



# Avonbank Mineral Sands Project - Powerline Upgrade

## Flora and Fauna Assessment

Prepared for WIM Resource Pty Ltd

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*Nature Advisory acknowledges the traditional owners and sovereign custodians of the land on which we work from—the Wurundjeri people of the Woi Wurrung language group. We extend our respect to their Ancestors and all First Peoples and Elders past and present.*

## Executive summary

WIM Resource Pty Ltd engaged Nature Advisory Pty Ltd to conduct a flora and fauna assessment of public and private land in Dooen, Drung, Jung, Longerenong and Riverside. The specific area investigated, referred to herein as the 'study area', predominantly comprised road reserves (including Drung-Jung Road, Horsham-Lubeck Road, Longerenong Road, River Wheat Road, School Road, Tralee Lane, Tuckers Road and the Wimmera Highway). The study area is located approximately 10 km east of Horsham and 266 km north-west of Melbourne. The upgrade of the existing 22 kV distribution line to a 66 kV power line between the Horsham Terminal Station and the WIM Base Area (WBA) is proposed for the study area.

### Assessment results

#### Native vegetation

A total of 48 patches comprising Floodplain Riparian Woodland (EVC 56), Riverine Chenopod Woodland (EVC 103), Plains Grassland (EVC 132), Red Gum Swamp (EVC 292), Black Box Lignum Woodland (EVC 663), Plains Woodland (EVC 803) and Plains Savannah (EVC 826) were identified in the study area. This totalled an area of 57.686 ha of native vegetation in patches and included 1 large tree.

Additionally, one small scattered tree occurred in the study area (a Black Box < 70 cm DBH).

#### Flora species

The following threatened and protected flora species were recorded during the field assessments and targeted surveys:

- Buloke *Allocasuarina luehmannii* (FFG Act: Critically Endangered)
- Club-hair New Holland Daisy *Vittadinia condyloides* (FFG Act: Endangered)
- Late-flower Flax-lily *Dianella tarda* (FFG Act: Critically Endangered)
- Swamp Sheoak *Casuarina obesa* (FFG Act: Critically Endangered)
- Winged New Holland Daisy *Vittadinia pterochaeta* (FFG Act: Endangered)

The likelihood of occurrence analysis as well as results from previous targeted surveys (Nature Advisory 2025b) indicates that no additional listed flora species have the potential to occur.

#### Fauna

Fauna habitat within the study area comprised wooded habitat, grassland habitat and aquatic habitat (i.e., the Wimmera River and Two Mile Creek), of low to high quality with a mix of native and exotic species. These habitats provide foraging, nesting and shelter resources for common bird, fish, amphibian, reptile, invertebrate and mammal species.

No listed fauna species were recorded during the field survey.

The likelihood of occurrence analysis indicates that 24 listed fauna species have the potential to occur.

#### Listed threatened ecological communities

The following EPBC Act-listed threatened ecological community was recorded in the study area:

- 7.598 ha of *Natural Grasslands of the Murray Valley Plains* – listed as Critically Endangered (Habitat Zones 4AD, 5, 6, 35 and 36.)

The following three FFG Act-listed threatened ecological communities were recorded in the study area:

- 1.900 ha of Northern Plains Grassland Community (Habitat Zone ID 4, 13, 21, 25, 35, 36 and 46)
- 0.398 ha of Red Gum Swamp Community No. 1 (Habitat Zone ID 20)

- 5.708 ha of Victorian temperate woodland bird community (Habitat Zones 9, 10, 11 and 24)

### *Impact assessment*

#### **Native vegetation**

To account for impacts to native vegetation, a precautionary approach was undertaken. Direct disturbance at each pole location is limited to a  $\sim 1 \times 1$  metre bore hole required for pole installation. Therefore, the majority of impacts accounted for are temporary disturbance areas to be used for vehicle positioning and construction activities. These impacts include:

- A nominal 20 x 8 metre work zone around the pole location to allow for safe plant operation and vehicle access; and
- Temporary vehicle access corridors, where poles cannot be reached from adjacent cleared land.

The resulting impact to native vegetation is 1.305 ha of native vegetation in patches (including no large trees in patches).

The majority of the native vegetation accounted for in these impacts is anticipated to remain unaffected, owing to the implementation of construction mitigation measures designed to restrict disturbance to the minimum extent practicable. Areas subject to temporary disturbance will be rehabilitated through the reinstatement of soil profiles, facilitation of natural regeneration via sensitive weed management, and, where natural recolonisation is inadequate, the direct seeding of grasses consistent with the relevant EVC will be undertaken.

#### **Flora species**

None of the listed flora species recorded during the site assessments and targeted surveys are proposed to be impacted.

Additionally, the likelihood of occurrence analysis of species listed under the EPBC Act and FFG Act indicated that no additional listed flora species have the potential to occur. Therefore, no listed flora species are considered to be susceptible to impacts from the proposal.

#### **Fauna**

No listed fauna species are anticipated to be impacted by the proposed development.

#### **Threatened ecological communities**

The following EPBC Act-listed threatened ecological community was precautionarily deemed to be impacted by the proposal:

- 0.046 ha of Natural Grasslands of the Murray Valley Plains (EPBC Act: Critically Endangered)

The following FFG Act-listed threatened ecological communities were also deemed to be impacted by the proposed development:

- 0.518 ha of Northern Plains Grassland Community
- 0.002 ha of Red Gum Swamp Community No. 1
- 0.016 ha of Victorian temperate woodland bird community

### *Implications under legislation and policy*

#### **The Guidelines**

A permit for the proposed removal of native vegetation is required under Cl. 52.17.

The proposal will be assessed under the Detailed assessment pathway. This would trigger a referral to the Department of Energy, Environment and Climate Action (DEECA).

Offsets required to compensate for the proposed removal of native vegetation from the study area are:

- 0.4960 general habitat units and must include the following offset attribute requirements:
  - Minimum strategic biodiversity value (SBV) of 0.1428.
  - Occur within the Wimmera CMA boundary or the Horsham Rural City municipal district.

### **Other planning provisions**

The following three relevant overlays in the Horsham Planning Scheme have specific application requirements, decision guidelines and implications for the current proposal:

- Environmental Significance Overlay – Schedule 3 (ES03)
- Floodway Overlay – Schedule 1 (FO1)
- Landscape Subject to Inundation Overlay – Schedule 1 (LSI01)

### **EPBC Act**

The proposed development will impact 0.046 ha of Natural Grasslands of the Murray Valley Plains (EPBC Act: Critically Endangered).

In November 2019, WIM Resource referred the project, including the utilities corridor, to the Commonwealth (referral 2019/8586) for a determination on whether the project was a controlled action under the EPBC Act. On 3 July 2020, the project was determined to be a controlled action requiring assessment and approval under the EPBC Act because of its potential impacts on matters of national environmental significance (MNES): listed threatened species and communities (sections 18 and 18A) and nuclear actions (sections 21 and 22A). The project's impacts on MNES were assessed by the accredited EES process, in accordance with the bilateral agreement made between the Australian and Victorian governments under section 45 of the EPBC Act. Therefore, decisions about whether, and under what conditions, to approve the project under the EPBC Act were to be informed by the EES process. A significant impact assessment of proposed impacts to Natural Grasslands of the Murray Valley Plains against the relevant significant impact guidelines is included at Appendix 10. This assessment indicates that the project is considered unlikely to significantly impact this community.

### **FFG Act**

The following FFG Act values listed as threatened and protected are anticipated to be impacted by the proposed development:

- 0.518 ha of Northern Plains Grassland Community
- 0.002 ha of Red Gum Swamp Community No. 1
- 0.016 ha of Victorian temperate woodland bird community

A Protected Flora Permit under the FFG Act would be required for the current proposal for the above-mentioned FFG Act-listed threatened values occurring on public land.

### **EE Act**

On 17 August 2019, the Minister for Planning determined an Environment Effects Statement (EES) was required for the proposed Avonbank Mineral Sands Project under the Environment Effects Act 1978. Following public exhibition of the EES, public hearings and a report from the independent Avonbank Mineral Sands Inquiry and Advisory Committee, the Minister for Planning announced that the EES had

received a favourable assessment in December 2024. The minor utilities corridor, in which the proposed powerline upgrade will sit, has been considered as part of the EES process. Prior to construction of the mine commencing, WIM needs approval of a work plan that incorporates all the EES recommendations. The Minister’s assessment determined that there was residual uncertainty about the potential presence of threatened flora and fauna in the minor utilities corridor and so required further survey work for specific threatened flora and fauna in the minor utilities corridor. This report is intended to address this recommendation.

### *Response to application requirements of the Guidelines*

The table below summarises the compliance of the information in this report with the application requirements of the *Guidelines for the Removal, Destruction or Lopping of Native Vegetation* (DELWP 2017).

Application requirement		Response
1.	Information about the native vegetation to be removed.	See Section 5.1.1.
2.	Topographic and land information relating to the native vegetation to be removed.	See Section 4.1.
3.	Recent, dated photographs of the native vegetation to be removed.	See Appendix 7.
4.	Details of any other native vegetation approved to be removed, or that was removed without the required approvals, on the same property or contiguous land in the same ownership as the applicant, in the five-year period before the application for a permit is lodged.	See Section 5.1.1 and Appendix 8
5.	An ‘avoid and minimise’ statement.	See Section 6.1.2.
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 is not required when the creation of defensible space is in conjunction with an application under the Bushfire Management Overlay.	Not applicable.
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.
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.	See Section 6.1.6 and Appendix 9.

Application requirement		Response
Additional requirements for applications in the Detailed assessment pathway		
10.	<p>A site assessment report of the native vegetation to be removed, including the following:</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 m above ground level) and species of any large trees within patches.</li> </ul> <p>The location, number, circumference (in centimetres measured at 1.3 m above ground level) and species of any scattered trees, and whether each tree is small or large.</p>	<p>See Appendix 1, Appendix 2 and Appendix 8</p>
11.	<p>Information about impacts on rare or threatened species habitat, including the following:</p> <p>The relevant section of the habitat importance map for each rare or threatened species requiring a species offset.</p> <p>For each rare or threatened species that the native vegetation to be removed is habitat for, according to the Habitat importance maps:</p> <ul style="list-style-type: none"> <li>▪ the species' conservation status;</li> <li>▪ the proportional impact of the removal of native vegetation on the total habitat for that species; and</li> <li>▪ whether the habitats are highly localised habitats, dispersed habitats, or important areas of habitat within a dispersed species habitat.</li> </ul>	<p>See Section 6.1.3 and Appendix 8</p>

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# 1. Introduction

WIM Resource Pty Ltd engaged Nature Advisory Pty Ltd to conduct a flora and fauna assessment of approximately 50 ha area of public and private land in Dooen, Drung, Jung, Longerenong and Riverside. The specific area investigated, referred to herein as the ‘study area’ (Figure 1), predominantly comprised road reserves (including Drung-Jung Road, Horsham-Lubeck Road, Longerenong Road, River Wheat Road, School Road, Tralee Lane, Tuckers Road and the Wimmera Highway). The study area is located approximately 10 km east of Horsham and 266 km north-west of Melbourne. The upgrade of the existing 22 kV distribution line to a 66 kV power line between the Horsham Terminal Station and the WIM Base Area (WBA) is proposed for the study area. More specifically, some new poles and some pole upgrades are required along the existing distribution line to accommodate the upgrade and meet clearance, span geometry and structural loading standards. Minor adjustments were also made to the proposed work areas to ensure safe access to each pole and facilitate lifting and stringing equipment.

On 17 August 2019, the Minister for Planning determined an Environment Effects Statement (EES) was required for the proposed Avonbank Mineral Sands Project under the *Environment Effects Act 1978*. Following public exhibition of the EES, public hearings and a report from the independent Avonbank Mineral Sands Inquiry and Advisory Committee, the Minister for Planning announced that the EES had received a favourable assessment in December 2024. The minor utilities corridor, in which the proposed powerline upgrade will sit, has been considered as part of the EES process. Prior to the commencement of the mine construction, the Minister’s assessment determined that there was residual uncertainty about the potential presence of threatened flora and fauna in the minor utilities corridor and so required further survey work for specific threatened flora and fauna in the minor utilities corridor.

This investigation was therefore commissioned to provide information on the extent and condition of native vegetation in the study area according to Victoria’s *Guidelines for the Removal, Destruction or Lopping of Native Vegetation* (DELWP 2017) and potential impacts on flora and fauna matters listed under the *Flora and Fauna Guarantee Act 1988* (Vic; FFG Act) and the *Environment Protection and Biodiversity Conservation Act 1999* (Cth; EPBC Act). This report outlines any implications under relevant national, state and local legislation and policy frameworks.

Specifically, the scope of the investigation included the following:

- Existing information regarding the flora, fauna and native vegetation of the study area and surrounds was reviewed and included the following:
  - *Victorian Biodiversity Atlas* administered by the Department of Energy, Environment and Climate Action (DEECA);
  - The *Commonwealth Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) *Protected Matters Search Tool*;
  - DEECA’s *Native Vegetation Regulation Map* (NVR Map); and
  - Previous mapping and reporting conducted by Nature Advisory.
- A site survey was undertaken and involved the following:
  - Characterisation and mapping (using a differential GPS where necessary) of native vegetation on the site, as defined in Victoria’s *Guidelines for the removal, destruction or lopping of native vegetation* (the ‘Guidelines’);

- Assessment of native vegetation in accordance with the Guidelines and standards detailed in the *Assessors Handbook: Applications to remove, destroy or lop native vegetation (DELWP version 1.1, 2018)* and *Vegetation Quality Assessment Manual – Guidelines for applying the habitat hectares scoping method (DSE version 1.3, 2004)*;
- Targeted survey for the EPBC Act-listed threatened community *Natural Grasslands of the Murray Valley Plains*;
- Capturing representative photographs of native vegetation present;
- Compilation of a flora species list for the site;
- Assessment of the nature and quality of native fauna habitat;
- Assessment of the likelihood of occurrence of EPBC Act and *Flora and Fauna Guarantee Act 1988* (FFG Act)-listed flora, fauna and communities on the site; and
- Collaboration in the field with relevant Powercor and WIM personnel to identify options to avoid or minimise impacts to ecological values.

This investigation was undertaken by a team from Nature Advisory comprising Cody Hajnal (Botanist), Elinor Ebsworth (Senior Botanist), Maya Zaeim (GIS Analyst) and Chris Armstrong (Senior Botanist & Project Manager).

## 2. Planning and legislative considerations

This report addresses the application of relevant legislation and planning policies that protect biodiversity in the context of the study area. Local, state and Commonwealth controls are summarised below.

### 2.1. EE Act

On 17 August 2019, the Minister for Planning determined an Environment Effects Statement (EES) was required for the proposed Avonbank Mineral Sands Project under the *Environment Effects Act 1978*. Following public exhibition of the EES, public hearings and a report from the independent Avonbank Mineral Sands Inquiry and Advisory Committee, the Minister for Planning announced that the EES had received a favourable assessment in December 2024. The minor utilities corridor, in which the proposed powerline upgrade will sit, has been considered as part of the EES process. Prior to construction of the mine commencing, the Minister's assessment determined that there was residual uncertainty about the potential presence of threatened flora and fauna in the minor utilities corridor and so required further survey work for specific threatened flora and fauna in the minor utilities corridor. This investigation was therefore commissioned to provide information on the existing conditions of native vegetation, listed species and communities within the minor utilities corridor, and documents any proposed impacts and resultant legislative implications.

### 2.2. Planning provisions

Planning provisions are established under the *Victorian Planning and Environment Act 1987* and are incorporated into all Victorian Planning Schemes.

The study area is located within the Horsham Rural City local government area and is covered by the Horsham Planning Scheme.

Relevant planning provisions are discussed below.

#### 2.2.1. Planning policy framework

##### Clause 12.01 - Biodiversity

Clause 12.01 of all Victorian Planning Schemes provides an overarching framework to protect and enhance Victoria's biodiversity. The responsible authority is obligated to refer to Clause 12.01-1S – *Protection of biodiversity*, Cl. 12.01-2S – *Native vegetation management*, Cl. 12.01-1R – *Protection of biodiversity - Wimmera Southern Mallee*, and Cl. 12.01-1L – *Protection of biodiversity - Horsham*. The objectives and strategies relating to the current proposal for each of these relevant Clauses are outlined below.

##### **Clause 12.01-1S – Protection of biodiversity**

The objective of this Clause is to protect and enhance Victoria's biodiversity through the following strategies:

- Use biodiversity information to identify important areas of biodiversity, including key habitat for rare or threatened species and communities, and strategically valuable biodiversity sites.
- Strategically plan for the protection and conservation of Victoria's important areas of biodiversity.
- Ensure that decision making takes into account the impacts of land use and development on Victoria's biodiversity, including consideration of:

- Cumulative impacts.
- Fragmentation of habitat.
- The spread of pest plants, animals and pathogens into natural ecosystems.
- Avoid impacts of land use and development on important areas of biodiversity.
- Consider impacts of any change in land use or development that may affect the biodiversity value of national parks and conservation reserves or nationally and internationally significant sites; including wetlands and wetland wildlife habitat designated under the Convention on Wetlands of International Importance (the Ramsar Convention) and sites utilised by species listed under the Japan-Australia Migratory Birds Agreement (JAMBA), the China-Australia Migratory Birds Agreement (CAMBA), or the Republic of Korea-Australia Migratory Bird Agreement (ROKAMBA).
- Assist in the identification, protection and management of important areas of biodiversity.
- Assist in the establishment, protection and re-establishment of links between important areas of biodiversity, including through a network of green spaces and large-scale native vegetation corridor projects.
- Support land use and development that contributes to protecting and enhancing habitat for indigenous plants and animals in urban areas.

#### **Clause 12.01-2S – *Native vegetation management***

The objective of this Clause is to ensure there is no net loss to biodiversity as a result of removal, destruction or lopping of native vegetation through the following strategies:

- Ensure decisions that involve, or will lead to, the removal, destruction or lopping of native vegetation, apply the three-step approach in accordance with the *Guidelines for the removal, destruction or lopping of native vegetation* (DELWP 2017; ‘the Guidelines’):
  - Avoid the removal, destruction or lopping of native vegetation.
  - Minimise impacts from the removal, destruction or lopping of native vegetation that cannot be avoided.
  - Provide an offset to compensate for the biodiversity impact from the removal, destruction or lopping of native vegetation.

#### **Clause 12.01-1R – *Protection of biodiversity - Wimmera Southern Mallee***

The objective of this Clause is to protect biodiversity within the Wimmera Southern Mallee region through the following strategies:

- Facilitate greater connectivity between areas of medium to high natural value to improve ecosystem resilience.
- Protect and manage environmental assets as cropping expands in the southern parts of the region.

#### **Clause 12.01-1L – *Protection of biodiversity - Horsham***

The objective of this Clause is to protect biodiversity within the Rural City of Horsham through the following strategies:

- Protect and enhance native vegetation, biodiversity and ecological processes and endeavour to achieve no net loss of native vegetation in the municipality.
- Protect remnant vegetation on private land and in road and railway reserves.
- Conserve suitable nesting sites for the Red-tailed Black Cockatoo through the protection of live and dead hollow bearing trees and other suitable trees within the bird's known nesting area.
- Conserve the feeding habitat of the Red-tailed Black Cockatoo through the retention of Buloke and Stringybark trees.

A response of how this application addresses the relevant Clauses is provided in Section 6.2.1.

#### *Clause 12.03 – Water bodies and wetlands*

Clause 12.03 of all Victorian planning schemes provides an overarching framework to protect and enhance waterway systems. The responsible authority is obligated to refer to Clause 12.03-1S - *River and riparian corridors, waterways, lakes, wetlands and billabongs* and Cl. 12.03-1L - *Protection of waterways and wetlands - Horsham*. The objectives and strategies relating to the current proposal for each of these relevant Clauses are outlined below.

#### **Clause 12.03-1S – River and riparian corridors, waterways, lakes, wetlands and billabongs**

The objective of this Clause is to protect and enhance waterway systems including river and riparian corridors, waterways, lakes, wetlands and billabongs through the following strategies relevant to this investigation:

- Protect the environmental, cultural, landscape values of all waterway systems as significant economic, environmental and cultural assets.
- Conserve waterway systems and the landscapes and environmental values surrounding them by protecting ecological values, indigenous vegetation, terrestrial and aquatic habitats and encouraging biodiversity.
- Sensitively design and site development to maintain and enhance the waterway system and the surrounding landscape setting, environmental assets, and ecological and hydrological systems.
- Protect geomorphology, bank stability and flood management capacity to strengthen the environmental value and health of waterway systems by:
  - Retaining, enhancing and re-establishing indigenous riparian vegetation along waterway systems, ensuring it responds to the bushfire risk of a location.
  - Enhancing and re-establishing both terrestrial and aquatic habitats and their linkages along and surrounding waterway systems.
  - Limiting earthworks in proximity to waterway systems to minimise alterations to geomorphology, natural drainage, natural flows and water quality.
  - Facilitating the restoration of waterway systems through the removal of weeds, invasive species and pests.

#### **Clause 12.03-1L - Protection of waterways and wetlands - Horsham**

The objective of this Clause is to protect waterways and wetlands within the Rural City of Horsham through the following strategies relevant to this investigation:

- Protect the environmental significance of waterways and wetlands in the Millicent Coast Basin, Wimmera River Basin and the Glenelg Basin.
- Minimise development impacts on waterways to support a flow regime for recreation, stock and domestic purposes while sustaining viable populations of native flora and fauna.

A response of how this application addresses the relevant clauses is provided in Section 6.2.2.

### 2.2.2. Local planning policies

Local planning policies have been considered and none are relevant to the current investigation. As there are no relevant implications of local planning policies for the current proposal, it is not discussed further in this report.

### 2.2.3. Zoning

The study area is zoned Farming Zone (FZ), Public Conservation and Resource Zone (PCRZ), Public Park and Recreation Zone (PPRZ), Public Use Zone – Education (PUZ2), Special Use Zone - Schedule 9 (SUZ9), Transport Zone 1 (TRZ1) and Transport Zone 2 (TRZ2) in the Horsham Planning Scheme.

The objectives of these zones are not considered relevant to the current investigation. As there are no relevant implications of zoning for the current proposal, it is not discussed further in this report.

### 2.2.4. Overlays

The study area is subject to the following three overlays in the Horsham Planning Scheme which are relevant to this investigation:

- Environmental Significance Overlay – Schedule 3 (ES03)
- Floodway Overlay – Schedule 1 (FO1)
- Landscape Subject to Inundation Overlay – Schedule 1 (LSI01)

The study area is also recognised as a designated Bushfire Prone Area (BPA). No other overlays which cover the study area are relevant to this investigation.

Any permit requirements, relevant application requirements, decision guidelines and implications under these overlays are addressed in Section 6.2.3.

### 2.2.5. Particular provisions – Native vegetation (Clause 52.17)

This report addresses the requirements under Clause 52.17 – *Native vegetation*.

The purpose of Clause 52.17 is to ensure that there is no net loss to biodiversity as a result of the removal, destruction or lopping of native vegetation. This is achieved by applying the following three step approach in accordance with the Guidelines (DELWP 2017).

1. Avoid the removal, destruction or lopping of native vegetation.
2. Minimise impacts from the removal, destruction or lopping of native vegetation that cannot be avoided.
3. Provide an offset to compensate for the biodiversity impact if a permit is granted to remove, destroy or lop native vegetation.

This provision states that a permit is required to remove, destroy or lop native vegetation, including dead native vegetation. This does not apply to the following:

- If an exemption in Table 52.17-7 specifically states that a permit is not required.

- If a native vegetation precinct plan corresponding to the land is incorporated into the planning scheme and listed in the schedule to Clause 52.16.
- The native vegetation is specified in a schedule to Clause 52.17.

In the Minister's EES decision, it is identified that the project may require a planning permit for the removal of any native vegetation inside the minor utilities corridor.

#### *Application requirements*

Any application to remove, destroy or lop native vegetation must comply with the application requirements specified in the Guidelines (DELWP 2017).

#### *Referral to DEECA*

Clause 66.02-2 of the planning scheme determines the role of the Department of Energy, Environment and Climate Action (DEECA) in the assessment of native vegetation removal permit applications. If an application is referred, DEECA may make certain recommendations to the responsible authority in relation to the permit application.

Any application to remove, destroy or lop native vegetation must be referred to DEECA if any of the following apply:

- The impacts to native vegetation fall within the Detailed Assessment Pathway
- A property vegetation plan applies to the site
- The native vegetation is on Crown land that is occupied or managed by the responsible authority

Implications under this particular provision are discussed in Section 6.1.

### **2.3. EPBC Act**

The EPBC Act is legislation designed to protect threatened species, habitats, listed migratory species and ecological communities of national conservation significance. Any significant impacts to these species require the approval of the Australian Minister for the Environment.

In December 2019, WIM Resource referred the project to the Commonwealth (referral 2019/8586) for a determination on whether the project was a controlled action under the EPBC Act. On 3 July 2020, the project was determined to be a controlled action requiring assessment and approval under the EPBC Act because of its potential impacts on matters of national environmental significance (MNES): listed threatened species and communities (sections 18 and 18A) and nuclear actions (s21 and s22A). The project's impacts on MNES were assessed by the accredited EES process, in accordance with the bilateral agreement made between the Australian and Victorian governments under section 45 of the EPBC Act. Therefore, decisions about whether, and under what conditions, to approve the project under the EPBC Act were to be informed by the EES process.

Implications under the EPBC Act for the current proposal are discussed in Section 6.3.

### **2.4. FFG Act**

The FFG Act includes:

- a *Threatened List* (DEECA 2024a)
- a *Declared Protected Flora List* (DEECA 2024b)

The FFG Act applies to all land in Victoria, with public authorities legally required to consider the impacts on threatened species and communities on all land tenures as part of their decision-making. A permit from DEECA is only required if there are to be impacts on FFG Act-listed values on public land.

### *Threatened List*

The *Flora and Fauna Guarantee Act 1988 Threatened List* represents Victoria's single operational list of threatened flora, fauna and communities. Each species is assigned a threatened status which aligns with the listing categories and criteria for the International Union for the Conservation of Nature (IUCN) Red List.

These values should be avoided wherever possible, in recognition of their threatened status at a state level.

Any application for a planning permit may also be assessed by the responsible or referral authority for potential impacts to FFG Act-listed threatened values as part of broader considerations of impacts to biodiversity regardless of land tenure. Under the FFG Act, the removal of FFG Act-listed threatened flora and communities from public land requires a Protected Flora Permit. Impacts to these species should be avoided wherever possible, in recognition of the species' threatened status at the state level.

### *Declared Protected Flora List*

The *Declared Protected Flora List* includes plants from three sources:

- Plant taxa (species, subspecies or varieties) listed as threatened under the FFG Act
- Plant taxa belonging to communities listed as threatened under the FFG Act
- Plant taxa which are not threatened but require protection for other reasons. For example, some species which are attractive or highly sought after, such as orchids, and grass trees, are protected so that the removal of these species from the wild can be controlled (DELWP 2019; DEECA 2024b).

Under the FFG Act, the removal of protected flora from public land requires a Protected Flora Permit. The FFG Act provides two different categories for protected flora species - 'restricted use protected flora', and all other protected flora (referred to as 'generally protected flora'). Removal of 'restricted use protected flora' species only requires a permit when it is impacted by take for commercial or personal use, and as such this list is not relevant to this investigation.

However, a Protected Flora Permit must be obtained from a regional DEECA office for impacts to any 'generally protected flora' on public land for any reason other than commercial or personal use, including impacts arising from this proposal. This permit can only be obtained after the removal of this flora is approved as part of a planning permit.

Implications under the FFG Act for the current proposal are discussed in Section 6.4.

## **2.5. CaLP Act**

The *Catchment and Land Protection Act 1994* (CaLP Act) requires that landowners (or a third party to whom responsibilities have been legally transferred) must eradicate regionally prohibited weeds and prevent the growth and spread of regionally controlled weeds.

Weed species listed under the CaLP Act that have been recorded in the study area are discussed in Section 6.6.

## 3. Existing information, definitions and methods

### 3.1. Existing information

The existing information used for this investigation is described below.

#### 3.1.1. Existing reporting and documentation

The existing documentation below, relating to the study area, was reviewed:

- Horsham Planning Scheme (DTP 2025)
- *Avonbank Mineral Sands Project: Minister's Assessment under Environment Effects Act 1978* (DTP 2024)
- *Avonbank Mineral Sands Project Environment Effects Statement: Appendix P – Flora and Fauna Impact Assessment* (AECOM 2023)
- *Avonbank Mineral Sands Project: Review of biodiversity surveys* (Nature Advisory 2024)
- *Avonbank Mineral Sands Project: Targeted Community Surveys and Updated Native Vegetation Assessments* (Nature Advisory 2025a)
- *Avonbank Mineral Sands Project: Targeted Flora Surveys* (Nature Advisory 2025b)

### 3.2. Definitions

#### *Native vegetation*

*Native vegetation* is currently defined in Clause 73.01 of all Victorian Planning Schemes as '*plants that are indigenous to Victoria, including trees, shrubs, herbs and grasses*'. The Guidelines (DELWP 2017) further classify two categories of native vegetation: patches and scattered trees.

The definitions of these categories are provided below, along with the prescribed DEECA methods of assessment.

#### *Patch*

A *patch* of native vegetation belongs to an *Ecological Vegetation Class* (EVC) characterised in a DEECA-published benchmark, and defined as one of the following:

- An area of vegetation where at least 25% of the total perennial understorey plant cover is native
- Any area with three or more native canopy trees<sup>1</sup> where the drip line<sup>2</sup> of each tree touches the drip line of at least one other tree, forming a continuous canopy
- Any mapped wetland included in the *Current Wetlands Map*, available at *MapShareVic* (DEECA 2025a)

Patch condition is assessed using the *habitat hectare* method (Parkes et al. 2003; DSE 2004b) whereby components of the patch (e.g., tree canopy, understorey and ground cover) are assessed

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<sup>1</sup> A native canopy tree is a mature (i.e., able to flower) tree taller than 3 m and normally found in the upper layer of the relevant vegetation type.

<sup>2</sup> The drip line is the outermost boundary of a tree canopy (leaves and/or branches) where the water drips onto the ground.

against an EVC benchmark. The score effectively measures the percentage resemblance of the vegetation to the original condition.

The *Native Vegetation Regulation Map* (NVR Map) system (DEECA 2025b) provides modelled condition scores for native vegetation to be used in circumstances where scores cannot be obtained.

### Scattered trees

A *scattered tree* may be defined as a native canopy tree that does not form part of a patch. A scattered tree can be classified as *large* or *small* according to its *diameter at breast height* (DBH, measured 1.3 m above ground level) in the relevant EVC benchmark. A scattered tree with a DBH less than the large tree DBH is a *small scattered tree*. A *large tree* is defined as a native canopy tree with a DBH greater than or equal to the large tree benchmark for the local EVC. A large tree can be a large scattered tree or a large tree within a patch of native vegetation.

## 3.3. Desktop methods

### 3.3.1. Native vegetation

Pre-1750 (pre-European settlement) vegetation mapping administered by DEECA was reviewed to determine the type of native vegetation likely to occur in the study area and surrounds. Information on EVCs was obtained from published EVC benchmarks. These sources included the following:

- Relevant EVC benchmarks for the Wimmera bioregion (DSE 2004a)
- *NatureKit* (DEECA 2025c)

### 3.3.2. Threatened species and ecological communities

Existing flora and fauna species records and information regarding the potential occurrence of listed matters were obtained for the ‘search region’, defined here as the area within 10 km of the study area boundary.

A list of the flora and fauna species recorded in the search region was obtained from the *Victorian Biodiversity Atlas* (VBA), a database administered by DEECA.

A list of bird species recorded from the search region was obtained from *eBird*, a citizen science database managed by the Cornell Lab of Ornithology. This database provides the most up-to-date bird species records on a global scale.

The *BatMap* database (Australasian Bat Society 2025) was used to determine whether listed bat species may potentially occur in the search region. *BatMap* is a project developed by the Australasian Bat Society to enable Australia’s bat experts to develop geographic distribution maps for Australian bat species. Given that survey effort between regions has been variable (with little to no survey effort in some areas), Nature Advisory uses a 20-km search radius with *BatMap* to obtain a conservative estimate of potential bat species.

The online EPBC Act-associated *Protected Matters Search Tool* (PMST; DCCEEW 2025b) was consulted to determine whether nationally listed species or communities may potentially occur in the search region. This is based on a habitat modelling process.

A likelihood of occurrence analysis was undertaken using these flora and fauna records in combination with field observations. Species considered ‘likely to occur’ are considered to have a very high potential of occurring in the study area as there are numerous records within the search region and suitable habitat in the study area. Species considered to have the ‘potential to occur’ are those for which suitable habitat exists but recent records are scarce.

### 3.4. Field methods

The current field assessment was conducted on 29 September 2025 to 2 October 2025. During this assessment, previously mapped areas of vegetation within the study area were visited to update the patch extent of the boundary closest to the impact area using a GPS device with greater accuracy (Carlson BRx7 GNSS Receiver; < 0.3 m accuracy).

Patches of the EPBC Act-listed threatened ecological community *Natural Grasslands of the Murray Valley Plains* were verified and the extents confirmed.

Additionally, any new patches of native vegetation recorded were mapped using the Carlson BRx7 GNSS Receiver and underwent a habitat hectare assessment.

#### 3.4.1. EVC determination

Determination of EVCs in the field was based on DEECA's pre-European modelled native vegetation (DEECA 2003b) within or nearby the study area and the methodology outlined in the habitat hectare method (DSE 2004b).

#### 3.4.2. Native vegetation assessments

Habitat hectare assessments were undertaken for all patches of native vegetation identified in the study area. Scattered trees and large trees in patches were counted and mapped, the species and DBH of each was recorded.

#### 3.4.3. Flora species and threatened flora habitat

During the habitat hectare assessments of native vegetation, a list of flora species was made.

The potential for habitats to support listed flora species was assessed based on the following criteria:

- The presence of suitable habitat for flora species such as soil type, floristic associations and landscape context
- The level of disturbance of suitable habitats by anthropogenic disturbances and invasions by pest plants and animals

Wherever appropriate, a precautionary approach was adopted in determining the likelihood of occurrence of flora listed under the EPBC Act and/or FFG Act. That is, where insufficient evidence on the potential occurrence of a listed species was available, it was assumed that the species had the potential to occur.

#### Targeted threatened flora surveys

Targeted surveys for 28 threatened flora species have been undertaken across the areas of potential habitat that fall within the current study area (Nature Advisory 2025b). These surveys were conducted as parallel transects spaced 2–5 m apart by a team of botanists from 7–11 October 29–31 October and 2–6 December 2024 (Nature Advisory 2025b).

#### 3.4.4. Fauna species and habitats

The techniques below were used to detect fauna utilising the study area.

- Incidental searches for mammal scats, tracks and signs (e.g., diggings, signs of feeding and nests/burrows)
- Turning over logs/rocks and other ground debris to find reptiles, frogs and mammals
- Daytime bird observations

- Searches for reptiles and frogs, including identification of frog calls in seasonally wet areas
- Searches for bat habitat, including waterbodies and potential roosting sites such as caves, trees with hollows, and underneath tree bark

The fauna habitats were assessed based on habitat components including old-growth trees, fallen timber, leaf litter and surface rocks.

The habitat connectivity of the study area (i.e., degree of isolation/fragmentation), including linkages to other habitats in the region, was determined using field observations, high-resolution aerial imagery, and *NatureKit* (DEECA 2025c).

Where appropriate, a precautionary approach was adopted in determining the likelihood of occurrence of fauna listed under the EPBC Act and/or FFG Act. That is, where insufficient evidence was available regarding the potential occurrence of a listed species, it was assumed that the species had the potential to occur.

### 3.4.5. Threatened ecological communities

#### *EPBC Act-listed threatened communities*

The likelihood of EPBC Act-listed threatened ecological communities occurring in the study area was determined by the following process:

- Review of the communities modelled to potentially occur in the study area by the EPBC Act *Protected Matters Search Tool* (PMST; DCCEEW 2025b)
- Checking field observations of mapped native vegetation against published descriptions of these communities and assessment against the identification criteria and condition thresholds from the relevant listing advice

#### *FFG Act-listed threatened communities*

The likelihood of FFG Act-listed threatened ecological communities occurring in the study area was determined by the following process:

- Review of the communities modelled to potentially occur within 5 km of the study area (DELWP 2018b)
- Review of any communities without modelled distribution habitat mapping
- Checking field observations against published descriptions of the identified communities (SAC 2015)

### 3.4.6. Limitations

The VBA database and PMST were used to gather preliminary information on the threatened species and ecological communities likely to occur in the study area. There are some inherent limitations in these tools. There may be discrepancies between these records and the current features of the study area and surrounds. The PMST uses predictive modelling of the potential distribution of threatened species and ecological communities that is based on historical records and known ranges and habitat requirements. Therefore, certain species and communities listed by the PMST may not occur in the area. The VBA database contains records of species observed or collected at a particular location. Some locations may have no VBA records, indicating that the area is likely under-surveyed, or otherwise does not support any ecological values. Subsequently, some threatened species that could occur may be absent from the VBA database. To overcome these limitations, the database results were validated by conducting field surveys.

The site assessment was conducted during spring, which is in general considered to be the most optimal time to undertake vegetation assessments. However, the short duration and seasonal timing of site assessments can result in certain species remaining undetected despite their occasional presence.

During the current assessment, most of HZ 13 and 46 that occur along the eastern side of Tuckers Road had been largely denuded (likely due to herbicide application; See Photo 1 and Photo 2 below). The health of native vegetation was very poor, but perennial tussock grasses were still visibly present throughout the habitat zones and were used to update the extent of the habitat zones. Whilst the native vegetation was in very poor health, evidence of new foliar growth was observed (Photo 4) within most of the perennial tussock grasses suggesting that they were not dead.



Photo 1: HZ 46 (Photo taken 26/11/2024)



Photo 2: HZ 46 (Photo taken 30/09/2025)



Photo 3: Rigid Panic tussock in an unimpacted patch of native vegetation



Photo 4: Rigid Panic tussock in an impacted patch of native vegetation

Timing of the survey and condition of vegetation were otherwise considered suitable to ascertain the extent and condition of native vegetation and fauna habitats.

These limitations were not considered to compromise the validity of the investigation as the habitat hectares scoring method has been intentionally designed to account for seasonal and temporal variation within patches of native vegetation, enabling site assessments to occur year-round. This reduces the subjectivity and variability between assessors and minimises the time taken during the assessment process. In most cases, habitat zones will be placed comfortably within a habitat component category that would unlikely change even if additional data was collected during

alternative survey times (DSE 2004b). Furthermore, the intention of this field assessment was not to determine the presence or absence of threatened species within the study area.

Therefore, this investigation accurately addresses the relevant policies and decision guidelines.

## 4. Assessment results

### 4.1. Site description

The study area (Figure 1) supported sandy clay loams on a relatively flat to gently undulating landscape. Two watercourses run through the study area, Two Mile Creek at the southern end of Tuckers Road and the Wimmera River at the southern end of River Wheat Road.

The study area is predominantly comprised of public road reserves and small portions of private property. Surrounding land in all directions supported broadacre cropping and grazing of livestock.

Vegetation in the study area consisted of Floodplain Riparian Woodland (EVC 56), Plains Grassland (EVC 132), Red Gum Swamp (EVC 292), Riverine Chenopod Woodland (EVC 103), Black Box Lignum Woodland (EVC 663) and Plains Savannah (EVC 826) primarily dominated by Rigid Panic, Windmill Grass, wallaby grasses and spear grasses, with few planted trees and shrubs (e.g., eucalypts and acacias) throughout. Portions of DEECA Mapped Wetlands also occur within the study area.

Weeds in the study area were dominated by Oat, Ryegrass and Toowoomba Canary-grass. High threat weeds present included Ox-tongue, Wild Sage, Horehound, Sugar Gum, Spear Thistle and Silver-leaf Nightshade.

Fauna habitat within the study area comprised aquatic, grassland and wooded habitat.

The following key fauna habitat areas occurred within the region:

- Darlot Swamp Wildlife Reserve occurred approximately 1.5 km east of the study area. Native vegetation in the study area was connected to this habitat via Two Mile Creek.
- Dooen Swamp Bushland Reserve occurred approximately 5 km west of the study area. Native vegetation in the study area was connected to this habitat via the Wimmera River.
- Two Mile Creek bisected the study area across Tuckers Road and continued along the western boundary of the study area. Native vegetation in the study area was contiguous with this habitat.
- The Wimmera River bisected the study area in the south-east. Native vegetation in the study area was contiguous with this habitat. The Wimmera River provides an important habitat corridor in the region linking numerous reserves.

The study area lies within the Wimmera Victorian bioregion, the Murray Darling Depression Interim Biogeographical Regionalisation for Australia (IBRA) bioregion, and the Wimmera catchment management area. The study area is located on Wotjobaluk, Jaadwa, Jadawadjali, Wergaia and Jupagulk Country.

### 4.2. Native vegetation

#### 4.2.1. Patches of native vegetation

Pre-European EVC mapping (DEECA 2025c) indicates that the study area and surrounds would have supported Floodplain Riparian Woodland (EVC 56), Low Rises Woodland (EVC 66), Riverine Chenopod Woodland (EVC 103), Plains Grassland (EVC 132), Sand Ridge Woodland (EVC 264), Plains Sedgy Woodland (EVC 283), Cane Grass Wetland (EVC 291), Red Gum Swamp (EVC 292), Riparian Woodland (EVC 641), Lunette Woodland (EVC 662), Black Box Lignum Woodland (EVC 663), Plains Woodland (EVC 803), Lignum Swampy Woodland (EVC 823), Plains Savannah (EVC 826) and Shallow Sands Woodland (EVC 882) prior to European settlement. This is based on modelling of factors including rainfall, aspect, soils and remaining vegetation.

Evidence on site, including floristic composition and soil characteristics, suggested that Vegetation in the study area consisted of Floodplain Riparian Woodland (EVC 56), Riverine Chenopod Woodland (EVC 103), Plains Grassland (EVC 132), Red Gum Swamp (EVC 292), Black Box Lignum Woodland (EVC 663), Plains Woodland (EVC 803) and Plains Savannah (EVC 826) (Figure 1).

A total of 48 patches (referred to herein as *habitat zones*) comprising the abovementioned EVCs were identified in and/or intersecting the study area. This totalled an area of 57.686 ha of native vegetation in patches and included one large tree. Additionally, two DEECA mapped wetlands were recorded in the study area (wetland ID: 19051 & 19053).

The habitat hectare assessment results for these habitat zones are provided in Table 1. More detailed habitat scoring results are presented in Appendix 1. Details of large trees in patches are provided in Appendix 2.

**Table 1: Summary of habitat hectare assessment results**

Habitat zone	EVC	Area (ha)	Condition score (out of 100)	No. of large trees in HZ
4	Plains Grassland (EVC 132)	0.078	19	N/A
5	Plains Grassland (EVC 132)	3.328	49	N/A
6	Plains Grassland (EVC 132)	3.097	32	N/A
9	Floodplain Riparian Woodland (EVC 56)	4.843	65	0
10	Riverine Chenopod Woodland (EVC 103)	0.314	53	0
11	Black Box Lignum Woodland (EVC 663)	0.083	50	1
13	Plains Grassland (EVC 132)	0.374	44	N/A
14	Plains Grassland (EVC 132)	0.763	51	N/A
20	Red Gum Swamp (EVC 292)	0.398	35	N/A
21	Plains Grassland (EVC 132)	0.057	30	N/A
22	DEECA Mapped Wetland	9.083	80	N/A
23	DEECA Mapped Wetland	31.245	80	N/A
24	Black Box Lignum Woodland (EVC 663)	0.444	50	0
34	Plains Grassland (EVC 132)	0.138	51	N/A
35	Plains Grassland (EVC 132)	0.166	17	N/A
36	Plains Grassland (EVC 132)	0.895	17	N/A
46	Plains Grassland (EVC 132)	0.330	44	N/A

Habitat zone	EVC	Area (ha)	Condition score (out of 100)	No. of large trees in HZ
68	Plains Grassland (EVC 132)	0.300	20	N/A
4A	Plains Grassland (EVC 132)	0.061	35	N/A
4C	Plains Grassland (EVC 132)	0.039	21	N/A
4D	Plains Grassland (EVC 132)	0.006	33	N/A
4E	Plains Grassland (EVC 132)	0.004	33	N/A
4F	Plains Grassland (EVC 132)	0.006	14	N/A
4G	Plains Grassland (EVC 132)	0.014	14	N/A
4H	Plains Grassland (EVC 132)	0.016	14	N/A
4I	Plains Grassland (EVC 132)	0.089	14	N/A
4J	Plains Grassland (EVC 132)	0.039	14	N/A
4K	Plains Grassland (EVC 132)	0.025	18	N/A
4L	Plains Grassland (EVC 132)	0.051	35	N/A
4M	Plains Grassland (EVC 132)	0.356	35	N/A
4N	Plains Grassland (EVC 132)	0.014	17	N/A
4O	Plains Grassland (EVC 132)	0.031	35	N/A
4P	Plains Grassland (EVC 132)	0.273	35	N/A
4X	Plains Grassland (EVC 132)	0.006	31	N/A
4Y	Plains Grassland (EVC 132)	0.010	31	N/A
4Z	Plains Grassland (EVC 132)	0.019	31	N/A
4AA	Plains Grassland (EVC 132)	0.063	13	N/A
4AB	Plains Grassland (EVC 132)	0.005	29	N/A
4AC	Plains Woodland (EVC 803)	0.008	19	0
4AD	Plains Grassland (EVC 132)	0.113	34	N/A
4AE	Plains Savannah (EVC 826)	0.057	32	0

Habitat zone	EVC	Area (ha)	Condition score (out of 100)	No. of large trees in HZ
4AF	Plains Savannah (EVC 826)	0.046	32	0
4AG	Plains Savannah (EVC 826)	0.056	35	0
4AH	Floodplain Riparian Woodland (EVC 56)	0.023	18	0
NA12	Plains Grassland (EVC 132)	0.031	16	N/A
NA13a	Plains Grassland (EVC 132)	0.213	16	N/A
NA13b	Plains Grassland (EVC 132)	0.011	16	N/A
NA13c	Plains Grassland (EVC 132)	0.065	16	N/A
<b>Total</b>		<b>57.686</b>		<b>1</b>

#### 4.2.2. Scattered trees

One scattered tree occurred in the study area (Figure 1), specifically the following:

- 1 small scattered Black Box tree (< 70 cm DBH)

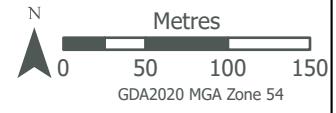
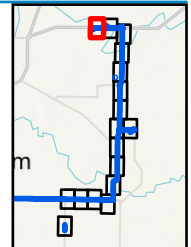
Further details of this scattered are included in Appendix 2.



**Figure 1-1: Native vegetation in the study area**

**Project No:** 23126\_07    **Project:** Avonbank Mineral Sands, VIC    **Date:** 2/12/2025

- Study area
- Native vegetation**
- 132 Plains Grassland



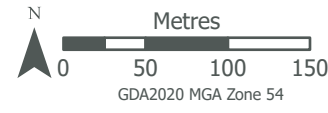
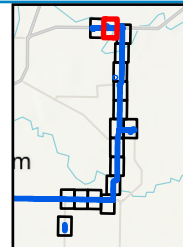
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**Figure 1-2: Native vegetation in the study area**

**Project No:** 23126\_07    **Project:** Avonbank Mineral Sands, VIC    **Date:** 2/12/2025

- Study area
- Native vegetation**
- 132 Plains Grassland



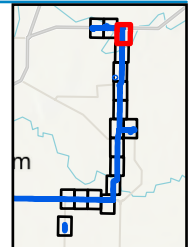
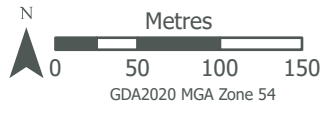
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**Figure 1-3: Native vegetation in the study area**

**Project No:** 23126\_07    **Project:** Avonbank Mineral Sands, VIC    **Date:** 2/12/2025

- Study area
- EPBC community**
- Natural Grasslands of the Murray Valley Plains
- Native vegetation**
- 132 Plains Grassland



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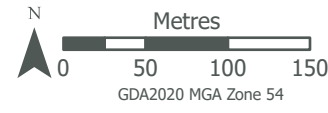
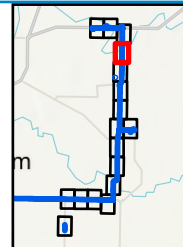


**Figure 1-4: Native vegetation in the study area**

**Project No:** 23126\_07    **Project:** Avonbank Mineral Sands, VIC    **Date:** 2/12/2025

- Study area
- Threatened flora species**
- ☆ Winged New Holland Daisy

- FFG community**
- ☐ Northern Plains Grassland Community
- Native vegetation**
- Small Scattered Tree
- 132 Plains Grassland









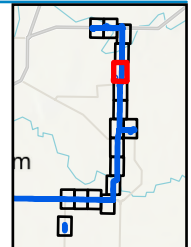
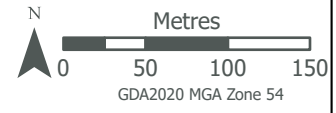
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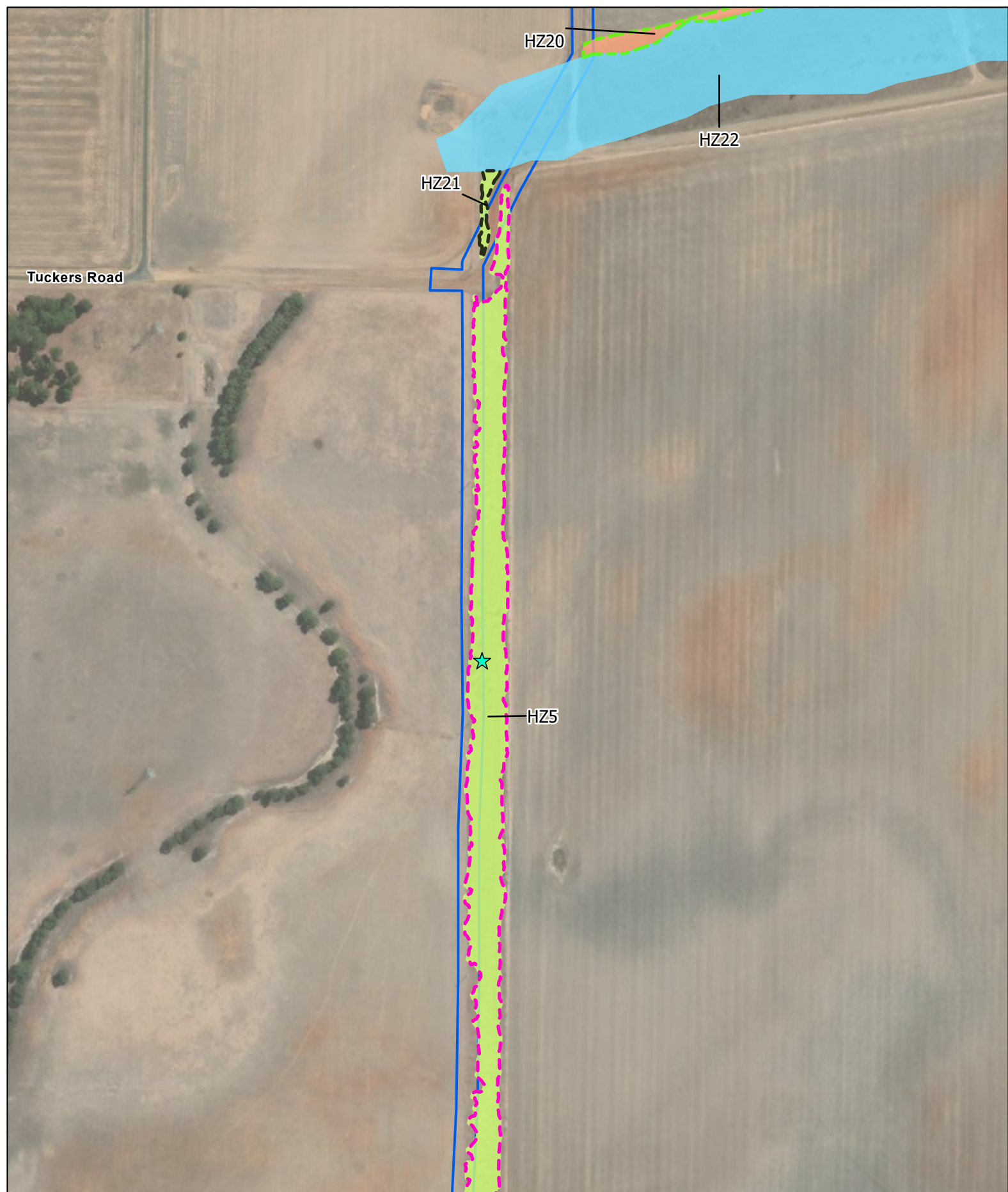
**Figure 1-5: Native vegetation in the study area**

**Project No:** 23126\_07    **Project:** Avonbank Mineral Sands, VIC    **Date:** 2/12/2025

- |   |  |
|---|--|
|  Study area                          | <b>Native vegetation</b>   |
|  Northern Plains Grassland Community |  132 Plains Grassland |
|  Red Gum Swamp Community No.1        |  292 Red Gum Swamp    |
|   |  DEECA Mapped Wetland |



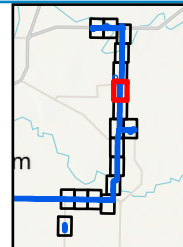
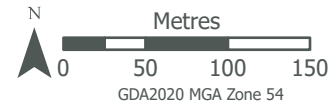
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**Figure 1-6: Native vegetation in the study area**

**Project No:** 23126\_07    **Project:** Avonbank Mineral Sands, VIC    **Date:** 2/12/2025

	FFG community	Native vegetation
Study area	Northern Plains Grassland Community	132 Plains Grassland
<b>Threatened flora species</b>	Red Gum Swamp Community No. 1	292 Red Gum Swamp
Late-flower Flax-lily		DEECA Mapped Wetland
<b>EPBC community</b>		
Natural Grasslands of the Murray Valley Plains		



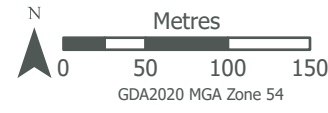
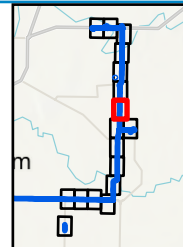
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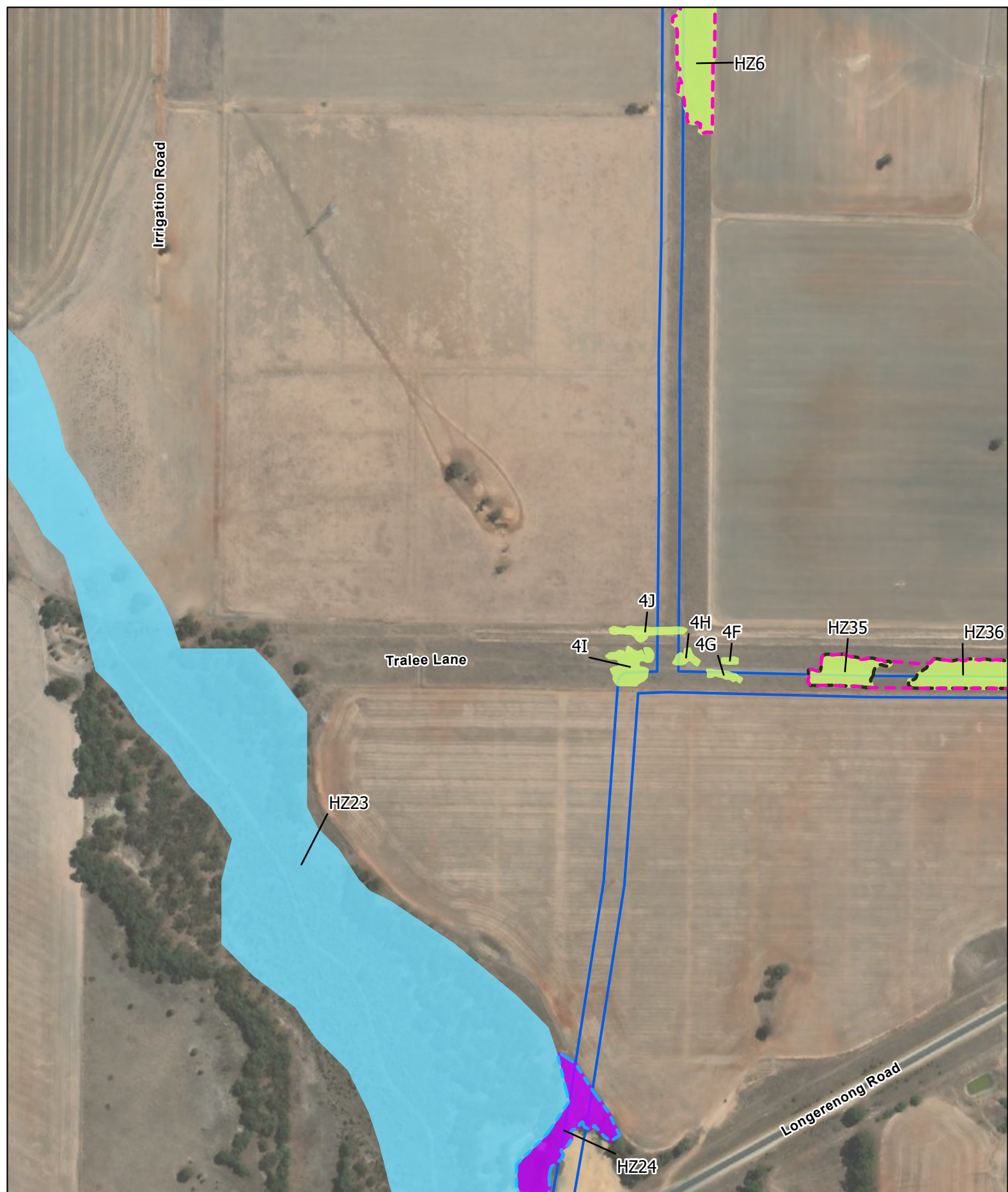
**Figure 1-7: Native vegetation in the study area**

**Project No:** 23126\_07    **Project:** Avonbank Mineral Sands, VIC    **Date:** 2/12/2025

- Study area
- EPBC community**
- 132 Plains Grassland
- Natural Grasslands of the Murray Valley Plains












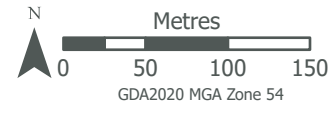
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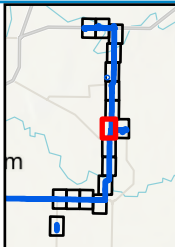
**Figure 1-8: Native vegetation in the study area**

**Project No:** 23126\_07    **Project:** Avonbank Mineral Sands, VIC    **Date:** 2/12/2025

EPBC community		FFG community		Native vegetation	
	Natural Grasslands of the Murray Valley Plains		Northern Plains Grassland Community		132 Plains Grassland
	Victorian Temperate Woodland Bird Community		Victorian Temperate Woodland Bird Community		663 Black Box Lignum Woodland
	Study area		DEECA Mapped Wetland		DEECA Mapped Wetland



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23126\_07 Figure 1: Native vegetation in the study area - Created by: emma - X:\GIS\2023 Jobs\23126\23126\_07\_PowerlineUpgrade\_F&F.aprx

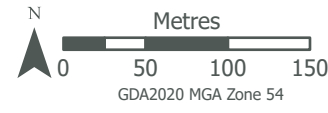
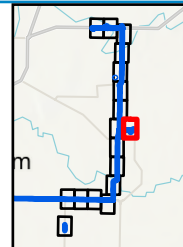


**Figure 1-9: Native vegetation in the study area**

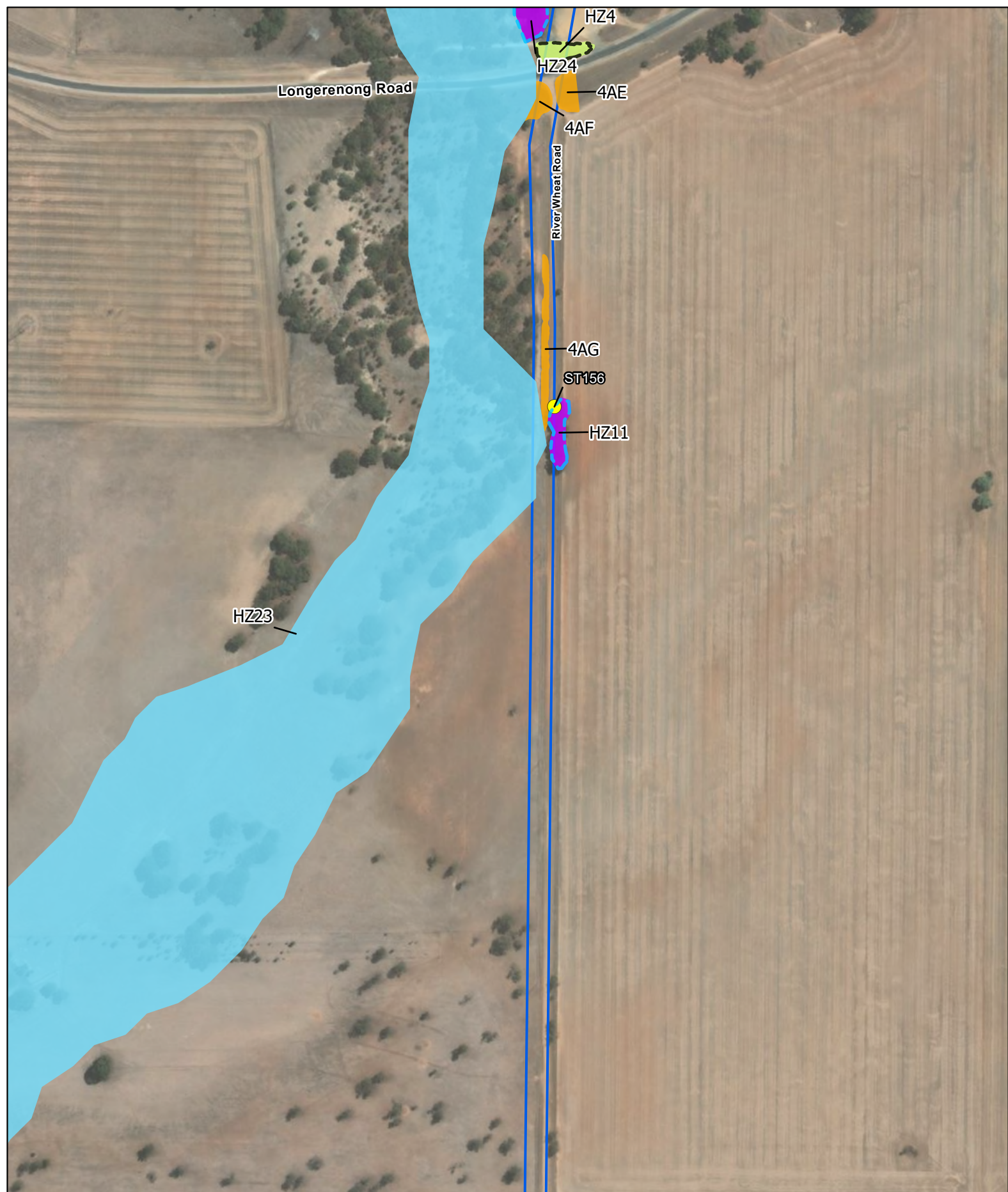
**Project No:** 23126\_07    **Project:** Avonbank Mineral Sands, VIC    **Date:** 2/12/2025

- Study area
- Threatened flora species**
- ★ Club-hair New Holland Daisy
- EPBC community**
- ▭ Natural Grasslands of the Murray Valley Plains

- FFG community**
- ▭ Northern Plains Grassland Community
- Native vegetation**
- 132 Plains Grassland



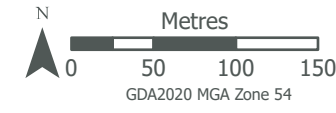
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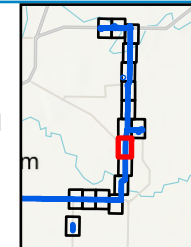
**Figure 1-10: Native vegetation in the study area**

**Project No:** 23126\_07    **Project:** Avonbank Mineral Sands, VIC    **Date:** 2/12/2025

Study area	Victorian Temperate Woodland Bird Community	663 Black Box Lignum Woodland
<b>FFG community</b>	<b>Native vegetation</b>	826 Plains Savannah
Northern Plains Grassland Community	Large Tree in Patch	DEECA Mapped Wetland
	132 Plains Grassland	



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23126\_07 Figure 1: Native vegetation in the study area - Created by: emma - X:\GIS\2023 Jobs\23126\23126\_07\_PowerlineUpgrade\_F&F.aprx

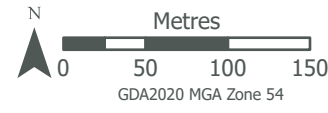
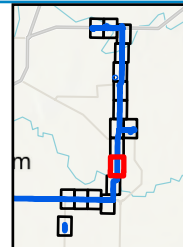


**Figure 1-11: Native vegetation in the study area**

**Project No:** 23126\_07    **Project:** Avonbank Mineral Sands, VIC    **Date:** 2/12/2025

- Study area
- FFG community**
- Victorian Temperate Woodland Bird Community

- Native vegetation**
- 103 Riverine Chenopod Woodland



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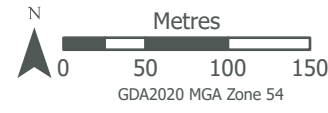
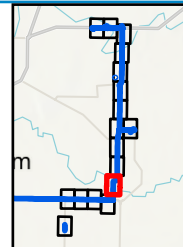


**Figure 1-12: Native vegetation in the study area**

**Project No:** 23126\_07    **Project:** Avonbank Mineral Sands, VIC    **Date:** 2/12/2025

- Study area
- FFG community**
- Victorian Temperate Woodland Bird Community

- Native vegetation**
- 56 Floodplain Riparian Woodland



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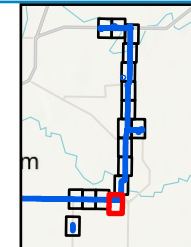
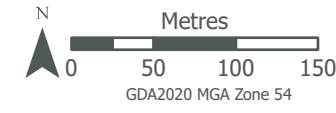
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**Figure 1-13: Native vegetation in the study area**

**Project No:** 23126\_07    **Project:** Avonbank Mineral Sands, VIC    **Date:** 2/12/2025

- Study area
- Native vegetation**
- 132 Plains Grassland



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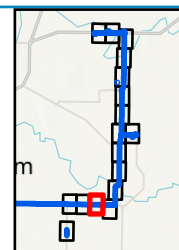
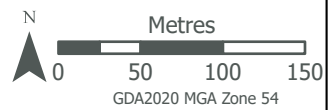
Horsham - Lubeck Road

East Road

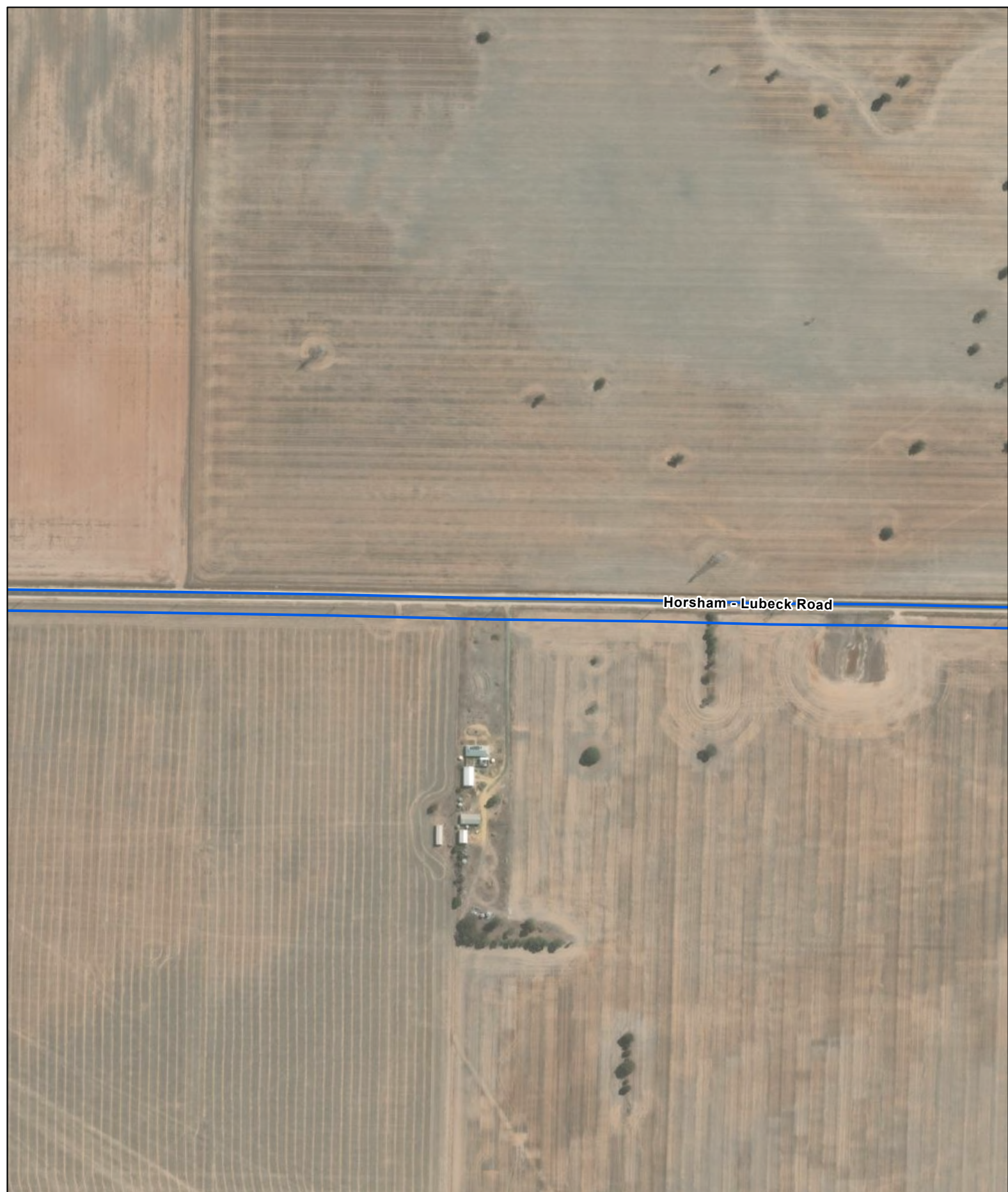
**Figure 1-14: Native vegetation in the study area**

**Project No:** 23126\_07    **Project:** Avonbank Mineral Sands, VIC    **Date:** 2/12/2025

 Study area



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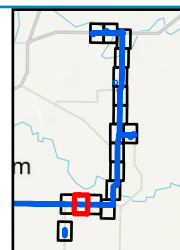
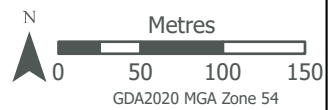


Horsham - Lubeck Road

**Figure 1-15: Native vegetation in the study area**

**Project No:** 23126\_07    **Project:** Avonbank Mineral Sands, VIC    **Date:** 2/12/2025

 Study area



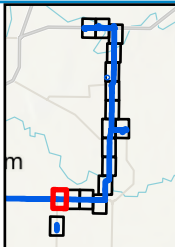
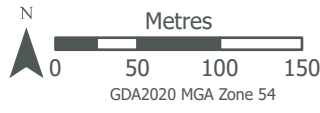
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**Figure 1-16: Native vegetation in the study area**

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 Study area



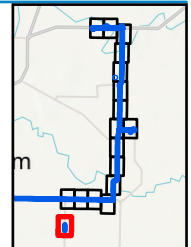
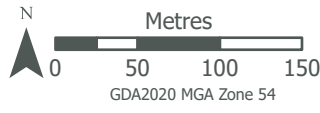
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**Figure 1-17: Native vegetation in the study area**

**Project No:** 23126\_07    **Project:** Avonbank Mineral Sands, VIC    **Date:** 2/12/2025

- Study area
- Native vegetation**
- 803 Plains Woodland



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### 4.3. Flora species

#### 4.3.1. Species recorded

During the field assessments, 103 plant species were recorded, of which 58 (56%) were indigenous and 45 (44%) were introduced or non-indigenous native in origin (Appendix 3).

#### 4.3.2. Listed threatened species

The following five threatened flora species were recorded during field assessments and targeted surveys:

- Buloke *Allocasuarina luehmannii* (FFG Act: Critically Endangered)
- Club-hair New Holland Daisy *Vittadinia condyloides* (FFG Act: Endangered)
- Late-flower Flax-lily *Dianella tarda* (FFG Act: Critically Endangered)
- Swamp Sheoak *Casuarina obesa* (FFG Act: Critically Endangered)
- Winged New Holland Daisy *Vittadinia pterochaeta* (FFG Act: Endangered)

These species are also listed as generally protected under the FFG Act.

The VBA (DEECA 2025d) and Commonwealth EPBC PMST (DCCEEW 2025b) contained records within the search region of 22 threatened flora species listed under the EPBC Act and 50 threatened flora species listed under the Victorian FFG Act, or potential suitable habitat for these species, including 19 species listed under both acts. The likelihood of occurrence of species listed under the EPBC Act and FFG Act in the study area is addressed in Appendix 4.

This analysis indicated that no additional listed flora species than the abovementioned species have the potential to occur.

#### 4.3.3. Listed protected species

The above-listed FFG Act-listed threatened species are also listed as generally protected under the FFG Act. No further generally protected species were recorded in the study area.

### 4.4. Fauna habitats

The study area supported the following three fauna habitat types:

- Aquatic habitat
- Grassland habitat
- Wooded habitat



**Photograph 1: Grassland habitat – remnant roadside native grassland habitat.**



**Photograph 2: Grassland habitat – roadside dominated by exotic pasture grasses.**



**Photograph 3: Aquatic habitat – Wimmera River.**



**Photograph 4: Wooded habitat – remnant canopy trees occurring adjacent to the Wimmera River.**

### *Aquatic habitat*

Aquatic habitat within the study area consisted of the Wimmera River and the ephemeral Two Mile Creek. The section of the Wimmera River that occurred within the study area was slow flowing and turbid at the time of assessment. The presence of fringing and emergent vegetation comprising of Common Reed increases the suitability of this habitat for a range of aquatic fauna species. The Wimmera River is likely used by a range of fauna species including waterbirds, fish, amphibians, reptiles, invertebrates and mammals.

At the time of assessment Two Mile Creek was dry as it is an ephemeral waterbody that flows during times of high rainfall and flooding events. The creek is variously treed along its length. Where it intersects the study area there is a lack of a canopy and is instead dominated by the shrub Tangled Lignum. Two Mile Creek is likely used by a range of fauna species including waterbirds, amphibians, invertebrates and reptiles, particularly while holding water.

### Grassland habitat

Grassland habitat represented the majority of the study area and varied in quality. This habitat comprised a mix of native species including Plump Spear-grass, Rigid Panic and Windmill Grass but was dominated by introduced pasture grasses such as Oat, Toowoomba Canary-grass and Wimmera Rye-grass. Higher quality grassland was present in Habitat Zones 4AD, 5, 6, 35 and 36 as they contained greater species diversity for fauna habitat and resources.

### Wooded habitat

A small proportion of the study area comprised wooded habitat. The highest quality woodlands within the study area occurred around watercourses such as the Wimmera River and Two Mile Creek. The dominant tree throughout these wooded areas was Black Box with occurrences of River Red-gum and the understorey comprised a mixture of shrubs including Gold-dust Wattle, Sweet Bursaria, Honey-myrtle and Weeping Myall with a combination of native and exotic herbs, forbs and grasses within the ground layer.

## 4.5. Fauna species

### 4.5.1. Species recorded

The field assessment detected 19 fauna species. This included 21 bird (4 introduced), 2 mammal (both introduced) and 1 reptile species (Appendix 5).

### 4.5.2. Listed species

No listed fauna species were recorded during the field survey.

The VBA (DEECA 2025d) and EPBC PMST (DCCEEW 2025b) were reviewed for records made within the search region. This indicated that there was potential suitable habitat for 44 species listed under the EPBC Act and 57 listed under the Victorian FFG Act, with 31 of these listed under both acts. The likelihood of occurrence of species listed under the EPBC Act and FFG Act in the study area is addressed in Appendix 6.

This analysis indicates that the following 24 listed fauna species have the potential to occur:

- Australasian Shoveler *Spatula rhynchotis* (FFG Act: Vulnerable)
- Black Falcon *Falco subniger* (FFG Act: Critically Endangered)
- Blue-winged Parrot *Neophema chrysostoma* (EPBC Act: Vulnerable)
- Brown Treecreeper *Climacteris picumnus* (EPBC Act: Vulnerable)
- Bush Stone-curlew *Burhinus grallarius* (FFG Act: Critically Endangered)
- Common Greenshank *Tringa nebularia* (EPBC Act: Endangered & Migratory; FFG Act: Endangered)
- Diamond Dove *Geopelia cuneata* (FFG Act: Vulnerable)
- Diamond Firetail *Stagonopleura guttata* (EPBC Act: Vulnerable; FFG Act: Vulnerable)
- Eastern Great Egret *Ardea alba modesta* (FFG Act: Vulnerable)
- Fork-tailed Swift *Apus pacificus* (EPBC Act: Migratory)
- Freckled Duck *Stictonetta naevosa* (FFG Act: Endangered)
- Freshwater Catfish *Tandanus tandanus* (FFG Act: Endangered)

- Glossy Ibis *Plegadis falcinellus* (EPBC Act: Migratory)
- Hooded Robin *Melanodryas cucullata cucullata* (EPBC Act: Endangered; FFG Act: Vulnerable)
- Little Eagle *Hieraaetus morphnoides* (FFG Act: Vulnerable)
- Murray Cod *Maccullochella peelii* (EPBC Act: Vulnerable; FFG Act: Endangered)
- Musk Duck *Biziura lobata* (FFG Act: Vulnerable)
- Platypus *Ornithorhynchus anatinus* (FFG Act: Vulnerable)
- Sharp-tailed Sandpiper *Calidris acuminata* (EPBC Act: Vulnerable & Migratory)
- Silver Perch *Bidyanus bidyanus* (EPBC Act: Endangered; FFG Act: Endangered)
- Southern Whiteface *Aphelocephala leucopsis* (EPBC Act: Vulnerable)
- Square-tailed Kite *Lophoictinia isura* (FFG Act: Vulnerable)
- White-bellied Sea-Eagle *Haliaeetus leucogaster* (EPBC Act: Migratory; FFG Act: Endangered)
- White-throated Needletail *Hirundapus caudacutus* (EPBC Act: Vulnerable & Migratory; FFG Act: Vulnerable)

#### Targeted survey results

Targeted surveys were undertaken for the following four listed fauna species (AECOM 2023):

- Striped Legless Lizard *Delma impar* (EPBC Act: Vulnerable; FFG Act: Endangered)
- Golden Sun Moth *Synemon plana* (EPBC Act: Vulnerable; FFG Act: Vulnerable)
- Pale Sun Moth *Synemon selene* (FFG Act: Endangered)
- Reddish-orange Sun Moth *Synemon jcaria* (FFG Act: Endangered)

No listed fauna species were recorded during targeted surveys and these species are now considered unlikely to occur.

## 4.6. Threatened ecological communities

### EPBC Act-listed communities

The EPBC PMST (DCCEE 2025b) indicated that seven threatened ecological communities listed under the EPBC Act had the potential to occur in the search region (Table 2). Of these, one was recorded within the study area (Table 2).

**Table 2: EPBC Act-listed threatened ecological communities and likelihood of occurrence in the study area**

Ecological community	EPBC status	Occurrence in the study area
Buloke Woodlands of the Riverina and Murray-Darling Depression Bioregions	Endangered	<b>Unlikely to occur within the study area.</b> No vegetation recorded in the study area is currently or was previously dominated by Buloke.
Grey Box ( <i>Eucalyptus microcarpa</i> ) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia	Endangered	<b>Does not occur within the study area.</b> No Grey Box recorded. Grey Box was not deemed to not be currently or previously (co-)dominant in the study area.

Ecological community	EPBC status	Occurrence in the study area
Mallee Bird Community of the Murray Darling Depression Bioregion	Endangered	<b>Does not occur within the study area.</b> No mallee growth form eucalypts recorded in the study area.
Natural Grasslands of the Murray Valley Plains	Critically Endangered	A total of 7.598 ha occurs within the study area in Habitat Zones 4AD, 5, 6, 35 and 36. Refer to the section below for a detailed justification.
Plains mallee box woodlands of the Murray Darling Depression, Riverina and Naracoorte Coastal Plain Bioregions	Critically Endangered	<b>Does not occur within the study area.</b> No mallee growth form eucalypts recorded in the study area.
Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains	Critically Endangered	<b>Does not occur within the study area.</b> No wetland vegetation recorded in the study area.
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered	<b>Does not occur within the study area.</b> No White Box, Yellow Box and/or Blakely's Red Gum recorded in study area. These species were not deemed to not be currently or previously (co-)dominant in the study area.

**Notes: EPBC status** = conservation status under the EPBC Act. Grey shading indicates threatened ecological communities recorded or with potential to occur within the study area.

The following threatened ecological community was recorded in the study area. A justification for the presence of this community is provided below.

- Natural Grasslands of the Murray Valley Plains (EPBC Act: Critically Endangered) - a total of 7.598 ha of this listed community was recorded in the study area. Native vegetation met the description, key diagnostic characteristics and the following condition thresholds (TSSC 2012):
  - The percentage cover of native vascular plants (annual and perennial) in the patch is greater than the percentage cover of perennial exotic species.
  - AND
  - Category A:
    - 15 or more native vascular plant species are present in the patch; AND
    - The patch contains one or more indicator species, characteristic of sites that are relatively undisturbed (e.g. have little to no history of cultivation); AND
    - The size of the grassland patch is at least 0.04 ha or more in size.
  - OR
  - Category B:
    - 10 or more native vascular plant species are present in the patch; AND
    - The size of the grassland patch is at least 1 ha or more in size.

Table 3 below indicates the way in which each of these patches qualified as *Natural Grasslands of the Murray Valley Plains* (NGMVP).

**Table 3: Key diagnostic characteristic and condition thresholds of Natural Grasslands of the Murray Valley Plains for each of the patches that qualified as the community.**

Habitat Zone	General description of vegetation and landform against key diagnostic characteristics	Condition threshold 1 – Cover of native vs perennial exotic species	Condition threshold 2 - Native species present (indicator species shown in bold)	Condition threshold 3 - Area (ha)	Distinction from derived grassland	Qualification as Natural Grasslands of the Murray Valley Plains
HZ5	This patch occurred in the Murray Darling Depression IBRA bioregion, which is one of the bioregions where NGMVP is listed to occur. It occurred on clay loam soil, which is in line with most occurrences of NGMVP. It was dominated by the native grass genera <i>Austrostipa</i> and <i>Rytidosperma</i> , which again indicates NGMVP is present. Shrub and tree cover was less than 1%, which is another key diagnostic characteristic for NGMVP.	Cover of native species was 44%, whereas exotic cover was 40%. Furthermore, many exotic species were annual rather than perennial.  <b>The cover of native species is greater than that of perennial exotic species.</b>	<i>Austrostipa</i> sp., <i>Austrostipa aristiglumis</i> , <i>Walwhalleya proluta</i> , <i>Rytidosperma</i> sp. 1, <i>Rytidosperma</i> sp. 2, <b><i>Maireana</i></b> sp., <i>Duma floribunda</i> , <i>Eryngium</i> sp., <i>Convolvulus angustissimus</i> , <i>Euphorbia dallychana</i> , <i>Calocephalus citreus</i> , <i>Chrysocephalum</i> sp., <i>Ptilotus macrocephalus</i> , <i>Sida corrugata</i> , <i>Oxalis</i> sp., <i>Haloragis</i> sp.  <b>This equates to 17 species including an indicator species, above the 10 required to qualify as the community.</b>	1.749  <b>This value is greater than 1 ha.</b>	Analysis of historic aerial imagery indicated that the patch has not had any canopy cover in recent decades. Furthermore, it contained <i>Maireana enchylaenoides</i> , which is indicative of a high-quality remnant patch of NGMVP.	Qualifies as NGMVP under both category A and B.
HZ6	This patch occurred in the Murray Darling Depression IBRA bioregion, which is one of the bioregions where NGMVP is listed to occur. It occurred on clay loam soil, which is in line with most occurrences of NGMVP. It was dominated by the native grass genera <i>Austrostipa</i> and <i>Rytidosperma</i> , which again indicates NGMVP is present. Shrub and tree cover was less than 1%, which is another key diagnostic characteristic for NGMVP.	Cover of native species was 44%, while cover of exotic species was above 50%. However, the dominant weedy species was Oat ( <i>Avena</i> sp.), which is an annual species. Other annual weeds were present too, meaning that the perennial cover of exotic species was well below 44%.  <b>As such, the cover of native species is greater than that of perennial exotic species.</b>	<i>Austrostipa</i> sp., <i>Austrostipa aristiglumis</i> , <i>Walwhalleya proluta</i> , <i>Rytidosperma</i> sp. 1, <i>Rytidosperma</i> sp. 2, <b><i>Maireana enchylaenoides</i></b> , <i>Maireana</i> sp., <i>Duma floribunda</i> , <i>Eryngium</i> sp., <i>Convolvulus angustissimus</i> , <i>Oxalis</i> sp., <i>Haloragis</i> sp., <i>Convolvulus wimmerensis</i> , <i>Asperula conferta</i> , <i>Sida corrugata</i> .  <b>This equates to 15 species including an indicator species, above the 10 required to qualify as the community.</b>	2.426  <b>This value is greater than 1 ha.</b>	Analysis of historic aerial imagery indicated that the patch has not had any canopy cover in recent decades. Furthermore, it contained <i>Maireana enchylaenoides</i> , which is indicative of a high-quality remnant patch of NGMVP.	Qualifies as NGMVP under both category A and B.
HZ35	This patch occurred in the Murray Darling Depression IBRA bioregion, which is one of the bioregions where NGMVP is listed to occur. It occurred on clay loam soil, which is in line with most occurrences of NGMVP. It was dominated by the native grass genera <i>Austrostipa</i> , <i>Enteropogon</i> and <i>Rytidosperma</i> , which again indicates NGMVP is present. Shrub and tree cover was less than 1%, which is another key diagnostic characteristic for NGMVP.	Cover of native species in this patch was 22%, whereas cover of exotic weeds was more than 50%. However, the dominant species was Oat ( <i>Avena</i> sp.). In fact, only one perennial exotic species was present (Toowoomba Canary-grass). This was not dominant and its cover was less than 22%.  <b>As such, the cover of native species is greater than that of perennial exotic species.</b>	<i>Chloris truncata</i> , <i>Rytidosperma</i> sp. 1, <i>Rytidosperma</i> sp. 2, <i>Austrostipa</i> sp. 1, <i>Austrostipa</i> sp. 2, <i>Juncus</i> sp., <i>Enteropogon acicularis</i> , <i>Distichlis distichophila</i> , <b><i>Maireana enchylaenoides</i></b> , <i>Sida corrugata</i> , <i>Convolvulus</i> sp., <i>Convolvulus angustissimus</i> , <i>Atriplex semibaccata</i> , <i>Vittadinia</i> sp., <i>Eryngium</i> sp., <i>Oxalis</i> sp., <i>Wahlenbergia</i> sp., <i>Euphorbia dallychana</i> and <i>Senecio quadridentatus</i> .  <b>This equates to 19 species including an indicator species, above the 10 required to qualify as the community.</b>	1.065 – note that HZ35 and HZ36 are connected under the guidelines for the community, as they are only separated by small-scale disturbance, so are considered the same patch when assessing the occurrence of the community.  <b>This is above the condition threshold of 1 ha so qualifies as the community.</b>	Analysis of historic aerial imagery indicated that the patch has not had any canopy cover in recent decades. Furthermore, it contained <i>Maireana enchylaenoides</i> , which is indicative of a high-quality remnant patch of NGMVP.	Qualifies as NGMVP under both category A and B.
HZ36	This patch occurred in the Murray Darling Depression IBRA bioregion, which is one of the bioregions where NGMVP is listed to occur. It occurred on clay loam soil, which is in line with most occurrences of NGMVP. It was dominated by the native grass genera <i>Austrostipa</i> , <i>Chloris</i> , <i>Enteropogon</i> and <i>Rytidosperma</i> , which again indicates NGMVP is present. Shrub and tree cover was less than 1%, which is another key diagnostic characteristic for NGMVP.	Cover of native species in this patch was 22%, whereas cover of exotic weeds was more than 50%. However, the dominant species was Oat ( <i>Avena</i> sp.). Whilst three perennial exotic species were present (Horehound, Toowoomba Canary-grass and Silver-leaf Nightshade). None of these species were dominant and their cover was less than 22%.	<i>Chloris truncata</i> , <i>Rytidosperma</i> sp. 1, <i>Rytidosperma</i> sp. 2, <i>Austrostipa</i> sp. 1, <i>Austrostipa</i> sp. 2, <i>Juncus</i> sp., <i>Enteropogon acicularis</i> , <i>Distichlis distichophila</i> , <b><i>Maireana enchylaenoides</i></b> , <i>Sida corrugata</i> , <i>Convolvulus</i> sp., <i>Convolvulus angustissimus</i> , <i>Atriplex semibaccata</i> , <i>Vittadinia</i> sp., <i>Eryngium</i> sp., <i>Oxalis</i> sp., <i>Wahlenbergia</i> sp., <i>Euphorbia dallychana</i> and <i>Senecio quadridentatus</i> .	1.065 – note that HZ35 and HZ36 are connected under the guidelines for the community, as they are only separated by small-scale disturbance, so are considered the same patch when assessing the occurrence of the community.	Analysis of historic aerial imagery indicated that the patch has not had any canopy cover in recent decades. Furthermore, it contained <i>Maireana enchylaenoides</i> , which is indicative of a high-quality remnant patch of NGMVP.	Qualifies as NGMVP under both category A and B.

Habitat Zone	General description of vegetation and landform against key diagnostic characteristics	Condition threshold 1 – Cover of native vs perennial exotic species	Condition threshold 2 - Native species present (indicator species shown in bold)	Condition threshold 3 - Area (ha)	Distinction from derived grassland	Qualification as Natural Grasslands of the Murray Valley Plains
		<b>As such, the cover of native species is greater than that of perennial exotic species.</b>	<b>This equates to 19 species including an indicator species, above the 10 required to qualify as the community.</b>	<b>This is above the condition threshold of 1 ha so qualifies as the community.</b>		
<b>HZ4AD</b>	This patch occurred in the Murray Darling Depression IBRA bioregion, which is one of the bioregions where NGMVP is listed to occur. It occurred on clay loam soil, which is in line with most occurrences of NGMVP. It was dominated by the native grass genera <i>Austrostipa</i> , <i>Chloris</i> , <i>Enteropogon</i> and <i>Rytidosperma</i> , which again indicates NGMVP is present. Shrub and tree cover was less than 1%, which is another key diagnostic characteristic for NGMVP.	Cover of native species was 23%, while cover of exotic species was also 23%. However, some of the exotic species were annual, including the two dominant weeds, Oat ( <i>Avena</i> sp.) and Rye ( <i>Lolium</i> sp.).  <b>As such, the cover of native species is greater than that of perennial exotic species.</b>	<i>Chloris truncata</i> , <i>Rytidosperma</i> sp. 1, <i>Rytidosperma</i> sp. 2, <i>Austrostipa</i> sp. 1, <i>Austrostipa</i> sp. 2, <i>Walwhalleya proluta</i> , <i>Lachnagrostis</i> sp., <i>Enteropogon acicularis</i> , <b><i>Maireana enchyalaenoides</i></b> , <i>Maireana</i> sp., <i>Atriplex semibaccata</i> , <i>Enchylaena tomentosa</i> and <i>Vittadinia</i> sp.  <b>This equates to 13 species including an indicator species, above the 10 required to qualify as the community.</b>	0.113 ha of the community occurs within the study area.  This habitat zone is connected to a larger area (>1 ha) of the ecological community, along the Wimmera Highway, that occurs outside of the study area.  <b>Total patch size value is greater than 1 ha.</b>	Analysis of historic aerial imagery indicated that the patch has not had any canopy cover in recent decades. Furthermore, it contained <i>Maireana enchyalaenoides</i> , which is indicative of a high-quality remnant patch of NGMVP.	Qualifies as NGMVP under category B.

### *FFG Act-listed communities*

Three threatened ecological communities listed under the FFG Act were recorded in the study area (Table 4). Occurrence of these communities in the study area was determined based on an assessment of the fauna assemblage or native vegetation present against published descriptions of these communities (SAC 2015).

**Table 4: FFG Act-listed threatened ecological communities and likelihood of occurrence in the study area**

Ecological community	Occurrence in the study area
Northern Plains Grassland Community	<b>Previously recorded within the study area</b> by AECOM (2023). A total of 1.900 ha of the listed community was recorded in the study area (Habitat Zones 4, 13, 21, 25, 35, 36 and 46)
Red Gum Swamp Community No. 1	<b>Previously recorded within the study area</b> by AECOM (2023). A total of 0.398 ha of the listed community was recorded in the study area (Habitat Zone 20).
Victorian temperate woodland bird community	<b>Previously recorded within the study area</b> by EA and AECOM (2023). A total of 5.708 ha of the listed community was recorded in the study area (Habitat Zones 9, 10, 11 and 24).

## 5. Impact assessment

### 5.1. Proposed development

The proposal involves upgrade of the existing 22 kV distribution line to a 66 kV power line between the Horsham Terminal Station and the WIM Base Area (WBA). More specifically, some new poles and some pole upgrades are required along the existing distribution line to accommodate the upgrade and meet clearance, span geometry and structural loading standards. Minor adjustments were also made to the proposed work areas to ensure safe access to each pole and facilitate lifting and stringing equipment.

Powercor have provided the following description of the construction works and associated environmental mitigation measures:

#### *Description of works to install a new pole, and mitigation measures:*

##### **Construction works:**

- Pole is landed within the construction zone with the end of the pole on the ground and a pole support  $\frac{3}{4}$  of the way along the pole so the head of the pole is approx. 1m off the ground
- The pole is pre-fabricated with x-arms, insulators, and associated materials attached
- The pole hole is bored (750 mm diameter) with the excavated material deposited around the hole (Direct disturbance area)
- Pole Erection and Removal Unit (PERU) is located adjacent to the pole hole ready to support the pole once lifted into position
- Pole is lifted by crane and located in the pole hole
- Pole hole is backfilled with crushed rock to a certain depth, and then backfilled with excavated material. Excess material is removed from site
- Conductors are run-out from a cable unit which drives along the length of the line route.
- Elevating Platform Vehicles (EPV) are located within the construction zone to “tie-in” conductors to the pole top
- Conductors are lifted into position by crane and tied-in.

##### **Mitigation measures**

- Where possible, pole locations will be micro-sited within the 20 x 8 m works area to further minimise impacts to native vegetation, flora and fauna where possible.
- Vehicle access restricted to construction areas indicated within Figure 2
- No go zone fencing will be installed where required
- Vehicles will access private property and reach out over the fence where this can be negotiated
- Stabiliser Pads will be used on out-riggers to spread the weight of the vehicle
- Vehicles will be located on already disturbed areas or on road hard shoulder where “reach” can be achieved
- Cranes with available “reach” will be used to lift poles and conductors, with plant located on the roadway or hard shoulder

- Diesel vehicles will be used and left running for 10 minutes prior to works commencing to allow fauna to move from the site.
- Disturbance will be uni-directional (e.g. north-to south or south-to north along a road reserve ) to allow fauna to passively move away from the disturbance footprint.
- Protocols and contingency measures to manage any injured or displaced fauna during construction will be implemented e.g. a suitably qualified ecologist with a Management Authorisation to conduct pre-clearance checks or relocate fauna if required.
- All mitigation measures will be communicated with all site personnel prior to undertaking works.

#### *Description of works to remove a pole and mitigation measures:*

##### **Construction works:**

- Elevating Platform Vehicles (EPV) will be located within the construction zone to “un-tie” conductors from pole top
- Conductors are lifted away from pole by crane.
- Pole removal:
  - For wood poles usually poles can be “pushed” around in the pole hole to make it big enough to “pluck” the pole out of the ground
  - For concrete poles, usually poles need to be dug out via excavators/backhoes/non-destructive excavation
- For pole removal, the old pole is placed on the back of a trailer and taken from site and the hole backfilled with available material (could be excess material from other pole holes or introduced “fill” material).
- For replacement poles, new pole is installed in position as per above.

##### **Mitigation measures**

- Vehicle access restricted to construction areas indicated within Figure 2
- No go zone fencing will be installed where required
- Vehicles will access private property and reach out over the fence where this can be negotiated
- Stabiliser Pads will be used on out-riggers to spread the weight of the vehicle
- Vehicles will be located on already disturbed areas or on road hard shoulder where “reach” can be achieved
- Cranes with available “reach” will be used to lift poles and conductors, with plant located on the roadway or hard shoulder
- Diesel vehicles will be used and left running for 10 minutes prior to works commencing to allow fauna to move from the site.
- Disturbance will be uni-directional (e.g. north-to south or south-to north along a road reserve)
- to allow fauna to passively move away from the disturbance footprint.

- Protocols and contingency measures to manage any injured or displaced fauna during construction will be implemented e.g. a suitably qualified ecologist with a Management Authorisation to conduct pre-clearance checks or relocate fauna if required.
- Excavated material will be used to backfill holes or “clean” material brought in.
- All mitigation measures will be communicated with all site personnel prior to undertaking works.

*Description of works for pole top works and mitigation measures:*

**Construction works:**

- Elevating Platform Vehicles (EPV) located within the construction zone to access pole top
- Conductors are lifted away from pole by crane if required.
- Works completed and conductors returned to pole top

**Mitigation measures**

- Vehicle access restricted to construction areas indicated within Figure 2
- No go zone fencing will be installed where required
- Vehicles will access private property and reach out over the fence where this can be negotiated
- Stabiliser Pads will be used on out-riggers to spread the weight of the vehicle
- Vehicles will be located on already disturbed areas or on road hard shoulder where “reach” can be achieved
- Cranes with available “reach” will be used to lift poles and conductors, with plant located on the roadway or hard shoulder
- Diesel vehicles will be used and left running for 10 minutes prior to works commencing to allow fauna to move from the site.
- All mitigation measures will be communicated with all site personnel prior to undertaking works.

*Description of works for stringing new line and mitigation measures:*

**Construction works:**

- Pole is in position
- Conductors are run-out from a cable unit which drives along the length of the line route corridor along the corridor between poles
- Elevating Platform Vehicles (EPV) are located within the construction zone to “tie-in” conductors to the pole top
- Conductors are lifted into position by crane
- Conductors are pulled up to tension via a cable recovery unit and tied-in.

**Mitigation measures**

- Vehicle access restricted to construction areas indicated within Figure 2
- No go zone fencing will be installed where required

- Vehicles will access private property and reach out over the fence where this can be negotiated
- Stabiliser Pads will be used on out-riggers to spread the weight of the vehicle
- Vehicles will be located on already disturbed areas or on road hard shoulder where “reach” can be achieved
- Cranes with available “reach” will be used to lift poles and conductors, with plant located on the roadway or hard shoulder Diesel vehicles will be used and left running for 10 minutes prior to works commencing to allow fauna to move from the site.
- All mitigation measures will be communicated with all site personnel prior to undertaking works.

#### **5.1.1. Impacts on native vegetation**

The proposed development will result in the loss of a total of 1.305 ha of native vegetation under the Guidelines, as represented in Figure 2 and documented in the Native Vegetation Removal (NVR) report provided by DEECA (Appendix 8). Exemptions to Clause 52.17 have been considered in the total impacts to native vegetation (see Section 6.1.1).

To account for impacts to native vegetation, a precautionary approach was undertaken. Direct disturbance at each pole location is limited to a  $\sim 1 \times 1$  metre bore hole required for pole installation. Therefore, the majority of impacts accounted for are temporary disturbance areas to be used for vehicle positioning and construction activities. These impacts include:

- A nominal 20 x 8 metre work zone around the pole location to allow for safe plant operation and vehicle access; and
- Temporary vehicle access corridors, where poles cannot be reached from adjacent cleared land.

The resulting Impacts to native vegetation comprise the following:

- 1.305 ha of native vegetation in patches (including no large trees in patches)

The majority of the native vegetation accounted for in these impacts is anticipated to remain unaffected, owing to the implementation of construction mitigation measures designed to restrict disturbance to the minimum extent practicable. Areas subject to temporary disturbance will be rehabilitated through the reinstatement of soil profiles, facilitation of natural regeneration via sensitive weed management, and, where natural recolonisation is inadequate, the direct seeding of grasses consistent with the relevant EVC.

Photographs of native vegetation proposed for removal are provided in Appendix 7.

Refer to Section 6.1 for implications under Clause 52.17.

#### **5.1.2. Impacts to listed flora species**

None of the listed flora species recorded during the site assessments and targeted surveys are proposed to be impacted.

Additionally, the likelihood of occurrence analysis of species listed under the EPBC Act and FFG Act indicated that no additional listed flora species have the potential to occur within the study area. Therefore, no listed flora species are considered to be susceptible to impacts from the proposal.

### 5.1.3. Impacts on listed fauna

The likelihood of occurrence analysis indicated that 24 listed fauna species are ‘likely to occur’ or ‘have the potential to occur’. For each of these species, a susceptibility and impact assessment was undertaken, as summarised in Table 5. This analysis considered the mobility of each species and the availability of other suitable habitat in the region. This informs the degree to which each species may rely on habitat in the study area and its susceptibility to the proposed development.

**Table 5: Susceptibility of listed fauna species**

Name	Conservation Status		Susceptibility analysis	Implications
	EPBC	FFG		
<b>Birds (non-migratory)</b>				
Australasian Shoveler		Vulnerable	No loss of suitable wetland habitat in the development extent.	No implications.
Black Falcon		Critically Endangered	Loss of open (likely non-breeding) habitat will not affect wide-ranging mobile population.	No implications.
Blue-winged Parrot	Vulnerable		Extensive cropland unlikely to represent important habitat and grassland to be removed is likely of limited use.	No implications.
Brown Treecreeper	Vulnerable		Suitable eucalypt woodland habitat is not proposed to be impacted by the development and is therefore not considered to be susceptible to impacts.	No implications.
Bush Stone-curlew		Critically Endangered		No implications.
Diamond Dove		Vulnerable		No implications.
Diamond Firetail	Vulnerable	Vulnerable		No implications.
Eastern Great Egret		Vulnerable	No loss of suitable wetland habitat in the development extent.	No implications.
Freckled Duck		Endangered	The extent of lignum swamp habitat proposed to be impacted by the development is limited and unlikely to represent important habitat.	No implications.
Hooded Robin	Endangered	Vulnerable	Suitable eucalypt woodland habitat is not proposed to be impacted by the development and is therefore not considered to be susceptible to impacts.	No implications.
Little Eagle		Vulnerable	The species’ use of the development is likely to be infrequent. Loss of suitable habitat will not affect wide-ranging mobile population.	No implications.

Name	Conservation Status		Susceptibility analysis	Implications
	EPBC	FFG		
Musk Duck		Vulnerable	No loss of suitable wetland habitat in the development extent.	No implications.
Southern Whiteface	Vulnerable		Suitable eucalypt woodland habitat is not proposed to be impacted by the development and is therefore not considered to be susceptible to impacts.	No implications.
Square-tailed Kite		Vulnerable	The extent of treed habitat proposed to be impacted by the development is limited and unlikely to represent important habitat.	No implications.
<b>Migratory birds</b>				
Common Greenshank	Endangered	Endangered	No loss of suitable wetland habitat in the development extent.	No implications.
Fork-tailed Swift	Migratory		The species would only occur aerially in the study area, as such the removal of any habitats will not impact the species.	No implications.
Glossy Ibis	Migratory		No loss of suitable wetland habitat in the development extent.	No implications.
Sharp-tailed Sandpiper	Vulnerable		No loss of suitable wetland habitat in the development extent.	No implications.
White-bellied Sea-Eagle		Endangered	Occurrence of this species would be limited to flights between large lakes and wetlands within the region and the development extent does not represent important habitat for this species.	No implications.
White-throated Needletail	Vulnerable	Vulnerable	The species would only occur aerially in the study area, as such the removal of any habitats will not impact the species.	No implications.
<b>Mammals</b>				
Platypus		Vulnerable	No proposed impacts to the Wimmera River, which is the only area of suitable habitat within the study area for the species.	No implications.
<b>Fish</b>				
Freshwater Catfish		Endangered	No proposed impacts to the Wimmera River, which is the only	No implications.

Name	Conservation Status		Susceptibility analysis	Implications
	EPBC	FFG		
Murray Cod	Vulnerable	Endangered	area of suitable habitat within the study area for the species.	
Silver Perch	Endangered	Endangered		

The susceptibility analysis indicated that no listed fauna species have the potential to be impacted by the proposed development.

Implications under the EPBC Act are discussed in Section 6.3, while implications under the FFG Act are detailed in Section 6.4.

#### **5.1.4. Impacts on listed communities**

The following EPBC Act-listed threatened ecological community was deemed to be impacted by the proposed development, as shown in Figure 2:

- 0.046 ha of Natural Grasslands of the Murray Valley Plains (EPBC Act: Critically Endangered)

The following FFG Act-listed threatened ecological communities were deemed to be impacted by the proposed development:

- 0.518 ha of Northern Plains Grassland Community
- 0.002 ha of Red Gum Swamp Community No. 1
- 0.016 ha of Victorian temperate woodland bird community

Implications under the EPBC Act are discussed in Section 6.3, while implications under the FFG Act are detailed in Section 6.4.

## 6. Implications under legislation and policy

### 6.1. Implications under Clause 52.17

A permit for the proposed removal of native vegetation is required under Cl. 52.17 of the Horsham Planning Scheme.

#### 6.1.1. Exemptions to Clause 52.17

No exemptions under the Horsham Planning Scheme are relevant to this project.

#### 6.1.2. Avoid and minimise statement

In accordance with the Guidelines, all applications to remove native vegetation must provide an ‘avoid and minimise’ statement, which describes efforts undertaken to avoid the removal of native vegetation and minimise impacts on biodiversity and other values, and how these efforts were focused on the areas of native vegetation that have the highest value. Efforts to avoid and minimise impacts to native vegetation in the current application are presented as follows.

##### *Strategic-level planning*

The minor utilities corridor, in which the proposed powerline upgrade for the proposed Avonbank Mineral Sands Project has been subject to an Environment Effects Statement (EES). The Minister’s assessment determined that there was residual uncertainty about the potential presence of threatened flora and fauna in the minor utilities corridor and so required further survey work for specific threatened flora and fauna in the minor utilities corridor. This investigation was therefore commissioned to provide information on the existing conditions of native vegetation, listed species and communities within the minor utilities corridor, and documents any proposed impacts and resultant legislative implications.

Additionally, the proposal will enable Powercor to upgrade the existing regional network infrastructure from 22 kV to 66 kV. Strategically, this upgrade will not only support the Avonbank Project but will provide future shared capacity for other users along the network.

##### *Site-level planning*

When accounting for potential impacts to native vegetation, a precautionary approach was undertaken. Direct disturbance at each pole location is limited to a  $\sim 1 \times 1$  metre bore hole required for pole installation. Therefore, the majority of impacts accounted for are temporary disturbance areas to be used for vehicle positioning and construction activities.

The following site-level measures have been made to the development plan to avoid and minimise impacts to native vegetation within the study area:

- Existing power poles will be used and upgraded where possible rather than replaced to minimise the impacts on native vegetation from installing new power poles.
- Extensive survey effort was undertaken in collaboration with relevant Powercor and WIM personnel to locate disturbance areas outside of native vegetation as far as practical, noting that there are restrictions in regard to the powerline alignment and power pole spacing.
  - In areas where the erection of new power poles is to occur, locations that occurred outside of native vegetation patches were preferred, followed by areas with a greater relative abundance of weeds when locations fell within patches of native vegetation.

- Existing roads and vehicle tracks will be utilised to minimise the impacts to native vegetation within the study area.

#### *Environmental mitigation measures*

The majority of the native vegetation accounted for in these impacts is anticipated to remain unaffected, owing to the implementation of construction mitigation measures designed to restrict disturbance to the minimum extent practicable (refer to section 5.1). Areas subject to temporary disturbance will be rehabilitated through the reinstatement of soil profiles, facilitation of natural regeneration via sensitive weed management, and, where natural recolonisation is inadequate, the direct seeding of grasses consistent with the relevant EVC.

#### **6.1.3. Modelled species important habitat**

The current proposal footprint will not have a significant impact on habitat for any rare or threatened species as determined in the NVR Report (Appendix 8).

#### **6.1.4. Assessment pathway**

The assessment pathway is determined by the location category and extent of native vegetation as detailed for the study area as follows:

- Location Category:** Location 2
  - As both location categories 1 and 2 apply, the highest location category (i.e., Location 2) applies
- Extent of native vegetation removal:** A total of 1.305 ha of native vegetation is proposed to be removed (including no large trees).

Based on the extent of native vegetation removal being  $\geq 0.5$  ha, the Guidelines stipulate that the proposal is to be assessed under the Detailed assessment pathway, as determined by the following matrix:

**Table 6: Assessment pathway matrix**

Extent of native vegetation	Location 1	Location 2	Location 3
< 0.5 ha and not including any large trees	Basic	Intermediate	Detailed
< 0.5 ha and including one or more large trees	Intermediate	Intermediate	Detailed
$\geq 0.5$ ha	Detailed	<b>Detailed</b>	Detailed

This proposal **will** trigger a referral to DEECA based on the above criteria.

#### **6.1.5. Offset requirements**

Under the Guidelines, all offsets must be secured prior to the removal of native vegetation.

Offsets required to compensate for the proposed removal of native vegetation from the study area are as follows:

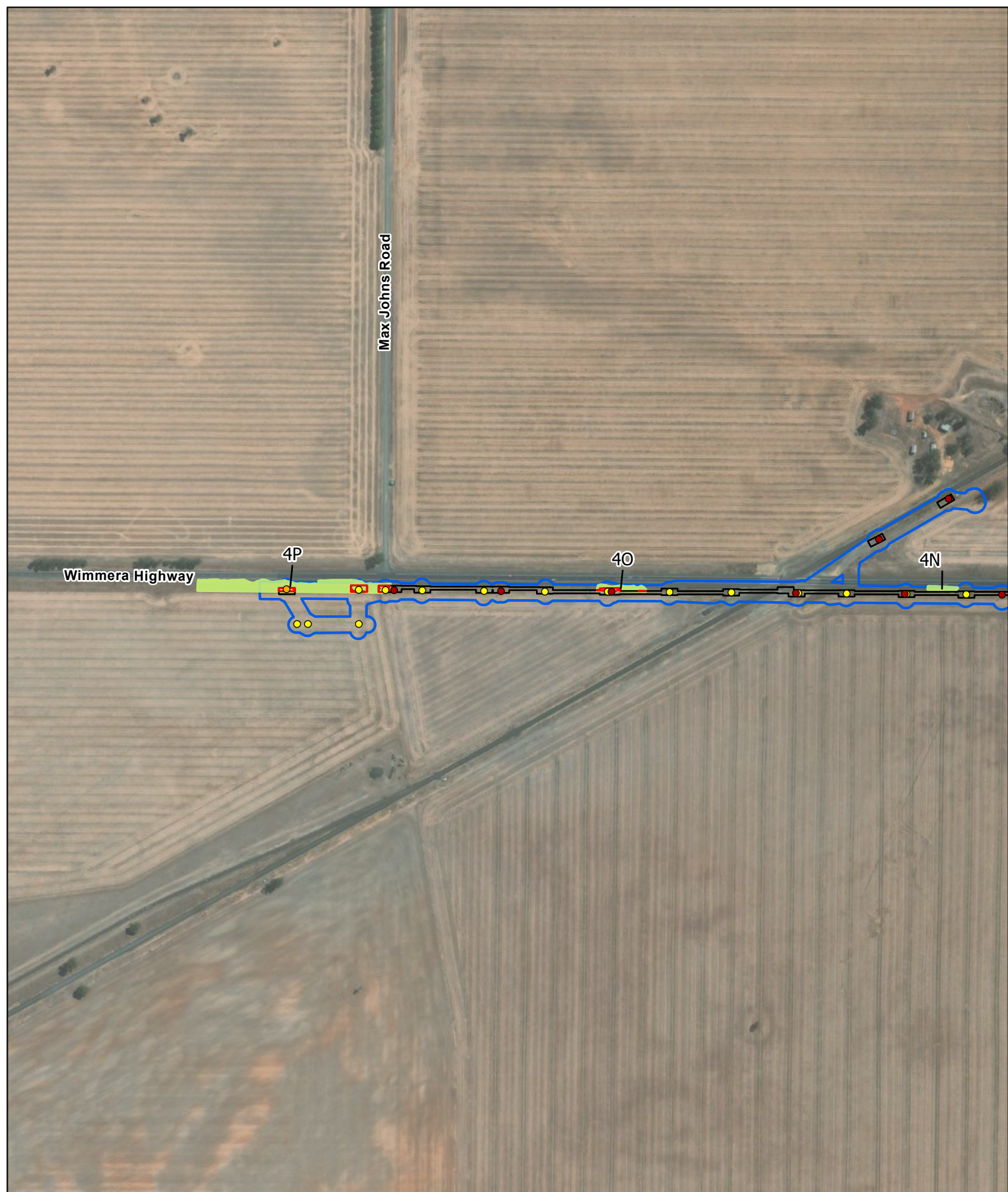
- 0.4960 general habitat units and must include the following offset attribute requirements:
  - Minimum strategic biodiversity value (SBV) of 0.1428.
  - Occur within the Wimmera CMA boundary or the Horsham Rural City municipal district.

#### **6.1.6. Offset statement**

The offset target for the current proposal will be achieved via a third-party offset.

An online search of the Native Vegetation Credit Register (NVCR) has shown that the required offset is currently available for purchase from a native vegetation credit owner (DEECA 2025e).

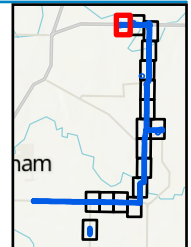
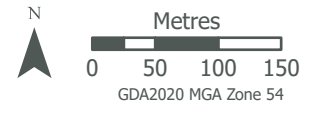
Evidence that the required offset is available is provided in Appendix 9. The required offset would be secured following approval of the application to remove native vegetation.



**Figure 2-1: Native vegetation to be removed**

**Project No:** 23126\_07    **Project:** Avonbank Mineral Sands, VIC    **Date:** 2/12/2025

- Study area
- Development footprint
- Works Type**
- New pole
- Pole top works
- Removed pole
- Native vegetation**
- 132 Plains Grassland
- Native vegetation to be removed



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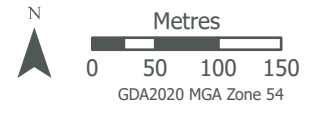
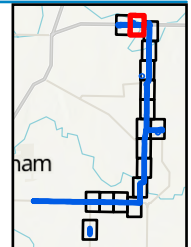


**Figure 2-2: Native vegetation to be removed**

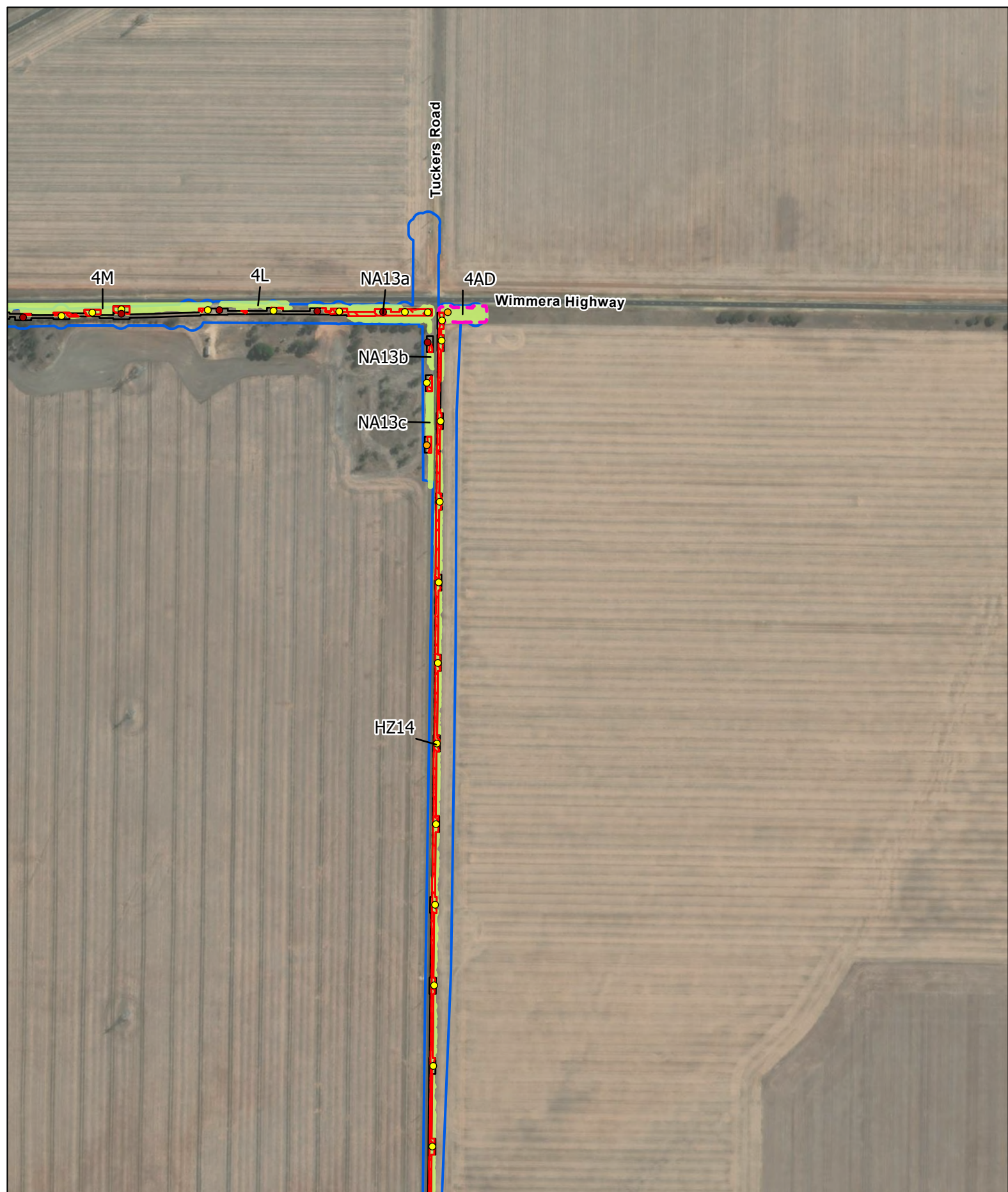
**Project No:** 23126\_07    **Project:** Avonbank Mineral Sands, VIC    **Date:** 2/12/2025

- Study area
- Development footprint
- Works Type**
- New pole

- Removed pole
- Native vegetation**
- 132 Plains Grassland
- Native vegetation to be removed



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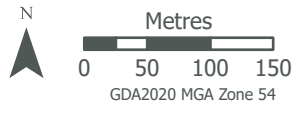
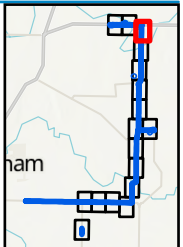


**Figure 2-3: Native vegetation to be removed**

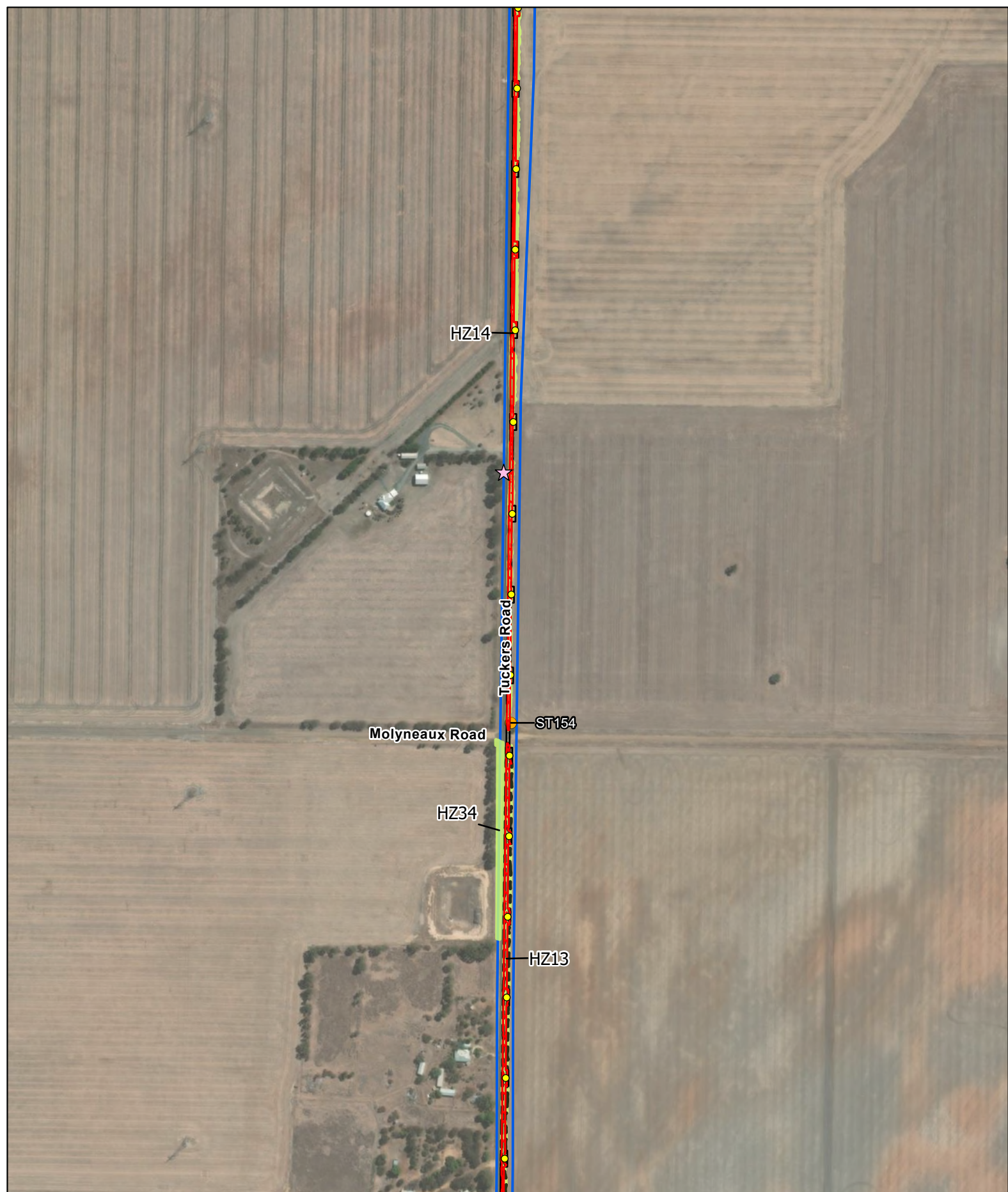
**Project No:** 23126\_07    **Project:** Avonbank Mineral Sands, VIC    **Date:** 2/12/2025

- Study area
- Development footprint
- Works Type**
- New pole
- Pole top works
- Removed pole

- EPBC community**
- Natural Grasslands of the Murray Valley Plains
- Native vegetation**
- 132 Plains Grassland
- Native vegetation to be removed



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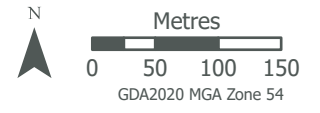
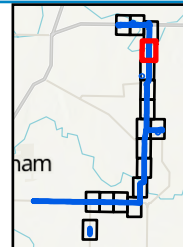
**Figure 2-4: Native vegetation to be removed**

**Project No:** 23126\_07    **Project:** Avonbank Mineral Sands, VIC    **Date:** 2/12/2025

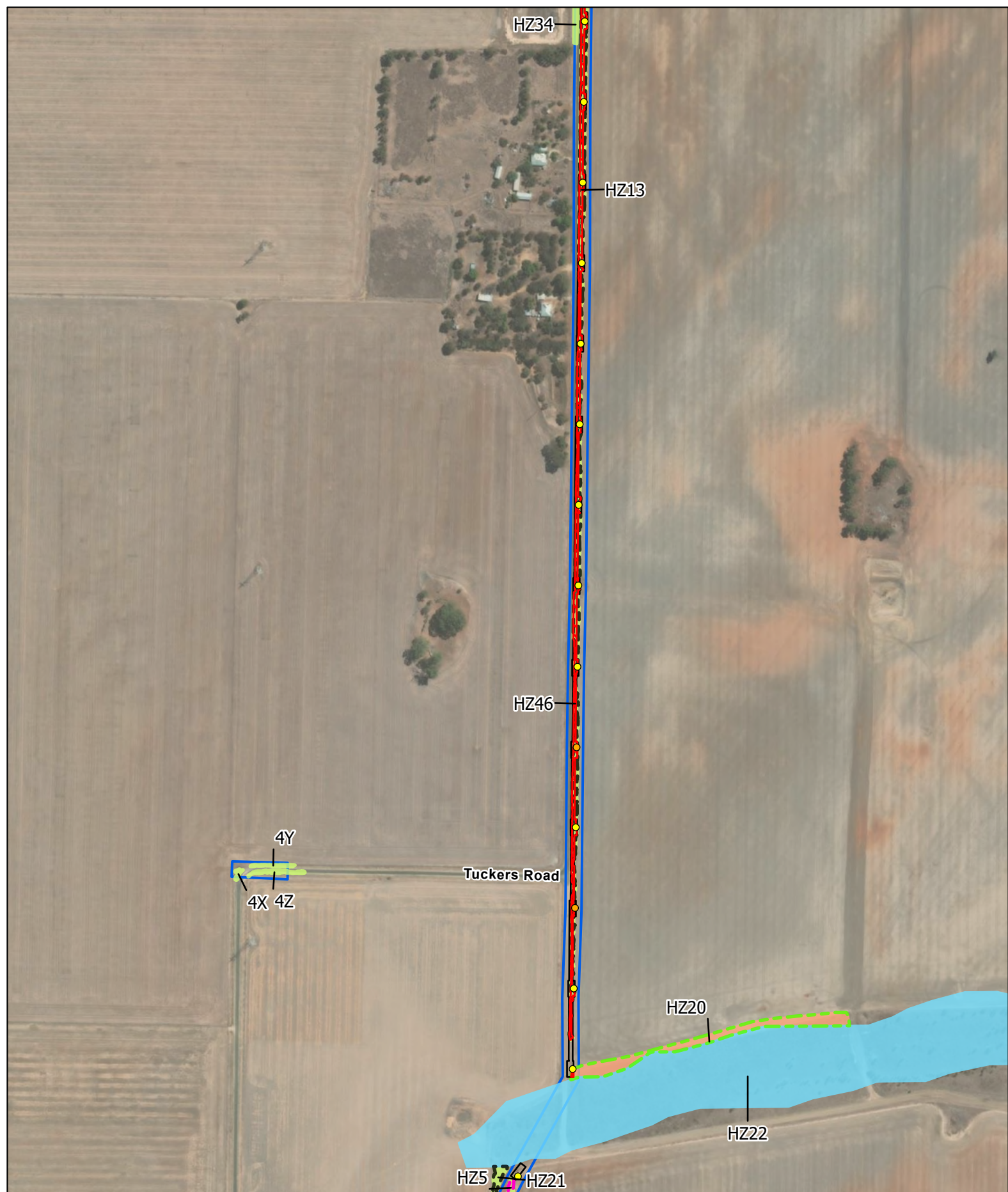
- Study area
- Development footprint
- Works Type**
- New pole

- Threatened flora species**
- ☆ Winged New Holland Daisy
- FFG community**
- Northern Plains Grassland Community

- Native vegetation**
- Small Scattered Tree
- 132 Plains Grassland
- Native vegetation to be removed



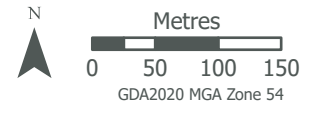
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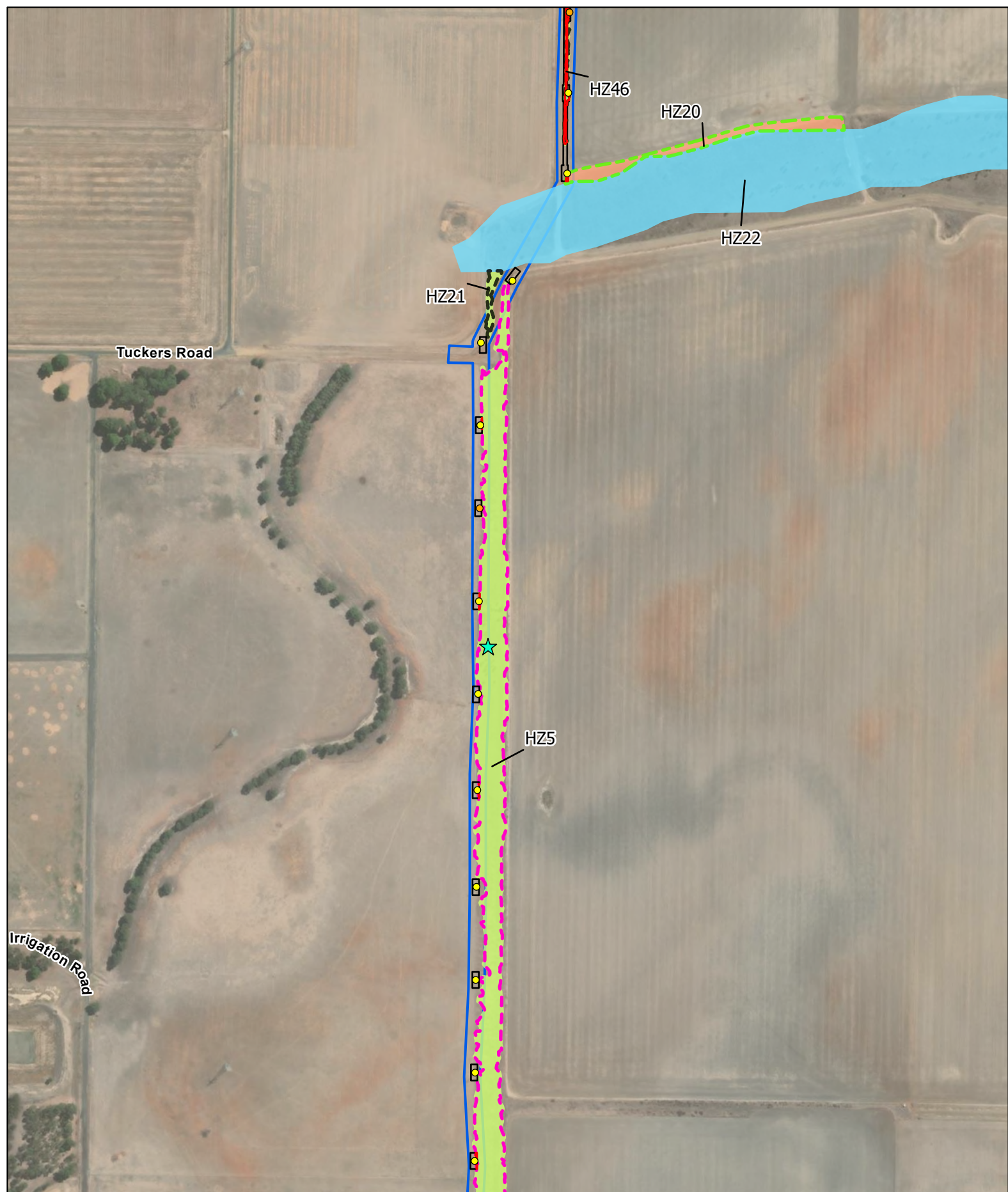
**Figure 2-5: Native vegetation to be removed**

**Project No:** 23126\_07    **Project:** Avonbank Mineral Sands, VIC    **Date:** 2/12/2025

<ul style="list-style-type: none"> <li><span style="border: 1px solid blue; display: inline-block; width: 15px; height: 10px; margin-right: 5px;"></span> Study area</li> <li><span style="border: 1px solid black; display: inline-block; width: 15px; height: 10px; margin-right: 5px;"></span> Development footprint</li> <li><b>Works Type</b></li> <li><span style="color: yellow; font-size: 10px; margin-right: 5px;">●</span> New pole</li> <li><span style="color: orange; font-size: 10px; margin-right: 5px;">●</span> Pole top works</li> </ul>	<p><b>EPBC community</b></p> <ul style="list-style-type: none"> <li><span style="border: 1px dashed magenta; display: inline-block; width: 15px; height: 10px; margin-right: 5px;"></span> Natural Grasslands of the Murray Valley Plains</li> </ul> <p><b>FFG community</b></p> <ul style="list-style-type: none"> <li><span style="border: 1px dashed black; display: inline-block; width: 15px; height: 10px; margin-right: 5px;"></span> Northern Plains Grassland Community</li> <li><span style="border: 1px dashed green; display: inline-block; width: 15px; height: 10px; margin-right: 5px;"></span> Red Gum Swamp Community No.1</li> </ul>	<p><b>Native vegetation</b></p> <ul style="list-style-type: none"> <li><span style="background-color: #90EE90; border: 1px solid black; display: inline-block; width: 15px; height: 10px; margin-right: 5px;"></span> 132 Plains Grassland</li> <li><span style="background-color: #FFA07A; border: 1px solid black; display: inline-block; width: 15px; height: 10px; margin-right: 5px;"></span> 292 Red Gum Swamp</li> <li><span style="background-color: #ADD8E6; border: 1px solid black; display: inline-block; width: 15px; height: 10px; margin-right: 5px;"></span> DEECA Mapped Wetland</li> <li><span style="border: 1px dashed red; display: inline-block; width: 15px; height: 10px; margin-right: 5px;"></span> Native vegetation to be removed</li> </ul>	
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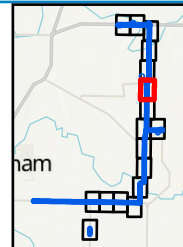
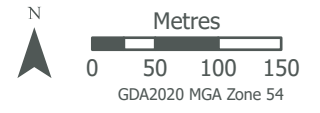
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**Figure 2-6: Native vegetation to be removed**

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Study area	<b>EPBC community</b>	<b>Native vegetation</b>
Development footprint	Natural Grasslands of the Murray Valley Plains	132 Plains Grassland
<b>Works Type</b>	<b>FFG community</b>	292 Red Gum Swamp
New pole	Northern Plains Grassland Community	DEECA Mapped Wetland
Pole top works	Red Gum Swamp Community No.1	Native vegetation to be removed
<b>Threatened flora species</b>		
Late-flower Flax-lily		



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23126\_07 Figure 2: Native vegetation to be removed - Created by: emma - X:\GIS\2023 Jobs\23126\23126\_07\_PowerlineUpgrade\_F&F.aprx

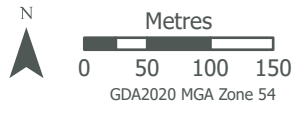
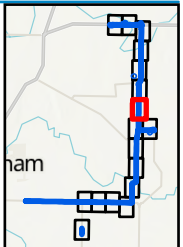


**Figure 2-7: Native vegetation to be removed**

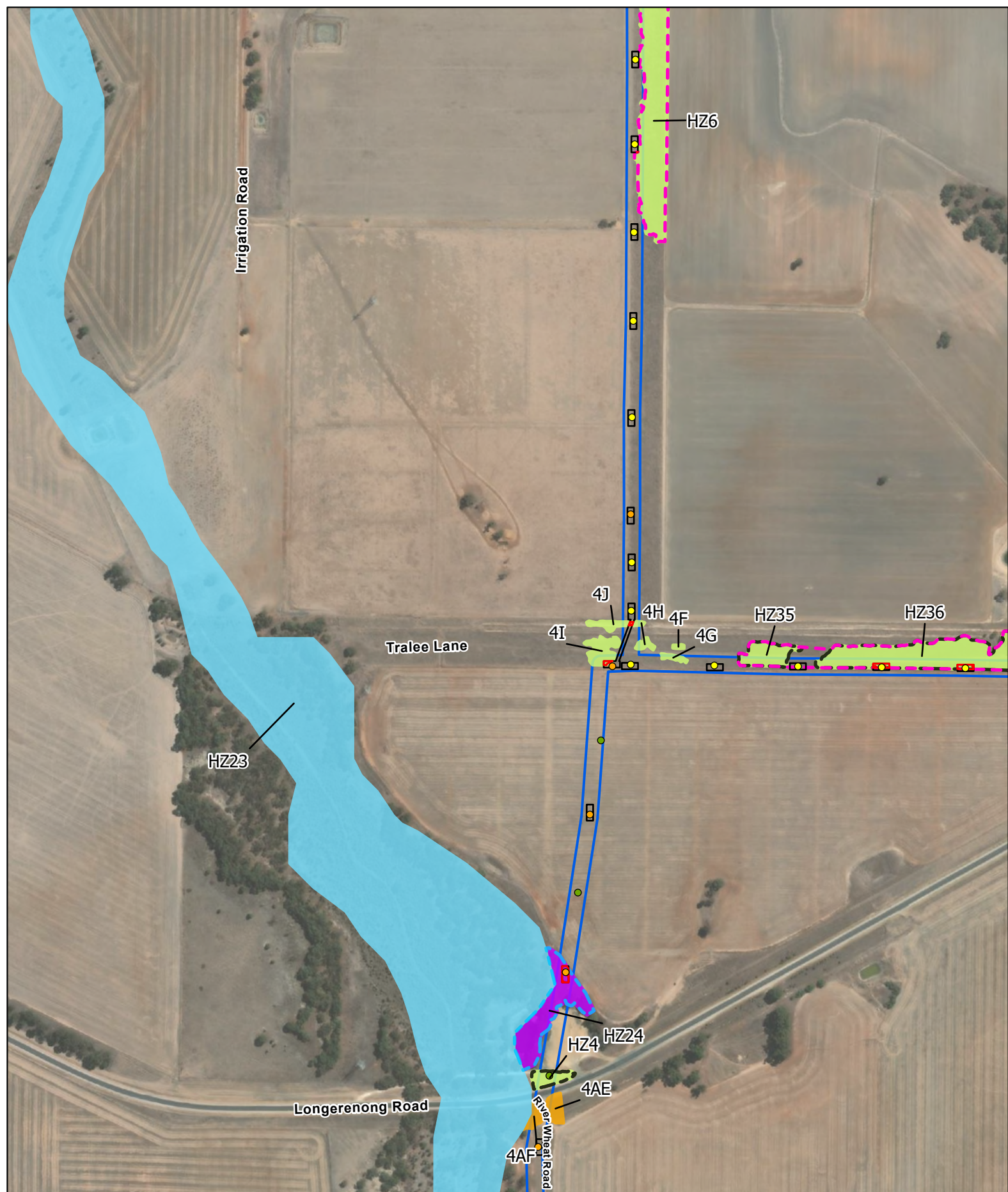
**Project No:** 23126\_07    **Project:** Avonbank Mineral Sands, VIC    **Date:** 2/12/2025

- Study area
- Development footprint
- Works Type**
- New pole
- Pole top works

- EPBC community**
- Natural Grasslands of the Murray Valley Plains
- Native vegetation**
- 132 Plains Grassland
- Native vegetation to be removed



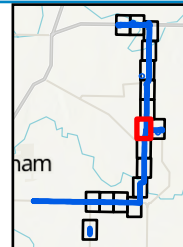
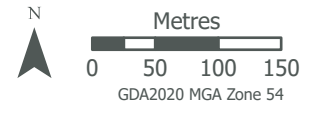
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**Figure 2-8: Native vegetation to be removed**

**Project No:** 23126\_07 **Project:** Avonbank Mineral Sands, VIC **Date:** 2/12/2025

Study area	<b>EPBC community</b>	<b>Native vegetation</b>
Development footprint	Natural Grasslands of the Murray Valley Plains	132 Plains Grassland
<b>Works Type</b>	<b>FFG community</b>	663 Black Box Lignum Woodland
New pole	Northern Plains Grassland Community	826 Plains Savannah
No works	Victorian Temperate Woodland Bird Community	DEECA Mapped Wetland
Pole top works		Native vegetation to be removed



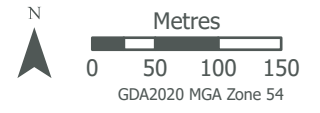
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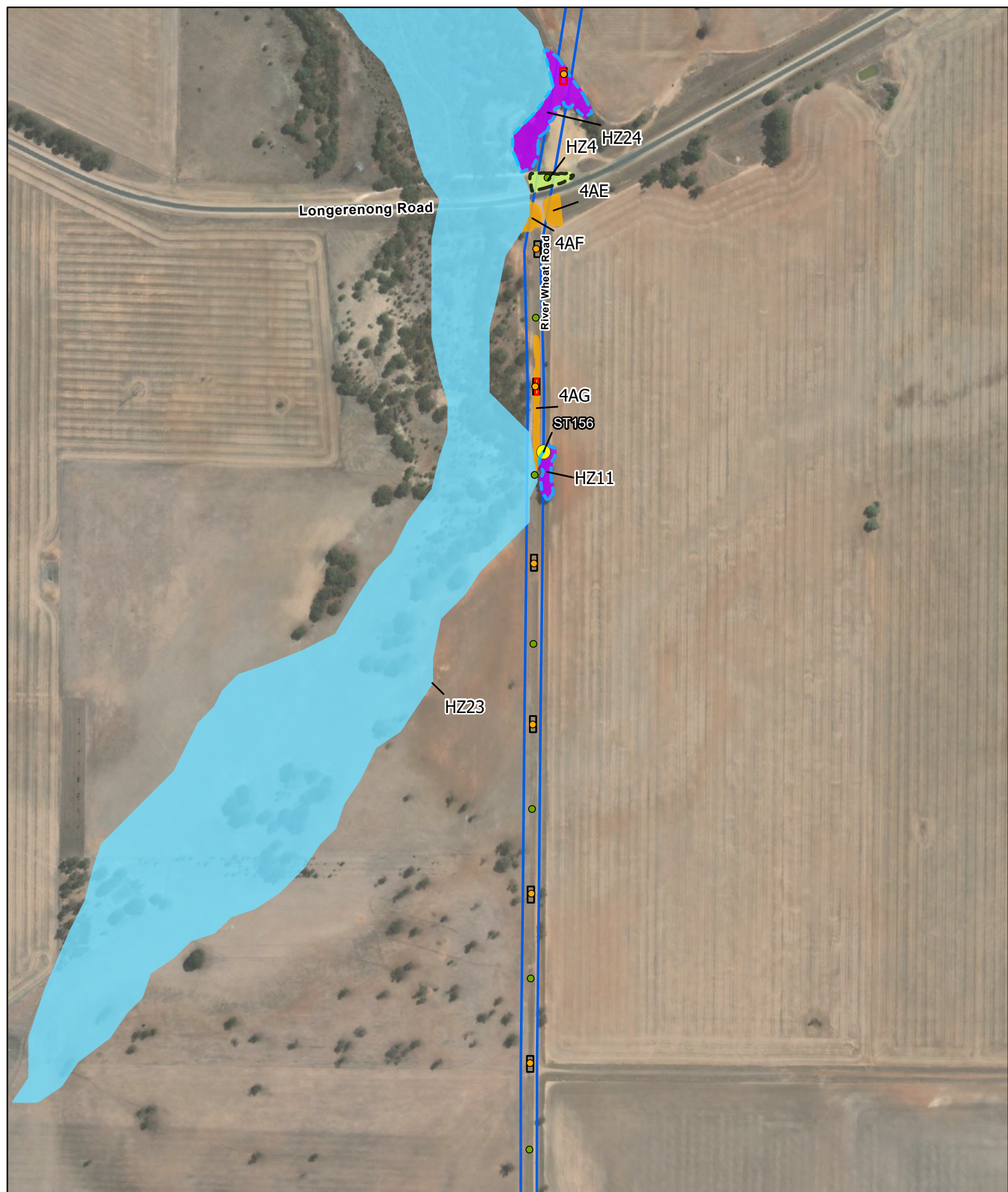
**Figure 2-9: Native vegetation to be removed**

**Project No:** 23126\_07    **Project:** Avonbank Mineral Sands, VIC    **Date:** 2/12/2025

<ul style="list-style-type: none"> <li><span style="border: 1px solid blue; display: inline-block; width: 15px; height: 10px; margin-right: 5px;"></span> Study area</li> <li><span style="border: 1px solid black; display: inline-block; width: 15px; height: 10px; margin-right: 5px;"></span> Development footprint</li> <li><b>Works Type</b></li> <li><span style="color: yellow; font-size: 10px; margin-right: 5px;">●</span> New pole</li> <li><span style="color: green; font-size: 10px; margin-right: 5px;">●</span> No works</li> <li><span style="color: orange; font-size: 10px; margin-right: 5px;">●</span> Pole top works</li> </ul>	<p><b>Threatened flora species</b></p> <ul style="list-style-type: none"> <li><span style="color: yellow; font-size: 15px;">★</span> Club-hair New Holland Daisy</li> </ul> <p><b>EPBC community</b></p> <ul style="list-style-type: none"> <li><span style="border-bottom: 1px dashed pink; display: inline-block; width: 20px; margin-right: 5px;"></span> Natural Grasslands of the Murray Valley Plains</li> </ul>	<p><b>FFG community</b></p> <ul style="list-style-type: none"> <li><span style="border: 1px solid black; display: inline-block; width: 15px; height: 10px; margin-right: 5px;"></span> Northern Plains Grassland Community</li> </ul> <p><b>Native vegetation</b></p> <ul style="list-style-type: none"> <li><span style="background-color: yellow; border: 1px solid black; display: inline-block; width: 15px; height: 10px; margin-right: 5px;"></span> 132 Plains Grassland</li> <li><span style="border: 1px solid red; display: inline-block; width: 15px; height: 10px; margin-right: 5px;"></span> Native vegetation to be removed</li> </ul>	
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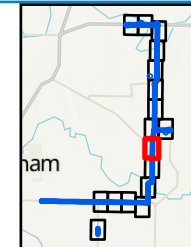
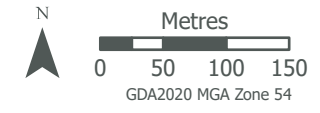
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**Figure 2-10: Native vegetation to be removed**

**Project No:** 23126\_07 **Project:** Avonbank Mineral Sands, VIC **Date:** 2/12/2025

<ul style="list-style-type: none"> <li><span style="border: 1px solid blue; display: inline-block; width: 15px; height: 10px; margin-right: 5px;"></span> Study area</li> <li><span style="border: 1px solid black; display: inline-block; width: 15px; height: 10px; margin-right: 5px;"></span> Development footprint</li> <li><b>Works Type</b></li> <li><span style="color: green; font-size: 10px; margin-right: 5px;">●</span> No works</li> <li><span style="color: orange; font-size: 10px; margin-right: 5px;">●</span> Pole top works</li> </ul>	<p><b>FFG community</b></p> <ul style="list-style-type: none"> <li><span style="border: 1px solid black; display: inline-block; width: 15px; height: 10px; margin-right: 5px;"></span> Northern Plains Grassland Community</li> <li><span style="border: 1px solid blue; display: inline-block; width: 15px; height: 10px; margin-right: 5px;"></span> Victorian Temperate Woodland Bird Community</li> </ul> <p><b>Native vegetation</b></p> <ul style="list-style-type: none"> <li><span style="color: yellow; font-size: 15px; margin-right: 5px;">●</span> Large Tree in Patch</li> </ul>	<ul style="list-style-type: none"> <li><span style="background-color: #90EE90; border: 1px solid black; display: inline-block; width: 15px; height: 10px; margin-right: 5px;"></span> 132 Plains Grassland</li> <li><span style="background-color: #FF00FF; border: 1px solid black; display: inline-block; width: 15px; height: 10px; margin-right: 5px;"></span> 663 Black Box Lignum Woodland</li> <li><span style="background-color: #FFA500; border: 1px solid black; display: inline-block; width: 15px; height: 10px; margin-right: 5px;"></span> 826 Plains Savannah</li> <li><span style="background-color: #ADD8E6; border: 1px solid black; display: inline-block; width: 15px; height: 10px; margin-right: 5px;"></span> DEECA Mapped Wetland</li> <li><span style="border: 1px solid red; display: inline-block; width: 15px; height: 10px; margin-right: 5px;"></span> Native vegetation to be removed</li> </ul>
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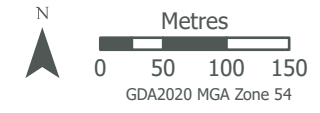
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**Figure 2-11: Native vegetation to be removed**

**Project No:** 23126\_07 **Project:** Avonbank Mineral Sands, VIC **Date:** 2/12/2025

<ul style="list-style-type: none"> <li><span style="border: 1px solid blue; display: inline-block; width: 15px; height: 10px; margin-right: 5px;"></span> Study area</li> <li><span style="border: 1px solid black; display: inline-block; width: 15px; height: 10px; margin-right: 5px;"></span> Development footprint</li> <li><b>Works Type</b></li> <li><span style="color: green; font-size: 10px; margin-right: 5px;">●</span> No works</li> <li><span style="color: orange; font-size: 10px; margin-right: 5px;">●</span> Pole top works</li> </ul>	<ul style="list-style-type: none"> <li><b>FFG community</b></li> <li><span style="border: 1px dashed blue; display: inline-block; width: 15px; height: 10px; margin-right: 5px;"></span> Victorian Temperate Woodland Bird Community</li> <li><b>Native vegetation</b></li> <li><span style="background-color: purple; border: 1px solid black; display: inline-block; width: 15px; height: 10px; margin-right: 5px;"></span> 103 Riverine Chenopod Woodland</li> <li><span style="background-color: cyan; border: 1px solid black; display: inline-block; width: 15px; height: 10px; margin-right: 5px;"></span> 56 Floodplain Riparian Woodland</li> <li><span style="background-color: lightblue; border: 1px solid black; display: inline-block; width: 15px; height: 10px; margin-right: 5px;"></span> DEECA Mapped Wetland</li> </ul>
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**Figure 2-12: Native vegetation to be removed**

**Project No:** 23126\_07

**Project:** Avonbank Mineral Sands, VIC

**Date:** 2/12/2025

- Study area
- Development footprint

**Works Type**

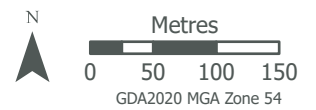
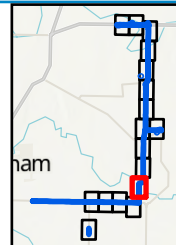
- No works
- Pole top works

**FFG community**

- Victorian Temperate Woodland Bird Community

**Native vegetation**

- 56 Floodplain Riparian Woodland



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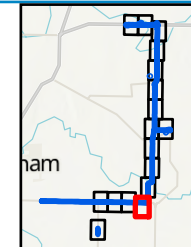
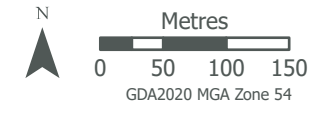


**Figure 2-13: Native vegetation to be removed**

**Project No:** 23126\_07    **Project:** Avonbank Mineral Sands, VIC    **Date:** 2/12/2025

- Study area
- Development footprint
- Works Type**
- No works

- Pole top works
- Native vegetation**
- 132 Plains Grassland



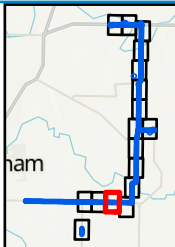
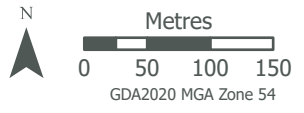
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**Figure 2-14: Native vegetation to be removed**

**Project No:** 23126\_07    **Project:** Avonbank Mineral Sands, VIC    **Date:** 2/12/2025

- Study area
  - Development footprint
- Works Type**
- No works
  - Pole top works



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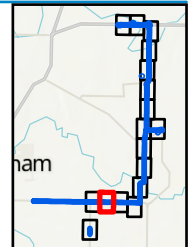
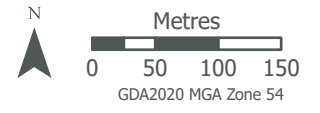


Horsham - Lubeck Road

**Figure 2-15: Native vegetation to be removed**

**Project No:** 23126\_07    **Project:** Avonbank Mineral Sands, VIC    **Date:** 2/12/2025

- Study area
  - Development footprint
- Works Type**
- No works
  - Pole top works



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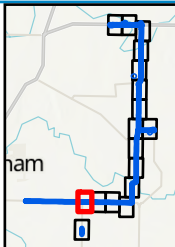
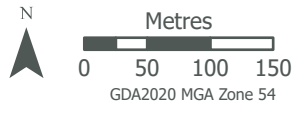
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**Figure 2-16: Native vegetation to be removed**

**Project No:** 23126\_07    **Project:** Avonbank Mineral Sands, VIC    **Date:** 2/12/2025

- Study area
  - Development footprint
  - No works
  - Pole top works
- Works Type**
- New pole



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**Figure 2-17: Native vegetation to be removed**

**Project No:** 23126\_07    **Project:** Avonbank Mineral Sands, VIC    **Date:** 2/12/2025

- Study area
- Development footprint

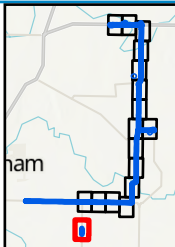
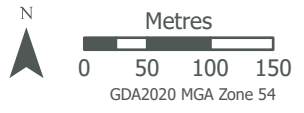
**Works Type**

- No works

- Pole replacement
- Pole top works

**Native vegetation**

- 803 Plains Woodland



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## 6.2. Implications under other planning provisions

### 6.2.1. Clause 12.01 - Biodiversity

The objectives and strategies of Clause 12.01 (outlined in Section 2.2.1) are, in general, achieved by the Guidelines and the *avoid, minimise and offset* obligations detailed within this report. However, this clause is also relevant to the application by considering the avoidance of fragmentation of habitat.

This application responds to these objectives as there has been significant efforts to minimise impacts to biodiversity through the avoidance of many of the areas mapped as the EPBC Act-listed threatened ecological community *Natural Grasslands of the Murray Valley Plains*, which also constitute higher-quality grassland vegetation, by micro siting the locations of power poles primarily outside or on the edge of patches of this community. Additionally, the removal of native vegetation has been minimised through the replacement or upgrade of existing power poles through pole-top works. No Buloke are proposed to be removed within the study area which conserves the feeding habitat of the Red-tailed Black Cockatoo aiding in recovery efforts of the species, in line with Clause 12.01-1L.

### 6.2.2. Clause 12.03 – Water bodies and wetlands

The objectives and strategies of Clause 12.03 (outlined in Section 2.2.1) are, in general, achieved by the Guidelines and the *avoid, minimise and offset* obligations as detailed within this report.

This application responds to these objectives by upgrading existing power poles rather than replacing them along the Wimmera River to ensure minimal impacts to native vegetation. Additionally, limited native vegetation is proposed to be removed along Two Mile Creek. The proposed works are not anticipated to impact the geomorphology, natural drainage, natural flows and water quality of these waterbodies.

### 6.2.3. Overlays

The relevant application requirements, decision guidelines and implications under relevant overlays in the Horsham Planning Scheme are discussed below.

#### *Environmental Significance Overlay – Schedule 3 (ESO3)*

The objectives of the ESO3 aim to protect and enhance watercourses within the Horsham Rural City local government area, specifically to protect water quality as well as flora and fauna habitats. These objectives are achieved by ensuring that the siting and design of works does not adversely impact on significant environmental values, such as habitat of botanical and zoological significance. The application responds to these objectives by utilising and upgrading existing power poles that occur along the Wimmera River rather than replacing them, minimising the impact to flora and fauna habitats.

The proposal addresses the relevant decision guideline “conservation of natural habitats and the preservation of native fauna, fish and other marine life” through the *avoid and minimise* measures implemented (see Section 6.1.2).

#### *Floodway Overlay (FO)*

The objectives of the FO aim to identify areas within the Horsham Rural City local government area prone to flooding to ensure the free passage and temporary storage of floodwater, minimisation of flood damage and is compatible with flood hazard, local drainage conditions and the minimisation of soil erosion, sedimentation and silting. These objectives are achieved by ensuring that any

development maintains or improves upon the current conditions. The application responds to these objectives by being a minor utility instillation that will not alter flooding and its impacts in the region.

The relevant application requirement “The effects of the development on river health values including wetlands, natural habitat, stream stability, erosion, environmental flows, water quality and sites of scientific significance” is addressed in Section 5.

#### *Land Subject to Inundation Overlay – Schedule 1 (LSIO1)*

The objectives of the LSIO aim to identify areas within the Horsham Rural City local government area prone to flooding to maintain the free passage and temporary storage of floodwaters, minimises flood damage, responds to the flood hazard and local drainage conditions and will not cause any significant rise in flood level or flow velocity. These objectives are achieved by ensuring that any development maintains or improves upon the current conditions. The application responds to these objectives by being a minor utility instillation with minimal footprint to impact flooding.

The proposal addresses the relevant decision guideline “The effect of the development on river, marine and coastal health values including wetlands, natural habitat, stream stability, erosion, environmental flows, water quality, estuaries and sites of scientific significance” in Section 5.

### **6.3. Implications under the EPBC Act**

The proposed development will impact on the following EPBC Act-listed value:

- *Natural Grasslands of the Murray Valley Plains* (total of 0.046 ha)

In December 2019, WIM Resource referred the project to the Commonwealth (referral 2019/8586) for a determination on whether the project was a controlled action under the EPBC Act. On 3 July 2020, the project was determined to be a controlled action requiring assessment and approval under the EPBC Act because of its potential impacts on matters of national environmental significance (MNES): listed threatened species and communities (sections 18 and 18A) and nuclear actions (s21 and s22A). The project’s impacts on MNES were assessed by the accredited EES process, in accordance with the bilateral agreement made between the Australian and Victorian governments under section 45 of the EPBC Act. Therefore, decisions about whether, and under what conditions, to approve the project under the EPBC Act were to be informed by the EES process.

A significant impact assessment of proposed impacts to *Natural Grasslands of the Murray Valley Plains* against the relevant significant impact guidelines is included at Appendix 10. This assessment indicates that the project is considered unlikely to significantly impact this community. As such, the proposed refinements represent a minor variation to the approved works and remain consistent with the intent and environmental outcomes of the existing approval under EPBC 2019/8586.

### **6.4. Implications under the FFG Act**

#### *Threatened and protected flora*

The following FFG Act values listed as threatened are anticipated to be impacted by the proposed development:

- 0.518 ha of Northern Plains Grassland Community
- 0.002 ha of Red Gum Swamp Community No. 1
- 0.016 ha of Victorian temperate woodland bird community

As detailed in Section 6.1.2, every effort has been made to minimise impacts to native vegetation, including the above mentioned communities. The majority of these impacts is anticipated to remain unaffected, owing to the implementation of construction mitigation measures designed to restrict disturbance to the minimum extent practicable. Areas subject to temporary disturbance will be rehabilitated through the reinstatement of soil profiles, facilitation of natural regeneration via sensitive weed management, and, where natural recolonisation is inadequate, the direct seeding of grasses consistent with the relevant EVC will be undertaken., with the majority of these impacts accounted for being temporary in nature and intended to be rehabilitated.

A Protected Flora Permit under the FFG Act would be required for the current proposal for the above-mentioned FFG Act-listed threatened values occurring on public land. Protected Flora Permits can only be lodged after a planning permit is obtained.

### 6.5. Implications under the EE Act

The *Ministerial Guidelines for Assessment of Environmental Effects under the Environment Effects Act 1978* (DSE 2006) identifies criteria that trigger a Referral to the state Minister for Planning.

An Environmental Effects Statement (EES) for the Avonbank Mineral Sands Project has been prepared and was assessed by the state Minister for Planning in November 2024 (DTP 2024). The proposed refinements to what was previously supported represent a minor variation to the approved works. They are limited in scale, necessary to facilitate the safe and compliant construction of the 66 kV network upgrade, and remain consistent with the intent and environmental outcomes approved.

### 6.6. CaLP Act

The *Catchment and Land Protection Act 1994* (Vic; CaLP Act) requires that landowners (or a third party to whom responsibilities have been legally transferred) must eradicate regionally prohibited weeds and prevent the growth and spread of regionally controlled weeds.

Property owners who do not eradicate regionally prohibited weeds or prevent the growth and spread of regionally controlled weeds for which they are responsible may be issued with a Land Management Notice or Directions Notice that requires specific control work to be undertaken.

In accordance with the CaLP Act, the noxious weed species listed below, which were recorded in the study area, must be controlled.

- Bathurst Burr *Xanthium spinosum*
- Horehound *Marrubium vulgare*
- Silver-leaf Nightshade *Solanum elaeagnifolium*
- Sweet Briar *Rosa rubiginosa*
- Two-leaf Cape-tulip *Moraea miniata*

Precision control methods that minimise off-target kills (e.g., spot spraying) should be used in environmentally sensitive areas (e.g., within or near native vegetation, waterways, etc.).

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**Appendix 1: Detailed habitat hectare assessment results**

Habitat Zone			4A	4C	4D	4E	4F	4G	4H	4I	4J	4K	4L	4M	4N	
Bioregion			Wimmera	Wimmera	Wimmera	Wimmera	Wimmera	Wimmera	Wimmera	Wimmera	Wimmera	Wimmera	Wimmera	Wimmera	Wimmera	Wimmera
EVC Number			132	132	132	132	132	132	132	132	132	132	132	132	132	132
Total area of Habitat Zone (ha)			0.061	0.038	0.006	0.004	0.006	0.014	0.016	0.089	0.039	0.025	0.051	0.386	0.014	
Site Condition	Large Trees	/10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Tree Canopy Cover	/5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Lack of Weeds	/15	9	2	7	7	0	0	0	0	0	2	2	2	2	
	Understorey	/25	5	5	5	5	5	5	5	5	5	5	15	15	5	
	Recruitment	/10	3	3	6	6	0	0	0	0	0	3	3	3	0	
	Organic Matter	/5	5	4	5	5	4	4	4	4	4	4	2	4	4	4
	Logs	/5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Site condition standardising multiplier*			1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36
	<i>Site Condition subtotal</i>			30	19	31	31	12	12	12	12	12	16	33	33	15
Landscape Context	Patch Size	/10	4	1	1	1	1	1	1	1	1	1	1	1	1	
	Neighbourhood	/10	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Distance to Core	/5	1	1	1	1	1	1	1	1	1	1	1	1	1	
<b>Total Condition Score</b>		<b>/100</b>	<b>35</b>	<b>21</b>	<b>33</b>	<b>33</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>18</b>	<b>35</b>	<b>35</b>	<b>17</b>	

\* Modified approach to habitat scoring - refer to Table 14 of DELWP's Vegetation Quality Assessment Manual (DSE 2004).

Habitat Zone			40	4P	4X	4Y	4Z	4AA	4AB	4AC	4AD	4AE	4AF	4AG	4AH	
Bioregion			Wimmera	Wimmera	Wimmera	Wimmera	Wimmera	Wimmera	Wimmera	Wimmera	Wimmera	Wimmera	Wimmera	Wimmera	Wimmera	
EVC Number			132	132	132	132	132	132	132	803	132	826	826	103_61	56	
Total area of Habitat Zone (ha)			0.027	0.274	0.006	0.01	0.019	0.063	0.005	0.008	0.113	0.057	0.046	0.056	0.023	
Site Condition	Large Trees	/10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	N/A	0	0	0	0	
	Tree Canopy Cover	/5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	N/A	0	0	0	0	
	Lack of Weeds	/15	2	2	7	7	7	0	7	7	7	4	4	7	0	
	Understorey	/25	15	15	5	5	5	5	5	5	5	15	15	15	5	
	Recruitment	/10	3	3	3	3	3	0	3	0	6	0	0	0	5	
	Organic Matter	/5	4	4	5	5	5	3	5	5	5	3	3	3	4	
	Logs	/5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	N/A	0	0	0	0
	Site condition standardising multiplier*			1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.00	1.36	1.00	1.00	1.00	1.00
	<i>Site Condition subtotal</i>			33	33	27	27	27	11	27	17	31	22	22	25	14
Landscape Context	Patch Size	/10	1	1	1	1	1	1	1	1	2	8	8	8	1	
	Neighbourhood	/10	0	0	0	0	0	0	0	0	0	1	1	1	0	
	Distance to Core	/5	1	1	3	3	3	1	1	1	1	1	1	1	3	
<b>Total Condition Score</b>		<b>/100</b>	<b>35</b>	<b>35</b>	<b>31</b>	<b>31</b>	<b>31</b>	<b>13</b>	<b>29</b>	<b>19</b>	<b>34</b>	<b>32</b>	<b>32</b>	<b>35</b>	<b>18</b>	

\* Modified approach to habitat scoring - refer to Table 14 of DELWP's Vegetation Quality Assessment Manual (DSE 2004).

Habitat Zone			HZ4	HZ5	HZ6	HZ9	HZ10	HZ11	HZ13	HZ14	HZ20	HZ21	HZ22	HZ23	HZ24	
Bioregion			Wimmera	Wimmera	Wimmera	Wimmera	Wimmera	Wimmera	Wimmera	Wimmera	Wimmera	Wimmera	Wimmera	Wimmera	Wimmera	
EVC Number			132	132	132	56	103	663	132	132	292	132	DEECA Mapped	DEECA Mapped	663	
Total area of Habitat Zone (ha)			0.032	3.508	3.34	4.449	0.205	0.083	0.278	0.496	0.398	0.082	9.082	31.239	0.218	
Site Condition	Large Trees	/10	N/A	N/A	N/A	10	10	10	N/A	N/A	0	N/A	N/A	N/A	10	
	Tree Canopy Cover	/5	N/A	N/A	N/A	5	5	5	N/A	N/A	0	N/A	N/A	N/A	5	
	Lack of Weeds	/15	2	6	2	4	6	2	6	9	4	6	N/A	N/A	2	
	Understorey	/25	5	15	15	15	15	15	15	15	10	5	N/A	N/A	15	
	Recruitment	/10	0	6	0	10	10	5	3	6	5	3	N/A	N/A	5	
	Organic Matter	/5	4	4	4	3	4	4	5	5	4	5	N/A	N/A	4	
	Logs	/5	N/A	N/A	N/A	4	0	3	N/A	N/A	0	N/A	N/A	N/A	3	
	Site condition standardising multiplier*			1.36	1.36	1.36	1.00	1.00	1.00	1.36	1.36	1.00	1.36	1.00	1.00	1.00
	<i>Site Condition subtotal</i>			15	42	29	51	50	44	40	48	23	26	0	0	44
Landscape Context	Patch Size	/10	1	4	2	8	2	4	1	2	8	1	N/A	N/A	4	
	Neighbourhood	/10	1	0	0	2	0	1	0	0	0	0	N/A	N/A	1	
	Distance to Core	/5	2	3	1	4	1	1	3	1	4	3	N/A	N/A	1	
<b>Total Condition Score</b>			<b>/100</b>	<b>19</b>	<b>49</b>	<b>32</b>	<b>65</b>	<b>53</b>	<b>50</b>	<b>44</b>	<b>51</b>	<b>35</b>	<b>30</b>	<b>80</b>	<b>80</b>	<b>50</b>

\* Modified approach to habitat scoring - refer to Table 14 of DELWP's Vegetation Quality Assessment Manual (DSE 2004).

Habitat Zone			HZ34	HZ35	HZ36	HZ46	HZ68	NA12	NA13a	NA13b	NA13c	
Bioregion			Wimmera	Wimmera	Wimmera	Wimmera	Wimmera	Wimmera	Wimmera	Wimmera	Wimmera	
EVC Number			132	132	132	132	132	132	132	132	132	
Total area of Habitat Zone (ha)			0.138	0.166	0.895	0.294	0.247	0.291	0.213	0.011	0.065	
Site Condition	Large Trees	/10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	Tree Canopy Cover	/5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	Lack of Weeds	/15	9	2	2	6	4	0	0	0	0	
	Understorey	/25	15	5	5	15	5	5	5	5	5	
	Recruitment	/10	6	0	0	3	0	3	3	3	3	
	Organic Matter	/5	5	4	4	5	4	2	2	2	2	
	Logs	/5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	Site condition standardising multiplier*			1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36
	<i>Site Condition subtotal</i>			48	15	15	40	18	14	14	14	14
Landscape Context	Patch Size	/10	2	1	1	1	1	2	2	2	2	
	Neighbourhood	/10	0	0	0	0	1	0	0	0	0	
	Distance to Core	/5	1	1	1	3	0	0	0	0	0	
<b>Total Condition Score</b>		<b>/100</b>	<b>51</b>	<b>17</b>	<b>17</b>	<b>44</b>	<b>20</b>	<b>16</b>	<b>16</b>	<b>16</b>	<b>16</b>	

\* Modified approach to habitat scoring - refer to Table 14 of DELWP's Vegetation Quality Assessment Manual (DSE 2004).

**Appendix 2: Large trees in patches and scattered trees recorded in the study area**

Tree No.	Common Name	Scientific Name	DBH (cm)	Circumference	Habitat Category	Radius of TPZ (m)	Remove/Retain	Notes
ST154	Black Box	<i>Eucalyptus largiflorens</i>	31.5	99	Small Scattered Tree	3.78	Retained	AECOM
ST156	Black Box	<i>Eucalyptus largiflorens</i>	65.5	206	Large Tree in HZ11	7.86	Retained	AECOM

**Notes:** DBH = Diameter at breast height (130 cm from the ground); TPZ = Tree Protection Zone.

### Appendix 3: Flora species recorded in the study area

Origin	Common name	Scientific name	EPBC	FFG-T	FFG-P	CaLP Act
	Gold-dust Wattle	<i>Acacia acinacea s.l.</i>			R	
†	Weeping Myall	<i>Acacia pendula</i>		Critically Endangered	P	
	Golden Wattle	<i>Acacia pycnantha</i>			R	
	Sheep's Burr	<i>Acaena echinata</i>				
*	Hair Grass	<i>Aira spp.</i>				
	Buloke	<i>Allocasuarina luehmannii</i>		Critically Endangered	P	
*	Hairy Fiddle-neck	<i>Amsinckia calycina</i>				R
*	Cape Weed	<i>Arctotheca calendula</i>				
	Common Woodruff	<i>Asperula conferta</i>				
	Berry Saltbush	<i>Atriplex semibaccata</i>				
	Plump Spear-grass	<i>Austrostipa aristiglumis</i>				
	Rough Spear-grass	<i>Austrostipa scabra</i>				
	Spear Grass	<i>Austrostipa spp.</i>				
*	Oat	<i>Avena spp.</i>				
*	Great Brome	<i>Bromus diandrus</i>				
*	Soft Brome	<i>Bromus hordeaceus</i>				
	Sweet Bursaria	<i>Bursaria spinosa</i>				
	Lemon Beauty-heads	<i>Calocephalus citreus</i>				
	Knob Sedge	<i>Carex inversa</i>				
	Swamp Sheoak	<i>Casuarina obesa</i>		Critically Endangered	P	
	Goosefoot	<i>Chenopodium spp.</i>				
	Windmill Grass	<i>Chloris truncata</i>				
*	Spear Thistle	<i>Cirsium vulgare</i>				R
	Blushing Bindweed	<i>Convolvulus angustissimus</i>				
	Wimmera Bindweed	<i>Convolvulus wimmerensis</i>				
*	Water Buttons	<i>Cotula coronopifolia</i>				
	Sieber Crassula	<i>Crassula sieberiana s.l.</i>				
	Crassula	<i>Crassula spp.</i>				
*	Couch	<i>Cynodon dactylon var. dactylon</i>				
	Late-flower Flax-lily	<i>Dianella tarda</i>		Critically Endangered	P	

**Notes:** EPBC = threatened species status under EPBC Act; FFG-T = threatened species status under the FFG Act; FFG - P = listed as generally protected (P) under the FFG Act; CaLP Act = declared noxious weeds status under the CaLP Act; S = State Prohibited Weeds (any infestations are to be reported to DEECA. DEECA is responsible for control of State Prohibited Weeds); P = Regionally Prohibited Weeds (Land owners must take all reasonable steps to eradicate regionally prohibited weeds on their land); C = Regionally Controlled Weeds (Land owners have the responsibility to take all reasonable steps to prevent the growth and spread of Regionally controlled weeds on their land); R = Restricted Weeds (Trade in these weeds and their propagules, either as plants, seeds or contaminants in other materials is prohibited).

\* = introduced to Victoria

# = Victorian native taxa occurring outside the natural range

† = planted

Origin	Common name	Scientific name	EPBC	FFG-T	FFG-P	CaLP Act
	Silky Blue-grass	<i>Dichanthium sericeum</i> <i>subsp. sericeum</i>				
	Australian Salt-grass	<i>Distichlis distichophylla</i>				
	Tangled Lignum	<i>Duma florulenta</i>				
	Nodding Saltbush	<i>Einadia nutans</i>				
	Spike Sedge	<i>Eleocharis spp.</i>				
	Ruby Saltbush	<i>Enchylaena tomentosa</i> <i>var. tomentosa</i>				
*	Musky Heron's-bill	<i>Erodium moschatum</i>				
	Blue Devil	<i>Eryngium ovinum</i>				
	River Red-gum	<i>Eucalyptus</i> <i>camaldulensis</i>				
*	Sugar Gum	<i>Eucalyptus cladocalyx</i>				
	Black Box	<i>Eucalyptus largiflorens</i>				
#	Flat Spurge	<i>Euphorbia dallachyana</i>				
*	Gazania	<i>Gazania linearis</i>				
	Crane's Bill	<i>Geranium spp.</i>				
	Common Raspwort	<i>Gonocarpus tetragynus</i>				
	Rough Raspwort	<i>Haloragis aspera</i>				
*	Ox-tongue	<i>Helminthotheca</i> <i>echioides</i>				
*	Barley Grass	<i>Hordeum spp.</i>				
	Rush	<i>Juncus spp.</i>				
	Common Blown-grass	<i>Lachnagrostis filiformis</i> <i>s.l.</i>				
*	Prickly Lettuce	<i>Lactuca serriola</i>				
*	Common Peppercress	<i>Lepidium africanum</i>				
*	Wimmera Rye-grass	<i>Lolium rigidum</i>				
*	Rye Grass	<i>Lolium spp.</i>				
	Trefoil	<i>Lotus spp.</i>				
*	Blue Pimpernel	<i>Lysimachia arvensis var.</i> <i>caerulea</i>				
	Short-leaf Bluebush	<i>Maireana brevifolia</i>				
	Wingless Bluebush	<i>Maireana enchylaenoides</i>				
	Bluebush	<i>Maireana spp.</i>				
*	Small-flower Mallow	<i>Malva parviflora</i>				
*	Horehound	<i>Marrubium vulgare</i>				C

**Notes:** EPBC = threatened species status under EPBC Act; FFG-T = threatened species status under the FFG Act; FFG - P = listed as generally protected (P) under the FFG Act; CaLP Act = declared noxious weeds status under the CaLP Act; S = State Prohibited Weeds (any infestations are to be reported to DEECA. DEECA is responsible for control of State Prohibited Weeds); P = Regionally Prohibited Weeds (Land owners must take all reasonable steps to eradicate regionally prohibited weeds on their land); C = Regionally Controlled Weeds (Land owners have the responsibility to take all reasonable steps to prevent the growth and spread of Regionally controlled weeds on their land); R = Restricted Weeds (Trade in these weeds and their propagules, either as plants, seeds or contaminants in other materials is prohibited).

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Origin	Common name	Scientific name	EPBC	FFG-T	FFG-P	CaLP Act
*	Burr Medic	<i>Medicago polymorpha</i>				
	Honey-myrtle	<i>Melaleuca spp.</i>				
*	Two-leaf Cape-tulip	<i>Moraea miniata</i>				P
*	Thread Iris	<i>Moraea setifolia</i>				
*	Musk Weed	<i>Myagrurn perfoliatum</i>				
*	Olive	<i>Olea europaea</i>				
	Grassland Wood-sorrel	<i>Oxalis perennans</i>				
*	Soursob	<i>Oxalis pes-caprae</i>				R
*	Toowoomba Canary-grass	<i>Phalaris aquatica</i>				
*	Canary Island Date-palm	<i>Phoenix canariensis</i>				
	Common Reed	<i>Phragmites australis</i>				
	Common Rice-flower	<i>Pimelea humilis</i>				
*	Radiata Pine	<i>Pinus radiata</i>				
*	Ribwort	<i>Plantago lanceolata</i>				
*	Annual Meadow-grass	<i>Poa annua s.l.</i>				
	Common Tussock-grass	<i>Poa labillardierei</i>				
*	Prostrate Knotweed	<i>Polygonum aviculare s.l.</i>				
	Poranthera	<i>Poranthera spp.</i>				
	Feather Heads	<i>Ptilotus macrocephalus</i>				
*	Onion Grass	<i>Romulea rosea</i>				
*	Sweet Briar	<i>Rosa rubiginosa</i>				C
*	Curled Dock	<i>Rumex crispus</i>				
	Wallaby Grass	<i>Rytidosperma spp.</i>				
*	Wild Sage	<i>Salvia verbenaca var. verbenaca</i>				
	Cotton Fireweed	<i>Senecio quadridentatus</i>				
	Variable Sida	<i>Sida corrugata</i>				
*	Silver-leaf Nightshade	<i>Solanum elaeagnifolium</i>				C
*	Common Sow-thistle	<i>Sonchus oleraceus</i>				
	Broughton Pea	<i>Swainsona procumbens</i>				
	Grey Germander	<i>Teucrium racemosum s.l.</i>				
	Kangaroo Grass	<i>Themeda triandra</i>				
*	Narrow-leaf Clover	<i>Trifolium angustifolium var. angustifolium</i>				
*	Hare's-foot Clover	<i>Trifolium arvense var. arvense</i>				
*	Clover	<i>Trifolium spp.</i>				

**Notes:** EPBC = threatened species status under EPBC Act; FFG-T = threatened species status under the FFG Act; FFG - P = listed as generally protected (P) under the FFG Act; CaLP Act = declared noxious weeds status under the CaLP Act; S = State Prohibited Weeds (any infestations are to be reported to DEECA. DEECA is responsible for control of State Prohibited Weeds); P = Regionally Prohibited Weeds (Land owners must take all reasonable steps to eradicate regionally prohibited weeds on their land); C = Regionally Controlled Weeds (Land owners have the responsibility to take all reasonable steps to prevent the growth and spread of Regionally controlled weeds on their land); R = Restricted Weeds (Trade in these weeds and their propagules, either as plants, seeds or contaminants in other materials is prohibited).

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Origin	Common name	Scientific name	EPBC	FFG-T	FFG-P	CaLP Act
*	Common Vetch	<i>Vicia sativa</i>				
	Club-hair New Holland Daisy	<i>Vittadinia condyloides</i>		Endangered	P	
	Winged New Holland Daisy	<i>Vittadinia pterochaeta</i>		Endangered	P	
	New Holland Daisy	<i>Vittadinia spp.</i>				
*	Squirrel-tail Fescue	<i>Vulpia bromoides</i>				
	Bluebell	<i>Wahlenbergia spp.</i>				
	Rigid Panic	<i>Walwhalleya proluta</i>				
*	Bathurst Burr	<i>Xanthium spinosum</i>				C

**Notes:** EPBC = threatened species status under EPBC Act; FFG-T = threatened species status under the FFG Act; FFG - P = listed as generally protected (P) under the FFG Act; CaLP Act = declared noxious weeds status under the CaLP Act; S = State Prohibited Weeds (any infestations are to be reported to DEECA. DEECA is responsible for control of State Prohibited Weeds); P = Regionally Prohibited Weeds (Land owners must take all reasonable steps to eradicate regionally prohibited weeds on their land); C = Regionally Controlled Weeds (Land owners have the responsibility to take all reasonable steps to prevent the growth and spread of Regionally controlled weeds on their land); R = Restricted Weeds (Trade in these weeds and their propagules, either as plants, seeds or contaminants in other materials is prohibited).

\* = introduced to Victoria

# = Victorian native taxa occurring outside the natural range

† = planted

**Appendix 4: Likelihood of occurrence of listed flora**

Common Name	Scientific name	EPBC	FFG	Habitat	Source	Number of VBA records	Date of last record	Likelihood of occurrence
Hairy-pod Wattle	<i>Acacia glandulicarpa</i>	Vulnerable	Endangered	Occurs in semi-arid grassy and shrubby woodland and mallee communities, supporting heavier loams and sandy-gravel soils respectively (Venn 2003; Carter 2011). The species is distributed in the midwest of the state, around the Wimmera region (Carter 2011). Flowers July to October.	PMST & VBA	1	01/01/1894	The study area is within the known species distribution and contains habitat. However, the absence of nearby historical records and no observations during current and previous vegetation and flora surveys, as well as the highly disturbed nature of understorey vegetation in woodland areas suggest this species is unlikely to occur in the proposed impact area.
Umbrella Wattle	<i>Acacia oswaldii</i>		Critically Endangered	Widespread but rather uncommon through north-western Victoria, mainly in calcareous sands or loam (Entwistle et al. 1996).	VBA	1	22/7/2009	Study area is within the known species distribution. Recorded by EA during native vegetation within the On-Retention Licence study area (Hab Zone 54 – Fig 8n and 13n (AECOM 2023)). Lack of suitable habitat, the highly disturbed nature of the understorey vegetation of the woodland areas throughout the development extent and there were no observations made during current and previous vegetation and flora surveys. Considering this, the species is unlikely to occur in the proposed impact area.
Weeping Myall	<i>Acacia pendula</i>		Critically Endangered	Rare in Victoria with isolated occurrences near Waracknabeal and Echuca. Mainly on floodplains in fertile alluvial clay and red earth soils (Entwistle et al. 1996).	VBA	2	31/1/2008	Study area within natural distribution and contains habitat. Common ornamental tree. Recorded as planted during detailed assessments and targeted surveys. Unlikely to naturally occur in the proposed impact area.
Three-nerve Wattle	<i>Acacia trineura</i>		Critically Endangered	Grows near inland water bodies on red earth and clays. The species is found in the Wimmera, Murray Mallee and Lowan Mallee regions. Flowers August to November (RBGV 2023).	VBA	1	1/10/1977	Study area within known species distribution and contains habitat. However, the lack of nearby recent records, the highly disturbed nature of the understorey vegetation of the woodland areas and there were no observations made during current and previous vegetation and flora surveys suggesting the species is unlikely to occur in the proposed impact area.
Buloke	<i>Allocasuarina luehmannii</i>		Critically Endangered	Often grows on non-calcerous soils in Grey Box Eucalyptus microcarpa woodlands, as well as escarpment shrubland and plains grassland communities. Flowers September to November (Bull 2014; RBGV 2023).	VBA	14	26/3/2019	Recorded during detailed assessments and during targeted surveys. Does occur within the study area.
River Swamp Wallaby-grass	<i>Amphibromus fluitans</i>	Vulnerable		River Swamp Wallaby-grass grows mostly in permanent swamps and also lagoons, billabongs, dams and roadside ditches. The species requires moderately fertile soils with some bare ground; conditions that are caused by seasonally-fluctuating water levels (DCCEEW 2023).	PMST	No VBA records	N/A	Study area is on the edge of known species distribution. Lack of habitat within study area, no nearby historical records, and there were no observations made during current and previous vegetation and flora surveys suggesting this species is unlikely to occur in the proposed impact area.
Buloke Mistletoe	<i>Amyema linophylla subsp. orientalis</i>		Critically Endangered	Grows in association with its host-plant, Buloke <i>Allocasuarina luehmannii</i> . The species is widespread in western Victoria, but less common due to declining populations of Buloke. Flowers January to April (RBGV 2023).	VBA	1	4/9/1973	Known to occur on the eastern side of the River Wheat Road reserve. However, this species was not recorded in the current study area during detailed assessments and targeted surveys. Unlikely to occur within the study area.
Downy Star-Bush	<i>Asterolasia phebaloides</i>	Vulnerable	Vulnerable	Victoria, occurs in Grampians and Little Desert in open woodland, forest and heath on sandstone and sandy soils (Duretto 1999).	PMST	No VBA records	N/A	Study area is on the edge of the known species distribution and contains habitat. Understorey vegetation is highly modified, there are no nearby historical records, and there were no observations made during vegetation and flora surveys. Considering this, this species is unlikely to occur in the proposed impact area.
Fine-hairy Spear-grass	<i>Austrostipa puberula</i>		Endangered	This species is primarily restricted to sandy areas in the far north-western region of the State, where it is commonly found on lighter, often wind-deposited soils with calcareous properties, particularly in the Wimmera and southern Mallee, but also in similar landscapes in the south-west. It generally inhabits grassy woodlands where Buloke, Native Pine, or Eucalypt species—such as Grey Box, Yellow Box, and Black Box—form the dominant canopy (DELWP 2021).	VBA	1	8/12/1998	Study area is within the known species distribution. Recorded previously during targeted flora surveys within the On-Retention Licence study area (i.e., along Greenhills Road (Nature Advisory 2025)). There were no observations made during current and previous vegetation and flora surveys within the current study area. Considering this, the species is unlikely to occur in the proposed impact area.
Yellow-tongue Daisy	<i>Brachyscome chrysoglossa</i>		Endangered	In Victoria occurring as far west as Jeparit and Horsham, extending eastward to Strathmerton and Ulupna Island, commonly on clay soils subject to inundation (Short 1999).	VBA	2	01/01/1890	Study area is within the known species distribution and contains habitat. There were no observations made during current and previous vegetation and flora surveys within the study area. Considering this, the species is unlikely to occur in the proposed impact area.

Notes: grey shading = species likely or with potential to occur in study area; EPBC = status under EPBC Act; FFG = status under FFG Act.

Common Name	Scientific name	EPBC	FFG	Habitat	Source	Number of VBA records	Date of last record	Likelihood of occurrence
Rigid Spider-orchid	<i>Caladenia tensa</i>	Endangered		Known to occur in Eucalyptus and Callitris woodland in well-drained sandy loams, among shrubs. Widespread within and near Little Desert (Jones 2006).	PMST	No VBA records	N/A	Within known species distribution. However, study area lacks suitable habitat due to the highly modified nature of the understory vegetation and no records during vegetation and flora surveys indicating this species is unlikely to occur in the proposed impact area.
Candy Spider-orchid	<i>Caladenia versicolor</i>	Vulnerable	Endangered	Grows on winter-wet sandy loams in woodland habitat. Known from the Stawell area, in the western Midlands region (RBGV 2023).	PMST	No VBA records	N/A	Outside of known species distribution, study area lacks habitat, no nearby historical records, and no records during vegetation and flora surveys, making it unlikely to occur in the proposed impact area.
Yellow-lip Spider-orchid	<i>Caladenia xanthochila</i>	Endangered	Endangered	Grows in Yellow Gum ( <i>Eucalyptus leucoxylon</i> ) woodland, on sandy soils. A rare species known only from four areas between Bendigo and Dimboola. Flowers during September (RBGV 2023).	PMST	No VBA records	N/A	Within known species distribution. However, study area lacks suitable habitat due to the highly modified nature of the understory vegetation and no records during vegetation and flora surveys, indicating this species is unlikely to occur in the proposed impact area.
Wimmera Bottlebrush	<i>Callistemon wimmerensis</i>	Critically Endangered	Endangered	Associated with Plains Riparian Shrubby Woodland with a shrubby and grassy understorey (EVC 659) and Plains Swampy Woodland (EVC 651) in one small area in upper reaches of MacKenzie River (Marriott & Carr 2008). Rarely found away from creek edges and does not occur on steep terraces or rocky areas (Marriott & Carr 2008). Soil type in known habitat is alluvial terraces of pale brown, silty alluvium (over a sandstone bedrock) derived predominantly from Upper Silurian-Lower Devonian quartose sandstones of the Grampians (Marriott & Carr 2008).	PMST	No VBA records	N/A	Outside known species distribution, study area lacks habitat, no nearby historical records and no records during vegetation and flora surveys indicating this species is unlikely to occur in the proposed impact area.
Cut-leaf Burr-daisy	<i>Calotis anthemoides</i>		Critically Endangered	A rare species that grows in habitat prone to waterlogging, on heavy soils. Distributed in the north and west of Victoria. Flowers September to December (RBGV 2023).	VBA	2	12/12/1996	Study area is within the known species distribution and contains habitat. There were no observations made during current and previous vegetation and flora surveys within the study area. Considering this, the species is unlikely to occur in the proposed impact area.
Western Bitter-cress	<i>Cardamine lineariloba</i>		Endangered	Drainage lines, saline flats and stream banks.	VBA	2	2/9/1995	Within known species distribution and contains habitat. Historical records found next to Darlot Swamp Wildlife Reserve in high quality woodland. Lack of recent records and no records during vegetation and flora surveys indicate this species is unlikely to occur in the proposed impact area.
Riverina Bitter-cress	<i>Cardamine moirensis</i>		Endangered	Grows in seasonally wet areas, across the north and west of Victoria. Flowers June to November (RBGV 2023).	VBA	3	2/9/1995	Within known species distribution and contains habitat. Historical records found next to Darlot Swamp Wildlife Reserve in high quality woodland. Lack of recent records and no records during vegetation and flora surveys indicate this species is unlikely to occur in the proposed impact area.
Cotton Sneezeweed	<i>Centipeda nidiformis</i>		Endangered	Scattered throughout the Murray Basin and around the Grampians along the margins of watercourses on clay or clay-loam soils (VicFlora 2025).	VBA	1	31/8/1902	Within known species distribution and contains habitat. However, the lack of nearby recent records and the highly disturbed nature of the understorey vegetation suggest the species is unlikely to occur in the proposed impact area.
Small Milkwort	<i>Comesperma polygaloides</i>		Critically Endangered	Grows in remnant native grassland of the Western (Basalt) Plains, in association with Kangaroo Grass <i>Themeda triandra</i> , Common Tussock-grass <i>Poa labillardieri</i> , Wallaby-grass <i>Rytidosperma</i> spp. and Spear-grass <i>Austrostipa</i> spp. The species is also known from Grey Box <i>Eucalyptus microcarpa</i> and Yellow Gum <i>Eucalyptus leucoxylon</i> grassy woodlands in the Wimmera and Bendigo areas. Flowers November to February (DSE 2004).	VBA	1	23/10/1998	Within known species distribution and study area contains suitable habitat. Historical records found to the east of the study area within woodland along Corkers Creek (Figure 2 (AECOM 2023)) are of higher quality than suitable habitat within the proposed impact area. Given the highly modified condition of the understorey vegetation in this area and no records during vegetation and flora surveys, this species is unlikely to occur within the impact area.
Spotted Gum	<i>Corymbia maculata</i>		Vulnerable	Known from the Mottle Range, south of Buchan. The species is also widely planted for ornamental purposes. Flowers July to September (RBGV 2023).	VBA	3	26/3/2019	Outside of known species distribution. Species widely cultivated. Recent nearby records are likely planted, and are therefore not considered for the purposes of this investigation. Does not naturally occur.
Thorny Bitter-pea	<i>Daviesia pectinata</i>		Critically Endangered	Confined to the west of Victoria where it is restricted to the Little Desert and Horsham areas. Occurs in mallee scrublands and woodlands on dry stony or sandy soils (VicFlora 2025).	VBA	2	1/10/1927	Study area is on the edge of the known species distribution and lacks habitat. Understorey vegetation is highly modified, there is a lack of nearby historical records, and there were no observations made during vegetation and flora surveys. Considering this, this species is unlikely to occur in the proposed impact area.

Notes: grey shading = species likely or with potential to occur in study area; EPBC = status under EPBC Act; FFG = status under FFG Act.

Common Name	Scientific name	EPBC	FFG	Habitat	Source	Number of VBA records	Date of last record	Likelihood of occurrence
Umbrella Grass	<i>Digitaria divaricatissima</i> <i>var. divaricatissima</i>		Endangered	Heavier soils prone to occasional flooding.	VBA	1	13/12/2018	Within known species distribution. However the study area lacks habitat and nearby recent records. Additionally, the highly disturbed nature of the understorey vegetation suggest the species is unlikely to occur in the proposed impact area.
Brown Beetle-grass	<i>Diplachne fusca</i> subsp. <i>fusca</i>		Endangered	Grows in billabongs and floodplains, where the species favours shallow water. Known from the Murray River and associated tributaries. Flowers all year (RBGV 2023).	VBA	1	01/01/1889	Within known species distribution and contains habitat. Lack of recent nearby records suggest this species is unlikely to occur in the proposed impact area.
Swamp Diuris	<i>Diuris palustris</i>		Endangered	Grows in swampy habitat in grassland and open woodland communities. Scattered across western Victoria, though now considered extinct in sites around Melbourne. Flowers August to October (RBGV 2023).	VBA	1	01/01/1893	Within known species distribution. However the study area lacks habitat and nearby recent records. Additionally, the highly disturbed nature of the understorey vegetation suggest the species is unlikely to occur in the proposed impact area.
Trailing Hop-bush	<i>Dodonaea procumbens</i>	Vulnerable		Grows in a variety of habitats, including woodland, low open forest, grassland and heathland, where the species is found in winter-wet areas on clays and sands. Largely restricted to the south-west of the state, between Castlemaine, Dergholm and Cressy. Flowers spring to summer (Carter 2010).	PMST & VBA	1	3/10/2008	Study area on edge of known species distribution. Lacks suitable habitat due to the highly modified nature of the understory vegetation and no records during vegetation and flora surveys make it unlikely to occur in the proposed impact area.
Spiny Lignum	<i>Duma horrida</i> subsp. <i>horrida</i>		Critically Endangered	Silty soils and clays fringing shallow swamps and lakes (Walsh 1996).	VBA	2	7/9/2019	Study area is within the known species distribution. Recorded previously during targeted flora surveys within the On-Retention Licence study area (i.e., along Greenhills Road (Nature Advisory 2025)). There were no observations made during current and previous vegetation and flora surveys within the current study area. Considering this, the species is unlikely to occur in the proposed impact area.
Kamarooka Mallee	<i>Eucalyptus froggattii</i>		Critically Endangered	Mallee scrub and woodland (Brooker & Slee 1996).	VBA	1	18/9/1946	Within known species distribution. However the study area lacks habitat and nearby recent records suggesting this species is unlikely to occur in the proposed impact area.
Deniliquin Box	<i>Eucalyptus X oxypoma</i>		Endangered	Occurs in northern and western Victoria (e.g., Dimboola, Horsham, and Kerang) where it occurs on more elevated parts of floodplains, around the boundary between the distributions of the two parent taxa (i.e. <i>E. camaldulensis</i> and <i>E. largiflorens</i> ; VicFlora 2019)	VBA	1	11/7/1985	Study area on edge of known species distribution. There is a lack of recent nearby records which suggest that this species is unlikely to occur in the proposed impact area.
Clover Glycine	<i>Glycine latrobeana</i>	Vulnerable	Vulnerable	Primarily favours grassland and grassy woodland, though also known from dry forest and rarely heathland. This species mostly grows on clays and sometimes more loamy soils. Distribution is widespread but sporadic across the state. Flowers during spring at lower elevations, and during summer at higher elevations (Carter & Sutter 2010).	PMST	No VBA records	N/A	Within known species distribution and contains suitable habitat. However, the lack of recent historical records and no records during vegetation and flora surveys indicate the species is unlikely to occur in the proposed impact area.
Winged Peppergrass	<i>Lepidium monoplacoides</i>	Endangered	Endangered	Occurs predominantly in mallee scrub in semi-arid areas. Sites are seasonally moist to water-logged with heavy, fertile soils and a mean annual rainfall of around 300 to 500 mm. The predominant vegetation is usually an open-woodland dominated by <i>Allocasuarina leuhmannii</i> and/or eucalypts, particularly <i>Eucalyptus largiflorens</i> (Black Box) or <i>Eucalyptus populnea</i> (Poplar Box). The field layer of the surrounding woodland is dominated by tussock grasses (notably <i>Danthonia</i> spp. and <i>Stipa</i> spp.), but the seasonally waterlogged sites preferred by Winged Pepper-grass also support a number of moisture dependent herbs, such as <i>Marsilea</i> spp. Also known from riparian woodland (e.g. Gunbower Is.) (DCCEEW 2023).	PMST	No VBA records	N/A	Study area on the edge of known species distribution and contains suitable habitat. However, there are no nearby historical records and no records during vegetation and flora surveys - so it is considered unlikely to occur in the proposed impact area.

Notes: grey shading = species likely or with potential to occur in study area; EPBC = status under EPBC Act; FFG = status under FFG Act.

Common Name	Scientific name	EPBC	FFG	Habitat	Source	Number of VBA records	Date of last record	Likelihood of occurrence
Button Immortelle	<i>Leptorhynchos waitzia</i>		Endangered	Occurs in open grassy plains, grassy woodlands and sandy flats in mallee areas. Isolated occurrence at Lake Corangamite (VicFlora 2023).	VBA	1	1/11/1903	Within known species distribution and contains habitat. However, the highly modified condition of the understorey vegetation in this area and no records during vegetation and flora surveys suggest that this species is unlikely to occur within the impact area.
Chariot Wheels	<i>Maireana cheelii</i>	Vulnerable	Endangered	Usually found on heavier, grey clay soils with <i>Atriplex vesicaria</i> (Bladder Saltbush). Recorded on the Hay Plain in <i>Atriplex vesicaria</i> , <i>Maireana aphylla</i> and <i>Acacia homalophylla</i> shrublands. Soils include heavy brown to red-brown clay-loams, hard cracking red clay, other heavy texture-contrast soils.	PMST	No VBA records	N/A	Study area contains suitable habitat but is outside the natural distribution of the species. Additionally, there are no nearby historical records, and there were no records during the vegetation and flora surveys. Therefore, this species is unlikely to occur in the proposed impact area.
Giant Honey-myrtle	<i>Melaleuca armillaris subsp. armillaris</i>		Endangered	A near-coastal species that grows in sandy heath, scrub (associated with saltmarsh and/or riparian habitat) and rocky habitat in coastal and foothill areas. Naturally occurs eastwards from Marlo, though the species is widely cultivated outside its natural distribution. Flowers during summer (RBGV 2023).	VBA	1	26/3/2019	Study area outside natural distribution. Common street and ornamental tree. Local records likely refer to planted specimens. No records during vegetation and flora surveys and therefore it is unlikely to occur in the proposed impact area.
Ridged Water-milfoil	<i>Myriophyllum porcatum</i>	Vulnerable	Critically Endangered	Rare and restricted to northern and north western Victoria where it has been recorded growing in temporary waterholes, lagoons, farm dams, and rock holes and on clay pans (Jeanes 1996).	PMST	No VBA records	N/A	Study area is outside the natural distribution of the species, lacks habitat and there are no nearby historical records. Therefore, this species is unlikely to occur in the proposed impact area.
Wavy Marshwort	<i>Nymphoides crenata</i>		Endangered	In Victoria, known predominantly from along the Murray River (Riverina bioregion) with previous collections from the Midlands, Wimmera and Wilsons Promontory bioregions. Occurs in fresh, still to slow-flowing water to 1.5 m deep in swamps, lagoons, irrigation channels, streams and in temporarily inundated depressions (VicFlora 2025).	VBA	3	4/1/1964	Within known species distribution and contains habitat. However, the highly modified condition of the Wimmera River and a lack of recent nearby records suggest that this species is unlikely to occur within the impact area.
Wimmera Rice-flower	<i>Pimelea spinescens subsp. pubiflora</i>	Critically Endangered	Critically Endangered	Only known from two extant populations at Natimuk and Minyip, in western Victoria. Both populations occur on level ground with a loamy soil type. The Natimuk population occurs on a roadside reserve in a grassland dominated by spear grasses and wallaby grasses ( <i>Austrostipa</i> and <i>Austrodanthonia</i> species respectively), with scattered shrubs of <i>Bursaria spinosa</i> (Sweet Bursaria) and <i>Senna artemisioides</i> (Cassia), whereas the population at Minyip occurs on Crown Land within a Buloke grassland area (DCCEE 2023).	PMST	No VBA records	N/A	The study area is within the known distribution of this species, however only two small populations are considered to remain. Grassland habitat within the impact area was surveyed extensively and there were no records during vegetation and flora surveys. Additionally, understorey vegetation is of a highly modified condition. Therefore, this species is unlikely to occur in the proposed impact area.
Spiny Rice-flower	<i>Pimelea spinescens subsp. spinescens</i>	Critically Endangered	Critically Endangered	Found growing in grassland, open shrubland and occasionally woodland on soils derived from basalt, usually comprising black or grey clays. Populations in the north of Victoria occur on red clay complexes, while southern populations occur on heavy grey-black clay loams. Occurs primarily on flat land but can occur on slight rises or in slightly wettish depressions. Flowers April to August (Carter, O & Walsh, N 2006; RBGV 2023).	PMST & VBA	1	01/01/1894	Study area on the edge of known species distribution and contains suitable habitat. However, there is a lack of recent nearby records, and no records during the vegetation and flora surveys. Therefore, unlikely to occur in the proposed impact area.
Floodplain Rustyhood	<i>Pterostylis cheraphila</i>	Vulnerable	Endangered	Grows in open <i>Eucalyptus largiflorens</i> / <i>Eucalyptus leucoxylo</i> n woodland with a sparse grassy understorey, on seasonally inundated, heavy, grey-black clay soils. A couple of sites occur on the floodplain of the Wimmera River (Duncun et al. 2009).	PMST & VBA	7	30/6/2011	Within known species distribution and study area contains suitable habitat. However, the highly modified condition of the understorey vegetation in this area and no records during vegetation and flora surveys suggest the species is unlikely to occur within the impact area .

Notes: grey shading = species likely or with potential to occur in study area; EPBC = status under EPBC Act; FFG = status under FFG Act.

Common Name	Scientific name	EPBC	FFG	Habitat	Source	Number of VBA records	Date of last record	Likelihood of occurrence
Green-striped Greenhood	<i>Pterostylis chlorogramma</i>	Vulnerable	Endangered	Found growing on sandy-loam soils in Box-Stringbark forest, often supporting a canopy of Eucalyptus obliqua, Eucalyptus radiata, Eucalyptus cephalocarpa and/or Eucalyptus cypellocarpa. The understory typically comprises a dominant Pteridium esculentum component, and may also include Hakea ulicina, Dillwynia glaberrima, Pultenaea scabra, Banksia spinulosa, Epacris impressa, Acacia mucronata, Leptospermum laevigatum, Monotoca scoparia, and Bursaria spinosa. The species has a scattered distribution from Yarram to Edenhope. Flowers July to September (Duncan, Pritchard & Coates 2009).	PMST	No VBA records	N/A	Study area lacks suitable habitat, there are no nearby historical records, and no records during vegetation and flora surveys. So it is considered unlikely to occur in the proposed impact area.
Hairy Tails	<i>Ptilotus erubescens</i>		Critically Endangered	Grows in grassland, grassy woodland and heathy habitat. Favours heavy soils (north and west of Melbourne) and sandy soils (far western Victoria). Mostly distributed in the west of the state, though an isolated occurrence exists in the far east at Wingan Inlet. Flowers October to February (RBGV 2023).	VBA	3	12/12/1996	Within known species distribution and contains habitat. However, during EA, AECOM and Nature Advisory's 2018-2020, 2022 and 2024 targeted surveys (respectively), none were found within the development extent. It is therefore considered unlikely to occur in the proposed impact area.
Swamp Buttercup	<i>Ranunculus undosus</i>		Endangered	Heavy soils in seasonally wet areas.	VBA	2	15/9/1990	Within known species distribution and contains suitable habitat. However, there is a scarcity of historical records, and no records during vegetation and flora surveys. Unlikely to occur within proposed impact area.
Turnip Copperburr	<i>Sclerolaena napiformis</i>	Endangered	Critically Endangered	Grows in native grasslands and grassy woodlands on relatively fertile clay-loam soils. In Victoria the species grows on red clay to red loam soils, and associated species include Common Wallaby-grass, Rough Spear-Grass, Spurred Spear-Grass, Common Everlasting and Buloke. Anecdotal evidence suggests that Turnip Copperburr can tolerate waterlogging in the spring, and all remaining populations are located in close vicinity to a water course or swamp.	PMST & VBA	1	10/9/1999	Within known species distribution and contains habitat. Historical records occur to the east of the study area in high quality wooded roadsides on the outskirts of Saw Pit Swamp Wildlife Reserve and adjacent to Corkers Creek (which leads into the Barrabool Nature Conservation Reserve). Targeted surveys conducted by EA (2020), AECOM (2023a) and Nature Advisory (2025) were unable to detect this species, indicating it is unlikely to occur within the proposed impact area.
Large-headed Fireweed	<i>Senecio macrocarpus</i>	Vulnerable	Critically Endangered	Occurs most commonly west of Melbourne in remnant Themeda grasslands on clay or clay-loam soils derived from Basalt but can also occur in sedgeland, grassy woodlands and open woodlands across the Victorian Volcanic Plain. Flowers August to October (DEECA 2023; RBGV 2023).	PMST	No VBA records	N/A	Within known species distribution and contains habitat. However, during EA's 2018- 2020 and Nature Advisory's 2024 targeted surveys, none were detected within the development extent, indicating it is unlikely to occur in the proposed impact area.
Slender Darling-pea	<i>Swainsona murrayana</i>	Vulnerable	Endangered	The Slender Darling-pea often grows in heavy soils, especially depressions, and is also found on grey and red to brown clay and clay-loam soils in Atriplex vesicaria (Bladder Saltbush) herbland, Eucalyptus largiflorens (Black Box) woodland and grassland communities and is frequently associated with Maireana species. In Victoria, the species is found in seasonally inundated flats around lakes (DCCEEW 2023).	PMST & VBA	2	30/6/2011	Within known species distribution and study area contains suitable habitat. Historical records found to the east of the study area within woodland next to Corkers Creek and adjacent roadsides (Figure 2 (AECOM 2023)) are of higher quality than suitable habitat within the proposed impact area. Given the highly modified condition of the understorey vegetation and no records during vegetation and flora surveys, this species is unlikely to occur within the impact area.
Red Swainson-pea	<i>Swainsona plagiotropis</i>	Vulnerable	Endangered	Restricted to several sites in north-central Victoria between Bendigo and the Murray River. Growing in grassland on heavy red soils it is now predominantly confined to roadside remnants (Jeanes 1999).	PMST	No VBA records	N/A	Study area contains habitat but is outside the known species distribution. There are no nearby historical records, and no records during vegetation and flora surveys. Therefore, it is unlikely to occur in the proposed impact area.

**Notes:** grey shading = species likely or with potential to occur in study area; EPBC = status under EPBC Act; FFG = status under FFG Act.

Common Name	Scientific name	EPBC	FFG	Habitat	Source	Number of VBA records	Date of last record	Likelihood of occurrence
Silky Swainson-pea	<i>Swainsona sericea</i>		Endangered	Rare in Victoria, of disjunct occurrence in north of state where usually found in grassland and grassy woodland (Jeanes 1996).	VBA	6	8/10/2013	Within known species distribution and study area contains suitable habitat. Historical records found to the east of the study area within woodland next to Corkers Creek and adjacent roadsides (Figure 2 (AECOM 2023)) are of higher quality than suitable habitat within the proposed impact area. Given the highly modified condition of the understorey vegetation in this area and no records during vegetation and flora surveys, this species is unlikely to occur within the proposed impact area.
Downy Swainson-pea	<i>Swainsona swainsonioides</i>		Endangered	Heavier clay soils in woodland (Jeanes 1996).	VBA	4	18/12/1998	Within known species distribution and study area contains suitable habitat. Historical records from next to Wimmera River in what appears to be high quality woodland (Figure 2 (AECOM 2023)). Given the highly modified condition of the understorey vegetation and no records during vegetation and flora surveys, this species is unlikely to occur within the proposed impact area.
Metallic Sun-orchid	<i>Thelymitra epipactoides</i>	Endangered	Endangered	Primarily found in coastal areas, growing on dry sand loams or loamy sands in heathland, grassland and woodland habitat. The species is also found further inland in comparable habitat (Backhouse & Jeanes 1995). Distribution ranges as far west as the SA border, north to the Nhill-Dimboola area and as far east as the Bairnsdale area. Flowers September to November, during sunny periods (RBGV 2023).	PMST	No VBA records	N/A	Study area on the edge of known species distribution, there are no nearby historical records, and no records during vegetation and flora surveys indicate it is unlikely to occur in the proposed impact area.
Slender Plum-orchid	<i>Thelymitra orientalis</i>	Critically Endangered	Critically Endangered	Occurs in heath and heathy woodland, usually in damp/seepage areas along watercourses and around swamp margins, on either in peaty white sands or heavy black often peaty soils (DEECA 2023; RBGV 2023).	PMST	No VBA records	N/A	Study area outside the known species distribution, there are no nearby historical records, and no records during vegetation and flora surveys indicate it is unlikely to occur in the proposed impact area.
Torpedo Arrowgrass	<i>Triglochin trichophora</i>		Critically Endangered	In Victoria, this species occurs near Horsham where it grows in sandy and calcareous soils (VicFlora 2025).	VBA	1	13/10/1986	Within known species distribution and study area contains suitable habitat. The lack of recent nearby records suggests this species is unlikely to occur within the proposed impact area.
Fuzzy New Holland Daisy	<i>Vittadinia cuneata var. morrisii</i>		Endangered	Only known from a few small populations.	VBA	2	22/12/2011	Within known species distribution and contains habitat. However, during AECOM (2022) and Nature Advisory's (2024) targeted surveys, none were found within the development extent. It is therefore considered unlikely to occur in the proposed impact area.
Giant New Holland Daisy	<i>Vittadinia megacephala</i>		Endangered	Scattered throughout the Wimmera and Mallee, where it is found on sandy soils and heathy woodlands (Vicflora 2023).	VBA	1	5/11/1996	Within known species distribution and contains habitat. However, during AECOM (2022) and Nature Advisory's (2024) targeted surveys, none were found within the development extent. It is therefore considered unlikely to occur in the proposed impact area.
Winged New Holland Daisy	<i>Vittadinia pterochaeta</i>		Endangered	Very rare in Victoria, known by only a few collections in the Quambatook-Leaghur region, near Warracknabeal and Walpolla Island west of Mildura. Apparently confined to relatively fertile clay-loam soils (Walsh 1996).	VBA	2	12/12/1996	Recorded during detailed assessments and during targeted surveys. Does occur within the study area.

**Notes:** grey shading = species likely or with potential to occur in study area; EPBC = status under EPBC Act; FFG = status under FFG Act.

**Appendix 5: Fauna species recorded in the study area**

Origin	Common name	Scientific name	EPBC-T	EPBC-M	FFG
	Australian Magpie	<i>Gymnorhina tibicen</i>			
	Australian Wood Duck	<i>Chenonetta jubata</i>			
	Brown Songlark	<i>Cinchoramphus cruralis</i>			
*	Common Starling	<i>Sturnus vulgaris</i>			
	Crested Pigeon	<i>Ocyphaps lophotes</i>			
*	Domestic Pigeon	<i>Columba livia</i>			
	Eastern Brown Snake	<i>Pseudonaja textilis</i>			
*	Eurasian Skylark	<i>Alauda arvensis</i>			
*	European Rabbit	<i>Oryctolagus cuniculus</i>			
	Galah	<i>Eolophus roseicapilla</i>			
*	House Sparrow	<i>Passer domesticus</i>			
	Magpie-lark	<i>Grallina cyanoleuca</i>			
	Nankeen Kestrel	<i>Falco cenchroides</i>			
	New Holland Honeyeater	<i>Phylidonyris novaehollandiae</i>			
	Noisy Miner	<i>Manorina melanocephala</i>			
	Ravens and Crows	<i>Corvus spp.</i>			
*	Red Fox	<i>Vulpes vulpes</i>			
	Spotted Pardalote	<i>Pardalotus punctatus</i>			
	Sulphur-crested Cockatoo	<i>Cacatua galerita</i>			
	Superb Fairy-wren	<i>Malurus cyaneus</i>			
	Welcome Swallow	<i>Hirundo neoxena</i>			
	Whistling Kite	<i>Haliastur sphenurus</i>			
	Willie Wagtail	<i>Rhipidura leucophrys</i>			
	Yellow-tailed Black-Cockatoo	<i>Zanda funerea</i>			

**Notes:** EPBC-T = Threatened species status under EPBC Act; EPBC-M: Migratory status under the EPBC Act (M = listed migratory taxa; Bonn Convention (A2H) – Convention on the Conservation of Migratory Species of Wild Animals – listed as a member of a family; Bonn Convention (A2S) – Convention on the Conservation of Migratory Species of Wild Animals – species listed explicitly; CAMBA – China-Australia Migratory Birds Agreement; JAMBA – Japan-Australia Migratory Birds Agreement; ROKAMBA – Republic of Korea Australia Migratory Birds Agreement); FFG: = Threatened species status under the FFG Act.

\* = introduced to Victoria

## Appendix 6: Likelihood of occurrence of listed fauna

Common Name	Scientific name	EPBC - T	EPBC - M	FFG	Habitat	Source	Number of VBA records	Date of last record	Likelihood of occurrence
<b>Birds</b>									
Australasian Bittern	<i>Botaurus poiciloptilus</i>	Endangered		Critically Endangered	Terrestrial wetlands, including a range of wetland types but prefers permanent water bodies with tall dense vegetation, particularly those dominated by sedges, rush, reeds or cutting grass (Marchant & Higgins 1990).	PMST & VBA	4	3/1/1996	No suitable habitat present within study area and lack of recent historical records. Unlikely to occur.
Australasian Shoveler	<i>Spatula rhynchotis</i>			Vulnerable	Large and deep permanent bodies of water and aquatic flora abundant. Also occurs on billabongs, watercourses and flood waters on alluvial plains, freshwater meadows, shallow swamps, reed swamps, wooded lakes, sewage farms and farm dams (Marchant & Higgins 1990).	eBird & VBA	59	4/3/2024	Nearby suitable habitat occurs in the form of farm dams, and historical records from search region suggest this species has potential to occur near the study area.
Australian Gull-billed Tern	<i>Gelochelidon macrotarsa</i>			Endangered	Shallow freshwater and saline wetlands; intertidal mudflats, also in sheltered inshore marine waters where they roost on sandbars and beaches (Higgins & Davies 1996).	eBird	No VBA records	N/A	Lack of suitable habitat within study area and no nearby historical records. Unlikely to occur.
Australian Painted-snipe	<i>Rostratula australis</i>	Endangered		Critically Endangered	Generally inhabits shallow terrestrial freshwater wetlands, including temporary and permanent lakes, swamps and claypans. They also use inundated or waterlogged grassland or saltmarsh, dams, rice crops, sewage farms and bore drains. Typical sites include those with rank emergent tussocks of grass, sedges, rushes or reeds, or samphire; often with scattered clumps of <i>Lignum muehlenbeckia</i> or canegrass or sometimes tea-tree ( <i>Melaleuca</i> ). Sometimes utilises areas that are lined with trees, or that have some scattered fallen or washed-up timber (DCCEEW 2023).	PMST	No VBA records	N/A	Lack of suitable habitat within study area and no nearby historical records. Unlikely to occur.
Bar-tailed Godwit	<i>Limosa lapponica</i>	Endangered	BONNA2H,R OKAMBA,JAM BA,CAMBA	Vulnerable	Mainly coastal species, usually in sheltered bays, estuaries and lagoons with large intertidal mudflats or sandflats (Higgins & Davies 1996).	eBird	No VBA records	N/A	Lack of suitable habitat within study area and no nearby historical records. Unlikely to occur.
Black Falcon	<i>Falco subniger</i>			Critically Endangered	Woodlands, open country and terrestrial wetlands; in arid and semi-arid zones; mainly over open plains and undulating land with large tracts of low vegetation. It is more commonly found in north-western Victoria and is only occasionally found in southern Victoria. It is a highly mobile species, moving in response to food availability and seasonal conditions (Marchant & Higgins 1993).	eBird & VBA	18	14/2/2019	Suitable habitat occurs in the study area and recent records from the search region suggest this species is likely to occur.
Black-tailed Godwit	<i>Limosa limosa</i>	Endangered	BONNA2H,R OKAMBA,JAM BA,CAMBA	Critically Endangered	Mainly coastal species, usually in sheltered bays, estuaries and lagoons with large intertidal mudflats or sandflats. In Vic. Found mainly round Port Phillip Bay (Higgins & Davies 1996).	eBird	No VBA records	N/A	Lack of suitable habitat within study area and no nearby historical records. Unlikely to occur.
Blue-billed Duck	<i>Oxyura australis</i>			Vulnerable	Terrestrial wetlands and prefers deep permanent, well vegetated water bodies (Marchant & Higgins 1990).	eBird & VBA	25	4/3/2024	Lack of suitable habitat within study area. Unlikely to occur.
Blue-winged Parrot	<i>Neophema chrysostoma</i>	Vulnerable			Occupies coastal, subcoastal and inland habitats ranging into semi-arid zones. Throughout much of range inhabits grasslands and grassy woodlands and forest (Higgins 1999).	eBird, PMST & VBA	2	2/1/2020	May occasionally move through the study area on migration between distant, more suitable habitat. Potential to occur.

**Notes:** grey shading indicates species that are likely to or have the potential to occur in the study area; **EPBC-T** = threatened species status under EPBC Act; **EPBC-M** = migratory status under the EPBC Act (M = listed migratory taxa; Bonn Convention (A2H) - Convention on the Conservation of Migratory Species of Wild Animals – listed as a member of a family; Bonn Convention (A2S) - Convention on the Conservation of Migratory Species of Wild Animals - species listed explicitly; CAMBA - China-Australia Migratory Birds Agreement; JAMBA - Japan-Australia Migratory Birds Agreement; ROKAMBA - Republic of Korea Australia Migratory Birds Agreement); **FFG** = threatened species status under the FFG Act.

Common Name	Scientific name	EPBC - T	EPBC - M	FFG	Habitat	Source	Number of VBA records	Date of last record	Likelihood of occurrence
Brolga	<i>Antigone rubicunda</i>			Endangered	Wetlands that include permanent open water and deep freshwater marsh. Between 500 and 700 Brolgas are known to occur in southwestern Victoria (Marchant & Higgins 1993).	eBird & VBA	15	16/2/2022	Lack of suitable habitat. Unlikely to occur.
Brown Treecreeper	<i>Climacteris picumnus</i>	Vulnerable			Woodlands dominated by eucalypts, especially Stringybarks or other rough-barked eucalypts usually with open grassy understorey (Higgins et al. 2001)	eBird, PMST & VBA	109	11/3/2021	Recorded at Darlot Swamp and Dooen Swamp adjacent to study area during field assessment by Nature Advisory. Some suitable habitat within study area. Known to occur.
Bush Stone-curlew	<i>Burhinus grallarius</i>			Critically Endangered	Open woodlands with Grey Box, Yellow Box and/or River Red Gum, with a grassy understorey. The species is mainly found in northern and western Victoria; the bird has declined since European settlement, especially in the south of the state (Robinson & Johnson 1997).	eBird & VBA	66	25/7/2020	Suitable habitat occurs in remnant woodlands adjacent to study area including Dooen Swamp Bushland Reserve, and recent records from search region suggest this species has potential to occur in the study area.
Caspian Tern	<i>Hydroprogne caspia</i>		CAMBA, JAMBA	Vulnerable	Sheltered coastal embayment, including harbours, lagoons, inlets, estuaries and river deltas, usually with sandy or muddy margins (Higgins & Davies 1996).	eBird & VBA	12	29/11/2018	Lack of suitable habitat. Unlikely to occur.
Common Greenshank	<i>Tringa nebularia</i>	Endangered	BONNA2H, ROKAMBA, JAMBA, CAMBA	Endangered	Inhabits wide range of coastal or inland wetlands with varying levels of salinity; mainly muddy margins or rocky shores of wetlands (Higgins & Davies 1996).	eBird, PMST & VBA	3	30/11/2018	Nearby suitable habitat occurs in the form of seasonal swamps, and historical records from search region suggest this species is likely to occur near the study area.
Common Sandpiper	<i>Actitis hypoleucos</i>		ROKAMBA, JAMBA, CAMBA	Vulnerable	Inhabits a wide range of coastal or inland wetlands with varying levels of salinity; mainly muddy margins or rocky shores of wetlands. In Victoria, mostly found Westernport and Port Phillip Bay (Higgins & Davies 1996).	eBird & PMST	No VBA records	N/A	Lack of suitable habitat within study area and no nearby historical records. Unlikely to occur.
Curlew Sandpiper	<i>Calidris ferruginea</i>	Critically Endangered	BONNA2H, CAMBA, JAMBA, ROKAMBA	Critically Endangered	Inhabits wide range of coastal or inland wetlands with varying levels of salinity; mainly muddy margins or rocky shores of wetlands (Higgins & Davies 1996).	eBird, PMST & VBA	8	20/10/2018	Lack of suitable habitat within study area and few nearby historical records. Unlikely to occur.
Diamond Dove	<i>Geopelia cuneata</i>			Vulnerable	Mostly arid and semi-arid grassland savannah, often of spinifex and in low open woodlands with grassy understorey. Also often found in open riparian woodlands (Higgins & Davies 1996).	eBird & VBA	1	12/4/1993	Suitable habitat occurs in remnant woodlands adjacent to study area such as Darlot Swamp Wildlife Reserve, and, while recent records from search region suggest this species is scarce, this species has potential to occur near the study area.
Diamond Firetail	<i>Stagonopleura guttata</i>	Vulnerable		Vulnerable	Commonly found in box-ironbark forests and woodlands and also occurs along watercourses and in farmland areas. Widespread but scattered. Forages on a wide range of seeds, which in some cases a large portion can be derived from weed species (Read 1994). Populations have declined in Victoria since the 1950s (Emison et al. 1987; Tzaros 2005).	eBird, PMST & VBA	21	11/3/2021	Suitable habitat occurs in remnant grassy woodlands adjacent to study area such as Darlot Swamp Wildlife Reserve, and recent records from search region suggest this species is likely to occur near the study area.
Double-banded Plover	<i>Charadrius bicinctus</i>		BONNA2H		Inhabits wide range of coastal or inland wetlands with varying levels of salinity; mainly muddy margins or rocky shores of wetlands (Marchant & Higgins 1993).	eBird	No VBA records	N/A	Lack of suitable habitat within study area and no nearby historical records. Unlikely to occur.

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Common Name	Scientific name	EPBC - T	EPBC - M	FFG	Habitat	Source	Number of VBA records	Date of last record	Likelihood of occurrence
Eastern Great Egret	<i>Ardea alba modesta</i>			Vulnerable	Occurs in a variety of wetlands including: permanent water bodies on flood plains; shallows of deep permanent lakes, either open or vegetated with shrubs or trees; semi-permanent swamps with tall emergent vegetation (e.g. bulrush) and herb dominated seasonal swamps with abundant aquatic flora (Marchant & Higgins 1990).	VBA	12	29/11/2018	Nearby suitable habitat occurs in the form of seasonal swamps, and historical records from search region suggest this species has potential to occur near the study area.
Fork-tailed Swift	<i>Apus pacificus</i>		CAMBA,ROKA MBA,JAMBA		The species can occur in wet sclerophyll forest but mainly prefers open forest or plains. It is almost exclusively aerial and feeds up to hundreds on metres above the ground, but can feed among open forest canopy. The species breeds internationally and seldom roosts in trees (Higgins 1999).	eBird, PMST & VBA	4	15/1/2020	May occasionally forage over study area. Likely to occur.
Freckled Duck	<i>Stictonetta naevosa</i>			Endangered	Terrestrial wetlands; prefer fresh, densely vegetated waters, particularly floodwater swamps and creeks vegetated with lignum or cane grass. During dry seasons or droughts, move off ephemeral breeding swamps and occupy large permanent waters (Marchant & Higgins 1990).	eBird & VBA	17	20/1/2019	Nearby suitable habitat occurs in the form of lignum and cane grass swamps, and historical records from search region suggest this species has potential to occur near the study area.
Gang-gang Cockatoo	<i>Callocephalon fimbriatum</i>	Endangered		Endangered	In summer generally in tall mountain forests and woodlands, particularly in heavily timbered, mature wet sclerophyll forests and woodlands. Prefer Eucalyptus dominated assemblages. Also occurs in subalpine snow gum woodlands and occasionally in temperate rainforests and regenerating forests. In winter occur at lower altitudes in drier, more open Eucalyptus woodland (Higgins 1999).	PMST	No VBA records	N/A	Lack of suitable habitat within study area and no nearby historical records. Unlikely to occur.
Glossy Ibis	<i>Plegadis falcinellus</i>		BONNA2S,C AMBA		Prefer freshwater inland wetlands, in particular, permanent or ephemeral water bodies and swamps with abundant vegetation (Marchant & Higgins 1990).	eBird & VBA	4	14/11/2018	Nearby suitable habitat occurs in the form of seasonal swamps, and historical records from search region suggest this species has potential to occur near the study area.
Grey Falcon	<i>Falco hypoleucos</i>	Vulnerable		Vulnerable	Inhabits arid and semi-arid zones; mainly on sandy and stony plains of inland drainage systems, lightly timbered with acacia. Hunt far into open areas, over spinifex, tussock grasslands and low shrublands. In Victoria, few records mostly in north and northwestern regions (Marchant & Higgins 1993).	PMST & VBA	1	12/9/1989	Extremely rare raptor of the arid and semi-arid zones. Unlikely to occur.
Grey-crowned Babbler	<i>Pomatostomus temporalis</i>			Vulnerable	Inhabits dry woodlands and forests with a shrub layer and a groundcover of leaf litter and fallen timber. In Victoria it is found in woodlands and forests with box-ironbark eucalypt associations and River Red Gums, including narrow remnants along roadsides and streams. Formerly widespread over much of Victoria, but populations has declined and range has contracted markedly, mostly from the south and west since the 1970s. Gregarious, usually found in family group of 3-6 birds (Higgins & Peter 2002; Tzaros 2005).	VBA	3	1/1/1998	Lack of suitable habitat within study area and scarcity of recent nearby records. Unlikely to occur.

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Hooded Robin	<i>Melanodryas cucullata cucullata</i>	Endangered		Vulnerable	Occur mostly in open Grey Box, White Box, Yellow Box, Yellow Gum and Ironbark woodlands with pockets of saplings or taller shrubs, an open shrubby understorey, sparse grasses and patches of bare ground and leaf-litter, with scattered fallen timber. The population has declined throughout range, especially since the early 1980s. This species typically occurs north of the great divide in shrubland or woodland dominated by acacias (Higgins & Peter 2002; Tzaros 2005).	eBird, PMST & VBA	7	27/7/2008	Suitable habitat occurs in remnant woodlands adjacent to study area such as Darlot Swamp Wildlife Reserve and Dooen Swamp Bushland Reserve, and recent records from search region suggest this species is likely to occur near the study area.
Latham's Snipe	<i>Gallinago hardwickii</i>	Vulnerable	BONNA2H,R OKAMBA,JAM BA,CAMBA		Occurs in wide variety of permanent and ephemeral wetlands; it prefers open freshwater wetlands with dense cover nearby, such as the edges of rivers and creeks, bogs, swamps, waterholes. The species is widespread in southeast Australia and most of its population occurs in Victoria, except in the northwest of the state (Naarding 1983; Higgins & Davies 1996).	eBird, PMST & VBA	4	7/11/1998	Sub-optimal habitat may occasionally occur in the study area in the form of temporarily inundated areas, but an absence of recent records in the search region suggests this species is unlikely to occur.
Little Eagle	<i>Hieraetus morphnoides</i>			Vulnerable	Over wooded and forested lands and open country of Aust. Range extending into arid zone. Most abundant in open forest and woodland (Marchant & Higgins 1993).	eBird & VBA	15	22/2/2022	Suitable habitat occurs in the study area and there are numerous recent records from the search region suggesting this species is likely to occur.
Little Egret	<i>Egretta garzetta</i>			Endangered	It occurs in a range of coastal and terrestrial wetlands, including freshwater wetlands with vegetation such as bulrush and requires trees for roosting and nesting (Marchant & Higgins 1990).	VBA	2	27/4/2021	Scarcity of recent records and lack of suitable habitat. Unlikely to occur.
Long-toed Stint	<i>Calidris subminuta</i>		BONNA2H,R OKAMBA,JAM BA,CAMBA		Inhabits a variety of terrestrial wetlands it prefers shallow freshwater or brackish wetlands with areas of muddy shorelines and growth of various vegetation (Higgins & Davies 1996).	eBird & VBA	5	6/12/2017	Scarcity of recent records and lack of suitable habitat. Unlikely to occur.
Magpie Goose	<i>Anseranas semipalmata</i>			Vulnerable	Terrestrial and aquatic habitats, but activities centered on wetlands, mainly those on floodplains of rivers (Marchant & Higgins 1990).	VBA	2	8/7/2006	Scarcity of recent records and lack of suitable habitat. Unlikely to occur.
Malleefowl	<i>Leipoa ocellata</i>	Vulnerable		Vulnerable	Mainly in semi-arid zones (200–450 mm rainfall), but in higher rainfall area of heath and mallee-heath. Rarely occurs in arid zones. Associated with mallee, particularly floristically rich tall dense mallee of higher rainfall areas (Marchant & Higgins 1993). Notably in Victoria, a small, isolated population does occur in Wychitella Flora and Fauna Reserve near Wedderburn (DSE 2003).	PMST	No VBA records	N/A	This species is associated with mallee, particularly floristically rich tall dense mallee of higher rainfall areas (Marchant & Higgins 1993). It is considered unlikely to occur in the study area.
Marsh Sandpiper	<i>Tringa stagnatilis</i>		BONNA2H,R OKAMBA,JAM BA,CAMBA	Endangered	Inhabits sandy, muddy or rocky shores, usually coastal, rarely far inland. Often on beaches and mudflats, sandflats and occasionally rock shelves (Higgins & Davies 1996).	eBird & VBA	3	24/11/2018	Scarcity of recent records and lack of suitable habitat. Unlikely to occur.
Musk Duck	<i>Biziura lobata</i>			Vulnerable	It inhabits terrestrial wetlands, estuarine habitats and sheltered inland waters. Almost entirely aquatic; preferring deep water of large swamps, lakes and estuaries, where conditions are stable and aquatic flora abundant (Marchant & Higgins 1990).	eBird & VBA	69	15/2/2019	Nearby suitable habitat occurs in the form of seasonal swamps, and historical records from search region suggest this species has potential to occur near the study area.

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Pacific Golden Plover	<i>Pluvialis fulva</i>		BONNA2H,R OKAMBA,JAM BA,CAMBA	Vulnerable	Inhabits sandy, muddy or rocky shores, usually coastal, rarely far inland. Often on beaches and mudflats, sandflats and occasionally rock shelves (Marchant & Higgins 1993).	eBird	No VBA records	N/A	Lack of suitable habitat within study area and no nearby historical records. Unlikely to occur.
Painted Honeyeater	<i>Grantiella picta</i>	Vulnerable		Vulnerable	Inhabits box-ironbark forests and woodlands and mainly feeds on the fruits of mistletoe. Strongly associated with mistletoe around the margins of open forests and woodlands. Can also be found in farmland containing remnant treed vegetation. Occurs at few localities. Uncommon breeding migrant from further north, arriving in October and leaving in February (Higgins et al. 2001; Tzaros 2005).	PMST & VBA	1	2/1/2020	Scarcity of recent records and lack of suitable habitat. Unlikely to occur.
Pectoral Sandpiper	<i>Calidris melanotos</i>		BONNA2H,R OKAMBA,JAM BA		Inhabit shallow fresh to saline wetlands, usually coastal to near-coastal, but occasionally farther inland. Wetlands often have open fringing mudflats and low emergent or fringing vegetation (Higgins & Davies 1996).	eBird, PMST & VBA	1	12/9/1982	Scarcity of recent records and lack of suitable habitat. Unlikely to occur.
Plains-wanderer	<i>Pedionomus torquatus</i>	Critically Endangered		Critically Endangered	This species is highly sensitive to changes in grassland cover and density. Typically inhabits treeless native grasslands with sparse cover, with a preference for grasslands composed of wallaby grass and spear grass (Marchant & Higgins 1993). Habitat becomes unsuitable when grassland becomes dense (CA 2016). Evidence suggests it avoids areas of tree cover, with no records of the species within 300m of trees (>10m high) in their strongholds in New South Wales or Victoria (CA 2016).	PMST & VBA	7	1/9/1984	Lack of suitable habitat within study area and a lack of recent nearby records. Unlikely to occur.
Plumed Egret	<i>Ardea intermedia plumifera</i>			Critically Endangered	It mainly inhabits terrestrial wetlands; only occasionally visit coastal wetlands and forages amongst aquatic vegetation in shallow water and requires trees for roosting and nesting. It often occurs in wetlands that contain vegetation, including bulrush (Marchant & Higgins 1990).	eBird & VBA	1	1/3/1978	Scarcity of recent records and lack of suitable habitat. Unlikely to occur.
Red Knot	<i>Calidris canutus</i>	Vulnerable	ROKAMBA,JA MBA,CAMBA	Endangered	In Australasia, the Red Knot mainly inhabits intertidal mudflats, sandflats and sandy beaches of sheltered coasts, in estuaries, bays, inlets, lagoons and harbours; sometimes on sandy ocean beaches or shallow pools on exposed wave-cut rock platforms or coral reefs. They are occasionally seen on terrestrial saline wetlands near the coast, such as lakes, lagoons, pools and pans, and recorded on sewage ponds and saltworks, but rarely use freshwater swamps. They rarely use inland lakes or swamps (DCCEEW 2023).	eBird	No VBA records	N/A	Lack of suitable habitat within study area and no nearby historical records. Unlikely to occur.
Red-chested Button-quail	<i>Turnix pyrrhotorax</i>			Endangered	Inhabits dense, sometimes damp grasslands with little or no tree cover; also in acacia, eucalypts and melaleuca woodlands with ground cover of long grass. Sparsely distributed in Victoria, with few records present (Marchant & Higgins 1993).	eBird	No VBA records	N/A	Lack of suitable habitat within study area and no nearby historical records. Unlikely to occur.

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Red-necked Stint	<i>Calidris ruficollis</i>		BONNA2H,R OKAMBA,JAM BA,CAMBA		Inhabit shallow fresh to saline wetlands, usually coastal to near-coastal, but occasionally farther inland. Wetlands often have open fringing mudflats and low emergent or fringing vegetation (Higgins & Davies 1996).	eBird & VBA	3	18/12/1998	Scarcity of recent records and lack of suitable habitat. Unlikely to occur.
Red-tailed Black-Cockatoo (south-eastern)	<i>Calyptorhynchus banksii graptogyne</i>	Endangered		Endangered	Prefer eucalypt forests and woodlands but often in adjacent acacia or Casuarina woodlands. In Victoria, subsp. graptogyne inhabits mostly in or at edge of patches of Brown Stringybark woodlands in pasture or in remnant copses of River Red-gum (Higgins 1999).	PMST	No VBA records	N/A	Lack of suitable habitat within study area and no nearby historical records. Unlikely to occur.
Regent Parrot	<i>Polytelis anthopeplus monarchoides</i>	Vulnerable		Vulnerable	The species inhabits riparian or littoral River Red-gum forests or woodlands and adjacent Black Box woodlands and in nearby open mallee woodlands or shrublands. This species is more regularly reported further northwest in the Mallee region of Victoria, particularly where large remnant areas of mallee vegetation adjoin riparian forests with large, hollow-bearing River Red-gums (used for breeding) (Higgins 1999).	PMST	No VBA records	N/A	Lack of suitable habitat within study area and no nearby historical records. Unlikely to occur.
Sanderling	<i>Calidris alba</i>		ROKAMBA,JA MBA,CAMBA		Inhabits open sandy beaches exposed to sea-swells; also on exposed sandbars and spits (Higgins & Davies 1996).	eBird	No VBA records	N/A	Lack of suitable habitat within study area and no nearby historical records. Unlikely to occur.
Sharp-tailed Sandpiper	<i>Calidris acuminata</i>	Vulnerable	BONNA2H,R OKAMBA,JAM BA,CAMBA		Inhabit shallow fresh to saline wetlands, usually coastal to near-coastal, but occasionally farther inland. Wetlands often have open fringing mudflats and low emergent or fringing vegetation (Higgins & Davies 1996).	eBird, PMST & VBA	2	14/11/2018	Nearby suitable habitat occurs in the form of seasonal swamps, and historical records from search region suggest this species has potential to occur near the study area.
Southern Whiteface	<i>Aphelocephala leucopsis</i>	Vulnerable			Occurs mainly in woodlands and shrublands dominated by acacias or eucalypts, with an understory of grass and/or low shrubs (commonly mallee, mulga and saltbush) (Higgins & Peter 2002)	eBird, PMST & VBA	1	16/11/1979	Suitable habitat may occur in remnant woodlands adjacent to study area such as Darlot Swamp Wildlife Reserve and Dooen Swamp Bushland Reserve, and recent records from search region suggest this species has potential to occur near the study area.
Speckled Warbler	<i>Pyrholaemus sagittatus</i>			Endangered	Inhabits dry eucalypt forests and woodlands, especially those with box-ironbark eucalypt associations. It is also found in River Red Gum woodlands. The species is uncommon; populations have declined since the 1980s (Higgins & Peter 2002; Tzaros 2005).	eBird	No VBA records	N/A	Lack of recent historical records from search region suggest this species is unlikely to occur.
Square-tailed Kite	<i>Lophoictinia isura</i>			Vulnerable	It occurs mainly in open forests and woodlands and in Victoria utilises habitats with box-ironbark, peppermint, Stringybark and River Red Gum eucalypt associations. The rarest and least seen bird in Victoria, mainly occur in the far east of the state, though occasionally recorded in central and western parts of the state (Marchant & Higgins 1993).	eBird & VBA	3	7/1/2019	A rare species in Victoria but may occasionally forage over the study area. Potential to occur.

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Swift Parrot	<i>Lathamus discolor</i>	Critically Endangered		Critically Endangered	Prefers a select range of eucalypts in Victoria, including Yellow Gum, Grey Box, White Box, Red Ironbark and Yellow Box, as well as River Red-gum when this species supports abundant 'lerp' (Saunders & Tzaros 2011). The species is also known to forage within planted stands of Spotted Gum and Sugar Gum (Nature Advisory; unpublished data). Breeds in Tasmania and migrates to the mainland of Australia for the autumn, winter and early spring months. It lives mostly north of the Great Dividing Range, passing through two areas of Victoria on migration: the Port Phillip district and Gippsland (Emison et al. 1987; Higgins 1999; Kennedy & Tzaros 2005). Though it is also not uncommonly sighted in urban areas (Nature Advisory; unpublished data). Occurrence of this species on the mainland can substantially change from year to year depending on food availability, giving potential for this species to occur almost anywhere throughout its range (Emison et al. 1987).	PMST & VBA	2	14/8/2018	Lack of suitable habitat within study area and surrounds. Unlikely to occur.
White-bellied Sea-Eagle	<i>Haliaeetus leucogaster</i>		CAMBA	Endangered	Maritime habitats, terrestrial large wetlands and coastal lands of tropical and temperate Australia and offshore islands, ranging far inland only over large rivers and wetlands. The eagles usually breed on coast and offshore islands and inland beside large lakes or rivers, usually in tall trees in or near water, also in cliffs, rock pinnacles and escarpments (Marchant & Higgins 1993).	eBird & VBA	20	16/2/2023	Nearby suitable habitat occurs in the form of seasonal swamps, and historical records from search region suggest this species may occasionally forage over the study area. Potential to occur.
White-throated Needletail	<i>Hirundapus caudacutus</i>	Vulnerable	CAMBA, ROKAMBA, JAMBA	Vulnerable	Aerial, over all habitats, but probably more over wooded areas, including open forest and rainforest. Often over heathland and less often above treeless areas such as grassland and swamps or farmland (Higgins 1999).	eBird, PMST & VBA	2	15/1/2020	May occasionally forage and fly over study area. Likely to occur.
Yellow Wagtail	<i>Motacilla flava</i>		CAMBA, JAMBA, ROKAMBA		Common migrant from Asia. Inhabits moist, grassy or muddy areas, sewage treatment plants, sports fields, tracks or bare ground, occasionally on beaches (Menkhorst et al. 2017).	PMST	No VBA records	N/A	Lack of recent historical records from search region suggest this species is unlikely to occur.
<b>Mammals</b>									
Fat-tailed Dunnart	<i>Sminthopsis crassicaudata</i>			Vulnerable	Native grasslands associated with rocky areas, rough pastures and the edges of stubble paddocks (Menkhorst 1995).	VBA	2	26/2/1960	Lack of recent historical records from search region suggest this species is unlikely to occur.
Heath Mouse	<i>Pseudomys shortridgei</i>	Endangered		Endangered	In eastern Australia, Heath Mouse prefers recently burnt (preferably 7–10 years post fire), floral species-rich, treeless, dry heathlands in an area with 600 mm annual rainfall. The optimum situation for the species appears to be a mosaic of habitats of differing maturity, subject to the disturbance by fire. Typical habitats include dry heath, and forest and woodland with a heathy understorey (Menkhorst 1995). In Victoria, the species is restricted to the wannon region in the far west of the state.	PMST	No VBA records	N/A	Lack of suitable habitat within study area and no recent historical records. Unlikely to occur.

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Platypus	<i>Ornithorhynchus anatinus</i>			Vulnerable	Inhabits freshwater streams, ranging from alpine creeks to tropical lowland rivers; also lakes, shallow reservoirs and farm dams (Menkhorst and knight 2001).	VBA	2	27/11/2021	Wimmera River provides suitable habitat, and historical records from search region suggest this species has potential to occur within the study area.
Squirrel Glider	<i>Petaurus norfolcensis</i>			Vulnerable	Dry forest and woodland and nearby riverine corridors (Menkhorst 1995).	VBA	1	7/9/1992	Lack of recent historical records from search region suggest this species is unlikely to occur.
<b>Bats</b>									
Grey-headed Flying-fox	<i>Pteropus poliocephalus</i>	Vulnerable		Vulnerable	Brisbane, Newcastle, Sydney and Melbourne are occupied continuously. Elsewhere, during spring, they are uncommon south of Nowra and widespread in other areas of their range. Roosts in aggregations of various sizes on exposed branches. Roost sites are typically located near water, such as lakes, rivers or the coast. Roost vegetation includes rainforest patches, stands of Melaleuca, mangroves and riparian vegetation, but colonies also use highly modified vegetation in urban and suburban areas (DCCEEW 2023).	BatMap, PMST & VBA	1	15/10/2024	Lack of suitable habitat within the study area and surrounds as well as a paucity of recent nearby records. Unlikely to occur.
Yellow-bellied Sheathtail Bat	<i>Saccolaimus flaviventris</i>			Vulnerable	Known to occur from urban, agricultural semi-arid and tall wet forest habitats (Menkhorst 1995).	BatMap	No VBA records	N/A	Suitable habitat present within the study area. However, there are no recent nearby records suggesting that this species is unlikely to occur.
<b>Reptiles</b>									
Bearded Dragon	<i>Pogona barbata</i>			Vulnerable	Semi-arboreal species and is usually found on fallen timber, stumps, branches and fence posts (Cogger 2000). The species will forage on foliage and flowers (Wilson & Swan 2003).	VBA	1	31/12/1883	Areas of suitable habitat present within study area and a historical record exists from the search region. This species is unlikely to occur in important numbers given the limited extent of woodland habitat and the isolation of remnant woodlands by extensive cropping and cultivation.
Striped Legless Lizard	<i>Delma impar</i>	Vulnerable		Endangered	Grassland specialist. Known to occur in some areas dominated by introduced species such as Harding Grass <i>Phalaris aquatica</i> , Serated Tussock <i>Nasella trichotoma</i> and Flatweed <i>Hypochaeris radicata</i> and at sites with a history of grazing and pasture improvement. shelter in grass tussocks, thick ground cover, soil cracks, under rocks, spider burrows, and under ground debris such as timber. The majority of sites in Victoria and NSW occur on cracking clay soils with some surface rock which provide shelter for the species (DCCEEW 2023).	PMST & VBA	5	7/11/2005	Areas of suitable habitat occur within study area and some historical records exist from search region. Targeted surveys were conducted by EA in 2018, in accordance with the EPBC Act survey guidelines for the species and found none on or near the development extent. Therefore this species is considered unlikely to occur within the development extent.
<b>Fish</b>									
Freshwater Catfish	<i>Tandanus tandanus</i>			Endangered	Swims close to sand or ravel bottoms in slow-moving streams, lakes and ponds with fringing vegetation (Allen et al. 2002).	VBA	26	24/1/2024	Wimmera River provides suitable habitat and recent nearby records from the search region suggest this species is likely to occur.
Macquarie Perch	<i>Macquaria australasica</i>	Endangered		Endangered	Cool, clear water of rivers and lakes. Favours slower moving water (Allen et al. 2002).	VBA	7	28/3/1977	Lack of recent nearby records from search region suggest this species is unlikely to occur in the study area.
Murray Cod	<i>Maccullochella peelii</i>	Vulnerable		Endangered	Slow flowing turbid water of rivers and streams of low elevation; also fast flowing clear upland streams (Allen et al. 2002).	PMST & VBA	38	17/3/2025	Wimmera River provides suitable habitat and recent nearby records from the search region suggest this species is likely to occur.

**Notes:** grey shading indicates species that are likely to or have the potential to occur in the study area; **EPBC-T** = threatened species status under EPBC Act; **EPBC-M** = migratory status under the EPBC Act (M = listed migratory taxa; Bonn Convention (A2H) - Convention on the Conservation of Migratory Species of Wild Animals – listed as a member of a family; Bonn Convention (A2S) - Convention on the Conservation of Migratory Species of Wild Animals - species listed explicitly; CAMBA - China-Australia Migratory Birds Agreement; JAMBA - Japan-Australia Migratory Birds Agreement; ROKAMBA - Republic of Korea Australia Migratory Birds Agreement); **FFG** = threatened species status under the FFG Act.

Common Name	Scientific name	EPBC - T	EPBC - M	FFG	Habitat	Source	Number of VBA records	Date of last record	Likelihood of occurrence
Silver Perch	<i>Bidyanus bidyanus</i>	Endangered		Endangered	Rivers, lakes and reservoirs, preferring areas of rapid flow. Swims near the surface and tolerates a wide temperature range, often seen below rapids and weirs (Allen et al. 2002).	VBA	20	17/3/2025	Wimmera River provides suitable habitat and recent nearby records from the search region suggest this species is likely to occur.
<b>Invertebrates</b>									
Genoveva Blue	<i>Ogyris genoveva</i>			Endangered	In Victoria this species occurs in box-ironbark woodlands, grassy woodlands and mallee woodlands, predominantly in low rainfall areas where the larval food plant grows as mistletoes on eucalypts and wattles ( <i>Acacia</i> spp.)	VBA	44	4/1/1934	Suitable grassy woodland habitat present within the study area. However, there is a lack of recent nearby records suggesting that this species is unlikely to occur.
Golden Sun Moth	<i>Synemon plana</i>	Vulnerable		Vulnerable	Areas that are, or have been native grasslands or grassy woodlands. It is known to inhabit degraded grasslands with introduced grasses being dominant, with a preference for the native wallaby grass being present (DEWHA 2009). Also known to be closely associated with exotic grass species, with populations found in grassland almost entirely composed of Chilean needlegrass (Richter et al. 2013).	PMST	No VBA records	N/A	Lack of historical records but areas of suitable habitat present within study area. During EA's 2018 targeted surveys of the most suitable habitats on and near the development extent, none were found, indicating it is unlikely to occur extensively or in large numbers within the development extent.
Pale Sun Moth	<i>Synemon selene</i>			Endangered	Occurs in native perennial grassland and grassy woodland dominated by wallaby grasses ( <i>Rytidosperma</i> spp.) and spear grasses ( <i>Austrostipa</i> spp.) on clay or clay-loam soils. Woodland habitat is usually dominated by Buloke ( <i>Allocasuarina luehmannii</i> ) and Black Box ( <i>Eucalyptus largiflorens</i> ) (DELWP 2021).	VBA	3	4/3/1993	Study area within known species distribution and contains habitat. Targeted surveys were undertaken by EA in 2020 in areas of most suitable habitat on and near the development extent, none were found, indicating it is unlikely to occur extensively or in large numbers within the development extent.
<b>Amphibians</b>									
Growling Grass Frog	<i>Litoria raniformis</i>	Vulnerable		Vulnerable	Permanent, still or slow flowing water with fringing and emergent vegetation in streams, swamps, lagoons and artificial wetlands such as farm dams and abandoned quarries (Clemann & Gillespie 2004).	PMST & VBA	2	19/11/2010	Nearby suitable habitat occurs in the form of seasonal swamps and waterways. However there is a lack of recent nearby records and this species is therefore considered unlikely to occur within the development extent.

**Notes:** grey shading indicates species that are likely to or have the potential to occur in the study area; **EPBC-T** = threatened species status under EPBC Act; **EPBC-M** = migratory status under the EPBC Act (M = listed migratory taxa; Bonn Convention (A2H) - Convention on the Conservation of Migratory Species of Wild Animals – listed as a member of a family; Bonn Convention (A2S) - Convention on the Conservation of Migratory Species of Wild Animals - species listed explicitly; CAMBA - China-Australia Migratory Birds Agreement; JAMBA - Japan-Australia Migratory Birds Agreement; ROKAMBA - Republic of Korea Australia Migratory Birds Agreement); **FFG** = threatened species status under the FFG Act.

### Appendix 7: Photographs of native vegetation proposed for removal

All photographs were taken between 29 September 2025 to 2 October 2025 unless otherwise stated.



Habitat Zone 5 - Plains Grassland (EVC 132) (Taken on: 26/11/24)



Habitat Zone 6 - Plains Grassland (EVC 132) (Taken on: 26/11/24)



Habitat Zone 9 - Floodplain Riparian Woodland (EVC 56)



Habitat Zone 10 - Riverine Chenopod Woodland (EVC 103)



Habitat Zone 13 - Plains Grassland (EVC 132)



Habitat Zone 14 - Plains Grassland (EVC 132)



Habitat Zone 20 - Red Gum Swamp (EVC 292) (Taken on: 26/11/24)



Habitat Zone 21 - Plains Grassland (EVC 132) (Taken on: 26/11/24)



Habitat Zone 22 – DEECA Mapped Wetland



Habitat Zone 24 - Black Box Lignum Woodland (EVC 663)



Habitat Zone 36 - Plains Grassland (EVC 132) (Taken on: 25/11/24)



Habitat Zone 46 - Plains Grassland (EVC 132)



Habitat Zone 4C - Plains Grassland (EVC 132) (Taken on: 25/11/24)



Habitat Zone 4I - Plains Grassland (EVC 132) (Taken on: 25/11/24)



Habitat Zone 4J - Plains Grassland (EVC 132) (Taken on: 25/11/24)



Habitat Zone 4M - Plains Grassland (EVC 132)



Habitat Zone 40 - Plains Grassland (EVC 132) (Taken on: 27/11/24)



Habitat Zone 4P - Plains Grassland (EVC 132)



Habitat Zone 4AD - Plains Grassland (EVC 132)



Habitat Zone 4AG - Riverine Chenopod Woodland (EVC 103)



Habitat Zone 4AH - Floodplain Riparian Woodland (EVC 56)



Habitat Zone NA12 - Plains Grassland (EVC 132)



Habitat Zone NA13a - Plains Grassland (EVC 132)



Habitat Zone NA13c - Plains Grassland (EVC 132)

**Appendix 8: Native Vegetation Removal (NVR) report**

NVRR ID: 332\_20260119\_LDQ

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 Guidelines). This report is **not an assessment by DEECA** 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.

## Report details

**Date created:** 19/01/2026

**Local Government Area:** HORSHAM RURAL CITY

**Shapefile name:**

23126\_07\_NVR\_Patches\_251201\_noPAST.shp

**Site assessor name:** Cody Hajnal

**Registered Aboriginal Party:** Barengi Gadjin

**Coordinates:** 142.32139, -36.63605

**Address:**

252 TUCKERS ROAD LONGERENONG 3401

21 CAMPUS DRIVE LONGERENONG 3401

228 COLLEGE AVENUE LONGERENONG 3401

16 CENTRE ROAD LONGERENONG 3401

33 CENTRE ROAD LONGERENONG 3401

26 WEST ROAD LONGERENONG 3401

COLLEGE AVENUE LONGERENONG 3401

5 FARM ROAD LONGERENONG 3401

200 COLLEGE AVENUE LONGERENONG 3401

9 CAMPUS DRIVE LONGERENONG 3401

(27 additional addresses not listed)

## Regulator Notes

Removal polygons are located:

- On Crown Land

## Summary of native vegetation to be removed

Assessment pathway	Detailed Assessment Pathway		
<b>Location category</b>	Location 2 The native vegetation extent map indicates that this area is typically characterised as supporting native vegetation. Additionally, it is modelled as encompassing an endangered Ecological Vegetation Class, sensitive wetland or sensitive coastal area. The removal of less than 0.5 hectares of native vegetation in this area will not require a Species Offset.		
<b>Total extent including past and proposed removal (ha)</b> <i>Includes endangered EVCs (ha): 1.302</i>	<b>1.305</b>	<i>Extent of past removal (ha)</i>	0
		<i>Extent of proposed removal - Patches (ha)</i>	1.305
		<i>Extent of proposed removal - Scattered Trees (ha)</i>	0.000
<b>No. Large Trees proposed to be removed</b>	<b>0</b>	<i>No. Large Patch Trees</i>	0
		<i>No. Large Scattered Trees</i>	0
<b>No. Small Scattered Trees</b>	0		

## Offset requirements if approval is granted

Any approval granted will include a condition to obtain an offset, before the removal of native vegetation, that meets the following requirements:

<b>General Offset amount <sup>1</sup></b>	<b>0.4960 General Habitat Units</b>
Vicinity	Wimmera CMA or HORSHAM RURAL CITY LGA
Minimum strategic biodiversity value score <sup>2</sup>	0.1428
Large Trees*	0
<b>*The total number of Large Trees that the offset must protect</b>	<b>0</b> Large Trees to be protected in either the General, Species or combination across all habitat units protected

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 with mapped habitat at the site

Appendix 3 includes the following figures

- Location map
- Strategic Biodiversity Value map
- Condition map
- Endangered EVCs map
- Aerial photograph showing mapped native vegetation
- Property in context
- Habitat Importance maps

1. The General Offset amount required is the sum of all General Habitat Units in Appendix 1.

2. Minimum strategic biodiversity value score is 80 per cent of the weighted average score across habitat zones where a General Offset is required.

3. The Species Offset amount(s) required is the sum of all Species Habitat Units in Appendix 1.



## 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 approval from the responsible authority. The responsible authority will refer your application to DEECA for assessment, as required. **This report is not a referral assessment by DEECA.**

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

Refer to 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 as applicable.
- A defensible space statement as applicable.
- A statement about the Native Vegetation Precinct Plan (NVPP) 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.

## 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 meets or exceeds the Species Offset threshold, a Species Offset is required. This test is completed for all species with mapped habitat 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 are calculated by the following equation in accordance with the Guidelines: ***Species Habitat Units = extent without overlap x condition score x species landscape factor x 2, where the species landscape factor = 0.5 + (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 are calculated by the following equation in accordance with the Guidelines: ***General Habitat Units = extent without overlap x condition score x general landscape factor x 1.5, where the general landscape factor = 0.5 + (strategic biodiversity value score/2)***

The General Offset amount required is the sum of all General Habitat Units per zone.

### Native vegetation to be removed

Information provided by or on behalf of the applicant							Information calculated by NVR Map						
Zone	Type	DBH (cm)	EVC code	Bioregional conservation status	Partial Removal	Condition score	Large Tree(s)	Polygon extent (ha)	Extent without overlap (ha)	SBV score	HI Score	Habitat Units	Offset Type
13-HZa	Patch	-	Wim_0132	Endangered	no	0.440	-	0.266	0.266	0.222	-	0.107	General
13-NAa	Patch	-	Wim_0132	Endangered	no	0.160	-	0.082	0.082	0.160	-	0.011	General

Information provided by or on behalf of the applicant							Information calculated by NVR Map						
Zone	Type	DBH (cm)	EVC code	Bioregional conservation status	Partial Removal	Condition score	Large Tree(s)	Polygon extent (ha)	Extent without overlap (ha)	SBV score	HI Score	Habitat Units	Offset Type
13-NAaa	Patch	-	Wim_0132	Endangered	no	0.160	-	0.000	0.000	0.190	-	0.000	General
13-NAab	Patch	-	Wim_0132	Endangered	no	0.160	-	0.000	0.000	0.190	-	0.000	General
13-NAb	Patch	-	Wim_0132	Endangered	no	0.160	-	0.003	0.003	0.130	-	0.000	General
13-NAc	Patch	-	Wim_0132	Endangered	no	0.160	-	0.009	0.009	0.130	-	0.001	General
13-NAca	Patch	-	Wim_0132	Endangered	no	0.160	-	0.007	0.007	0.130	-	0.001	General
14-HZa	Patch	-	Wim_0132	Endangered	no	0.510	-	0.545	0.545	0.121	-	0.234	General
14-HZb	Patch	-	Wim_0132	Endangered	no	0.510	-	0.000	0.000	0.130	-	0.000	General
20-HZa	Patch	-	Wim_0831	Vulnerable	no	0.350	-	0.002	0.002	0.630	-	0.001	General
24-HZa	Patch	-	Wim_0663	Endangered	no	0.500	-	0.016	0.016	0.790	-	0.011	General
36-HZa	Patch	-	Wim_0132	Endangered	no	0.170	-	0.001	0.001	0.150	-	0.000	General

Information provided by or on behalf of the applicant							Information calculated by NVR Map						
Zone	Type	DBH (cm)	EVC code	Bioregional conservation status	Partial Removal	Condition score	Large Tree(s)	Polygon extent (ha)	Extent without overlap (ha)	SBV score	HI Score	Habitat Units	Offset Type
36-HZb	Patch	-	Wim_0132	Endangered	no	0.170	-	0.011	0.011	0.150	-	0.002	General
36-HZc	Patch	-	Wim_0132	Endangered	no	0.170	-	0.010	0.010	0.150	-	0.002	General
4-ad	Patch	-	Wim_0132	Endangered	no	0.340	-	0.007	0.007	0.130	-	0.002	General
4-ag	Patch	-	Wim_0826	Endangered	no	0.350	-	0.007	0.007	0.430	-	0.003	General
4-c	Patch	-	Wim_0132	Endangered	no	0.210	-	0.002	0.002	0.410	-	0.000	General
4-ca	Patch	-	Wim_0132	Endangered	no	0.210	-	0.003	0.003	0.410	-	0.001	General
4-i	Patch	-	Wim_0132	Endangered	no	0.140	-	0.003	0.003	0.370	-	0.000	General
4-j	Patch	-	Wim_0132	Endangered	no	0.140	-	0.002	0.002	0.370	-	0.000	General
4-l	Patch	-	Wim_0132	Endangered	no	0.350	-	0.001	0.001	0.190	-	0.000	General
4-la	Patch	-	Wim_0132	Endangered	no	0.350	-	0.000	0.000	0.190	-	0.000	General
4-lb	Patch	-	Wim_0132	Endangered	no	0.350	-	0.001	0.001	0.190	-	0.000	General
4-m	Patch	-	Wim_0132	Endangered	no	0.350	-	0.016	0.016	0.200	-	0.005	General
4-ma	Patch	-	Wim_0132	Endangered	no	0.350	-	0.002	0.002	0.200	-	0.001	General
4-mb	Patch	-	Wim_0132	Endangered	no	0.350	-	0.013	0.013	0.200	-	0.004	General
4-mc	Patch	-	Wim_0132	Endangered	no	0.350	-	0.008	0.008	0.200	-	0.003	General

Information provided by or on behalf of the applicant							Information calculated by NVR Map						
Zone	Type	DBH (cm)	EVC code	Bioregional conservation status	Partial Removal	Condition score	Large Tree(s)	Polygon extent (ha)	Extent without overlap (ha)	SBV score	HI Score	Habitat Units	Offset Type
4-md	Patch	-	Wim_0132	Endangered	no	0.350	-	0.001	0.001	0.240	-	0.000	General
4-me	Patch	-	Wim_0132	Endangered	no	0.350	-	0.001	0.001	0.200	-	0.000	General
4-mf	Patch	-	Wim_0132	Endangered	no	0.350	-	0.000	0.000	0.240	-	0.000	General
4-o	Patch	-	Wim_0132	Endangered	no	0.350	-	0.008	0.008	0.430	-	0.003	General
4-oa	Patch	-	Wim_0132	Endangered	no	0.350	-	0.000	0.000	0.430	-	0.000	General
4-p	Patch	-	Wim_0132	Endangered	no	0.350	-	0.008	0.008	0.190	-	0.003	General
4-pa	Patch	-	Wim_0132	Endangered	no	0.350	-	0.009	0.009	0.377	-	0.003	General
4-pb	Patch	-	Wim_0132	Endangered	no	0.350	-	0.015	0.015	0.190	-	0.005	General
46-HZa	Patch	-	Wim_0132	Endangered	no	0.440	-	0.228	0.228	0.184	-	0.089	General
5-HZa	Patch	-	Wim_0132	Endangered	no	0.490	-	0.001	0.001	0.380	-	0.000	General
5-HZb	Patch	-	Wim_0132	Endangered	no	0.490	-	0.000	0.000	0.380	-	0.000	General
5-HZc	Patch	-	Wim_0132	Endangered	no	0.490	-	0.000	0.000	0.180	-	0.000	General
5-HZd	Patch	-	Wim_0132	Endangered	no	0.490	-	0.000	0.000	0.180	-	0.000	General

Information provided by or on behalf of the applicant							Information calculated by NVR Map						
Zone	Type	DBH (cm)	EVC code	Bioregional conservation status	Partial Removal	Condition score	Large Tree(s)	Polygon extent (ha)	Extent without overlap (ha)	SBV score	HI Score	Habitat Units	Offset Type
5-HZe	Patch	-	Wim_0132	Endangered	no	0.490	-	0.000	0.000	0.350	-	0.000	General
5-HZf	Patch	-	Wim_0132	Endangered	no	0.490	-	0.001	0.001	0.350	-	0.000	General
5-HZg	Patch	-	Wim_0132	Endangered	no	0.490	-	0.000	0.000	0.350	-	0.000	General
5-HZh	Patch	-	Wim_0132	Endangered	no	0.490	-	0.002	0.002	0.330	-	0.001	General
5-HZi	Patch	-	Wim_0132	Endangered	no	0.490	-	0.000	0.000	0.330	-	0.000	General
6-HZa	Patch	-	Wim_0132	Endangered	no	0.320	-	0.000	0.000	0.320	-	0.000	General
6-HZb	Patch	-	Wim_0132	Endangered	no	0.320	-	0.000	0.000	0.320	-	0.000	General
6-HZc	Patch	-	Wim_0132	Endangered	no	0.320	-	0.009	0.009	0.320	-	0.003	General
6-HZd	Patch	-	Wim_0132	Endangered	no	0.320	-	0.000	0.000	0.320	-	0.000	General
6-HZe	Patch	-	Wim_0132	Endangered	no	0.320	-	0.000	0.000	0.320	-	0.000	General
6-HZf	Patch	-	Wim_0132	Endangered	no	0.320	-	0.001	0.001	0.340	-	0.000	General

Information provided by or on behalf of the applicant							Information calculated by NVR Map						
Zone	Type	DBH (cm)	EVC code	Bioregional conservation status	Partial Removal	Condition score	Large Tree(s)	Polygon extent (ha)	Extent without overlap (ha)	SBV score	HI Score	Habitat Units	Offset Type
6-HZg	Patch	-	Wim_0132	Endangered	no	0.320	-	0.001	0.001	0.340	-	0.000	General
6-HZh	Patch	-	Wim_0132	Endangered	no	0.320	-	0.000	0.000	0.340	-	0.000	General

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

This table identifies all rare or threatened species with mapped habitat at the site and the proportional impact associated with the proposed native vegetation removal.

Species common name	Species scientific name	Taxon ID	Conservation status	Group	Habitat impacted	Proportional impact (%)
Erect Peppergrass	<i>Lepidium pseudopapillosum</i>	501909	Critically Endangered	Dispersed	Habitat importance map	0.0001
Turnip Copperburr	<i>Sclerolaena napiformis</i>	503991	Critically Endangered	Dispersed	Habitat importance map	0.0001
Gull-billed Tern	<i>Gelochelidon nilotica macrotarsa</i>	10111	Endangered	Dispersed	Habitat importance map	0.0000
Brolga	<i>Grus rubicunda</i>	10177	Endangered	Dispersed	Habitat importance map	0.0000
Intermediate Egret	<i>Ardea intermedia</i>	10186	Critically Endangered	Dispersed	Habitat importance map	0.0000
Eastern Great Egret	<i>Ardea modesta</i>	10187	Vulnerable	Dispersed	Habitat importance map	0.0000
Australasian Shoveler	<i>Anas rhynchotis</i>	10212	Vulnerable	Dispersed	Habitat importance map	0.0000
Blue-billed Duck	<i>Oxyura australis</i>	10216	Vulnerable	Dispersed	Habitat importance map	0.0000
Musk Duck	<i>Biziura lobata</i>	10217	Vulnerable	Dispersed	Habitat importance map	0.0000
Black Falcon	<i>Falco subniger</i>	10238	Critically Endangered	Dispersed	Habitat importance map	0.0000
Grey-crowned Babbler	<i>Pomatostomus temporalis temporalis</i>	10443	Vulnerable	Dispersed	Habitat importance map	0.0000
Striped Legless Lizard	<i>Delma impar</i>	12159	Endangered	Dispersed	Habitat importance map	0.0000
Bearded Dragon	<i>Pogona barbata</i>	12177	Vulnerable	Dispersed	Habitat importance map	0.0000

Species common name	Species scientific name	Taxon ID	Conservation status	Group	Habitat impacted	Proportional impact (%)
Port Lincoln Snake	<i>Parasuta spectabilis</i>	12813	Endangered	Dispersed	Habitat importance map	0.0000
Growling Grass Frog	<i>Litoria raniformis</i>	13207	Vulnerable	Dispersed	Habitat importance map	0.0000
Golden Sun Moth	<i>Synemon plana</i>	15021	Vulnerable	Dispersed	Habitat importance map	0.0000
Hairy-pod Wattle	<i>Acacia glandulicarpa</i>	500039	Endangered	Dispersed	Habitat importance map	0.0000
Umbrella Wattle	<i>Acacia oswaldii</i>	500070	Critically Endangered	Dispersed	Habitat importance map	0.0000
Buloke Mistletoe	<i>Amyema linophylla</i> subsp. <i>orientalis</i>	500217	Critically Endangered	Dispersed	Habitat importance map	0.0000
Twin-leaf Bedstraw	<i>Asperula gemella</i>	500280	Endangered	Dispersed	Habitat importance map	0.0000
Yellow Burr-daisy	<i>Calotis lappulacea</i>	500598	Vulnerable	Dispersed	Habitat importance map	0.0000
Buloke	<i>Allocasuarina luehmannii</i>	500678	Critically Endangered	Dispersed	Habitat importance map	0.0000
Swamp Sheoak	<i>Casuarina obesa</i>	500682	Critically Endangered	Dispersed	Habitat importance map	0.0000
Silky Umbrella-grass	<i>Digitaria ammophila</i>	501041	Endangered	Dispersed	Habitat importance map	0.0000
Umbrella Grass	<i>Digitaria divaricatissima</i> var. <i>divaricatissima</i>	501045	Endangered	Dispersed	Habitat importance map	0.0000
Purple Love-grass	<i>Eragrostis lacunaria</i>	501190	Endangered	Dispersed	Habitat importance map	0.0000
Long Eryngium	<i>Eryngium paludosum</i>	501238	Endangered	Dispersed	Habitat importance map	0.0000
Kamarooka Mallee	<i>Eucalyptus froggattii</i>	501279	Critically Endangered	Dispersed	Habitat importance map	0.0000

Species common name	Species scientific name	Taxon ID	Conservation status	Group	Habitat impacted	Proportional impact (%)
Blue Mallee	<i>Eucalyptus polybractea</i>	501311	Endangered	Dispersed	Habitat importance map	0.0000
Western Golden-tip	<i>Goodia medicaginea</i>	501518	Endangered	Dispersed	Habitat importance map	0.0000
Slender Club-sedge	<i>Isolepis congrua</i>	501773	Endangered	Dispersed	Habitat importance map	0.0000
Winged Peppercross	<i>Lepidium monoplocoides</i>	501905	Endangered	Dispersed	Habitat importance map	0.0000
Button Immortelle	<i>Leptorhynchos waitzia</i>	501949	Endangered	Dispersed	Habitat importance map	0.0000
Small Monkey-flower	<i>Elacholoma prostrata</i>	502196	Endangered	Dispersed	Habitat importance map	0.0000
Woolly Minuria	<i>Minuria denticulata</i>	502200	Endangered	Dispersed	Habitat importance map	0.0000
Smooth Minuria	<i>Minuria integerrima</i>	502201	Vulnerable	Dispersed	Habitat importance map	0.0000
Spiny Lignum	<i>Duma horrida</i> subsp. <i>horrida</i>	502230	Critically Endangered	Dispersed	Habitat importance map	0.0000
Diosma Rice-flower	<i>Pimelea flava</i> subsp. <i>dichotoma</i>	502518	Endangered	Dispersed	Habitat importance map	0.0000
Tough Scurf-pea	<i>Cullen tenax</i>	502776	Endangered	Dispersed	Habitat importance map	0.0000
Hairy Tails	<i>Ptilotus erubescens</i>	502825	Critically Endangered	Dispersed	Habitat importance map	0.0000
Swamp Buttercup	<i>Ranunculus undosus</i>	502915	Endangered	Dispersed	Habitat importance map	0.0000
Tiny Bog-sedge	<i>Schoenus nanus</i>	503050	Endangered	Dispersed	Habitat importance map	0.0000
Pin Sida	<i>Sida fibulifera</i>	503142	Endangered	Dispersed	Habitat importance map	0.0000
Neat Spear-grass	<i>Austrostipa mundula</i>	503281	Endangered	Dispersed	Habitat importance map	0.0000
Slender Darling-pea	<i>Swainsona murrayana</i>	503321	Endangered	Dispersed	Habitat importance map	0.0000

Species common name	Species scientific name	Taxon ID	Conservation status	Group	Habitat impacted	Proportional impact (%)
Dwarf Swainson-pea	Swainsona phacoides	503323	Endangered	Dispersed	Habitat importance map	0.0000
Red Swainson-pea	Swainsona plagiotropis	503324	Endangered	Dispersed	Habitat importance map	0.0000
Downy Swainson-pea	Swainsona swainsonioides	503328	Endangered	Dispersed	Habitat importance map	0.0000
Club-hair New Holland Daisy	Vittadinia condyloides	503536	Endangered	Dispersed	Habitat importance map	0.0000
Giant New Holland Daisy	Vittadinia megacephala	503540	Endangered	Dispersed	Habitat importance map	0.0000
Winged New Holland Daisy	Vittadinia pterochaeta	503542	Endangered	Dispersed	Habitat importance map	0.0000
Yellow-tongue Daisy	Brachyscome chrysoglossa	503654	Endangered	Dispersed	Habitat importance map	0.0000
Dwarf Brooklime	Gratiola pumilo	503753	Endangered	Dispersed	Habitat importance map	0.0000
Inland Pomaderris	Pomaderris paniculosa subsp. paniculosa	503943	Endangered	Dispersed	Habitat importance map	0.0000
Half-bearded Spear-grass	Austrostipa hemipogon	503985	Vulnerable	Dispersed	Habitat importance map	0.0000
Fine-hairy Spear-grass	Austrostipa puberula	503988	Endangered	Dispersed	Habitat importance map	0.0000
Mallee Annual-bluebell	Wahlenbergia tumidifruca	504060	Endangered	Dispersed	Habitat importance map	0.0000
Riverine Flax-lily	Dianella porracea	504266	Critically Endangered	Dispersed	Habitat importance map	0.0000
Jericho Wire-grass	Aristida jerichoensis var. subspinulifera	504631	Critically Endangered	Dispersed	Habitat importance map	0.0000
Pepper Grass	Panicum laevinode	504808	Vulnerable	Dispersed	Habitat importance map	0.0000
Spiny Rice-flower	Pimelea spinescens subsp. spinescens	504823	Critically Endangered	Dispersed	Habitat importance map	0.0000

Species common name	Species scientific name	Taxon ID	Conservation status	Group	Habitat impacted	Proportional impact (%)
Southern Swainson-pea	Swainsona behriana	504944	Endangered	Dispersed	Habitat importance map	0.0000
Silky Swainson-pea	Swainsona sericea	504946	Endangered	Dispersed	Habitat importance map	0.0000
Fuzzy New Holland Daisy	Vittadinia cuneata var. morrisii	505060	Endangered	Dispersed	Habitat importance map	0.0000
Arching Flax-lily	Dianella sp. aff. longifolia (Benambra)	505560	Critically Endangered	Dispersed	Habitat importance map	0.0000
Scaly Mantle	Eriochlamys squamata	505661	Endangered	Dispersed	Habitat importance map	0.0000

#### Habitat Group

- Highly localised habitat means there is 2,000 hectares or less mapped habitat for the species.
- Dispersed habitat means there is more than 2,000 hectares of mapped habitat for the species.

#### Habitat Impacted

The Species General Offset test, as described in Section 5.3.1 of the Guidelines, is used to determine if proposed native vegetation removal will result in a proportionally significant impact on the habitat value of rare or threatened species. The test is applied where the native vegetation proposed for removal:

- Intersects the Habitat Importance Map for a rare or threatened species; or
- Intersects the 'top ranking' modelled habitat for a rare or threatened species with dispersed habitat, as identified in its Top Ranking Habitat Importance Map.

Top Ranking Maps consist of the 2,000 hectares of habitat with the highest Habitat Importance Scores for each dispersed species.

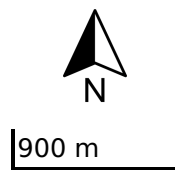
The 'Habitat impacted' column identifies whether the Habitat Importance Map or its Top Ranking Map was used to determine the proportional impact for a species with dispersed habitat.

# Appendix 3: Images of mapped native vegetation

## 1. Property in context



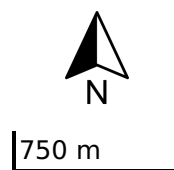
- Proposed Removal
- Past Removal
- Partial Removal
- Property Boundaries



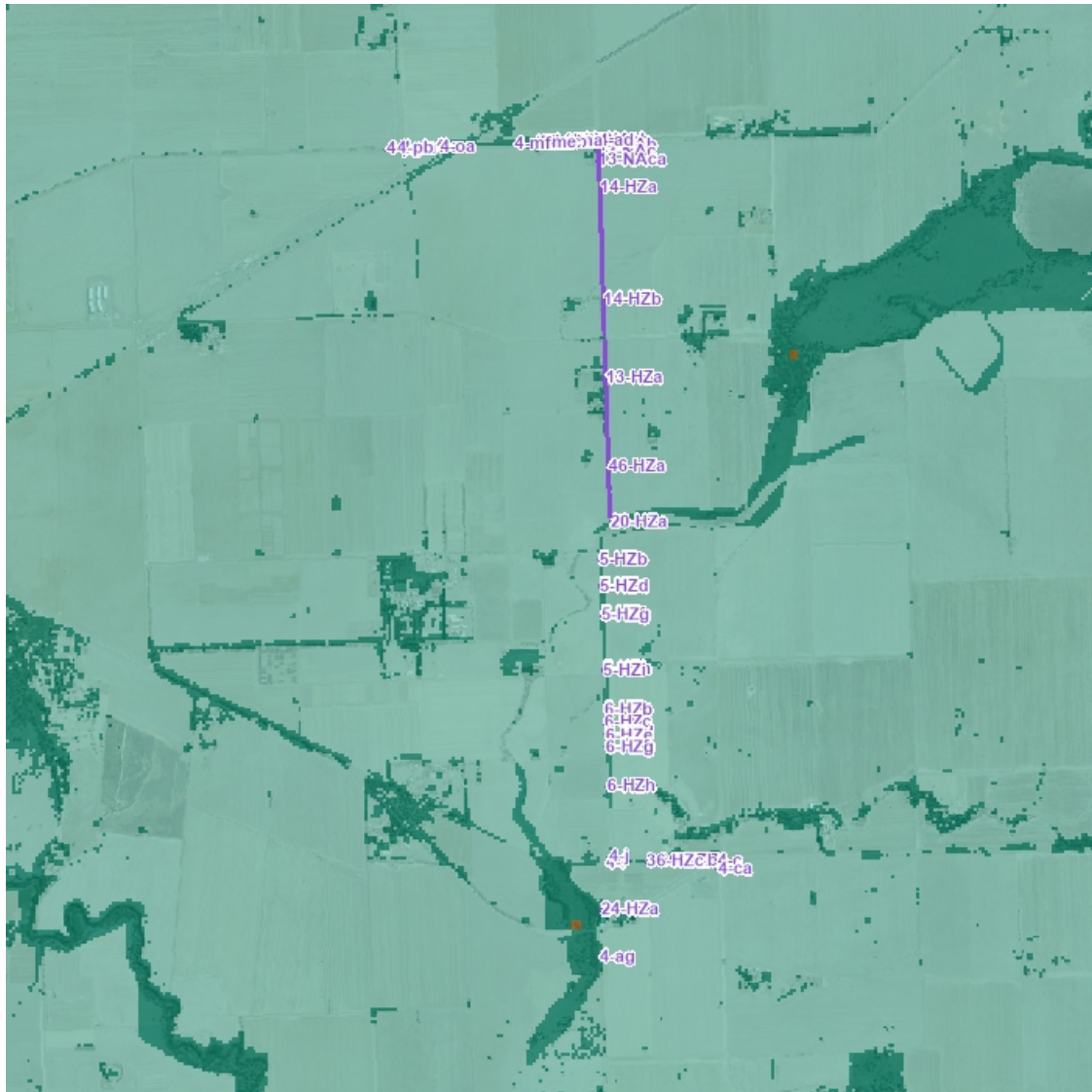
## 2. Aerial photograph showing mapped native vegetation



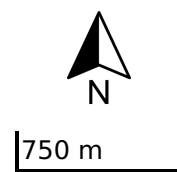
- Proposed Removal
- Past Removal
- Partial Removal



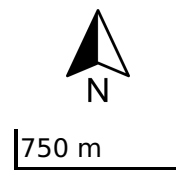
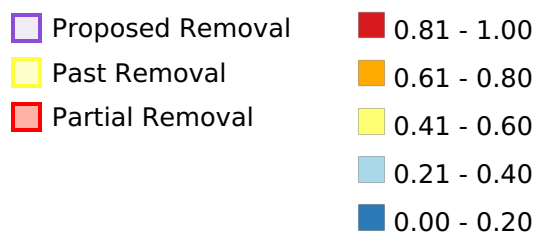
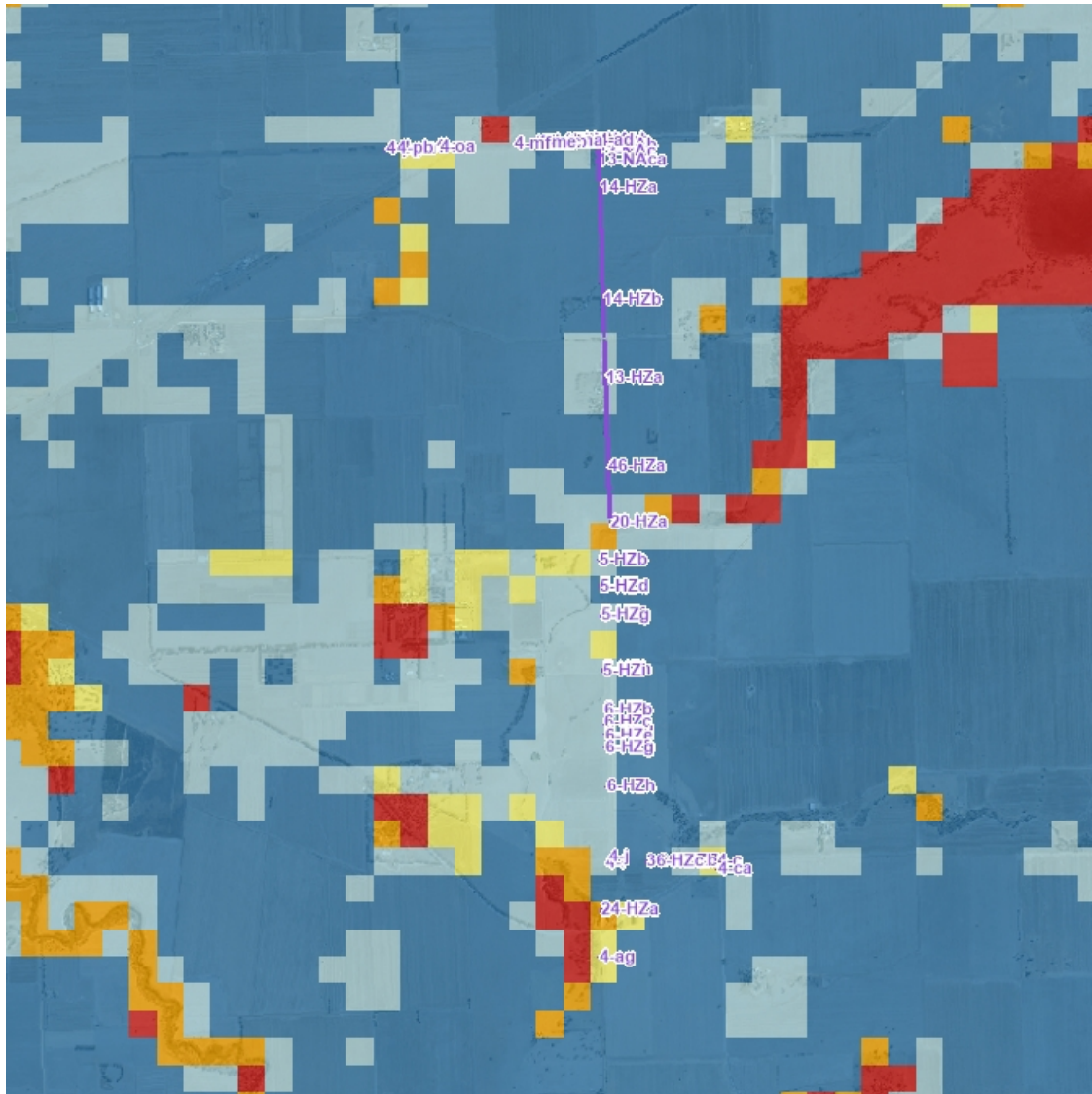
### 3. Location Risk Map



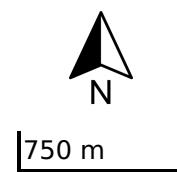
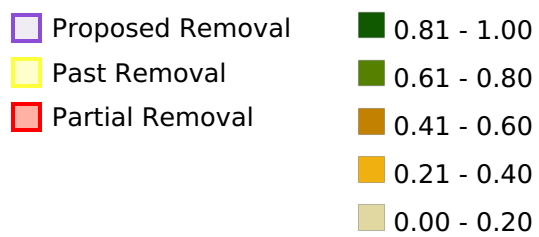
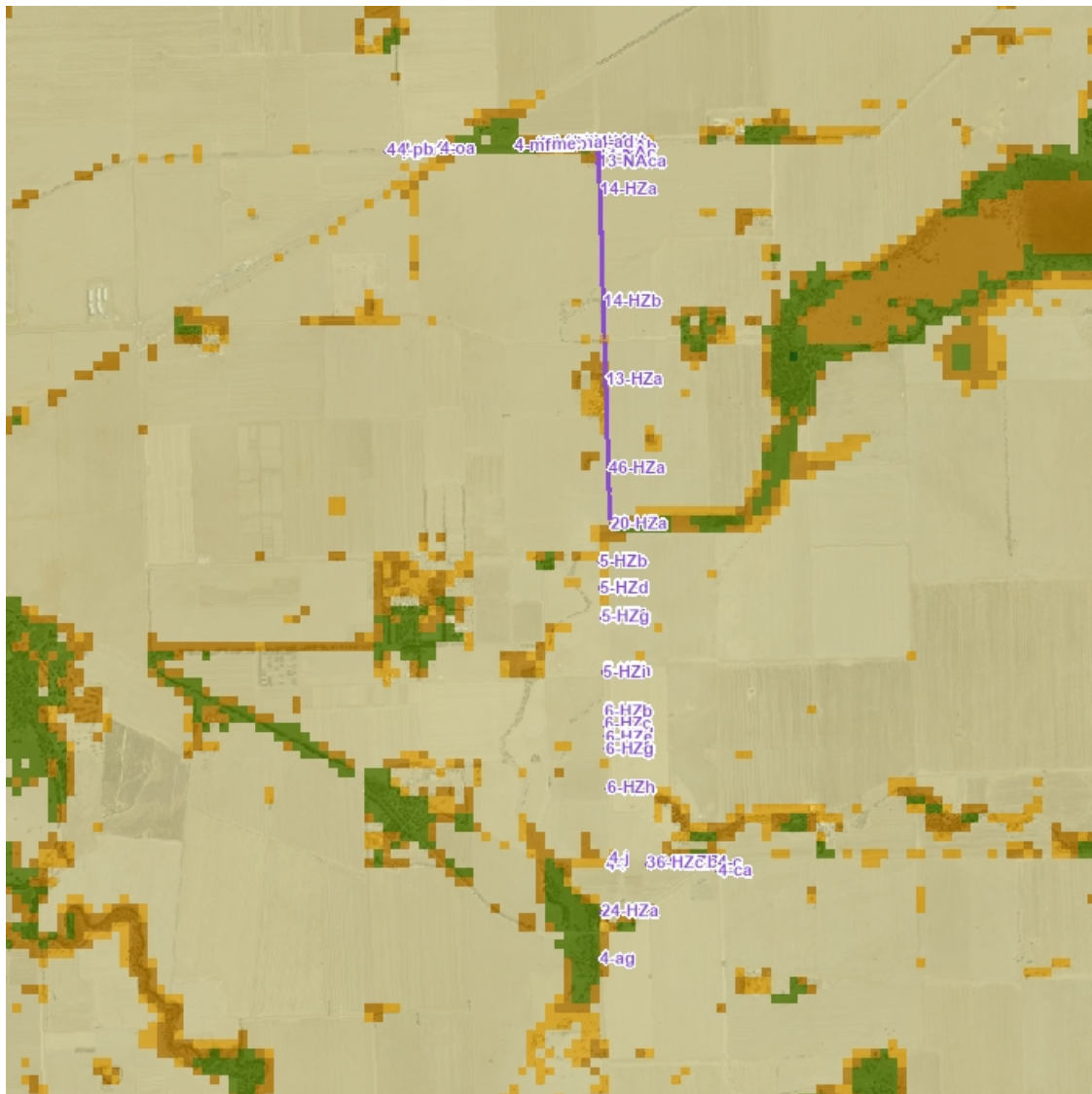
- |   |   |
|---|---|
| <span style="border: 1px solid purple; display: inline-block; width: 15px; height: 10px; vertical-align: middle;"></span> Proposed Removal                      | <span style="background-color: lightblue; display: inline-block; width: 15px; height: 10px; vertical-align: middle;"></span> Location 1 |
| <span style="background-color: yellow; border: 1px solid black; display: inline-block; width: 15px; height: 10px; vertical-align: middle;"></span> Past Removal | <span style="background-color: darkgreen; display: inline-block; width: 15px; height: 10px; vertical-align: middle;"></span> Location 2 |
| <span style="border: 1px solid red; display: inline-block; width: 15px; height: 10px; vertical-align: middle;"></span> Partial Removal                          | <span style="background-color: brown; display: inline-block; width: 15px; height: 10px; vertical-align: middle;"></span> Location 3     |



## 4. Strategic Biodiversity Value Score Map



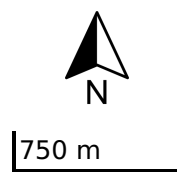
## 5. Modelled Condition Score Map



## 6. Modelled Endangered EVCs



- Proposed Removal
- Past Removal
- Partial Removal
- Endangered 1750 Ecological Vegetation Classes



## 7. Habitat Importance maps

Not Applicable

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**Appendix 9: Evidence that native vegetation offset requirement is available**

# 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: 20/01/2026 10:04

Report ID: 33771

## What was searched for?

### General offset

General habitat units	Strategic biodiversity value	Large trees	Vicinity (Catchment Management Authority or Municipal district)	
0.496	0.1428	0	CMA	Wimmera
			or LGA	Horsham Rural City

## Details of available native vegetation credits on 20 January 2026 10:04

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

Credit Site ID	GHU	LT	CMA	LGA	Land owner	Trader	Fixed price	Broker(s)
BBA-3001	3.859	0	Wimmera	Hindmarsh Shire	Yes	Yes	No	VegLink
BBA-3002	4.599	0	Wimmera	Northern Grampians Shire	Yes	Yes	No	Bio Offsets, VegLink
BBA-3018	0.712	1	Wimmera	Northern Grampians Shire	Yes	Yes	No	VegLink
TFN-C1864	0.907	0	Wimmera	Ararat Rural City	Yes	Yes	No	VegLink
TFN-C2031	18.655	177	Wimmera	Northern Grampians Shire	Yes	Yes	No	Ecocentric, VegLink
VC_CFL-3001_02	12.739	5	Wimmera	Hindmarsh Shire	Yes	Yes	No	VegLink
VC_CFL-3064_01	43.188	1096	Wimmera	West Wimmera Shire	Yes	Yes	No	Abezco, Bio Offsets, Ethos
VC_CFL-3723_01	42.834	1620	Wimmera	West Wimmera Shire	Yes	Yes	No	VegLink
VC_TFN-C2019_01	0.553	204	Wimmera	Northern Grampians Shire	Yes	Yes	No	Ecocentric

### 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)
----------------	-----	----	-----	-----	------------	--------	-------------	-----------

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
	Fully traded			
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@deeca.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
IDES	ID Ecological Management	(03) 9437 0555		www.idecological.com.au
Nillumbik SC	Nillumbik Shire Council	(03) 9433 3316	offsets@nillumbik.vic.gov.au	www.nillumbik.vic.gov.au
TFN	Trust for Nature	8631 5888	offsets@tfn.org.au	www.trustfornature.org.au
VegLink	Vegetation Link Pty Ltd	(03) 8578 4250 or 1300 834 546	offsets@vegetationlink.com.au	www.vegetationlink.com.au
Yarra Ranges SC	Yarra Ranges Shire Council	1300 368 333	biodiversityoffsets@yarraranges.vic.gov.au	www.yarraranges.vic.gov.au

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

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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

### Appendix 10: Assessment of impacts to NGMVP against the significant impact criteria (DoE 2013) for Critically Endangered communities

Criteria	Response	Conclusion
Reduce the extent of an ecological community	<p>A total of 0.046 ha (460 square metres) is proposed for removal from 22 roadside locations, each no more than 0.013 ha (134 square metres) in area, and 16 of which are less than 0.001 ha (10 square metres). The predicted extent within Victoria is 33,000 - 48,000 ha (TSSC 2012), and thus, based on a midpoint of 40,500 ha, the Project would impact approximately 0.00011% of the Victorian community.</p> <p>Given the small quantum of impact (460 square metres, or 0.00011% of the Victorian community), it is considered that impacts are considered to be minimal even at a local scale and the proposed development will not meaningfully reduce the extent of this community.</p> <p>Additionally, the impact area accounts for a nominal 20 × 8 metre work zone at each pole location to allow for safe plant operation and vehicle access. Direct disturbance at poles requiring replacement is limited to the ~1 × 1 metre bore hole required for pole installation, with the remainder of the work area used for vehicle positioning and construction activities. As such, impacts are precautionary and there is an opportunity to further microsite impacts to avoid and minimise these small impacts that have been accounted for.</p> <p>Areas of NGMVP subject to temporary disturbance will be rehabilitated through the reinstatement of soil profiles, facilitation of natural regeneration via sensitive weed management, and, where natural recolonisation is inadequate, then direct seeding of grasses consistent with the relevant EVC will be undertaken. This will ensure that the extent of the TEC will not be reduced.</p>	Unlikely
Fragment or increase fragmentation of an ecological community, for example by clearing vegetation for roads or transmission lines	The proposed impacts are generally along the edge of the mapped patches of the community. These patches are already fragmented by roads and driveways within the region. Therefore, the proposed removal will not fragment or increase fragmentation of the community.	Unlikely
Adversely affect habitat critical to the survival of an ecological community	Given that only 0.046 ha is proposed for removal along two roadside edges, it is unlikely that the proposal will adversely affect habitat critical to the survival of NGMVP.	Unlikely
Modify or destroy abiotic (non-living) factors (such as water, nutrients, or soil) necessary for an ecological community's survival, including reduction of groundwater levels, or substantial alteration of surface water drainage patterns	Mitigation measures outlined in Sections 5.1 and 6.1.2 will be implemented for the works. Considering this, it is unlikely that the project would modify or destroy abiotic factors necessary for the ecological community's survival.	Unlikely

Criteria	Response	Conclusion
Cause a substantial change in the species composition of an occurrence of an ecological community, including causing a decline or loss of functionally important species, for example through regular burning or flora or fauna harvesting	Areas of NGMVP subject to temporary disturbance will be rehabilitated through the reinstatement of soil profiles, facilitation of natural regeneration via sensitive weed management, and, where natural recolonisation is inadequate, then direct seeding of grasses consistent with the relevant EVC will be undertaken. This will prevent a substantial change in the species composition of this community.	Unlikely
Cause a substantial reduction in the quality or integrity of an occurrence of an ecological community, including, but not limited to: <ul style="list-style-type: none"> <li>▪ assisting invasive species, that are harmful to the listed ecological community, to become established, or</li> <li>▪ causing regular mobilisation of fertilisers, herbicides or other chemicals or pollutants into the ecological community which kill or inhibit the growth of species in the ecological community</li> </ul>	The protection of retained NGMVP and implementation mitigation measures outlined in Sections 5.1 and 6.1.2 will prevent a substantial reduction in the quality or integrity of this community.  As described in Section 6.1.2, a rehabilitation plan will be prepared to control the spread and proliferation of invasive species and disease.	Unlikely
Interfere with the recovery of an ecological community.	Given that only 0.046 ha is proposed for removal in 22 locations, impacts are considered to be minimal even at a local scale. As such, the proposed impacts are unlikely to interfere with the recovery of the ecological community.	Unlikely