Bembaala Farm:

Flora and fauna assessment

FINAL REPORT

Prepared for goFARM Australia Pty Ltd

25 October 2023

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- goFARM: Nick Raleigh
- Victorian Government Department of Environment, Energy and Climate Action for access to the Victorian Biodiversity Atlas, NatureKit and EnSym/Native Vegetation Information Management tool
- Australian Government Department of Climate Change, Energy, the Environment and Water for access to the Protected Matters Search Tool

Biosis staff involved in this project were:

- Georgina Zacks (assistance in the field)
- Ewan Kelly and Danielle Eastick (fauna reporting)
- Astrid Mackegard, Samantha Blades and Michael Knudsen (mapping)
- Jeff Yugovic (quality assurance)

Summary

Biosis Pty Ltd was commissioned by goFARM Australia (goFARM) to undertake a flora and fauna assessment of the Bembaala and Griffiths farms which are to be developed into high value agricultural land (permanent plantation orchards). The study area for this report is the combined Bembaala and Griffiths farms in Katunga, Victoria.
The study area is zoned as farmland (FZ1) and is situated approximately 6.5 kilometres north of Numurkah and approximately 21 kilometres south-west of Cobram.

Ecological values

Key ecological values identified within the study area are as follows:

- Native patch vegetation consistent with EVC 803 Plains Woodland in low to moderate condition states.
- Scattered trees throughout the study area, many large trees with hollows.
- Potential and/or known habitat for the following flora threatened under the *Flora and Fauna Guarantee Act 1988* (FFG Act):
  - Buloke *Allocasuarina luehmannii* (Critically Endangered, FFG Act)
  - Spiny-fruit Saltbush *Atriplex spinibractea* (Endangered, FFG Act)
- Potential habitat for the following fauna threatened under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) and/or FFG Act:
  - Swift Parrot *Lathamus discolor* (Critically Endangered, EPBC Act and FFG Act)
  - Superb Parrot *Polytelis swainsonii* (Vulnerable, EPBC Act; Endangered, FFG Act)
  - White-throated Needletail *Hirundapus caudacutus* (Vulnerable, EPBC Act and FFG Act)
  - Blue-winged Parrot *Neophema chrysostoma* (Vulnerable, EPBC Act)
  - Brown Treecreeper *Climacteris picumnus* (Vulnerable, EPBC Act)
  - Plumed Egret *Ardea intermedia plumifera* (Critically Endangered, FFG Act)
  - Black Falcon *Falco subniger* (Critically Endangered, FFG Act)
  - Barking Owl *Ninox connivens* (Critically endangered, FFG Act)
  - Brolga *Antigone rubicunda* (Endangered, FFG Act)
  - Little Egret *Egretta garzetta* (Endangered, FFG Act)
  - Eastern Great Egret *Ardea alba modesta* (Vulnerable, FFG Act)
  - Musk Duck *Biziura lobata* (Vulnerable, FFG Act)
  - Little Eagle *Hieraaetus morphnoides* (Vulnerable, FFG Act)
  - Grey-crowned Babbler *Pomatostomus temporalis* (Vulnerable, FFG Act).

Government legislation and policy

An assessment of the project in relation to key biodiversity legislation and policy is summarised below.

Legislation / policy	Relevant ecological feature on site	Permit / approval required	Notes
***Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act)**	Suitable habitat for threatened EPBC Act fauna on site: • Swift Parrot • Superb Parrot • White-throated Needletail • Blue-winged Parrot • Brown Treecreeper No threatened EPBC Act communities are present on site (Appendix A.3).	Referral not recommended (see section 4.1).	Significant impacts on matters of national environmental significance are not expected to occur as a result of the proposed works. See Section 4.1.1 for discussion of impacts on matters of national environmental significance.
***Flora and Fauna Guarantee Act 1988* (FFG Act)**	Six protected flora species are present on site as recorded in the site assessment (Appendix A.1). Suitable habitat for threatened FFG Act flora species on site (Appendix A.2): • Buloke (recorded on site) • Spiny-fruit Saltbush Suitable habitat for the following FFG Act fauna species (Appendix B.1): • Swift Parrot • Superb parrot • White-throated Needletail • Blue-winged Parrot • Brown Treecreeper • Plumed Egret • Black Falcon • Barking Owl • Brolga • Little Egret • Eastern Great Egret • Musk Duck • Little Eagle • Grey-crowned Babbler	Protected Flora Permit not required as on private land.	Site is private land. The proponent should consider impacts on FFG Act species recorded and likely to occur in the study area through reducing impacts on remnant vegetation. Impacts on patch vegetation have been reconsidered by goFARM and have now been excluded from the impact footprint and will be treated as no-go zones during construction.
Planning and Environment Act 1987	All indigenous vegetation to be removed.	Planning permit required to remove, destroy or lop native vegetation.	The proposed works include 1.960 hectares of native vegetation to be removed including 26 large scattered trees. Assessment against the Guidelines has been undertaken.

Legislation / policy	Relevant ecological feature on site	Permit / approval required	Notes
***Catchment and Land Protection Act 1994* (CaLP Act)**	Six noxious weeds recorded on site (Appendix A.1). No pest animals recorded on site.	Comply with requirements to control/eradicate noxious weeds identified on site.	See section 4.2.2.
Water Act 1989	Dams and channels in the study area.	Referral to Goulburn Broken Catchment Management Authority.	Discuss implications of proposed works impacts on these waterways with Goulburn Broken CMA.

Guidelines for the removal, destruction or lopping of native vegetation (the Guidelines)

Based on the current design, the proposed development will require the removal of 1.960 hectares of native vegetation, including 26 large trees, from within Location category 3. Therefore the planning permit application will be assessed on the Detailed Assessment Pathway. The strategic biodiversity value score of the native vegetation to be removed ranges between 0.100 and 0.720.

If a permit is granted, the offset requirements would be 0.377 general habitat units and 26 large trees. The general offset must be within the Goulburn Broken Catchment Management Authority area or the Moira Shire area, and must have a minimum strategic biodiversity value score of 0.227.

It is the intention of goFARM to purchase the offset credits from the Victorian Native Vegetation Credit Register (NVCR). A quote is provided in Appendix F.

Recommendations

This report includes recommendations to assist goFARM to plan, design and complete the proposed works in a way that reduces impacts on biodiversity. Actions to minimise impacts on native vegetation and threatened species habitat need to be considered at the design stage and mitigation measures will need to be implemented through a project Construction Environmental Management Plan (CEMP). Future requirements for infrastructure must be forecast as much as possible at this time and allowance made outside any nominated reserves for all construction works. All areas of vegetation/habitat nominated in this report as 'retained' are to be treated as no-go zones and are not to be encroached upon as development progresses.

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1. Introduction

1.1. Project background

Biosis Pty Ltd was commissioned by goFARM Australia (goFARM) to undertake a flora and fauna assessment of the Bembaala and Griffiths farms which are to be developed into high value agricultural land (walnut farms). The study area for this report is the combined Bembaala and Griffiths farms in Katunga, Victoria.

1.2. Scope of assessment

The objectives of this investigation are to:

- Describe the vascular flora (ferns, conifers, flowering plants), vertebrate fauna (mammals, birds, reptiles, frogs, fishes) and decapod crustacea (e.g. crayfish).
- Map native vegetation and other habitat features.
- Conduct a vegetation quality assessment.
- Review the implications of relevant biodiversity legislation and policy, including Victoria's Guidelines for the removal, destruction or lopping of native vegetation ('the Guidelines').
- Identify potential implications of the proposed development and provide recommendations to assist with development design.
- Recommend any further assessments of the site that may be required e.g. a vegetation impact assessment or targeted searches for threatened species.

1.3. Location of the study area

The study area is located approximately 6.5 kilometres north of Numurkah and approximately 21 kilometres south-west of Cobram (Figure 1). The study area is the combined Bembaala and Griffiths farm properties encompassing approximately 1,220 hectares of private land and the adjacent road reserves. It is currently zoned as farmland (FZ1).

The study area is situated within a matrix of cleared and cultivated lands. The broader landscape features similar habitat to the study area with fragmented remnant vegetation in the form of scattered trees and patches of native vegetation with cleared or cropped paddocks. There is little connectivity between native vegetation in the study area and large areas of remnant native vegetation in the broader landscape.

The study area is within the:

- Murray Fans Bioregion
- Broken River Basin (Goulburn Broken Catchment)
- Management the Goulburn Broken Catchment Management Authority (CMA)
- Shire of Moira.

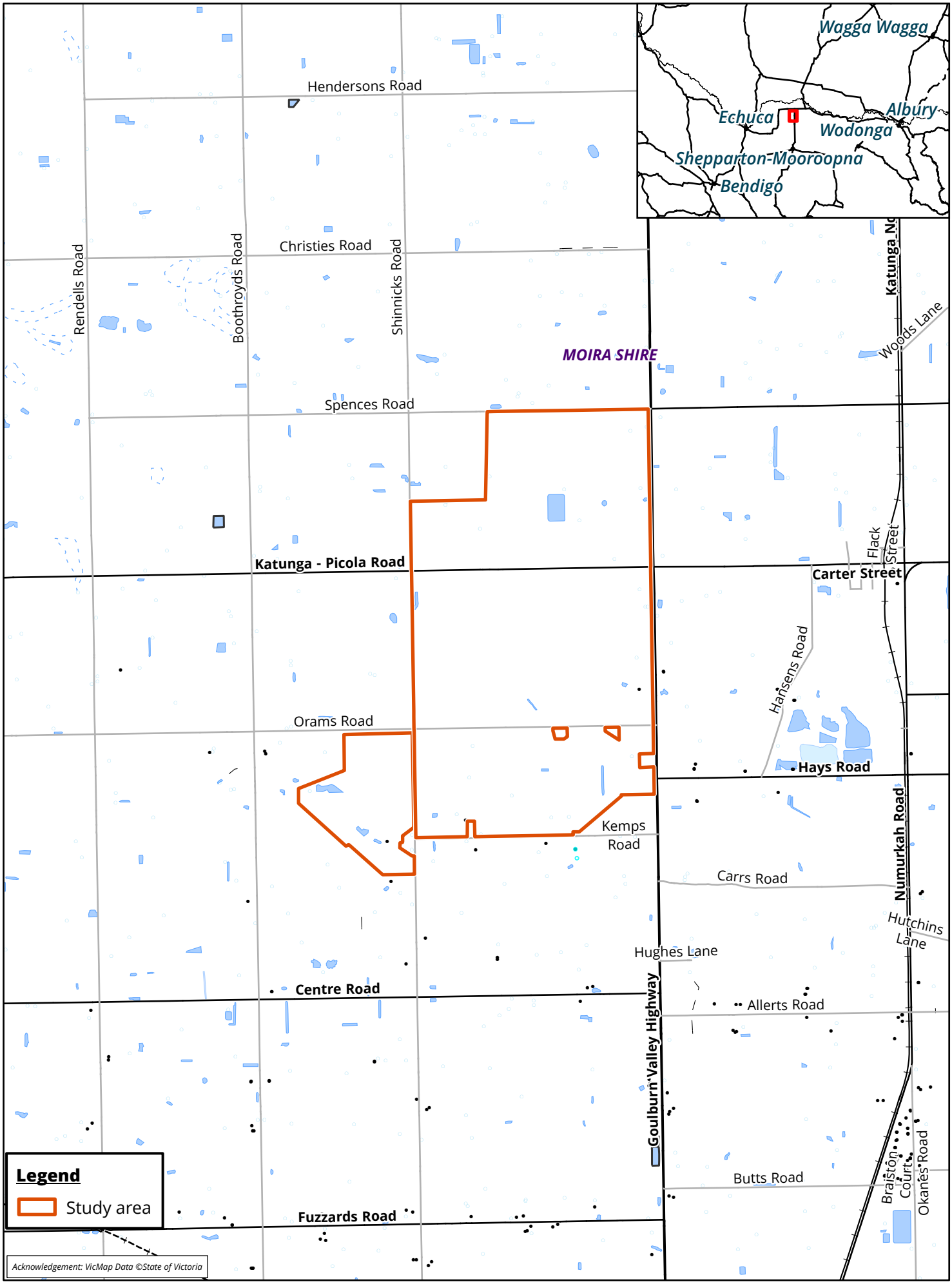


Figure 1 Location of the study area

biosis

Matter: 38042,
Date: 19 April 2023 ,
Prepared for: JC, Prepared by: AM, Last edited by: amackegard
Layout: 38042_F1_Locality
Project: P:\38000s\38042\Mapping\38042_GoFARM_FFA_BembalaGriffiths.aprx

0 500 1,000 1,500 2,000
Metres

Scale: 1:50,000 @ A4
Coordinate System GDA 1994 MGA Zone 55

N

00

2. Methods

2.1. Database review

In order to provide a context for the study area, information about flora and fauna from within 5 kilometres of the study area (the 'local area') was obtained from relevant biodiversity databases, many of which are maintained by the Victorian Government Department of Energy, Environment and Climate Action (DEECA) (formerly Department of Environment, Land, Water and Planning (DELWP)) or the Australian Government Department of Climate Change, Energy, the Environment and Water (DCCEEW). Records from the following databases were collated and reviewed:

- DEECA's Victorian Biodiversity Atlas (VBA), including the 'VBA_FLORA25, FLORA100 & FLORA Restricted' and 'VBA_FAUNA25, FAUNA100 & FAUNA Restricted' datasets
- DCCEEW's Protected Matters Search Tool for matters protected by the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act)

Other sources of biodiversity information were examined including:

- DEECA's NatureKit mapping tool
- DEECA's Habitat Importance maps
- DEECA's Native Vegetation Information Management (NVIM) system
- DEECA's Ensym NVR Tool Support team was provided with site-based spatial information in order to generate a Native Vegetation Removal Report for the study area.
- Planning Scheme overlays relevant to biodiversity based on http://planningschemes.dpcd.vic.gov.au.

2.2. Definitions of threatened species or communities

Threatened species and communities are listed under the EPBC Act and/or FFG Act. The conservation status of a species or ecological community is determined by its listing status under Commonwealth or State legislation/policy (Table 1).

Table 1 Conservation status of threatened species and ecological communities

Government level	Conservation status
National	Listed as nationally critically endangered, endangered or vulnerable under the EPBC Act
State	Listed as extinct, extinct in the wild, critically endangered, endangered, vulnerable or conservation dependent in Victoria under the FFG Act

Lists of threatened species generated from the databases are provided in Appendix A (flora) and Appendix B (fauna) and the species have been assessed to determine their likelihood of occurrence based on the following process.

2.3. Determining likelihood of occurrence of threatened species

Likelihood of occurrence indicates the potential for a species or ecological community to occur regularly within the study area. It is based on expert opinion, information in relevant biodiversity databases and reports, and an assessment of the habitats on site. Likelihood of occurrence is ranked as negligible, low, medium, high or recorded. The rationale for the rank assigned is provided for each species in Appendix A (flora) and Appendix B (fauna). Those species for which there is little or no suitable habitat within the study area are assigned a likelihood of low or negligible and are not considered further.

Only those species listed under the EPBC Act or the FFG Act (hereafter referred to as ' threatened species') are assessed to determine their likelihood of occurrence. The habitat value for threatened species is calculated by the Habitat Importance Modelling produced by DEECA (DELWP 2017a). Where threatened species are recorded in the study area this is noted in Appendix A (flora) and Appendix B (fauna).

Threatened species which have at least medium likelihood of occurrence are given further consideration in this report. The need for targeted survey for these species is also considered.

2.4. Site investigation

2.4.1. Flora assessment

The flora assessment was undertaken by Consultant Botanist Georgina Zacks and Botanist Jessica Chapman on 15–16 November 2022. A list of flora species was compiled and will be submitted to DEECA for incorporation into the Victorian Biodiversity Atlas. Planted species were not been recorded unless they were naturalised.

Native vegetation is defined in the Victoria Planning Provisions as 'plants that are indigenous to Victoria, including trees, shrubs, herbs, and grasses' (Clause 73.01).

The Guidelines classify native vegetation into two categories (DELWP 2017a):

- A **patch** of native vegetation (measured in hectares) is either:
  - An area of native vegetation, with or without trees, where at least 25% of the total perennial understorey cover is native plants.
  - An area with three or more native canopy trees where the drip line (i.e. the outermost boundary of a tree canopy) of each tree touches the drip line of at least one other tree, forming a continuous canopy.
  - Any mapped wetland included in the Current wetlands map, available in DEECA systems and tools.

Patch vegetation is classified into ecological vegetation classes (EVCs). An EVC contains one or more floristic (plant) communities, and represents a grouping of broadly similar environments. Definitions of EVCs and benchmarks (condition against which vegetation quality at the site can be compared) are determined by DEECA.

- A **scattered tree** is defined as a native canopy tree that does not form part of a patch of native vegetation.

A canopy tree is a mature tree that is greater than three metres in height and is normally found in the upper layer of a vegetation type. Ecological vegetation class descriptions provide a list of the typical canopy species. A scattered tree is defined as either small or large, and is determined using the large tree benchmark for the relevant EVC. The extent of a small scattered tree is the area of a circle with a 10 metre radius (i.e. 0.031

hectares), while the extent of a large scattered tree is a circle with a 15 metre radius (i.e. 0.070 hectares). A condition score is applied to each scattered tree based on information provided by DEECA's NVIM.

A Vegetation Quality Assessment (VQA) was undertaken for all patches of native vegetation identified in the study area consistent with DEECA's habitat hectare method (DSE 2004) and the Guidelines (DELWP 2017a). For the purposes of this assessment the limit of the resolution for identification of a patch of native vegetation was taken to be 0.001 habitat hectares (Hha). That is, if a discrete patch native vegetation was present with sufficient cover but its condition and extent would not have resulted in the identification of at least 0.001 habitat hectares, the vegetation patch of vegetation was not mapped in the assessment.

Species nomenclature for flora follows the Victorian Biodiversity Atlas (VBA).

2.4.2. Fauna assessment

A desktop fauna assessment was undertaken by Senior Ecologist Ewan Kelly to assess the fauna habitat values of the study area, and to determine the likelihood of threatened fauna species occurring. The desktop fauna assessment incorporated a review of database records of significant fauna species, along with photographs and vegetation descriptions obtained during the flora assessment.

2.4.3. Permits

Biosis undertakes flora and fauna assessments under the following permits and approvals:

- Permit to Take/Keep Protected Flora issued by DEECA under the *Flora and Fauna Guarantee Act 1988* (FFG Act) (Permit Number 10010194)

2.5. Qualifications

Ecological surveys provide a sampling of flora and fauna at a given time and season. There are several reasons why not all species may be detected at a site during survey, such as low abundance, patchy distribution, species dormancy, seasonal conditions, and migration and breeding behaviours. In many cases these factors do not present a significant limitation to assessing the overall biodiversity values of a site.

The current flora and fauna assessment was conducted in spring, which is an optimal time for survey. The survey effort was sufficient to assess the general values of the study area.

Native Vegetation Removal Reports are prepared through DEECA's NVIM system or requested through DEECA's Ensym NVR Tool Support team. Biosis supplies relevant site-based spatial information as inputs to DEECA and we are entirely reliant on DEECA's output reports for all assessment pathway applications. Biosis makes every effort to ensure site and spatial information entered into the NVIM, or supplied to DEECA, is an accurate reflection of proposed native vegetation removal.

2.6. Legislation and policy

The implications for the project were assessed in relation to key biodiversity legislation and policy including:

- Matters listed under the EPBC Act, associated policy statements, significant impacts guidelines, listing advice and key threatening processes
- Threatened taxa, communities and threatening processes listed under Section 10 of the FFG Act and associated action statements and listing advice

- Guidelines for the removal, destruction or lopping of native vegetation (DELWP 2017a)
- *Planning and Environment Act 1987* – specifically Clause 52.17
- Noxious weeds and pest animals lists under the *Catchment and Land Protection Act 1994* (CaLP Act)
- *Water Act 1989* – specifically relating to water bodies in the study area.

2.7. Mapping

The current site plans were received by Biosis from goFARM on 10 September 2023 ([13378a23_Bembala_Landforming_Extents_030823] and [Bembala Eastwood Biosis Tree Info]).

Mapping was conducted using hand-held GPS-enabled tablets and aerial photo interpretation. The accuracy of this mapping is therefore subject to the accuracy of the tablets (generally ±7 metres) and dependent on the limitations of aerial photo rectification and registration.

Mapping has been produced using a Geographic Information System (GIS). Electronic GIS files which contain our flora and fauna spatial data are available to incorporate into design concept plans. However this mapping may not be sufficiently precise for detailed design purposes.

3. Results

The ecological features of the study area are described below and mapped in Figure 2.

Species recorded during the flora and fauna assessment are listed in Appendix A (flora) and Appendix B (fauna). Unless of particular note, these species are not discussed further.

Threatened species recorded or predicted to occur in the local area are also listed in these appendices, along with an assessment of the likelihood of the species occurring within the study area.

3.1. Vegetation and fauna habitat

Most of the study area is currently used for crops and has been significantly modified historically. Predominantly introduced vegetation is present on site as the understorey of native patch vegetation and in areas adjacent to disturbed areas. Predominantly introduced vegetation is of limited ecological value to native threatened species. Ecological features present within the study area include small patches of remnant native vegetation consistent with EVC 803 Plains Woodland and scattered trees are present in cropped paddocks. The study area features farm dams and channels as well as some degraded drainage lines.

These features are described further in Table 2 and mapped in Figure 2. Photos are provided in Appendix C.

Table 2 Summary of vegetation and habitat types within the study area

Vegetation or habitat type	Description	Location	Significant values
Ecological Vegetation Class (EVC): 803 Plains Woodland **Bioregional Conservation Status (BCS): Endangered** **Photo 1 -Photo 2**	**Structure:** Grassy or sedgy woodland to 15 metres tall. Canopy dominated by Grey Box *Eucalyptus microcarpa*. Buloke *Allocasuarina luehmannii*, Black Box *Eucalyptus largiflorens* and White Cypress-pine *Callitris glaucophylla* also present throughout the study area. The midstorey is generally sparse and the understorey has varying scattered native species and predominantly introduced vegetation. **Character species:** Grey Box dominated with Buloke and Black Box present. Sparse shrub layer includes predominantly introduced vegetation, mainly dominated by Boxthorn *Lycium ferocissimum* with scattered Lightwood *Acacia implexa*. In some channels, Common Reed *Phragmites australis* is present. Understorey is sparse to moderately sparse with introduced species as the dominant cover with scattered native grass, herb and sedge species including Wallaby Grass *Rytidosperma* species, Windmill Grass *Chloris truncata*, Knob Sedge *Carex inversa*, Jersey Cudweed *Laphangium luteoalbum*, Common Nardoo *Marsilea drummondii* and Grassland Wood-sorrel *Oxalis perennans.* **Weeds:** Common introduced species include Spear Thistle *Cirsium vulgare,* Paterson's Curse *Echium plantagineum*, African Box-thorn *Lycium ferocissimum*, Soursob *Oxalis pes-caprae*, Sweet briar *Rosa rubiginosa,* Bearded Oat *Avena barbata*, Annual Veldt-grass *Ehrharta longifolia* and Toowoomba Canary-grass *Phalaris aquatica*.	Patches of EVC 803 Plains Woodland are scattered throughout the study area.	Plains Woodland in the study area offers possible suitable habitat for EPBC Act threatened species Swift Parrot, Superb Parrot, Blue-winged Parrot and Brown Treecreeper. White-throated Needletail could utilise the airspace above eucalypts. A range of FFG Act species could utilise the Plains Woodland on site including Black Falcon, Little Eagle, Barking Owl and Grey-crowned Babbler.
Scattered trees **Photo 3**	Remnant scattered trees are Grey Box, Buloke, White Cypress-pine and Black Box.	Throughout the study area, generally in cleared and cropped paddocks.	Scattered trees offer possible foraging habitat for EPBC Act threatened species Swift Parrot and Superb Parrot. White-throated Needletail could utilise the airspace above eucalypts. A range of FFG Act species could utilise scattered trees on site including Black Falcon, Little Eagle, Barking Owl and Grey-crowned Babbler.

Vegetation or habitat type	Description	Location	Significant values
Planted vegetation **Photo 4**	Planted species are generally adjacent to roadsides and residential/farm buildings or lining paddock boundaries as windbreaks. Species include Sugar Gum *Eucalyptus cladocalyx*, Desert Ash *Fraxinus angustifolia*, River Red-gum *Eucalyptus camaldulensis* and Pepper Tree *Schinus molle*.	Throughout the study area.	Eucalypts in these areas offer possible foraging habitat for EPBC Act threatened species Swift Parrot, Superb Parrot, Blue-winged Parrot and Brown Treecreeper. White-throated Needletail could utilise the airspace above eucalypts. A range of FFG Act species could utilise the planted eucalypts on site including Black Falcon, Little Eagle, Barking Owl and Grey-crowned Babbler.
Predominantly introduced vegetation **Photo 5**	Predominantly introduced vegetation occurs in low to moderate habitat zones of native patch vegetation, throughout cropped paddocks and on the edges of roads, paddocks and residential areas. Habitat zones of EVC 803 are dominated by introduced species in the understorey.	Throughout the study area.	Predominantly introduced vegetation provides little ecological value for native fauna species.
Cropped area **Photo 6**	Paddocks of crops are throughout the entire study area. These crop paddocks are currently in use.	Throughout the study area.	FFG Act fauna species including Brolga may use crop paddocks on rare occasion in the study area.
Constructed dams and channels **Photo 7**	The majority of dams and channels are in a degraded state owing to the absence of woody vegetation and historically clearing and erosion of the surrounding areas. Nonetheless, the dams could provide habitat for waterbirds and amphibian species.	Throughout the study area.	The dams and channels could provide habitat for waterbirds and amphibian species. Some FFG threatened species may utilise the farm dams and channels in the study area including Brolga, Little Egret, Plumed Egret, Eastern Great Egret and Musk Duck.

3.2. Landscape context

The study area is situated within a matrix of cleared and cultivated lands in the broader landscape. The broader landscape features similar habitat to the study area with fragmented remnant vegetation in the form of scattered trees and patches of native vegetation. There is little connectivity between vegetation in the study area and the broader landscape. The study area is not subject to flooding. There are farm dams and channels present and the Number 5 Main Channel runs through the study area from the north and exits to the east.

3.3. Threatened species and ecological communities

Threatened species recorded or predicted to occur within 10 kilometres of the study area are listed in Appendix A (flora) and Appendix B (fauna). An assessment of the likelihood of these species occurring in the study area and an indication of where within the site (i.e. which habitats or features of relevance to the species) is included. A summary of those species recorded or with a medium or higher likelihood of occurring in the study area is provided in Table 3.

Table 3 Summary of EPBC and FFG Act listed species most likely to occur in the study area

Species name	Listing status	Area of value within the study area
Flora species		
Buloke *Allocasuarina luehmannii*	Critically Endangered under the FFG Act	Recorded throughout the study area as patch and scattered trees, EVC 803 Plains Woodland on site.
Spiny-fruit Saltbush *Atriplex spinibractea*	Endangered under the FFG Act	Grey Box Woodland, EVC 803 Plains Woodland on site.
Fauna species		
Swift Parrot *Lathamus discolor*	Critically Endangered under the EPBC Act Critically Endangered under the FFG Act	Grey Box Woodland, EVC 803 Plains Woodland on site.
Superb Parrot *Polytelis swainsonii*	Vulnerable under the EPBC Act Endangered under the FFG Act	Grey Box Woodland, EVC 803 Plains Woodland on site.
White-throated Needletail *Hirundapus caudacutus*	Vulnerable under the EPBC Act Vulnerable under the FFG Act	Airspace above Grey Box Woodland, EVC 803 Plains Woodland on site.
Blue-winged Parrot *Neophema chrystostoma*	Vulnerable under the EPBC Act	Grey Box Woodland, EVC 803 Plains Woodland on site.
Brown Treecreeper *Climacteris picumnus*	Vulnerable under the EPBC Act	Grey Box Woodland, EVC 803 Plains Woodland on site.
Plumed Egret *Ardea intermedia plumifera*	Critically Endangered under the FFG Act	Waterbodies in the study area on rare occasion.
Black Falcon *Falco subniger*	Critically Endangered under the FFG Act	Woodlands and planted eucalypts in the study area.

Species name	Listing status	Area of value within the study area
Barking Owl *Ninox connivens*	Critically Endangered under the FFG Act	Woodlands and planted eucalypts in the study area.
Brolga *Antigone rubicunda*	Endangered under the FFG Act	Croplands in the study area.
Little Egret *Egretta garzetta*	Endangered under the FFG Act	Waterbodies in the study area on rare occasion.
Eastern Great Egret *Ardea alba modesta*	Vulnerable under the FFG Act	Waterbodies in the study area on rare occasion.
Musk Duck *Biziura lobata*	Vulnerable under the FFG Act	Waterbodies in the study area on rare occasion.
Little Eagle *Hieraaetus morphnoides*	Vulnerable under the FFG Act	Woodlands and open area in the study area.
Grey-crowned Babbler *Pomatostomus temporalis*	Vulnerable under the FFG Act	Open woodlands and planted eucalypts.

3.3.1. DEECA habitat importance modelling for threatened species

To support decision making under the Guidelines, DEECA has produced maps for Victoria showing the modelled extent of habitat for most threatened species. These maps are called 'habitat importance maps' and they assign a 'habitat importance score' to a location based on the importance of that location in the landscape as habitat for a particular threatened species, in relation to other suitable habitat for that species (DELWP 2017a).

Under the Guidelines, these maps form the basis for determining the impact of potential native vegetation removal on threatened species. The maps only apply where a proposal to remove native vegetation is considered on the Detailed Assessment Pathway. The habitat importance scores are used to calculate the type and extent of biodiversity offsets required for native vegetation removal that impacts on individual threatened species habitat.

A summary of those species for which habitat is modelled in the study area is provided in Table 3. These data were provided by DEECA's Ensym NVR Tool Support team and a full output report from DEECA is provided in Appendix E.

Determination of the requirement for a species offset based on the extent of impact on one or more rare or threatened species is addressed in Section 5 and in Appendix E.

3.3.2. Threatened ecological communities

The following threatened ecological communities (TECs) are predicted to occur within the search area (Appendix A.3):

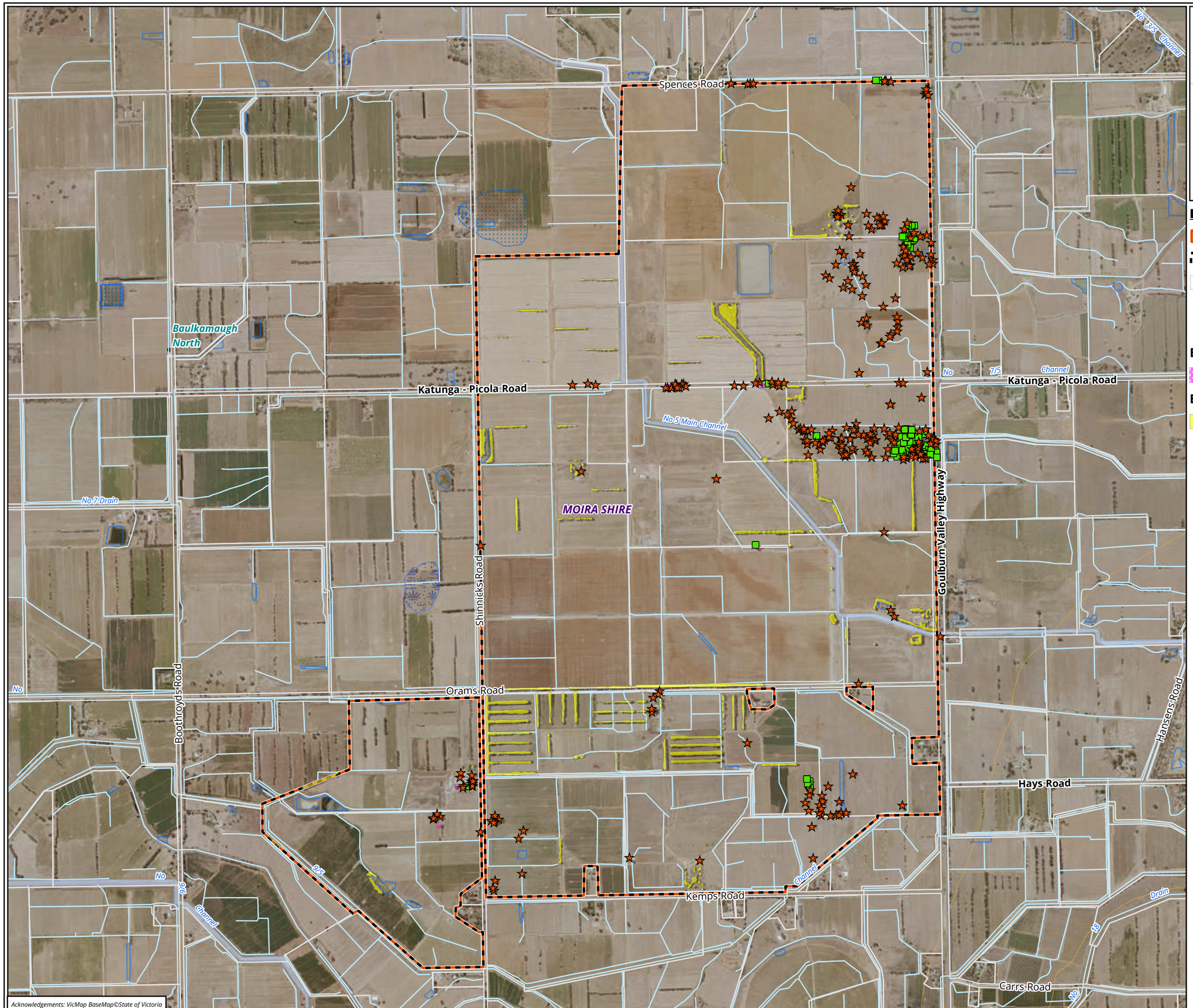
- EPBC Act TECs:
  - Natural Grasslands of the Murray Valley Plains (Critically Endangered)
  - Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains (Critically Endangered)
  - White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland (Critically Endangered)

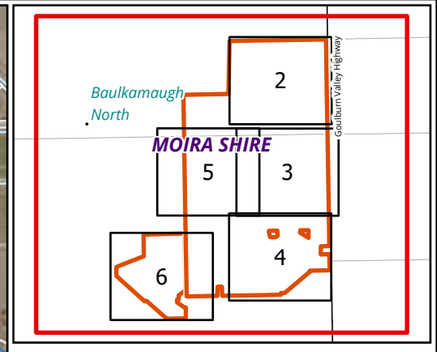
  - Buloke Woodlands of the Riverina and Murray-Darling Depression Bioregions (Endangered)
  - Grey Box (Eucalyptus microcarpa) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia (Endangered)
  - Weeping Myall Woodlands (Endangered).
- FFG Act TECs:
  - Creekline Grassy Woodland (Goldfields) Community (Threatened)
  - Northern Plains Grassland Community (Threatened).

Native vegetation on site is not consistent with the above TECs due to incorrect landscape position and/or the lack of diagnostic flora species and composition. Further consideration of the determination of presence/absence of these TECs is available in Appendix A.3.

3.4. Further survey recommendations

No further survey is recommended.





Legend

- Study area
- Impact area
- Current parcel boundary
- Scattered tree
- Large patch tree

Ecological vegetation class

- (MuF_0803) Plains Woodland

Ecological feature

- Planted vegetation

Figure 2 Ecological features

Page 1 of 6

0 200 400 600 800 1,000

Metres

N

Scale: 1:19,000 @ A3

Coordinate System: GDA 1994 MGA Zone 55

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Matter: 38042,
Date: 10 October 2023 ,
Prepared for: JC, Prepared by: AM, Last edited by: mknudsen
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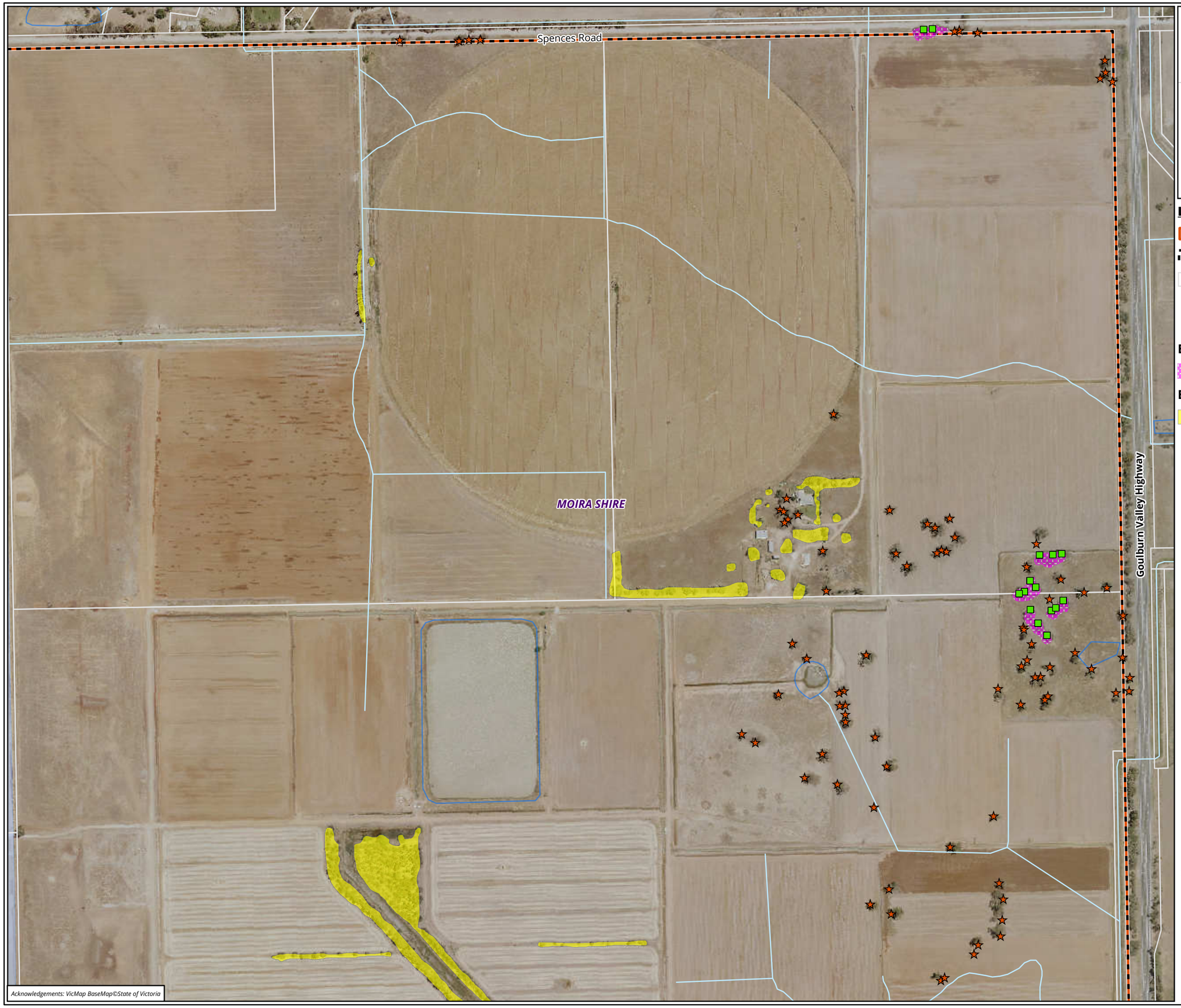

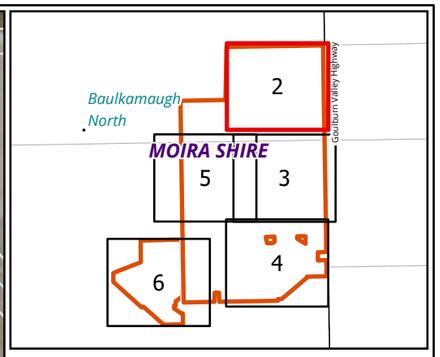

Legend

- Study area
- Impact area
- Current parcel boundary
- Scattered tree
- Large patch tree

Ecological vegetation class

- (MuF_0803) Plains Woodland

Ecological feature

- Planted vegetation

Figure 2 Ecological features

Page 2 of 6

0 50 100 150 200 250

Metres

Scale: 1:5,200 @ A3

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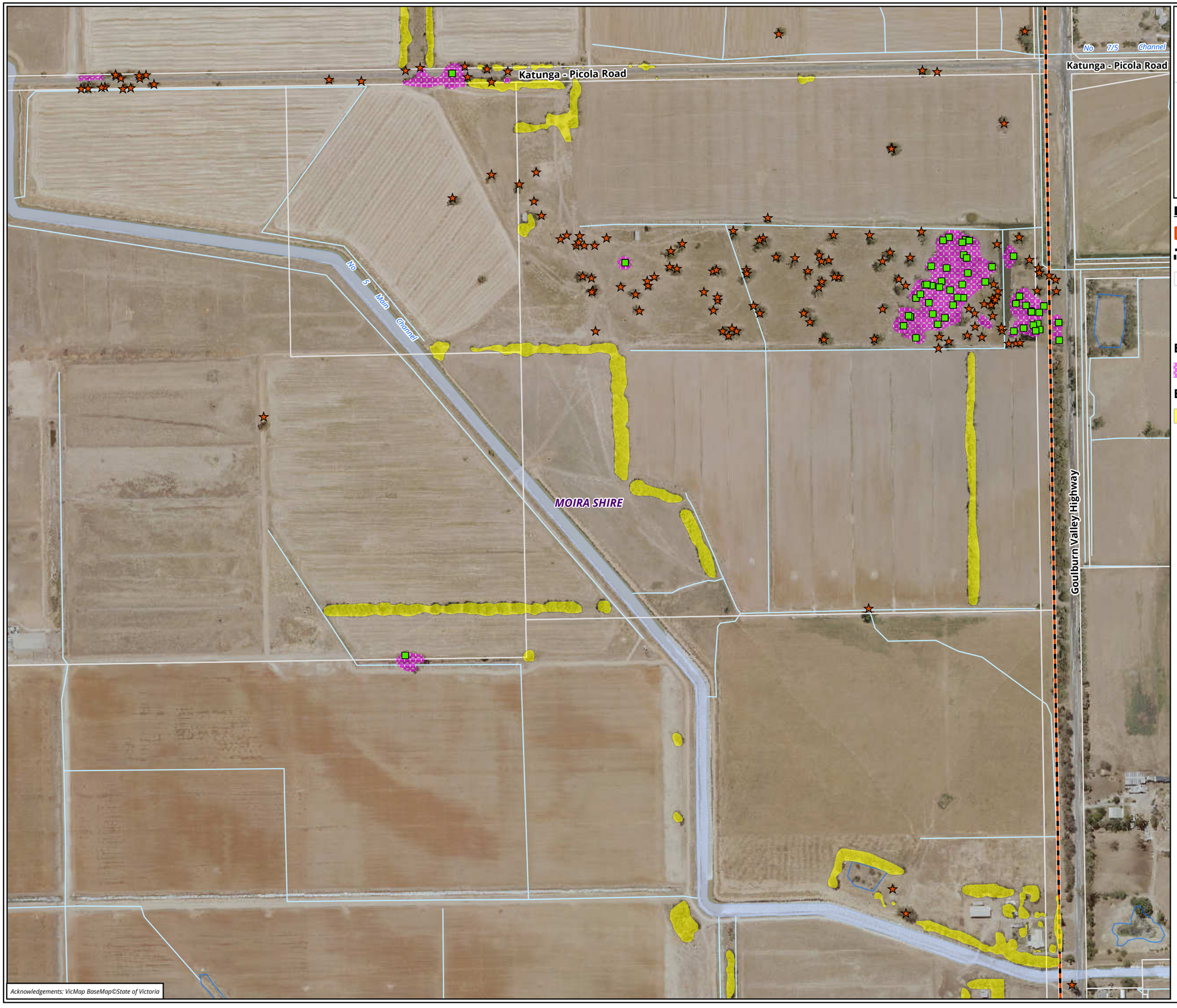

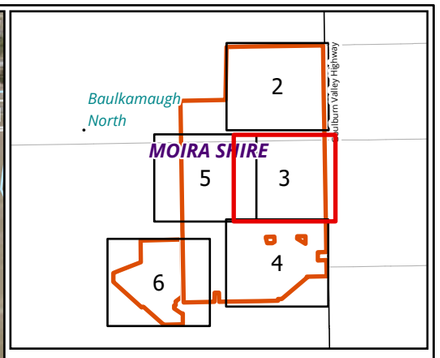

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Ecological vegetation class

- (MuF_0803) Plains Woodland

Ecological feature

- Planted vegetation

Figure 2 Ecological features

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Metres

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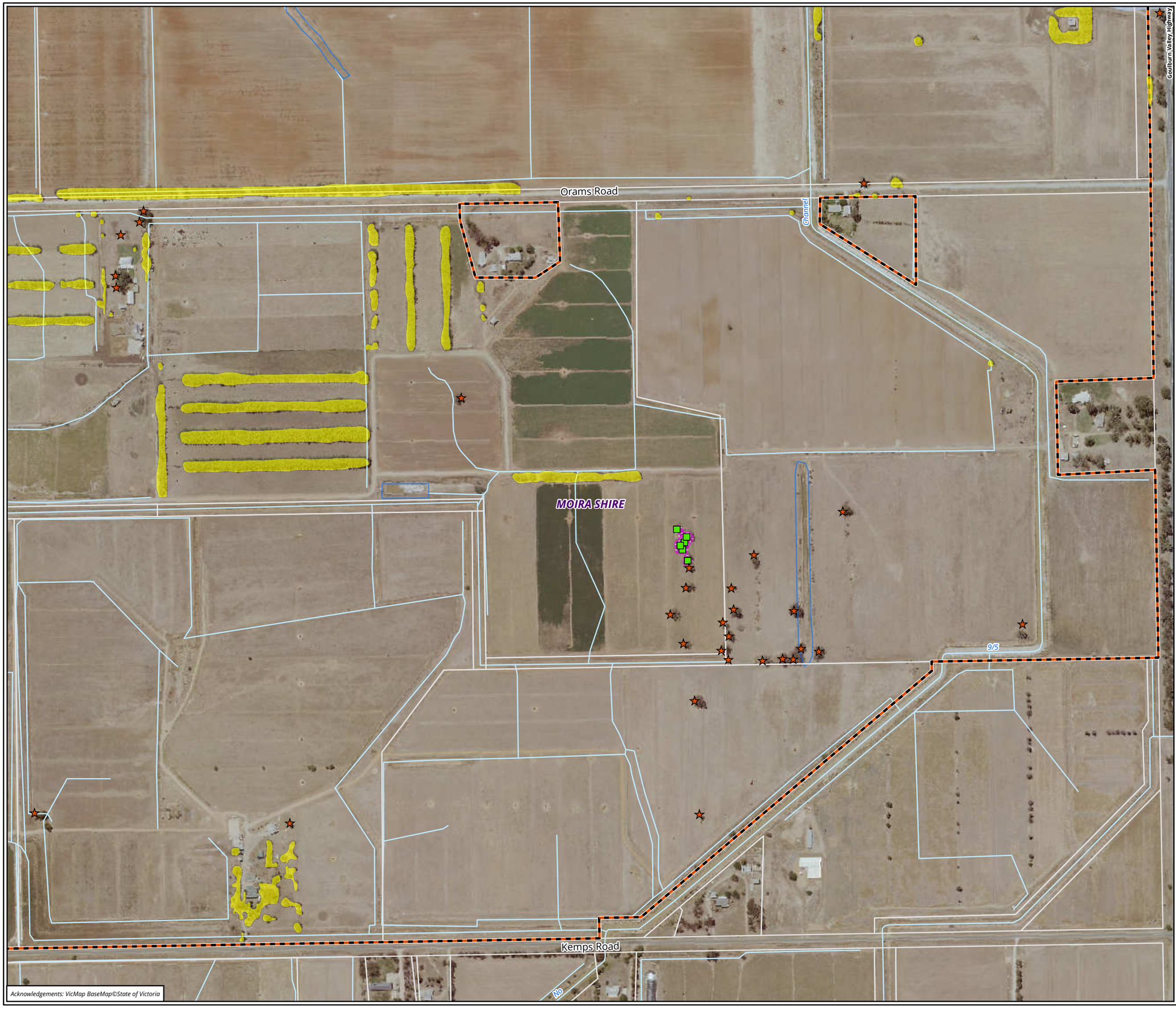

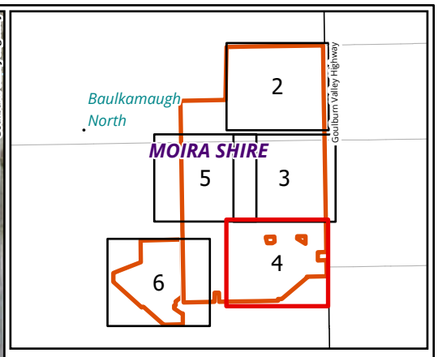

Legend

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- Large patch tree

Ecological vegetation class

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Figure 2 Ecological features

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Metres

Scale: 1:5,200 @ A3

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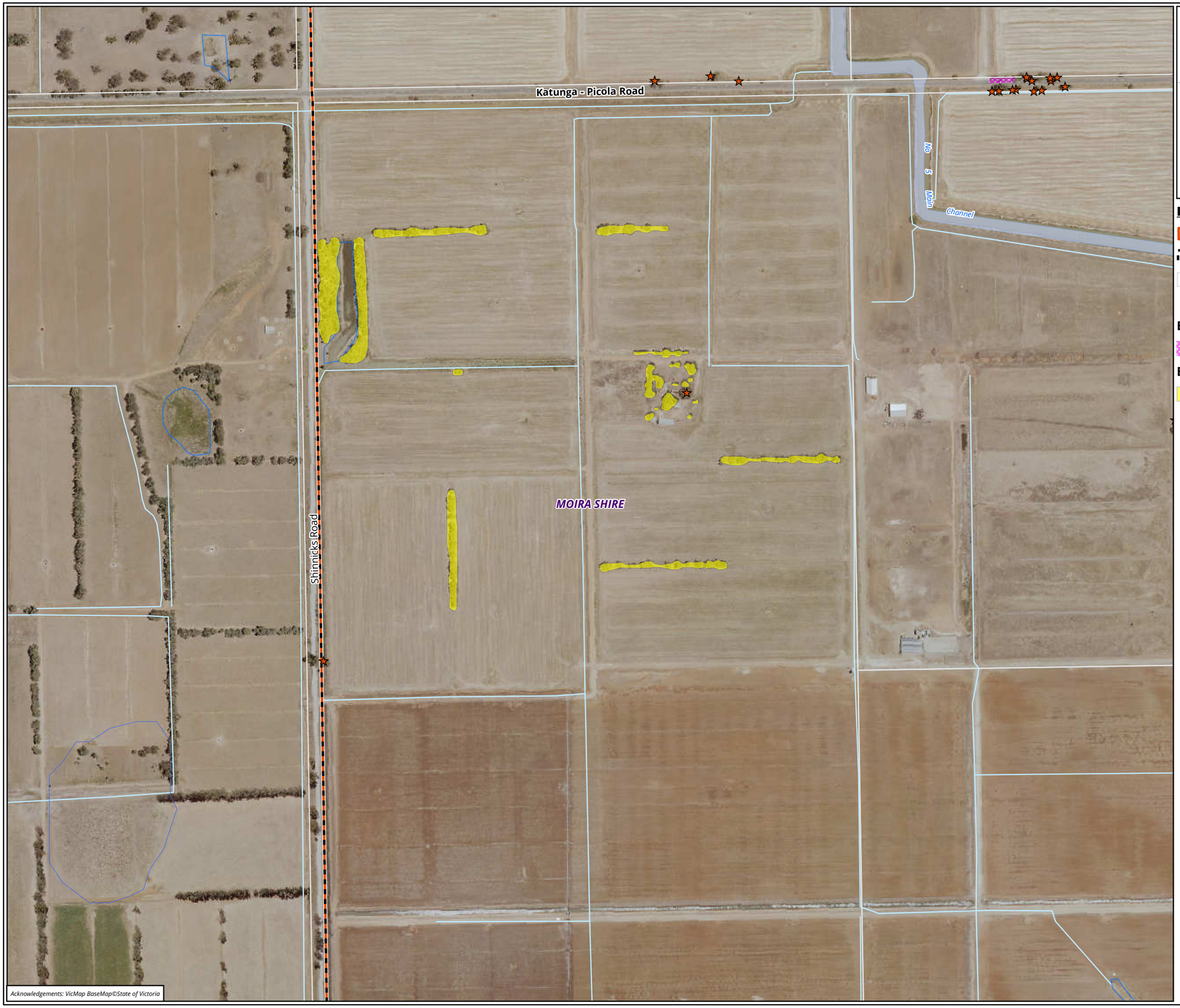

Acknowledgements: VicMap BaseMap©State of Victoria

Figure 2 Ecological features

Page 5 of 6

Scale: 1:5,200 @ A3
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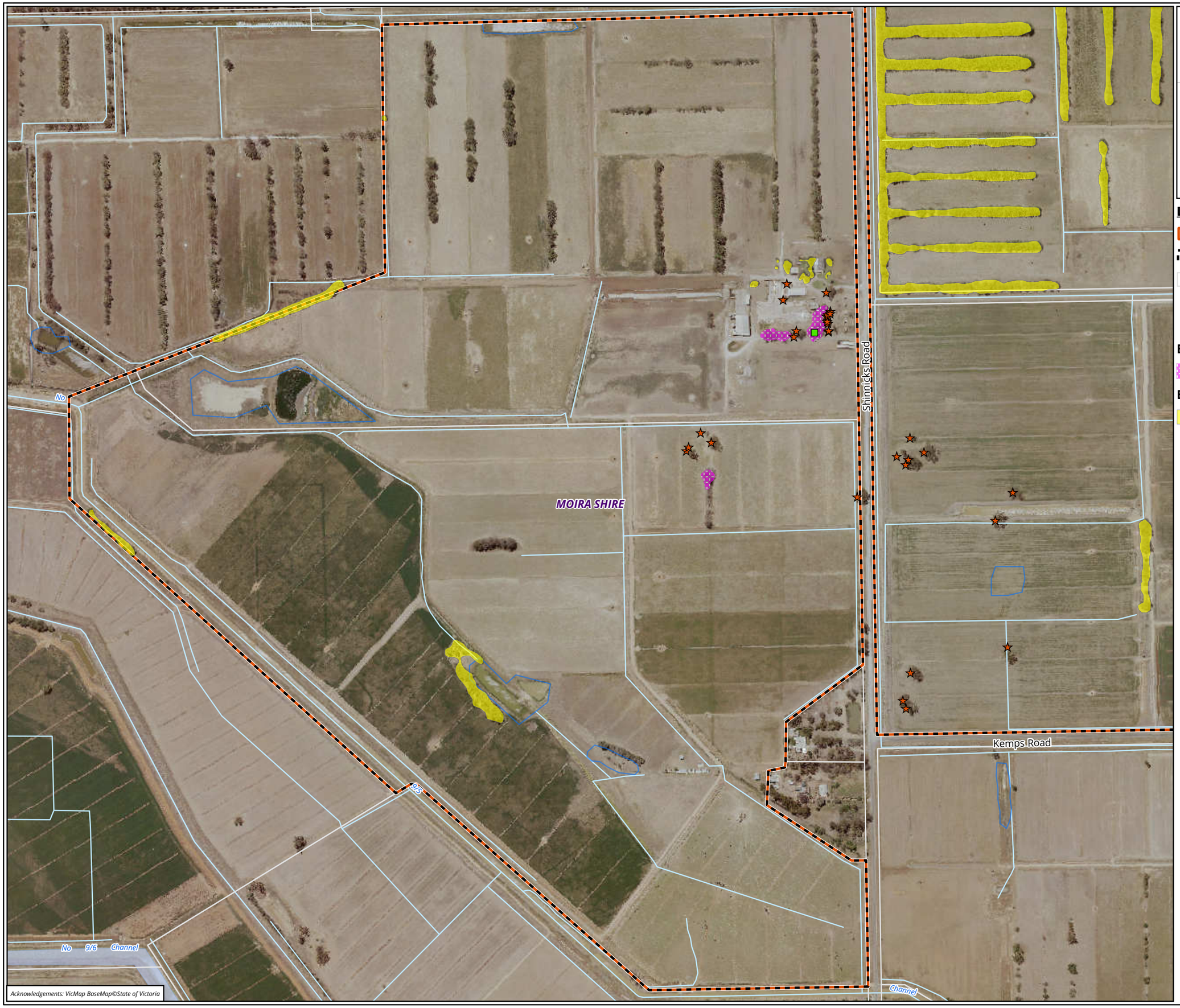

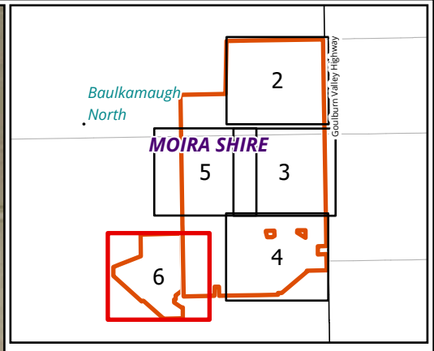

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Ecological vegetation class

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4. Biodiversity legislation and government policy

This section provides an assessment of the project in relation to key biodiversity legislation and government policy. It does not describe the legislation and policy in detail. Where available, links to further information are provided.

4.1. Commonwealth

4.1.1. Environment Protection and Biodiversity Conservation Act 1999

The EPBC Act applies to developments and associated activities that have the potential to significantly impact on Matters of National Environmental Significance (MNES) protected under the Act.

Further information including a guide to the referral process is available at http://www.environment.gov.au/epbc/index.html

MNES relevant to the project are summarised in Table 4. It includes an assessment against the EPBC Act policy statements published by the Australian Government which provide guidance on the practical application of EPBC Act.

Table 4 Assessment of project in relation to the EPBC Act

MNES	Project specifics	Assessment against significant impact guidelines
EPBC Act listed species	Thirty-nine (39) EPBC Act listed species are recorded or predicted to occur in the project search area. The likelihood of these species occurring in the study area is assessed in Appendix A (flora) and Appendix B (fauna).	Most of these species are unlikely to occur and development is unlikely to constitute a significant impact. Significant impact criteria assessments have been prepared for the following EPBC Act species with potential habitat on site: • Swift Parrot • Superb Parrot • Blue-winged Parrot • Brown Treecreeper A significant impact assessment was not prepared for White-throated Needletail as this species is exclusively aerial, and the proposed works are unlikely to have a significant impact on this species.
EPBC Act listed ecological communities	Five (5) EPBC Act listed ecological communities are predicted to occur in the project search area. These threatened ecological communities are not present in the study area. An assessment of the vegetation in the study area to determine these community's presence or absence is provided in Appendix A.3.	Native vegetation on site is not consistent with the EPBC Act threatened ecological communities predicted to occur in the search area. There is a lack of diagnostic flora species and incorrect landscape position in general for these communities (see Appendix A.3).

MNES	Project specifics	Assessment against significant impact guidelines
Migratory species	Eleven (11) migratory species are recorded or predicted to occur in the project search area. The likelihood of these species occurring in the study area is assessed in Appendix B.2.	While some of these species would be expected to use the study area on occasions, it does not provide important habitat for an ecologically significant proportion of any of these species.
Wetlands of international importance (Ramsar sites)	The study area is identified as being within the catchment of seven (7) Ramsar sites: Banrock Station Wetland Complex, Barmah Forest, Gunbower Forest, Hattah-Kulkyne Lakes, NSW Central Murray State Forests, Riverland and The Coorong and Lakes Alexandrina and Albert Wetland.	The study area does not drain directly into any Ramsar site and the development is not likely to result in a significant impact to the Ramsar sites.

On the basis of criteria outlined in the relevant Significant Impact Guidelines it is considered unlikely that a significant impact on a Matter of National Environmental Significance would result from the proposed action. Referral of the proposed action to the Australian Government Minister for the Environment to determine whether the action requires approval under the EPBC Act is therefore unlikely to be required. See below Significant Impact Criteria Assessments.

4.1.2. Significant Impact Criteria Assessments

Swift Parrot *Lathamus discolor* - critically endangered EPBC Act fauna species

Based on the assessment provided in Table 5 it is concluded the project is unlikely to lead to a significant impact on Swift Parrot. While the species is expected to use woodland patches, these will not be impacted within the construction footprint, and in isolation this habitat is not considered to be critical for the survival of an important population of the species. Affected habitat is not considered to constitute breeding habitat and is already highly fragmented. The project will not result in a reduction in the area of occupancy for Swift Parrot. The significant impact assessment presented below has been undertaken with reference to the avoidance measures already pursued and further impact minimisation and mitigation measures available to the project.

Table 5 Swift Parrot *Lathamus* discolor, critically endangered species - assessment against Significant Impact Criteria (CoA 2013)

Significant impact criteria (vulnerable species)	Likelihood of significant impact	Justification
Lead to a long-term decrease in the size of an important population of a species.	Unlikely	The project will result in the removal of scattered trees that provide foraging habitat for Swift Parrot. As Swift Parrot migrates and breeds in Tasmania in spring and summer, the study area does not provide breeding habitat for the species. Given the local scale of removal and the availability of resources in the broader study area and surrounding landscape (i.e. large woodland blocks on public and private land), it is unlikely to lead to a long-term decrease in the size of a population of the species.
Reduce the area of occupancy of an important population.	Unlikely	Whilst scattered trees that constitute potential foraging habitat will be removed as part of the project, the overall area of occupancy by the species will remain unchanged.
Fragment an existing important population into two or more populations.	Unlikely	Swift Parrot is migratory and is highly mobile and individuals can move freely through areas of unsuitable and marginal habitat to seek out and exploit favourable habitat patches. As a result, the project will not fragment the population into two or more populations.
Adversely affect habitat critical to the survival of the species.	Unlikely	While foraging habitat occurs within the study area, the extent of removal associated with the project will not adversely affect critical habitat to the extent that the species is likely to decline. The study area is not critical breeding habitat for the species as Swift Parrot breeds in Tasmania.
Disrupt the breeding cycle of an important population.	Highly unlikely	The study area does not provide breeding habitat for Swift Parrot, which is in Tasmania.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline.	Unlikely	The project will result in the removal of potential foraging habitat (scattered trees). However, the magnitude of the impact is small in the context of other causes of habitat loss operating across the species' range and in isolation is unlikely to impact the species to the extent that it would cause a decline in the population. The study area is not breeding habitat for this

Significant impact criteria (vulnerable species)	Likelihood of significant impact	Justification
		species.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat.	Unlikely	The study area sits within a matrix of agricultural land and these areas are subject to existing weed invasion, pest animals, erosion and chemical inputs as a result of surrounding agricultural land use. The project is unlikely to exacerbate the current level of invasive species threat operating within the study area to the point that they become harmful to Swift Parrot.
Introduce disease that may cause the species to decline.	Unlikely	The project is unlikely to introduce a disease that causes the Swift Parrot to decline.
Interfere substantially with the recovery of a species.	Unlikely	Habitat loss is a key threat facing Swift Parrot throughout its range. While the project will result in the removal of potential foraging habitat (scattered trees), the magnitude of loss will be small in the context of habitat that remains available to the species throughout its range. There is no evidence to suggest that the vegetation within the construction footprint is exceptionally high-quality Swift Parrot habitat nor is that habitat likely to be critical to the species' survival as this species' breeding habitat is in Tasmania. The project is therefore unlikely to substantially interfere with the conservation actions outlined in the species national recovery plan.

It is therefore considered unlikely that a significant impact on a Matter of National Environmental Significance would result from the proposed action of the proposed project works.

Superb Parrot *Polytelis swainsonnii* - vulnerable EPBC Act fauna species

Superb Parrot is listed as vulnerable under the EPBC Act. Superb Parrots are absent from large areas of the Riverina and northern Victoria, with the core distribution being west of the Great Dividing Range in NSW from Canberra, Goulburn and as far west as Nyngan and Swan Hill. There are only three main breeding areas: an area of the south-west slopes bounded by Molong, Rye Park, Yass, Coolac, Cootamundra and Young (NSW); along the Murrumbidgee River, between Wagga Wagga and Toganmain Station, and farther north at Goolgowi (NSW); and along the Murray and Edward Rivers, from east of Barmah and Millewa State Forest to south of Taylors Bridge (NSW and Victoria). The species occurs in box-gum and acacia woodlands and riverine woodlands. They mostly feed on the ground on fruits and seeds from a variety of plants but also feed extensively in shrubs and trees. Major threats to the Superb Parrot are loss and degradation of habitat, competition for nest hollows, road kills, illegal removal of wild birds, Psittacine beak and feather disease (PBFD) and climate change. While Superb Parrot is expected to use woodland patches that will not be removed within the construction footprint, and in isolation this habitat is not considered to be critical for the survival of an important population of the species. Affected vegetation is not considered to constitute core breeding habitat and is already highly fragmented. The project will not result in a reduction in the area of occupancy for Superb Parrot.

Based on the assessment provided in Table 6 it is concluded the project is unlikely to lead to a significant impact on Superb Parrot. The significant impact assessment presented below has been undertaken with reference to the avoidance measures already pursued and further impact minimisation and mitigation measures available to the project.

Table 6 Superb Parrot *Polytelis swainsonii*, vulnerable species - assessment against Significant Impact Criteria (CoA 2013)

Significant impact criteria (vulnerable species)	Likelihood of significant impact	Justification
Lead to a long-term decrease in the size of an important population of a species.	Unlikely	The project will result in the removal of areas of woodland and scattered trees that provide foraging habitat for Superb Parrot. The study area does not provide key breeding habitat for Superb Parrot, which is mostly in the NSW South Western Slopes and Riverina bioregions. Given the local scale of removal and the availability of resources in the broader study area and surrounding landscape (i.e. large woodland blocks on public and private land), it is unlikely to lead to a long-term decrease in the size of a population of the species.
Reduce the area of occupancy of an important population.	Unlikely	Whilst areas of woodland and scattered trees that constitute potential foraging habitat will be removed as part of the project, the overall area of occupancy by the species will remain unchanged.
Fragment an existing important population into two or more populations.	Unlikely	Superb Parrot displays seasonal movement patterns typified by post-breeding dispersal and local nomadism. The species is highly mobile and individuals can move freely through areas of unsuitable and marginal habitat to seek out and exploit favourable habitat patches. As a result, the project will not fragment the population into two or more populations.

Significant impact criteria (vulnerable species)	Likelihood of significant impact	Justification
Adversely affect habitat critical to the survival of the species.	Unlikely	Superb Parrot habitat is not listed in the Register of Critical Habitat under the EPBC Act. The national recovery plan for Superb Parrot (Baker-Gabb 2011) lists foraging and breeding habitat as critical habitat for Superb Parrot. The study area is not within the core breeding range of Superb Parrot identified within the National Recovery Plan. While foraging habitat occurs within the study area, the extent of removal associated with the project will not adversely affect critical habitat to the extent that the species is likely to decline.
Disrupt the breeding cycle of an important population.	Unlikely	The study area does not provide key breeding habitat for Superb Parrot, which is mostly in the NSW South Western Slopes and Riverina bioregions.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline.	Unlikely	The project will result in the removal of potential foraging habitat and potential breeding habitat for Superb Parrot. However, the magnitude of the impact is small in the context of other causes of habitat loss operating across the species' range and in isolation is unlikely to impact the species to the extent that it would cause a decline in the population.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat.	Unlikely	Most locations where this habitat for this species occurs are subject to existing weed invasion, pest animals, erosion and chemical inputs as a result of surrounding agricultural land use. The study area sits within a matrix of agricultural land. The project is unlikely to exacerbate the current level of invasive species threat operating within the study area to the point that they become harmful to Superb Parrot.
Introduce disease that may cause the species to decline.	Unlikely	The project is unlikely to introduce a disease that causes the Superb Parrot to decline.
Interfere substantially with the recovery of a species.	Unlikely	Habitat loss is a key threat facing Superb Parrot throughout its range. While the project will result in the removal of confirmed and potential habitat, the magnitude of loss will be small in the context of habitat that remains available to the species throughout its range. There is no evidence to suggest that the vegetation within the construction footprint is exceptionally high quality Superb Parrot habitat nor is that habitat likely to be critical to the species' survival. The project is therefore unlikely to substantially interfere substantially with the conservation actions outlined in the species national recovery plan.

It is therefore considered unlikely that a significant impact on a Matter of National Environmental Significance would result from the proposed action of the proposed project works.

Blue-winged Parrot *Neophema chrystostoma* – vulnerable EPBC Act fauna species

Based on the assessment provided in Table 7 it is concluded the project is unlikely to lead to a significant impact on Blue-winged Parrot. While the species is expected to use woodland patches, these will not be removed within the construction footprint, and in isolation this habitat is not considered to be critical for the survival of an important population of the species. Affected habitat is not considered to constitute core breeding habitat and is already highly fragmented. The project will not result in a reduction in the area of occupancy for Blue-winged Parrot. The significant impact assessment presented below has been undertaken with reference to the avoidance measures already pursued and further impact minimisation and mitigation measures available to the project.

Table 7 Blue-winged Parrot *Neophema chrystostoma*, vulnerable species - assessment against Significant Impact Criteria (CoA 2013)

Significant impact criteria (vulnerable species)	Likelihood of significant impact	Justification
Lead to a long-term decrease in the size of an important population of a species.	Unlikely	The project will result in the removal of scattered trees that provide foraging habitat for Swift Parrot. Given the local scale of removal and the availability of resources in the broader study area and surrounding landscape (i.e. large woodland blocks on public and private land), it is unlikely to lead to a long-term decrease in the size of a population of the species.
Reduce the area of occupancy of an important population.	Unlikely	Whilst scattered trees that constitute potential foraging habitat will be removed as part of the project, the overall area of occupancy by the species will remain unchanged.
Fragment an existing important population into two or more populations.	Unlikely	Blue-winged Parrot is highly mobile and individuals can move freely through areas of unsuitable and marginal habitat to seek out and exploit favourable habitat patches. As a result, the project will not fragment the population into two or more populations as only scattered trees are to be removed.
Adversely affect habitat critical to the survival of the species.	Unlikely	While foraging habitat occurs within the study area, the extent of removal associated with the project (scattered trees) will not adversely affect critical habitat to the extent that the species is likely to decline.
Disrupt the breeding cycle of an important population.	Highly unlikely	The study area does not provide key breeding habitat for Blue-winged Parrot. Woodland remnant vegetation will be retained in the study area.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline.	Unlikely	The project will result in the removal of potential foraging habitat. However, the magnitude of the impact is small in the context of other causes of habitat loss operating across the species' range and in isolation is unlikely to impact the species to the extent that it would cause a decline in the population. The study area is not critical breeding habitat for this species.

Significant impact criteria (vulnerable species)	Likelihood of significant impact	Justification
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat.	Unlikely	The study area sits within a matrix of agricultural land and these areas are subject to existing weed invasion, pest animals, erosion and chemical inputs as a result of surrounding agricultural land use. The project is unlikely to exacerbate the current level of invasive species threat operating within the study area to the point that they become harmful to Blue-winged Parrot.
Introduce disease that may cause the species to decline.	Unlikely	The Project is unlikely to introduce a disease that causes the Blue-winged Parrot to decline.
Interfere substantially with the recovery of a species.	Unlikely	Habitat loss is a key threat facing Blue-winged Parrot throughout its range. While the project will result in the removal of potential foraging habitat (scattered trees), the magnitude of loss will be small in the context of habitat that remains available to the species throughout its range. There is no evidence to suggest that the vegetation within the construction footprint is exceptionally high-quality Blue-winged Parrot habitat nor is that habitat likely to be critical to the species' survival due to its degraded nature. The project is therefore unlikely to substantially interfere with the conservation actions outlined in the species national recovery plan.

It is therefore considered unlikely that a significant impact on a Matter of National Environmental Significance would result from the proposed action of the proposed project works.

Brown Treecreeper *Climacteris picumnus* – vulnerable EPBC Act fauna species

Based on the assessment provided in Table 8 it is concluded the project is unlikely to lead to a significant impact on Brown Treecreeper. While the species is expected to use woodland patches, these will not be impacted within the study area, and in isolation this habitat is not considered to be critical for the survival of an important population of the species. Affected habitat is not considered to constitute core breeding habitat and is already highly fragmented. The project will not result in a reduction in the area of occupancy for Brown Treecreeper. The significant impact assessment presented below has been undertaken with reference to the avoidance measures already pursued and further impact minimisation and mitigation measures available to the project.

Table 8 Brown Treecreeper *Climacteris picumnus*, critically endangered species - assessment against Significant Impact Criteria (CoA 2013)

Significant impact criteria (vulnerable species)	Likelihood of significant impact	Justification
Lead to a long-term decrease in the size of an important population of a species.	Unlikely	The project will result in the removal of scattered trees that provide foraging habitat for Brown Treecreeper. Given the local scale of removal and the availability of resources in the broader study area and surrounding landscape (i.e. large woodland blocks on public and private land), it is unlikely to lead to a long-term decrease in the size of a population of the species.
Reduce the area of occupancy of an important population.	Unlikely	Whilst scattered trees that constitute potential foraging habitat will be removed as part of the project, the overall area of occupancy by the species will remain unchanged as woodland habitat is to be retained.
Fragment an existing important population into two or more populations.	Unlikely	Brown Treecreeper is highly mobile and individuals can move freely through areas of unsuitable and marginal habitat to seek out and exploit favourable habitat patches. As a result, the project will not fragment the population into two or more populations as only scattered trees are to be removed.
Adversely affect habitat critical to the survival of the species.		While foraging habitat occurs within the study area, the extent of removal associated with the project (scattered trees) will not adversely affect critical habitat to the extent that the species is likely to decline.
Disrupt the breeding cycle of an important population.	Highly unlikely	Scattered trees in the study area do not provide key breeding habitat for Brown Treecreeper. Woodland remnant vegetation will be retained in the study area.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline.	Unlikely	The project will result in the removal of potential foraging habitat. However, the magnitude of the impact is small in the context of other causes of habitat loss operating across the species' range and in isolation is unlikely to impact the species to the extent that it would cause a decline in the population. The study area is not critical breeding habitat for this species.

Significant impact criteria (vulnerable species)	Likelihood of significant impact	Justification
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat.	Unlikely	The study area sits within a matrix of agricultural land and these areas are subject to existing weed invasion, pest animals, erosion and chemical inputs as a result of surrounding agricultural land use. The project is unlikely to exacerbate the current level of invasive species threat operating within the study area to the point that they become harmful to Brown Treecreeper.
Introduce disease that may cause the species to decline.	Unlikely	The Project is unlikely to introduce a disease that causes the Brown Treecreeper to decline.
Interfere substantially with the recovery of a species.	Unlikely	Habitat loss is a key threat facing Brown Treecreeper throughout its range. While the project will result in the removal of potential foraging habitat (scattered trees), the magnitude of loss will be small in the context of habitat that remains available to the species throughout its range. There is no evidence to suggest that the vegetation within the construction footprint is exceptionally high-quality Brown Treecreeper habitat nor is that habitat likely to be critical to the species' survival due to its degraded nature. The project is therefore unlikely to substantially interfere with the conservation actions outlined in the species national recovery plan.

It is therefore considered unlikely that a significant impact on a Matter of National Environmental Significance would result from the proposed action of the proposed project works.

White-throated Needletail *Hirundapus caudacutus* - vulnerable EPBC Act fauna species

A Significant Impact Criteria Assessment was not completed for this species as White-throated Needletail is an exclusively aerial species, and the proposed works are unlikely to have a significant impact on this species. White-throated Needletail could operate in the air space above the Grey Box woodlands present in the study area, however, the removal of the native vegetation associated with the current proposed project works will not significantly alter the habitat for this species. It is considered unlikely that a significant impact on a Matter of National Environmental Significance would result from the proposed action of the proposed project works.

4.2. State

4.2.1. Flora and Fauna Guarantee Act 1988 (FFG Act)

The FFG Act is the key piece of Victorian legislation on the conservation of threatened species and communities and on the management of potentially threatening processes. Under the FFG Act a permit is required from DEECA to 'take' protected flora species. Permit exemptions under the Act generally apply to the non-commercial removal of protected flora from private land, unless there is 'critical habitat' that has been declared on the land. Authorisation under the FFG Act is required to collect, kill, injure or disturb listed fish on private or public land.

Link for further information: https://www.environment.vic.gov.au/conserving-threatened-species/victorias-framework-for-conserving-threatened-species

The FFG Act defines public land as Crown land or land owned by, or vested in, a public authority, while private land is defined as any land other than public land. A public authority is defined in the FFG Act as a body established for a public purpose by or under any Act and includes:

- an administrative office
- a government department
- a municipal council
- a public entity
- a State-owned enterprise.

Native vegetation on site is not a FFG act listed threatened community. The study area contains potential habitat for threatened fauna species (Appendix B.1) and protected flora species are present on site (Appendix A.1).

The study area is on private land, does not contain any declared 'critical habitat' for the purposes of the FFG Act and the flora species are not being taken for the purpose of commercial sale. A protected flora permit is therefore not required, however the presence of rare or threatened flora and habitat for threatened fauna will be considered by the Responsible Authority in determining its response to an application for native vegetation removal under Clause 52.17.

Due to the reduction of the study area impact footprint including the retention of Plains Woodland patches, goFARM have reduced their impacts on FFG Act listed flora and fauna species.

4.2.2. Catchment and Land Protection Act 1994 (CaLP Act)

The CaLP Act identifies and classifies certain species as noxious weeds or pest animals, and provides a system of controls on noxious species.

Declared noxious weeds identified in the study area are listed in A.1 (Table 12). No pest animals were recorded on site.

The proponent must take all reasonable steps to eradicate regionally prohibited weeds, prevent the growth and spread of regionally controlled weeds, and prevent the spread of and as far as possible eradicate established pest animals. The State is responsible for eradicating State prohibited weeds from all land in Victoria.

Further information is at http://agriculture.vic.gov.au/agriculture/pests-diseases-and-weeds

4.2.3. Planning and Environment Act 1987 (incl. Planning Schemes)

The *Planning and Environment Act 1987* controls the planning and development of land in Victoria, and provides for the development of planning schemes for all municipalities.

Of particular relevance to the development proposal are controls relating to the removal, destruction or lopping of native vegetation contained within the Moira Planning Scheme (the Scheme), including permit requirements. The Scheme (Clause 73.01) defines 'native vegetation' as 'Plants that are indigenous to Victoria, including trees, shrubs, herbs, and grasses'. It is an objective of Clause 12.01-2 of the State Planning Policy Framework (Native Vegetation Management) that removal of native vegetation results in no net loss in the contribution made by native vegetation to Victoria's biodiversity.

Clause 52.17 (Native Vegetation) requires a planning permit to remove, destroy or lop native vegetation including some dead native vegetation. Decision guidelines that must be considered by the referral or responsible authority are contained in Section 7 of the Guidelines, and referred to in Clause 52.17-4.

The study area is not covered by any overlays relevant to biodiversity under the Scheme.

Victoria's Guidelines for the removal, destruction or lopping of native vegetation

The Guidelines are incorporated into the Victoria Planning Provisions and all planning schemes in Victoria (DELWP 2017a). The Guidelines replaced the previous incorporated document titled Permitted clearing of native vegetation – Biodiversity assessment guidelines (DEPI 2013) on 12 December 2017.

The purpose of the Guidelines is to guide how impacts to biodiversity should be considered when assessing a permit application to remove, destroy or lop native vegetation. The objective for the guidelines in Victoria is 'No net loss to biodiversity as a result of the removal, destruction or lopping of native vegetation'.

A detailed assessment of the implications for the project under the Guidelines is provided in Section 5 of this report. Under the Guidelines, there are three assessment pathways for assessing an application for a permit to remove native vegetation: basic, intermediate and detailed.

A detailed determination of the assessment pathway for the planning application relevant to the proposed development is provided in Section 5.2. In summary, the planning application for removal of native vegetation must meet the requirements of, and be assessed in, the Detailed Assessment Pathway.

4.2.4. Water Act 1989

The primary purpose of the *Water Act 1989* is to provide a framework for the allocation and management of surface water and groundwater throughout Victoria. It provides a principal mechanism for maintenance of ecosystem functions including those of aquatic ecosystems. Under By-Laws created by the relevant Authority under the Act, the authorities regulate the works within and in the vicinity of waterways.

The proposed development will involve construction and post-construction maintenance or farming activities that may affect beds and banks of dams and channels throughout the study area.

5. Victoria's Guidelines for the removal, destruction or lopping of native vegetation

The Guidelines were introduced in December 2017. They set out and describe the application of Victoria's statewide policy in relation to assessing and compensating for the removal of native vegetation in order to achieve the objective of 'no net loss to biodiversity as a result of the removal, destruction or lopping of native vegetation'.

This objective is to be achieved through Victoria's planning system using an assessment approach that relies on strategic planning and the permit and offset system. The key policy for achieving no net loss to biodiversity is the three-step approach of avoid, minimise and offset:

- **Avoid** the removal, destruction or lopping of native vegetation.
- **Minimise** impacts resulting from the removal, destruction or lopping native vegetation that cannot be avoided.
- Provide an **offset** to compensate for the biodiversity impact from the removal, destruction or lopping of native vegetation.

The steps that have been taken during the design of the development to ensure that impacts on biodiversity from the removal of native vegetation have been minimised include:

- Locating temporary site storage and compounds on existing disturbed land to minimise impacts on native vegetation.
- Utilising existing roads where possible to minimise introduction of weeds and pathogens and reduce impacts on native vegetation.

DEECA has provided biodiversity information tools to assist with determining the assessment pathway associated with the removal of native vegetation and the contribution that native vegetation within the study area makes to Victoria's biodiversity.

All planning permit applications to remove native vegetation are assigned to an assessment pathway determined by the extent and location of proposed native vegetation removal. The assessment pathway will dictate the information to be provided in a planning permit application and the decision guidelines the responsible authority (e.g. Council) and/or DEECA as a referral authority will use to assess the permit application.

The biodiversity information tools have two components:

Site-based information

The site-based information is observable at a particular site. Biosis has collected the requisite site-based information for the assessment against the Guidelines.

Landscape scale information

Landscape scale information requires consideration of information beyond the site. This information is managed by DEECA and can be accessed via the NVIM.

The following section summarises the results of the site-based assessment and the outputs generated by the Native Vegetation Removal Report, which identifies the assessment pathway on which the planning application will be assessed. The full Native Vegetation Removal Report can be viewed in Appendix E.

5.1. Proposed removal of native vegetation

The extent of native vegetation patches, the location of large trees within patches and any scattered trees were mapped within the study area (Figure 2) and the condition was assessed in relation to standard methods provided by DSE (2004) and pre-determined EVC benchmarks: https://www.environment.vic.gov.au/biodiversity/bioregions-and-evc-benchmarks. DEECA's Native Vegetation Information Management system was also used to determine vegetation extent and condition.

The proposed removal of native vegetation was assessed in accordance with the concept design provided by goFARM Australia. The development proposes to remove 1.960 hectares of native vegetation, including 26 large scattered trees. No large trees within patches are proposed to be removed. Spatial data (shapefiles) of proposed vegetation removal were submitted to DEECA's native vegetation support team, who provided a Native Vegetation Removal Report for the project. This is provided in Appendix E and summarised in the following sections.

5.1.1. Vegetation quality assessment

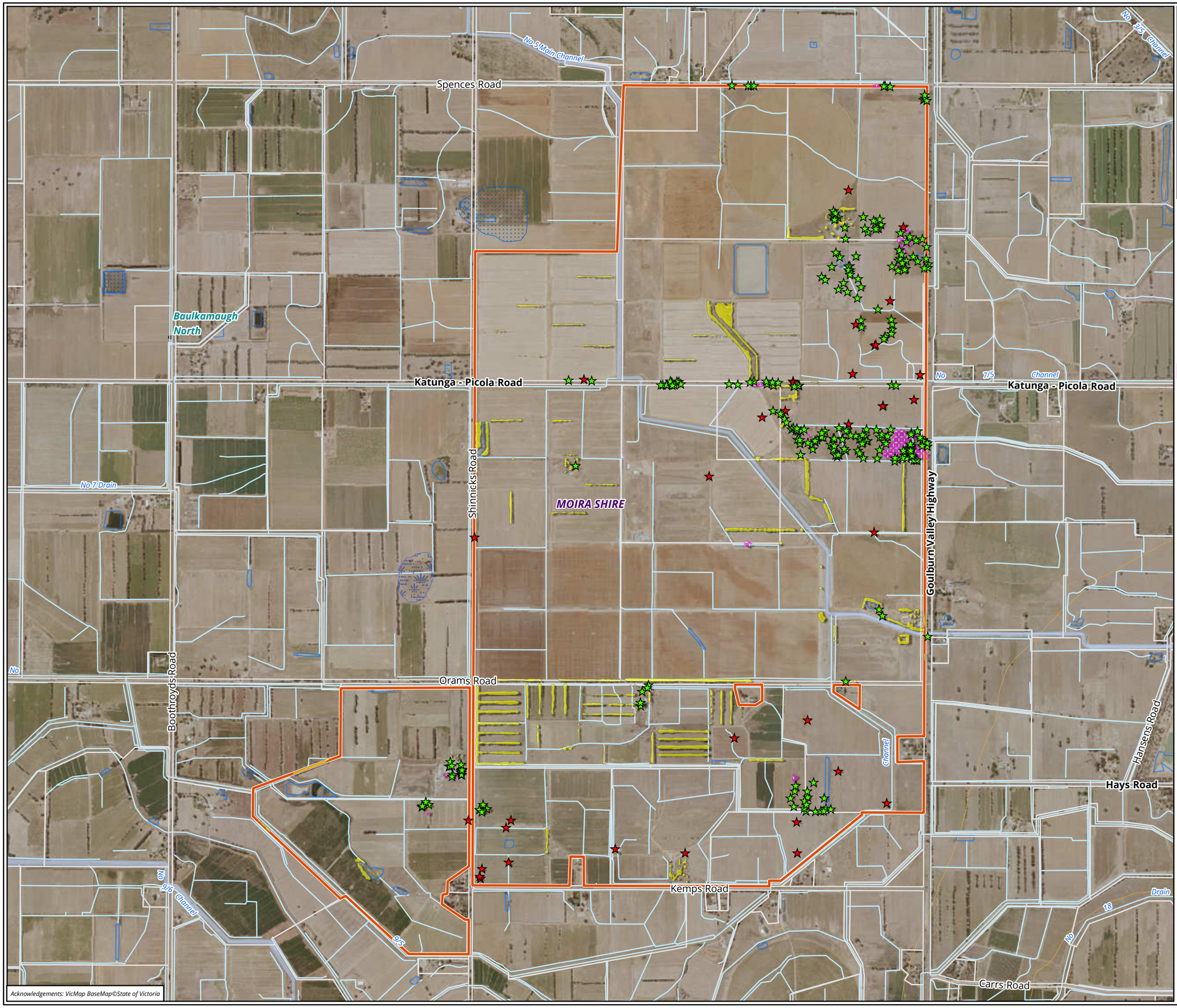
A continuous area of the same EVC is termed a 'habitat zone'. Different habitat zones exists where there are different EVCs present and/or discrete (non-continuous) patches of the same EVC. A separate vegetation quality assessment was conducted for each habitat zone. The vegetation quality assessment score was multiplied by the extent of the habitat zone to give a value in habitat hectares.

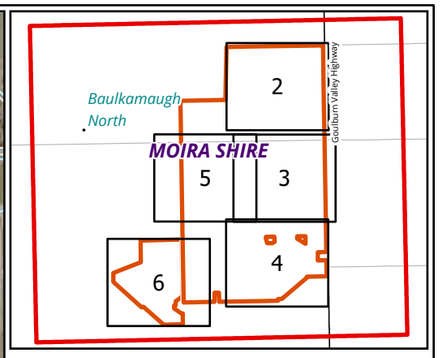
The results of the vegetation quality assessment are provided in Table 9 below.

There are 9 scattered small trees and 26 scattered large trees within the study area. Details of each scattered tree are provided in Table 17 in Appendix D. For applications that propose to remove scattered trees, the extent of scattered trees is calculated using the standard extents described in Section 2.4.1. A condition score is applied to each scattered tree based on information provided by DEECA's NVIM (Table 18). The locations of scattered trees within the study area are shown in Figure 2 and further details for each tree (e.g. size, extent and circumference) are provided in Appendix D.

Table 9 Vegetation quality assessment of native vegetation within the study area

Site ID			Bembaala Farm
Habitat Zone ID			All habitat zones
EVC #: Name			803 Plains Woodland with PIV understorey
		Max Score	**Score**
Site Condition	Large Trees	10	7
	Tree Canopy Cover	5	4
	Lack of Weeds	15	0
	Understorey	25	5
	Recruitment	10	0
	Organic Matter	5	5
	Logs	5	0
	Total Site Score		21
Landscape Value	Patch Size	10	1
	Neighbourhood	10	0
	Distance to Core Area	5	0
	Total Landscape Score		1
Habitat points = #/100		100	22
CONDITION SCORE		1	0.22





Legend

- Study area
- Current parcel boundary

Scattered trees

- Retained
- Proposed to be removed

Ecological vegetation class

- (MuF_0803) Plains Woodland

Ecological feature

- Planted vegetation

Figure 3 Proposed vegetation removal

0 200 400 600 800 1,000 N

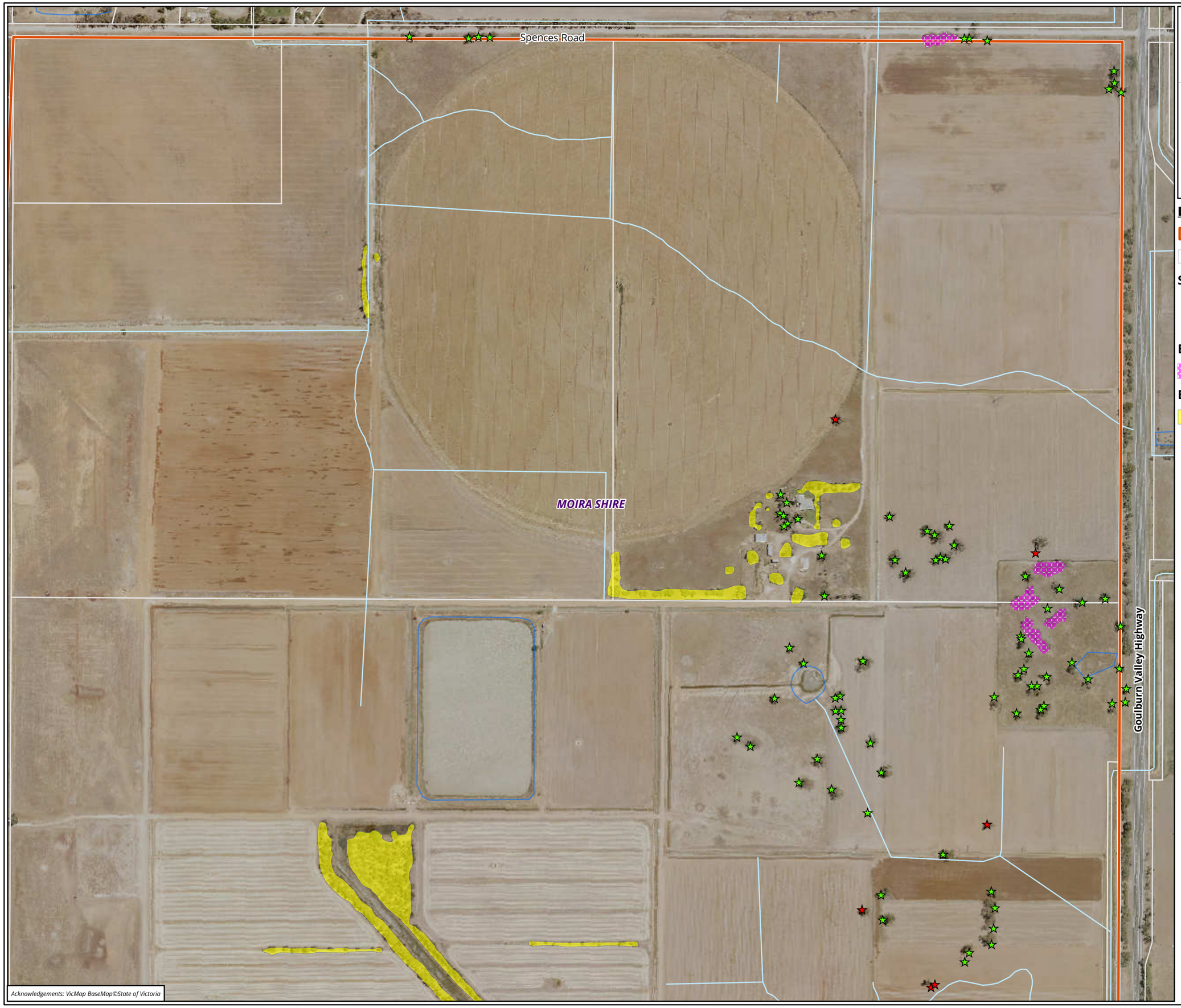
Metres

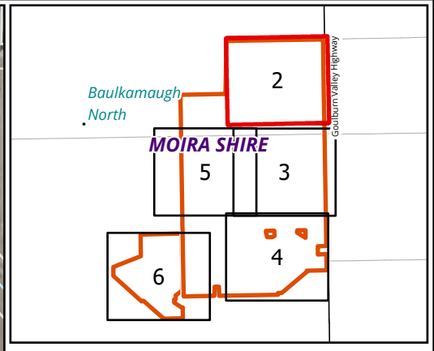
Scale: 1:19,000 @ A3

Coordinate System: GDA 1994 VICGRID94

biosis

Matter: 38042,
Date: 11 October 2023 ,
Prepared for: JC, Prepared by: AM, Last edited by: mknudsen
Layout: 38042_F3_VegRemoval
Project: P:\38000s\38042\Mapping\
38042_GoFARM_FFA_BembalaGriffiths.aprx





Legend

- Study area
- Current parcel boundary

Scattered trees

- Retained
- Proposed to be removed

Ecological vegetation class

- (MuF_0803) Plains Woodland

Ecological feature

- Planted vegetation

Figure 3 Proposed vegetation removal

0 50 100 150 200 250

Metres

Scale: 1:5,200 @ A3

Coordinate System: GDA 1994 VICGRID94

N

biosis

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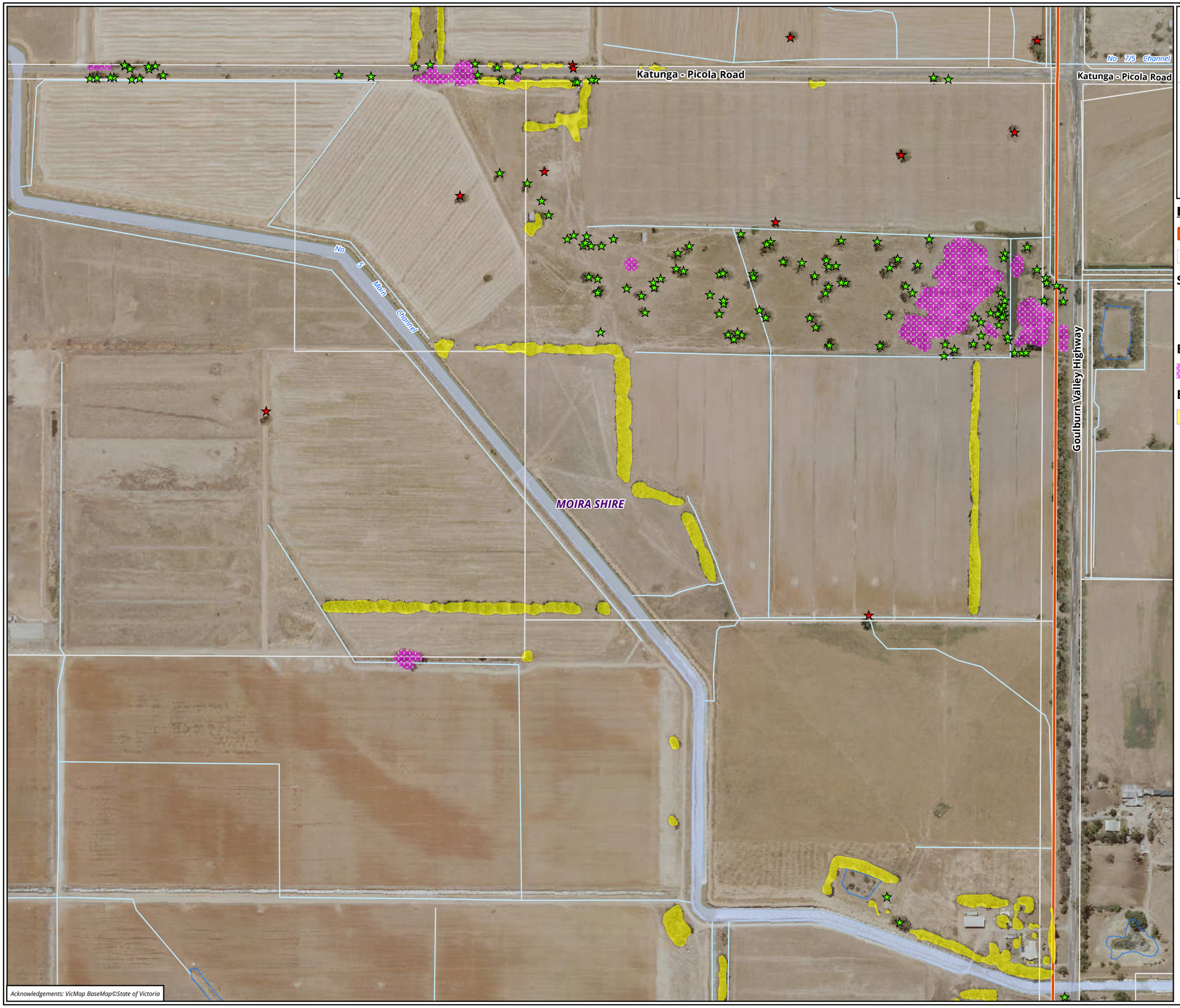

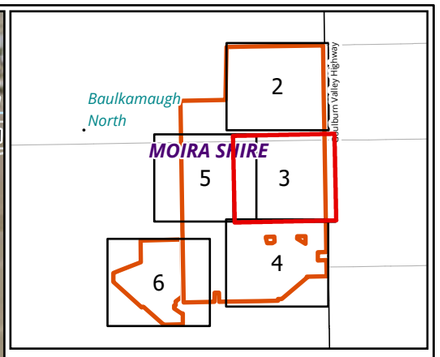

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Ecological feature

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Metres

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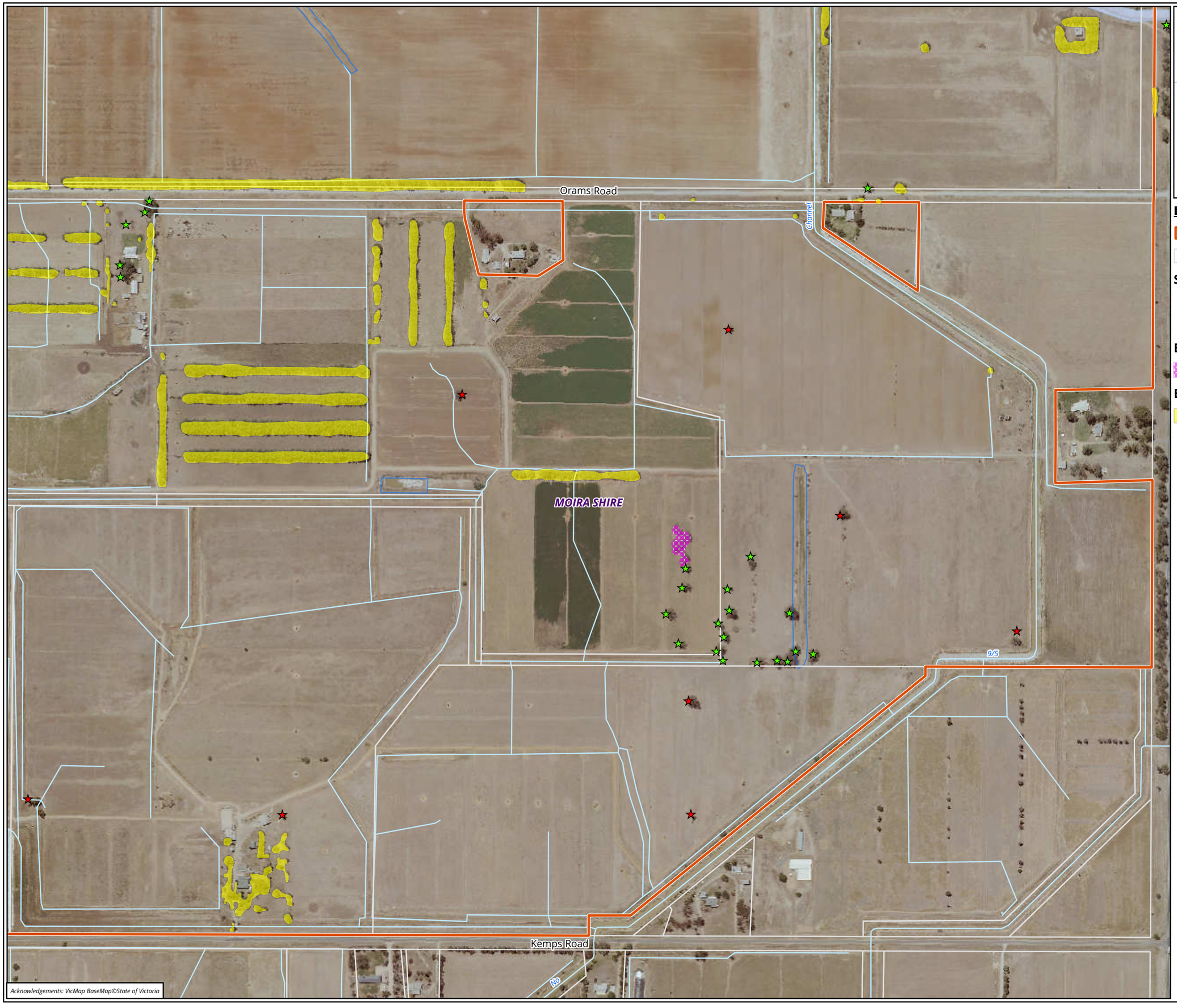

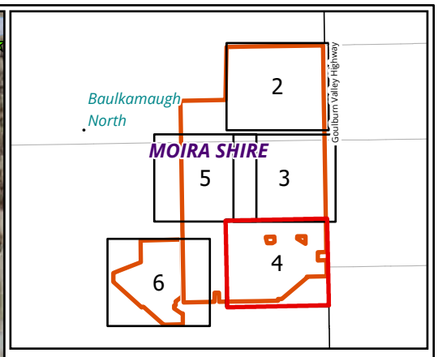

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Scattered trees

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Ecological vegetation class

- (MuF_0803) Plains Woodland

Ecological feature

- Planted vegetation

Figure 3 Proposed vegetation removal

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Metres

Scale: 1:5,200 @ A3

Coordinate System: GDA 1994 VICGRID94

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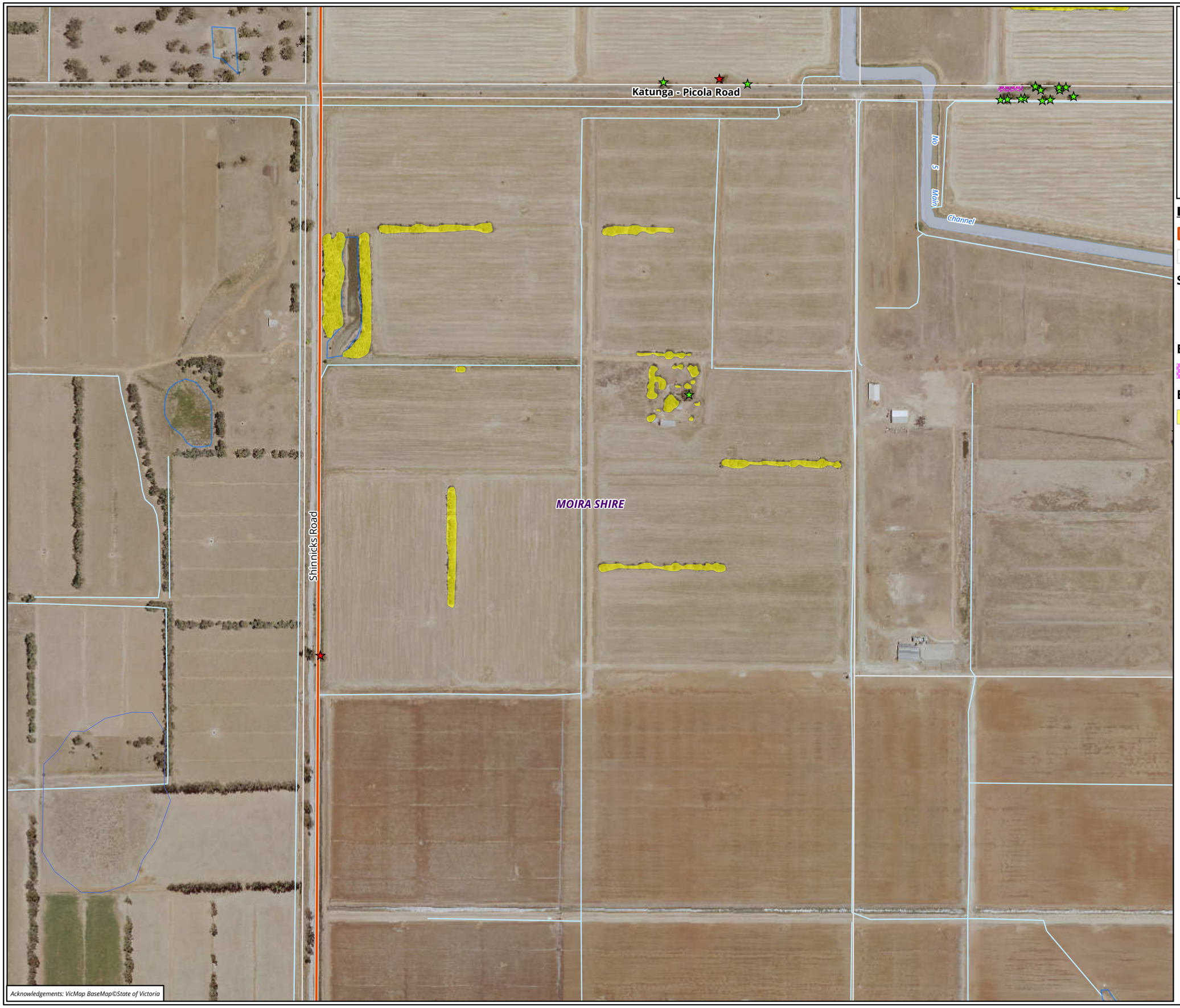

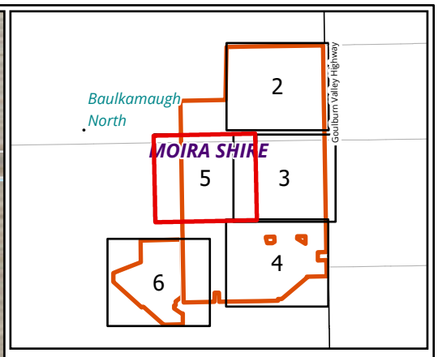

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Ecological feature

- Planted vegetation

Figure 3 Proposed vegetation removal

0 50 100 150 200 250

Metres

Scale: 1:5,200 @ A3

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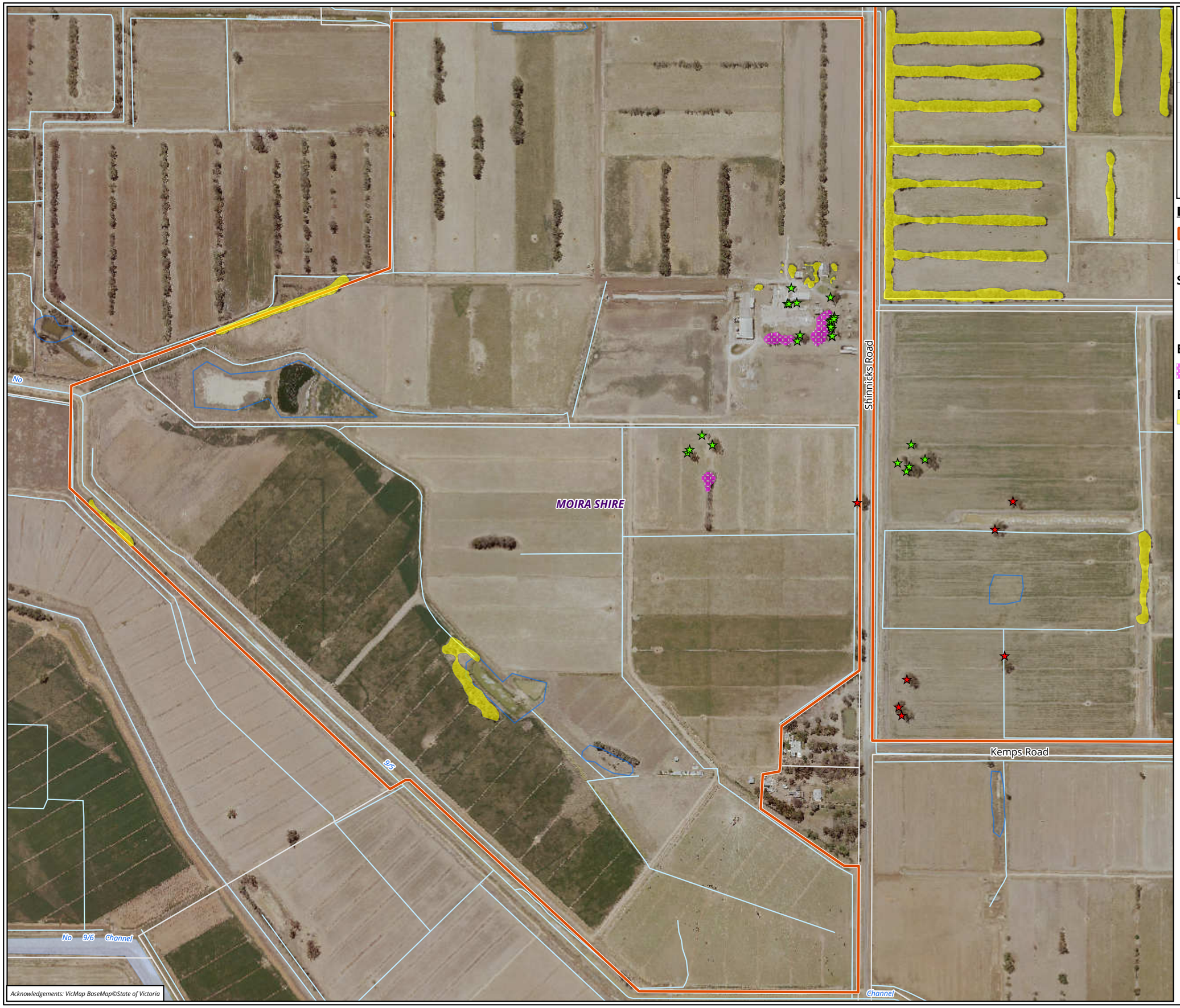
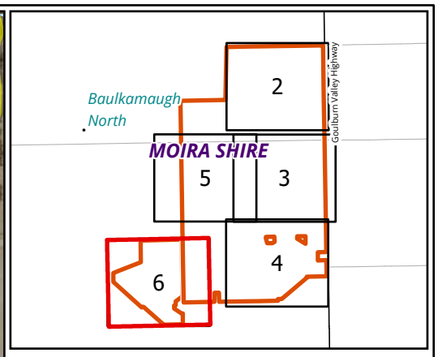
Acknowledgements: VicMap BaseMap©State of Victoria





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Ecological vegetation class

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Ecological feature

- Planted vegetation

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Metres

Scale: 1:5,200 @ A3

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38042_GoFARM_FFA_BembalaGriffiths.aprx

5.2. Determining the assessment pathway

Applications to remove native vegetation are categorised into one of three assessment pathways: basic, intermediate or detailed. Two factors are used to determine the assessment pathway for a permit application, the location and extent of the native vegetation proposed to be removed. Location has been divided into three possible categories by DEECA, and has been pre-determined by DEECA for all locations in Victoria. The location of a particular site is determined using the location map available in the Native Vegetation Information Management (NVIM) system (http://nvim.depi.vic.gov.au).

The extent of native vegetation proposed to be removed determines the assessment pathway by considering the following:

- The total area (hectares) of native vegetation (including any patches and scattered trees) proposed to be removed
- Whether any large trees are proposed to be removed, either as scattered trees or occurring in patches.

It is proposed to remove 1.960 hectares of native vegetation from within Location category 3, therefore the application for removal of this native vegetation must meet the requirements of, and be assessed in, the Detailed Assessment pathway. These requirements are provided in Appendix E.

5.3. Offset requirements

In order to ensure a gain to Victoria's biodiversity that is equivalent to the loss resulting from the proposed removal of native vegetation, compensatory offsets are required. Losses and gains are measured in general or species habitat scores or units. The offset must also include at least one large tree for every large tree removed.

For a Detailed Assessment Pathway application, the species-general offset test will determine if a general offset, species offset or combination of both is required. The results of the species-general offset test are provided in Appendix E and summarised in Table 10.

Table 10 Summary of DEECA Native Vegetation Removal Report

Attribute	Outcome	Notes
Location category	Location category 3	The native vegetation on site is in an area where the removal of less than 0.5 hectares could have a significant impact on habitat for one or more rare or threatened species. The native vegetation is also in an area mapped as an endangered ecological vegetation class (as per the state-wide EVC map).
Native vegetation removal extent	1.960 hectares	Including 26 large scattered trees and 9 small scattered trees.
Assessment pathway	Detailed Assessment Pathway	Less than 0.5 hectares however could still have significant impact in location 3.
Strategic Biodiversity Value Score	0.100 – 0.720	A range of Strategic Biodiversity Value scores for habitat zones and trees.
Modelled habitat for threatened species	Yes	Modelled habitat for multiple species (see Appendix E)
Offset type	General offset	0.377 general habitat units required and 26 large trees.

Attribute	Outcome	Notes
Offset amount: general habitat units	0.377 general habitat units	The general habitat units required for offset.
General offset vicinity	Goulburn Broken Catchment Management Authority (CMA) or Moira Shire Council.	The offset site must be located within the same CMA boundary or municipal district as the native vegetation to be removed.
General offset minimum Strategic Biodiversity Value Score	0.227	The minimum SBV score required for the general offset.
Large tree attributes	26 large trees	The offset must include protection of at least one large tree for every large tree to be removed.

5.4. Proposed offset strategy

The general offset sites must be located in the Goulburn Broken catchment management area or Moira Shire LGA. The offset site must have a minimum strategic biodiversity value score of 0.227.

It is the intention of goFARM to purchase the offset credits from the Victorian Native Vegetation Credit Register (NVCR). A quote is provided in Appendix F.

6. Key ecological values and recommendations

This section identifies the key ecological features of the study area, provides an outline of potential implications of proposed development on those values and includes recommendations to assist goFARM to design a development to minimise impacts on biodiversity.

The primary measure to reduce impacts to biodiversity values within the study area is to avoid and minimise removal of native vegetation. It is critical that this be considered during the design phase of the project, when key decisions are made about the location of infrastructure, site compounds, access roads, temporary material storage, and stockpiles. The results of this assessment should therefore be incorporated into the project design, by adding the flora and fauna mapping information into the planning maps and investigating options to retain as much of the mapped native vegetation as possible. Priority should be given to highest value areas like patch vegetation and retaining larger areas in preference to numerous smaller ones.

The design phase is also the time during which future requirements for infrastructure and services must be forecast and allowance made outside any nominated reserves for all construction works. All areas of native vegetation or fauna habitat nominated in the design plan as 'retained' are to be treated as no-go zones and are not to be encroached upon as development progresses.

A summary of potential implications of development of the study area and recommendations to minimise impacts during the **design phase** of the project is provided in Table 11.

Table 11 Summary of key ecological values, potential implications of developing the study area and recommendations to minimise ecological impacts during the design phase.

Ecological feature (Figure 2)	Implications of development	Recommendations
Native vegetation	The permanent removal of 1.960 hectares of native vegetation including 9 small scattered trees and 26 large scattered trees. No large trees in patches are proposed for removal. The application will be assessed on the Detailed Assessment Pathway.	Avoid and minimise removal of native vegetation, in accordance with the Guidelines. Refer to Section 5. Retained vegetation, including Plains Woodland patches and scattered trees should be fenced off and treated as no-go zones. Identify and implement appropriate offsets for vegetation losses as outlined in Section 5.3.
Threatened species and ecological communities	Removal of potential habitat for threatened species (as identified in Table 3).	Nominate retained areas of patch vegetation and scattered trees as no-go zones and adhere to these boundaries during construction works.

Recommendations

This report includes recommendations to assist goFARM to plan, design and complete the proposed works in a way that reduces impacts on biodiversity. Actions to minimise impacts on native vegetation and threatened species habitat need to be considered at the design stage and mitigation measures will need to be implemented through a project Construction Environmental Management Plan (CEMP). Future requirements for infrastructure must be forecast as much as possible at this time and allowance made outside any

nominated reserves for all construction works. All areas of vegetation/habitat nominated in this report as 'retained' are to be treated as no-go zones and are not to be encroached upon as development progresses

Construction and post-construction management

Specific detail relating to preventing impacts to retained native vegetation and terrestrial habitat should be addressed in a site-specific Construction Environmental Management Plan. This will include issues relating to contractors such as environmental inductions, installation of temporary fencing, signage, drainage and sediment control.

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Appendices

Appendix A. Flora

Abbreviations and symbols:

Code	Meaning	Reference
National listings (EPBC Act)		
EX	Extinct	Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)
CR	Critically endangered	
EN	Endangered	
VU	Vulnerable	
PMST	Protected Matters Search Tool	
State listings (FFG Act)		
x	Extinct	Victorian Flora and Fauna Guarantee Act 1988 (FFG Act)
cr	Critically endangered	
e	Endangered	
v	Vulnerable	
t	Threatened	
P	Protected (public land only)	
Weed status (CaLP Act, DAWE Weeds of National Significance)		
SP	State prohibited species	Victorian Catchment and Land Protection Act 1994 (CaLP Act)
RP	Regionally prohibited species	
RC	Regionally controlled species	
R	Restricted species	

Appendix A.1. Flora species recorded from the study area

Table 12 Flora species recorded from the study area

Status	Scientific name	Common name
Indigenous species		
	Acacia implexa	Lightwood
cr, P, e	*Allocasuarina luehmannii*	Buloke
	Asperula conferta	Common Woodruff
	Atriplex semibaccata	Berry Saltbush
	Callistemon spp.	Bottlebrush
	Callitris glaucophylla	White Cypress-pine
	Carex inversa	Knob Sedge
	Carex spp.	Sedge
	Chloris truncata	Windmill Grass
P	*Cotula* spp.	Cotula
	Einadia nutans	Nodding Saltbush
	Eleocharis acuta	Common Spike-sedge
	Enteropogon acicularis	Spider Grass
	Eucalyptus largiflorens	Black Box
	Eucalyptus microcarpa	Grey Box
P	*Laphangium luteoalbum*	Jersey Cudweed
P	*Marsilea drummondii*	Common Nardoo
	Microlaena stipoides var. *stipoides*	Weeping Grass
	Oxalis perennans	Grassland Wood-sorrel
	Phragmites australis	Common Reed
	Rumex spp.	Dock
	Rytidosperma duttonianum	Brown-back Wallaby-grass
	Rytidosperma racemosum var. *racemosum*	Slender Wallaby-grass
	Solanum spp.	Nightshade
P	*Sonchus* spp.	Sow Thistle
P	*Vittadinia* spp.	New Holland Daisy
	Wahlenbergia spp.	Bluebell
Introduced species		
RC	*Amsinckia* spp.	Fiddle Neck
	Arctotheca calendula	Cape Weed
	Avena barbata	Bearded Oat
	Bromus hordeaceus	Soft Brome
	Cenchrus clandestinus	Kikuyu
R	*Cirsium vulgare*	Spear Thistle
	Citrullus lanatus	Camel Melon
	Cyperus eragrostis	Drain Flat-sedge
RC	*Echium plantagineum*	Paterson's Curse
	Ehrharta longiflora	Annual Veldt-grass

Status	Scientific name	Common name
	Erigeron bonariensis	Flaxleaf Fleabane
	Eucalyptus cladocalyx	Sugar Gum
	Fraxinus angustifolia	Desert Ash
	Helminthotheca echioides	Ox-tongue
	Hordeum spp.	Barley Grass
	Lactuca serriola	Prickly Lettuce
	Lepidium africanum	Common Peppercress
	Lolium perenne	Perennial Rye-grass
	Lolium rigidum	Wimmera Rye-grass
RC	*Lycium ferocissimum*	African Box-thorn
	Malva parviflora	Small-flower Mallow
	Medicago polymorpha	Burr Medic
R	*Oxalis pes-caprae*	Soursob
	Phalaris aquatica	Toowoomba Canary-grass
	Plantago lanceolata	Ribwort
	Polygonum arenastrum	Wireweed
	Romulea rosea	Onion Grass
RC	*Rosa rubiginosa*	Sweet Briar
	Rumex crispus	Curled Dock
	Schinus molle	Pepper Tree
	Sonchus oleraceus	Common Sow-thistle
	Trifolium arvense var. *arvense*	Hare's-foot Clover
	Trifolium dubium	Suckling Clover
	Trifolium spp.	Clover
	Urtica urens	Small Nettle
	Vicia sativa	Common Vetch

Appendix A.2. Listed flora species

The following table includes threatened flora species that have potential to occur within the study area, sourced from the VBA and PMST (accessed on 3 October 2023). Where years are specified for the most recent database records, these refer to records from the VBA unless otherwise specified. Where no year is specified, the PMST has predicted that the species has potential to occur. A proportion of the flora habitat descriptions have been reproduced with permission from the Royal Botanic Gardens Victoria (RBGV 2020).

Table 13 Threatened flora species recorded or predicted to occur within 10 km of the study area

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
National significance								
Amphibromus fluitans	River Swamp Wallaby-grass	VU			PMST	Swampy areas, mainly along the Murray River between Wodonga and Echuca with scattered records from southern Victoria.	**Negligible**	There are no records of this species within the search area. The distribution of this species occurs further north of the study area adjacent to the Murray River and its tributaries. There is limited suitable floodplain or moist environments for this species to occur in the study area.
Austrostipa wakoolica	Austrostipa wakoolica	EN			PMST	Confined to the floodplains of the Murray River tributaries of central-western and south-western NSW.	**Negligible**	This species is known to occur in NSW in Murray River tributaries. As the study area is in Victoria and further removed from the Murray River and its tributaries, this species is unlikely to occur in the study area.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
Brachyscome muelleroides	Mueller Daisy	VU	e	1996	PMST	Floodplains of the Murray River and its tributaries.	**Low**	This species is extremely rare and in Victoria it is confined to the floodplains of the Murray River and its tributaries. There are records from the 1990s in the search area for this species, which occur to the south-east and north of the study area. Due to the history of farming and clearing in the study area, it is unlikely this species would occur in the study area.
Lepidium aschersonii	Spiny Peppercress	VU	e		PMST	Heavy clay soils near salt lakes on the volcanic plains; disjunct records near Lake Omeo.	**Negligible**	There are no records of this species within the search area. There is no suitable salt lake habitat for this species to occur in within the study area.
Lepidium monoplocoides	Winged Peppercress	EN	e		PMST	A variety of grassland, wetland and floodplain communities on finely textured soils; sometimes in exposed, sparsely vegetated sites, on dry and eroded clay scolds.	**Low**	There are no records of this species in the search area. This species has minimal suitable grassland, wetland and floodplain habitat in the study area.
Myriophyllum porcatum	Ridged Water-milfoil	VU	cr	2008	PMST	Ephemeral wetlands, rock pools, farm dams and watercourse shallows.	**Low**	There are records within the search area of this species. This species is rare and is restricted to wetlands and farm dams of which some highly disturbed examples occur in the study area.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
Pimelea spinescens subsp. spinescens	Spiny Rice-flower	CR	cr		PMST	Primarily grasslands featuring a moderate diversity of other native species and inter-tussock spaces, although also recorded in grassland dominated by introduced perennial grasses.	**Low**	There are no records of this species in the search area. This species has minimal suitable derived native grassland habitat in the study area, due to historical clearing and grazing.
Sclerolaena napiformis	Turnip Copperburr	EN	cr		PMST	Native grassland and Box/Buloke woodlands, on clay-loam soil, that are infrequently grazed or cultivated.	**Low**	There are no records of this species in the search area. There is minimal derived native grassland and box woodland in the study area, however due to the historical land use, including cultivation and grazing, this species is unlikely to occur in the study area.
Senecio macrocarpus	Large-headed Fireweed	VU	cr		PMST	Grassland, shrubland and woodland habitats on heavy soils subject to waterlogging and/or drought conditions in summer.	**Low**	There are no records of this species within the search area. This species has suitable habitat within the derived grasslands and woodland areas of the study area. However this species is largely confined to remnant Themeda grasslands near Melbourne, west of the Skipton area and the overall distribution is further south of the study area.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
Senecio psilocarpus	Swamp Fireweed	VU			PMST	Seasonally inundated herb-rich swamps, growing on peaty soils or volcanic clays.	**Low**	This species has no records within the study area. There is some suitable inundated habitat for the species, however the overall Victorian distribution of this species is further south and south-west of the study area.
Swainsona murrayana	Slender Darling-pea	VU	e	1997	PMST	Around lakes and on flats that are subject to seasonal inundation.	**Low**	This species has records in the search area from 1997. The derived grasslands near remnant canopy species has been heavily cultivated and therefore this species has a low likelihood of occurrence.
Swainsona plagiotropis	Red Swainson-pea	VU	e		PMST	Northern Plains Grassland communities on clay loam and clay soils, typically in areas that are seasonally inundated.	**Low**	There are no records of this species in the search area. This species is rare and apparently restricted to north-central Victoria where it grows in roadside remnant grassland patches.
State significance								
Acacia homalophylla	Yarran Wattle		cr	1997		Belah Casuarina pauper, Rosewood Alectryon spp. and Box communities occurring on solonized brown earths.	**Low**	There are records within the search area of this species. There are Box communities in the study area, however, these habitats are highly modified and cropped and are unsuitable for this species.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
Allocasuarina luehmannii	Buloke		cr	2021		Non-calcareous soils in drier areas on slopes and plains; often in woodlands associated with Grey Box.	**Recorded**	There are records within the search area and this species was recorded during the site visit.
Atriplex spinibractea	Spiny-fruit Saltbush		e	1994		Occurring in heavy alluvial soil in Grey Box woodland.	**Medium**	There are records of this species in the search area. There is suitable Grey Box woodland in the study area that this species could occur in.
Brachyscome chrysoglossa	Yellow-tongue Daisy		e	2002		Clay soils that are typically subject to inundation.	**Low**	There are records of this species in the search area, however they occur on the outskirts of this search area, closer to inundated areas adjacent to the Murray River and its tributaries.
Brachyscome readeri	Reader's Daisy		e	1993		Usually growing in areas subject to inundation in the south-west and in the north of the state near the Murray River, between Swan Hill and Ulupna Island.	**Low**	There is one record of this species from the search area in 1993. The records in the broader landscape for this species are adjacent to the Murray River in areas that are subject to inundation. This species could occur in the study area in areas of inundation, however, due to limited records in close proximity to the study area, this species has a low likelihood of occurrence.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
Callitriche umbonata	Winged Water-starwort		e	1996		Damp, periodically waterlogged sites; swamps and shallow freshwater ponds.	**Low**	There are minimal records for this species in the search area from 1996 and prior. This species could occur in waterlogged areas of the study area but due to the history of clearing on site and the limited records for this species, it has a low likelihood of occurrence in the study area.
Calotis anthemoides	Cut-leaf Burr-daisy		cr	1999		Scattered north and west of Melbourne (e.g. Sunshine, Camperdown, Moyston, Dunkeld, Numurkah regions) on heavy soils prone to waterlogging, but now rather rare due to habitat depletion.	**Low**	There are records of this species in the search area. This species is known for areas north and west of Melbourne including Numurkah, which is south of the study area. This species is rare due to habitat depletion. As the study area has a history of clearing, this species has a low likelihood of occurrence.
Cardamine moirensis	Riverina Bitter-cress		e	2008		Low-lying, seasonally wet areas near streams and swamps.	**Low**	There are records of this species in the search area. In the search area, the species records are in closer proximity to the Murray River and creeklines. The study area does not support any swamps or streams, however there are areas of inundated or waterlogged habitat. Due to the lack of records in close proximity to the study area and minimal preferred habitat, this species has a low likelihood of occurrence.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
Dianella tarda	Late-flower Flax-lily		cr	1993		Heavy soils in grassy woodland environments dominated by River Red-gum *Eucalyptus camaldulensis* and Yellow Box *E. melliodora.*	**Low**	There are records of this species in the search area from 1993. There is some grassy woodland habitat in the study area, however these habitats are dominated by Grey Box.
Eremophila maculata subsp. maculata	Spotted Emu-bush		cr	1993		Mainly in Black Box forests or woodlands on heavy clay soils.	**Low**	There are records in the search area for this species. This species occurs predominantly in habitats with Black Box canopy, which is absent in the study area. As there are minimal records near the study area that occur further south-west and minimal suitable habitat, this species has a low likelihood of occurrence.
Eryngium paludosum	Long Eryngium		e	2002		Heavy soils of river floodplains and lake margins.	**Low**	There are records of this species in the search area. This species occurs mainly in river floodplains and on lake margins. The study area does not contain lakes and is further removed from the river, however there is minimal suitable inundated areas and waterholes in the study area that this species could occur in.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
Glossostigma cleistanthum	Small-flower Mud-mat		e	1997		Shallow freshwater sites, more commonly in those which are seasonally inundated.	**Low**	There is a record for this species in the search area from 1997, however this record occurs further south of Numurkah. This species has minimal suitable habitat in the study area but could occur in inundated areas.
Maireana microphylla	Small-leaf Bluebush		e	1998		Remnant native vegetation on loamy soils in far north-central Victoria.	**Low**	There are records of this species in the search area. These records occur mainly north of the study area adjacent to the Murray Valley Highway. However the study area is heavily disturbed and cropped and the remnant patches are of low quality.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
Minuria integerrima	Smooth Minuria		v	1996		Heavy clay and alluvial silty soils on the Murray River floodplains.	**Low**	This species has records in the search area, however these records occur further towards the Murray River and its tributaries and adjacent to creeklines south of the study area. There are some waterholes and seasonally inundated areas in the study area, however, due to a lack of records immediately adjacent to the study area, this species has a low likelihood of occurrence.
Myoporum montanum	Waterbush		e	1991		Mallee and riparian woodlands, and rocky gorges.	**Low**	There are records for this species in the search area, however, this species has no suitable mallee, riparian woodland or rocky gorges in the study area where it could occur. This species therefore has a low likelihood of occurrence.
Myriophyllum gracile var. lineare	Slender Water-milfoil		e	2010		In Victoria, known only from a few collections near Numurkah where it grows in damp areas that become pools in winter.	**Low**	This species has records in the search area. There are minimal records adjacent to the study area and there are no suitable pools for this species to grow in.
Myriophyllum striatum	Striped Water-milfoil		e	1997		Damp areas on creek banks and around waterholes, but occasionally found in deep water.	**Low**	This species has records from the search area. There is no suitable habitat for this species.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
Nymphoides crenata	Wavy Marshwort		e	1964		Occurs in fresh, still to slow-flowing water to 1.5 m deep in swamps, lagoons, irrigation channels and streams, also frequent in temporarily inundated depressions.	**Low**	This species has records from the search area, however they occur further north and south of the study area. This species could occupy damp areas around waterholes and inundated areas in the study area.
Panicum laevinode	Pepper Grass		v	2005		Semi-arid shrub woodlands, acacia shrublands, arid tussock grasslands, and arid hummock grasslands.	**Low**	This species has records in the search area, however there is no suitable habitat for this species as it prefers arid environments.
Swainsona behriana	Southern Swainson-pea		e	2002		Grasslands and grassy woodlands.	**Low**	Study area heavily cropped and disturbed, no suitable habitat.
Swainsona sericea	Silky Swainson-pea		e	1999		Grasslands and grassy woodlands.	**Low**	Study area heavily cropped and disturbed, no suitable habitat.
Tripogonella loliiformis	Rye Beetle-grass		e	2002		Dry sites in association with escarpments and rocky outcrops.	**Negligible**	No suitable habitat.

Appendix A.3. Threatened ecological communities

The following table includes the threatened ecological communities that have potential to occur within the project area, compiled with reference to characteristics of FFG Act threatened communities (SAC 2013) and predictive output from the PMST (accessed on 3 October 2023).

Table 14 Threatened ecological communities predicted to occur within 10 km of the study area.

Community Name	Conservation status	Source	Presence/absence on site
National significance			
Natural Grasslands of the Murray Valley Plains	Critically Endangered	PMST	**Absent**. Native vegetation in the study area is limited to patch vegetation with predominantly introduced vegetation and scattered native understorey species or scattered trees in cropped paddocks. There are no native grasslands on site. The study area is currently used for cropland and is historically disturbed.
Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains	Critically Endangered	PMST	**Absent**. No wetland ecological values are present on site.
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered	PMST	**Absent**. The canopy species of this community, White Box *Eucalyptus albens*, Yellow Box *Eucalyptus melliodora* and Blakey's Red Gum *Eucalyptus blakelyi* are absent in the study area and the derived native grassland of this community is absent due to historical clearing of the study area for farm and crop use.
Buloke Woodlands of the Riverina and Murray-Darling Depression Bioregions	Endangered	PMST	**Absent**. Buloke individuals were recorded in the study area, however, the understorey of the study area is heavily mofified or cropped. The native vegetation on site does not meet the condition benchmarks for this community.
Grey Box (Eucalyptus microcarpa) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia	Endangered	PMST	**Absent**. Canopy species, including Grey Box were recorded in the study area, however, the understorey of the study area is heavily degraded or cropped. The native vegetation on site does not meet

Community Name	Conservation status	Source	Presence/absence on site
			the condition benchmarks for this community.
Weeping Myall Woodlands	Endangered	PMST	**Absent**. The native vegetation on site does not meet the condition benchmarks for this community.
State significance			
Creekline Grassy Woodland (Goldfields) Community	Threatened		**Absent**. Canopy species were recorded in the study area including Grey Box and planted River Red-gum. The understorey of the study area is heavily degraded or cropped. The native vegetation on site does not meet the condition benchmarks for this community.
Northern Plains Grassland Community	Threatened		**Absent**. Native vegetation in the study area is limited to patch vegetation with predominantly introduced vegetation and scattered native understorey species or occurs as scattered trees in cropped paddocks. There are no native grasslands on site. The study area is currently used for cropland and is historically disturbed.

Appendix B. Fauna

Abbreviations and symbols:

Code	Meaning	Reference
National listings (EPBC Act)		
EX	Extinct	Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)
CR	Critically endangered	
EN	Endangered	
VU	Vulnerable	
NT	Near threatened	
CD	Conservation dependent	
PMST	Protected Matters Search Tool	
State listings (FFG Act)		
x	Extinct	Victorian Flora and Fauna Guarantee Act 1988 (FFG Act)
cr	Critically endangered	
e	Endangered	
v	Vulnerable	
t	Threatened	
Pest animal status (CaLP Act and Fisheries Act)		
PS	Declared pest animal	Victorian Catchment and Land Protection Act 1994 (CaLP Act)

Appendix B.1. Listed fauna species

The following table includes a list of threatened fauna species that have potential to occur within the study area, sourced from the VBA and PMST (accessed on 3 October 2023). Where years are specified for the most recent database records, these refer to records from the VBA unless otherwise specified. Where no year is specified, the PMST has predicted that the species has potential to occur.

Table 15 Threatened fauna species recorded or predicted to occur within 10 km of the study area

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
National significance								
Pedionomus torquatus	Plains-wanderer	CR	cr		PMST	Native grassland with a sparse, open structure.	**Negligible**	No records within the search area. No undisturbed native grassland remaining in the study area.
Rostratula australis	Australian Painted-snipe	EN	cr		PMST	Shallows of well-vegetated freshwater wetlands.	**Negligible**	No records within the search area. There are no suitable well-vegetated freshwater wetlands in the study area.
Botaurus poiciloptilus	Australasian Bittern	EN	cr	2004	PMST	Shallow freshwater and brackish wetlands with abundant emergent aquatic vegetation.	**Low**	This species has records within the search area. However, there is no suitable freshwater or wetlands in the study area, and the irrigation channel is greatly disturbed.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
Falco hypoleucos	Grey Falcon	VU	v	1999	PMST	Lightly timbered plains and Acacia scrub.	**Low**	There is one record of this species in the search area from 1999. There is minimal suitable Acacia scrub or lightly timbered plain habitat for this species due to clearing history in the study area.
Lophochroa leadbeateri	Major Mitchell's Cockatoo	EN	cr		PMST	Mallee, mulga, treed farmland, cereal crops and Callitris woodland.	**Medium**	Recent record within 20 km of study area. May use box eucalypts around farmland.
Polytelis swainsonii	Superb Parrot	VU	e	2017	PMST	Red-gum and box-dominated forests and woodlands.	**Medium**	There are recent records of this species in the search area. This species may utilise Grey Box woodlands in the study area on occasion to forage and as a stepping stone between surrounding vegetation in the broader landscape.
Neophema chrysostoma	Blue-winged Parrot	VU		1980	PMST	A range of coastal, sub-coastal and semi-arid regions throughout south-eastern Australia. Nests in tree hollows in coastal eucalypt forests and woodlands. Feeds on seeds of a range of native grasses and herbs.	**Medium**	Historic records in local area, and some suitable habitat in Plains Woodland habitat.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
Lathamus discolor	Swift Parrot	CR	cr	2018	PMST	A range of forests and woodlands, especially those supporting nectar-producing tree species. Also well-treed urban areas.	**Medium**	There are recent records of this species in the search area. This species may utilise Grey Box woodlands in the study area on occasion to forage and as a stepping stone between surrounding vegetation in the broader landscape.
Pezoporus occidentalis	Night Parrot	EN			PMST	Low vegetation in arid and semi-arid areas dominated by Triodia spp., chenopod, and samphire shrublands.	**Negligible**	There are no records for this species in the search area. There is no suitable arid or semi-arid areas in the study area that support the species preferred habitat.
Hirundapus caudacutus	White-throated Needletail	VU	v	1980	PMST	An almost exclusively aerial species within Australia, occurring over most types of habitat, particularly wooded areas.	**Medium**	There are records for this species in the search area. This species is exclusively aerial and could operate in the air space above Grey Box woodlands in the study area.
Calidris ferruginea	Curlew Sandpiper	CR	cr		PMST	Large intertidal sandflats, banks, mudflats, estuaries, inlets, sewage farms, saltworks, harbours, coastal lagoons and bays.	**Negligible**	This species has no records in the search area and no suitable waterbody habitat in the study area.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
Melanodryas cucullata	Hooded Robin	EN	v	2002	PMST	Woodlands of eucalypt, Mallee, semi-cleared farmland.	**Low**	There is a record in the local area and small patches of suitable habitat in the study area, but these are quite fragmented from larger suitable patches.
Aphelocephala leucopsis	Southern Whiteface	VU		1981	PMST	Occurs in a wide range of open woodlands and shrublands, favouring sparsely treed areas with an herbaceous understorey containing grasses and/or shrubs.	**Low**	Historical records in local area and there are small patches of suitable habitat in the study area, but these are quite fragmented from larger suitable patches.
Grantiella picta	Painted Honeyeater	VU	v		PMST	Dry open woodlands and forests. Typically forages for fruit and nectar in mistletoes and in tree canopies.	**Negligible**	This species has no records within the search area. Generally occurs in Acaccia woodlands containing Grey Mistltoe or on the edge of forested habitats.
Anthochaera phrygia	Regent Honeyeater	CR	cr		PMST	A range of dry woodlands and forests dominated by nectar-producing tree species.	**Negligible**	No suitable habitat in the study area.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
Stagonopleura guttata	Diamond Firetail	VU	v	1994	PMST	Open forests and woodlands with a grassy ground layer.	**Low**	There are records in the search area for this species, however there is minimal woodland patches with native grassy ground layer and records in the broader landscape occur within closer proximity to creeklines and rivers than where the study area is situated.
Climacteris picumnus	Brown Treecreeper	VU		2018	PMST	Open eucalypt forests, woodlands and Mallee, often where there are stands of dead trees.	**Medium**	Recent records in local area, however these are closer to riparian areas. There are small patches of suitable habitat in the study area, but these are quite fragmented from larger suitable patches. Study area within this species' range.
Pteropus poliocephalus	Grey-headed Flying-fox	VU	v	2020	PMST	Rainforest, wet and dry sclerophyll forest, woodland and urban areas.	**Low**	There are records of this species within the search area, however these occur south of the study area near Numurkah in well vegetated areas adjacent to Broken Creek. Strips of planted vegetation in the study area are isolated from

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
								any surrounding vegetation.
Aprasia parapulchella	Pink-tailed Worm-Lizard	VU	e		PMST	Woodland and grassland with partially buried rocks.	**Negligible**	No suitable habitat.
Crinia sloanei	Sloane's Froglet	EN	e		PMST	Adults are most common in woodlands, floodplains, grasslands, and open and disturbed areas.	**Low**	There are no records of this species in the search area. There is minimal suitable habitat for this species the study area and any waterbodies in the study area are highly disturbed.
Litoria raniformis	Growling Grass Frog	VU	v	1973	PMST	Still or slow-flowing waterbodies and surrounding terrestrial vegetation.	**Low**	There are historical records including one from 1973 of this species in the search area. However, there is minimal suitable habitat for this species in the study area as any waterbodies are heavily disturbed and have minimal surrounding vegetation.
Galaxias rostratus	Flat-headed Galaxias	CR	v		PMST	Still or slow-moving waters of rivers, billabongs, lakes and swamps.	**Negligible**	No suitable aquatic habitat for this species in the study area.
Maccullochella macquariensis	Trout Cod	EN	e		PMST	Streams characterised by a high abundance of large woody debris.	**Negligible**	No suitable aquatic habitat for this species in the study area.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
Maccullochella peelii	Murray Cod	VU	e		PMST	A diverse range of stream habitats in the Murray-Darling basin; principally the main channels of rivers and their major tributaries.	**Negligible**	No suitable aquatic habitat for this species in the study area.
Macquaria australasica	Macquarie Perch	EN	e		PMST	Streams with clear water and deep, rocky holes with abundant cover.	**Negligible**	No suitable aquatic habitat for this species in the study area.
Bidyanus bidyanus	Silver Perch	CR	e		PMST	Lowland streams within the Murray-Darling Basin.	**Negligible**	No suitable aquatic habitat for this species in the study area.
Synemon plana	Golden Sun Moth	VU	v		PMST	Natural temperate grassland, grassy woodland and pasture supporting spear grasses and wallaby grasses and exotic grassland dominated by Chilean needle grass.	**Low**	There are no records for this species in the search area. There is minimal suitable intact grassy woodland that could support this species.
State significance								
Geopelia cuneata	Diamond Dove		v	1980		Drier woodlands and scrub, spinifex and mulga.	**Low**	There is a historic record of this species in the search area (1980). There is some Grey Box woodland in the study aream however, due to the disturbed nature of the study area and absence of mulga, spinifex and scrub, this species has a low likelihood of occurence.
Burhinus grallarius	Bush Stone-curlew		cr	2008		Open woodland, treed farmland.	**Low**	Habitat within the study area is modified.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
Antigone rubicunda	Brolga		e	1981		Shallow freshwater and brackish wetlands, crops, grassland and pasture. [NOTE: Due to recent taxonomic changes; genus Antigone has changed to Grus. Formally recognised by birdlife Australia]	**Medium**	There are records for this species in the search area, however these occur further north and south of the study area. This species could utilise croplands in the study area on very rare occasion. The croplands are not a permanent food source for this species and are harvested regularly.
Egretta garzetta	Little Egret		e	2007		Swamps, billabongs, floodplain pools, mudflats, mangroves and channels; breeds in trees standing in water.	**Medium**	There are records for this species in the search area. There is minimal suitable habitat in the channels in the study area.
Ardea intermedia plumifera	Plumed Egret		cr	2018		Densely vegetated freshwater wetlands including lakes, swamps and billabongs. Breeds in trees standing in water.	**Medium**	There are records for this species in the search area. There is minimal suitable waterbody habitat for this species in the study area. There is a lack of trees with submerged roots in the study area. This species is therefore unlikely to utilise the study area on a regular basis.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
Ardea alba modesta	Eastern Great Egret		v	2019		Flooded crops, pasture, swamps, lagoons, saltmarsh, sewage ponds, estuaries, dams, roadside ditches. Breeds in trees standing in water.	**Medium**	There are recent records for this species in the search area, however these occur south of the study area in suitable habitat adjacent to riparian creekline vegetation. The study area has limited waterbodies for this species and is removed from trees standing in water for the species to utilise for breeding.
Ixobrychus dubius	Australian Little Bittern		e	2007		Freshwater swamps, lakes and rivers with dense reedbeds, saltmarsh and coastal lagoons.	**Low**	There are records in the search area for this species, however there is no suitable habitat for this species in the study area.
Anseranas semipalmata	Magpie Goose		v	2017		Swamps, lakes, sewage ponds, flooded pasture, dams.	**Low**	There are records in the search area for this species, however there is no suitable waterbody habitat for this species in the study area.
Spatula rhynchotis	Australasian Shoveler		v	2017		Variety of wetlands, with a preferance for large, parmanent, freshwater lakes/swamps with dense fringing vegetation.	**Low**	There are records for this species in the search area, however the records further north and south of the study area in extensive vegetation and aquatic

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
								environments, of which there is minimal in the study area.
Aythya australis	Hardhead		v	2018		Deep freshwater swamps and wetlands, with abundant aquatic and terrestrial vegetation for roosting. Can occur in sheltered estuaries.	**Low**	There are records for this species in the search area, however there are minimal suitable waterbodies or aquatic vegetation for this species in the study area.
Oxyura australis	Blue-billed Duck		v	2000		Open or densely vegetated wetlands.	**Negligible**	There is a record for this species from 2000 in the search area, however, there is no suitable wetland habitat for this species in the study area to support this species.
Biziura lobata	Musk Duck		v	1989		Deep, permanent freshwater wetlands with areas of open water and patches of dense aquatic vegetation.	**Medium**	There are records for this species in the search area, however there are minimal suitable waterbodies or aquatic vegetation for this species in the study area.
Hieraaetus morphnoides	Little Eagle		v	2004		Woodland and open areas. Rabbits are a key component of their diet. Nesting occurs in mature trees in open woodland or riparian vegetation.	**Medium**	There are records for this species in the search area, and there is some suitable woodland habitat and open area for this

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
								species in the study area.
Haliaeetus leucogaster	White-bellied Sea-Eagle		e	2005		Coastal areas such as beaches and estuaries, inland wetlands and major inland streams.	**Low**	There are records for this species in the search area, however there are minimal suitable waterbodies or aquatic vegetation for this species.
Falco subniger	Black Falcon		cr	2009		Woodlands, open country and around terrestrial wetlands areas, including rivers and creeks. Primarily occurs in arid and semi-arid zones in the north, north-west and west of Victoria.	**Medium**	This species has records within the search area and may utilise the woodlands and open areas of the study area for hunting.
Ninox connivens	Barking Owl		cr	1979		Eucalypt forests and woodlands.	**Medium**	There are historical records of this species in the search area. This species may utilise the Grey Box woodlands in the study area. This species may utilise some areas of planted eucalypts, *Allocasuarina* thickets and revegetation areas throughout the study area.
Actitis hypoleucos	Common Sandpiper		v		PMST	Migrates to Australia from Eurasia in August where it inhabits a wide variety of coastal and inland wetlands	**Negligible**	No suitable aquatic habitat for this species in the study area.

Scientific name	Common name	Conservation status		Most recent database record	Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	FFG					
						with muddy margins before departing north in March.		
Coracina maxima	Ground Cuckoo-shrike		e	1999		Open woodland, farmland, mulga, spinifex with scattered trees.	**Low**	Rare in Victoria, limited suitable habitat.
Pomatostomus temporalis	Grey-crowned Babbler		v	2020		Open forests and woodlands.	**Medium**	There are records for this species in the search area. The records occur to the north of the study area and the Murray Valley Highway. This species could utilise Grey Box woodland and planted eucalypts and other trees in the study area to forage and nest in.
Varanus varius	Lace Monitor		e	2019		A variety of wooded habitats, including woodlands; shelters in hollow trunks, limbs and logs.	**Low**	There are records for this species within the search area, however due to the cleared nature of the study area and timber removal, this species has minimal suitable habitat to utilise in the study area.

Appendix B.2. Migratory species (EPBC Act listed)

Table 16 Migratory fauna species recorded or predicted to occur within 10 km of the study area

Scientific name	Common name	Most recent record
Migratory species		
Gallinago hardwickii	Latham's Snipe	2008
Plegadis falcinellus	Glossy Ibis	2018
Hirundapus caudacutus	White-throated Needletail	1980
Apus pacificus	Fork-tailed Swift	2005
Actitis hypoleucos	Common Sandpiper	PMST
Calidris ferruginea	Curlew Sandpiper	PMST
Calidris acuminata	Sharp-tailed Sandpiper	PMST
Calidris melanotos	Pectoral Sandpiper	PMST
Motacilla flava	Yellow Wagtail	PMST
Rhipidura rufifrons	Rufous Fantail	1978
Myiagra cyanoleuca	Satin Flycatcher	PMST

Appendix C. Photos of the study area

Photo 1 **EVC 803 Plains Woodland with predominantly introduced vegetation (Boxthorn *Lycium ferocissimum*) understorey. Looking approximately north. Photo taken 15 November 2022.**

Photo 2 **EVC 803 Plains Woodland with crop understorey in the study area. Looking approximately north-west. Photo taken 15 November 2022.**

Photo 3 **Example of scattered trees in the study area. Looking approximately west. Photo taken 16 November 2022.**

Photo 4 **Example of planted vegetation in the study area. Looking approximately north-east. Photo taken 15 November 2022.**

Photo 5 **Example of predominantly introduced vegetation (Boxthorn in foreground) in the study area with native canopy. Looking approximately north-east. Photo taken 15 November 2022.**

Photo 6 **Example of cropped paddocks in the study area. Looking approximately west. Photo taken 16 November 2022.**

Photo 7 **Example of farm dam in the study area. Looking approximately south. Photo taken 16 November 2022.**

Appendix D. Vegetation impact assessment results

Appendix D.1. Tree data

Table 17 Scattered trees within the study area to be removed

Tree #	Scientific name	Common name	Circumference (cm)	Size	Extent	Tree retention zone (m)	Other attributes	Status
35	*Callitris glaucophylla*	White Cypress Pine	31.4	Small	0.031	1.2	N/A	To be directly removed
34	*Callitris glaucophylla*	White Cypress Pine	47.1	Small	0.031	1.8	N/A	To be directly removed
329	*Eucalyptus microcarpa*	Grey Box	78.5	Small	0.031	3	N/A	To be directly removed
572	*Eucalyptus microcarpa*	Grey Box	94.2	Small	0.031	3.6	N/A	To be directly removed
666	*Eucalyptus microcarpa*	Grey Box	94.2	Small	0.031	3.6	N/A	To be directly removed
50	*Eucalyptus microcarpa*	Grey Box	125.6	Small	0.031	4.8	Hollows	To be directly removed
628	*Eucalyptus microcarpa*	Grey Box	141.3	Small	0.031	5.4	N/A	To be directly removed
150	*Eucalyptus microcarpa*	Grey Box	157	Small	0.031	6	Hollows	To be directly removed
533	*Eucalyptus microcarpa*	Grey Box	188.4	Small	0.031	7.2	N/A	To be directly removed

Tree #	Scientific name	Common name	Circumference (cm)	Size	Extent	Tree retention zone (m)	Other attributes	Status
611	*Callitris glaucophylla*	White Cypress Pine	141.3	Large	0.070	5.4	Hollows	To be directly removed
552	Dead	Dead	188.4	Large	0.070	7.2	N/A	To be directly removed
612	*Eucalyptus largiflorens*	Black Box	188.4	Large	0.070	7.2	Hollows	To be directly removed
159	*Eucalyptus microcarpa*	Grey Box	219.8	Large	0.070	8.4	Hollows	To be directly removed
606	*Eucalyptus microcarpa*	Grey Box	219.8	Large	0.070	8.4	Hollows	To be directly removed
595	*Eucalyptus microcarpa*	Grey Box	235.5	Large	0.070	9	Hollows	To be directly removed
607	*Eucalyptus microcarpa*	Grey Box	235.5	Large	0.070	9	Hollows	To be directly removed
626	*Eucalyptus microcarpa*	Grey Box	235.5	Large	0.070	9	Hollows	To be directly removed
151	*Eucalyptus microcarpa*	Grey Box	251.2	Large	0.070	9.6	Hollows	To be directly removed
516	*Eucalyptus microcarpa*	Grey Box	251.2	Large	0.070	9.6	Hollows	To be directly removed
550	*Eucalyptus microcarpa*	Grey Box	251.2	Large	0.070	9.6	Hollows	To be directly removed
635	*Eucalyptus microcarpa*	Grey Box	251.2	Large	0.070	9.6	N/A	To be directly removed

Tree #	Scientific name	Common name	Circumference (cm)	Size	Extent	Tree retention zone (m)	Other attributes	Status
85	*Eucalyptus microcarpa*	Grey Box	251.2	Large	0.070	9.6	Hollows	To be directly removed
67	*Eucalyptus microcarpa*	Grey Box	257.48	Large	0.070	9.84	Hollows	To be directly removed
69	*Eucalyptus microcarpa*	Grey Box	260.62	Large	0.070	9.96	Hollows	To be directly removed
148	*Eucalyptus microcarpa*	Grey Box	266.9	Large	0.070	10.2	Hollows	To be directly removed
19	*Eucalyptus microcarpa*	Grey Box	266.9	Large	0.070	10.2	Hollows	To be directly removed
71	*Eucalyptus microcarpa*	Grey Box	266.9	Large	0.070	10.2	Hollows	To be directly removed
545	*Eucalyptus microcarpa*	Grey Box	282.6	Large	0.070	10.8	Hollows	To be directly removed
70	*Eucalyptus microcarpa*	Grey Box	282.6	Large	0.070	10.8	Hollows	To be directly removed
84	*Eucalyptus microcarpa*	Grey Box	282.6	Large	0.070	10.8	Hollows	To be directly removed
86	*Eucalyptus microcarpa*	Grey Box	282.6	Large	0.070	10.8	Hollows	To be directly removed
134	*Eucalyptus microcarpa*	Grey Box	298.3	Large	0.070	11.4	Hollows	To be directly removed
627	*Eucalyptus microcarpa*	Grey Box	298.3	Large	0.070	11.4	Hollows	To be directly removed

Tree #	Scientific name	Common name	Circumference (cm)	Size	Extent	Tree retention zone (m)	Other attributes	Status
83	*Eucalyptus microcarpa*	Grey Box	298.3	Large	0.070	11.4	Hollows	To be directly removed
72	*Eucalyptus microcarpa*	Grey Box	314	Large	0.070	12	Hollows	To be directly removed
81	*Eucalyptus microcarpa*	Grey Box	314	Large	0.070	12	Hollows	To be directly removed
31	*Eucalyptus microcarpa*	Grey Box	329.7	Large	0.070	12.6	Hollows	To be directly removed
553	*Eucalyptus melliodora*	Yellow Box	345.4	Large	0.070	13.2	Hollows	To be directly removed
68	*Eucalyptus microcarpa*	Grey Box	376.8	Large	0.070	14.4	Hollows	To be directly removed
82	*Eucalyptus microcarpa*	Grey Box	376.8	Large	0.070	14.4	Hollows	To be directly removed

Table 18 Habitat hectare conversion for scattered trees to be removed

	Number within study area	Condition score	Standard extent (ha)	Habitat hectares (Hha)
Large scattered trees	26	0.200	0.070 ha	0.014
Small scattered trees	9	0.200	0.031 ha	0.062

Appendix E. Native vegetation removal 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: **11/10/2023**
Time of issue: **3:04 pm**

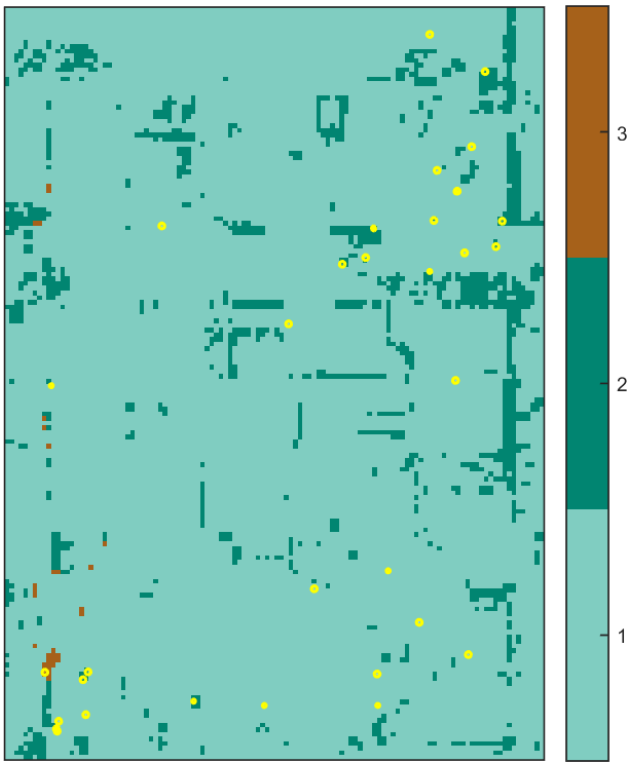
Report ID: BIO_2023_216

Project ID	VegRemoval_111023

Assessment pathway

Assessment pathway	**Detailed Assessment Pathway**
Extent including past and proposed	1.960 ha
Extent of past removal	0.000 ha
Extent of proposed removal	1.960 ha
No. Large trees proposed to be removed	26
Location category of proposed removal	Location 3 The native vegetation is in an area where the removal of less than 0.5 hectares could have a significant impact on habitat for one or more rare or threatened species.The native vegetation is also in an area mapped as an endangered Ecological Vegetation Class (as per the statewide EVC map).

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]	0.377 general habitat units
Vicinity	Goulburn Broken Catchment Management Authority (CMA) or Moira Shire Council
Minimum strategic biodiversity value score[2]	0.227
Large trees	26 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 Detailed Assessment Pathway and it will be assessed under the Detailed Assessment Pathway.

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

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

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

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

Additional application requirements must be met including:

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

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

The species-general offset test was applied to your proposal. This test determines if the proposed removal of native vegetation has a proportional impact on any rare or threatened species habitats above the species offset threshold. The threshold is set at 0.005 per cent of the mapped habitat value for a species. When the proportional impact is above the species offset threshold a species offset is required. This test is done for all species mapped at the site. Multiple species offsets will be required if the species offset threshold is exceeded for multiple species.

Where a zone requires species offset(s), the species habitat units for each species in that zone is calculated by the following equation in accordance with the Guidelines:

Species habitat units = extent x condition x species landscape factor x 2, where the species landscape factor = 0.5 + (habitat importance score/2)

The species offset amount(s) required is the sum of all species habitat units per zone

Where a zone does not require a species offset, the general habitat units in that zone 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**
3-A	Scattered Tree	muf_0803	Endangered	1	no	0.200	0.070	0.070	0.170		0.012	General
4-A	Scattered Tree	muf_0803	Endangered	0	no	0.200	0.031	0.021	0.720		0.005	General
5-A	Scattered Tree	muf_0803	Endangered	1	no	0.200	0.070	0.070	0.610		0.017	General
6-A	Scattered Tree	muf_0803	Endangered	1	no	0.200	0.070	0.070	0.270		0.013	General
10-A	Scattered Tree	muf_0803	Endangered	0	no	0.200	0.031	0.021	0.720		0.005	General
11-A	Scattered Tree	muf_0803	Endangered	0	no	0.200	0.031	0.031	0.100		0.005	General
12-A	Scattered Tree	muf_0803	Endangered	1	no	0.200	0.070	0.070	0.145		0.012	General
13-A	Scattered Tree	muf_0803	Endangered	1	no	0.200	0.070	0.054	0.150		0.009	General

Information provided by or on behalf of the applicant in a GIS file							Information calculated by EnSym					
Zone	Type	BioEVC	BioEVC conservation status	Large tree(s)	Partial removal	Condition score	Polygon Extent	Extent without overlap	SBV score	HI score	Habitat units	Offset type
14-A	Scattered Tree	muf_0803	Endangered	1	no	0.200	0.070	0.070	0.670		0.018	General
15-A	Scattered Tree	muf_0803	Endangered	1	no	0.200	0.070	0.070	0.670		0.018	General
16-A	Scattered Tree	muf_0803	Endangered	1	no	0.200	0.070	0.054	0.150		0.009	General
17-A	Scattered Tree	muf_0803	Endangered	1	no	0.200	0.070	0.070	0.110		0.012	General
18-A	Scattered Tree	muf_0803	Endangered	1	no	0.200	0.070	0.070	0.250		0.013	General
19-A	Scattered Tree	muf_0803	Endangered	1	no	0.200	0.070	0.070	0.330		0.014	General
20-A	Scattered Tree	muf_0803	Endangered	1	no	0.200	0.070	0.037	0.330		0.007	General
21-A	Scattered Tree	muf_0803	Endangered	1	no	0.200	0.070	0.070	0.100		0.012	General
22-A	Scattered Tree	muf_0803	Endangered	0	no	0.200	0.031	0.031	0.110		0.005	General
23-A	Scattered Tree	muf_0803	Endangered	1	no	0.200	0.070	0.070	0.100		0.012	General
24-A	Scattered Tree	muf_0803	Endangered	0	no	0.200	0.031	0.031	0.100		0.005	General
25-A	Scattered Tree	muf_0803	Endangered	1	no	0.200	0.070	0.070	0.670		0.018	General
26-A	Scattered Tree	muf_0803	Endangered	1	no	0.200	0.070	0.070	0.100		0.012	General
27-A	Scattered Tree	muf_0803	Endangered	1	no	0.200	0.070	0.070	0.100		0.012	General
28-A	Scattered Tree	muf_0803	Endangered	1	no	0.200	0.070	0.070	0.100		0.012	General

Information provided by or on behalf of the applicant in a GIS file							Information calculated by EnSym					
Zone	Type	BioEVC	BioEVC conservation status	Large tree(s)	Partial removal	Condition score	Polygon Extent	Extent without overlap	SBV score	HI score	Habitat units	Offset type
29-A	Scattered Tree	muf_0803	Endangered	0	no	0.200	0.031	0.031	0.100		0.005	General
30-A	Scattered Tree	muf_0803	Endangered	1	no	0.200	0.070	0.070	0.340		0.014	General
31-A	Scattered Tree	muf_0803	Endangered	0	no	0.200	0.031	0.002	0.158		0.000	General
32-A	Scattered Tree	muf_0803	Endangered	1	no	0.200	0.070	0.070	0.100		0.012	General
33-A	Scattered Tree	muf_0803	Endangered	1	no	0.200	0.070	0.070	0.174		0.012	General
34-A	Scattered Tree	muf_0803	Endangered	1	no	0.200	0.070	0.070	0.480		0.016	General
35-A	Scattered Tree	muf_0803	Endangered	0	no	0.200	0.031	0.031	0.100		0.005	General
36-A	Scattered Tree	muf_0803	Endangered	1	no	0.200	0.070	0.070	0.470		0.016	General
37-A	Scattered Tree	muf_0803	Endangered	0	no	0.200	0.031	0.031	0.310		0.006	General
38-A	Scattered Tree	muf_0803	Endangered	1	no	0.200	0.070	0.070	0.330		0.014	General
39-A	Scattered Tree	muf_0803	Endangered	1	no	0.200	0.070	0.037	0.330		0.007	General
40-A	Scattered Tree	muf_0803	Endangered	1	no	0.200	0.070	0.070	0.250		0.013	General

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

This table lists all rare or threatened species' habitats mapped at the site.

Species common name	Species scientific name	Species number	Conservation status	Group	Habitat impacted	% habitat value affected
Slender Water-milfoil	*Myriophyllum gracile var. lineare*	504517	Endangered	Highly Localised Habitat	Habitat importance map	0.0031
Small-leaf Bluebush	*Maireana microphylla*	503865	Endangered	Dispersed	Habitat importance map	0.0003
Stiff Groundsel	*Senecio behrianus*	503101	Endangered	Dispersed	Habitat importance map	0.0001
Yarran Wattle	*Acacia omalophylla*	500069	Endangered	Dispersed	Habitat importance map	0.0001
Ridged Water-milfoil	*Myriophyllum porcatum*	502257	Vulnerable	Dispersed	Habitat importance map	0.0001
Coolibah Grass	*Panicum queenslandicum var. queenslandicum*	504806	Endangered	Dispersed	Habitat importance map	0.0001
Striped Water-milfoil	*Myriophyllum striatum*	503869	Vulnerable	Dispersed	Habitat importance map	0.0000
Silky Umbrella-grass	*Digitaria ammophila*	501041	Vulnerable	Dispersed	Habitat importance map	0.0000
Pale Flax-lily	*Dianella sp. aff. longifolia (Riverina)*	507399	Vulnerable	Dispersed	Habitat importance map	0.0000
Northern Sandalwood	*Santalum lanceolatum*	503005	Endangered	Dispersed	Habitat importance map	0.0000
Veiled Fringe-sedge	*Fimbristylis velata*	501369	Rare	Dispersed	Habitat importance map	0.0000
Riverina Bitter-cress	*Cardamine moirensis*	505032	Rare	Dispersed	Habitat importance map	0.0000
Pepper Grass	*Panicum laevinode*	504808	Vulnerable	Dispersed	Habitat importance map	0.0000
Bent-leaf Wattle	*Acacia flexifolia*	500035	Rare	Dispersed	Habitat importance map	0.0000
Yellow-tongue Daisy	*Brachyscome chrysoglossa*	503654	Vulnerable	Dispersed	Habitat importance map	0.0000
Small Scurf-pea	*Cullen parvum*	502773	Endangered	Dispersed	Habitat importance map	0.0000
Silky Swainson-pea	*Swainsona sericea*	504946	Vulnerable	Dispersed	Habitat importance map	0.0000
Jericho Wire-grass	*Aristida jerichoensis var. subspinulifera*	504631	Endangered	Dispersed	Habitat importance map	0.0000
Red Swainson-pea	*Swainsona plagiotropis*	503324	Endangered	Dispersed	Habitat importance map	0.0000

Blue Burr-daisy	*Calotis cuneifolia*	500594	Rare	Dispersed	Habitat importance map	0.0000
Superb Parrot	*Polytelis swainsonii*	10277	Endangered	Dispersed	Habitat importance map	0.0000
Slender Darling-pea	*Swainsona murrayana*	503321	Endangered	Dispersed	Habitat importance map	0.0000
Umbrella Grass	*Digitaria divaricatissima var. divaricatissima*	501045	Vulnerable	Dispersed	Habitat importance map	0.0000
Rye Beetle-grass	*Tripogon loliiformis*	503455	Rare	Dispersed	Habitat importance map	0.0000
Dwarf Bitter-cress	*Rorippa eustylis*	502944	Rare	Dispersed	Habitat importance map	0.0000
Spotted Emu-bush	*Eremophila maculata subsp. maculata*	501204	Rare	Dispersed	Habitat importance map	0.0000
Broom Bitter-pea	*Daviesia genistifolia s.s.*	503813	Rare	Dispersed	Habitat importance map	0.0000
Smooth Minuria	*Minuria integerrima*	502201	Rare	Dispersed	Habitat importance map	0.0000
Long Eryngium	*Eryngium paludosum*	501238	Vulnerable	Dispersed	Habitat importance map	0.0000
Dark Wire-grass	*Aristida calycina var. calycina*	503630	Rare	Dispersed	Habitat importance map	0.0000
Kamarooka Mallee	*Eucalyptus froggattii*	501279	Rare	Dispersed	Habitat importance map	0.0000
Southern Swainson-pea	*Swainsona behriana*	504944	Rare	Dispersed	Habitat importance map	0.0000
Ausfeld's Wattle	*Acacia ausfeldii*	500013	Vulnerable	Dispersed	Habitat importance map	0.0000
Rosemary Grevillea	*Grevillea rosmarinifolia subsp. rosmarinifolia*	504066	Rare	Dispersed	Habitat importance map	0.0000
Late-flower Flax-lily	*Dianella tarda*	505085	Vulnerable	Dispersed	Habitat importance map	0.0000
Purple Diuris	*Diuris punctata*	501084	Vulnerable	Dispersed	Habitat importance map	0.0000
Branching Groundsel	*Senecio cunninghamii var. cunninghamii*	503104	Rare	Dispersed	Habitat importance map	0.0000
Small Burr-grass	*Tragus australianus*	503418	Rare	Dispersed	Habitat importance map	0.0000
Slender Club-sedge	*Isolepis congrua*	501773	Vulnerable	Dispersed	Habitat importance map	0.0000
Bush Stone-curlew	*Burhinus grallarius*	10174	Endangered	Dispersed	Habitat importance map	0.0000
Fuzzy New Holland Daisy	*Vittadinia cuneata var. morrisii*	505060	Rare	Dispersed	Habitat importance map	0.0000
Dwarf Brooklime	*Gratiola pumilo*	503753	Rare	Dispersed	Habitat importance map	0.0000

Waterbush	*Myoporum montanum*	502240	Rare	Dispersed	Habitat importance map	0.0000
Western Golden-tip	*Goodia medicaginea*	501518	Rare	Dispersed	Habitat importance map	0.0000
Hairy Tails	*Ptilotus erubescens*	502825	Vulnerable	Dispersed	Habitat importance map	0.0000
Lanky Buttons	*Leptorhynchos elongatus*	501941	Endangered	Dispersed	Habitat importance map	0.0000
Floodplain Fireweed	*Senecio campylocarpus*	507136	Rare	Dispersed	Habitat importance map	0.0000
Buloke Mistletoe	*Amyema linophylla subsp. orientalis*	500217	Vulnerable	Dispersed	Habitat importance map	0.0000
Cottony Cassinia	*Cassinia ozothamnoides*	501560	Vulnerable	Dispersed	Habitat importance map	0.0000
Dookie Daisy	*Brachyscome gracilis*	505494	Vulnerable	Dispersed	Habitat importance map	0.0000
Brolga	*Grus rubicunda*	10177	Vulnerable	Dispersed	Habitat importance map	0.0000
Buloke	*Allocasuarina luehmannii*	500678	Endangered	Dispersed	Habitat importance map	0.0000
Painted Honeyeater	*Grantiella picta*	10598	Vulnerable	Dispersed	Habitat importance map	0.0000
Twiggy Sida	*Sida intricata*	503143	Vulnerable	Dispersed	Habitat importance map	0.0000
Woolly Wattle	*Acacia lanigera var. lanigera*	505093	Rare	Dispersed	Habitat importance map	0.0000
Grey-crowned Babbler	*Pomatostomus temporalis temporalis*	10443	Endangered	Dispersed	Habitat importance map	0.0000
Pale Swamp Everlasting	*Coronidium gunnianum*	504655	Vulnerable	Dispersed	Habitat importance map	0.0000
Bearded Dragon	*Pogona barbata*	12177	Vulnerable	Dispersed	Habitat importance map	0.0000
Delicate Crane's-bill	*Geranium sp. 6*	505347	Vulnerable	Dispersed	Habitat importance map	0.0000
Black Falcon	*Falco subniger*	10238	Vulnerable	Dispersed	Habitat importance map	0.0000
Plump Windmill Grass	*Chloris ventricosa*	500757	Vulnerable	Dispersed	Habitat importance map	0.0000
Yellow Burr-daisy	*Calotis lappulacea*	500598	Rare	Dispersed	Habitat importance map	0.0000
Lace Monitor	*Varanus varius*	12283	Endangered	Dispersed	Habitat importance map	0.0000
Grey Grass-tree	*Xanthorrhoea glauca subsp. angustifolia*	507229	Endangered	Dispersed	Habitat importance map	0.0000
Spiny Lignum	*Duma horrida subsp. horrida*	502230	Rare	Dispersed	Habitat importance map	0.0000

Habitat group

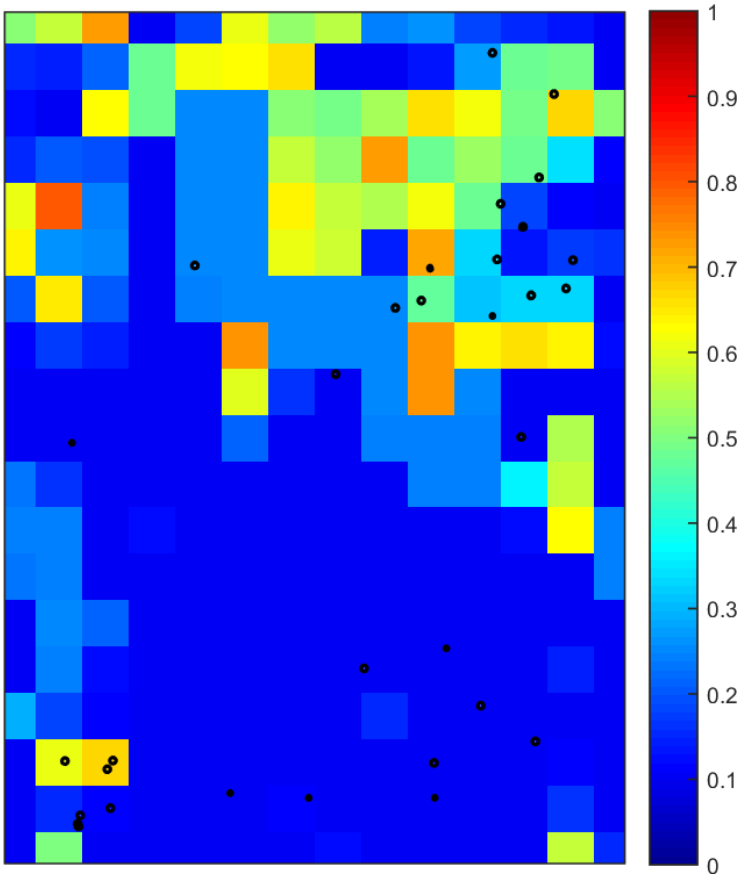
- Highly localised habitat means there is 2000 hectares or less mapped habitat for the species
- Dispersed habitat means there is more than 2000 hectares of mapped habitat for the species

Habitat impacted

- Habitat importance maps are the maps defined in the Guidelines that include all the mapped habitat for a rare or threatened species
- Top ranking maps are the maps defined in the Guidelines that depict the important areas of a dispersed species habitat, developed from the highest habitat importance scores in dispersed species habitat maps and selected VBA records
- Selected VBA record is an area in Victoria that represents a large population, roosting or breeding site etc.

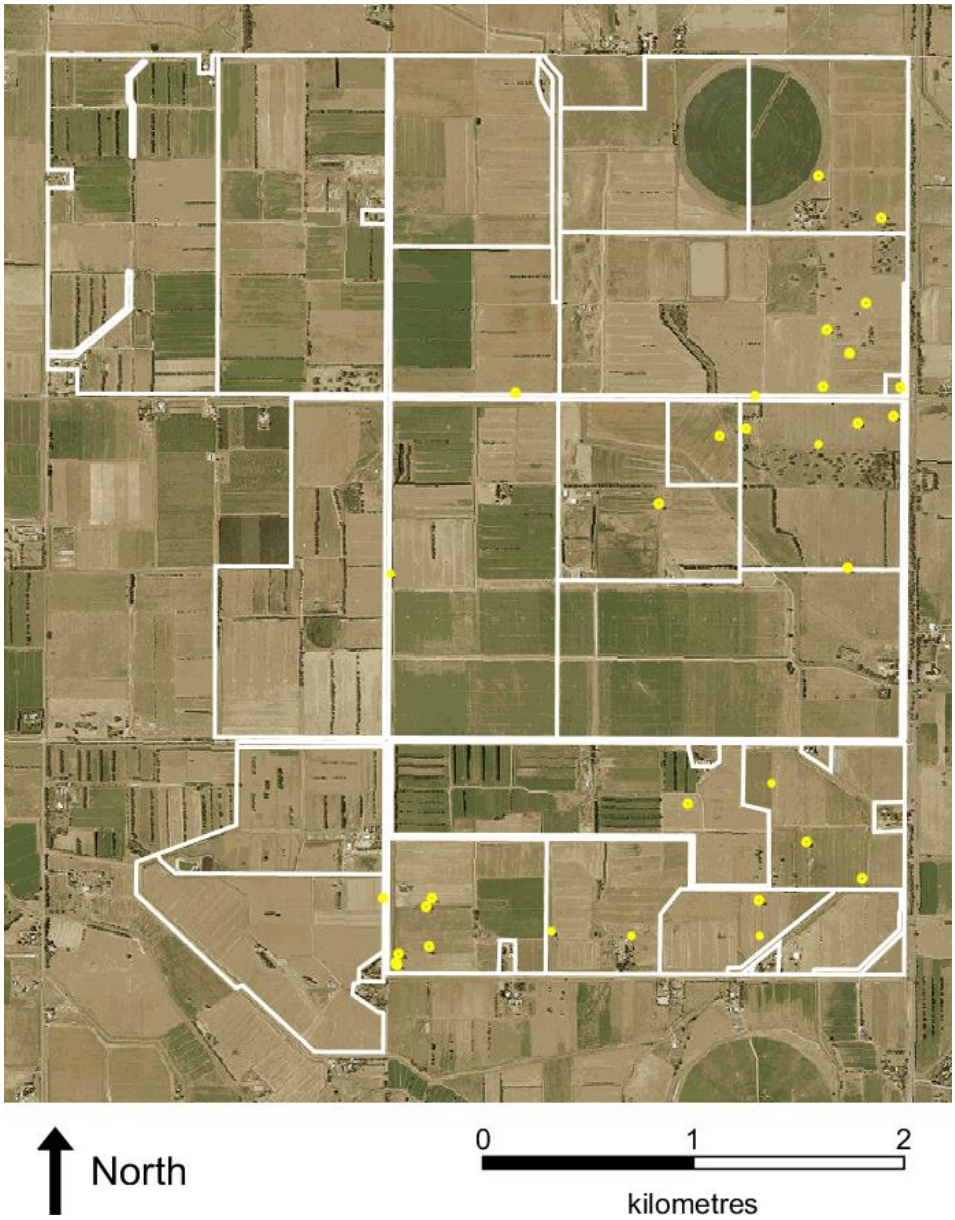
Appendix 3 – Images of mapped native vegetation

2. Strategic biodiversity values map



3. Aerial photograph showing mapped native vegetation

4. Map of the property in context



Yellow boundaries denote areas of proposed native vegetation removal.

Appendix F. Offset quote

vegetationlink

Our reference: VLQ-9772-B

Your reference: TBA

20 October 2023

Georgina Zacks
Biosis
gzacks@biosis.com.au

Dear Georgina

RE: Quotation for the supply of native vegetation credits

Vegetation Link is an accredited offset provider with the Department of Energy, Environment and Climate Action (DEECA). We offer a specialised brokerage service to enable permit holders and developers to identify suitable native vegetation credits to meet their planning permit offset requirements.

Based on the information you have provided; I understand you require the following native vegetation offset:

Offset type	Vicinity	General habitat units (GHU)	Min. strategic biodiversity value (SBV)	Large trees
General	Goulburn Broken CMA	0.377	0.227	26

To meet your offset requirements, you can purchase native vegetation credits from a third party as per the options quoted below[1]. This quotation is valid for 14 days, subject to credit availability.

Credit Trade Option 1: **3-Party CTA pathway - offset site located in the Greater Shepparton City area** (approx. 3-6 week turnaround from acceptance of quote)

Native Vegetation Credit Fees – Invoiced by DEECA	
Cost of native vegetation credits (ex. GST)	$46,930.00
Broker Fee – Invoiced by Vegetation Link	
Cost of broker fee (ex. GST)	$1,250.00
Total Credit Trade Fees	
Subtotal Cost (ex. GST)	$48,180.00
Total GST applicable	$4,818.00
Total Cost (inc. GST)	**$52,998.00**

[1] *Note that the broker fee includes the NVOR transfer and allocation fees when an allocation is done at the time of purchase.*

Credit Trade Option 2: **3-Party CTA pathway - offset site located in the Campaspe Shire area** (approx. 3-6 week turnaround from acceptance of quote)

Native Vegetation Credit Fees – Invoiced by DEECA	
Cost of native vegetation credits (ex. GST)	$46,553.00
Broker Fee – Invoiced by Vegetation Link	
Cost of broker fee (ex. GST)	$1,250.00
Total Credit Trade Fees	
Subtotal Cost (ex. GST)	$47,803.00
Total GST applicable	$4,780.30
Total Cost (inc. GST)	**$52,583.30**

Credit Trade Option 3: **2 x 3-Party CTA pathway - offset sites located in the Strathbogie & Greater Shepparton Shire areaa** (approx. 3-6 week turnaround from acceptance of quote)

Native Vegetation Credit Fees – Invoiced by DEECA	
Cost of native vegetation credits – 0.364 GHU's (ex. GST)	$32,741.80
Cost of native vegetation credits – 0.013 GHU's + 26 LT's (ex. GST)	$8,970.00
Broker Fee – Invoiced by Vegetation Link	
Cost of broker fee (ex. GST)	$2,500.00
Total Credit Trade Fees	
Subtotal Cost (ex. GST)	$44,211.80
Total GST applicable	$4,421.18
Total Cost (inc. GST)	**$48,632.98**

If you would like to purchase credits, let us know that you accept the quote and return the attached **purchaser details form** by email. If more than one quotation option is provided above, specify which option you choose. Upon receipt of the form, we will begin the trade process. Further details of the process for credit allocation are in the FAQ below.

Should you have any queries, please do not hesitate to contact us on 1300 VEG LINK (1300 834 546) or email offsets@vegetationlink.com.au.

Sincerely,

Lucas Rotteveel
Biodiversity Offset Broker

FAQs

What is a third party offset?

A third-party offset is an offset site owned by another landowner who manages and protects native vegetation on their land. Landowners who establish these offset sites are required to:

- Enter into a Landowner Agreement for the specified offset site. A landowner agreement is in perpetuity and is binding upon the current and future landowners of the site. It permanently restricts use of the site for many purposes.
- Implement a detailed 10-year Management Plan endorsed by the DEECA Native Vegetation Offset Register to manage and improve the biodiversity values of the site.

How is the price of native vegetation offset credit (GHUs, GBEUs etc.) determined?

Landowners who own offset sites set their own price for native vegetation credits. They determine the price based on numerous factors. This includes but not limited to site establishment, the cost to manage the site in perpetuity (e.g., maintain fencing, control pest species), foregone use cost, and administrative costs. Depending on how the site is registered, the credit fee may be paid to either DEECA or directly to the landowner.

Further information about the work some of our landowners are doing can be found on the Vegetation Link website.

What is the process after I accept the quote?

After you accept the quote and return the purchaser table, the following steps will be undertaken:

1. We will set up a contract between the parties involved and send the contract out for signing by all parties.
2. Once the contract is signed by all parties, invoices will be issued for the fees listed in the quotation. We will send you two invoices, one for our transaction fee invoiced by Vegetation Link and one for the credit fee, usually to be paid to DEECA or the landowner. We recommend providing remittances for your payments.
3. Once payments are received, Vegetation Link will send you an allocated credit extract from the Native Vegetation Offset Register and your executed contract as evidence that you have purchased the offset.

How long will the process take? When will I get my credits?

Generally, the process from quote acceptance to having evidence of allocated credits takes between 2-6 weeks. This is dependent on a range of factors including the type of landholder agreement, contract types and organisational workflows. We work as quickly as possible to get your credits to you within this time period.

We note that you **cannot** remove vegetation until you have been given permission by the Responsible Authority (usually the council that has issued your permit).

What happens if I don't have a permit yet?

When people are buying credits before a permit is issued, the following three options are most common:

- You can pay for the offsets before the planning permit is available, and then the offsets are allocated to the permit when it is available. This will incur an additional $50 fee from DEECA. When considering this option, it is important to realise that your estimated offset requirements may be different than the actual permit requirements.
- You can wait for the planning permit to be approved first and then request a quote to meet the requirements in your permit. Should credits be available, you can then start the offset purchase process. We then use the planning permit number for allocating the credits. Allocating credits to the permit is evidence that you have purchased your offset.
- You can request a quote to confirm availability and to get an idea of the cost of offsetting before you apply for a permit. Once you receive the planning permit you can request an updated quote. It is at this point that you can then go through the offset purchase process.

We cannot guarantee credit availability until a) contracts are executed, or b) credits have been held via a pending trade lodged with DEECA Native Vegetation Offset Register.

We cannot guarantee price until a) a quote has been accepted within 14 days, and b) a Credit Trading Agreement is signed within 21 days, and c) the invoice for the credits is paid within 28 days of the date the invoice is issued.

If I sign the contract, does that mean I MUST pay for the credits?

Yes, you have entered into a contract agreeing to pay for the offset credits therein and are required to pay for those credits. The credits must be paid for within 28 days of the date of the invoice.

Can you hold the credits for me, as I want to pay later?

We are unable to hold credits for later payment. Please also see 'What happens if I don't have a permit yet?' above.

For further information, see our website, the DEECA website or call us any time on 1300 834 546.