i>Pyrrholaemus sagittatus</i>	Speckled Warbler	2018	22	-	EN	3
<i>Stagonopleura guttata</i>	Diamond Firetail	2019	42	-	VU	4
<i>Stictonetta naevosa</i>	Freckled Duck	1999	5	-	EN	3
<i>Tandanus tandanus</i>	Freshwater Catfish	2012	25	-	EN	4

**Data source:** Victorian Biodiversity Atlas (DELWP 2021); Victorian Fauna Database (Viridans 2011b); Protected Matters Search Tool (DAWE 2020).



**Taxonomic order:** Mammals (Strahan 1995 *in* Menkhorst & Knight 2004); Birds (Christidis & Boles, 2008); Reptiles and Amphibians (Cogger et al. 1983 *in* Cogger 1996); Fish (Nelson 1994).

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

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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.

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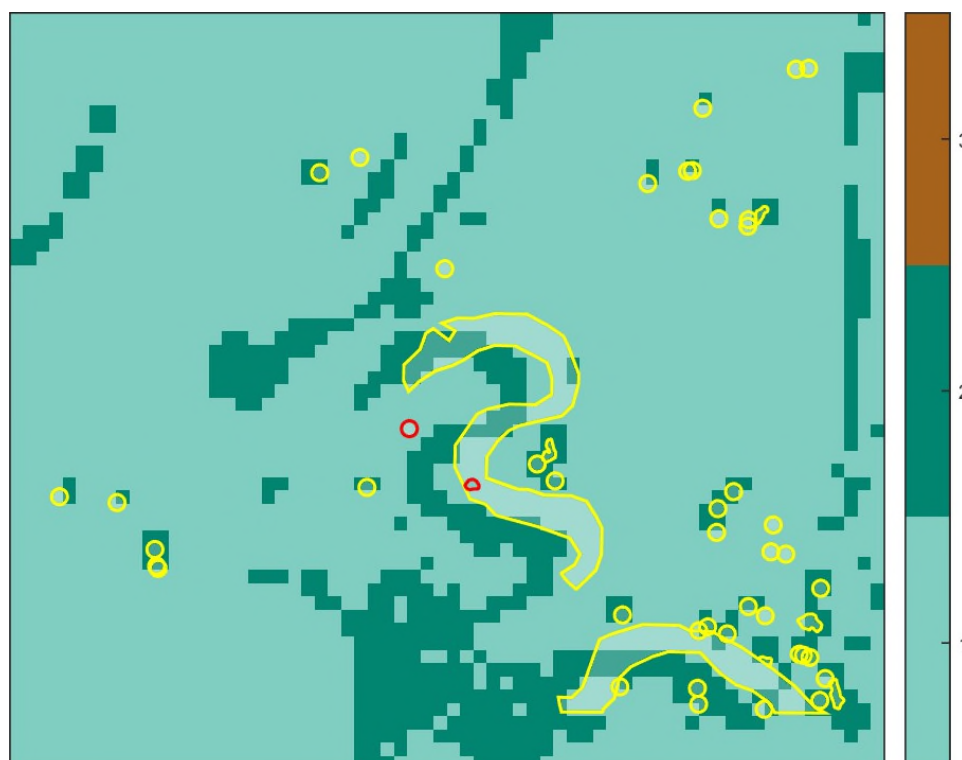
Project ID

EHP14424\_Nagambie\_14092021\_VG94

## Assessment pathway

Assessment pathway	Detailed Assessment Pathway
Extent including past and proposed	11.781 ha
Extent of past removal	0.108 ha
Extent of proposed removal	11.673 ha
No. Large trees proposed to be removed	68
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:

<b>General offset amount<sup>1</sup></b>	2.964 general habitat units
Vicinity	Goulburn Broken Catchment Management Authority (CMA) or Strathbogie Shire Council
Minimum strategic biodiversity value score <sup>2</sup>	0.211
Large trees	68 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

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

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

## Next steps

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

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

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

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

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

Additional application requirements must be met including:

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

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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

Zone	Type	BioEVC	BioEVC conservation status	Large tree(s)	Partial removal	Condition score	Information calculated by EnSym					
							Polygon Extent	Extent without overlap	SBV score	HI score	Habitat units	Offset type
1-CW	Patch	wetland	Vulnerable	2	no	0.230	5.632	5.632	0.275		1.239	General
2-CW	Patch	wetland	Vulnerable	7	no	0.400	3.104	3.104	0.249		1.163	General
1-A	Patch	vriv0055	Endangered	3	no	0.230	0.080	0.080	0.219		0.017	General
2-A	Patch	vriv0055	Endangered	4	no	0.230	0.093	0.093	0.180		0.019	General
3-A	Patch	vriv0055	Endangered	0	no	0.230	0.024	0.024	0.200		0.005	General
1-TR	Scattered Tree	vriv0055	Endangered	1	no	0.200	0.070	0.070	0.200		0.013	General
2-TR	Scattered Tree	vriv0055	Endangered	1	no	0.200	0.070	0.070	0.190		0.013	General
3-TR	Scattered Tree	vriv0055	Endangered	1	no	0.200	0.070	0.049	0.195		0.009	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
4-TR	Scattered Tree	vriv0055	Endangered	1	no	0.200	0.070	0.049	0.196		0.009	General
5-TR	Scattered Tree	vriv0055	Endangered	1	no	0.200	0.070	0.070	0.180		0.012	General
6-TR	Scattered Tree	vriv0055	Endangered	1	no	0.200	0.070	0.053	0.180		0.009	General
7-TR	Scattered Tree	vriv0055	Endangered	1	no	0.200	0.070	0.050	0.180		0.009	General
8-TR	Scattered Tree	vriv0055	Endangered	1	no	0.200	0.070	0.070	0.780		0.019	General
9-TR	Scattered Tree	vriv0055	Endangered	1	no	0.200	0.070	0.070	0.804		0.019	General
10-TR	Scattered Tree	vriv0055	Endangered	1	no	0.200	0.070	0.070	0.200		0.013	General
11-TR	Scattered Tree	vriv0055	Endangered	1	no	0.200	0.070	0.070	0.200		0.013	General
12-TR	Scattered Tree	vriv0055	Endangered	1	no	0.200	0.070	0.070	0.200		0.013	General
13-TR	Scattered Tree	vriv0055	Endangered	1	no	0.200	0.070	0.070	0.180		0.012	General
14-TR	Scattered Tree	vriv0055	Endangered	1	no	0.200	0.070	0.070	0.950		0.021	General
15-TR	Scattered Tree	vriv0055	Endangered	1	no	0.200	0.070	0.043	0.950		0.013	General
16-TR	Scattered Tree	vriv0055	Endangered	1	no	0.200	0.070	0.043	0.950		0.013	General
17-TR	Scattered Tree	vriv0055	Endangered	1	no	0.200	0.070	0.069	0.190		0.012	General
18-TR	Scattered Tree	vriv0055	Endangered	1	no	0.200	0.070	0.070	0.190		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
19-TR	Scattered Tree	vriv0055	Endangered	1	no	0.200	0.070	0.070	0.176		0.012	General
20-TR	Scattered Tree	vriv0055	Endangered	1	no	0.200	0.070	0.070	0.170		0.012	General
21-TR	Scattered Tree	vriv0055	Endangered	1	no	0.200	0.070	0.070	0.170		0.012	General
22-TR	Scattered Tree	vriv0055	Endangered	1	no	0.200	0.070	0.070	0.171		0.012	General
23-TR	Scattered Tree	vriv0055	Endangered	1	no	0.200	0.070	0.070	0.180		0.012	General
24-TR	Scattered Tree	vriv0055	Endangered	1	no	0.200	0.070	0.070	0.180		0.012	General
25-TR	Scattered Tree	vriv0055	Endangered	1	no	0.200	0.070	0.070	0.180		0.012	General
26-TR	Scattered Tree	vriv0055	Endangered	1	no	0.200	0.070	0.070	0.170		0.012	General
27-TR	Scattered Tree	vriv0055	Endangered	1	no	0.200	0.070	0.049	0.220		0.009	General
28-TR	Scattered Tree	vriv0055	Endangered	1	no	0.200	0.070	0.070	0.220		0.013	General
29-TR	Scattered Tree	vriv0055	Endangered	1	no	0.200	0.070	0.070	0.220		0.013	General
30-TR	Scattered Tree	vriv0055	Endangered	1	no	0.200	0.070	0.069	0.200		0.012	General
31-TR	Scattered Tree	vriv0055	Endangered	1	no	0.200	0.070	0.070	0.200		0.013	General
32-TR	Scattered Tree	vriv0055	Endangered	1	no	0.200	0.070	0.068	0.201		0.012	General
33-TR	Scattered Tree	vriv0055	Endangered	1	no	0.200	0.070	0.063	0.180		0.011	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
34-TR	Scattered Tree	vriv0055	Endangered	1	no	0.200	0.070	0.029	0.170		0.005	General
35-TR	Scattered Tree	vriv0055	Endangered	1	no	0.200	0.070	0.052	0.172		0.009	General
36-TR	Scattered Tree	vriv0055	Endangered	1	no	0.200	0.070	0.070	0.180		0.012	General
37-TR	Scattered Tree	vriv0055	Endangered	1	no	0.200	0.070	0.070	0.180		0.012	General
38-TR	Scattered Tree	vriv0055	Endangered	1	no	0.200	0.070	0.054	0.200		0.010	General
39-TR	Scattered Tree	vriv0055	Endangered	1	no	0.200	0.070	0.030	0.197		0.005	General
40-TR	Scattered Tree	vriv0055	Endangered	1	no	0.200	0.070	0.047	0.196		0.008	General
4-A	Patch	vriv0055	Endangered	3	no	0.230	0.043	0.043	0.180		0.009	General
5-A	Patch	vriv0055	Endangered	7	no	0.230	0.062	0.062	0.190		0.013	General
42-TR	Scattered Tree	vriv0055	Endangered	1	no	0.200	0.070	0.066	0.190		0.012	General
43-TR	Scattered Tree	vriv0055	Endangered	1	no	0.200	0.070	0.066	0.190		0.012	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
Plump Windmill Grass	<i>Chloris ventricosa</i>	500757	Vulnerable	Dispersed	Habitat importance map	0.0018
Ridged Water-milfoil	<i>Myriophyllum porcatum</i>	502257	Vulnerable	Dispersed	Habitat importance map	0.0008
Silky Umbrella-grass	<i>Digitaria ammophila</i>	501041	Vulnerable	Dispersed	Habitat importance map	0.0005
Jericho Wire-grass	<i>Aristida jerichoensis</i> var. <i>subspinulifera</i>	504631	Endangered	Dispersed	Habitat importance map	0.0004
Western Silver Wattle	<i>Acacia decora</i>	500027	Vulnerable	Dispersed	Habitat importance map	0.0004
Pale Flax-ily	<i>Dianella</i> sp. aff. <i>longifolia</i> ( <i>Riverina</i> )	507399	Vulnerable	Dispersed	Habitat importance map	0.0004
Pepper Grass	<i>Panicum laevinode</i>	504808	Vulnerable	Dispersed	Habitat importance map	0.0004
Bent-leaf Wattle	<i>Acacia flexifolia</i>	500035	Rare	Dispersed	Habitat importance map	0.0004
Silky Swainson-pea	<i>Swainsona sericea</i>	504946	Vulnerable	Dispersed	Habitat importance map	0.0004
Yellow-tongue Daisy	<i>Brachyscome chrysoglossa</i>	503654	Vulnerable	Dispersed	Habitat importance map	0.0003
Dookie Daisy	<i>Brachyscome gracilis</i>	505494	Vulnerable	Dispersed	Habitat importance map	0.0003
Small Scurf-pea	<i>Cullen parvum</i>	502773	Endangered	Dispersed	Habitat importance map	0.0003
Narrow Goodenia	<i>Goodenia macbarronii</i>	501513	Vulnerable	Dispersed	Habitat importance map	0.0003
Kamarooka Mallee	<i>Eucalyptus froggattii</i>	501279	Rare	Dispersed	Habitat importance map	0.0003
Umbrella Grass	<i>Digitaria divaricatissima</i> var. <i>divaricatissima</i>	501045	Vulnerable	Dispersed	Habitat importance map	0.0003
Mueller Daisy	<i>Brachyscome muelleroides</i>	500465	Endangered	Dispersed	Habitat importance map	0.0002
Velvet Daisy-bush	<i>Olearia pannosa</i> subsp. <i>cardiophylla</i>	502317	Vulnerable	Dispersed	Habitat importance map	0.0002
Ausfeld's Wattle	<i>Acacia ausfeldii</i>	500013	Vulnerable	Dispersed	Habitat importance map	0.0002

Western Golden-tip	<i>Goodia medicaginea</i>	501518	Rare	Dispersed	Habitat importance map	0.0002
Broom Bitter-pea	<i>Daviesia genistifolia</i> s.s.	503813	Rare	Dispersed	Habitat importance map	0.0002
Baillon's Crake	<i>Porzana pusilla palustris</i>	10050	Vulnerable	Dispersed	Habitat importance map	0.0002
Long Eryngium	<i>Eryngium paludosum</i>	501238	Vulnerable	Dispersed	Habitat importance map	0.0002
Smooth Minuria	<i>Minuria integerrima</i>	502201	Rare	Dispersed	Habitat importance map	0.0002
Dark Wire-grass	<i>Aristida calycina</i> var. <i>calycina</i>	503630	Rare	Dispersed	Habitat importance map	0.0002
Northern Sandalwood	<i>Santalum lanceolatum</i>	503005	Endangered	Dispersed	Habitat importance map	0.0002
Southern Swainson-pea	<i>Swainsona behriana</i>	504944	Rare	Dispersed	Habitat importance map	0.0002
Australian Painted Snipe	<i>Rostratula australis</i>	10170	Critically endangered	Dispersed	Habitat importance map	0.0002
Australian Little Bittern	<i>Ixobrychus dubius</i>	10195	Endangered	Dispersed	Habitat importance map	0.0002
Delicate Crane's-bill	<i>Geranium</i> sp. 6	505347	Vulnerable	Dispersed	Habitat importance map	0.0002
Purple Diuris	<i>Diuris punctata</i>	501084	Vulnerable	Dispersed	Habitat importance map	0.0002
Grey-crowned Babbler	<i>Pomatostomus temporalis temporalis</i>	10443	Endangered	Dispersed	Habitat importance map	0.0002
Rosemary Grevillea	<i>Grevillea rosmarinifolia</i> subsp. <i>rosmarinifolia</i>	504066	Rare	Dispersed	Habitat importance map	0.0002
Late-flower Flax-ily	<i>Dianella tarda</i>	505085	Vulnerable	Dispersed	Habitat importance map	0.0002
Branching Groundsel	<i>Senecio cunninghamii</i> var. <i>cunninghamii</i>	503104	Rare	Dispersed	Habitat importance map	0.0001
Australasian Shoveler	<i>Anas rhynchos</i>	10212	Vulnerable	Dispersed	Habitat importance map	0.0001
Slender Club-sedge	<i>Isolepis congrua</i>	501773	Vulnerable	Dispersed	Habitat importance map	0.0001
Fuzzy New Holland Daisy	<i>Vittadinia cuneata</i> var. <i>morrisii</i>	505060	Rare	Dispersed	Habitat importance map	0.0001
Spiny Rice-flower	<i>Pimelea spinescens</i> subsp. <i>spinescens</i>	504823	Endangered	Dispersed	Habitat importance map	0.0001
Bush Stone-curlew	<i>Burhinus grallarius</i>	10174	Endangered	Dispersed	Habitat importance map	0.0001
Hardhead	<i>Aythya australis</i>	10215	Vulnerable	Dispersed	Habitat importance map	0.0001
Veiled Fringe-sedge	<i>Fimbristylis velata</i>	501369	Rare	Dispersed	Habitat importance map	0.0001

Downy Swainson-pea	<i>Swainsona swainsonioides</i>	503328	Endangered	Dispersed	Habitat importance map	0.0001
Dwarf Brooklime	<i>Gratiola pumilo</i>	503753	Rare	Dispersed	Habitat importance map	0.0001
Waterbush	<i>Myoporum montanum</i>	502240	Rare	Dispersed	Habitat importance map	0.0001
Hairy Tails	<i>Ptilotus erubescens</i>	502825	Vulnerable	Dispersed	Habitat importance map	0.0001
Cottony Cassinia	<i>Cassinia ozothamnoides</i>	501560	Vulnerable	Dispersed	Habitat importance map	0.0001
Brolga	<i>Grus rubicunda</i>	10177	Vulnerable	Dispersed	Habitat importance map	0.0001
Squirrel Glider	<i>Petaurus norfolcensis</i>	11137	Endangered	Dispersed	Habitat importance map	0.0001
Buloke Mistletoe	<i>Amyema linophylla subsp. orientalis</i>	500217	Vulnerable	Dispersed	Habitat importance map	0.0001
Rye Beetle-grass	<i>Tripogon loliiiformis</i>	503455	Rare	Dispersed	Habitat importance map	0.0001
Striped Water-milfoil	<i>Myriophyllum striatum</i>	503869	Vulnerable	Dispersed	Habitat importance map	0.0001
Buloke	<i>Allocasuarina luehmannii</i>	500678	Endangered	Dispersed	Habitat importance map	0.0000
Golden Cowslips	<i>Diuris behrii</i>	501061	Vulnerable	Dispersed	Habitat importance map	0.0000
Lanky Buttons	<i>Leptorhynchos elongatus</i>	501941	Endangered	Dispersed	Habitat importance map	0.0000
Stiff Groundsel	<i>Senecio behrianus</i>	503101	Endangered	Dispersed	Habitat importance map	0.0000
Riverina Bitter-cress	<i>Cardamine moltenensis</i>	505032	Rare	Dispersed	Habitat importance map	0.0000
Water Shield	<i>Brasenia schreberi</i>	500487	Vulnerable	Dispersed	Habitat importance map	0.0000
Black Falcon	<i>Falco subniger</i>	10238	Vulnerable	Dispersed	Habitat importance map	0.0000
Floodplain Fireweed	<i>Senecio campylocarpus</i>	507136	Rare	Dispersed	Habitat importance map	0.0000
Intermediate Egret	<i>Ardea intermedia</i>	10186	Endangered	Dispersed	Habitat importance map	0.0000
Grassland Velleia	<i>Velleia arguta</i>	503487	Rare	Dispersed	Habitat importance map	0.0000
Pale Swamp Everlasting	<i>Coronidium gunnianum</i>	504655	Vulnerable	Dispersed	Habitat importance map	0.0000
Flat-headed Galaxias	<i>Galaxias rostratus</i>	4692	Vulnerable	Dispersed	Habitat importance map	0.0000
Woolly Wattle	<i>Acacia lanigera var. lanigera</i>	505093	Rare	Dispersed	Habitat importance map	0.0000
Freshwater Catfish	<i>Tandanus tandanus</i>	528545	Endangered	Dispersed	Habitat importance map	0.0000

Murray-Darling Rainbowfish	<i>Melanotaenia fluviatilis</i>	4774	Vulnerable	Dispersed	Habitat importance map	0.0000
Dwarf Bitter-cress	<i>Rorippa eustylis</i>	502944	Rare	Dispersed	Habitat importance map	0.0000
Silver Perch	<i>Bidyanus bidyanus</i>	528544	Vulnerable	Dispersed	Habitat importance map	0.0000
Murray Cod	<i>Maccullochella peelii</i>	4871	Vulnerable	Dispersed	Habitat importance map	0.0000
Southern Pygmy Perch (Murray-Darling lineage)	<i>Nannoperca australis (Murray-Darling lineage)</i>	903231	Vulnerable	Dispersed	Habitat importance map	0.0000
Bearded Dragon	<i>Pogona barbata</i>	12177	Vulnerable	Dispersed	Habitat importance map	0.0000
Superb Parrot	<i>Polytelis swainsonii</i>	10277	Endangered	Dispersed	Habitat importance map	0.0000
White-bellied Sea-Eagle	<i>Haliaeetus leucogaster</i>	10226	Vulnerable	Dispersed	Habitat importance map	0.0000
Broad-shelled Turtle	<i>Chelodina expansa</i>	5133	Endangered	Dispersed	Habitat importance map	0.0000
Little Egret	<i>Egretta garzetta nigripes</i>	10185	Endangered	Dispersed	Habitat importance map	0.0000
Eastern Great Egret	<i>Ardea modesta</i>	10187	Vulnerable	Dispersed	Habitat importance map	0.0000
Freckled Duck	<i>Stictonetta naevosa</i>	10214	Endangered	Dispersed	Habitat importance map	0.0000
Blue-billed Duck	<i>Oxyura australis</i>	10216	Endangered	Dispersed	Habitat importance map	0.0000
Spiny Lignum	<i>Duma horrida subsp. horrida</i>	502230	Rare	Dispersed	Habitat importance map	0.0000
Growing Grass Frog	<i>Litoria raniformis</i>	13207	Endangered	Dispersed	Habitat importance map	0.0000
Musk Duck	<i>Biziura lobata</i>	10217	Vulnerable	Dispersed	Habitat importance map	0.0000
Brown Toadlet	<i>Pseudophryne bibronii</i>	13117	Endangered	Dispersed	Habitat importance map	0.0000
Lewin's Rail	<i>Lewinia pectoralis pectoralis</i>	10045	Vulnerable	Dispersed	Habitat importance map	0.0000
Painted Honeyeater	<i>Grantiella picta</i>	10598	Vulnerable	Dispersed	Habitat importance map	0.0000
Barking Owl	<i>Ninox connivens connivens</i>	10246	Endangered	Dispersed	Habitat importance map	0.0000
Australasian Bittern	<i>Botaurus poiciloptilus</i>	10197	Endangered	Dispersed	Habitat importance map	0.0000
Square-tailed Kite	<i>Lophoictinia isura</i>	10230	Vulnerable	Dispersed	Habitat importance map	0.0000
Lace Monitor	<i>Varanus varius</i>	12283	Endangered	Dispersed	Habitat importance map	0.0000
White-throated Needletail	<i>Hirundapus caudacutus</i>	10334	Vulnerable	Dispersed	Habitat importance map	0.0000

Chestnut-rumped Heathwren	<i>Calamanthus pyrrhopygius</i>	10498	Vulnerable	Dispersed	Habitat importance map	0.0000
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**Habitat group**

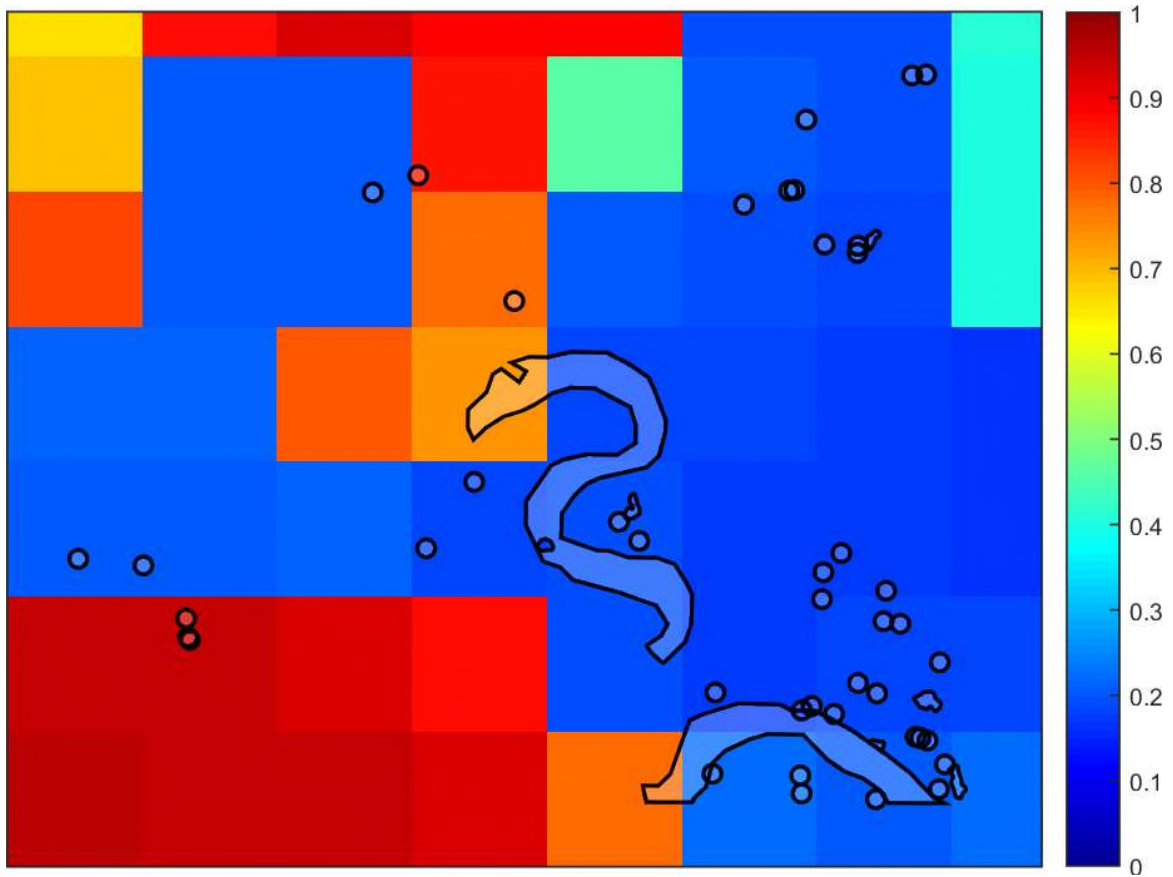
- Highly localised habitat means there is 2000 hectares or less mapped habitat for the species
- Dispersed habitat means there is more than 2000 hectares of mapped habitat for the species

**Habitat impacted**

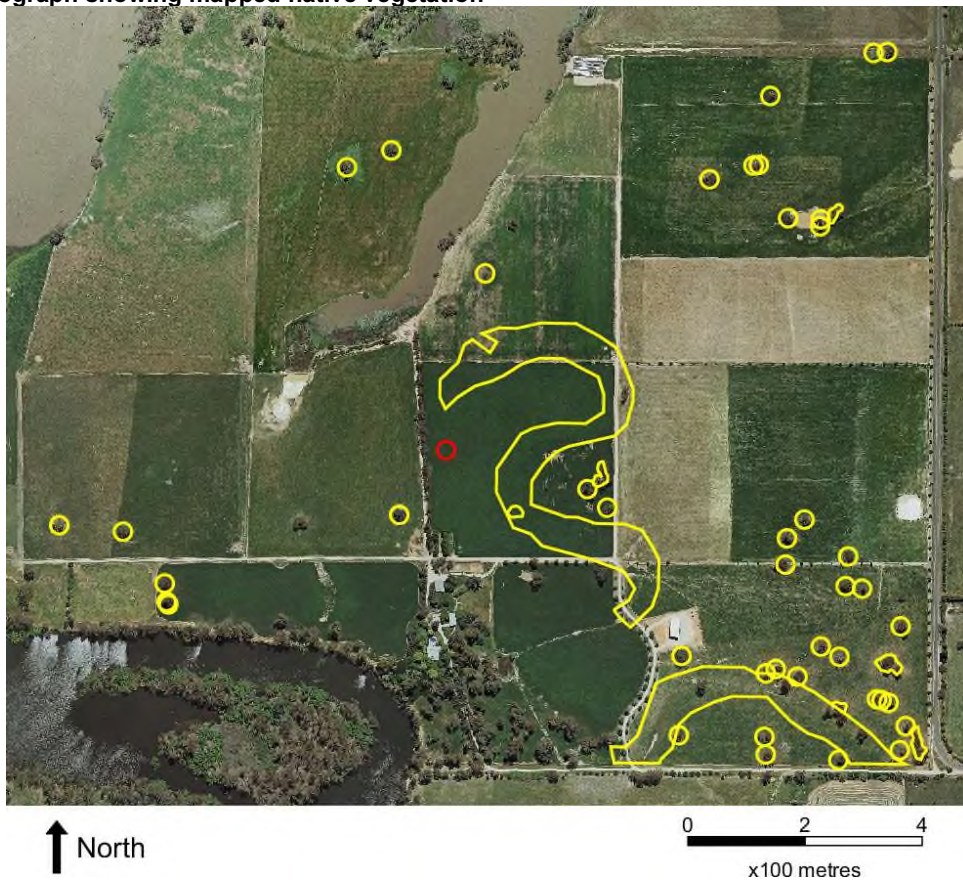
- Habitat importance maps are the maps defined in the Guidelines that include all the mapped habitat for a rare or threatened species
- Top ranking maps are the maps defined in the Guidelines that depict the important areas of a dispersed species habitat, developed from the highest habitat importance 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

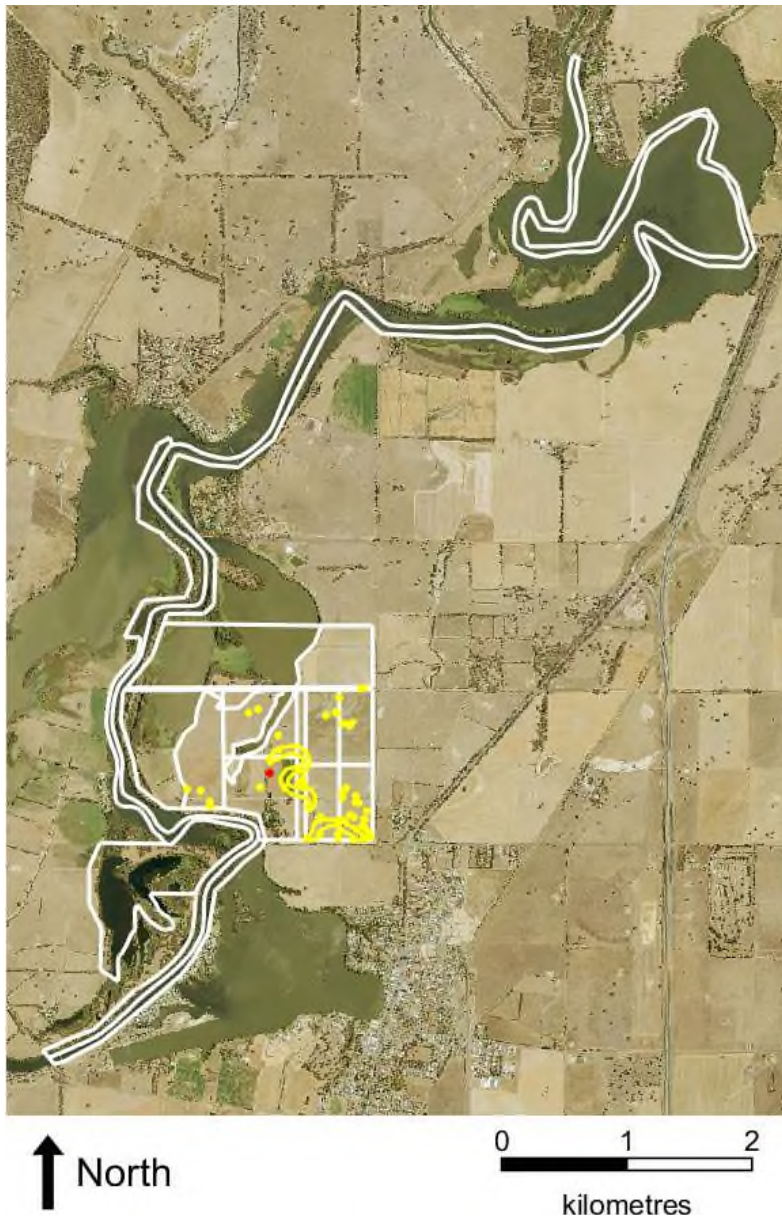
## 2. Strategic biodiversity values map



## 3. Aerial photograph showing mapped native vegetation



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



Yellow boundaries denote areas of proposed native vegetation removal.

Red boundaries denote areas of past removal.



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

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# Report of available native vegetation credits

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

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

Date and time: 15/09/2021 05:15

Report ID: 10943

## What was searched for?

### General offset

General habitat units	Strategic biodiversity value	Large trees	Vicinity (Catchment Management Authority or Municipal district)	
2.964	0.211	68	CMA	Goulburn Broken
			or LGA	Strathbogie Shire

## Details of available native vegetation credits on 15 September 2021 05:15

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

Credit Site ID	GHU	LT	CMA	LGA	Land owner	Trader	Fixed price	Broker(s)
VC_CFL-3075_01	9.571	131	Goulburn Broken	Greater Shepparton City	Yes	Yes	No	VegLink

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

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

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

Credit Site ID	GHU	LT	CMA	LGA	Land owner	Trader	Fixed price	Broker(s)
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There are no potential sites listed in the Native Vegetation Credit Register that meet your offset requirements.

LT - Large Trees

CMA - Catchment Management Authority

LGA - Municipal District or Local Government Authority

## Next steps

### If applying for approval to remove native vegetation

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

### If you have approval to remove native vegetation

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

## Broker contact details

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

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

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This publication may be of assistance to you but the State of Victoria and its employees do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss or other consequence which may arise from you relying on any information in this publication.

Obtaining this publication does not guarantee that the credits shown will be available in the Native Vegetation Credit Register either now or at a later time when a purchase of native vegetation credits is planned.

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