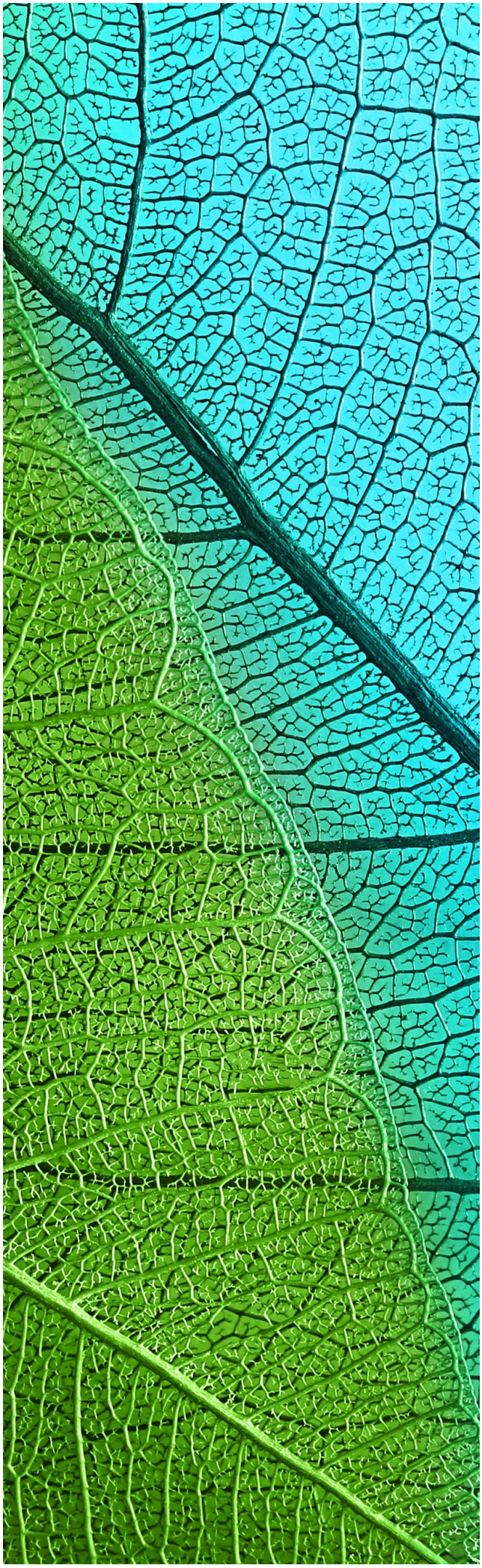

Tarrone Battery Energy Storage System (BESS)

Flora and Fauna Assessment

Prepared for GPG Australia Pty Ltd
C/- Umwelt (Australia) Pty Ltd

June 2024
Report No. 14144.32 (1.2)

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

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1. Executive summary

Umwelt (Australia) Pty Ltd, on behalf of GPG Australia Pty Ltd, engaged Nature Advisory Pty Ltd to conduct a flora and fauna assessment of an approximately 40-hectare area of land in Tarrone. The specific area investigated, referred to herein as the 'study area', comprised an irregular shaped polygon (see Figure 1), immediately east of the Tarrone Terminal Station, which is situated approximately 23 kilometres north of Port Fairy, in western Victoria. Proposed works for the study area include construction of a Battery Energy Storage System (BESS), and associated infrastructure, including access corridors through to Tarrone North Road and Riordans Road.

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 2017a), herein referred to as 'the Guidelines', and any potential impacts on flora and fauna matters listed under the state *Flora and Fauna Guarantee Act 1988* (FFG Act) and the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). This report outlines any implications under relevant national, state and local legislation and policy frameworks.

Vegetation in the study area primarily consisted of introduced pasture grasses and broad-leaf weeds. The broader property was surrounded by planted windrows of native trees and shrubs. Areas supporting native vegetation were primarily restricted to the wet depressions or stony rises, although drier flatter land along the adjoining reserves of Tarrone North Road and Riordans Road also supported native vegetation.

The wet depressions supported wetland species typical of Plains Grassy Wetland, such as Spike Sedge, Rush, Australian Sweet-grass, Common Blown-grass and Common Tussock-grass.

The stony rises supported Stony Knoll Shrubland and were characterised by the presence of Weeping Grass and Austral Bracken. Other native species included wallaby and spear grasses, Kidney Weed and Sheep's Burr.

The adjoining reserves of Tarrone North Road and Riordans Road supported highly modified examples of Plains Grassy Woodland, characterised by a canopy of Blackwood and Black Wattle over an understorey of introduced pasture grasses.

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

Impact assessment

The current proposal will involve construction of a BESS, with a storage capacity of up to 200 Megawatt AC (MWac)/400 Megawatt Hour (MWh). The BESS will be connected to the Tarrone Terminal Station via an approximate 200 metre underground 132kV transmission line. Specifically, the transmission line will extend from the Project transformers within the BESS to a new 132kV switchyard to be constructed at the Tarrone Terminal Station to support the connection of GPG's Ryan Corner Wind Farm and Hawkesdale Wind Farm Projects.

The proponent proposes to remove 0.313 hectares of native vegetation requiring a permit to remove under Clause 52.17 of the Moyne Planning Scheme, comprising:

- 0.313 hectares of native vegetation in patches (including no large trees in patches)

An additional 0.186 hectares of native vegetation was approved for removal for works associated with the construction of the Tarrone Terminal Station. These impacts have been considered as past removal for this project as it is connected to this infrastructure.

Implications under legislation and policy

The application site lies within Location 2. Based on the extent of native vegetation being impacted and location category, the proposal must be assessed under the **Intermediate** assessment pathway. This **would not** trigger a referral to the Department of Energy, Environment and Climate Action (DEECA).

A *Native Vegetation Removal* (NVR) report for this proposal is provided in Appendix 7.

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

- 0.095 general habitat units, with following offset attribute requirements:
  - A minimum strategic biodiversity value (SBV) of 0.302
  - Located within the Glenelg Hopkins CMA boundary or the Moyne Shire municipal district.
  - Include protection of no large trees.

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

The majority of the study area is located in the Farming Zone under the Moyne Planning Scheme, some of the decision guidelines are considered relevant to this investigation and are detailed within this report. The study area is also partially subject to the Special Use Zone – Schedule 6 where the proposed BESS connects to the Tarrone Terminal Station. The application requirements and decision guidelines under this zoning are not considered relevant to this application as it involves *works associated with a Utility Installation to transmit, distribute, or store power*.

The study area is covered by the Environmental Significance Overlay – Schedule 5 but is not considered relevant to this investigation.

No listed species or ecological communities were considered to have the potential to be significantly impacted by the current proposal. Therefore, there are no implications under the FFG and EPBC Acts.

Response to application requirements of the Guidelines

The table below summarises the compliance of the information in this report with the application requirements of the *Guidelines for the removal, destruction or lopping of native vegetation* (DELWP 2017).

	Application requirement	Response
1.	Information about the native vegetation to be removed.	Section 6.1.1
2.	Topographic and land information relating to the native vegetation to be removed.	Section 5.1
3.	Recent, dated photographs of the native vegetation to be removed.	Appendix 6
4.	Details of any other native vegetation approved to be removed, or that was removed without the required approvals, on the same property or contiguous land in the same ownership as the applicant, in the five-year period before the application for a permit is lodged.	0.186 hectares of native vegetation has been included as past removal for this application. This was approved to be removed for works associated with the Tarrone Terminal Station, for which this project is connected to.
5.	An avoid and minimise statement.	Section 7.1.3
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.	Not applicable.
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.	Not applicable.
8.	If the application is under Clause 52.16, a statement that explains how the proposal responds to the Native Vegetation Precinct Plan considerations (at decision guideline 8).	Not applicable.
9.	An offset statement providing evidence that an offset that meets the offset requirements for the native vegetation to be removed has been identified and can be secured in accordance with the Guidelines.	Appendix 8

2. Introduction

Umwelt (Australia) Pty Ltd, on behalf of GPG Australia Pty Ltd, engaged Nature Advisory Pty Ltd to conduct a flora and fauna assessment of a 40-hectare area of land in Tarrone. The specific area investigated, referred to herein as the 'study area', comprised an irregular shaped polygon (see Figure 1), immediately east of the Tarrone Terminal Station, which is situated approximately 23 kilometres north of Port Fairy, in western Victoria. Proposed works for the study area include construction of a BESS, and associated infrastructure, including access corridors to adjacent Tarrone North Road and Riordans Road.

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 2017a), herein referred to as 'the Guidelines', and any potential impacts on flora and fauna matters listed under the state *Flora and Fauna Guarantee Act 1988* (FFG Act) and the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). This report outlines any implications under relevant national, state and local legislation and policy frameworks.

Specifically, the scope of the investigation included the following:

- Existing information regarding the flora, fauna and native vegetation of the study area and surrounds was reviewed and include the following:
    - *Victorian Biodiversity Atlas* administered by the Department of Energy, Environment and Climate Action (DEECA);
    - The *Commonwealth Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) *Protected Matters Search Tool*; and
    - DEECA's *Native Vegetation Information Management system* (NVIM).
- A site survey was undertaken and involve the following:
    - 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 a flora species list/flora and fauna species lists for the site; and
    - Assessment of the nature and quality of native fauna habitat.

This investigation was undertaken by a team from Nature Advisory comprising Brett Macdonald (Senior Ecologist), Emma Wagner (GIS Analyst) and Chris Armstrong (Senior Botanist & 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. Planning provisions

The study area is located within the Moyne local government area and is located in the Farming Zone (FZ) and partially within the Special Use Zone – Schedule 6 (SUZ6), under the Moyne Planning Scheme.

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

3.1.1. Planning Policy Framework

Clause 12.01 - Biodiversity

Clause 12.01 of all Victorian planning schemes provides an overarching framework to protect and enhance Victoria's biodiversity. The responsible authority is obligated to refer to Clause 12.01-1S – Protection of biodiversity and Clause 12.01-2S – Native vegetation management. The objectives and strategies relating to the current proposal for each Clause are outlined below.

Clause 12.01-1S – *Protection of biodiversity*

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

- *Use biodiversity information to identify important areas of biodiversity, including key habitat for rare or threatened species and communities, and strategically valuable biodiversity sites.*
- *Strategically plan for the protection and conservation of Victoria's important areas of biodiversity.*
- *Ensure that decision making takes into account the impacts of land use and development on Victoria's biodiversity, including consideration of:*
    - *Cumulative impacts.*
    - *Fragmentation of habitat.*
    - *The spread of pest plants, animals and pathogens into natural ecosystems.*
- *Avoid impacts of land use and development on important areas of biodiversity.*
- *Consider impacts of any change in land use or development that may affect the biodiversity value of national parks and conservation reserves or nationally and internationally significant sites; including wetlands and wetland wildlife habitat designated under the Convention on Wetlands of International Importance (the Ramsar Convention) and sites utilised by species listed under the Japan-Australia Migratory Birds Agreement (JAMBA), the China-Australia Migratory Birds Agreement (CAMBA), or the Republic of Korea-Australia Migratory Bird Agreement (ROKAMBA).*
- *Assist in the identification, protection and management of important areas of biodiversity.*

- *Assist in the establishment, protection and re-establishment of links between important areas of biodiversity, including through a network of green spaces and large-scale native vegetation corridor projects.*
- *Support land use and development that contributes to protecting and enhancing habitat for indigenous plants and animals in urban areas.*

Clause 12.01-2S – *Native vegetation management*

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

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

A response of how this application addresses this policy is provided in Section 7.2.1.

Clause 12.03 – Water bodies and wetlands

Clause 12.03 of all Victorian planning schemes provides an overarching framework to protect and enhance waterway systems including riparian corridors, waterways, lakes, wetlands and billabongs through the following strategies relevant to this investigation:

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

A response of how this application addresses this policy is provided in Section 7.2.2.

3.1.2. Zoning

The majority of the study area is located in the Farming Zone under the Moyne Planning Scheme, which contains the following relevant decision guidelines relevant to this investigation.

Relevant decision guidelines

- *The impact of the use or development on the flora and fauna on the site and its surrounds.*
- *The need to protect and enhance the biodiversity of the area, including the retention of vegetation and faunal habitat and the need to revegetate land including riparian buffers along waterways, gullies, ridgelines, property boundaries and saline discharge and recharge area.*
- *The location of on-site effluent disposal areas to minimise the impact of nutrient loads on waterways and native vegetation.*

Thes relevant decision guidelines are addressed in Section 7.2.3.

The study area is also partially subject to the Special Use Zone – Schedule 6 where the proposed BESS connects to the Tarrone Terminal Station. Decision guidelines and application requirements under this zoning are not considered relevant to this application as it involves *works associated with a Utility Installation to transmit, distribute or store power.*

3.1.3. Overlays

Most of the eastern half of the study area is subject to the following overlay under the Moyne Planning Scheme:

Environmental Significance Overlay – Schedule 5 (ESO5)

- Tarrone Power Station Environs - Aims to ensure that the development and use of the Tarrone Power Station is not constrained by the establishment of potentially conflicting accommodation uses and developments nearby. A permit is not required to remove native vegetation under this overlay.

Therefore, this overlay is not considered relevant to this investigation, as it has no environmental implications.

3.1.4. Particular provisions – Native Vegetation (Clause 52.17)

The contents of this report aims to address the requirements under Clause 52.17 – *Native Vegetation* of the Moyne Planning Scheme.

The purpose of Clause 52.17 is to ensure that there is no net loss to biodiversity as a result of the removal, destruction or lopping of native vegetation. This is achieved by applying the following three step approach in accordance with the *Guidelines for the removal, destruction or lopping of native vegetation* (DELWP 2017), herein referred to as '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 if a permit is granted to remove, destroy or lop native vegetation.

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

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

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

Application requirements

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

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

Referral to DEECA

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

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

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

Implications under this particular provision are discussed in Section 7.1.

3.2. 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 to these species require the approval of the Commonwealth Minister for the Environment.

If there is a possibility of a significant impact on nationally threatened species, communities or listed migratory species, a Referral under the EPBC Act should be considered. The Minister will decide whether the project will be a 'controlled action' under the EPBC Act after 20 business days, in which case the project can only be undertaken with 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.

3.3. FFG Act

The Victorian *Flora and Fauna Guarantee Act 1988* (FFG Act) includes:

- a *Threatened List* (DEECA 2023a); and
- a *Protected Flora List* (DELWP 2019).

This Act generally only has implications for impacts to FFG Act-listed values where they occur on public land.

Threatened List

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

Although there are no legislative implications for impacts to these species on private land under the FFG Act, these values should be avoided wherever possible, in recognition of their threatened status at a state level.

Any application for a planning permit may also be assessed by the responsible or referral authority for potential impacts to FFG Act threatened values as part of broader considerations of impacts to biodiversity.

Protected Flora List

The Protected Flora List includes plants from three sources:

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

Under the Act, any removal of protected flora from public land requires a Protected Flora Permit, which must be obtained from the relevant regional DELWP office. This can only be obtained after the removal of this flora is approved as part of a planning permit.

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

3.4. EE Act

One or a combination of several criteria may trigger a requirement for a Referral to the Victorian Minister for Planning who will determine whether an Environmental Effects Statement (EES) will be 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 that trigger a Referral are listed below.

One or more of the following would trigger a Referral:

- Potential clearing of 10 or more hectares of native vegetation from an area that meets the following criteria:
    - Is of an Ecological Vegetation Class identified as endangered by the Department of Sustainability and Environment (in accordance with Appendix 2 of Victoria's Native Vegetation Management Framework); or
    - Is, or is likely to be, of very high conservation significance (as defined in accordance with Appendix 3 of Victoria's Native Vegetation Management Framework); and
    - Is not authorised under an approved Forest Management Plan or Fire Protection Plan;
- 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'; or
- Potential extensive or major effects on the health or biodiversity of aquatic, estuarine or marine ecosystems, over the long term.

Two or more of the following would also trigger a Referral:

- Potential clearing of 10 or more hectares 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, including the following:
    - 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
    - Potentially 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.

3.5. CaLP Act

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

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

4.2. Desktop methods

4.2.1. Native vegetation

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

- Relevant EVC benchmarks for the Victorian Volcanic Plain bioregion[1] (DSE 2004a); and
- *NatureKit* (DEECA 2023b).

Pre–European EVC mapping (DEECA 2023a) 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 DEECA wetlands are mapped on this site.

4.2.2. Threatened species and ecological communities

Existing flora and fauna species records and information regarding the potential occurrence of listed matters were obtained from an area termed the 'search region', defined here as an area with a radius of 10 kilometres from the approximate centre point of the study area (coordinates: latitude 38° 10' 47" S and longitude 142° 11' 20" 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 DEECA. Any species where the last observation predates 1990 has been excluded from this list.

A likelihood of occurrence analysis was undertaken using these flora and fauna records. Species considered 'likely to occur' have very high potential of occurring 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.

The online EPBC Act *Protected Matters Search Tool* (DCCEEW 2023a) was consulted to determine whether nationally listed species or communities potentially occurred in the search region based on habitat modelling.

[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).

4.3. Field methods

The field assessment was conducted on 6th to 7th March 2023. During this assessment, the study area was initially surveyed by vehicle and areas supporting native vegetation and/or fauna habitat were inspected in more detail 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 or FFG Act (where these occurred on public land) were also mapped using the same method.

4.3.1. 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:

- Patch; or
- Scattered tree.

Further details on definitions of patches and scattered trees, along with the prescribed methods of assessment, are provided in Appendix 1.

4.3.2. EVC determination

Determination of EVCs in the field was based on DEECA's pre-European modelled native vegetation (DEECA 2003b) within or nearby to the study area.

Although some vegetation types more closely resembled EVCs not modelled in the study area, this was due to historical modification of the landscape. Where this is the case, EVC has been assigned based on the modelled vegetation type in that locality.

4.3.3. Flora species and habitats

Records of flora species were made in conjunction with sampling methods used to undertake habitat hectare assessments of the native vegetation described above. Specimens requiring more detailed identification were collected and identified with additional resources.

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

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

- The presence of suitable habitat for flora species such as soil type, floristic associations and landscape context; and
- 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 regarding the potential occurrence of a listed species, the assumption was made that this could be in an area of suitable habitat.

4.3.4. 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, including identification of frog calls in seasonally wet areas
- General searches for bat habitat including waterbodies and potential roosting sites such as caves, trees with hollows and underneath the bark of trees.

Fauna habitats are described using habitat components that include old-growth trees, fallen timber, leaf litter and surface rocks.

Habitat connectivity of the study area (i.e. degree of isolation/fragmentation), including linkages to other habitats in the region, was determined using field observations, recent aerial photography and *NatureKit* (DEECA 2023b).

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 regarding the potential occurrence of a listed species, the assumption was made that this could be in an area of suitable habitat.

4.3.5. Threatened ecological communities

EPBC Listed communities

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

- Review of the communities modelled to potentially occur in the study area from the EPBC Act *Protected Matters Search Tool* (DCCEEW 2023a), and
- Checking general field observations of mapped native vegetation against published descriptions of these communities and assessment against the identification criteria and condition thresholds from the relevant listing advice.

FFG Listed communities

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

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

4.3.6. Limitations

The short duration and seasonal timing of field assessments can result in some species not being detected when these may occur at other times. Additionally, some flora species and lifeforms may be undetectable at the time of survey or unidentifiable due to a lack of flowers or fruit.

The site assessment was conducted during early autumn. The short duration and seasonal timing of field assessments can result in some species not being detected when these may occur at other times. Additionally, some flora species and lifeforms may be undetectable at the time of survey or unidentifiable due to a lack of flowers or fruit.

However, these limitations were not considered to compromise the validity of the investigation as the habitat hectares scoring method has been intentionally designed to account for seasonal and temporal variation within patches of native vegetation, to enable site assessments to occur year-round. This reduces the subjectivity and variability between assessors and minimises the time taken during the assessment process. In most cases, habitat zones will be placed comfortably within a habitat component category that would unlikely change even if additional data was collected during alternative survey times (DSE 2004b).

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

5. Assessment results

5.1. Site description

The study area for this investigation (Figure 1) constituted approximately 40 hectares of private and public (adjoining road reserves) land located at Tarrone, approximately 23 kilometres north of Port Fairy, in western Victoria.

The study area supported basalt soils on a gently undulating landscape, characterised by wet depressions at the low points and stony rises, exposing basaltic rock at the high points. A coordinated ephemeral drainage line dissected the east of the study area in a north-south orientation.

The land has historically been used for domestic stock grazing. Surrounding land predominantly supported similar pastoral farmland in all directions.

Vegetation in the study area primarily consisted of introduced pasture grasses and broad-leaf weeds. The broader property was surrounded by planted windrows of native trees and shrubs. Areas supporting native vegetation were primarily restricted to the wet depressions or stony rises, although drier flatter land along the adjoining reserves of Tarrone North Road and Riordans Road also supported native vegetation.

The wet depressions supported wetland species typical of Plains Grassy Wetland, such as Spike Sedge, Rush, Australian Sweet-grass, Common Blown-grass and Common Tussock-grass.

The stony rises supported Stony Knoll Shrubland and were characterised by the presence of Weeping Grass and Austral Bracken. Other native species included wallaby and spear grasses, Kidney Weed and Sheep's Burr.

The adjoining reserves of Tarrone North Road and Riordans Road supported highly modified examples of Plains Grassy Woodland, characterised by a canopy of Blackwood and Black Wattle over an understorey of introduced pasture grasses.

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

The following key fauna habitat areas occurred within the region:

- Tower Hill Wildlife Reserve approximately 20 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 20 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 Plain bioregion and falls within the Glenelg Hopkins catchment management area.

5.2. Native vegetation

5.2.1. Patches of native vegetation

Evidence on site, including floristic composition and soil characteristics, suggested that Plains Grassy Wetland (EVC 125), Stony Knoll Shrubland (EVC 649) and Higher Rainfall Plains Grassy Woodland (EVC 55_63) were present within the study area (Figure 1).

25 patches (referred to herein as habitat zones) comprising the abovementioned EVCs, were identified in the study area (Table 1). This totalled an area of 3.007 hectares of native vegetation.

Table 1: Description of habitat zones in the study area

Habitat Zone	EVC	Description
A	Plains Grassy Wetland (EVC 125)	Moderate quality native vegetation. Large ephemeral wetland dominated by indigenous Australian Sweet-grass, Swamp Wallaby-grass, rush and Spike Sedge and introduced Bent Grass, clover and various annual grasses. Other indigenous species included Common Tussock-grass, Poong'ort, Common Blown-grass, Common Grass-sedge, willow herb and Small Loosestrife. Indigenous species diversity was relatively low, particularly forbs. Introduced weed cover was moderate to high, the majority of that cover being attributable to moderate or low threat species. Organic litter was well above benchmark while recruitment potential was well below benchmark. All of this native vegetation qualifies as the EPBC Act-listed community *Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains*.
B,C,D	Plains Grassy Wetland (EVC 125)	Low quality native vegetation. Small ephemeral wetlands dominated by introduced Bent Grass, Toowoomba Canary-grass, clover and various annual grasses. Indigenous elements included Australian Sweet-grass, Swamp Wallaby-grass, rush and Spike Sedge. Indigenous species diversity was relatively low, particularly forbs. Introduced weed cover was very high, the majority of that cover being attributable to moderate or low threat species. Organic litter was well above benchmark while recruitment potential was well below benchmark.

Habitat Zone	EVC	Description
G,H,I,J,K.L.M,O,P,R,X,Y	Stony Knoll Shrubland (EVC 649)	Moderate quality native vegetation. Stony rises dominated by indigenous Austral Bracken and Weeping Grass and introduced Sheep Sorrell, clover and Rough Dog's-tail. Canopy trees absent. Other indigenous species included wallaby and spear grasses, Kidney Weed and Sheep's Burr. Indigenous species diversity was relatively low. Introduced weed cover was moderate to high, the majority of that cover being attributable to high threat species. No woody recruitment observed. Organic litter cover was optimal while logs were absent.
N,Q,S,T,U,V	Higher Rainfall Plains Grassy Woodland (EVC 55_63)	Low quality native vegetation. Road reserve vegetation dominated by Blackwood and Black Wattle trees of various ages and heights, some exceeding benchmark canopy height. Large trees absent. Understorey dominated by Toowoomba Canary-grass with scattered broad-leaf weeds. Introduced weed cover was very high, the majority of that cover being attributable to high threat species. No woody recruitment observed. Organic litter was well above benchmark while logs were absent.

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	EVC no.	Area (ha)	Condition Score (out of 100)	Number of Large Trees recorded
A	125	1.259	34	0
B	125	0.064	32	0
C	125	0.233	32	0
D	125	0.091	32	0
E	649	0.156	32	0
F	649	0.314	29	0
G	649	0.035	29	0
H	649	0.152	29	0
I	649	0.038	29	0
J	649	0.008	29	0
K	649	0.024	29	0

Habitat Zone	EVC no.	Area (ha)	Condition Score (out of 100)	Number of Large Trees recorded
L	649	0.216	29	0
M	649	0.031	29	0
N	55_63	0.002	9	0
O	649	0.042	32	0
P	649	0.026	32	0
Q	55_63	0.006	9	0
R	649	0.036	29	0
S	55_63	0.028	14	0
T	55_63	0.030	13	0
U	55_63	0.013	9	0
V	55_63	0.019	9	0
W	649	0.060	21	0
X	649	0.057	29	0
Y	649	0.032	29	0
Total		**2.972**		

5.2.2. Scattered trees

No scattered trees were recorded in the study area.

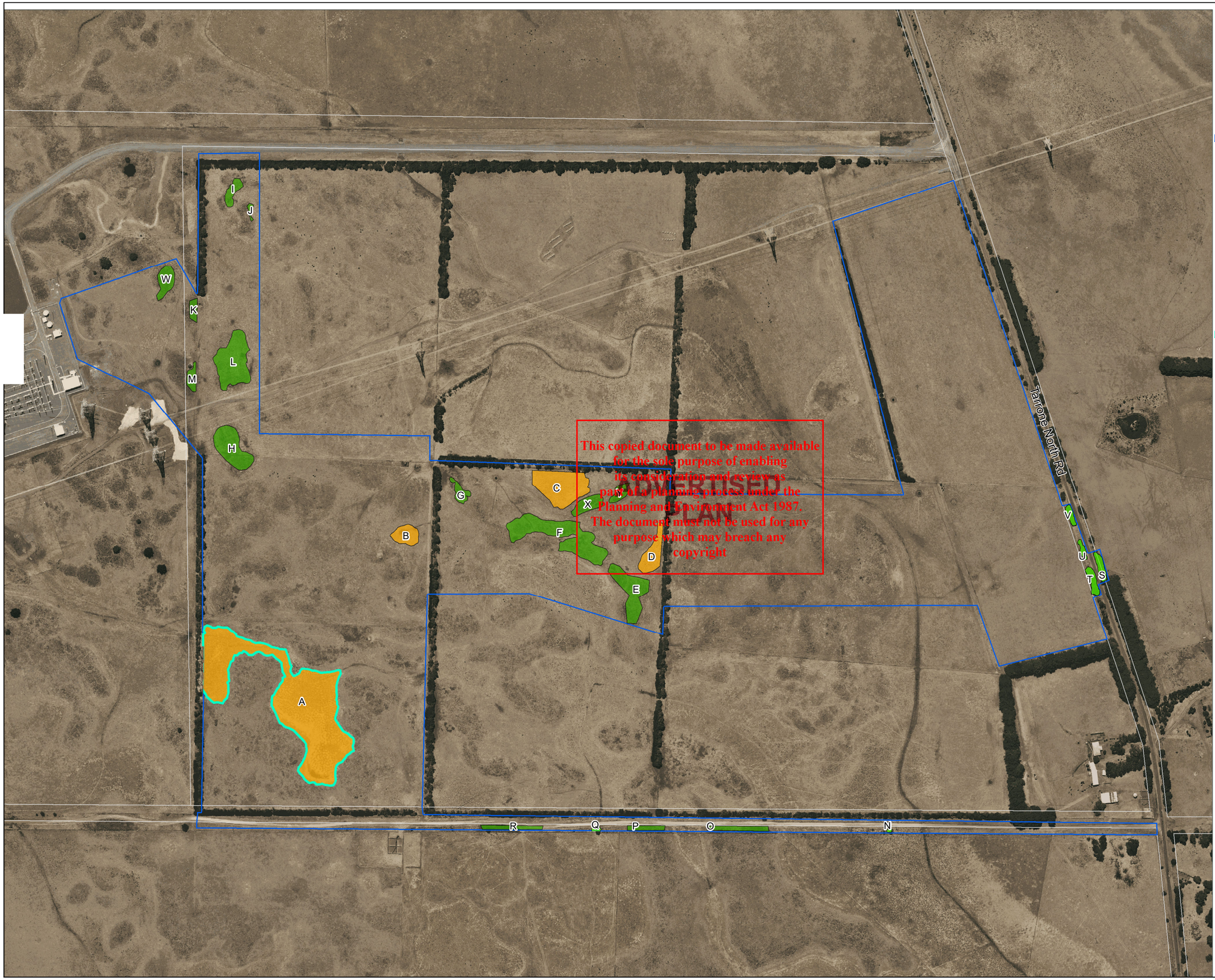

Figure 1: Study area and native vegetation

Project: Tarrone BESS
Client: Global Power Generation Australia Pty Ltd
Date: 26/06/2024

- Study area
- Property boundary

Native vegetation

- Higher Rainfall Plains Grassy Woodland (EVC 55)
- Plains Grassy Wetland (EVC 125)
- Stony Knoll Shrubland (EVC 649)

Listed community

- SHWTLP

N

Metres
0 70

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5.3. Flora species

5.3.1. Species recorded

During the field assessment, 47 plant species were recorded, of which 24 (51%) were indigenous and 23 (49%) were introduced or non-indigenous native in origin (Appendix 3).

5.3.2. Listed species

Records from the VBA (DEECA 2023d) and Commonwealth EPBC Protected Matters Search Tool (DCCEEW 2022a) indicated that within the search region there were records of, or potential suitable habitat occurred 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 of species listed under the EPBC Act and FFG Act in the study area is addressed in Appendix 4. Species considered 'likely to occur' have very high potential of occurring 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 none of the flora species listed in Appendix 5 are likely to occur or have the potential to occur in the study area.

5.4. Fauna habitats

The study area supported four fauna habitat types.

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

Photograph 1: Rocky outcrops – basaltic surface rocks in paddock vegetation.

Photograph 2: Grazing paddocks – exotic pastures with an incidental occurrence of native graminoids.

Photograph 3: Native treed vegetation – a small patch of remnant Blackwood trees.

Photograph 4: Ephemeral wetland – Habitat Zone A, supporting various wetland graminoids.

Rocky outcrops

Numerous 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 Austral Bracken and 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.

Native treed vegetation

Minor occurrences of this habitat type within the adjoining reserves of Tarrone North Road and Riordans Road supported highly modified examples of Plains Grassy Woodland, characterised by a canopy of Black Wattle and Blackwood over an understorey of introduced pasture grasses. Large trees were absent and large woody debris was scarce.

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 and sedges, although very few aquatic herbs.

5.5. Fauna species

5.5.1. Listed species

The review of existing information [including VBA records (DEECA 2023c) and the results of the EPBC Protected Matters Search Tool (DCCEEW 2023a) indicated that within the search region there were records of, or potential suitable habitat occurred for, 45 species listed under the Commonwealth EPBC Act and the state FFG Act.

The likelihood of occurrence of species listed under the EPBC Act and FFG Act in the study area is addressed in Appendix 5. This analysis of potential occurrence of listed fauna species excludes the following:

This analysis of potential occurrence of listed fauna species excludes the following:

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

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

- **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)
- **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])

5.6. Listed ecological communities

EPBC Listed communities

The EPBC *Protected Matters Search Tool* (DCCEEW 2023a) indicated that four ecological communities listed under the EPBC Act had the potential to occur in the search region (Table 3).

Table 3: EPBC Act-listed ecological communities and likelihood of occurrence in the study area

Ecological Community	EPBC Status	Occurrence in the study area
Grassy Eucalypt Woodland of the Victorian Volcanic Plain (GEWVVP)	CR	While one EVC associated with this community (Plains Grassy Woodland (EVC 55)) was recorded within the study area, the native treed vegetation in habitat zones N, Q, S, T, U and V comprising EVC 55 were found not to meet the key diagnostic criteria and condition thresholds (TSSC 2012) for this community, as they did not meet the native understorey cover threshold or the minimum size requirement of 0.5 hectares. **Does not occur.**
Natural Temperate Grassland of the Victorian Volcanic Plain	CR	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. **Does not occur.**
Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains (SHWTLP)	CR	Habitat Zone A, comprising of the EVC Plains Grassy Wetland (EVC 125) was found to meet the key diagnostic criteria and condition thresholds (TSSC 2012) for this community. **Known to occur.**
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	CR	The study area is beyond the extent of this community, which occurs in the Victorian Midlands and Riverina Bioregions (TSSC 2006). **Does not occur.**

Notes: EPBC = status under the EPBC Act.

FFG Listed communities

A review of the communities modelled to potentially occur within 5 kilometres of the study area (DELWP 2018b), as well as reviewing any communities without modelled distribution habitat mapping, indicated that one ecological community listed under the FFG Act had the potential to occur in the search region (Table 4). Occurrence of this community in the study area was determined based on an assessment of the fauna assemblage or native vegetation present against published descriptions of this community (SAC 2015).

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

Ecological Community	Occurrence in the study area
Western Basalt Plains (River Red Gum) Grassy Woodland	Higher Rainfall Plains Grassy Woodland (EVC 55_63) patches represented the only EVC within the study area that may form this community. However, these patches lacked a characteristic open canopy of River Red Gum, and supported highly-modified exotic understories. Therefore, they did not meet the diagnostic characteristics of this community. **Does not occur.**

6. Impact assessment

6.1. Proposed development

The current proposal will involve construction of a BESS, with a storage capacity of up to 200 Megawatt AC (MWac)/400 Megawatt Hour (MWh). The BESS will be connected to the Tarrone Terminal Station via an approximate 200 metre underground 132kV transmission line. Specifically, the transmission line will extend from the Project transformers within the BESS to a new 132kV switchyard to be constructed at the Tarrone Terminal Station to support the connection of GPG's Ryan Corner Wind Farm and Hawkesdale Wind Farm Projects. The following ancillary infrastructure will also be established:

- Site office and control room;
- Access to the Project site via access roads from either Riordan's Road or Tarrone North Road. It is the intention GPG will select one access road prior to planning approval being granted. Both access corridors have a proposed corridor of 25 metres;
- Four-metre-wide internal access roads to support movement through the facility during the operations;
- Security fencing of up to 2.1 metres high around the Project infrastructure;
- Fire water supply storage tanks;
- A 10 metres buffer zone to the east and west of the proposed facility location to provide an adequate buffer from site-based works to the existing vegetation located on the property; and
- A site laydown area of approximately 28 metres by 135 metres, for the housing of Project infrastructure, site construction facilities and parking where required.

To determine impacts to native vegetation, the proposed project impact area plan was overlaid with the native vegetation mapped as part of this investigation. In addition to this, the following areas of consequential removal were accounted for:

- The entire corridor associated within underground 132kV transmission line;
- A 2 metre buffer along the outer edge of the proposed security fencing;
- Any vegetation within the 'compound area'; and
- A 25 metre wide access road corridor to Tarrone North Road.

6.1.1. Impacts to native vegetation

The proposed development will result in the following impacts to native vegetation:

- 0.313 hectares of native vegetation in patches (including no large trees in patches).

An additional 0.186 hectares of native vegetation was approved for removal for works associated with the construction of the Tarrone Terminal Station. These impacts have been considered as past removal for this project as it is connected to this infrastructure.

6.1.2. Impacts to listed flora species

The likelihood of occurrence of species listed under the EPBC Act and FFG Act indicated that no listed flora species are likely to occur or have the potential to occur, therefore no listed flora species are considered to be susceptible to impacts from the proposal.

6.1.3. Impacts to listed fauna

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

Table 5: Susceptibility of listed fauna species

Name	Conservation Status		Susceptibility analysis	Implications
	EPBC	FFG		
Birds (non-migratory)				
Brolga	-	EN	The study area does not contain suitable breeding habitat for these species. However, they are likely to occasionally use ephemeral wetland habitat opportunistically within and nearby to the study area for foraging. 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. Additionally, the proposed infrastructure is not considered to present a collision risk to these species.	Given that these species are not expected to be significantly impacted by the proposed development, there are no further implications.
Eastern Great Egret	-	VU		
Magpie Goose	-	VU		
Plumed Egret	-	CE		
Migratory Birds				
Glossy Ibis	M	-	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.	Given that these species are not expected to be significantly impacted by the proposed development, there are no further implications.
Latham's Snipe	M	-		
Fork-tailed Swift	M	-	These species are likely to occasionally occur over the study area, given their highly mobile and aerial habit. 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.	
White-throated Needletail	M, VU	VU		

Name	Conservation Status		Susceptibility analysis	Implications
	EPBC	FFG		
Mammals				
Southern Bent-wing Bat	CE	CE	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 the Tarrone Terminal Station already exists adjacent the study area, and the nature of the proposed development, it is considered unlikely that these species would be impacted by the proposed development.	Given that this species is not expected to be significantly impacted by the proposed development, there are no further implications.

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

6.1.4. Impacts to listed communities

The proposed development will not result in any losses to EPBC Act listed ecological communities, as the area of SHWTLP comprising Habitat Zone A has been sufficiently avoided provided appropriate mitigation measures are adopted (see Section 7.7).

7. Implications under legislation and policy

7.1. Implications under Clause 52.17

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

7.1.1. Exemptions to Clause 52.17

No exemptions to Clause 52.17 are relevant to this project.

7.1.2. Impacts to native vegetation

The proposed development will result in the loss of a total extent of 0.313 hectares of native vegetation under the Guidelines as represented in Figure 2 and documented in the *Native Vegetation Removal* (NVR) report provided by DEECA (Appendix 7).

This comprised the following:

- 0.313 hectares of native vegetation in patches (including no large trees in patches).

The native vegetation to be removed is in an area mapped as an endangered Ecological Vegetation Class.

In addition, the approved removal of a total extent of 0.186 hectares of native vegetation has occurred adjacent to the study area within the last five years in accordance with the permit for the construction of the Tarrone Sub-station.

Photographs of native vegetation proposed for removal are provided in Appendix 6.

7.1.3. Avoid and minimise statement

In accordance with the Guidelines, all applications to remove native vegetation must provide an avoid and minimise statement that describes any efforts undertaken to avoid the removal of, and minimise the impacts to biodiversity and other values of native vegetation, and how these efforts were focused on areas of native vegetation with the highest 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 BESS facility has been designed to avoid any impacts on the largest and most important area of native vegetation in the project area, that being Habitat Zone A, which also constitutes the EPBC Act-listed community SHWTLP. Access tracks have also been redesigned to minimise impacts to native vegetation and to avoid fragmentation within existing patches. These design changes resulted from multiple meetings and discussions between Umwelt, Nature Advisory and GPG to prepare the current development plan. The proposed layout will allow for retention of approximately 90% of native vegetation in the study area.

The client has advised that no feasible opportunities exist to further avoid and minimise impacts to native vegetation without undermining the key objectives of the proposal. Design and construction recommendations to further avoid and minimise impacts to native vegetation are provided in Section 7.7.

7.1.4. Modelled species important habitat

The current proposal footprint will not have a significant impact on habitat for any rare or threatened species as determined in the NVR Report (Appendix 7).

7.1.5. Assessment pathway

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

- **Location Category:** Location 2
- **Extent of native vegetation:** A total of 0.498 hectares of native vegetation (including no large trees) comprising of:
    - 0.186 hectares of past removal associated with the construction of the Tarrone Terminal Station and;
    - 0.313 hectares of proposed removal associated with this application.

Based on the extent of native vegetation removal being <0.5 hectares, not including any large trees, and being in Location 2, the Guidelines stipulate that the proposal is to be assessed under the **Intermediate** assessment pathway, as determined by the following matrix:

Table 6: Assessment pathway matrix

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

This proposal **would not** trigger a referral to DEECA based on the above criteria.

7.1.6. Offset requirements

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

- 0.095 general habitat units and must include the following offset attribute requirements:
    - Minimum strategic biodiversity value (SBV) of 0.302.
    - Occur within the Glenelg Hopkins CMA boundary or the Moyne Shire municipal district.

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

7.1.7. Offset statement

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

An online search of the Native Vegetation Credit Register (NVCR) has shown that the required offset is currently available for purchase from a native vegetation credit owner (DEECA 2023d).

Evidence that the required offset is available is provided in Appendix 8. The required offset would be secured following approval of the application to remove native vegetation.

Figure 2: Native vegetation to be removed

Project: Tarrone BESS
Client: Global Power Generation Australia Pty Ltd
Date: 14/06/2024

Study area
Property boundary

Native vegetation

Higher Rainfall Plains Grassy Woodland (EVC 55)
Plains Grassy Wetland (EVC 125)
Stony Knoll Shrubland (EVC 649)

Listed community

SHWTLP
Native vegetation to be removed

Tarrone North Rd

N

Metres
0 60

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7.2. Implications under other planning provisions

7.2.1. Clause 12.01 - Biodiversity

The objective of Clause 12.01 – *Biodiversity* is to protect and enhance Victoria's biodiversity and to ensure that there is no let loss as a result of the removal, destruction or lopping of native vegetation. This is in general, achieved by the 'Guidelines' and the avoid, minimise and offset obligations as detailed within this report. Specific strategies of Clause 12.01-1S and Clause 12.01-2S are outlined in Section 3.1.1. These Clauses are relevant to the application by considering the protection and enhancement of habitat for indigenous plants and animals in urban areas and avoiding fragmentation of habitat.

This application responds to these objectives by retention of the majority of remnant native vegetation within the study area, as well as the requirement to offset the limited impacts proposed. Of the 2.972 hectares of remnant native vegetation identified in the study area, only 0.313 hectares is proposed for removal. This equates to the retention of approximately 90.5% of native vegetation in the study area. Furthermore, the largest and most intact patch (Habitat Zone A), which also represents an occurrence of the EPBC-listed community Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains (SHWTLP), will not be impacted. Impacted patches are also disconnected and very limited in extent, with the largest impacted patch being 0.152 hectares, and the development plan has been redesigned to avoid fragmentation within existing patches. Given the larger matrix of exotic pastures that these patches occur within, long-term persistence of smaller patches is considered unlikely, and their biodiversity value is generally limited. Through offsetting these impacts, the proposal will also avoid causing a net loss of biodiversity. Evidence of the required offset being available can be found in Appendix 8.

7.2.2. Clause 12.03 – Water bodies and wetlands

The objective of Clause 12.03 – *Water bodies and wetlands* is to protect and enhance waterway systems including river and riparian corridors, waterways, lakes, wetlands and billabongs. Specific strategies of Clause 12.03-1S are outlined in Section 3.1.1.

This application responds to these objectives by retention of the majority of ephemeral wetland habitat within the study area, with only smaller disconnected wetland patches being impacted. More specifically, 0.079 hectares of wetland habitat will be impacted, while 1.569 hectares will be retained. This equates to the retention of approximately 95% of wetland habitat within the study area. Furthermore, the largest and most intact instance (Habitat Zone A), which also represents an occurrence of the EPBC-listed community Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains (SHWTLP), will not be impacted. Therefore, the most significant wetland values will be retained, and impacts are otherwise considered to be very limited.

7.2.3. Zoning

The majority of the study area is located in the Farming Zone under the Moyne Planning Scheme. A response to the relevant decision guidelines to this investigation are provided below.

Table 7: Relevant decision guidelines and responses under Farming Zone

Decision Guidelines	Response
The impact of the use or development on the flora and fauna on the site and its surrounds.	The contents of this report adequately considers the impacts to flora and fauna arising from this proposal.

Decision Guidelines	Response
The need to protect and enhance the biodiversity of the area, including the retention of vegetation and faunal habitat and the need to revegetate land including riparian buffers along waterways, gullies, ridgelines, property boundaries and saline discharge and recharge area.	A detailed response to how the application responds to the protection of biodiversity is provided above in Sections 7.2.1 and 7.2.2. Any proposed plantings for screening purposes or otherwise should utilise species of an appropriate EVC such as Plains Grassy Woodland or Stony Knoll Shrubland. The planting design and management be to the satisfaction of Moyne Shire.
The location of on-site effluent disposal areas to minimise the impact of nutrient loads on waterways and native vegetation.	The proposal does not include an on-site effluent disposal area, therefore not considered relevant.

The study area is also partially subject to the Special Use Zone – Schedule 6 where the proposed BESS connects to the Tarrone Terminal Station. Decision guidelines and application requirements under this zoning are not considered relevant to this application as it involves *works associated with a Utility Installation to transmit, distribute or store power.*

7.2.4. Overlays

Most of the eastern half of the study area is subject to the following overlay under the Moyne Planning Scheme:

Environmental Significance Overlay – Schedule 5 (ESO5)

- Tarrone Power Station Environs – Aims to ensure that the development and use of the Tarrone Power Station is not constrained by the establishment of potentially conflicting accommodation uses and developments nearby. A permit is required to remove native vegetation under this overlay, however the decision guidelines associated with ESO5 have no ecological considerations.

Therefore, this overlay is not considered relevant to this investigation.

7.3. Implications under the 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.

Based on the relevant guidelines, the proposed development is unlikely to result in a significant impact on any EPBC Act-listed values.

7.4. Implications under the FFG Act

The FFG Act includes:

- Threatened List (DELWP 2022); and
- a Protected Flora List (DELWP 2019).

Impacts to FFG Act-listed values generally only have implications for where they occur on public land.

Threatened species

No FFG Act values listed as threatened are anticipated to be impacted from the proposed development.

Protected Flora

The following FFG Act values listed as protected were recorded during the site assessment but they are not anticipated to be impacted from the proposed development on public land:

- Black Wattle *Acacia mearnsii*
- Jersey Cudweed *Laphangium luteoalbum*

Therefore, a Protected Flora Permit under the FFG Act would not be required for the current proposal.

7.5. Implications under the EE Act

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

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 this investigation.

7.6. CaLP Act

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

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

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

- Spear Thistle.

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. Design and Construction mitigation recommendations

The following design recommendations are provided to enhance native vegetation, and flora and fauna habitats:

- Any proposed plantings for screening purposes or otherwise should utilise species of an appropriate EVC such as Plains Grassy Woodland or Stony Knoll Shrubland. The planting design and management be to the satisfaction of Moyne Shire.

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 zones;
- A suitably qualified zoologist should undertake a pre-clearance survey of any trees to be removed during the week prior to removal to identify the presence of any nests or hollows; and
- If considered necessary based on the results of the pre-clearance survey, a suitably qualified zoologist should be on site during any tree removal works to capture and relocate any misplaced fauna that may be present.

8. References

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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 of all Victorian Planning Schemes, as identified in Clause 12.01, 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 described 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.

Patch

A patch of native vegetation may be defined as one of the following:

- 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 (DEECA 2023e).

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 to which the condition of the vegetation resembles the original condition.

The *Native Vegetation Information Management* (NVIM) system (DEECA 2023f) provides modelled condition scores for native vegetation to be used in certain circumstances.

Scattered tree

A scattered tree may be defined as the following:

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

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

[2] A native canopy tree is a mature tree (i.e. able to flower) that is taller 3 metres and 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 onto the ground.

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 the following:

- Basic;
- Intermediate; or
- Detailed.

This assessment pathway is determined by the following two factors:

- **Location Category**, as determined using the Location Map of Victoria. The location category indicates the potential risk to biodiversity from removing a small amount of native vegetation. The three location categories are defined as follows:
    - 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 (and 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 the DBH is greater than or equal to the large tree benchmark 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 subsequently determined as shown 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. This is represented as a score between 0 and 1, and determined from the SBV map, available from *NVIM* (DEECA 2022c).

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. This is represented as a score between 0 and 1 and determined from the Habitat importance maps, administered by DEECA.

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 area 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, as determined below.

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 × 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 subsequently used as follows to determine the biodiversity value of a site:

General habitat score = habitat hectares × general landscape factor

Species habitat score = habitat hectares × 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 × 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 × 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 × 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 includes the protection of at least one large tree for every large tree to be removed

- Species offsets
  - **Offset amount** – species offset = species habitat score × 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 includes 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	B	C	D	E	F	G	H	I	J
Bioregion			VVP	VVP	VVP	VVP	VVP	VVP	VVP	VVP	VVP	VVP
EVC Number			125	125	125	125	649	649	649	649	649	649
Total area of Habitat Zone (ha)			1.259	0.064	0.233	0.091	0.156	0.314	0.035	0.152	0.038	0.008
Site Condition	Large Old Trees	/10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Tree Canopy Cover	/5	N/A	N/A	N/A	N/A	0	0	0	0	0	0
	Lack of Weeds	/15	6	4	4	4	7	4	4	4	4	4
	Understorey	/25	15	15	15	15	15	15	15	15	15	15
	Recruitment	/10	0	0	0	0	0	0	0	0	0	0
	Organic Matter	/5	3	4	4	4	5	5	5	5	5	5
	Logs	/5	N/A	N/A	N/A	N/A	0	0	0	0	0	0
	Site condition standardising multiplier*		1.36	1.36	1.36	1.36	1.15	1.15	1.15	1.15	1.15	1.15
	Site Condition subtotal		*33*	*31*	*31*	*31*	*31*	*28*	*28*	*28*	*28*	*28*
Landscape	Patch Size	/10	1	1	1	1	1	1	1	1	1	1
	Neighbourhood	/10	0	0	0	0	0	0	0	0	0	0
	Distance to Core	/5	0	0	0	0	0	0	0	0	0	0
Total Condition Score		**/100**	**34**	**32**	**32**	**32**	**32**	**29**	**29**	**29**	**29**	**29**
Condition score out of 1			0.34	0.32	0.32	0.32	0.32	0.29	0.29	0.29	0.29	0.29

Habitat Zone			K	L	M	N	O	P	Q	R	S	T
Bioregion			VVP	VVP	VVP	VVP	VVP	VVP	VVP	VVP	VVP	VVP
EVC Number			649	649	649	55_63	649	649	55_63	649	55_63	55_63
Total area of Habitat Zone (ha)			0.024	0.216	0.031	0.002	0.042	0.026	0.006	0.036	0.028	0.030
Site Condition	Large Old Trees	/10	N/A	N/A	N/A	0	N/A	N/A	0	N/A	0	0
	Tree Canopy Cover	/5	0	0	0	0	0	0	0	0	5	4
	Lack of Weeds	/15	4	4	4	0	7	7	0	4	0	0
	Understorey	/25	15	15	15	5	15	15	5	15	5	5
	Recruitment	/10	0	0	0	0	0	0	0	0	0	0
	Organic Matter	/5	5	5	5	3	5	5	3	5	3	3
	Logs	/5	0	0	0	0	0	0	0	0	0	0
	Site condition standardising multiplier*		1.15	1.15	1.15	1.00	1.15	1.15	1.00	1.15	1.00	1.00
	Site Condition subtotal		*28*	*28*	*28*	*8*	*31*	*31*	*8*	*28*	*13*	*12*
Landscape	Patch Size	/10	1	1	1	1	1	1	1	1	1	1
	Neighbourhood	/10	0	0	0	0	0	0	0	0	0	0
	Distance to Core	/5	0	0	0	0	0	0	0	0	0	0
Total Condition Score		**/100**	**29**	**29**	**29**	**9**	**32**	**32**	**9**	**29**	**14**	**13**
Condition score out of 1			0.29	0.29	0.29	0.09	0.32	0.32	0.09	0.29	0.14	0.13

Habitat Zone			U	V	W	X	Y
Bioregion			VVP	VVP	VVP	VVP	VVP
EVC Number			55_63	55_63	649	649	649
Total area of Habitat Zone (ha)			0.013	0.019	0.060	0.057	0.032
Site Condition	Large Old Trees	/10	0	0	0	N/A	N/A
	Tree Canopy Cover	/5	0	0	0	0	0
	Lack of Weeds	/15	0	0	4	4	4
	Understorey	/25	5	5	5	15	15
	Recruitment	/10	0	0	3	0	0
	Organic Matter	/5	3	3	5	5	5
	Logs	/5	0	0	0	0	0
	Site condition standardising multiplier*		1.00	1.00	1.15	1.15	1.15
	Site Condition subtotal		*8*	*8*	*20*	*28*	*28*
Landscape Context	Patch Size	/10	1	1	1	1	1
	Neighbourhood	/10	0	0	0	0	0
	Distance to Core	/5	0	0	0	0	0
Total Condition Score		**/100**	**9**	**9**	**21**	**29**	**29**
Condition score out of 1			0.09	0.09	0.21	0.29	0.29

* Modified approach to habitat scoring - refer to Table 14 of DEECA'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.	
	Black Wattle	*Acacia mearnsii*	
	Blackwood	*Acacia melanoxylon*	
	Sheep's Burr	*Acaena echinata*	
*	Bent	*Agrostis spp.*	
	Swamp Wallaby-grass	*Amphibromus spp.*	
*	Sweet Vernal-grass	*Anthoxanthum odoratum*	
*	Cape weed	*Arctotheca calendula*	
	Spear grass	*Austrostipa spp.*	
*	Lesser Quaking-grass	*Briza minor*	
*	Prairie Grass	*Bromus catharticus*	
*	Great Brome	*Bromus diandrus*	
*	Soft Brome	*Bromus hordeaceus*	
	Sweet Bursaria	*Bursaria spinosa*	
	Common Grass-sedge	*Carex breviculmis*	
	Poong'ort	*Carex tereticaulis*	
*	Common Mouse-ear Chickweed	*Cerastium glomeratum s.l.*	
*	Spear Thistle	*Cirsium vulgare*	C
*	Rough Dog's-tail	*Cynosurus echinatus*	
	Kidney Weed	*Dichondra repens.*	
	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*	
*	Barley Grass	*Hordeum spp.*	
*	Flatweed	*Hypochaeris radicata*	
	Rush	*Juncus* spp.	
	Common Blown-grass	*Lachnagrostis filiformis s.s.*	
	Jersey Cudweed	*Laphangium luteoalbum*	
*	Rye Grass	*Lolium spp.*	
	Small Loosestrife	*Lythrum hyssopifolia*	
	Tree Violet	*Melicytus dentatus s.l.*	
	Weeping Grass	*Microlaena stipoides var. stipoides*	
*	Toowoomba Canary-grass	*Phalaris aquatica*	
	Common Tussock-grass	*Poa labillardierei*	
	Austral Bracken	*Pteridium esculentum* subsp. *esculentum*	
	Buttercup	*Ranunculus* sp.	
	Wiry Dock	*Rumex dumosus*	
*	Dock	*Rumex spp.*	
	Wallaby grass	*Rytidosperma spp.*	
*	Variegated Thistle	*Silybum marianum*	
*	Sow Thistle	*Sonchus spp.*	
*	Clover	*Trifolium* spp.	

Origin	Common name	Scientific name	CaLP Act
*	Squirrel-tail Fescue	*Vulpia bromoides*	

Notes: EPBC = Threatened species status under the EPBC Act; **FFG-T** = Threatened species status under the FFG Act; **FFG-P =** Listed as protected (P) under the FFG Act; **CaLP Act**: Declared noxious weeds under the CaLP Act (S = State Prohibited Weeds – any infestations must be reported to DEECA that is responsible for control of these; P = Regionally Prohibited Weeds – landowners must eradicate these; C = Regionally Controlled Weeds – landowners must prevent the growth and spread of these; R = Restricted Weeds – trade in these weeds and propagules, either as plants, seeds or contaminants in other materials is prohibited).

* = introduced to Victoria

= Victorian native taxa occurring outside the natural range

† = planted

Appendix 4: Likelihood of occurrence of listed flora

Common Name	Scientific name	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 (DCCEEW 2023b).	-	-	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	Marginal 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 in nearby EVC 125 habitat. **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 (DCCEEW 2023b).	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 (DCCEEW 2023b).	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 2023).	-	-	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**
Spiny Peppercress	*Lepidium aschersonii*	VU	en	Spiny Peppercress occurs in periodically wet sites such as gilgai depressions and the margins of freshwater and saline marshes and shallow lakes, usually on heavy clay soil. Almost all sites receive some degree of soil waterlogging or seasonal flooding (DCCEEW 2023b).	-	-	Marginal suitable habitat within areas of Plains Grassy Wetland (EVC 125) exist, although no records in search region. Not detected in targeted surveys in nearby EVC 125 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 (DCCEEW 2023b).	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 2023).	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	Marginal suitable habitat within areas of Plains Grassy Wetland (EVC 125). Not detected in targeted surveys in nearby EVC 125 habitat. **Unlikely to occur.**

Common Name	Scientific name	Conservation status		Habitat	Number of records	Date of last record	Likelihood of occurrence
		EPBC	FFG				
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 (DCCEEW 2023b).	-	-	Lack of nearby records, however marginal suitable habitat within areas of Plains Grassy Wetland (EVC 125) exists. Not detected in targeted surveys in nearby EVC 125 habitat. **Unlikely to occur.**
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 2023).	-	-	Lack of suitable treed and/or grassland habitat. **Unlikely to occur**
Large-headed Fireweed	*Senecio macrocarpus*	VU	cr	Victoria, occurs most commonly in grasslands on red-brown earth soils; may also occur in grassy woodlands and open woodlands predominantly in the Western (Basalt) Plains grassland on red brown earth soils formed on recent Quaternary (basalt) deposits (DCCEEW 2023b).	-	-	Lack of suitable habitat in study area. **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).	-	-	Lack of nearby records, however marginal suitable habitat within areas of Plains Grassy Wetland (EVC 125) exists. Not detected in targeted surveys in nearby EVC 125 habitat. **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 (DCCEEW 2023b).	-	-	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 (DCCEEW 2023b).	-	-	Lack of nearby records, however marginal suitable habitat within areas of Plains Grassy Wetland (EVC 125) exists. Not detected in targeted surveys in nearby EVC 125 habitat. **Unlikely to occur.**

Notes: EPBC-T = threatened species status under EPBC Act; **FFG** = threatened species status under the FFG Act.

Appendix 5: Likelihood of occurrence of listed fauna

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 (DCCEEW 2023b).	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 foraging habitat on site within areas of Plains Grassy Wetland (EVC 125). Nearest records occurring within Cockatoo Swamp approximately 3km away. **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

Common Name	Scientific name	EPBC-T	EPBC-M	FFG	Habitat	Number of records	Date of last record	Likelihood of occurrence
								and Moyne River. **Potential to occur.**
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. **Potential 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. **Potential 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	No suitable habitat. **Unlikely 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	No suitable habitat. **Unlikely 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 (DCCEEW 2023b).	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 (DCCEEW 2023b).	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 (DCCEEW 2023b). 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 Hypochaeris 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 mouse burrows. The majority of sites in Victoria and NSW occur on cracking clay soils with some surface rock which provide shelter for the species (DCCEEW 2023b).	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: grey shading indicates species that are likely to or have the potential to occur in the study area; **EPBC-T** = threatened species status under EPBC Act; **EPBC-M =** migratory status under the EPBC Act (M = listed migratory taxa; Bonn Convention (A2H) - Convention on the Conservation of Migratory Species of Wild Animals – listed as a member of a family; Bonn Convention (A2S) - Convention on the Conservation of Migratory Species of Wild Animals - species listed explicitly; CAMBA - China-Australia Migratory Birds Agreement; JAMBA - Japan-Australia Migratory Birds Agreement; ROKAMBA - Republic of Korea Australia Migratory Birds Agreement); **FFG** = threatened species status under the FFG Act.

Appendix 6: Photographs of native vegetation proposed for removal

All photographs were taken on the 6th and 7th March 2023.

Photo 1: Habitat Zone B

Photo 2: Habitat Zone D

Photo 3: Habitat Zone F

Photo 4: Habitat Zone H

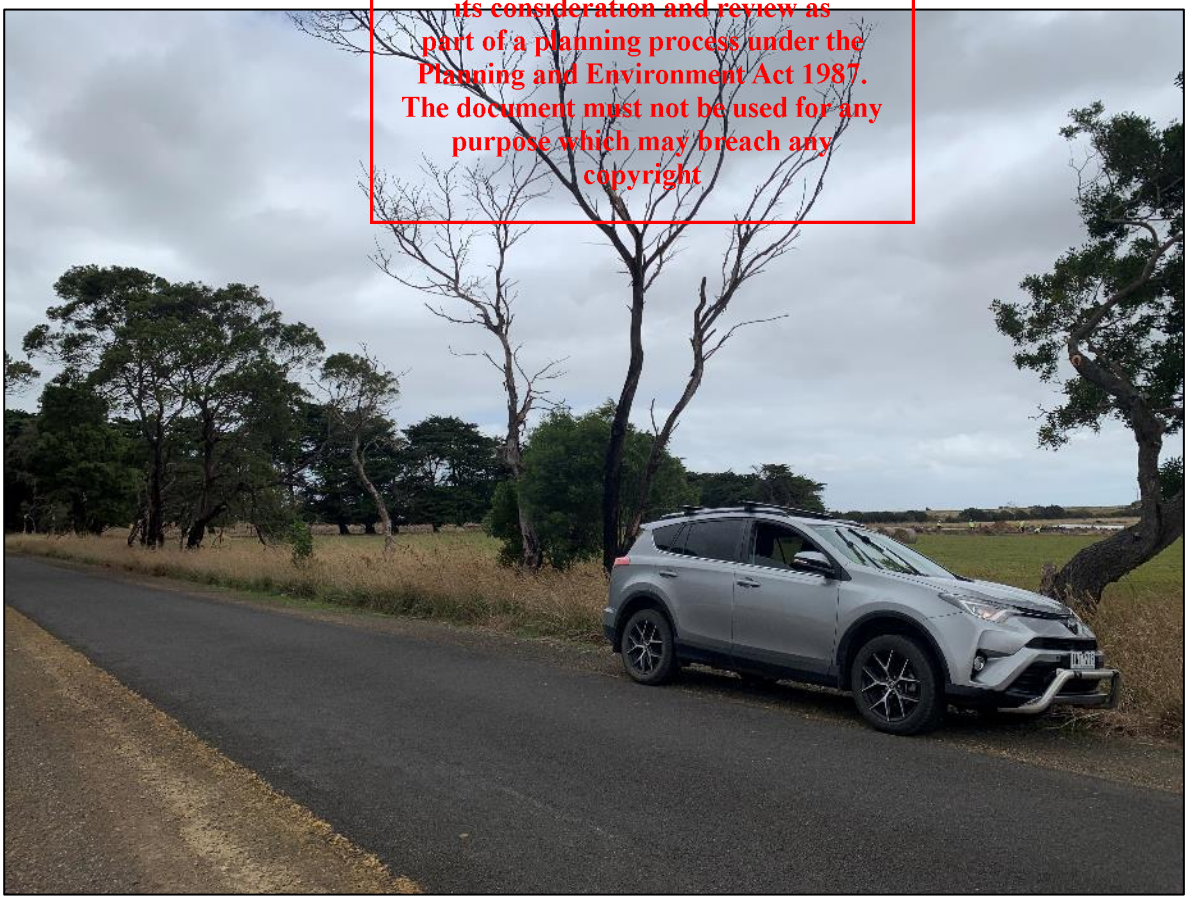


Photo 5: Habitat Zone U

Appendix 7: 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: **26/06/2024**
Time of issue: **10:23 am**

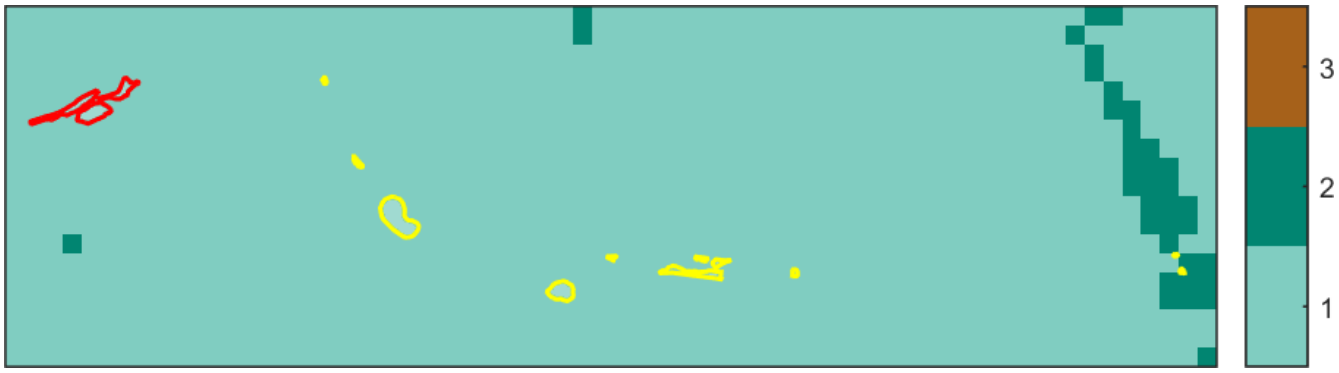
Report ID: NAA_2024_096

Project ID	14144_TarroneTS_BESS_removal_240625

Assessment pathway

Assessment pathway	**Intermediate Assessment Pathway**
Extent including past and proposed	0.498 ha
Extent of past removal	0.186 ha
Extent of proposed removal	0.313 ha
No. Large trees proposed to be removed	0
Location category of proposed removal	Location 2 The native vegetation is in an area mapped as an endangered Ecological Vegetation Class (as per the statewide EVC map). Removal of less than 0.5 hectares of native vegetation in this location will not have a significant impact on any habitat for a rare or threatened species.

1. Location map



Offset requirements if a permit is granted

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

General offset amount[1]	0.095 general habitat units
Vicinity	Glenelg Hopkins Catchment Management Authority (CMA) or Moyne Shire Council
Minimum strategic biodiversity value score[2]	0.302
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 Intermediate Assessment Pathway and it will be assessed under the Intermediate 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

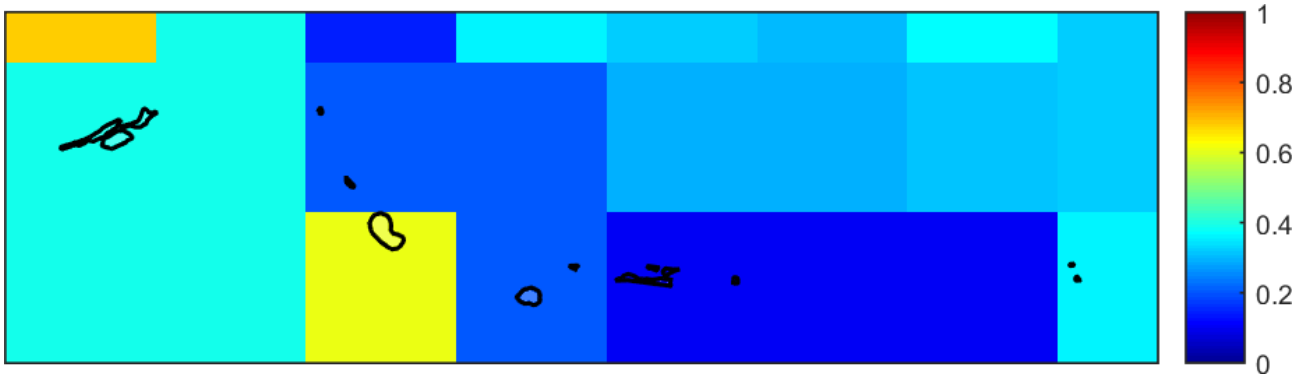
Information provided by or on behalf of the applicant in a GIS file							Information calculated by EnSym					
Zone	Type	BioEVC	BioEVC conservation status	Large tree(s)	Partial removal	Condition score	Polygon Extent	Extent without overlap	SBV score	HI score	Habitat units	Offset type
1-W	Patch	vvp_0649	Endangered	0	no	0.210	0.003	0.003	0.200		0.001	General
1-M	Patch	vvp_0649	Endangered	0	no	0.290	0.007	0.007	0.200		0.002	General
1-H	Patch	vvp_0649	Endangered	0	no	0.290	0.152	0.152	0.610		0.053	General
1-B	Patch	vvp_0125	Endangered	0	no	0.320	0.065	0.065	0.200		0.019	General
1-D	Patch	vvp_0125	Endangered	0	no	0.320	0.006	0.006	0.100		0.002	General
1-F	Patch	vvp_0649	Endangered	0	no	0.290	0.054	0.054	0.100		0.013	General
1-X	Patch	vvp_0649	Endangered	0	no	0.290	0.012	0.012	0.100		0.003	General
1-C	Patch	vvp_0125	Endangered	0	no	0.320	0.006	0.006	0.100		0.001	General
1-G	Patch	vvp_0649	Endangered	0	no	0.290	0.004	0.004	0.200		0.001	General
1-U	Patch	vvp_0055_61	Endangered	0	no	0.090	0.003	0.003	0.360		0.000	General
1-V	Patch	vvp_0055_61	Endangered	0	no	0.090	0.002	0.002	0.360		0.000	General

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

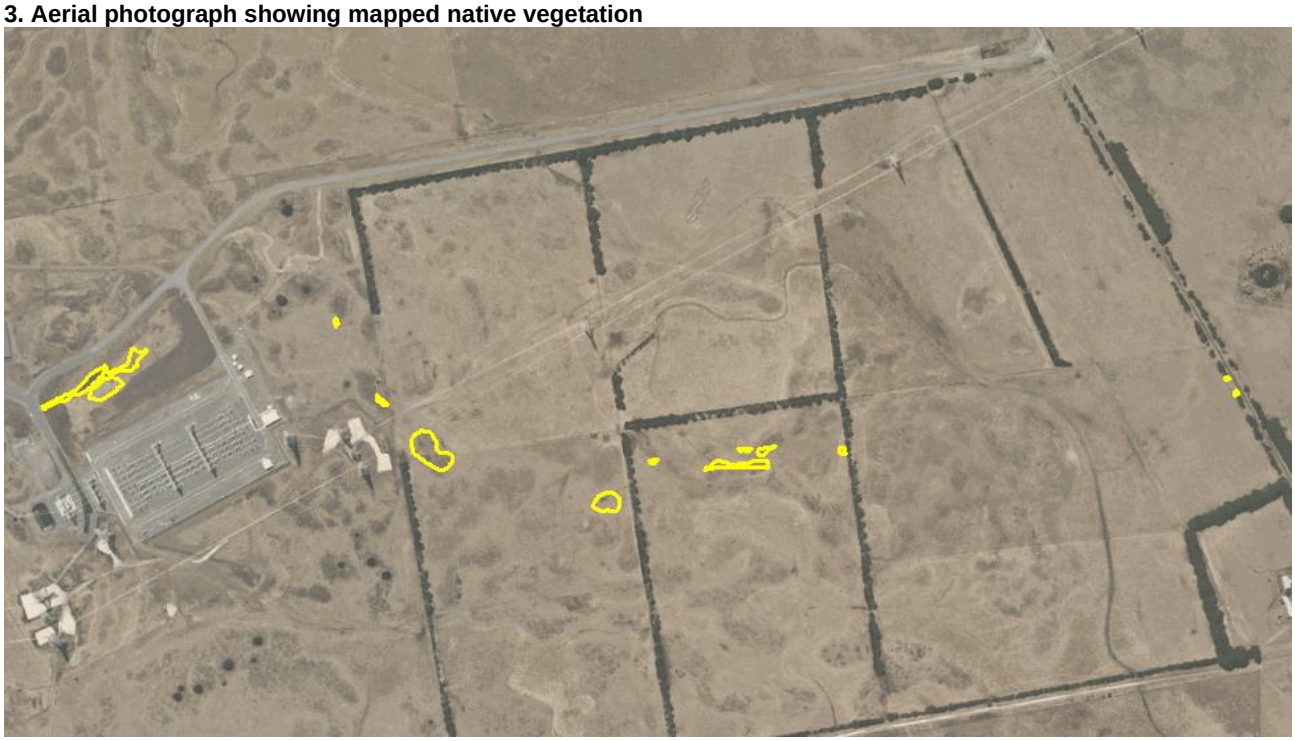
This is not applicable in the Intermediate Assessment Pathway.

Appendix 3 – Images of mapped native vegetation

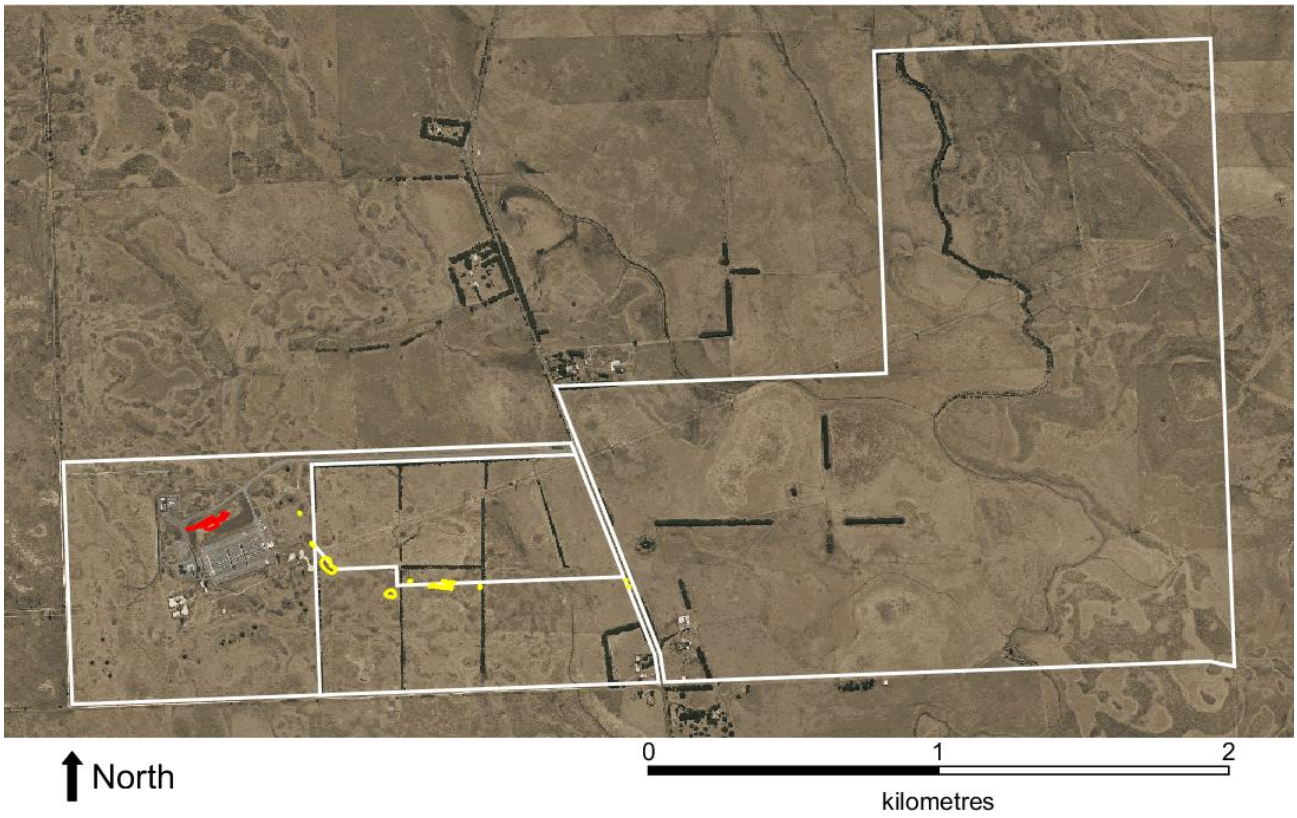
2. Strategic biodiversity values map



3. Aerial photograph showing mapped native vegetation



4. Map of the property in context



Yellow boundaries denote areas of proposed native vegetation removal.

Red boundaries denote areas of past removal.

Appendix 8: 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: 26/06/2024 12:46 **Report ID: 25028**

What was searched for?

General offset

General habitat units	Strategic biodiversity value	Large trees	Vicinity (Catchment Management Authority or Municipal district)
0.095	0.302	0	CMA: Glenelg Hopkins or LGA: Moyne Shire

Details of available native vegetation credits on 26 June 2024 12:46

These sites meet your requirements for general offsets.

Credit Site ID	GHU	LT	CMA	LGA	Land owner	Trader	Fixed price	Broker(s)
BBA-0639	4.618	0	Glenelg Hopkins	Moyne Shire	Yes	Yes	No	Bio Offsets
BBA-0667	1.567	0	Glenelg Hopkins	Southern Grampians Shire	Yes	Yes	No	Contact NVOR
BBA-1139_05	1.141	0	Glenelg Hopkins	Moyne Shire	No	Yes	No	VegLink
BBA-2088	0.193	5	Glenelg Hopkins	Southern Grampians Shire	Yes	Yes	No	VegLink
BBA-2467	0.236	11	Glenelg Hopkins	Glenelg Shire	No	Yes	No	
BBA-3027	1.231	267	Glenelg Hopkins	Pyrenees Shire	Yes	Yes	No	VegLink
BBA-3041	0.289	252	Glenelg Hopkins	Moyne Shire	Yes	Yes	No	VegLink
TFN-C0228	4.637	0	Glenelg Hopkins	Glenelg Shire	No	Yes	No	Bio Offsets
TFN-C0543	0.407	7	Glenelg Hopkins	Southern Grampians Shire	No	Yes	No	Bio Offsets
VC_CFL-3693_01	2.194	600	Glenelg Hopkins	Ararat Rural City	Yes	Yes	No	VegLink
VC_CFL-3727_01	12.327	24	Glenelg Hopkins	Ararat Rural City	Yes	Yes	No	VegLink
VC_CFL-3756_01	25.909	0	Glenelg Hopkins	Ararat Rural City	Yes	Yes	No	VegLink

VC_CFL-3763_01	3.246	266	Glenelg Hopkins	Glenelg Shire	Yes	Yes	No	VegLink
VC_TFN-C2046_01	7.575	1446	Glenelg Hopkins	Southern Grampians Shire	Yes	Yes	No	Ecocentric, Ethos, 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)

There are no potential sites listed in the Native Vegetation Credit Register that meet your offset requirements.

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

Next steps

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

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

Broker contact details

Broker Abbreviation	Broker Name	Phone	Email	Website
Abezco	Abzeco Pty. Ltd.	(03) 9431 5444	offsets@abzeco.com.au	www.abzeco.com.au
Baw Baw SC	Baw Baw Shire Council	(03) 5624 2411	bawbaw@bawbawshire.vic.gov.au	www.bawbawshire.vic.gov.au
Bio Offsets	Biodiversity Offsets Victoria	0452 161 013	info@offsetsvictoria.com.au	www.offsetsvictoria.com.au
Contact NVOR	Native Vegetation Offset Register	136 186	nativevegetation.offsetregister@delwp.vic.gov.au	www.environment.vic.gov.au/native-vegetation
Ecocentric	Ecocentric Environmental Consulting	0410 564 139	ecocentric@me.com	Not 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 DEECA Customer Service Centre 136 186 or the Native Vegetation Credit Register at nativevegetation.offsetregister@delwp.vic.gov.au