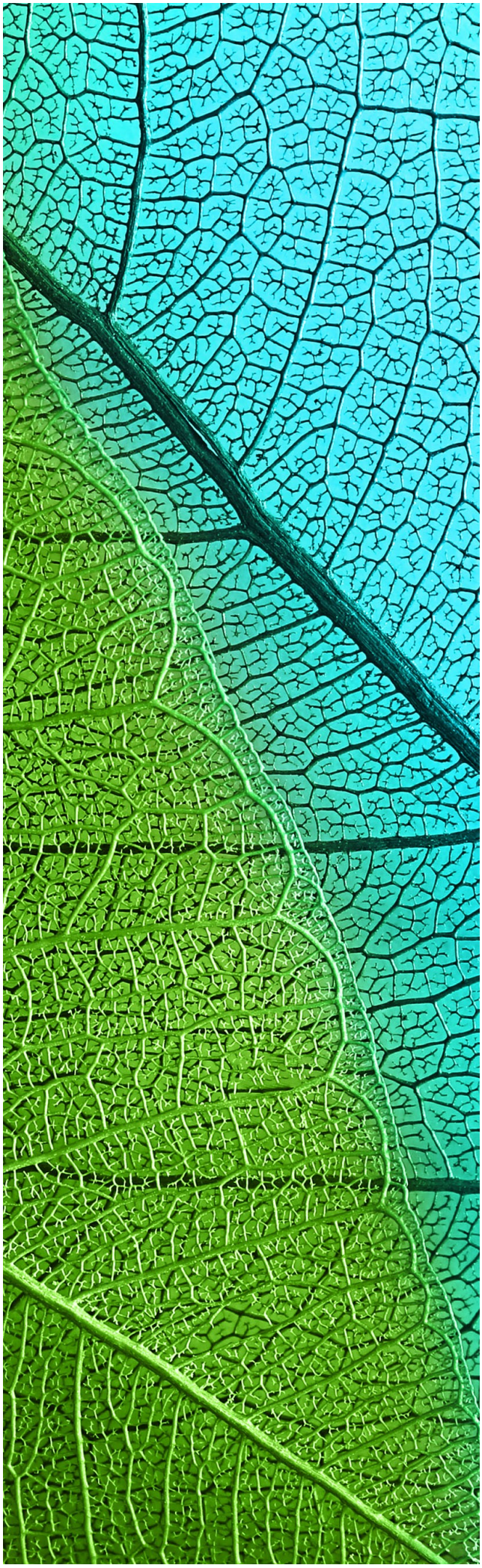

Tarrone Terminal Station

Flora and Fauna Assessment

Prepared for Ryan Corner Development Pty Ltd

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Report No. 14144.14 (17.4)

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1. Executive summary

Nature Advisory Pty Ltd undertook a flora and fauna assessment of a 12.47-hectare area of private land located at Tarrone, 35 kilometres north-west of Warrnambool and 250 kilometres west of Melbourne. The installation of additional infrastructure (such as transformers) within the existing Tarrone Terminal Station, the construction of additional infrastructure to the east of the existing Tarrone Terminal Station, the construction of new perimeter fence, the construction of a new hardstand area to the north of the terminal station, and the construction of new access points. is proposed for the study area.

The study area supported basalt soils on a gently undulating landscape, which formed wet depressions at the low points and stony rises, exposing granitic rock at the high points. A formed drainage line extended along the western perimeter of the sub-station, which then ran in a south-eastern direction beyond the study area.

The land has historically been used for grazing prior to the construction of Tarrone Terminal Station. Surrounding land predominantly supported farmland in all directions.

Vegetation in the study area primarily consisted of pasture grasses and associated weeds. The broader property was surrounded by planted windrows and native shrubs. Areas containing native vegetation were restricted to the wet depressions or stony rises. The wet depressions supported wetland species typical of Plains Grassy Wetland, such as Spike Sedge (*Eleocharis sp.*), Rushes (*Juncus spp.*), Australian Sweet-grass (*Glyceria australis*), Common Blown-grass (*Lachnagrostis filiformis*) and Common Tussock-grass (*Poa labillardierei* subsp. *labillardierei*). The stony rises supported Stony Knoll Shrubland and were characterised by the presence of Weeping Grass (*Microlaena stipoides* var. *stipoides*), Austral Bracken (*Pteridium esculentum*) and occasionally Tree Violet (*Melicytus dentatus* s.s.).

Fauna habitat within the study area comprised rocky outcrops, grazing paddocks and ephemeral wetlands.

18 patches of native vegetation were identified in the study area. This totalled an area of 1.188 hectares of native vegetation in patches. The current proposed footprint will result in the loss of 0.118 hectares of native vegetation. The G*uidelines for the removal, destruction or lopping of native vegetation* (DELWP 2017), herein referred to as 'the Guidelines', stipulate that the proposal is to be assessed under the **Basic** assessment pathway. Offsets required to compensate for the proposed removal of native vegetation from the study area are provided below.

- 0.025 general habitat units and must include the following offset attribute requirements:
    - Minimum strategic biodiversity value (SBV) of 0.312; and
    - Occur within the Glenelg Hopkins Catchment Management Authority boundary or the Moyne municipal district.

A planning permit under Clause 52.17 of the Moyne Planning Scheme will be required for the removal of native vegetation.

This proposal will not trigger a referral to the Secretary to the Department of Environment, Land, Water and Planning (as constituted under Part 2 of the *Conservation Forests and Lands Act 1987)* in accordance with Clause 66.02-2 of the Moyne Planning Scheme, based on the applicable assessment pathway.

The EPBC Act protects a number of threatened species and ecological communities that are considered to be of national conservation significance. Any significant impacts on these species require the approval of the Australian Minister for the Environment.

The following EPBC and/or FFG Act listed species could potentially occur within the study area in areas of native vegetation. Targeted surveys in areas of proposed impact will be undertaken in December 2021, to coincide with the flowering time for all species:

- Curly Sedge FFG
- Gorae Leek-orchid EPBC FFG
- Maroon Leek-orchid EPBC FFG
- Swamp Fireweed EPBC FFG
- Swamp Everlasting EPBC FFG

As the study area occurs on private land, there are no implications under the FFG Act.

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 Sections 5.2 and 6.2.1
.2.	Topographic and land information relating to the native vegetation to be removed	See Section 5.1
3.	Recent, dated photographs of the native vegetation to be removed	See Appendix 4
4.	Details of any other native vegetation approved to be removed, or that was removed without the required approvals, on the same property or on contiguous land in the same ownership as the applicant, in the five-year period before the application for a permit is lodged	NA
5.	An avoid and minimise statement	See Section 7.2.1
6.	A copy of any Property Vegetation Plan contained within an agreement made pursuant to section 69 of the *Conservation, Forests and Lands Act 1987* that applies to the native vegetation to be removed	NA
7.	Where the removal of native vegetation is to create defendable space, a written statement explaining why the removal of native vegetation is necessary. This statement is not required when the creation of defendable space is in conjunction with an application under the Bushfire Management Overlay.	NA

	Application requirement	Response
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).	NA
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 7.2.4

2. Introduction

Ryan Corner Development Pty Ltd and Hawkesdale Asset Pty Ltd engaged Nature Advisory Pty Ltd to conduct a flora and fauna assessment of a 12.47-hectare area of land in Tarrone. The specific area investigated, referred to herein as the 'study area', comprised the existing terminal station and adjacent grazing land which may be impacted by development, all of which are located on Lot 2 of Lot Plan 218923A. The installation of additional infrastructure (such as transformers) within the existing Tarrone Terminal Station, the construction of additional infrastructure to the east of the existing Tarrone Terminal Station, the construction of new perimeter fence, the construction of a new hardstand area to the north of the terminal station, and the construction of new access points is proposed for the study area.

This investigation was 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), herein referred to as 'the Guidelines', as well as any potential impacts on flora and fauna matters listed under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). As the study area occurs on private land, there are no implications under the FFG Act. This report outlines any implications under relevant national, state and local legislation and policy frameworks.

Specifically, the scope of the investigation included:

- Reviewing information on the flora, fauna and native vegetation of the study area and surrounds, including:
  - Victorian Biodiversity Atlas administered by the Department of Environment, Land, Water and Planning (DELWP 2021a);
  - The Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) Protected Matters Search Tool (DAWE 2021); and
  - DELWP Native Vegetation Information Management system (NVIM) (DELWP 2018b).
- A site survey, involving:
  - Characterisation and mapping 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, including habitat hectare assessment and/or scattered tree assessment;
  - Compilation of flora and fauna species lists for the site; and
  - Assessment of the likelihood of occurrence of EPBC Act listed flora, fauna, and communities on the site.

This report is divided into the following sections:

Section 3 provides the legislative background including details of all relevant Commonwealth, State and local legislation and policies.

Section 4 describes the sources of information, including the methods used for the field survey.

Section 5 presents the assessment results, including details of the native vegetation, flora and fauna of the study area.

Section 6 discusses the proposed impacts of the project.

Section 7 details the implications of the findings under the relevant legislation and policy.

This investigation was undertaken by a team from Nature Advisory comprising Elinor Ebsworth (Senior Ecologist), Brett Macdonald (Senior Ecologist) and Jim Grant (Senior Ecologist & Project Manager).

3. Planning and legislative considerations

This investigation and report address the application on the site of relevant legislation and planning policies that protect biodiversity. Local, state and Commonwealth controls are summarised below.

3.1. Local planning provisions

The study area is located within the Moyne local government area and is currently zoned Special Use Zone – Schedule 6 in the Moyne Planning Scheme.

The study area is located within a Bushfire-prone Area.

Local planning provisions apply under the *Victorian Planning and Environment Act 1987*.

3.2. Local Planning Policies

Local provisions can override state provisions.

The following local planning policies are relevant to the investigation:

3.2.1. LPP 21.06 – Environment

This local planning policy aims to protect and enhance the region's indigenous genetic biodiversity by maintaining the extent and diversity of the various ecosystems.

The strategies of this policy are implemented through overlays and other local planning policies.

3.2.2. LPP 22.02 – Environment

LPP 22.02-2 – Rare and Threatened Species

Policy objectives:

- To maintain and enhance biodiversity in Moyne.
- To recognise the location of Victorian Rare and Threatened Flora and Fauna Species including but not limited to those listed under Schedule 2 of the *Flora and Fauna Guarantee Act 1988*.
- To maintain and enhance the habitat, particularly the critical habitat, of Victorian Rare and Threatened Flora and Fauna species including but not limited to those listed under Schedule 2 of the *Flora and Fauna Guarantee Act 1988*.

LPP 22.02-5 – Pest Plant Management

Policy objectives:

- To contain the spread of noxious and pest weeds and to progressively reduce the areas affected.

LPP 22.02-8 – Flora and Fauna Local Policy

Policy objectives:

- To protect and enhance flora and fauna communities throughout the Shire.

3.3. Overlays

No overlays relevant to this investigation cover the study area.

3.4. State planning provisions

State planning provisions are established under the *Victorian Planning and Environment Act 1987*.

Clause 52.17 of all Victorian Planning Schemes states that:

A permit is required to remove, destroy or lop native vegetation, including dead native vegetation.

A permit is not required if:

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

3.4.1. Exemptions

No exemptions to planning permit requirements included in Clause 52.17 are relevant to this project.

3.4.2. Application requirements

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

When assessing an application, Responsible Authorities are also obligated to refer to Clause 12.01-2 (Native vegetation management) in the Planning Scheme which in addition to the Guidelines, refers to the following:

- *Assessor's handbook – applications to remove, destroy or lop native vegetation* (Version 1.1) (DELWP 2018c).
- Statewide biodiversity information maintained by DELWP.

The application of the Guidelines (DELWP 2017) is explained further in Appendix 1.

3.4.3. Referral to DELWP

Clause 66.02-2 of the planning scheme determines the role of the Secretary to the Department of Environment, Land, Water and Planning (as constituted under Part 2 of the *Conservation Forests and Lands Act 1987)* DELWP Environment Portfolio in the assessment of native vegetation removal permit applications. If an application is referred, DELWP's Environment Portfolio 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 DELWP's Environment Portfolio if:

- The impacts to native vegetation are in the Detailed Assessment Pathway;
- A property vegetation plan applies to the site; or
- The native vegetation is on Crown land which is occupied or managed by the responsible authority.

3.5. EPBC Act

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) protects a number of threatened species and ecological communities that are considered to be of national conservation significance. Any significant impacts on these species require the approval of the Australian Minister for the Environment.

If there is a possibility of a significant impact on nationally threatened species or communities or listed migratory species, a Referral under the EPBC Act should be considered. The Minister will

decide after 20 business days whether the project will be a 'controlled action' under the EPBC Act, in which case it cannot be undertaken without the approval of the Minister. This approval depends on a further assessment and approval process (lasting between three and nine months, depending on the level of assessment).

Implications under the EPBC Act for the current proposal are discussed in Section 7.3.

3.6. FFG Act

The Victorian *Flora and Fauna Guarantee Act 1988* (FFG Act) lists threatened and protected species and ecological communities (DELWP 2019, DELWP 2021b). Any removal of protected flora, which includes threatened flora species and the plants that make up threatened communities, listed under the FFG Act from public land requires a Protected Flora Licence or Permit under the Act, obtained from DELWP.

The FFG Act only applies to private land where a license is required to remove grass trees, tree ferns and sphagnum moss for sale, or where an Interim Conservation Order has been made to protect critical habitat for a threatened species or community. As no such habitat has ever been declared, this mechanism under the FFG Act has never been implemented.

Implications under the FFG Act for the current proposal are discussed in Section 7.4.

3.7. EE Act

One or a combination of a number of criteria may trigger a requirement for a Referral to the Victorian Minister for Planning who will determine if an Environmental Effects Statement (EES) is required according to the *Ministerial Guidelines for Assessment of Environmental Effects under the* Environment Effects Act 1978 (DSE 2006).

The criteria related to flora, fauna and native vegetation which trigger a Referral are outlined below.

<u>One or more</u> of the following would trigger a Referral:

- Potential clearing of 10 hectares or more of native vegetation from an area that:

Is of an Ecological Vegetation Class identified as endangered by the Department of Sustainability and Environment (in accordance with Appendix 2 of Victoria's Native Vegetation Management Framework); or

  - Is, or is likely to be, of very high conservation significance (as defined in accordance with of Victoria's Native Vegetation Management Framework); and
  - Is not authorised under an approved Forest Management Plan or Fire Protection Plan

- Potential long-term loss of a significant proportion (e.g. 1 to 5 percent depending on the conservation status of the species) of known remaining habitat or population of a threatened species within Victoria
- Potential long-term change to the ecological character of a wetland listed under the Ramsar Convention or in 'A Directory of Important Wetlands in Australia'
- Potential extensive or major effects on the health or biodiversity of aquatic, estuarine or marine ecosystems, over the long term

<u>Two or more</u> of the following would also trigger a Referral:

- Potential clearing of 10 hectares or more of native vegetation, unless authorised under an approved Forest Management Plan or Fire Protection Plan

- Matters listed under the Flora and Fauna Guarantee Act 1988:
  - Potential loss of a significant area of a listed ecological community; or
  - Potential loss of a genetically important population of an endangered or threatened species (listed or nominated for listing), including as a result of loss or fragmentation of habitats; or
  - Potential loss of critical habitat; or

Potential significant effects on habitat values of a wetland supporting migratory bird species.

Implications under the *Environment Effects Act 1978* (EE Act) for the current proposal are discussed in Section 7.5.

3.8. 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 on the CaLP Act that have been recorded in the study area are discussed in Section 7.6.

4. Existing information and methods

4.1. Existing information

Existing information used for this investigation is described below.

4.1.1. Existing reporting and documentation

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

- Moyne Planning Scheme

4.1.2. Native vegetation

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

- Relevant EVC benchmarks for the Victorian Volcanic Plain bioregion[1] (DSE 2004a);
- *NatureKit* (DELWP 2018a).

4.1.3. Listed matters

Existing flora and fauna species records and information about the potential occurrence of listed matters was obtained from an area termed the 'search region', defined here as an area with a radius of ten kilometres from the approximate centre point of the study area (coordinates: latitude 38˚ 10' 46" S and longitude 142˚ 10' 49" E).

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 DELWP.

The online EPBC Act *Protected Matters Search Tool* (DAWE 2021) was consulted to determine whether nationally listed species or communities potentially occurred in the search region based on habitat modelling.

4.2. Field methods

The field assessment was conducted on the 8th October 2020 and 12th October 2021. During these assessments, the study area was surveyed on foot.

Sites in the study area found to support native vegetation or with potential to support listed matters were mapped through a combination of aerial photograph interpretation and ground-truthing using a hand-held GPS (accurate to approximately five metres). Species and ecological communities listed as threatened under the EPBC Act were also mapped using the same method.

4.2.1. 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 native vegetation as belonging to two categories:

[1] A bioregion is defined as "a geographic region that captures the patterns of ecological characteristics in the landscape, providing a natural framework for recognising and responding to biodiversity values". In general bioregions reflect underlying environmental features of the landscape (DNRE 1997).

- Patch; or
- Scattered tree.

The definitions of these categories are provided below, along with the prescribed DELWP methods to assess them. Further details on definitions of patches and scattered trees are provided in Appendix 1.

Patch

A patch of native vegetation is either:

- An area of vegetation where at least 25 per cent of the total perennial understorey plant cover is native; or
- Any area with three or more native canopy trees[2] where the drip line[3] of each tree touches the drip line of at least one other tree, forming a continuous canopy; or
- Any mapped wetland included in the *Current wetlands map*, available at *MapShareVic* (DELWP 2021c).

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

The *Native Vegetation Information Management* (NVIM) system (DELWP 2018b) provides modelled condition scores for native vegetation to be used in certain circumstances.

Scattered tree

A scattered tree is:

- A native canopy tree[2] that does not form part of a patch.

Scattered trees are counted and mapped, the species identified and their circumference at 1.3 m above the ground is recorded.

4.2.2. Flora species and habitats

Records of flora species were made in conjunction with sampling methods used to undertake habitat hectare assessments of native vegetation described above. Specimens requiring identification using laboratory techniques were collected.

Species protected under the FFG Act were determined by crosschecking against the FFG Act *Protected Flora List* (DELWP 2019).

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

- The presence of suitable habitat for flora species such as soil type, floristic associations and landscape context; and

[2] A native canopy tree is a mature tree (i.e. it is able to flower) that is greater than 3 metres in height and is normally found in the upper layer of the relevant vegetation type.
[3] The drip line is the outermost boundary of a tree canopy (leaves and/or branches) where the water drips on to the ground.

- 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 or flora listed under the EPBC Act and/or FFG Act. That is, where insufficient evidence was available on the potential occurrence of a listed species, it is assumed that it could be in an area of suitable habitat.

4.2.3. Fauna species and habitats

The techniques below were used to detect fauna species 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 for reptiles, frogs and mammals.
- Daytime bird observations.
- General searches for reptiles and frogs.

Fauna habitats are described using habitat components that include rocky outcrops, grazing paddocks and ephemeral wetlands.

The study area's habitat connectivity (i.e. degree of isolation/fragmentation), including linkages to other habitats in the region, was determined using field observations, recent aerial photography and *NatureKit* (DELWP 2018a).

Wherever appropriate, a precautionary approach was adopted in determining the likelihood of occurrence or fauna listed under the EPBC Act and FFG Act. That is, where insufficient evidence was available on the potential occurrence of a listed species, it is assumed that it could be in an area of suitable habitat.

4.2.4. Threatened ecological communities

The presence or otherwise of listed threatened ecological communities in the study area was determined by checking general field observations against published descriptions of relevant listed ecological communities modelled to potentially occur in the study area.

Reviewed ecological community descriptions comprised identification criteria and condition thresholds from listing advice for EPBC Act communities as well as FFG Act-listed community descriptions (SAC 2015).

4.3. Limitations of field assessment

The site assessments were carried out in spring. The short duration and seasonal timing of field assessments can result in some species not being detected when they may occur at other times. Additionally, some flora species and life-forms may be undetectable at the time of the survey or unidentifiable due to a lack of flowers or fruit. However, spring provides the optimum conditions to survey for native vegetation, particularly in grasslands.

These limitations were not considered to compromise the validity of the current investigation, which was designed to address the relevant policies and decision guidelines.

5. Assessment results

5.1. Site description

The study area for this investigation (Figure 1) was approximately 12.47 hectares of private land located at Tarrone, 35 kilometres north-west of Warrnambool and 250 kilometres west of Melbourne.

The study area supported basalt soils on a gently undulating landscape, which formed wet depressions at the low points and stony rises, exposing granitic rock at the high points. A formed drainage line extended along the western perimeter of the sub-station, which then ran in a south-eastern direction beyond the study area.

The land has historically been used for grazing prior to the construction of a terminal station. Surrounding land predominantly supported farmland in all directions.

Vegetation in the study area primarily consisted of pasture grasses and associated weeds. The broader property was surrounded by planted windrows and native shrubs. Areas containing native vegetation were restricted to the wet depressions or stony rises. The wet depressions supported wetland species typical of Plains Wetland, such as Spike Sedge (*Eleocharis sp.*), Rushes (*Juncus spp.*), Australian Sweet-grass (*Glyceria australis*), Common Blown-grass (*Lachnagrostis filiformis*) and Common Tussock-grass (*Poa labillardierei*). The stony rises supported Stony Knoll Shrubland and were characterised by the presence of Weeping Grass (*Microlaena stipoides var. stipoides*), Austral Bracken (*Pteridium esculentum*) and occasionally Tree Violet (*Melicytus dentatus* s.s.). Other native species Kidney Weed (*Dichondra* sp.), Wiry Dock (*Rumex dumosus*) and Crane's Bill (*Geranium* sp.).

Fauna habitat within the study area comprised rocky outcrops, grazing paddocks and ephemeral wetlands.

The following key fauna habitat areas occurred within the region:

- Tower Hill Wildlife Reserve approximately 21 kilometres south-east of the study area. Native vegetation in the study area was isolated from this habitat by roads and large tracts of agricultural land.
- Belfast Coastal Reserve approximately 25 kilometres south-east of the study area. Native vegetation in the study area was isolated from this habitat by roads and large tracts of agricultural land.
- Budj Bim National Park approximately 19 kilometres north-west of the study area. Native vegetation in the study area was isolated from this habitat by roads and large tracts of agricultural land.

The study area lies within the Victorian Volcanic Plains bioregion and falls within the Glenelg Hopkins catchment management area.

5.2. Native vegetation

5.2.1. Patches of native vegetation

Pre–European EVC mapping (DELWP 2018a) indicated that the study area and surrounds would have supported Stony Knoll Shrubland/Plains Grassy Woodland/Plains Grassy Wetland Mosaic (EVC 714), and Plains Grassy Wetland (EVC 125) prior to European settlement based on modelling

of factors including rainfall, aspect, soils and remaining vegetation. No DELWP wetlands are mapped on this site.

Evidence on site, including floristic composition and soil characteristics, suggested that Plains Grassy Wetland (EVC 125) and Stony Knoll Shrubland (EVC 649) were present within the study area (Figure 1). Descriptions of these EVCs are provided within the EVC benchmarks in Appendix 4.

18 patches (referred to herein as habitat zones) comprising the abovementioned EVCs, were identified in the study area (Table 1). This totalled an area of 1.188 hectares of native vegetation in patches and included no large trees.

Table 1: Description of habitat zones in the study area

Habitat Zone	EVC	Description
E, F, L, O, S and T	Plains Grassy Wetland (EVC 125)	Plains Grassy Wetland was recorded within wet depressions. These areas supported native species such as Spike Sedge, Rushes, Australian Sweet-grass, Common Blown-grass and Common Tussock-grass at a high cover of 60%. The native herbs, Variable Willow-herb (*Epilobium billardiereanum*) and Buttercup (*Ranunculus* sp.) were also recorded, but at a negligible cover. Weed cover was high, at approximately 40%, and leaf litter cover was moderate (10%). Habitat Zone F presented in a modified state, as it occurred along a modified drainage line.
A, A1, B, C, D, G, H, I, J, K, M and N	Stony Knoll Shrubland (EVC 649)	The stony rises scattered throughout the landscape supported Stony Knoll Shrubland and were characterised by the presence of Weeping Grass (5% cover), Austral Bracken (40% cover), Rock Fern (*Cheilanthes tenuifolia s.l.*) and occasionally Tree Violet (Habitat Zone J). Other native species occurred at a negligible cover and included Kidney Weed, Wiry Dock and Crane's Bill. Weed cover was moderate (30%), with leaf litter occurring at a cover of 10%. A high cover of bryophytes and lichens were observed within these zones.

The habitat hectare assessment results for these habitat zones are provided in Table 2 More detailed habitat scoring results are presented in Appendix 2.

Table 2: Summary of habitat hectare assessment results

Habitat Zone	Ecological Vegetation Class	Area (ha)	Condition Score (out of 100)	Number of Large Trees recorded
A	Stony Knoll Shrubland (EVC 649)	0.041	25	N/A
A1	Stony Knoll Shrubland (EVC 649)	0.026	25	N/A
B	Stony Knoll Shrubland (EVC 649)	0.066	25	N/A
C	Stony Knoll Shrubland (EVC 649)	0.103	25	N/A
D	Stony Knoll Shrubland (EVC 649)	0.039	25	N/A

E	Plains Grassy Wetland (EVC 125)	0.068	20	N/A
F	Plains Grassy Wetland (EVC 125)	0.083	20	N/A
G	Stony Knoll Shrubland (EVC 649)	0.029	25	N/A
H	Stony Knoll Shrubland (EVC 649)	0.036	25	N/A
I	Stony Knoll Shrubland (EVC 649)	0.239	25	N/A
J	Stony Knoll Shrubland (EVC 649)	0.022	25	N/A
K	Stony Knoll Shrubland (EVC 649)	0.008	25	N/A
L	Plains Grassy Wetland (EVC 125)	0.176	20	N/A
M	Stony Knoll Shrubland (EVC 649)	0.015	25	N/A
N	Stony Knoll Shrubland (EVC 649)	0.091	25	N/A
O	Plains Grassy Wetland (EVC 125)	0.028	20	N/A
S	Plains Grassy Wetland (EVC 125)	0.044	20	N/A
T	Plains Grassy Wetland (EVC 125)	0.074	20	N/A
Total		**1.188**		**0**

Figure 1: Study area and native vegetation

Project: Tarrone Terminal Station
Client: Ryan Corner Development Pty Ltd
Date: 23/11/2021

Legend

Study area

Native vegetation

Plains Grassy Wetland (VVP_0125)

Stony Knoll Shrubland (VVP_0649)

N

Metres

0 40

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5.2.2. Scattered trees

No scattered trees were recorded in the study area.

5.3. Flora species

5.3.1. Species recorded

During the field assessment 34 plant species were recorded. Of these, 15 (44%) were indigenous and 19 (56%) were introduced or non-indigenous native in origin (Appendix 3).

5.3.2. Listed species

VBA records (DELWP 2021a) and the EPBC Protected Matters Search Tool (DAWE 2021) indicated that within the search region there were records of, or there occurred potential suitable habitat for, 16 species listed under the Commonwealth EPBC Act and 16 listed under the state FFG Act, including 12 listed under both Acts. No flora species listed under the EPBC Act were recorded during the field survey.

The likelihood of occurrence in the study area of species listed under the EPBC Act and FFG Act is addressed in Table 3. Species considered 'likely to occur' are those that have a very high chance of being in the study area based on numerous records in 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.

This analysis indicates that the following six listed flora species are likely to occur or have the potential to occur:

- Curly Sedge
- Gorae Leek-orchid
- Maroon Leek-orchid
- Basalt Leek-orchid
- Swamp Fireweed
- Swamp Everlasting

Table 3: Listed flora species and the likelihood of their occurrence in the study area

Common Name	Scientific name	Conservation status		Habitat	Number of records	Date of last record	Likelihood of occurrence
		EPBC	FFG				
River Swamp Wallaby-grass	*Amphibromus fluitans*	VU		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 (DAWE 2020).	-	-	Limited suitable habitat, beyond known distribution. No records within 10km. **Unlikely to occur**
Curly Sedge	*Carex tasmanica*		vu	Occurs in seasonally wet, fertile, heavy basalt clay soils, usually around the margins of slightly saline drainage lines or freshwater swamps. The dominant vegetation type varies, but is often grassy/sedgy and generally lacks trees (Carter 2010).	2	3/04/2018	Suitable habitat within areas of Plains Grassy Wetland (EVC 125) exist, although it was not recorded during the site assessment. Not detected in targeted surveys **Unlikely to occur.**
Matted Flax-lily	*Dianella amoena*	EN	cr	Lowland grassland and grassy woodlands on well-drained to seasonally waterlogged fertile sandy loams to heavy cracking soils derived from sedimentary or volcanic Geology. It is widely distributed from eastern to south-western Victoria (DAWE 2020).	1	2/10/2016	Lack of areas with suitable habitat. Not known to occur on rocky outcrops. **Unlikely to occur**
Clover Glycine	*Glycine latrobeana*	VU	vu	Found across south-eastern Australia in native grasslands, dry sclerophyll forests, woodlands and low open woodlands with a grassy ground layer. In Victoria, populations occur in lowland grasslands, grassy woodlands and sometimes in grassy heath (DAWE 2020).	1	22/11/2011	Lack of areas with suitable habitat. Not known to occur on rocky outcrops. **Unlikely to occur**
Adamson's Blown-grass	*Lachnagrostis adamsonii* subsp. *adamsonii*	VU		Occurs on saline sites such as ephemeral swamps, depressions and drainage line between Portarlington to around Cavendish. The species cannot tolerate prolonged inundation (RBGV 2021).	-	-	Lack of suitable habitat. Wetland areas are not saline. Lack of nearby records. **Unlikely to occur**
Purple Blown-grass	*Lachnagrostis punicea* subsp. *filifolia*		en	Seasonally wet, heavy clay soils (Walsh 1994).	4	21/11/2011	Lack of suitable heavy clay soil habitat. **Unlikely to occur**
Basalt Peppercress	*Lepidium hyssopifolium* s.s.	EN	en	Known to establish on open, bare ground with limited competition from other plants. Previously recorded from Eucalypt woodland with a grassy ground cover, low open Casuarina woodland with a grassy ground cover and tussock grassland. Now generally found amongst exotic pasture grasses and beneath exotic trees (DAWE 2020).	1	25/11/2009	Lack of suitable treed habitat. **Unlikely to occur**
Pretty Leek-orchid	*Prasophyllum anticum*		cr	Only one known population at Orford, where it grows in Kangaroo Grass dominated Grassland on moist to wet black basaltic loam (RBGV 2021).	12	23/10/2018	Some recent nearby records. However, there is no suitable areas of habitat. **Unlikely to occur**
Gorae Leek-orchid	*Prasophyllum diversiflorum*	EN	cr	Wet grasslands or inundated swamps among tussocks (Jones 2006).	2	19/12/1995	Suitable habitat within areas of Plains Grassy Wetland (EVC 125). Not detected in targeted surveys **Unlikely to occur.** .
Maroon Leek-orchid	*Prasophyllum frenchii*	EN	en	Grows mainly in open sedge swampland or in wet grassland and wet heathland generally bordering swampy regions. Sites are generally low altitude, flat and moist. Soils are generally moderately rich damp sandy or black clay loams. Climate is mild, with an annual rainfall of 600–1100 mm, occurring predominantly in winter and spring (DAWE 2020).	-	-	Lack of nearby records, however suitable habitat within areas of Plains Grassy Wetland (EVC 125) exists. Not detected in targeted surveys **Unlikely to occur.**

Common Name	Scientific name	Conservation status		Habitat	Number of records	Date of last record	Likelihood of occurrence
		EPBC	FFG				
Dense Leek-orchid	*Prasophyllum spicatum*	VU	cr	Occurs in coastal and near-coastal heathland and heathy woodland. Soils are generally sandy, with some sites seasonally waterlogged (Duncan 2010).	2	1/11/2000	Lack of suitable coastal habitat. **Unlikely to occur**
Basalt Leek-orchid	*Prasophyllum viretrum*		cr	Moist to wet grassland on dark basaltic loam (Jones & Rouse 2006).	58	13/11/2019	Lack of suitable grassland habitat. **Unlikely to occur**
Green-striped Greenhood	*Pterostylis chlorogramma*	VU	en	Occurs in mixed Box-Stringybark forest with a shrubby understorey, often with Pteridium esculentum as a major component on sandy or clay loam soils (Duncan et al. 2009).	-	-	Lack of suitable treed habitat. **Unlikely to occur**
Leafy Greenhood	*Pterostylis cucullata*	VU		Tea-tree scrubs on tall sandy and calcareous dunes, in moist, open or even deep shaded locations (Jones 1994).	-	-	Lack of suitable shrub coastal habitat. **Unlikely to occur**
Button Wrinklewort	*Rutidosis leptorhynchoides*	EN	en	In Victoria restricted to open stands of plains grassland and grassy woodlands, on fertile clays to clay loams, usually in areas where the grass cover is more open, either as a result of recurrent fires or grazing by native macropods or stock. It also occurs on low rises with shallow, stony soils at less than 100 m above sea level (RBGV 2021).	-	-	Lack of suitable treed and/or grassland habitat. **Unlikely to occur**
Swamp Fireweed	*Senecio psilocarpus*	VU		Herb-rich winter-wet swamps on volcanic clays or peaty soils (Walsh 1999). Known from approximately 10 sites between Wallan, about 45 km north of Melbourne, and Honans Scrub in south-eastern South Australia (TSSC 2008a).	-	-	Suitable habitat within areas of Plains Grassy Wetland (EVC 125). Recorded nearby during targeted surveys by Nature Advisory. Not detected in targeted surveys **Unlikely to occur.**
Coast Dandelion	*Taraxacum cygnorum*	VU	cr	Woodland and scrub on limestone (Scarlett 1999).	-	-	Lack of suitable treed habitat. **Unlikely to occur**
Metallic Sun-orchid	*Thelymitra epipactoides*	EN	en	Grows primarily in mesic coastal heathlands, grasslands and woodlands, but is also found in drier inland heathlands, open forests and woodlands. Substrates may be moist or dry sandy loams or loamy sands. Critical habitat has not been determined but the species is likely to require open conditions, which may be created by soil disturbance or fire, for recruitment (DAWE 2020).	-	-	Lack of suitable treed habitat. **Unlikely to occur**
Spiral Sun-orchid	*Thelymitra matthewsii*	VU	en	Slightly elevated sites to 300m in well-drained soils (sandy loams to gravelly limestone soils) in light to dense forest; sometimes in coastal sandy flats (Weber & Entwisle 1994).	-	-	Lack of suitable treed habitat. **Unlikely to occur**
Swamp Everlasting	*Xerochrysum palustre*	VU	cr	Grows in wetlands including sedge-swamps and shallow freshwater marshes, often on heavy black clay soils. Commonly associated genera include Amphibromus, Baumea, Carex, Chorizandra, Craspedia, Eleocharis, Isolepis, Lachnagrostis, Lepidosperma, Myriophyllum, Phragmites australis, Themea triandra and Villarsia (DAWE 2020).	-	-	Suitable habitat within areas of Plains Grassy Wetland (EVC 125). Not detected in targeted surveys **Unlikely to occur.**

Notes: EPBC = threatened species status under EPBC Act (EN = endangered; VU = vulnerable); **FFG** = threatened species status under the FFG Act (cr = critically endangered; en = endangered; vu = vulnerable)

5.4. Fauna habitats

The study area supported three fauna habitat types.

- Rocky outcrops;
- Grazing paddocks (exotic pastures); and
- Ephemeral wetlands.

Rocky outcrops

Many outcrops of basalt occurred forming a mosaic with grazing pastures and ephemeral wetlands throughout the study area. These supported both native and exotic pasture grasses and some had scattered native shrubs. These areas were used for grazing (primarily cattle). Native plant species diversity was moderate, but structural diversity was greatly reduced and dominated by graminoids. Outcropping rocks and soil cracks occurred, but large woody debris was absent.

Grazing paddocks (exotic pastures)

This was the most abundant habitat type within the study area, and included exotic pasture dominated by species such as Phalaris, Soft Brome, Ryegrass and Hare's-tail Grass. This habitat provided the least habitat value within the study area.

Ephemeral wetlands

Aquatic habitat within the study area was ephemeral and mostly dry at the time of survey. It included small watercourses and grassy wetlands that formed a mosaic with grazing pastures and rocky outcrops throughout the study area. These areas supported the highest cover, species diversity and structural diversity of native vegetation within the study area, and included wetlands dominated by grasses, sedges and aquatic herbs.

5.5. Fauna species

5.5.1. Listed species

The review of existing information (including VBA records (DELWP 2021a) and the results of the EPBC Protected Matters Search Tool (DAWE 2021) indicated that within the search region there were records of, or there occurred potential suitable habitat for, 45 fauna species listed under the Commonwealth EPBC Act and the state FFG Act. The likelihood of occurrence of these species in the study area was assessed and the results are presented in Table 4.

This analysis of potential occurrence of listed fauna species excludes:

- Marine fauna given that the study area is inland
- Migratory oceanic bird species (such as albatrosses and petrels) and migratory shorebirds given that the study area is inland.

Species considered 'likely to occur' are those that have a very high chance of being in the study area given the existence of numerous records in the search region and suitable habitat in the study area. Using the precautionary approach, species considered to have the 'potential to occur' are those for which suitable habitat exists, but recent records are scarce. This analysis indicates that 11 listed fauna species are likely to occur or have the potential to occur. These species are:

- **Brolga** (FFG Act: endangered)
- **Eastern Great Egret** (FFG Act: vulnerable)
- **Magpie Goose** (FFG Act: vulnerable)

- **Plumed Egret** (FFG Act: critically endangered)
- **Glossy Ibis** (EPBC Act: Migratory)
- **Latham's Snipe** (EPBC Act: Migratory)
- **Pectoral Sandpiper** (EPBC Act: Migratory)
- **Sharp-tailed Sandpiper** (EPBC Act: Migratory)
- **Fork-tailed Swift** (EPBC: Migratory)
- **White-throated Needletail** (EPBC: Vulnerable & Migratory, FFG: vulnerable)
- **Southern Bent-wing Bat** (EPBC: Critically Endangered; FFG: critically endangered [as subspecies of Common Bent-wing Bat])

The susceptibility of these species to impacts from development is discussed in Section 5.5.2.

Table 4: Listed fauna species and the likelihood of their occurrence in the study area

Common Name	Scientific name	EPBC-T	EPBC-M	FFG	Habitat	Number of records	Date of last record	Likelihood of occurrence
Birds								
Australasian Bittern	*Botaurus poiciloptilus*	EN		cr	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).	None	N/A	No suitable habitat or records within the search region. **Unlikely to occur.**
Australian Painted-snipe	*Rostratula australis*	EN		cr	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 lignum Muehlenbeckia or canegrass or sometimes tea-tree (Melaleuca). Sometimes utilises areas that are lined with trees, or that have some scattered fallen or washed-up timber (DAWE 2020).	None	N/A	No suitable habitat or records within the search region. **Unlikely to occur.**
Brolga	*Grus rubicunda*			en	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).	13	12/11/2019	Marginal suitable habitat on site within areas of Plains Grassy Wetland (EVC 125). Records occurring within Cockatoo Swamp. **Potential to occur.**
Bush Stone-curlew	*Burhinus grallarius*			cr	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).	1	18/01/1963	No suitable habitat or records within the search region. **Unlikely to occur.**
Common Greenshank	*Tringa nebularia*		M (Bonn A2H, ROKAMBA, JAMBA, CAMBA)	en	Inhabits wide range of coastal or inland wetlands with varying levels of salinity; mainly muddy margins or rocky shores of wetlands (Higgins & Davies 1996).	None	N/A	Limited suitable habitat. Rare vagrant and site is 20 km from the coast. **Unlikely to occur.**
Common Sandpiper	*Actitis hypoleucos*		M (Bonn A2H, ROKAMBA, JAMBA, CAMBA)	vu	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).	None	N/A	No suitable habitat. **Unlikely to occur.**
Curlew Sandpiper	*Calidris ferruginea*	CR	M (Bonn A2H, ROKAMBA, JAMBA, CAMBA)	cr	Inhabits wide range of coastal or inland wetlands with varying levels of salinity; mainly muddy margins or rocky shores of wetlands (Higgins & Davies 1996).	None	N/A	No suitable habitat. **Unlikely to occur.**
Eastern Curlew	*Numenius madagascariensis*	CR	M (Bonn A1, ROKAMBA, JAMBA, CAMBA)	cr	Inhabits sheltered coasts, especially estuaries, embayment, harbours, inlets and coastal lagoons with large intertidal mudflats or sandflats, often with beds of sea grass (Higgins & Davies 1996).	None	N/A	No suitable intertidal habitat. **Unlikely to occur.**
Fork-tailed Swift	*Apus pacificus*		M (CAMBA, ROKAMBA, 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).	1	25/02/2019	Suitable habitat. Highly mobile species that may occasionally utilise habitat on site. **Potential to occur.**
Glossy Ibis	*Plegadis falcinellus*		M (Bonn A2S)		Prefer freshwater inland wetlands, in particular, permanent or ephemeral water bodies and swamps with abundant vegetation (Marchant & Higgins 1990).	3	9/12/2019	Suitable habitat within Plains Grassy Wetland (EVC 125). Recent records near the coast and Moyne River. **Likely to occur.**

Common Name	Scientific name	EPBC-T	EPBC-M	FFG	Habitat	Number of records	Date of last record	Likelihood of occurrence
Great Egret	*Ardea alba*			vu	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).	3	1/11/2011	Suitable habitat within the search region, suboptimal on site within Plains Grassy Wetland (EVC 125). Records found within Cockatoo Swamp and Swan River. **Potential to occur.**
Grey Falcon	*Falco hypoleucos*	VU		vu	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 north western regions (Marchant & Higgins 1993).	None	N/A	More commonly found in northwest Victoria. No records within the search region. Unlikely to occur.
Grey Goshawk	*Accipiter novaehollandiae*			en	Inhabit rainforests, open forests, swamp forests, woodlands and plantations; most abundant where forest or woodland provide cover for hunting from perches. in Vic., most common in Otway ranges (Marchant & Higgins 1993).	2	24/06/2007	No suitable habitat. **Unlikely to occur.**
Ground Parrot	*Pezoporus wallicus*			en	Inhabits mainly heathlands, sedgeland or button-grass plains providing dense cover. In Victoria the species is largely restricted to closed coastal heathland and sedgeland, which is generally found in Gippsland (Higgins 1999). The species is also known to occur in similar habitats in western Victoria, namely Discovery Bay National Park and Lake Connewarre (Higgins 1999).	1	17/04/1907	No suitable habitat. **Unlikely to occur.**
Hooded Plover	*Thinornis cucullatus*	VU		vu	Inhabits sandy ocean beaches, especially those that are broad and flat, with a wide wave-wash zone for feeding. Widespread and scattered across coastal Victoria. Numbers reduced due to disturbance by recreational activities on beaches (Marchant & Higgins 1993).	None	N/A	No suitable marine habitat on site or recent records. **Unlikely to occur.**
Hooded Robin	*Melanodryas cucullata*			vu	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).	2	18/01/1963	No suitable habitat. **Unlikely to occur.**
Latham's Snipe	*Gallinago hardwickii*		M (Bonn A2H, ROKAMBA, JAMBA, 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 wide spread in southeast Australia and most of its population occurs in Victoria, except in the northwest of the state (Naarding 1983; Higgins & Davies 1996).	4	29/10/2019	Suitable habitat within Plains Grassy Wetland (EVC 125) and nearby records. **Likely to occur.**
Magpie Goose	*Anseranas semipalmata*			vu	Terrestrial and aquatic habitats, but activities cantered on wetlands, mainly those on floodplains of rivers (Marchant & Higgins 1990).	2	11/11/2019	Suitable habitat within Plains Grassy Wetland (EVC 125). Records nearby close to the coast and in Tower Hill Wildlife Reserve. **Likely to occur.**

Common Name	Scientific name	EPBC-T	EPBC-M	FFG	Habitat	Number of records	Date of last record	Likelihood of occurrence
Osprey	*Pandion cristatus*		M (Bonn A2S)		Rare vagrant to Victoria (Marchant & Higgins 1993). Littoral and coastal habitats and terrestrial wetlands. They are mostly found in coastal areas but occasionally travel inland along major rivers (Johnstone & Storr 1998; Marchant & Higgins 1993; Olsen 1995). They require extensive areas of open fresh, brackish or saline water for foraging (Marchant & Higgins 1993).	None	N/A	No suitable habitat. **Unlikely to occur.**
Painted Honeyeater	*Grantiella picta*	VU		vu	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).	None	N/A	No suitable habitat or recent records. **Unlikely to occur.**
Pectoral Sandpiper	*Calidris melanotos*		M (Bonn A2H, ROKAMBA, JAMBA)		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).	None	N/A	Limited suitable habitat within Plains Grassy Wetland (EVC 125). No records within 10km. **Potential to occur.**
Plains-wanderer	*Pedionomus torquatus*	CR		cr	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).	None	N/A	No suitable habitat. **Unlikely to occur.**
Plumed Egret	*Ardea plumifera*			cr	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).	1	1/11/2011	Limited suitable habitat within Plains Grassy Wetland (EVC 125). **Potential to occur.**
Rufous Fantail	*Rhipidura rufifrons*		M (Bonn A2H)		In east and south-east Australia, mainly inhabits tall wet sclerophyll forests, often in gullies. When on passage in warmer months, they are sometimes recorded in drier sclerophyll forests and woodlands, as well as parks and gardens (Higgins et al. 2006). Virtually absent from south-eastern Australia during winter (Higgins et al. 2006).	None	N/A	No suitable habitat. **Unlikely to occur.**
Satin Flycatcher	*Myiagra cyanoleuca*		M (Bonn A2H)		Mostly found in eucalypt forest, particularly tall wet forests and woodland within gullies (Higgins et al. 2006). Also inhabits eucalypt woodland comprising an open understorey and a grassy ground layer (Higgins et al. 2006). Generally absent from rainforest (Higgins et al. 2006).	None	N/A	No suitable habitat. **Unlikely to occur.**
Sharp-tailed Sandpiper	*Calidris acuminata*		M (Bonn A2H, ROKAMBA, JAMBA, 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).	1	2/11/2009	Limited suitable habitat within Plains Grassy Wetland (EVC 125). **Potential to occur.**

Common Name	Scientific name	EPBC-T	EPBC-M	FFG	Habitat	Number of records	Date of last record	Likelihood of occurrence
Swift Parrot	*Lathamus discolor*	CR		cr	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).	None	N/A	No suitable habitat. **Unlikely to occur.**
White-throated Needletail	*Hirundapus caudacutus*	VU	M (CAMBA, ROKAMBA, JAMBA)	vu	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).	1	20/03/1986	Suitable (but marginal) habitat. Highly mobile species, may fly over the site. **Potential to occur.**
Yellow Wagtail	*Motacilla flava*		M (CAMBA, JAMBA, ROKAMBA)		Regular non-breeding visitor in northern Australia mainly spring-summer, vagrant to the south. Occupies a wide range of habitats, usually open areas with low vegetation such as crop, grassland and even parkland. Often recorded near water (Higgins, Peter & Cowling 1999)	None	N/A	No suitable habitat. **Unlikely to occur.**
Mammals								
Brush-tailed Phascogale	*Phascogale tapoatafa*			vu	Dry forest and woodland in association with box, ironbark and stringybark eucalypts (Menkhorst 1995). Closely associated with remnant vegetation, this species occupies large home ranges of woodland habitat (M=100Ha; F=20-70Ha) (Menkhorst 1995).	1	1/06/1946	No suitable habitat. **Unlikely to occur.**
Common Bent-wing Bat (southern ssp.)	*Miniopterus schreibersii bassanii*	CR		cr	Roosts in caves during the day, dispersing over a range of habitats at night. Its feeding areas tend to be associated with major drainage systems (Menkhorst 1995).	None	N/A	Habitat likely to be traversed on migration. **Potential to occur.**
Eastern Barred Bandicoot	*Perameles gunnii*	VU		en	The habitat of the Eastern Barred Bandicoot (mainland) is perennial tussock grassland and eucalypt woodland with a grassy ground layer (Dufty 1994b; Seebeck 1995a, 2001). Drainage lines and areas of high vegetative cover have been identified as prime habitat. The key determining factor for persistence of this species appears to be high structural complexity and heterogeneity within the environment, reflected in its absence from agricultural areas but persistence in rubbish dumps and other variable habitats.	2	1/01/1976	No suitable habitat within 5km. No connectivity exists between the site and blocks of woodland within the search region. **Unlikely to occur.**
Grey-headed Flying-fox	*Pteropus poliocephalus*	VU		vu	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 (DAWE 2020).	None	N/A	Closest camp is in Warrnambool, 35km from the site. No available foraging habitat. **Unlikely to occur.**

Common Name	Scientific name	EPBC-T	EPBC-M	FFG	Habitat	Number of records	Date of last record	Likelihood of occurrence
Southern Brown Bandicoot	*Isoodon obesulus obesulus*	EN		en	Suitable habitat for Southern Brown Bandicoots (eastern) is defined to be any patches of native or exotic vegetation, within their distribution, which contains understorey vegetation structure with 50–80% average foliage density in the 0.2–1 m height range. In areas where native habitats have been degraded or diminished, exotic vegetation, such as Blackberry (Rubus spp.), can and often does, provide important habitat (DAWE 2020).	None	N/A	No suitable habitat within 5km. No connectivity exists between the site and blocks of woodland within the search region. **Unlikely to occur.**
Spot-tailed Quoll	*Dasyurus maculatus maculatus*	EN		en	Rainforest, wet and dry forest, coastal heath and scrub and River Red-gum woodlands along inland rivers (Menkhorst 1995).	None	N/A	No suitable habitat within 5km. No connectivity exists between the site and blocks of woodland within the search region. **Unlikely to occur.**
Swamp Antechinus	*Antechinus minimus maritimus*	VU		vu	Dense wet heath, tussock grassland, sedgeland heathy woodland and coastal heath and scrub (Menkhorst 1995). Requires mature, dense vegetation with thick ground cover (DAWE 2020). Shelters in short burrows or underneath dense leaf litter. Rarely occurs more than 200m above sea level. Though this species has also previously been detected at sites which had experienced some structural disturbance in the South Gippsland region (Nature Advisory; unpublished data).	None	N/A	No suitable habitat within 5km. No connectivity exists between the site and blocks of woodland within the search region. **Unlikely to occur.**
Reptiles								
Striped Legless Lizard	*Delma impar*	VU		en	Grassland specialist. Known to occur in some areas dominated by introduced species such as Harding Grass Phalaris aquatica, Serrated Tussock Nasella trichotoma and Flatweed Hypocharis radicata 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 underground 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 (DAWE 2020).	None	N/A	No suitable habitat or recent records. **Unlikely to occur.**
Fish								
Australian Grayling	*Prototroctes maraena*	VU		en	Large and small coastal streams and rivers with cool, clear waters with a gravel substrate and altering pools and riffles (Cadwallader & Backhouse 1983).	None	N/A	No suitable permanent aquatic habitat. **Unlikely to occur.**
Dwarf Galaxias	*Galaxiella pusilla*	VU		en	Ranges from the far west of the state through to the Mitchell River basin in central Gippsland. Vegetated margins of still water, ditches, swamps and backwaters of creeks, both ephemeral and permanent (Allen et al. 2002). Some wetlands where it occurs may partially or completely dry up during summer, with such wetlands reliant on seasonal flooding plus linkages to other sites where the species occurs, for habitat and population replenishment (Saddlier, Jackson & Hammer 2010). Dwarf Galaxias is also often found in association with burrowing freshwater crayfish (Engaeus spp.), with the crayfish burrows reportedly providing refuge from predators and dry conditions for the species (Saddlier, Jackson & Hammer 2010).	None	N/A	Suitable (but marginal) habitat. No records within 10km. **Unlikely to occur.**
Macquarie Perch	*Macquaria australasica*	EN		en	Cool, clear water of rivers and lakes. Favours slower moving water (Allen et al. 2002).	1	1/01/1970	No suitable permanent aquatic habitat. **Unlikely to occur.**
Yarra Pygmy Perch	*Nannoperca obscura*	VU		vu	Streams and small lakes, prefers flowing water with abundant aquatic vegetation (Allen et al. 2002).	14	4/02/2016	No suitable permanent aquatic habitat. Majority of records within Shaw River which has little to no connectivity to the site. **Unlikely to occur.**
Invertebrates								

Common Name	Scientific name	EPBC-T	EPBC-M	FFG	Habitat	Number of records	Date of last record	Likelihood of occurrence
Golden Sun Moth	*Synemon plana*	CR		vu	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).	None	N/A	Habitat within the site is not suitable for GSM, due to it being a derived grassland, the high rainfall of the region, no nearby plains grassland EVC, and no VBA records within the search region. **Unlikely to occur.**
Amphibians								
Brown Toadlet	*Pseudophryne bibronii*			en	Wet and dry forest, grassy areas besides small creeks, alpine grasslands and mossy bogs (Cogger 2000). In Victoria, the Brown Toadlet is distributed from the north-east through to central and western Victoria with scattered records in Gippsland (SWIFFT 2020).	2	28/05/1976	Marginal suitable habitat. Records dating back to 1976 found 7km away. **Unlikely to occur.**
Growling Grass Frog	*Litoria raniformis*	VU		vu	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).	4	9/12/2019	No suitable habitat. Closest record 3km with no connectivity. **Unlikely to occur.**
Mussels, decapod crustacea								
Glenelg Spiny Crayfish	*Euastacus bispinosus*	EN		en	Glenelg Spiny Freshwater Crayfish is considered a specialist species with typically low tolerance to environmental conditions (namely dissolved oxygen concentrations), ensuring that species requires specific habitat requirements. As with other Euastacus species, Glenelg Spiny Freshwater Crayfish have a preference for permanently-flowing, cool (and shaded) and well-oxygenated water (Morgan 1986; Morgan 1997). Other habitat requirements vary across Victorian and South Australian populations.	None	N/A	No suitable habitat. **Unlikely to occur.**

Notes: EPBC-T = threatened species status under EPBC Act (CR = critically endangered; EN = endangered; VU = vulnerable); **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 (cr = critically endangered; en = endangered; vu = vulnerable).

5.5.2. Susceptibility of listed fauna to impacts

The following analysis identifies the susceptibility to development of listed fauna species which may utilise the study area. This analysis includes consideration of the factors below:

- The mobility of the species; and
- The availability and extent of other suitable habitat in the region and the degree to which each species may rely on habitat in the study area.

Targeted surveys will be required to determine the presence or absence of any listed fauna species considered to be susceptible to impacts from development.

Birds (non-migratory)

Four listed non-migratory bird species are considered to have the potential to occur in the study area. The susceptibility of these species to possible impacts from any development in the study area is discussed below.

- **Brolga** (FFG Act: endangered)
- **Eastern Great Egret** (FFG Act: vulnerable)
- **Magpie Goose** (FFG Act: vulnerable)
- **Plumed Egret** (FFG Act: critically endangered)

These species are likely to occasionally use ephemeral wetland habitat within the study area. Given the seasonal nature of this habitat, the large amount of similar habitat available in the surrounding region, the relatively small area of the site, it is considered unlikely that these species would be impacted by the proposed development.

Migratory Birds

Six listed migratory bird species (excluding oceanic species and shorebirds) have the potential to occur in the study area. The susceptibility of these species to possible impacts from any development in the study area is discussed below.

- **Glossy Ibis** (EPBC Act: Migratory)
- **Latham's Snipe** (EPBC Act: Migratory)
- **Pectoral Sandpiper** (EPBC Act: Migratory)
- **Sharp-tailed Sandpiper** (EPBC Act: Migratory)

These species are likely to occasionally use ephemeral wetland habitat within the study area. Given the seasonal nature of this habitat, the large amount of similar habitat available in the surrounding region, and the proportionally small impact of the proposed project on this habitat, it is considered unlikely that these species would be impacted by the proposed development.

- **Fork-tailed Swift** (EPBC: Migratory)
- **White-throated Needletail** (EPBC: Vulnerable & Migratory, FFG: vulnerable)

These species are likely to occasionally occur aerially over the study area. Given the aerial nature of these species and the large amount of similar habitat available in the surrounding region, it is considered unlikely that these species would be impacted by the proposed development.

Mammals

One listed mammal species are considered to have the potential to occur in the study area. The susceptibility of these species to possible impacts from any development in the study area is discussed below.

- **Southern Bent-wing Bat** (EPBC: Critically Endangered; FFG: critically endangered [as subspecies of Common Bent-wing Bat])

The Southern Bent-wing Bat has not been recorded within search region. However, the species' main breeding site in Victoria is at Starlight Cave, 8 km east of Warrnambool, and it is known to winter at caves at Byaduk and other caves to the west and north of the terminal station (Lumsden & Jemison 2015). It is reasonable to assume it may therefore migrate through the site between the breeding and wintering sites. Given the small number of the species which concentrate at only two known breeding caves in summer and disperse widely to wintering caves, it is expected that only small numbers would pass through the site. Given that a Terminal Station already exists in this location, and the nature of the proposed development, it is considered unlikely that these species would be impacted by the proposed development.

Reptiles, Frogs & Invertebrates

No listed reptile, frog or invertebrate species are considered to have the potential to occur in the study area. These species are therefore not considered susceptible to possible impacts from any development in the study area.

5.6. Listed ecological communities

The EPBC Protected Matters Search Tool (DAWE 2021) indicated that four ecological communities listed under the EPBC Act had the potential to occur in the search region (Table 5). Their occurrence in the study area was determined based on an assessment of the native vegetation present against published descriptions and condition thresholds for these communities.

Table 5: EPBC Act listed ecological communities and likelihood of occurrence in the study area

Ecological Community	EPBC	Occurrence in the study area
Grassy Eucalypt Woodland of the Victorian Volcanic Plain (GEWVVP)	CR	Does not occur within the study area
Natural Temperate Grassland of the Victorian Volcanic Plain	CR	Does not occur within the study area
Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains (SHWTLP)	CR	Although suitable habitat does exist, it does not occur within the study area
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	CR	Does not occur within the study area

Notes: EPBC = status under the EPBC Act (CR = Critically Endangered).

Four ecological communities were modelled to potentially occur in the study area. Based on an assessment of native vegetation in the study area against published descriptions and condition thresholds, the following communities were found not to occur in the study area based on the factors described below.

- *Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains (SHWTLP)* – listed as Critically Endangered under the EPBC Act (EVC 125).

The aquatic vegetation in habitat zones E, F, L, O, S and T comprising of the EVC Plains Grassy Wetland (EVC 125) were found not to meet the key diagnostic criteria and condition thresholds (TSSC 2012) for this community, as they did not meet the minimum size requirement of 0.5 hectares threshold.

- *Grassy Eucalypt Woodland of the Victorian Volcanic Plain (GEWVVP)* – listed as Critically Endangered under the EPBC Act).

No EVCs associated with this community (namely Plains Grassy Woodland (EVC 55)) were recorded within the study area.

- *Natural Temperate Grassland of the Victorian Volcanic Plain* – listed as Critically Endangered under the EPBC Act

No EVCs associated with this community (namely Plains Grassland (EVC 132) and Creekline Tussock Grassland (EVC 654) (TSSC 2008b)) were recorded within the study area.

- *White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland* – listed as Critically Endangered under the EPBC Act

The study area is beyond the extent of this community, which occurs in the Victorian Midlands and Riverina Bioregions (TSSC 2006).

6. Assessment of impacts

6.1. Proposed development

The current proposal will involve the installation of additional infrastructure (such as transformers) within the existing Tarrone Terminal Station, the construction of additional infrastructure to the east of the existing Tarrone Terminal Station, the construction of new perimeter fence, the construction of a new hardstand area to the north of the terminal station, and the construction of new access points is proposed for the study area.

To determine impacts to native vegetation, the proposed plan was overlaid with the native vegetation mapped as part of this investigation. Native vegetation occurring in the following locations was considered to be removed based on the proposed plan:

- Direct removal: All native vegetation affected by the proposed footprint

6.2. Impacts of proposed development

Various design measures have been undertaken for this proposal to avoid and minimise impacts to native vegetation. These are detailed in Section 7.1.

6.2.1. Native vegetation

The current proposal footprint will result in the loss of a total extent of 0.118 hectares of native vegetation as represented in Figure 2 and documented in the *Native Vegetation Removal* (NVR) report provided by DELWP (Appendix 5).

This comprised:

- 0.118 hectares of native vegetation in patches (including no large trees in patches);
- No scattered trees; and
- No DELWP mapped wetlands.

It is understood that no native vegetation has been approved for removal on the property within the last five years.

Photographs of native vegetation proposed for removal are provided in Appendix 4.

6.2.2. Modelled species important habitat

The current proposal footprint will not have a significant impact on any habitat for any rare or threatened species as determined above.

6.2.3. Listed flora species

The analysis of the likelihood of occurrence of listed flora species presented in Section 5.3.2 identified that the following species could occur within the study area. Targeted surveys in areas of proposed impact were undertaken in December 2021, to coincide with the flowering time for all species:

- Gorae Leek-orchid
- Maroon Leek-orchid
- Swamp Fireweed
- Swamp Everlasting
- Curly Sedge

None of these species were detected in targeted surveys.

6.2.4. Fauna habitat

The proposed development will result in impacts to grazing paddock (exotic pastures) and ephemeral wetland fauna habitat types.

6.2.5. Listed fauna species

The analysis of susceptibility of listed fauna species to impacts presented in Section 5.5.2 identified that no listed fauna species were likely to be impacted by development in the study area.

6.2.6. Listed ecological communities

The proposed development footprint will not result in any losses to EPBC Act listed ecological communities, as none were identified within the study area.

6.2.7. Cumulative impacts

The TXL line associated with this project will include this proposed clearing, if permitted, as past clearing in any reporting or calculations so cumulative effects will be accounted for in a broader perspective.

Figure 2: Native vegetation to be impacted

Project: Tarrone Terminal Station
Client: Ryan Corner Development Pty Ltd
Date: 10/12/2021

Legend

- Study area
- Lease boundary
- Access area
- Site office area
- Hardstand
- Development footprint
- Proposed fence

Native vegetation

- Plains Grassy Wetland (EVC 125)
- Stony Knoll Shrubland (EVC 649)
- Native vegetation to be removed

N

Metres
0 40

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7. Implications under legislation and policy

7.1. Summary of planning implications

No overlays relevant to this investigation cover the study area.

A planning permit under Clause 52.17 of the Moyne Planning Scheme is required for the removal of native vegetation from the study area.

7.2. Implications under the Guidelines

7.2.1. Avoid and minimise statement

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

- Site level planning – the footprint of the proposed terminal station upgrade has been placed as close as possible to the existing terminal station and access tracks/roads, and has been sited to avoid as much native vegetation as possible. The outcome of this is that only 10% of the native vegetation recorded on site will be impacted.
- The layout of the hardstand area has been designed to avoid impacts on native vegetation as much as practical.
- Furthermore, no feasible opportunities exist to further avoid and minimise impacts on native vegetation without undermining the key objectives of the proposal.

7.2.2. Assessment pathway

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

- **Location Category:** Location 1
- **Extent of native vegetation:** A total of 0.118 hectares of native vegetation (including no large trees).

Based on these details, the Guidelines stipulate that the proposal is to be assessed under the **Basic** assessment pathway.

This proposal **would not** trigger a referral to DELWP's Environment Portfolio based on the criteria specified in Section 3.4.3.

7.2.3. Offset requirements

Offsets required to compensate for the proposed removal of native vegetation from the study area are provided below.

- 0.025 general habitat units and must include the following offset attribute requirements:
    - Minimum strategic biodiversity value (SBV) of 0.312; and
    - Occur within the Glenelg Hopkins CMA boundary or the Moyne municipal district.

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

7.2.4. 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 (DELWP 2021d).

Evidence that the required offset is available is provided in Appendix 6. The required offset would be secured following approval of the application to remove native vegetation.

7.3. EPBC Act

The EPBC Act protects a number of threatened species and ecological communities that are considered to be of national conservation significance. Any significant impacts on these species require the approval of the Australian Minister for the Environment.

The following EPBC Act listed species could potentially occur within the study area in areas of native vegetation. Targeted surveys in areas of proposed impact were undertaken in December 2021, to coincide with the flowering time for all species:

- Gorae Leek-orchid
- Maroon Leek-orchid
- Swamp Fireweed
- Swamp Everlasting

No plants of any of these species were found in December 2021 surveys.

7.4. FFG Act

The Victorian FFG Act lists threatened and protected species and ecological communities (DELWP 2019, DELWP 2021b). Any removal of threatened flora species or communities (or protected flora) listed under the FFG Act from public land requires a Protected Flora Permit under the Act, obtained from DELWP.

The FFG Act only applies to private land in relation to the commercial collection of grasstrees, tree-ferns and sphagnum moss.

The land addressed in this assessment is private land; therefore, a Protected Flora Licence or Permit under the FFG Act would not be required for the current proposal.

7.5. EE Act

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

Based on the relevant criteria, a Referral to the State Minister for Planning will not be required under the EE Act for the aspects covered by the current investigation.

7.6. 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.

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 *Catchment and Land Protection Act 1994*, the noxious weed species listed below, which were recorded in the study area, must be controlled.

- Spear Thistle *Cirsium vulgare* (regionally controlled)

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.).

7.7. Construction mitigation recommendations

Recommendations to mitigate impacts to vegetation during construction are provided below:

- Establish appropriate vegetation protection zones around areas of native vegetation to be retained prior to works.
- Ensure all construction personnel are appropriately briefed prior to works, and that no construction personnel, machinery or equipment are placed inside vegetation protection zones.

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Appendix 1: Details of the assessment process in accordance with the Guidelines for the removal, destruction or lopping of native vegetation (DELWP 2017)

Purpose and objective

Policies and strategies relating to the protection and management of native vegetation in Victoria are defined in the State Planning Policy Framework (SPPF). The objective identified in Clause 12.01 of all Victorian Planning Schemes 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 to be achieved through the following three-step approach, as detailed in the Guidelines:

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 from the removal, destruction or lopping of native vegetation.

Note: While a planning permit may still be required, if native vegetation does not meet the definition of either a patch or a scattered tree, an offset under the Guidelines is not required.

Assessment pathways

The first step in determining the type of assessment required for any site in Victoria is to determine the assessment pathway for the proposed native vegetation removal. The three possible assessment pathways for applications to remove native vegetation in Victoria are:

- Basic;
- Intermediate; or
- Detailed.

This assessment pathway is determined by two factors:

- **Location Category**, as determined using the states' Location Map. The location category indicates the potential risk to biodiversity from removing a small amount of native vegetation. The three location categories are defined as:
  - Location 1 – shown in light blue-green on the Location Map; occurring over most of Victoria.
  - Location 2 – shown in dark blue-green on the Location Map; includes areas mapped as endangered EVCs and/or sensitive wetlands and coastal areas.
  - Location 3 – shown in brown on the Location Map; includes areas where the removal of less than 0.5 hectares of native vegetation could have a significant impact on habitat for rare and threatened species.
- **Extent of native vegetation** – The extent of any patches and scattered trees proposed to be removed (as well as the extent of any past native vegetation removal), with consideration as to whether the proposed removal includes any large trees. Extent of native vegetation is determined as follows:
  - **Patch** – the area of the patch in hectares.
  - **Scattered Tree** – the extent of a scattered tree is dependent on whether the scattered tree is small or large. A tree is considered to be a large tree if it is greater or equal to the large tree benchmark diameter at breast height (DBH) for the relevant bioregional EVC. Any scattered

tree that is not a large tree is a small scattered tree. The extent of large and small scattered trees is determined as follows:

- **Large scattered tree** – the area of a circle with a 15-metre radius, with the trunk of the tree at the centre.
- **Small scattered tree** – the area of a circle with a ten-metre radius, with the trunk of the tree at the centre.

The assessment pathway for assessing an application to remove native vegetation is then determined as detailed in the following matrix table:

Extent of native vegetation	Location Category		
	Location 1	Location 2	Location 3
< 0.5 hectares and not including any large trees	Basic	Intermediate	Detailed
< 0.5 hectares and including one or more large trees	Intermediate	Intermediate	Detailed
≥ 0.5 hectares	Detailed	Detailed	Detailed

Note: If the native vegetation to be removed includes more than one location category, the higher location category is used to determine the assessment pathway.

Landscape scale information – strategic biodiversity value

The strategic biodiversity value (SBV) is a measure of a location's importance to Victoria's biodiversity, relative to other locations across the state. It is represented as a score between 0 and 1 and determined from the Strategic biodiversity value map, available from *NVIM* (DELWP 2018b).

Landscape scale information – habitat for rare or threatened species

Habitat importance for rare or threatened species is a measure of the importance of a location in the landscape as habitat for a particular rare or threatened species, in relation to other habitat available for that species. It is represented as a score between 0 and 1 and is determined from the Habitat importance maps, administered by DELWP.

This includes two groups of habitat:

- **Highly localised habitats** – Limited in area and considered to be equally important, therefore having the same habitat importance score.
- **Dispersed habitats** – Less limited in are and based on habitat distribution models.

Habitat for rare or threatened species is used to determine the type of offset required in the detailed assessment pathway.

Biodiversity value

A combination of site-based and landscape scale information is used to calculate the biodiversity value of native vegetation to be removed. Biodiversity value is represented by a general or species habitat score, detailed as follows.

Firstly, the extent and condition of native vegetation to be removed are combined to determine the habitat hectares as follows:

Habitat hectares = extent of native vegetation x condition score

Secondly, the habitat hectare score is combined with a landscape factor to obtain an overall measure of biodiversity value. Two landscape factors exist as follows:

- **General landscape factor** – determined using an adjusted strategic biodiversity score, and relevant when no habitat importance scores are applicable;
- **Species landscape factor** – determined using an adjusted habitat importance score for each rare or threatened species habitat mapped at a site in the Habitat importance map.

These factors are then used as follows to determine the biodiversity value of a site:

General habitat score = habitat hectares x general landscape factor

Species habitat score = habitat hectares x species landscape factor

Offset requirements

A native vegetation offset is required for the approved removal of native vegetation. Offsets conform to one of two types and each type incorporates a multiplier to address the risk of offset:

- A **general offset** is required when the removal of native vegetation does not have a significant impact on any habitat for rare or threatened species (i.e. the proportional impact is below the species offset threshold). In this case a multiplier of 1.5 applies to determine the general offset amount.

General offset (amount of general habitat units) = general habitat score x 1.5

- A **species offset** is required when the removal of native vegetation has a significant impact on habitat for a rare or threatened species (i.e. the proportional impact is above the species offset threshold). In this case a multiplier of 2 applies to determine the species offset amount.

Species offset (amount of species habitat units) = Species habitat score x 2

Note: if native vegetation does not meet the definition of either a patch or scattered tree an offset is not required.

Offset attributes

Offsets must meet the following attribute requirements, as relevant:

- General offsets
  - **Offset amount** – general offset = general habitat score x 1.5

- **Strategic biodiversity value (SBV)** – the offset has at least 80% of the SBV of the native vegetation removed
- **Vicinity** – the offset is in the same CMA boundary or municipal district as the native vegetation removed
- Habitat for rare and threatened species – N/A
- **Large trees** – the offset include the protection of at least one large tree for every large tree to be removed

- Species offsets
  - **Offset amount** – species offset = species habitat score x 2
  - Strategic biodiversity value (SBV): N/A
  - Vicinity: N/A
  - **Habitat for rare and threatened species** – the offset comprises mapped habitat according to the Habitat importance map for the relevant species
  - **Large trees** – the offset include the protection of at least one large tree for every large tree to be removed

Appendix 2: Detailed habitat hectare assessment results

Habitat Zone			A	A1	B	C	D	E	F	G	H
Bioregion			VVP	VVP	VVP	VVP	VVP	VVP	VVP	VVP	VVP
EVC Number			VVP_0649	VVP_0649	VVP_0649	VVP_0649	VVP_0649	VVP_0125	VVP_0125	VVP_0649	VVP_0649
Total area of Habitat Zone (ha)			0.041	0.026	0.066	0.103	0.039	0.068	0.083	0.029	0.036
Site Condition	Large Old Trees	/10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	No. large trees in habitat zone		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	4	4	4	4	4	4	4	4	4
	Understorey	/25	5	5	5	5	5	5	5	5	5
	Recruitment	/10	3	3	3	3	3	0	0	3	3
	Organic Matter	/5	5	5	5	5	5	4	4	5	5
	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
	Site Condition subtotal		*23*	*23*	*23*	*23*	*23*	*18*	*18*	*23*	*23*
Landscape Context	Patch Size	/10	1	1	1	1	1	1	1	1	1
	Neighbourhood	/10	0	0	0	0	0	0	0	0	0
	Distance to Core	/5	1	1	1	1	1	1	1	1	1
Total Condition Score		**/100**	**25**	**25**	**25**	**25**	**25**	**20**	**20**	**25**	**25**
EPBC Act listed ecological communities			-	-	-	-	-	-	-	-	-
FFG Act listed ecological communities			-	-	-	-	-	-	-	-	-

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

Habitat Zone			I	J	K	L	M	N	O	S	T
Bioregion			VVP	VVP	VVP	VVP	VVP	VVP	VVP	VVP	VVP
EVC Number			VVP_0649	VVP_0649	VVP_0649	VVP_0125	VVP_0649	VVP_0649	VVP_0125	VVP_0125	VVP_0125
Total area of Habitat Zone (ha)			0.239	0.022	0.008	0.176	0.015	0.091	0.028	0.044	0.074
Site Condition	Large Old Trees	/10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	No. large trees in habitat zone		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	4	4	4	4	4	4	4	4	4
	Understorey	/25	5	5	5	5	5	5	5	5	5
	Recruitment	/10	3	3	3	0	3	3	0	0	0
	Organic Matter	/5	5	5	5	4	5	5	4	4	4
	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
	Site Condition subtotal		*23*	*23*	*23*	*18*	*23*	*23*	*18*	*18*	*18*
Landscape Context	Patch Size	/10	1	1	1	1	1	1	1	1	1
	Neighbourhood	/10	0	0	0	0	0	0	0	0	0
	Distance to Core	/5	1	1	1	1	1	1	1	1	1
Total Condition Score		**/100**	**25**	**25**	**25**	**20**	**25**	**25**	**20**	**20**	**20**
EPBC Act listed ecological communities			-	-	-	-	-		-		
FFG Act listed ecological communities			-	-	-	-	-		-		

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

Appendix 3: Flora species recorded in the study area

Origin	Common name	Scientific name	CaLP Act
*	Sheep Sorrel	*Acetosella vulgaris*	
*	Hair Grass	*Aira* sp.	
*	Sweet Vernal-grass	*Anthoxanthum odoratum*	
*	Cape weed	*Arctotheca calendula*	
*	Lesser Quaking-grass	*Briza minor*	
*	Great Brome	*Bromus diandrus*	
*	Soft Brome	*Bromus hordeaceus*	
*	Common Mouse-ear Chickweed	*Cerastium glomeratum s.l.*	
	Rock Fern	*Cheilanthes tenuifolia s.l.*	
*	Spear Thistle	*Cirsium vulgare*	C
*	Water Buttons	*Cotula coronopifolia*	
*	Rough Dog's-tail	*Cynosurus echinatus*	
	Kidney Weed	*Dichondra* sp.	
	Common Spike-sedge	*Eleocharis acuta*	
	Variable Willow-herb	*Epilobium billardiereanum*	
*	Cudweed	*Euchiton* sp.	
	Crane's Bill	*Geranium* sp.	
	Australian Sweet-grass	*Glyceria australis*	
*	Yorkshire Fog	*Holcus lanatus*	
	Pennywort	*Hydrocotyle* sp.	
*	Flatweed	*Hypochaeris radicata*	
	Rush	*Juncus* spp.	
	Common Blown-grass	*Lachnagrostis filiformis s.s.*	
*	Perennial Rye-grass	*Lolium perenne*	
	Tree Violet	*Melicytus dentatus s.l.*	
	Weeping Grass	*Microlaena stipoides var. stipoides*	
*	Water Couch	*Paspalum distichum*	
*	Toowoomba Canary-grass	*Phalaris aquatica*	
	Common Tussock-grass	*Poa labillardierei*	
	Austral Bracken	*Pteridium esculentum* subsp. *esculentum*	
	Buttercup	*Ranunculus* sp.	
	Wiry Dock	*Rumex dumosus*	
*	Clover	*Trifolium* spp.	
*	Squirrel-tail Fescue	*Vulpia bromoides*	

Notes:

CaLP Act: declared noxious weeds under the CaLP Act (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].

* = introduced to Victoria

Appendix 4: EVC benchmarks

Plains Grassy Wetland (EVC 125) – VVP

Stony Knoll Shrubland (EVC 649) – VVP

Department of Sustainability and Environment

EVC/Bioregion Benchmark for Vegetation Quality Assessment

Victorian Volcanic Plain bioregion

EVC 125: Plains Grassy Wetland

Description:
This EVC is usually treeless, but in some instances can include sparse River Red Gum *Eucalyptus camaldulensis* or Swamp Gum *Eucalyptus ovata*. A sparse shrub component may also be present. The characteristic ground cover is dominated by grasses and small sedges and herbs. The vegetation is typically species-rich on the outer verges but is usually species-poor in the wetter central areas.

Life Forms:

Life form	#Spp	%Cover	LF code
Large Herb	5	5%	LH
Medium Herb	6	10%	MH
Small or Prostrate Herb	3	10%	SH
Large Tufted Graminoid	3	15%	LTG
Large Non-tufted Graminoid	1	5%	LNG
Medium to Small Tufted Graminoid	8	30%	MTG
Medium to Tiny Non-tufted Graminoid	2	10%	MNG
Bryophytes/Lichens	na	10%	BL

LF Code	Species typical of at least part of EVC range	Common Name
LH	*Epilobium billardierianum*	Variable Willow-herb
LH	*Villarsia reniformis*	Running Marsh-flower
LH	*Epilobium billardierianum ssp. cinereum*	Grey Willow-herb
MH	*Potamogeton tricarinatus s.l.*	Floating Pondweed
MH	*Lilaeopsis polyantha*	Australian Lilaeopsis
MH	*Utricularia dichotoma s.l.*	Fairies' Aprons
SH	*Eryngium vesiculosum*	Prickfoot
SH	*Neopaxia australasica*	White Purslane
SH	*Lobelia pratioides*	Poison Lobelia
LTG	*Juncus flavidus*	Gold Rush
LTG	*Deyeuxia quadriseta*	Reed Bent-grass
LTG	*Amphibromus nervosus*	Common Swamp Wallaby-grass
LTG	*Poa labillardierei*	Common Tussock-grass
MTG	*Triglochin procerum s.l.*	Water Ribbons
MTG	*Glyceria australis*	Australian Sweet-grass
MTG	*Juncus holoschoenus*	Joint-leaf Rush
MTG	*Austrodanthonia duttoniana*	Brown-back Wallaby-grass
MNG	*Eleocharis acuta*	Common Spike-sedge
MNG	*Eleocharis pusilla*	Small Spike-sedge

Recruitment:
Episodic/Flood. Desirable period between disturbances is 5 years.

Organic Litter:
20% cover

Logs:
5 m/0.1 ha.(where trees are overhanging the wetland)

Victoria The Place To Be

Weediness:

LF Code	Typical Weed Species	Common Name	Invasive	Impact
LH	*Cirsium vulgare*	Spear Thistle	high	high
MH	*Leontodon taraxacoides ssp. taraxacoides*	Hairy Hawkbit	high	low
MH	*Hypochoeris radicata*	Cat's Ear	high	low
LTG	*Phalaris aquatica*	Toowoomba Canary-grass	high	high
LNG	*Holcus lanatus*	Yorkshire Fog	high	high
MTG	*Briza minor*	Lesser Quaking-grass	high	low
MTG	*Romulea rosea*	Onion Grass	high	low
TTG	*Cyperus tenellus*	Tiny Flat-sedge	high	low

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EVC/Bioregion Benchmark for Vegetation Quality Assessment

Victorian Volcanic Plain bioregion

EVC 649: Stony Knoll Shrubland

Description:
Stony Knoll Shrubland is a shrubland to 3 m tall or low non-eucalypt woodland to 8 m tall with a grassy understorey. It occurs on low stony rises on basalt flows. The soils are fertile and well drained but shallow with out cropping rock, causing severe summer dryness.

[+] woodland only components (ignore when assessing treeless areas and standardise final score as appropriate)

Canopy Cover[+]:

%cover	Character Species	Common Name
15%	*Allocasuarina verticillata*	Drooping Sheoak
	Bursaria spinosa	Sweet Bursaria

Understorey:

Life form	#Spp	%Cover	LF code
Medium Shrub	3	10%	MS
Prostrate Shrub	1	1%	PS
Large Herb	2	1%	LH
Medium Herb	11	10%	MH
Small or Prostrate Herb	4	5%	SH
Medium to Small Tufted Graminoid	10	25%	MTG
Tiny Tufted Graminoid	2	5%	TTG
Medium to Tiny Non-tufted Graminoid	2	5%	MNG
Ground Fern	2	5%	GF
Bryophytes/Lichens	na	10%	BL
Soil Crust	na	10%	S/C
Total understorey projective foliage cover		**85%**	

LF Code	Species typical of at least part of EVC range	Common Name
MS	*Hymenanthera dentata* s.l.	Tree Violet
MS	*Acacia paradoxa*	Hedge Wattle
PS	*Kennedia prostrata*	Running Postman
LH	*Senecio quadridentatus*	Cotton Fireweed
LH	*Senecio glomeratus*	Annual Fireweed
MH	*Oxalis perennans*	Grassland Wood-sorrel
MH	*Rumex brownii*	Slender Dock
MH	*Hypericum gramineum*	Small St John's Wort
MH	*Acaena ovina*	Australian Sheep's Burr
SH	*Dichondra repens*	Kidneyweed
SH	*Hydrocotyle laxiflora*	Stinking Pennywort
SH	*Crassula sieberiana*	Sieber Crassula
MTG	*Themeda triandra*	Kangaroo Grass
MTG	*Poa sieberiana*	Grey Tussock-grass
MTG	*Austrodanthonia caespitosa*	Common Wallaby-grass
MTG	*Austrodanthonia setacea*	Bristly Wallaby-grass
TTG	*Carex breviculmis*	Short-stem Sedge
MNG	*Microlaena stipoides* var. *stipoides*	Weeping Grass
GF	*Pteridium esculentum*	Austral Bracken
GF	*Adiantum aethiopicum*	Common Maidenhair
SC	*Convolvulus erubescens* spp. agg.	Pink Bindweed

Recruitment:
Continuous

Organic Litter:
20 % cover

Logs[+]:
5 m/0.1 ha. (note: large log class does not apply)

Weediness:

LF Code	Typical Weed Species	Common Name	Invasive	Impact
T	*Schinus molle*	Pepper Tree	high	high
MS	*Lycium ferocissimum*	African Box-thorn	high	high
MS	*Genista monspessulana*	Montpellier Broom	high	high
SS	*Marrubium vulgare*	Horehound	high	high
LH	*Sonchus oleraceus*	Common Sow-thistle	high	low
LH	*Helminthotheca echioides*	Ox-tongue	high	low
LH	*Lactuca serriola*	Prickly Lettuce	high	low
LH	*Sisymbrium officinale*	Hedge Mustard	high	low
LH	*Sonchus asper* s.l.	Rough Sow-thistle	high	low
LH	*Verbascum thapsus* ssp. *thapsus*	Great Mullein	high	high
LH	*Echium plantagineum*	Paterson's Curse	high	high
LH	*Centaurium tenuiflorum*	Slender Centaury	high	low
LH	*Foeniculum vulgare*	Fennel	high	high
MH	*Hypochoeris radicata*	Cat's Ear	high	low
MH	*Trifolium arvense* var. *arvense*	Hare's-foot Clover	high	low
MH	*Trifolium subterraneum*	Subterranean Clover	high	low
MH	*Trifolium campestre* var. *campestre*	Hop Clover	high	low
MH	*Trifolium angustifolium* var. *angustifolium*	Narrow-leaf Clover	high	low
MH	*Lotus suaveolens*	Hairy Bird's-foot Trefoil	high	low
MH	*Cerastium glomeratum* s.l.	Common Mouse-ear Chickweed	high	low
SH	*Medicago polymorpha*	Burr Medic	high	low
SH	*Trifolium glomeratum*	Cluster Clover	high	low
SH	*Modiola caroliniana*	Red-flower Mallow	high	low
SH	*Aptenia cordifolia*	Heart-leaf Ice-plant	high	high
LTG	*Phalaris aquatica*	Toowoomba Canary-grass	high	high
LNG	*Holcus lanatus*	Yorkshire Fog	high	high
LNG	*Avena fatua*	Wild Oat	high	low
MTG	*Nassella trichotoma*	Serrated Tussock	high	high
MTG	*Ehrharta longiflora*	Annual Veldt-grass	high	low
MTG	*Briza maxima*	Large Quaking-grass	high	low
MTG	*Bromus hordeaceus* ssp. *hordeaceus*	Soft Brome	high	low
MTG	*Sporobolus africanus*	Rat-tail Grass	high	high
MTG	*Vulpia bromoides*	Squirrel-tail Fescue	high	low
MTG	*Romulea rosea*	Onion Grass	high	low
MTG	*Pentaschistis airoides* ssp. *airoides*	False Hair-grass	high	low
MTG	*Lolium perenne*	Perennial Rye-grass	high	low
MTG	*Dactylis glomerata*	Cocksfoot	high	high
MTG	*Vulpia myuros*	Rat's-tail Fescue	high	low
MTG	*Bromus rubens*	Red Brome	high	low
MTG	*Avena barbata*	Bearded Oat	high	low
MTG	*Aira caryophyllea*	Silvery Hair-grass	high	low
SC	*Vicia sativa* ssp. *sativa*	Common Vetch	low	low

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Appendix 4: Photographs of native vegetation proposed for removal

Appendix 5: Native Vegetation Removal (NVR) report

Native vegetation removal report

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

Date of issue: **19/11/2021**
Time of issue: **1:06 pm**

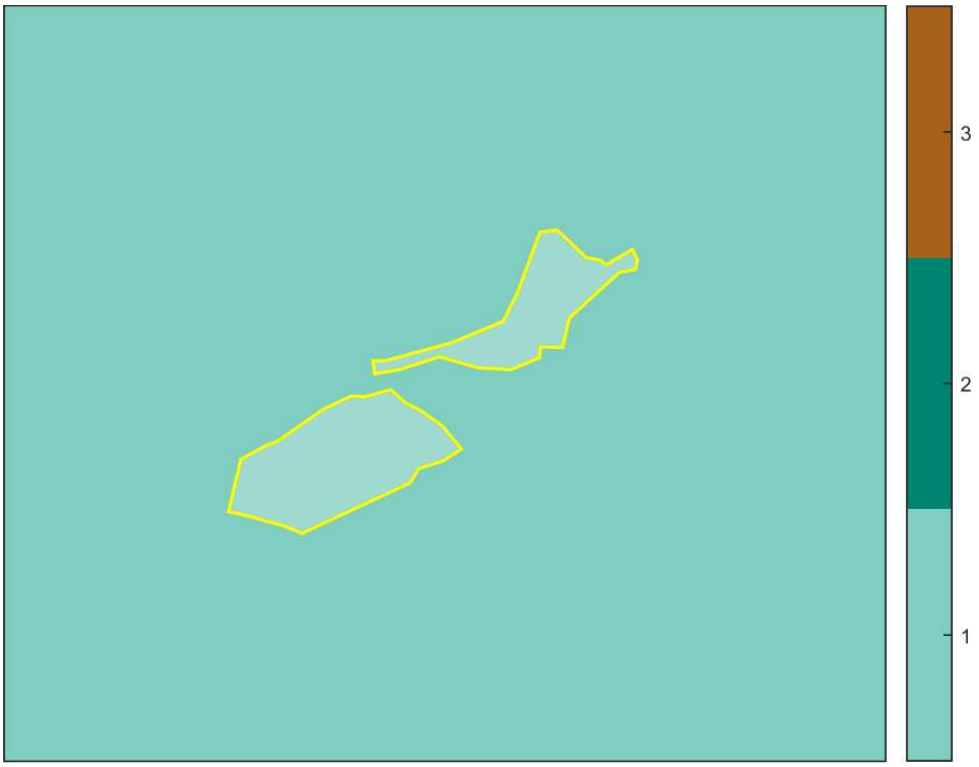
Report ID: NAA_2021_138

Project ID	14144_Substation_impact_211116

Assessment pathway

Assessment pathway	**Basic Assessment Pathway**
Extent including past and proposed	0.118 ha
Extent of past removal	0.000 ha
Extent of proposed removal	0.118 ha
No. Large trees proposed to be removed	0
Location category of proposed removal	Location 1 The native vegetation is not in an area mapped as an endangered Ecological Vegetation Class (as per the statewide EVC map), sensitive wetland or coastal area. Removal of less than 0.5 hectares in this location will not have a significant impact on any habitat for a rare or threatened species

1. Location map



Offset requirements if a permit is granted

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

General offset amount[1]	0.025 general habitat units
Vicinity	Glenelg Hopkins Catchment Management Authority (CMA) or Moyne Shire Council
Minimum strategic biodiversity value score[2]	0.312
Large trees	0 large trees

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

Appendix 1 includes information about the native vegetation to be removed

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

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

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

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

Next steps

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

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

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

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

- The assessment pathway and reason for the assessment pathway
- A description of the native vegetation to be removed (met unless you wish to include a site assessment)
- Maps showing the native vegetation and property
- The offset requirements determined in accordance with section 5 of the Guidelines that apply if approval is granted to remove native vegetation.

Additional application requirements must be met including:

- Topographical and land information
- Recent dated photographs
- Details of past native vegetation removal
- An avoid and minimise statement
- A copy of any Property Vegetation Plan that applies
- A defendable space statement as applicable
- A statement about the Native Vegetation Precinct Plan as applicable
- An offset statement that explains that an offset has been identified and how it will be secured.

Authorised by the Victorian Government, 8 Nicholson Street, East Melbourne.

For more information contact the DELWP Customer Service Centre 136 186

www.delwp.vic.gov.au

Appendix 1: Description of native vegetation to be removed

All zones require a general offset, the general habitat units each zone is calculated by the following equation in accordance with the Guidelines:

General habitat units = extent x condition 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

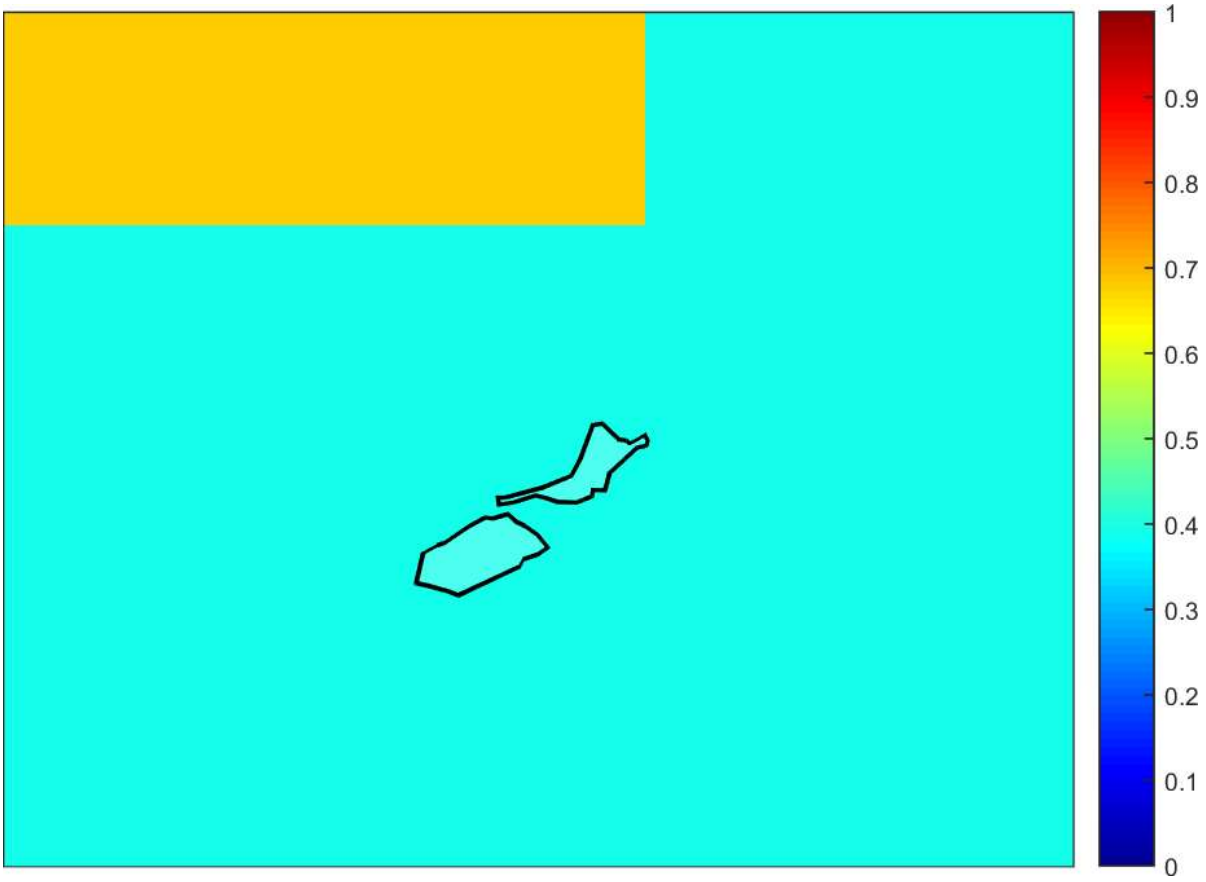
Information provided by or on behalf of the applicant in a GIS file							Information calculated by EnSym					
Zone	**Type**	**BioEVC**	**BioEVC conservation status**	**Large tree(s)**	**Partial removal**	**Condition score**	**Polygon Extent**	**Extent without overlap**	**SBV score**	**HI score**	**Habitat units**	**Offset type**
1-T	Patch	vvp_0125	Endangered	0	no	0.200	0.074	0.074	0.390		0.015	General
1-S	Patch	vvp_0125	Endangered	0	no	0.200	0.044	0.044	0.390		0.009	General

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

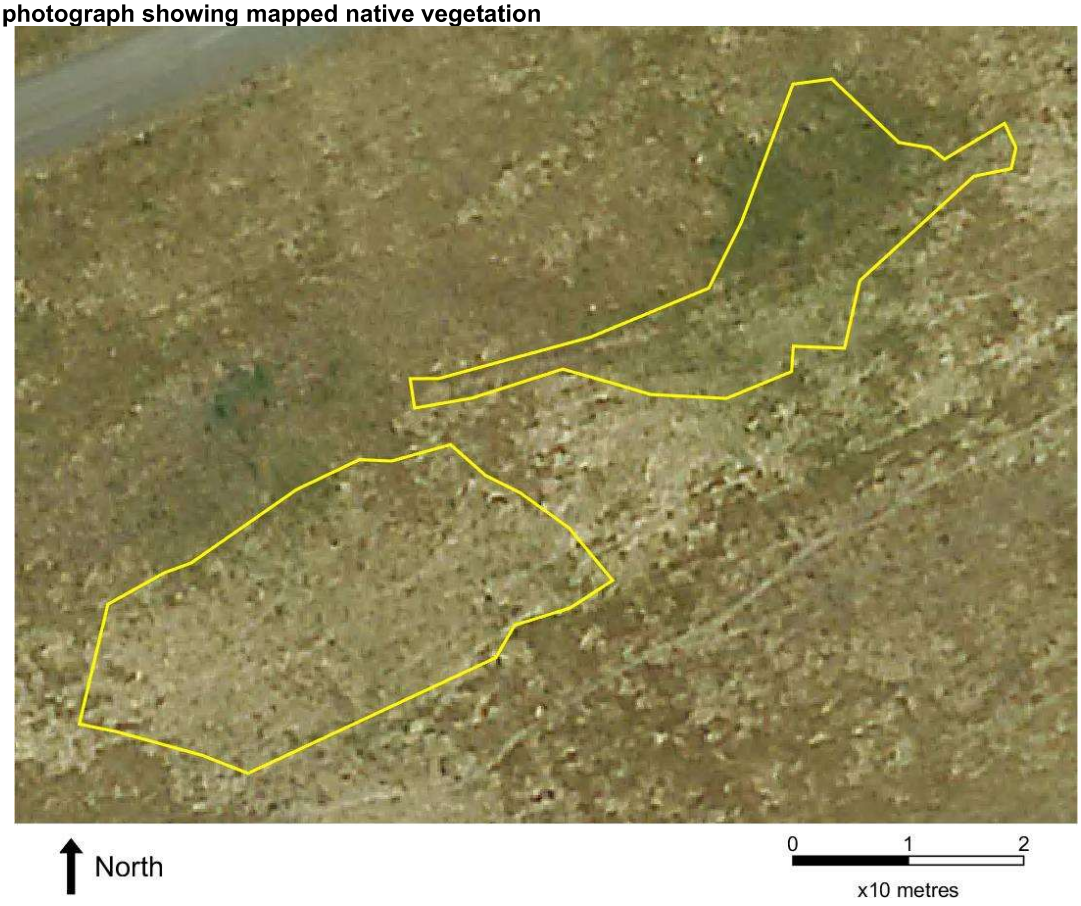
This is not applicable in the Basic Assessment Pathway.

Appendix 3 – Images of mapped native vegetation

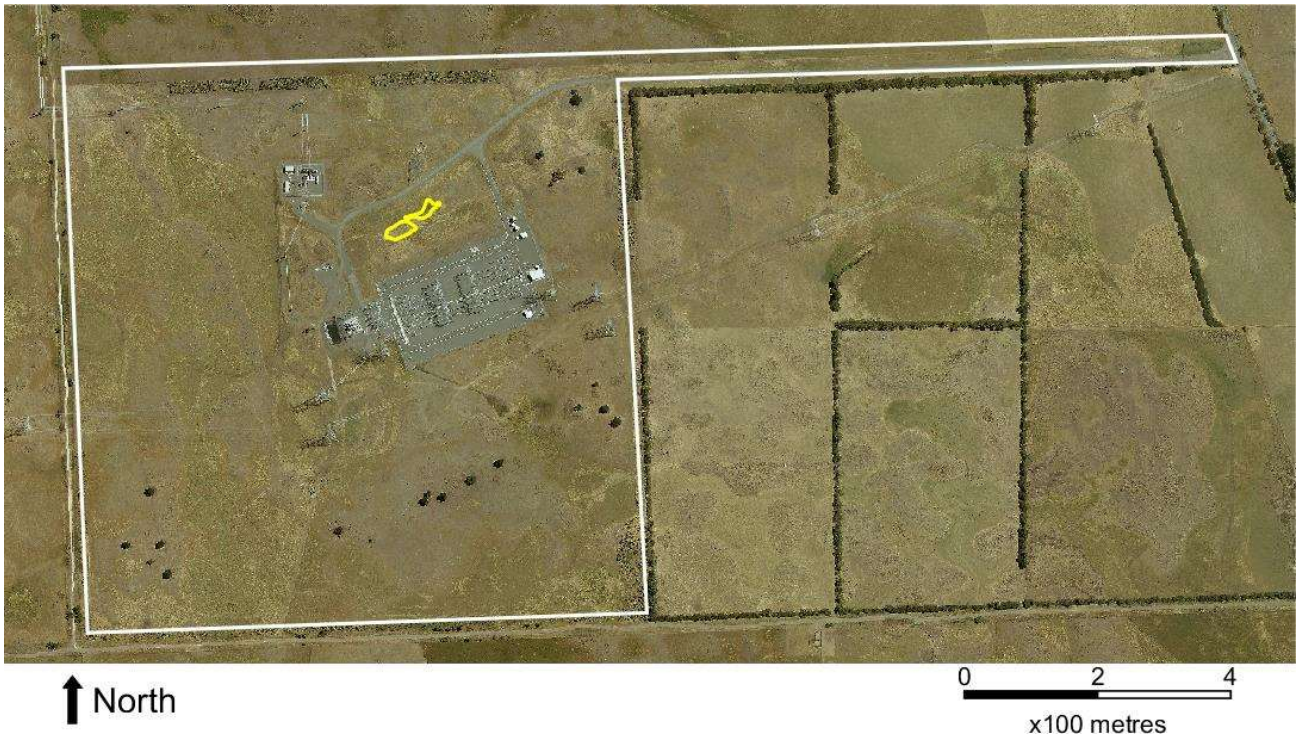
2. Strategic biodiversity values map



3. Aerial photograph showing mapped native vegetation



4. Map of the property in context



Yellow boundaries denote areas of proposed native vegetation removal.

Appendix 6: 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: 29/11/2021 11:44 **Report ID: 12037**

What was searched for?

General offset

General habitat units	Strategic biodiversity value	Large trees	Vicinity (Catchment Management Authority or Municipal district)	
0.025	0.312	0	CMA	Glenelg Hopkins
			or LGA	Moyne Shire

Details of available native vegetation credits on 29 November 2021 11:44

These sites meet your requirements for general offsets.

Credit Site ID	GHU	LT	CMA	LGA	Land owner	Trader	Fixed price	Broker(s)
BBA-0101	0.513	0	Glenelg Hopkins	Southern Grampians Shire	No	Yes	No	VegLink
BBA-0110	0.070	5	Glenelg Hopkins	Ararat Rural City	Yes	Yes	No	Contact NVOR
BBA-0639	7.437	0	Glenelg Hopkins	Moyne Shire	Yes	Yes	No	Bio Offsets
BBA-0667	1.582	0	Glenelg Hopkins	Southern Grampians Shire	Yes	Yes	No	Contact NVOR
BBA-0668	0.102	0	Glenelg Hopkins	Southern Grampians Shire	Yes	Yes	No	VegLink
BBA-1139_05	1.559	0	Glenelg Hopkins	Moyne Shire	Yes	Yes	No	VegLink
BBA-2088	0.212	5	Glenelg Hopkins	Southern Grampians Shire	Yes	Yes	No	VegLink
BBA-2467	3.017	40	Glenelg Hopkins	Glenelg Shire	Yes	Yes	No	VegLink
BBA-2467	0.369	11	Glenelg Hopkins	Glenelg Shire	No	Yes	No	
BBA-3027	2.518	267	Glenelg Hopkins	Pyrenees Shire	Yes	Yes	No	VegLink
BBA-3041	4.144	283	Glenelg Hopkins	Moyne Shire	Yes	Yes	No	VegLink
TFN-C0543	0.407	7	Glenelg Hopkins	Southern Grampians Shire	No	Yes	No	Bio Offsets
TFN-C1668	0.121	12	Glenelg Hopkins	Glenelg Shire	Yes	Yes	No	VegLink
VC_CFL-1139_06	0.331	0	Glenelg Hopkins	Moyne Shire	Yes	Yes	No	VegLink
VC_CFL-3693_01	4.058	686	Glenelg Hopkins	Ararat Rural City	Yes	Yes	No	VegLink
VC_CFL-3714_01	14.430	0	Glenelg Hopkins	Ararat Rural City	Yes	Yes	No	VegLink

VC_TFN-C2046_01	10.597	1460	Glenelg Hopkins	Southern Grampians Shire	Yes	Yes	No	Ecocentric, Ethos, VegLink
VC_TFN-C2109_01	1.029	0	Glenelg Hopkins	Pyrenees Shire	Yes	Yes	No	VegLink
VC_TFN-C2109_02	0.853	0	Glenelg Hopkins	Pyrenees Shire	Yes	Yes	No	VegLink

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

Credit Site ID	GHU	LT	CMA	LGA	Land owner	Trader	Fixed price	Broker(s)

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)
VC_CFL-3755_01	4.926	0	Glenelg Hopkins	Glenelg Shire	Yes	Yes	No	Contact NVOR

LT - Large Trees *CMA - Catchment Management Authority* *LGA - Municipal District or Local Government Authority*

Next steps

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

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

Broker contact details

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

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