



# Parwan Employment Precinct

## **Victorian Grassland Earless Dragon Habitat Assessment**

Final Report

Prepared for Victorian Planning Authority

8 April 2026

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*Biosis acknowledges the Aboriginal and Torres Strait Islander peoples as Traditional Custodians of the land on which we live and work.*

*We pay our respects to the Traditional Custodians and Elders past and present and honour their connection to Country and ongoing contribution to society.*

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# Contents

<b>Contents</b> .....	<b>ii</b>
<b>1 Introduction</b> .....	<b>6</b>
1.1 Project background .....	6
1.2 Scope of assessment .....	6
1.3 Location of the study area .....	7
1.4 Species description, ecology, and regulatory resources .....	7
1.4.1 VGED ecology and habitat .....	8
<b>2 VGED Habitat assessment approach</b> .....	<b>11</b>
2.1 Desktop assessment and historical imagery review .....	11
2.2 Preliminary roadside habitat assessment .....	11
2.3 Follow-up assessment and property access consent .....	12
<b>3 Detailed habitat assessment results</b> .....	<b>22</b>
3.1.1 Habitat assessment land use categories .....	22
<b>4 Targeted survey and conservation recommendations</b> .....	<b>34</b>
4.1 Targeted survey recommendations .....	34
4.1.1 Pre-development survey permit condition .....	34
4.1.2 Development constraints and survey prioritisation .....	34
4.2 Further VGED habitat assessment recommendations .....	35
4.3 Conservation priorities and strategies.....	35
4.3.1 Weed and pest control.....	36
4.3.2 Cat-free areas and curfews .....	36
4.3.3 Buffering of unsuitable land-use and urban development.....	37
4.3.4 Revegetation.....	37
4.3.5 Grazing .....	37
4.3.6 Controlled burning.....	38
4.3.7 Rock replacement .....	38
4.4 Targeted survey methodology and approach.....	38
4.4.1 Pitfall trapping.....	38
4.4.2 Local VGED movement patterns .....	39
4.5 Summary of recommendations.....	39
4.5.1 Property-based VGED habitat assessment results and recommendations .....	48
<b>References</b> .....	<b>62</b>
<b>Appendix 1 Photos of the study area</b> .....	<b>63</b>
<b>Tables</b>	
Table 1 PEP detailed land use categories and VGED habitat suitability assessment .....	22
Table 2 PEP individual property VGED habitat assessments and further survey recommendations .....	48

## Figures

Figure 1	Location of the study area .....	10
Figure 2	Preliminary VGED habitat assessment results and access for follow-up assessments .....	14
Figure 3	VGED habitat assessment results .....	26
Figure 4	VGED assessment summary and targeted survey recommendations .....	40

## Photos

Photo 1	Property parcel 4 (EHP parcel 38) (western extent, facing east). Potentially suitable VGED habitat in uncultivated grassland with open structure and surface/embedded rock. ....	64
Photo 2	Property parcel 5 (EHP parcel 4) (eastern extent, facing west). Potentially suitable VGED habitat in uncultivated grassland with open structure and surface/embedded rock. ....	65
Photo 3	Property parcel 6 (EHP parcel 5) (eastern extent, facing west). Potentially suitable VGED habitat in uncultivated grassland with open structure and surface/embedded rock. Grassland in foreground, scattered shrubs in small area of hillside. ....	66
Photo 4	Property parcel 7 (EHP parcel 14) (central extent, facing north). Cropped paddocks with small partially isolated area of low condition uncultivated grassland in drainage line. ....	67
Photo 5	Property parcel 9 (EHP parcel 15) (eastern extent, facing west from adjacent property). Uncultivated grassland – moderate, with high cover of Serrated Tussock. ....	68
Photo 6	Property parcel 10 (EHP parcel 16) (western extent, facing southwest). Uncultivated grassland – moderate. ....	69
Photo 7	Property parcel 10 (EHP parcel 16) (south-eastern extent, facing south). Heavily grazed pasture in left of image, low condition uncultivated grassland in right of image with high weed cover. ....	70
Photo 8	Property parcel 10 (EHP parcel 16) (eastern extent, facing southwest). Heavily grazed pasture in horse paddocks, with low mown grassland in roadside reserve in foreground. ....	71
Photo 9	Property parcel 11 (EHP parcel 17) (south-east extent of property, facing north-west). Uncultivated grassland – moderate, with high cover of Serrated Tussock. ....	72
Photo 10	Property parcel 16 (EHP parcel 11) (south-west extent, facing north). Cultivated paddock with remnant large eucalypts in background, native grassland and ploughed firebreak along Glenmore Road in foreground. ....	73
Photo 11	Glenmore Road. Vegetated roadside reserve (southern side of road, facing south). Good condition native grassland in foreground, ploughed firebreak along fence line in background. Potential VGED habitat and dispersal corridor between properties. ....	74
Photo 12	Property parcel 19 (EHP parcel 56) (northern extent, facing west). Uncultivated creek with native grassland and surface/embedded rock. Some cover of weedy shrubs and grasses. Potential VGED habitat and dispersal corridor along uncultivated and undeveloped creek. ....	75
Photo 13	Property parcel 19 (EHP parcel 56) (north-west extent, facing north-west). Good condition native grassland. Some scattered weeds, including Serrated Tussock and Feathertop Grass. ....	76

Photo 14	Property parcel 19 (EHP parcel 56). Example of natural spider burrow observed and inspected with endoscope during habitat assessment. Occupied by large Wolf Spider. Typical of spider burrows observed within areas of uncultivated grassland throughout the precinct. ....	77
Photo 15	Property parcels 19 and 20 (EHP parcel 56 and 69) (central boundary fence, facing south-east). Moderate condition uncultivated grassland. Habitat largely consistent across both adjacent properties. High proportion of Serrated Tussock, but with some open areas and scattered remnant native grassland plant species. Potential VGED habitat. ....	78
Photo 16	Property parcel 53 (EHP parcel 34) (central western extent, facing north-east). Small patch of moderate condition uncultivated grassland in foreground, larger patch of low condition uncultivated grassland in background with high cover of Serrated Tussock. ....	79
Photo 17	Property parcels 56 (EHP parcels 19) and Smiths Road vegetated roadside (north-east extent of property, facing west). Cultivated area within property 56. Uncultivated grassy roadside reserve along Smiths Road. ....	80
Photo 18	Property parcel 61 (EHP parcel 42) (southern extent, facing north from adjacent property). Moderate condition uncultivated grassland. Potential VGED habitat. No access to property, further habitat assessment recommended to assess impact of grazing on grassland structure. ....	81
Photo 19	Property parcel 63 (EHP parcel 52) (centre of property, facing north). Recently ploughed grassland within horse paddock, not previously cultivated. Any VGED population present likely destroyed. ....	82
Photo 20	Property parcel 63 (EHP parcel 52) (eastern extent, facing south-east). Recently ploughed grassland on eastern side of central horse track, not previously cultivated. Any VGED population present likely destroyed. ....	83
Photo 21	Property parcel 64 (EHP parcel 53). Heavily grazed pasture within horse paddocks, typical of similar regularly utilised horse paddocks within the precinct. ....	84
Photo 22	Property parcel 64 (EHP parcel 53). Heavily grazed pasture and disturbed soil within small horse paddocks, typical of similar small regularly utilised horse paddocks within the precinct. ....	85
Photo 23	Property parcel 65 (EHP parcel 54) (centre of property, facing east). Moderate condition uncultivated grassland. Low cover of Serrated Tussock, some remnant native grassland vegetation, some open inter-tussock space. Potential VGED habitat, targeted surveys recommended. ....	86
Photo 24	Property parcel 65 (EHP parcel 54). Example of moderate condition uncultivated grassland. Low cover of Serrated Tussock, some remnant native grassland vegetation, some open inter-tussock space. Potential VGED habitat, targeted surveys recommended. ....	87
Photo 25	Property parcel 72 (EHP parcel 74) (eastern extent, facing south-east). Recently cleared and ploughed area at eastern third of property, previously supporting buildings and uncultivated pasture paddocks. ....	88
Photo 26	Property parcels 72 and 74 (EHP parcels 74 and 75). Foreground low condition grassland in western extent of property 72 (almost total cover of dense Serrated Tussock, ploughed in 2006). Background recently ploughed area of property 74. ....	89
Photo 27	Property parcel 72 (EHP parcel 74) (western extent, facing south-east). Low condition grassland (almost total cover of dense Serrated Tussock, ploughed in 2006). Weedy horse track comprised of crushed glass. ....	90

Photo 28 Property parcel 82 (EHP parcel 21) (centre, facing west). Central laneway with fenced planted treelines. ....91

Photo 29 Property parcel 82 (EHP parcel 21) (central extent, facing north). Recently cultivated paddock. ....92

Photo 30 Property parcel 82 (EHP parcel 21) (central extent, facing south). Heavily grazed cattle paddock. ....93

Photo 31 Property parcel 82 (EHP parcel 21) (central extent, facing south). Heavily grazed cattle paddock. ....94

Photo 32 Property parcel 82 (EHP parcel 21) (north-east extent, facing north). Example of pasture with lighter recent grazing history within northeastern paddocks of property. Adjacent to uncultivated unused road easement. Potential VGED habitat. ....95

Photo 33 Unused road easement north of property parcel 82 (EHP parcel 21) (eastern extent, facing west). Uncultivated moderate condition grassland with some remnant native grassland vegetation, and open inter-tussock space. Potential VGED habitat and movement corridor. ....96

Photo 34 Property parcel 90 (EHP parcel 63) (central extent, facing south). Historically cultivated paddock with regrowth of weeds. Negligible native grassland plant species. Scattered *Cassinia sifton* throughout historically cultivated portion of property. ....97

Photo 35 Property parcel 90 (EHP parcel 63) (north-east extent, facing north). Large plastic-lined constructed dam and surrounding soil disturbance in corner of property. ....98

# 1 Introduction

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## 1.1 Project background

Biosis Pty Ltd was commissioned by the Victorian Planning Authority (VPA) to conduct a Victorian Grassland Earless Dragon *Tympanocryptis pinguicolla* (VGED) habitat assessment of the Parwan Employment Precinct.

The Parwan Employment Precinct ('PEP', or the 'study area') is a large area of primarily agricultural and semi-rural density residential land located south of Bacchus Marsh which is proposed for establishment as an industrial and agribusiness precinct.

In January 2023 the VGED was incidentally rediscovered in a grassland west of Melbourne during targeted surveys for other threatened reptiles. At this time VGED had not been reliably recorded since 1969. The rediscovery of the species prompted a pause in the PEP and established the need for further habitat assessment within the precinct to identify areas of potentially suitable VGED habitat.

This report outlines the scope of the assessment undertaken by Biosis within the PEP, and recommendations for further VGED habitat assessment, targeted surveys, and habitat conservation priorities and strategies.

## 1.2 Scope of assessment

The objectives of the assessment are to:

- Conduct a preliminary VGED habitat assessment based on historical aerial imagery and a visual assessment of properties from publicly accessible roads, to identify:
  - Areas that clearly do not support suitable VGED habitat due to unsuitable current or historical land use, or significant soil and grassland vegetation disturbance.
  - Areas unlikely to currently support a VGED population, but which may require follow-up assessment and targeted VGED surveys.
  - Areas of potentially suitable habitat which may support a current VGED population, or which may be targeted for rehabilitation and conservation.
- Conduct follow-up assessments of individual accessible properties identified as supporting potential VGED habitat, to refine assessment and mapping of areas of potentially suitable VGED habitat.
- Prepare a report outlining the findings of the habitat assessment, including:
  - Mapping of current land use and habitat suitability for VGED throughout the PEP.
  - Assessment of habitat suitability throughout properties and parcels with differing land use and habitat condition.
  - Recommendations for any further assessments that may be required at properties unable to be accessed during the habitat assessment, or to account for seasonal variations in habitat.
  - Recommendations for targeted VGED surveys at properties supporting potentially suitable habitat, and considerations for targeted survey approach.
  - Recommendations for conservation priority areas, and conservation strategies.

### 1.3 Location of the study area

The study area is located approximately 3 kilometres south-east of Bacchus Marsh (Figure 1). It encompasses approximately 2,480 hectares of private and public land, with 92 currently identified property parcels, the Bacchus Marsh Aerodrome, roads, unused road easement (Miles Road), and roadside reserves.

Properties within the study area support a range of land uses, including residential buildings, roads, cropping, grazing of sheep, cattle and horses, an airport and associated runways, horse stables and running tracks, a Motorcross (MX) track, a poultry farm and areas of remnant native vegetation. Parwan Creek runs along the north-west boundary of the study area.

### 1.4 Species description, ecology, and regulatory resources

The Victorian Grassland Earless Dragon is a small terrestrial dragon that inhabits natural grasslands west of Melbourne. Information on the ecology and behaviour of the VGED is currently limited, with much inferred from studies into closely related Grassland Earless Dragon species found in NSW and the ACT.

The species is listed as Critically Endangered under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and the Victorian *Flora and Fauna Guarantee Act 1988* (FFG Act). The VGED was never officially deemed extinct, although many people considered it to be likely, with no confirmed records since 1969. However, the species was rediscovered in January 2023 prompting further consideration of developments within its potential distribution.

Five key regulatory VGED resources informed this assessment and provide information on the species ecology and habitat requirements:

- The conservation advice for VGED (DCCEEW 2023a) which provides:
  - Ecological information about the species including preferred habitat attributes.
  - Descriptions of the threats to the species.
  - Conservation and recovery actions.
- Draft National Recovery Plan for VGED (DCCEEW 2023b) which was written after the Conservation Advice, and which provides:
  - Additional ecological information including habitat descriptions (although it has been noted by the VGED Recovery Team that this information is already partially out of date due to ongoing research on the species).
  - Information about what actions may lead to significant impacts on the species.
  - More detailed recovery strategies and actions.
- Current National Recovery Plan for the Grassland Earless Dragon (Robertson & Evans 2009), which was written before the VGED was recognised as a distinct species from Grassland Earless Dragons in NSW and the ACT in 2019. The Recovery Plan is mostly out of date and will be superseded once the Draft Recovery Plan for VGED is finalised.
- Recently published targeted survey guidelines for Grassland Earless Dragons (DCCEEW 2024), which provide:
  - Guidelines for best practice survey methods for identifying presence of Grassland Earless Dragons within a site. The survey guidelines are not specific to the Victorian species of

Grassland Earless Dragon, and do not incorporate learnings regarding VGED ecology and behaviour since the species rediscovery.

- Recently updated VGED Habitat Distribution Model (HDM) published by the Department of Energy, Environment and Climate Action (DEECA) in October 2024 (DEECA 2024).
  - The HDM estimates the distribution of potential VGED habitat by analysing environmental variables of areas where the species has been recorded.

#### 1.4.1 VGED ecology and habitat

The VGED feeds on a wide variety of small invertebrates and is known to shelter in the burrows of invertebrates, particularly spider burrows. Closely related Grassland Earless Dragon species have been shown to have relatively small home ranges, usually remaining within one metre of a burrow, and rarely moving over 40 metres over days or weeks. Observations by the VGED Recovery Team of VGED movement behaviour indicate that they can range further during daily foraging (tens of metres) and may make occasional larger dispersal movements. The dispersal ability of the species through unsuitable habitat and artificial substrate (e.g. across roads and into cultivated areas) is still unclear.

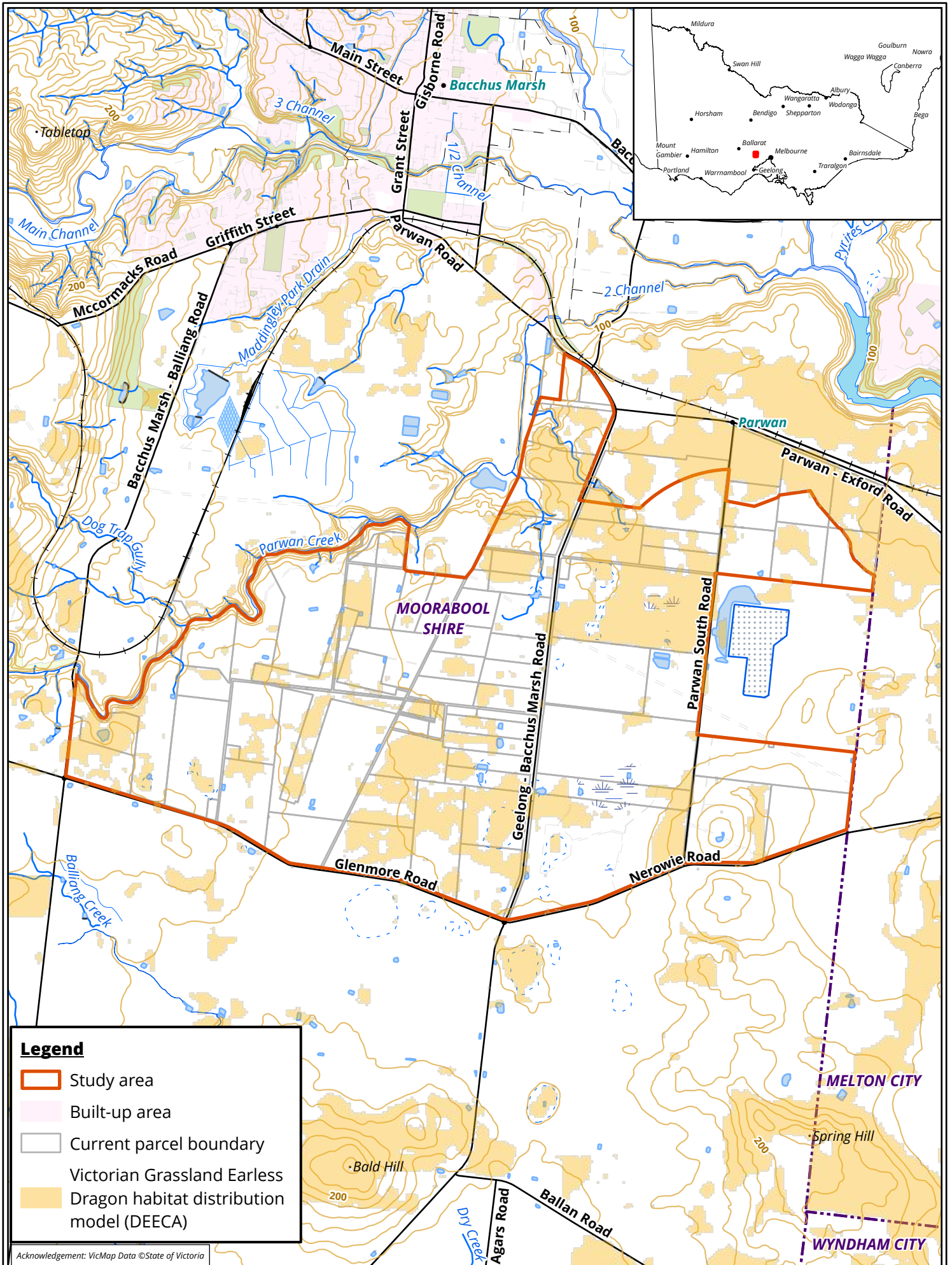
Grassland Earless Dragons are known to have short life cycles, with most individuals maturing within one year and usually not surviving more than one breeding season in the wild. Observations of VGED indicate that many individuals may survive into at least a second breeding season. Activity peaks in early spring, as individuals conduct larger scale movements looking for mates and lay eggs, and then in summer as eggs hatch and juveniles disperse. Observations of VGED indicate that some individuals may produce a second clutch of eggs in summer. Their short life cycle makes the species susceptible to loss of localised or isolated populations due to stochastic disturbance events.

The VGED Conservation Advice outlines that grasslands with the greatest likelihood of containing a remnant VGED population are likely to include:

1. Areas that have not been de-rocked, ploughed, or fertilized to improve pasture quality.
  - Areas that have been ploughed or mechanically de-rocked are likely to have had any local population of VGED destroyed, through direct mortality of individuals, and destruction of refuge habitat. Repopulation of cultivated areas from adjacent populated habitat may require rehabilitation of the area and will likely take significant time due to the limited dispersal ability of the species.
  - Populations may occur in areas that do not have surface or embedded rock, or where de-rocking was conducted by hand, rather than mechanically. VGED may repopulate areas that have been mechanically de-rocked given sufficient time.
2. Open patches of bare earth and/or naturally short open grass swards due to low-level disturbance (e.g. managed fire, low-moderate intensity grazing).
  - Open 'inter-tussock space' allows for easy movement of individuals during foraging and breeding. Low to moderate sheep or native herbivore grazing may be beneficial in maintaining low biomass and an open grassland structure.
  - Minimal tree and shrub cover, which shades grasslands, alters grassland vegetation structure, and provides perches for predatory birds.
3. Presence of suitable refugia, particularly invertebrate burrows, surface rock cover and/or soil cracks.

- Surface rock and soil cracks may not be an essential habitat attribute for the species, but their presence is generally indicative of grassland that has not been subject to intensive cultivation.
4. A functioning and diverse invertebrate community to provide appropriate prey, as well as invertebrates that engineer burrows for refuge (particularly spiders, beetles, and crickets).
- Application of insecticides can indirectly impact VGED through loss of invertebrate prey, and loss of burrow-building invertebrates.
  - VGED has been noted to eat a wide range of ants, spiders, beetles, and other invertebrates. A diverse invertebrate population may be critical to supporting the species within suitable habitat, providing a variety of prey species that may persist through local variation in vegetation composition, biomass, and seasonal climate variation.
  - VGED has been noted as avoiding consumption of the introduced Portuguese Millipede *Ommatoiulus moreleti*, as well as cockroaches.
5. High proportion of native tussock grasses, herbs and forbs, with minimal weed cover.
- Some high-threat weeds, such as Serrated Tussock *Nassella trichotoma* and Toowoomba Canary-grass *Phalaris aquatica* may exclude VGED from areas due to their unsuitable growth structure (dense contiguous swards with little to no inter-tussock space). These high-threat weeds can outcompete native grassland flora, creating monocultures, which may subsequently lead to a reduction in native invertebrate biodiversity.
  - The tolerance of VGED to exotic grassland vegetation is still largely unknown. The species may persist in areas with high weed cover of some exotic species, if the habitat structure does not become unsuitable for extended periods, and if suitable density and diversity of prey can also persist.

Areas with a recent history of soil disturbance (ploughing, cropping, mechanical rock removal), unsuitable grazing regimes, and insecticide use are unlikely to currently support a population of VGED. Areas that have become overgrown with dense matted grass and weeds for a prolonged period are also unlikely to support the species. Habitat loss through intensive agriculture is likely to cause local extinctions of isolated VGED populations.



Acknowledgement: VicMap Data ©State of Victoria

## 2 VGED Habitat assessment approach

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### 2.1 Desktop assessment and historical imagery review

An initial desktop preview of existing survey reports of the PEP area, and relevant VGED literature, regulatory documents, and habitat modelling was undertaken prior to the on-site habitat assessments. Sources reviewed include:

- The PEP design and scoping documents provided by the VPA.
- The biodiversity assessment for the PEP and Parwan Station Precinct Structure Plan, prepared by Ecology and Heritage Partners (EHP) in 2022 (Ecology & Heritage Partners 2022).
  - The EHP biodiversity assessment includes mapping and assessment of native vegetation and threatened ecological communities (TECs) within the properties EHP had consent to access. Areas of the EPBC Act listed TEC's 'Natural Temperate Grassland of the Victorian Volcanic Plain' (NTGVVP) and 'Grey Box Grassy Woodlands and Derived Native Grasslands' (GBGW-DNG) were recorded throughout the PEP area (Ecology & Heritage Partners 2022).
- The PEP targeted ecological survey report, prepared by WSP in 2023 (WSP 2023).
  - The WSP report includes details of threatened fauna targeted surveys.
  - The WSP assessment includes additional mapping of native vegetation, and some area of the TECs 'Seasonal Herbaceous Wetland' and GBGW-DNG that were not identified during the EHP biodiversity assessment.
- The VGED regulatory documents outlined above in Section 1.4.
- The VGED habitat distribution model outlined above in Section 1.4, and presented in Figure 1.
- Current and historical aerial imagery of the PEP area, to identify areas unlikely to support suitable VGED habitat due to cultivation and development.

### 2.2 Preliminary roadside habitat assessment

A preliminary one-day inspection of the PEP was undertaken on 17 June 2025 by Biosis Senior Zoologist Wyn Russell, and Senior Botanist Sarah Hilliar. Biosis staff were accompanied by representatives of the VGED Recovery Team, including Peter Robertson (Wildlife Profiles Pty Ltd).

All properties visible from publicly accessible roadsides were visually inspected, with a focus of confirming land-use identified during the aerial imagery review. Land-use was broadly categorised based on likely VGED habitat suitability, and divided into two categories to inform individual property assessments:

- **Potential to currently provide VGED habitat:** Areas supporting uncultivated native grassland or pasture, or that had been subjected to historical cultivation but showed signs of natural vegetation recovery.
- **Unlikely to currently provide VGED habitat:** Areas that were clearly currently or recently cultivated (cropped), subject to significant soil disturbance (ploughed, heavily disturbed by livestock trampling, or used as MX tracks), and areas supporting infrastructure and gardens were noted and follow-up assessments were assessed as unnecessary.

From the preliminary habitat assessment, a significant proportion of the PEP area was initially identified as unlikely to support VGED habitat (Figure 2). These areas were primarily currently or recently cultivated paddocks, densely treed, or clearly heavily disturbed from existing infrastructure and gardens.

## 2.3 Follow-up assessment and property access consent

Follow-up habitat assessments on individual properties were undertaken over 6 and 14 August 2025, led by Biosis Senior Zoologist Wyn Russell and accompanied during the first individual property assessment day by Peter Robertson of the VGED Recovery Team, and the Zoos Victoria VGED detection dog team.

Direct access for follow-up assessments was sought for properties that met the following criteria:

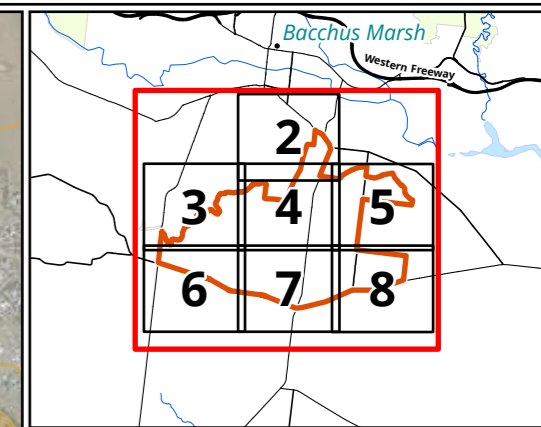
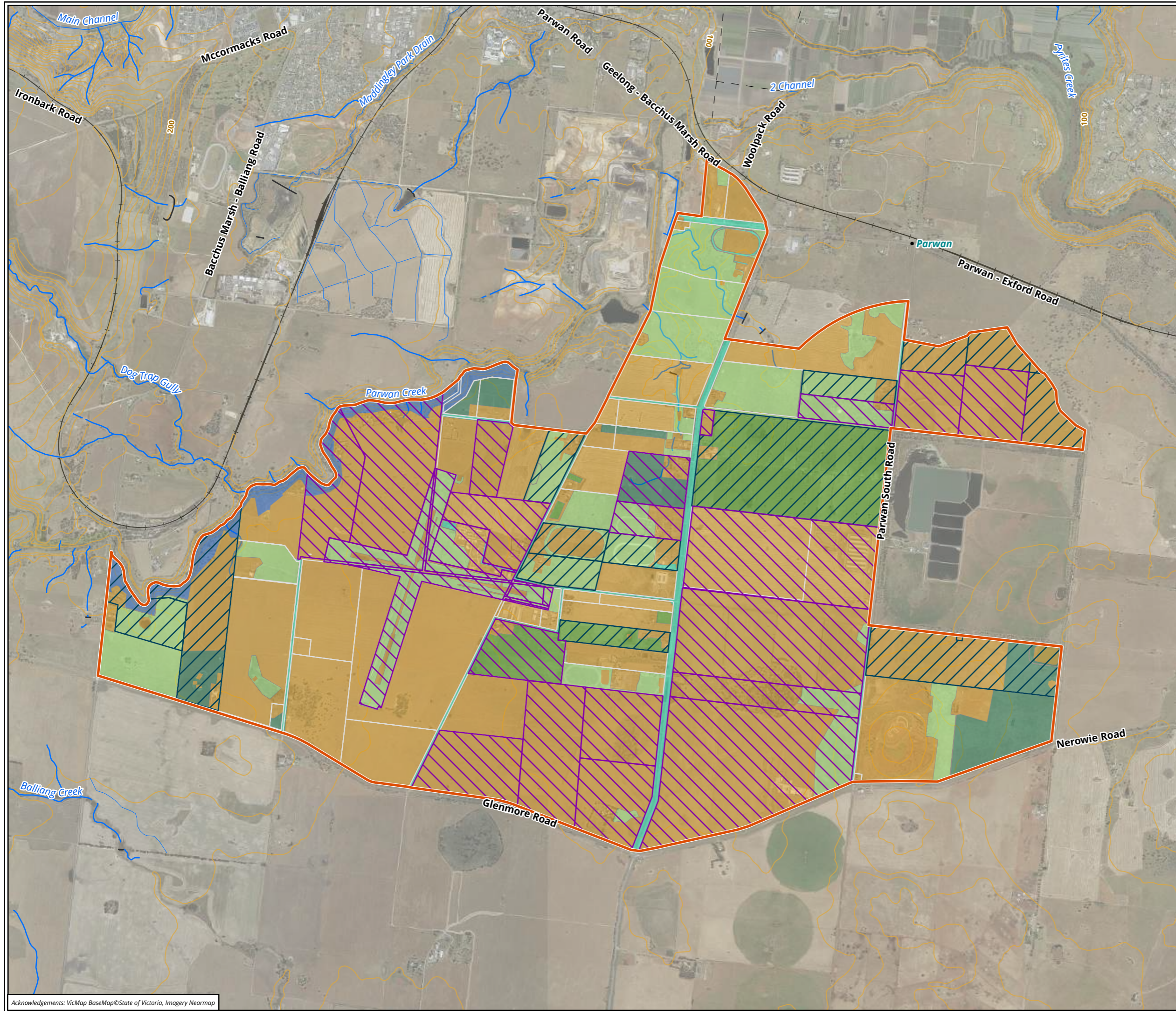
- Consent to access was established by the VPA and landholder contact details were provided.
- The landholder responded to email and/or phone contact (where available), and safe access could be arranged with tenants.
- The property was assessed during the desktop aerial imagery assessment and/or preliminary habitat assessment as supporting potential VGED habitat.
- The potential VGED habitat within the property could not be adequately assessed from publicly accessible roads, or from adjacent properties where access had been granted.

Properties that were identified as supporting no potential VGED habitat during the preliminary assessment were not accessed for individual property assessments.

Several properties were identified as supporting potential VGED habitat (uncultivated or historically cultivated grassland) and identified as suitable for follow-up individual property habitat assessment to refine mapping and to further assess habitat condition. Properties accessed for further follow-up assessment are outlined in Figure 2. The level of property access and assessment approach can be categorised as follows:

- Access consent obtained – property directly accessed.
  - These properties were directly accessed to assess the variation of habitat condition and land-use throughout areas of the property that could not be assessed sufficiently from accessible adjacent properties and roads.
- Access consent obtained – direct property access unnecessary.
  - The landowner or manager of these properties had provided access consent to the VPA, however, direct access to the properties was unnecessary as they either; clearly did not support potential VGED habitat, clearly supported suitable VGED habitat, or were clearly visible from adjacent accessed properties and public roads and did not require direct access for assessment.
- Access consent obtained – unable to arrange direct access with landholder or tenant.
  - The landowner or manager of these properties had provided access consent to the VPA, however, access could not be arranged with the landholder, land manager, and/or tenant.
  - Where access could not be arranged, properties were assessed from adjacent accessible properties, public roadsides, and through review of available current and historical aerial imagery.

- No access consent.
  - Properties where access consent could not be obtained were assessed from adjacent accessible properties, public roadsides, and through review of available current and historical aerial imagery.
  - Areas of uncultivated grassland within these inaccessible properties that were not clearly visible have been assessed as potentially suitable habitat as a precautionary approach, and targeted surveys or pre-development survey conditions are recommended. These properties are outlined in Table 2. If access consent can be obtained, general biodiversity and native vegetation assessments are recommended to be undertaken at these properties, which may identify areas that are unlikely to support VGED habitat.



**Legend**

- Study area
- Parcel boundary
- Contour 10m interval
- Accessibility**
- Accessed
- Property access consent obtained, direct access unnecessary or unable to be arranged with tenant
- Potential to currently provide VGED habitat**
- Historical cultivation
- Uncultivated grassland
- Uncultivated grassland - High weed cover
- Roads, tracks and roadside vegetation
- Uncultivated creekline
- Unlikely to currently provide VGED habitat**
- Other land use unlikely to support VGED

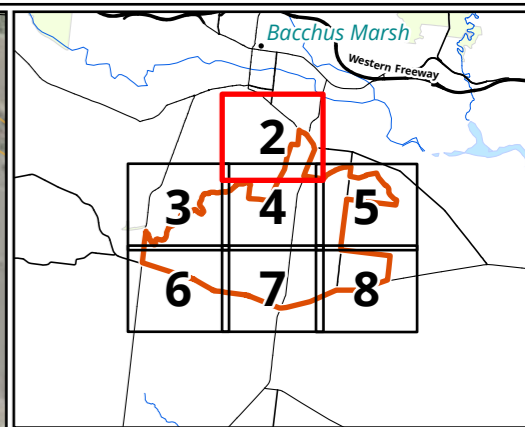
**Figure 2.0 Preliminary VGED Habitat assessment - Parwan PEP**

0 300 600 900 1,200 1,500 N  
 Metres  
 Scale: 1:30,000 @ A3  
 Coordinate System: GDA2020 MGA Zone 55



Matter: 42598,  
 Date: 09 February 2026,  
 Prepared for: WR, Prepared by: PG, Last edited by: PGidley  
 Layout: 42598\_F2\_Prelim\_VGED\_Habitat  
 Project: P:\42500s\42598\Mapping\42598\_Parwan\_VGED\_Habitat.aprx

Acknowledgements: VicMap BaseMap © State of Victoria, Imagery Nearmap



**Legend**

- Study area
- Parcel boundary
- Contour 10m interval

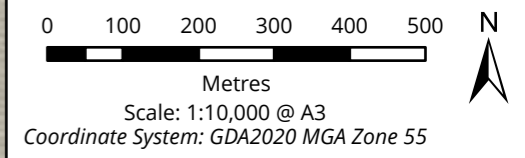
**Potential to currently provide VGED habitat**

- Uncultivated grassland
- Roads, tracks and roadside vegetation

**Unlikely to currently provide VGED habitat**

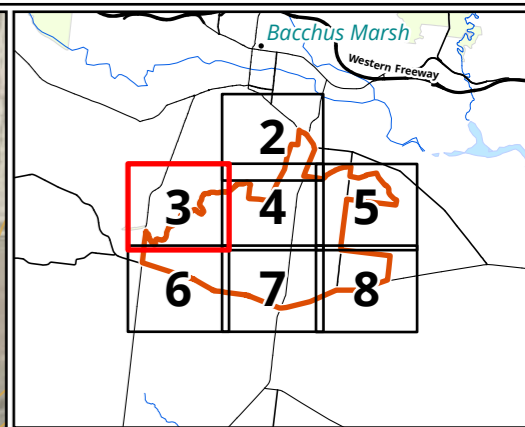
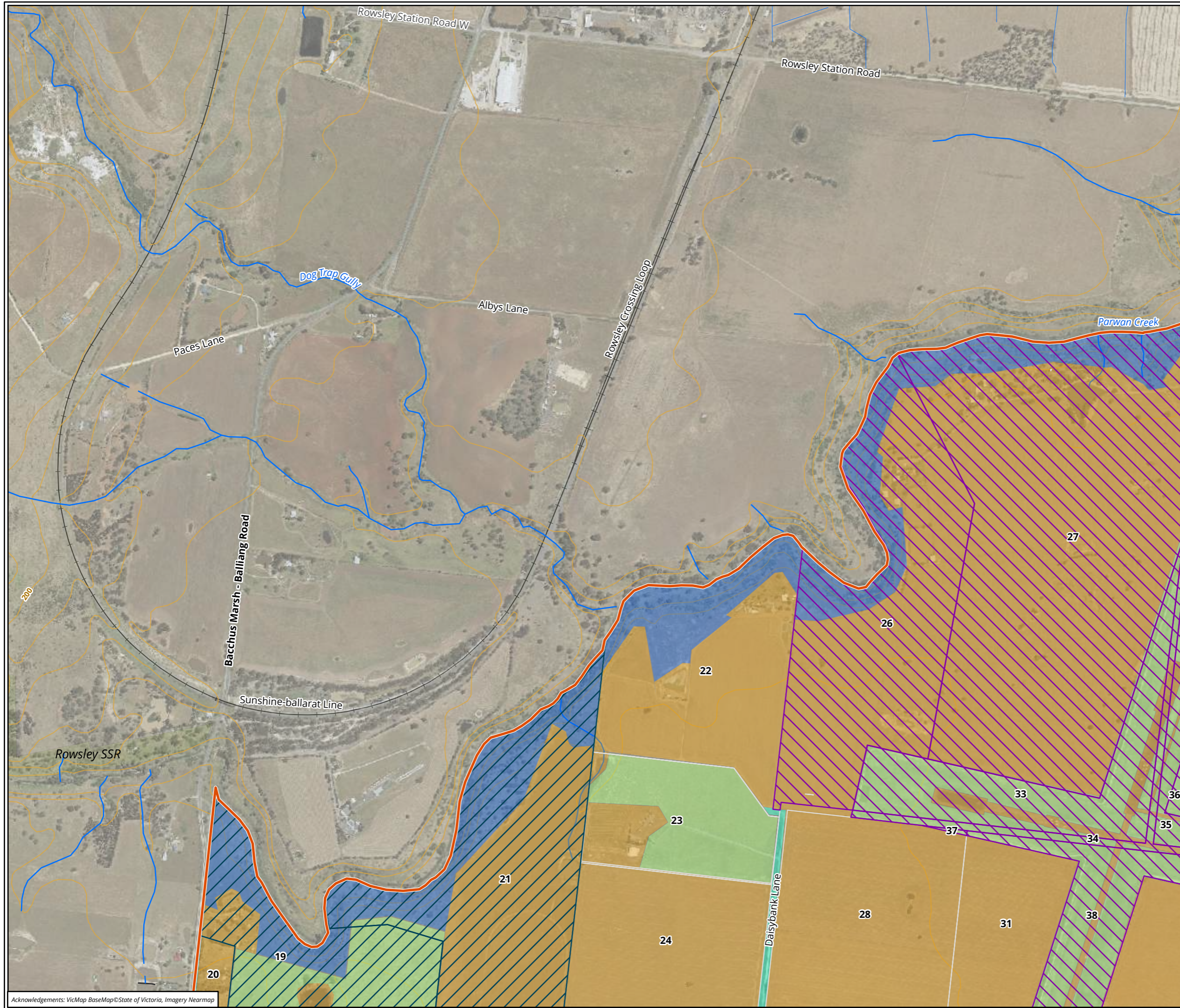
- Other land use unlikely to support VGED

**Figure 2.1 Preliminary VGED Habitat assessment - Parwan PEP**



Matter: 42598,  
 Date: 09 February 2026,  
 Prepared for: WR, Prepared by: PG, Last edited by: PGidley  
 Layout: 42598\_F2\_Prelim\_VGED\_Habitat  
 Project: P:\42500s\42598\Mapping\42598\_Parwan\_VGED\_Habitat.aprx

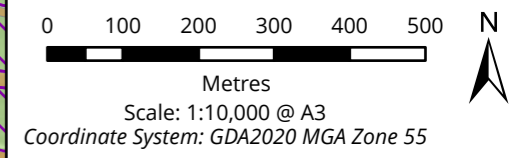
Acknowledgements: VicMap BaseMap © State of Victoria, Imagery Nearmap



**Legend**

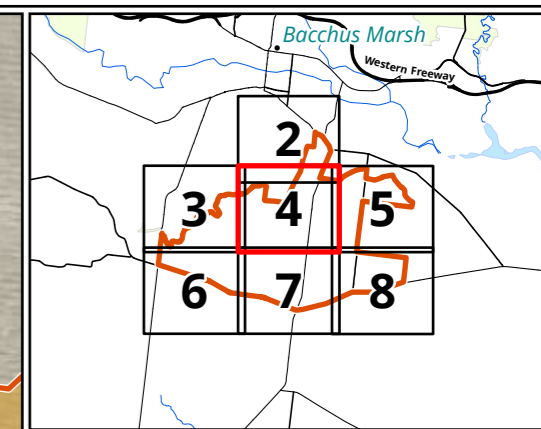
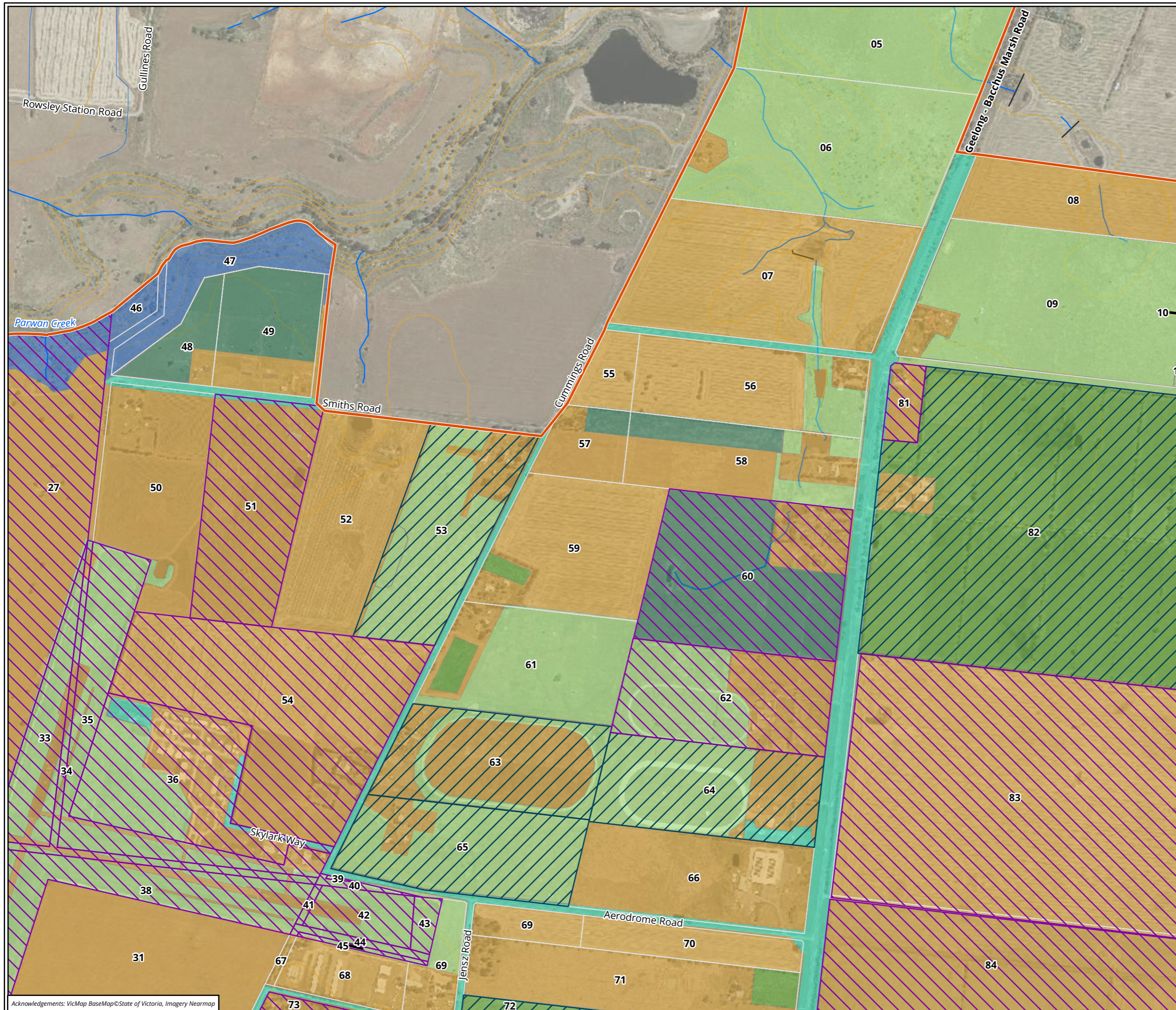
- Study area
- Parcel boundary
- Contour 10m interval
- Accessibility**
- Accessed
- Property access consent obtained, direct access unnecessary or unable to be arranged with tenant
- Potential to currently provide VGED habitat**
- Uncultivated grassland
- Roads, tracks and roadside vegetation
- Uncultivated creekline
- Unlikely to currently provide VGED habitat**
- Other land use unlikely to support VGED

**Figure 2.2 Preliminary VGED Habitat assessment - Parwan PEP**



Matter: 42598,  
 Date: 09 February 2026,  
 Prepared for: WR, Prepared by: PG, Last edited by: PGidley  
 Layout: 42598\_F2\_Prelim\_VGED\_Habitat  
 Project: P:\42500s\42598\Mapping\42598\_Parwan\_VGED\_Habitat.aprx

Acknowledgements: VicMap BaseMap © State of Victoria, Imagery Nearmap



**Legend**

- Study area
- Parcel boundary
- Contour 10m interval
- Accessibility**
- Accessed
- Property access consent obtained, direct access unnecessary or unable to be arranged with tenant
- Potential to currently provide VGED habitat**
- Historical cultivation
- Uncultivated grassland
- Uncultivated grassland - High weed cover
- Roads, tacks and roadside vegetation
- Uncultivated creekline
- Unlikely to currently provide VGED habitat**
- Other land use unlikely to support VGED

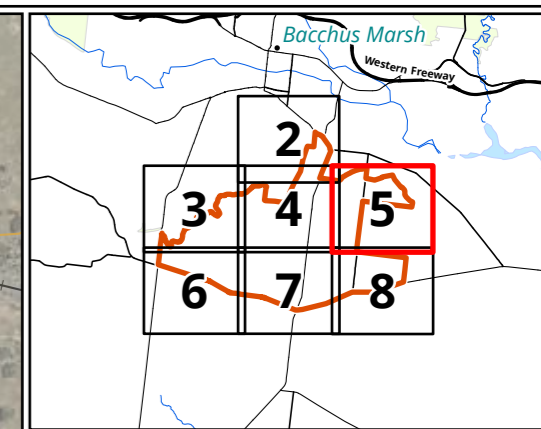
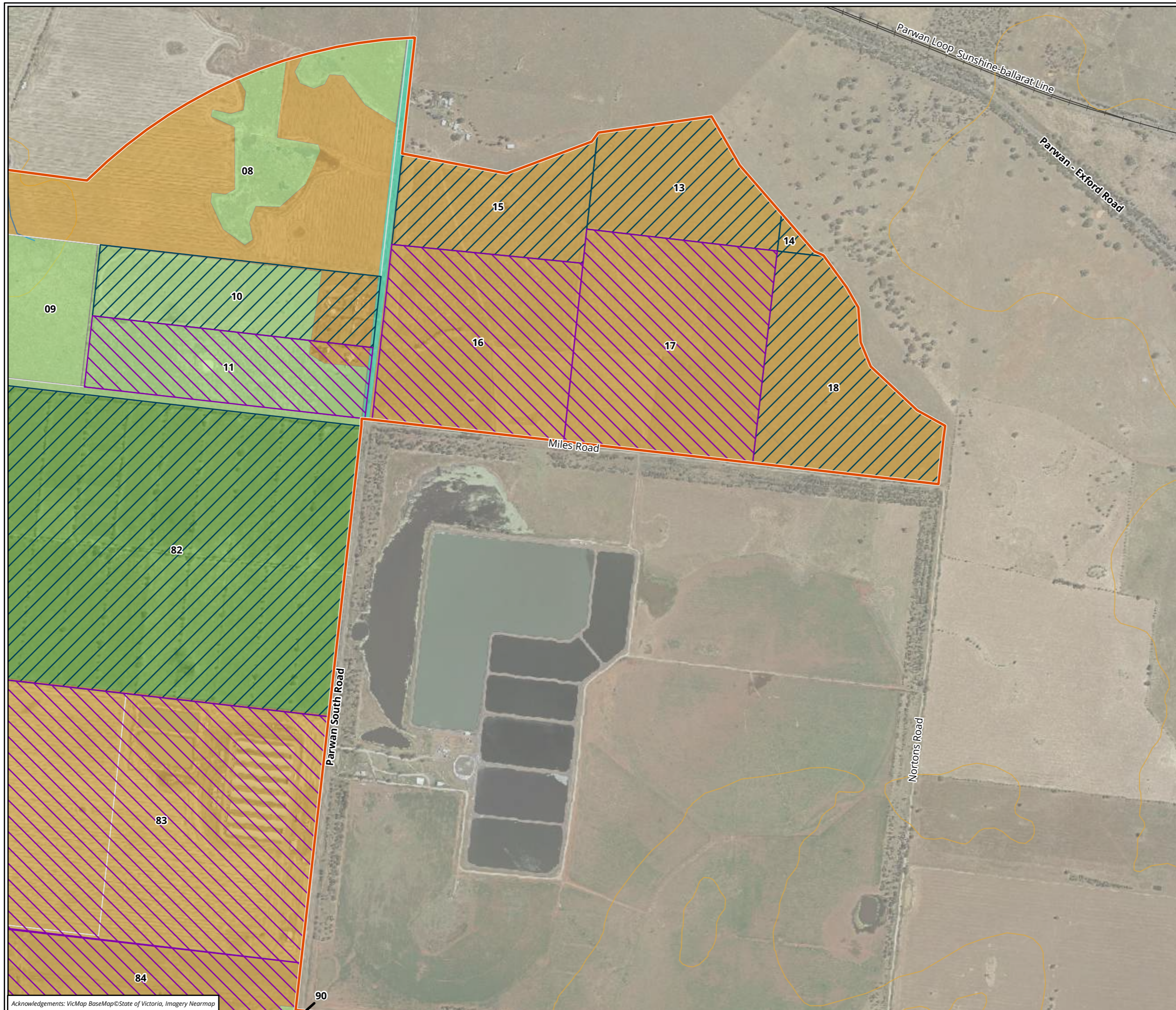
**Figure 2.3 Preliminary VGED Habitat assessment - Parwan PEP**

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 Metres  
 Scale: 1:10,000 @ A3  
 Coordinate System: GDA2020 MGA Zone 55



Matter: 42598,  
 Date: 09 February 2026,  
 Prepared for: WR, Prepared by: PG, Last edited by: PGidley  
 Layout: 42598\_F2\_Prelim\_VGED\_Habitat  
 Project: P:\42500s\42598\Mapping\42598\_Parwan\_VGED\_Habitat.aprx

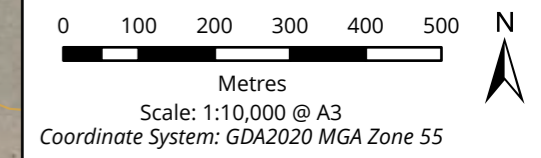
Acknowledgements: VicMap BaseMap © State of Victoria, Imagery Nearmap



**Legend**

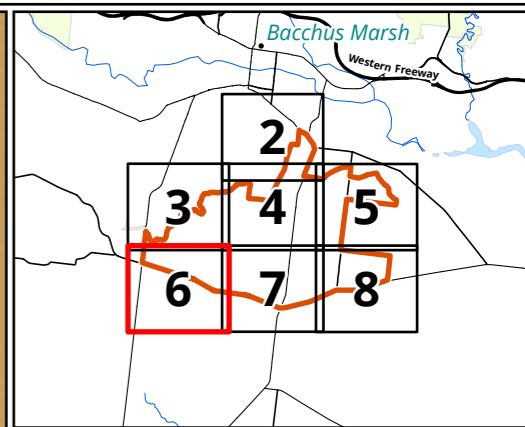
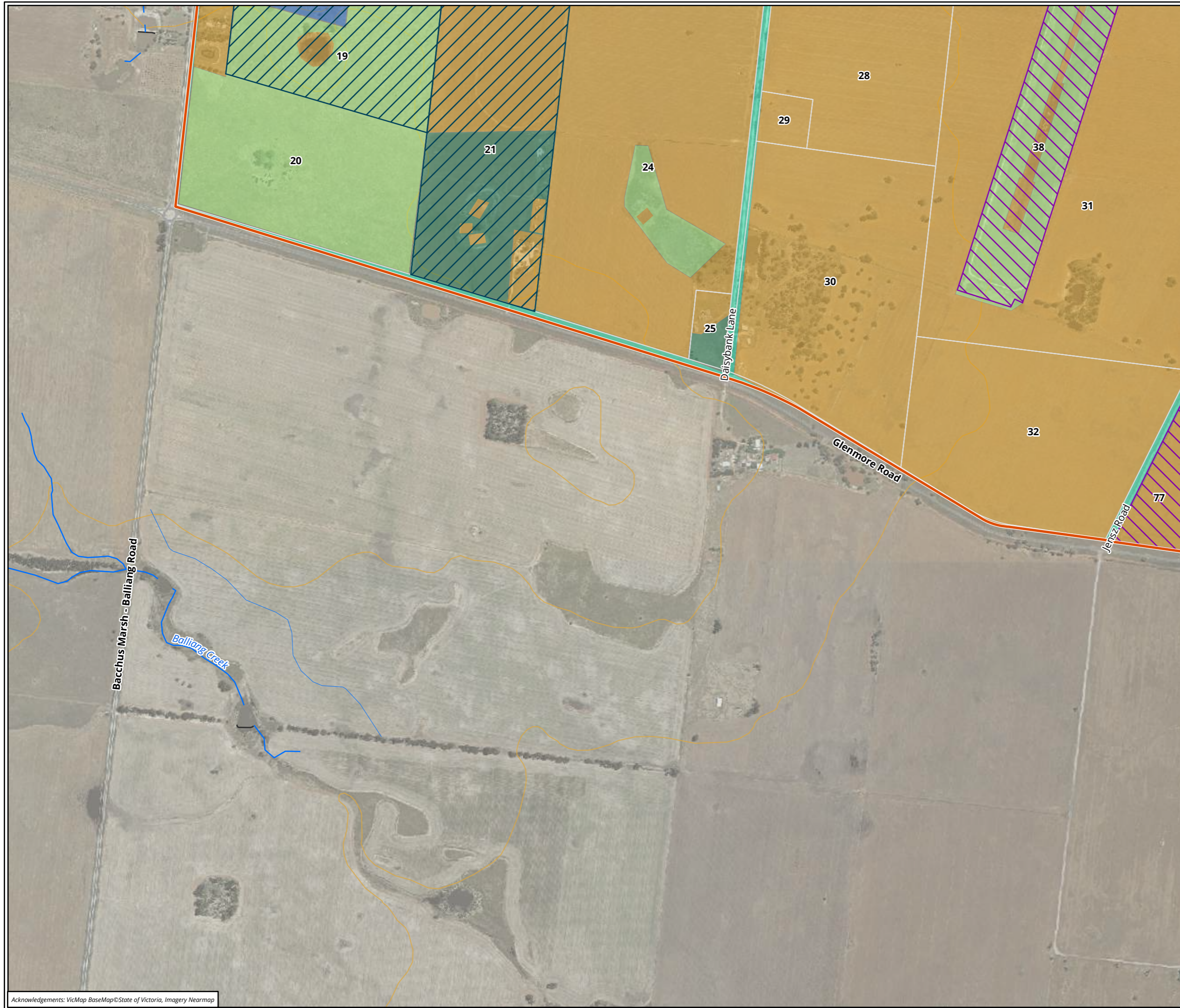
- Study area
  - Parcel boundary
  - Contour 10m interval
- Accessibility**
- Accessed
  - Property access consent obtained, direct access unnecessary or unable to be arranged with tenant
- Potential to currently provide VGED habitat**
- Uncultivated grassland
  - Uncultivated grassland - High weed cover
  - Roads, tracks and roadside vegetation
- Unlikely to currently provide VGED habitat**
- Other land use unlikely to support VGED

**Figure 2.4 Preliminary VGED Habitat assessment - Parwan PEP**



Matter: 42598,  
Date: 09 February 2026,  
Prepared for: WR, Prepared by: PG, Last edited by: PGidley  
Layout: 42598\_F2\_Prelim\_VGED\_Habitat  
Project: P:\42500s\42598\Mapping\42598\_Parwan\_VGED\_Habitat.aprx

Acknowledgements: VicMap BaseMap © State of Victoria, Imagery Nearmap



- Legend**
- Study area
  - Parcel boundary
  - Contour 10m interval
- Accessibility**
- Accessed
  - Property access consent obtained, direct access unnecessary or unable to be arranged with tenant
- Potential to currently provide VGED habitat**
- Historical cultivation
  - Uncultivated grassland
  - Roads, tacks and roadside vegetation
  - Uncultivated creekline
- Unlikely to currently provide VGED habitat**
- Other land use unlikely to support VGED

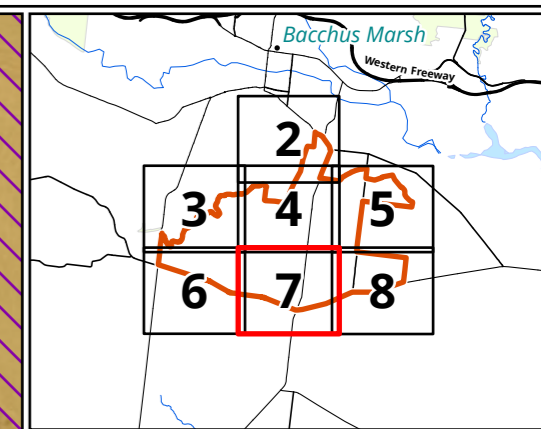
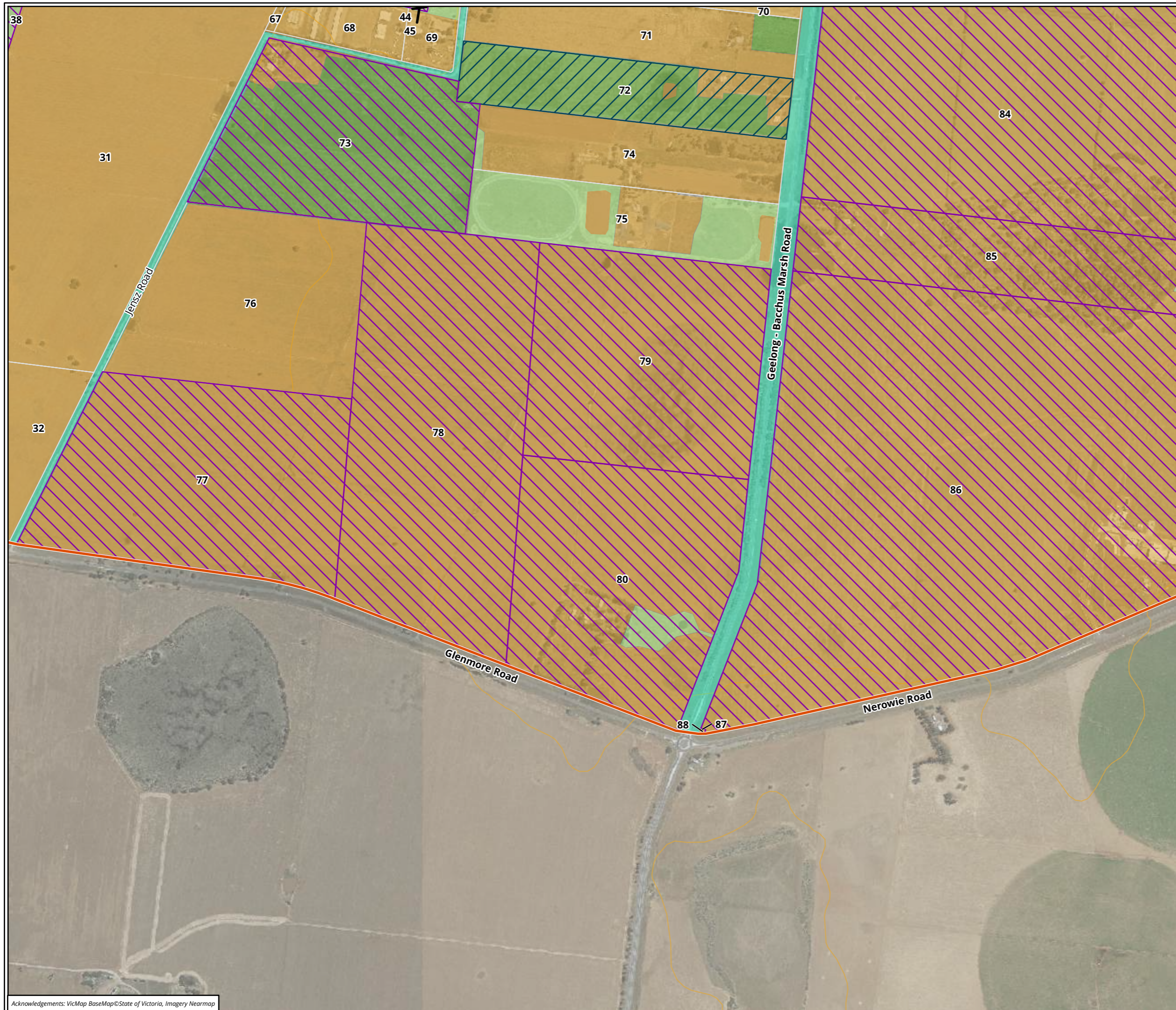
**Figure 2.5 Preliminary VGED Habitat assessment - Parwan PEP**

0 100 200 300 400 500  
Metres  
Scale: 1:10,000 @ A3  
Coordinate System: GDA2020 MGA Zone 55



Matter: 42598,  
Date: 09 February 2026,  
Prepared for: WR, Prepared by: PG, Last edited by: PGidley  
Layout: 42598\_F2\_Prelim\_VGED\_Habitat  
Project: P:\42500s\42598\Mapping\42598\_Parwan\_VGED\_Habitat.aprx

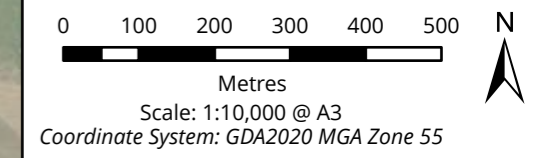
Acknowledgements: VicMap BaseMap © State of Victoria, Imagery Nearmap



**Legend**

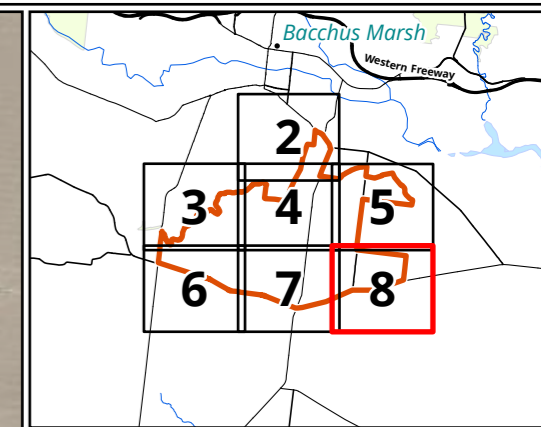
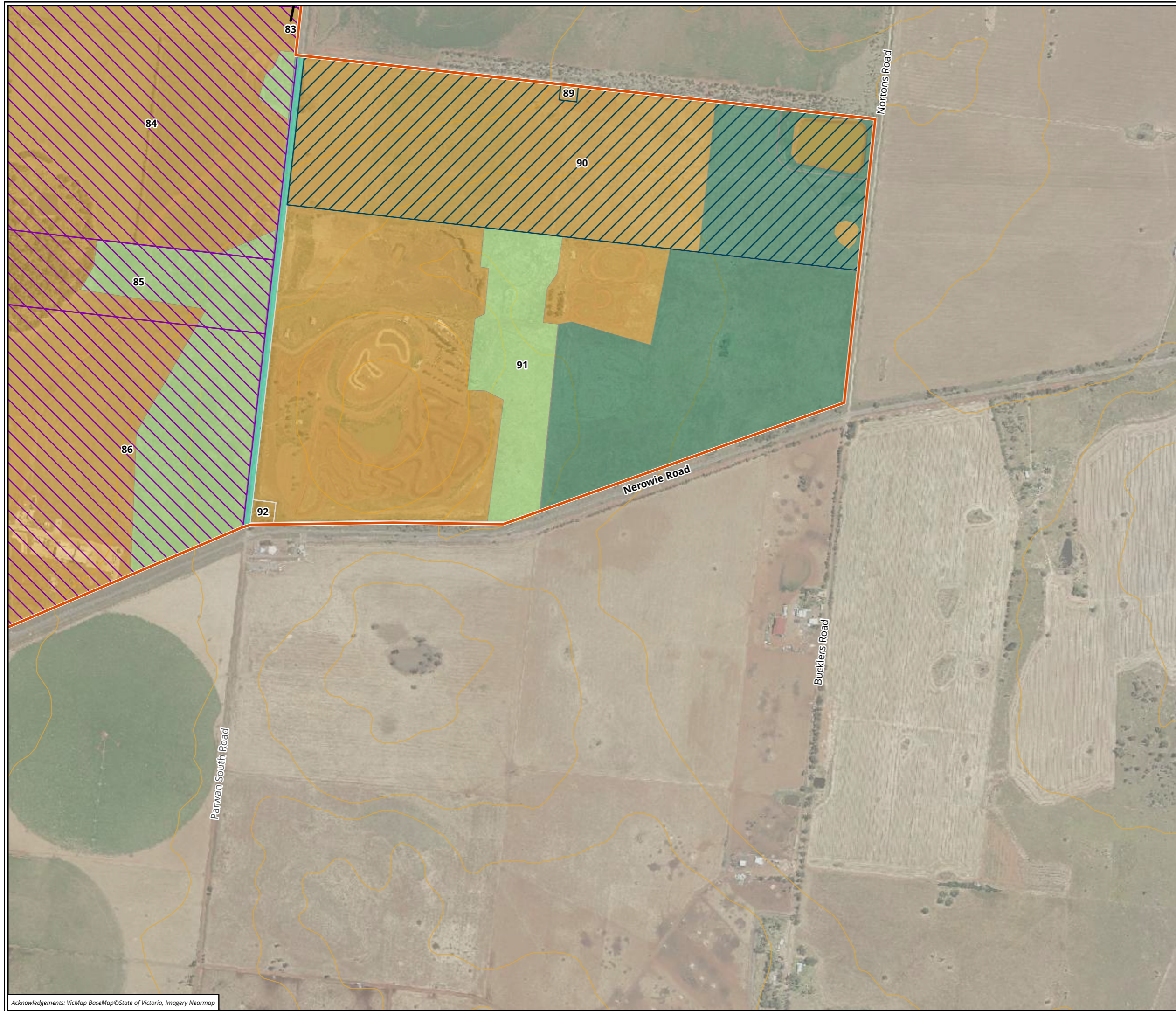
- Study area
  - Parcel boundary
  - Contour 10m interval
- Accessibility**
- Accessed
  - Property access consent obtained, direct access unnecessary or unable to be arranged with tenant
- Potential to currently provide VGED habitat**
- Uncultivated grassland
  - Uncultivated grassland - High weed cover
  - Roads, tracks and roadside vegetation
- Unlikely to currently provide VGED habitat**
- Other land use unlikely to support VGED

**Figure 2.6 Preliminary VGED Habitat assessment - Parwan PEP**



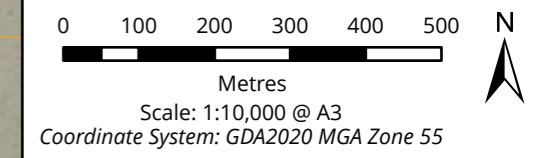
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 Prepared for: WR, Prepared by: PG, Last edited by: PGidley  
 Layout: 42598\_F2\_Prelim\_VGED\_Habitat  
 Project: P:\42500s\42598\Mapping\42598\_Parwan\_VGED\_Habitat.aprx

Acknowledgements: VicMap BaseMap © State of Victoria, Imagery Nearmap



- Legend**
- Study area
  - Parcel boundary
  - Contour 10m interval
- Accessibility**
- Accessed
  - Property access consent obtained, direct access unnecessary or unable to be arranged with tenant
- Potential to currently provide VGED habitat**
- Historical cultivation
  - Uncultivated grassland
  - Roads, tacks and roadside vegetation
- Unlikely to currently provide VGED habitat**
- Other land use unlikely to support VGED

**Figure 2.7 Preliminary VGED Habitat assessment - Parwan PEP**



Acknowledgements: VicMap BaseMap © State of Victoria, Imagery Nearmap

### 3 Detailed habitat assessment results

#### 3.1.1 Habitat assessment land use categories

Habitat was assessed and mapped based on broad visually distinct variation in current and past land-use, and condition where it pertains to likely VGED habitat requirements.

**Land-use assessed as potentially supporting VGED habitat include;**

- Moderate/good condition uncultivated grassland, uncultivated creeklines and woodland, lightly grazed or mown grassland, historically cultivated grassland, and vegetated roadside reserves.
  - These areas broadly support some necessary VGED habitat attributes outlined within the species Conservation Advice, including uncultivated native grassland. These areas may support a current population of VGED, and are of high conservation priority.

**Land-use assessed as unlikely to currently support a VGED population include;**

- Low condition uncultivated grassland (near-total cover of high-threat weeds) cultivated and ploughed paddocks, recent soil disturbance or stockpiles, wetlands, areas of dense trees and shrubs, MX tracks, and buildings, infrastructure and gardens.
  - Grassland habitat within these areas has been cleared, significantly degraded through soil disturbance and weed infestation, or absent due to presence of wetlands or infrastructure. These areas are unlikely to support a current VGED population and are of relatively low conservation priority due to the significant work necessary for restoration.
  - Due to the uncertainty in VGED ability to persist in degraded habitat, targeted surveys are recommended as a precautionary approach at five properties supporting large areas of heavily grazed or low condition uncultivated grasslands (parcels 53, 72, 73, 75, and 82).

A description of these land use categories and summary of targeted survey or conservation recommendations is outlined in Table 1 below.

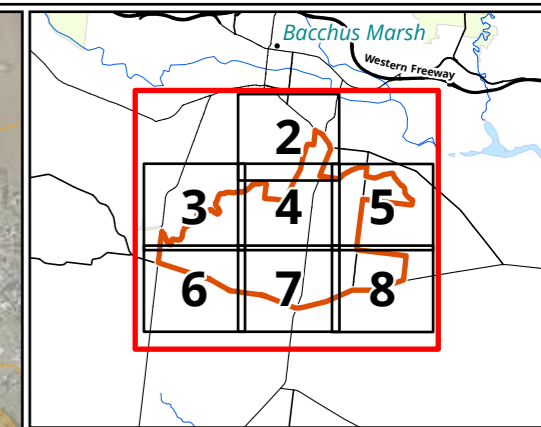
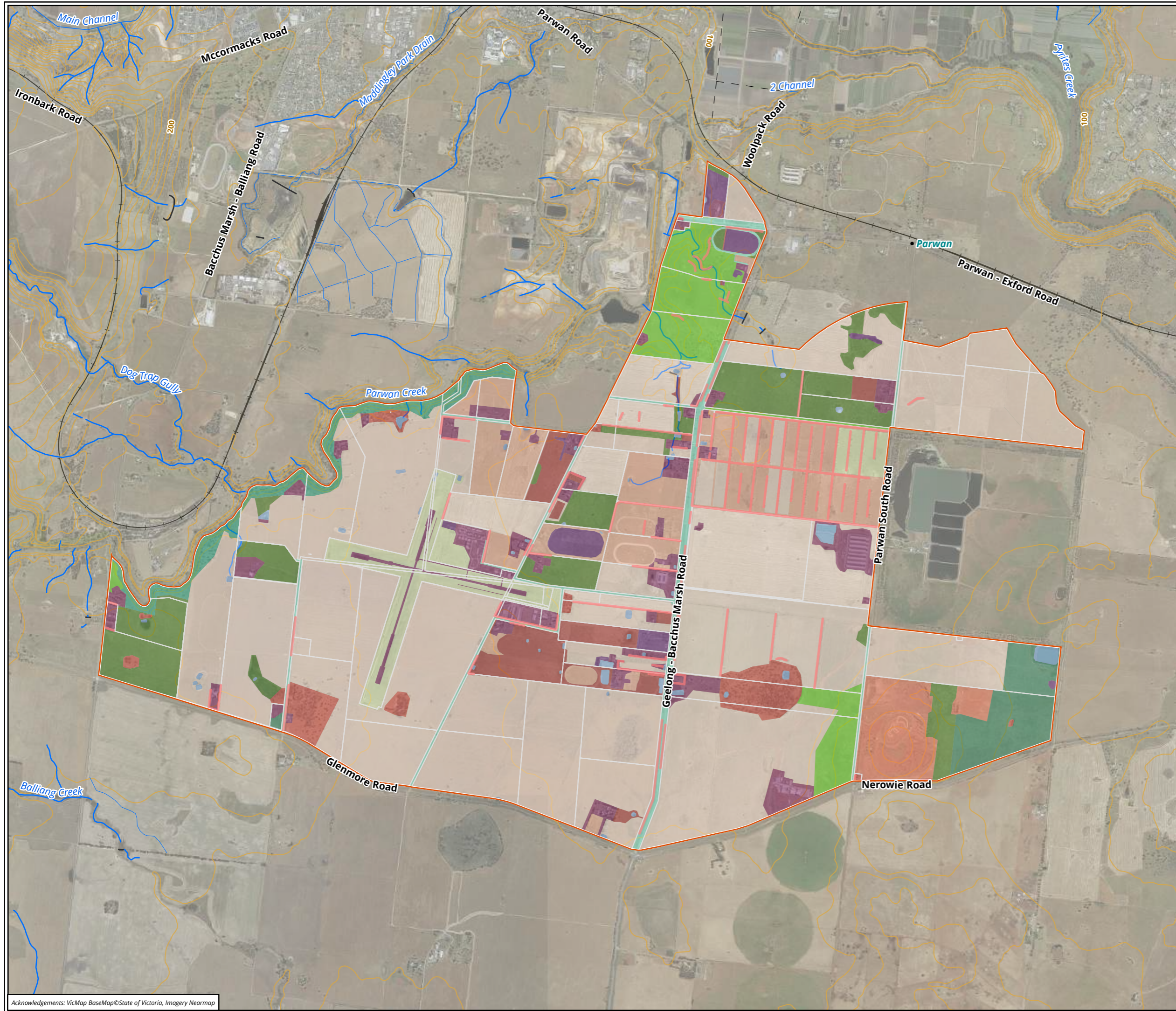
**Table 1 PEP detailed land use categories and VGED habitat suitability assessment**

Land use	Description (based on current condition, and historical aerial imagery)	VGED habitat suitability, rehabilitation and conservation potential
<b>Potential to support suitable VGED habitat, rehabilitation and conservation potential</b> - Targeted surveys recommended		
<b>Uncultivated grassland – good condition</b>	<ul style="list-style-type: none"> <li>• No clear cultivation or ploughing history</li> <li>• Some areas of native grassland with open structure</li> <li>• Low proportion of high-threat weeds</li> <li>• Surface and/or embedded rock present</li> </ul>	High likelihood of supporting VGED population due to suitable habitat features and location in respect to known VGED population.  High potential for rehabilitation with pest plant and animal control and native grassland revegetation. High conservation priority.

Land use	Description (based on current condition, and historical aerial imagery)	VGED habitat suitability, rehabilitation and conservation potential
<b>Uncultivated creekline</b>	<ul style="list-style-type: none"> <li>Large area of contiguous habitat, adjacent to other potential habitat, and/or near known VGED habitat</li> </ul>	<p>As above, however, creek corridor also provides potentially significant dispersal corridor, with minimal disturbance from infrastructure and roads. High conservation priority.</p> <p>Some areas have significant cover of shrubby weeds.</p>
<b>Uncultivated grassland – moderate condition</b>	<ul style="list-style-type: none"> <li>No clear cultivation or ploughing history</li> <li>Moderate to high proportion of weeds</li> <li>May have history of rock removal</li> <li>Some areas of open grassland structure and/or remnant native grassland vegetation</li> </ul>	<p>May support current population of VGED.</p> <p>High potential for rehabilitation with pest plant and animal control, native grassland revegetation, and reintroduction of local rocks from stockpiles.</p>
<b>Vegetated roadside reserves</b>	<ul style="list-style-type: none"> <li>Narrow corridors of uncultivated or historically cultivated grassland adjacent to roads and tracks.</li> <li>Grassland condition varies, even along short road stretches, with some remnant native grassland vegetation.</li> <li>Wider road reserves on Glenmore Rd and Nerowie Rd have high proportion of native grassland vegetation. Fenceline areas regularly ploughed as fire breaks, and reserve likely subjected to occasional low-intensity fuel-reduction burns.</li> </ul>	<p>May support current population of VGED, and/or may facilitate dispersal between core areas of habitat.</p> <p>High potential for rehabilitation with pest plant and animal control, native grassland revegetation, and reintroduction of local rocks from stockpiles.</p>
<b>Uncultivated grassy woodland</b>	<ul style="list-style-type: none"> <li>Open native woodland with sparse mostly native grassy understorey</li> <li>Low-moderate sheep grazing</li> <li>Targeted VGED surveys conducted within and adjacent to the area, no VGED recorded within the woodland over two years of monitoring</li> </ul>	<p>Unlikely to currently support a population of VGED, however, targeted surveys are ongoing within the area due to nearby known VGED habitat and are recommended to continue due to uncertainty in species habitat limitations and dispersal capability.</p> <p>If grazing within the property is maintained, natural recruitment of trees and shrubs may be prevented, and the woodland area may eventually transition into grassland.</p>
<b>Historical cultivation</b>	<ul style="list-style-type: none"> <li>Evidence of cultivation within past ~10 years</li> <li>Moderate to high proportion of weeds</li> <li>Some areas of open grassland structure and/or remnant native grassland vegetation</li> </ul>	<p>May support current population of VGED.</p> <p>Potential for rehabilitation with pest plant and animal control, native grassland revegetation, and reintroduction of local rocks from stockpiles.</p>

Land use	Description (based on current condition, and historical aerial imagery)	VGED habitat suitability, rehabilitation and conservation potential
<b>Lightly grazed or mown grassland</b>	<ul style="list-style-type: none"> <li>• Low, open grassland structure</li> <li>• Significant or total rock removal</li> <li>• No clear sign of recent cultivation</li> <li>• Low proportion of high-threat weeds</li> <li>• Low and/or open grassland structure maintained by low level grazing pressure, or slashing as maintenance for airfield.</li> </ul>	<p>Further habitat assessment is recommended as part of any PEP biodiversity or native vegetation assessments to assess presence of native vegetation and seasonal variation in grassland biomass.</p> <p><b>Targeted surveys are recommended due to uncertainty in species habitat limitations and dispersal capability.</b></p>
<p><b>Current VGED habitat potential uncertain, moderate rehabilitation potential</b></p> <ul style="list-style-type: none"> <li>- <b>Further habitat assessment recommended during PEP biodiversity assessments</b></li> <li>- <b>Targeted surveys recommended in large patches, and areas adjacent to suitable habitat, which may support a population as a precautionary approach (parcels 53, 72, 73, 75, and 82)</b></li> </ul>		
<b>Uncultivated grassland – low condition</b>	<ul style="list-style-type: none"> <li>• No clear recent cultivation or ploughing history (may have ploughing history &gt;20 years prior)</li> <li>• Significant or total rock removal</li> <li>• Little to no native grassland vegetation</li> <li>• Little to no bare ground</li> <li>• Near total cover of high-threat weeds</li> </ul>	<p>Unlikely to currently support a population of VGED.</p> <p>Some potential for rehabilitation with significant pest plant and animal control, revegetation with native grassland species, and reintroduction of local rocks from stockpiles.</p> <p>Further habitat assessment is recommended as part of any PEP biodiversity or native vegetation assessments to assess presence of native vegetation and seasonal variation in grassland biomass.</p>
<b>Heavily grazed pasture</b>	<ul style="list-style-type: none"> <li>• High grazing from livestock resulting in negligible native vegetation</li> <li>• Significant soil disturbance from trampling</li> <li>• May have some scattered Serrated Tussock (largely absent from small horse paddocks)</li> <li>• May have also been historically cultivated and/or subjected to rock removal</li> </ul>	<p><b>Targeted surveys recommended in large patches which may support a population of VGED (parcels 53, 72, 73, 75, and 82) as a precautionary approach, due to uncertainty in the ability of VGED to persist in degraded habitat.</b></p>
<p><b>Unlikely to currently provide VGED habitat, low rehabilitation and conservation priority</b></p> <ul style="list-style-type: none"> <li>- <b>Targeted surveys unlikely to be required</b></li> </ul>		
<b>Cultivated</b>	<ul style="list-style-type: none"> <li>• Currently cultivated, with ploughing and/or cropping</li> <li>• No native grassland vegetation</li> <li>• Significant soil disturbance, rock removal, and destruction of spider burrows</li> </ul>	<p>Unlikely to currently support a population of VGED.</p> <p>Low priority for restoration unless within or adjacent to known VGED habitat. Significant time and cost required to restore habitat features likely to support VGED population.</p>
<b>Recent soil disturbance</b>	<ul style="list-style-type: none"> <li>• Recent significant soil disturbance, (ploughing, dumping of soil or gravel, dam construction, firebreaks)</li> </ul>	<p>Unlikely to currently support a population of VGED.</p> <p>Low priority for restoration unless within or adjacent to known VGED habitat. Significant time and cost required to restore habitat features likely to support VGED population.</p>

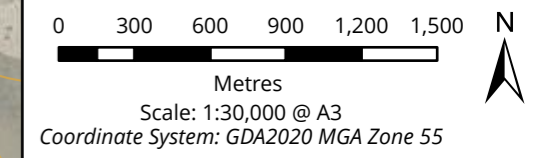
Land use	Description (based on current condition, and historical aerial imagery)	VGED habitat suitability, rehabilitation and conservation potential
<b>Wetlands</b>	<ul style="list-style-type: none"> <li>• Dams, creeks, drains, water basins, and adjacent heavily disturbed banks</li> </ul>	<p>Unlikely to currently support a population of VGED.</p> <p>Works to modify wetlands or waterways to provide VGED habitat are unlikely to be appropriate, outside of filling of small constructed drains and dams. Impacts to wetland habitat may disturb threatened aquatic fauna and flora habitat.</p>
<b>Trees and shrubs</b>	<ul style="list-style-type: none"> <li>• High cover of remnant and/or planted trees and shrubs</li> <li>• Native grassland structure absent, or significantly disturbed</li> <li>• Often significant soil disturbance under scattered trees and shrubs in grassland areas due to use as livestock or kangaroo resting sites</li> </ul>	<p>Based on knowledge of VGED ecology and habitat use, heavily treed areas are unlikely to support populations.</p> <p>Works to modify native woodlands to provide VGED habitat are unlikely to be appropriate as it would result in impacts to native vegetation. Clearing of planted and/or exotic trees and shrubs may be appropriate in conjunction with other rehabilitation efforts at a local scale.</p>
<b>Buildings, infrastructure, and gardens</b>	<ul style="list-style-type: none"> <li>• Native grassland structure absent, or significantly disturbed</li> <li>• Significant and ongoing localised disturbance from people, pet, livestock, and vehicle access</li> <li>• High proportion of exotic vegetation, including garden plants</li> </ul>	<p>Unlikely to currently support a population of VGED.</p> <p>Low priority for restoration unless within or adjacent to known VGED habitat. Significant time and cost required to restore habitat features likely to support VGED population.</p>
<b>MX tracks</b>	<ul style="list-style-type: none"> <li>• Significant and ongoing soil disturbance for use as vehicle tracks, car parks, buildings and associated infrastructure</li> </ul>	<p>Restoration unlikely to be appropriate due to necessary removal of infrastructure and significant change in land use.</p>



**Legend**

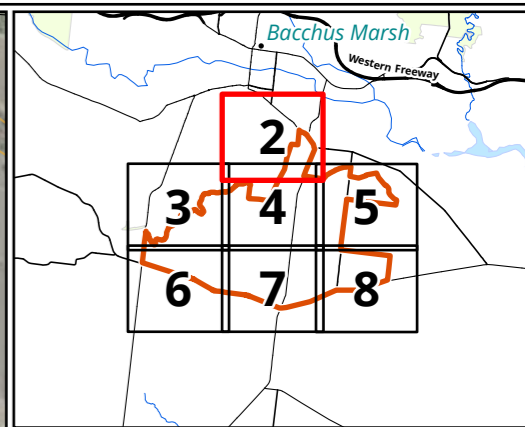
- Study area
  - Parcel boundary
- Potential VGED Habitat**
- Historical cultivation
  - Uncultivated grassland - Good
  - Uncultivated grassy woodland
  - Uncultivated grassland - Moderate
  - Lightly grazed or mown grassland
  - Uncultivated creekline
  - Vegetated roadside reserve
- Unsuitable VGED Habitat**
- Buildings, infrastructure and gardens
  - Recent soil disturbance
  - Wetland
  - Cultivated
  - Heavily grazed pasture
  - MX Track
  - Trees and shrubs
  - Uncultivated grassland - Low
  - Trees and shrubs

**Figure 3.0 VGED Detailed habitat assessment - Parwan PEP**



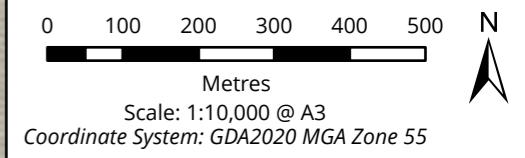
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Prepared for: WR, Prepared by: PG, Last edited by: PGidley  
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Acknowledgements: VicMap BaseMap © State of Victoria, Imagery Nearmap



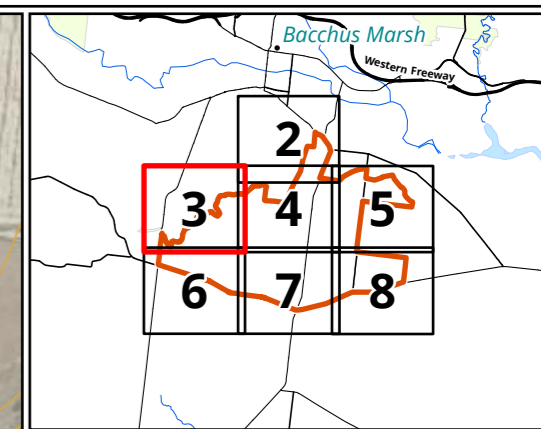
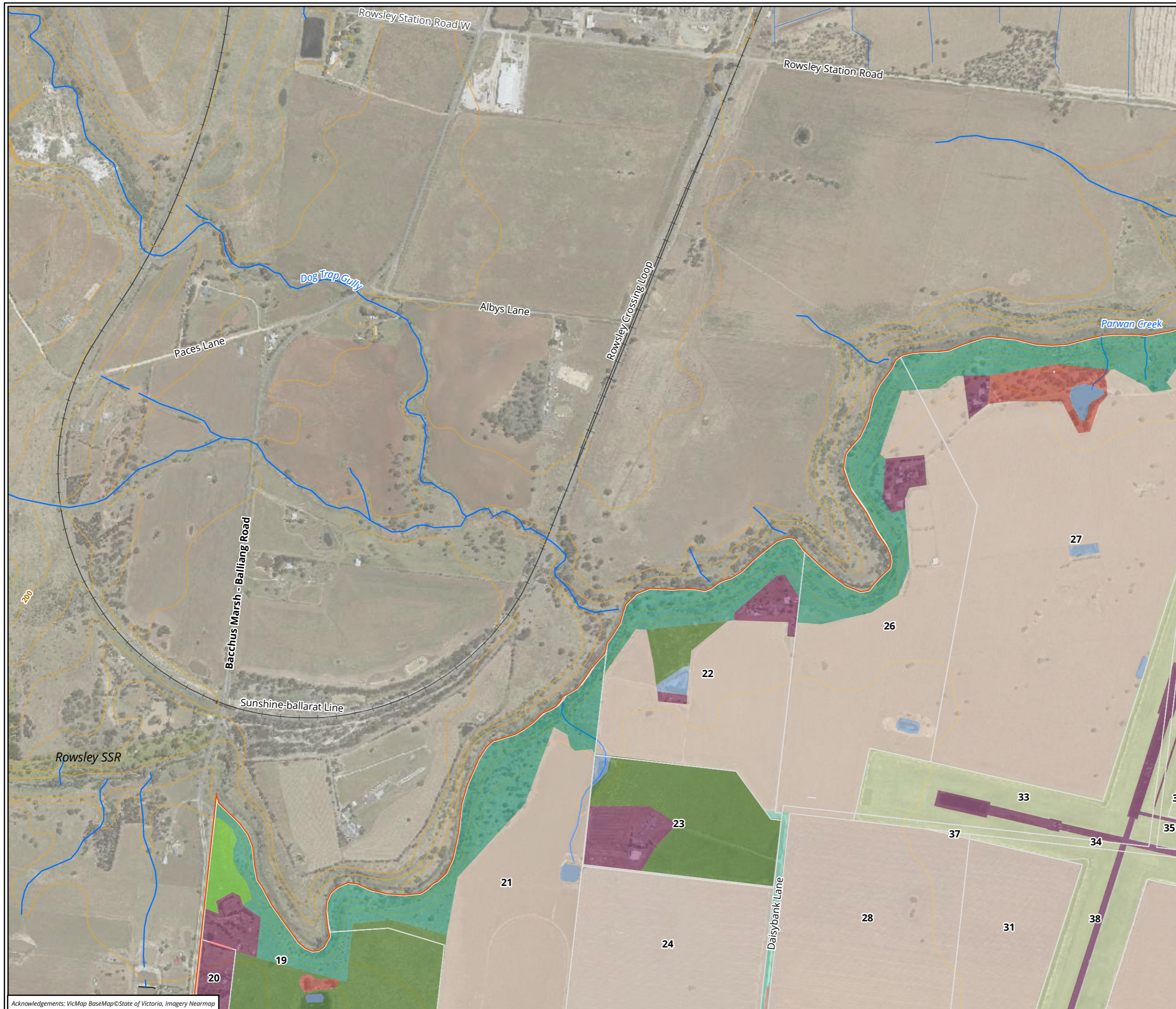
- Legend**
- Study area
  - Parcel boundary
- Potential VGED Habitat**
- Uncultivated grassland - Good
  - Uncultivated grassland - Moderate
  - Vegetated roadside reserve
- Unsuitable VGED Habitat**
- Buildings, infrastructure and gardens
  - Recent soil disturbance
  - Wetland
  - Cultivated
  - Heavily grazed pasture
  - Trees and shrubs
  - Trees and shrubs

**Figure 3.1 VGED Detailed habitat assessment - Parwan PEP**



Matter: 42598,  
 Date: 09 February 2026,  
 Prepared for: WR, Prepared by: PG, Last edited by: PGidley  
 Layout: 42598\_F3\_VGED\_Habitat  
 Project: P:\42500s\42598\Mapping\42598\_Parwan\_VGED\_Habitat.aprx

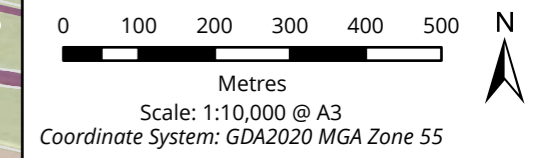
Acknowledgements: VicMap BaseMap©State of Victoria, Imagery Nearmap



**Legend**

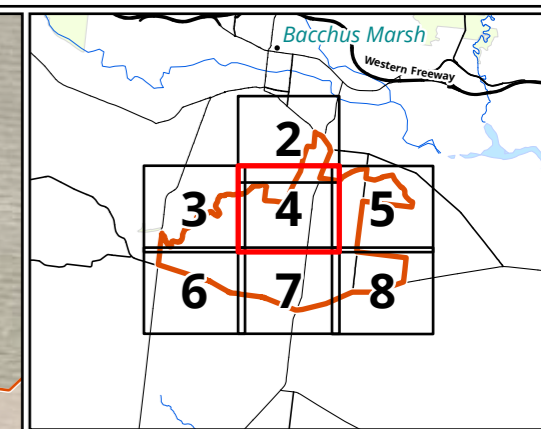
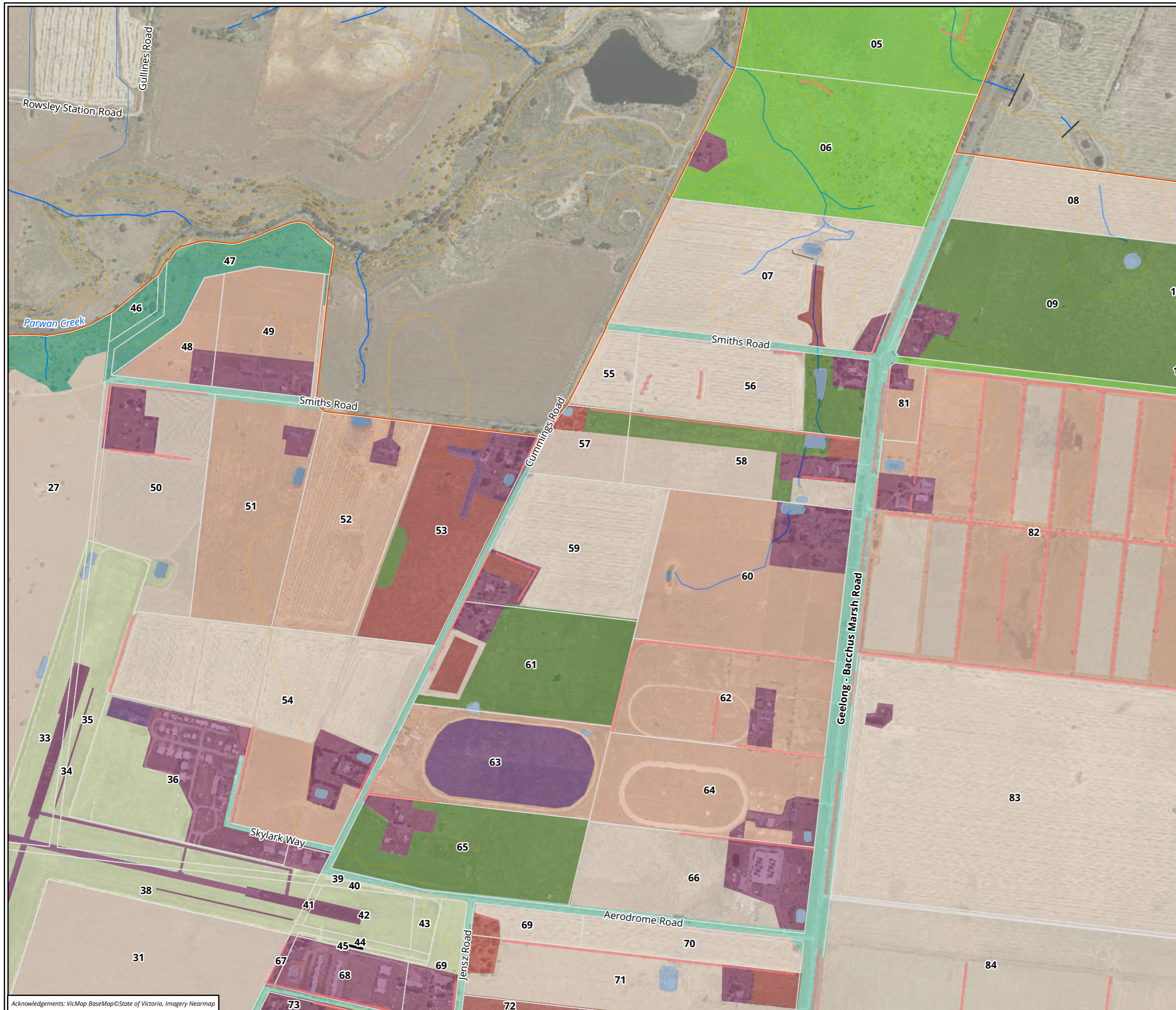
- Study area
- Parcel boundary
- Potential VGED Habitat**
- Uncultivated grassland - Good
- Uncultivated grassland - Moderate
- Lightly grazed or mown grassland
- Uncultivated creekline
- Vegetated roadside reserve
- Unsuitable VGED Habitat**
- Buildings, infrastructure and gardens
- Wetland
- Cultivated
- Trees and shrubs
- Trees and shrubs

**Figure 3.2 VGED Detailed habitat assessment - Parwan PEP**



Matter: 42598,  
Date: 09 February 2026,  
Prepared for: WR, Prepared by: PG, Last edited by: PGidley  
Layout: 42598\_F3\_VGED\_Habitat  
Project: P:\42500s\42598\Mapping\42598\_Parwan\_VGED\_Habitat.aprx

Acknowledgements: VicMap BaseMap © State of Victoria, Imagery Nearmap



**Legend**

- Study area
- Parcel boundary
- Potential VGED Habitat**
- Uncultivated grassland - Good
- Uncultivated grassland - Moderate
- Lightly grazed or mown grassland
- Uncultivated creekline
- Vegetated roadside reserve
- Unsuitable VGED Habitat**
- Buildings, infrastructure and gardens
- Recent soil disturbance
- Wetland
- Cultivated
- Heavily grazed pasture
- Trees and shrubs
- Uncultivated grassland - Low
- Trees and shrubs

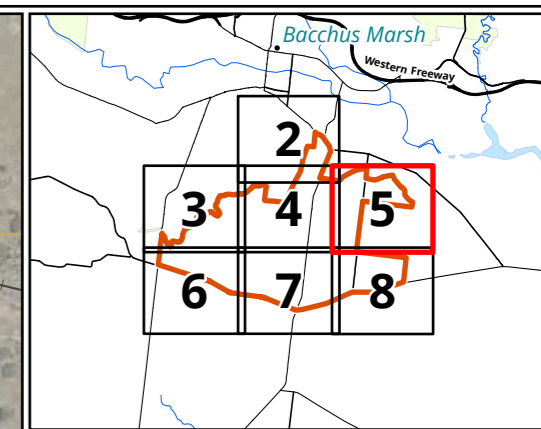
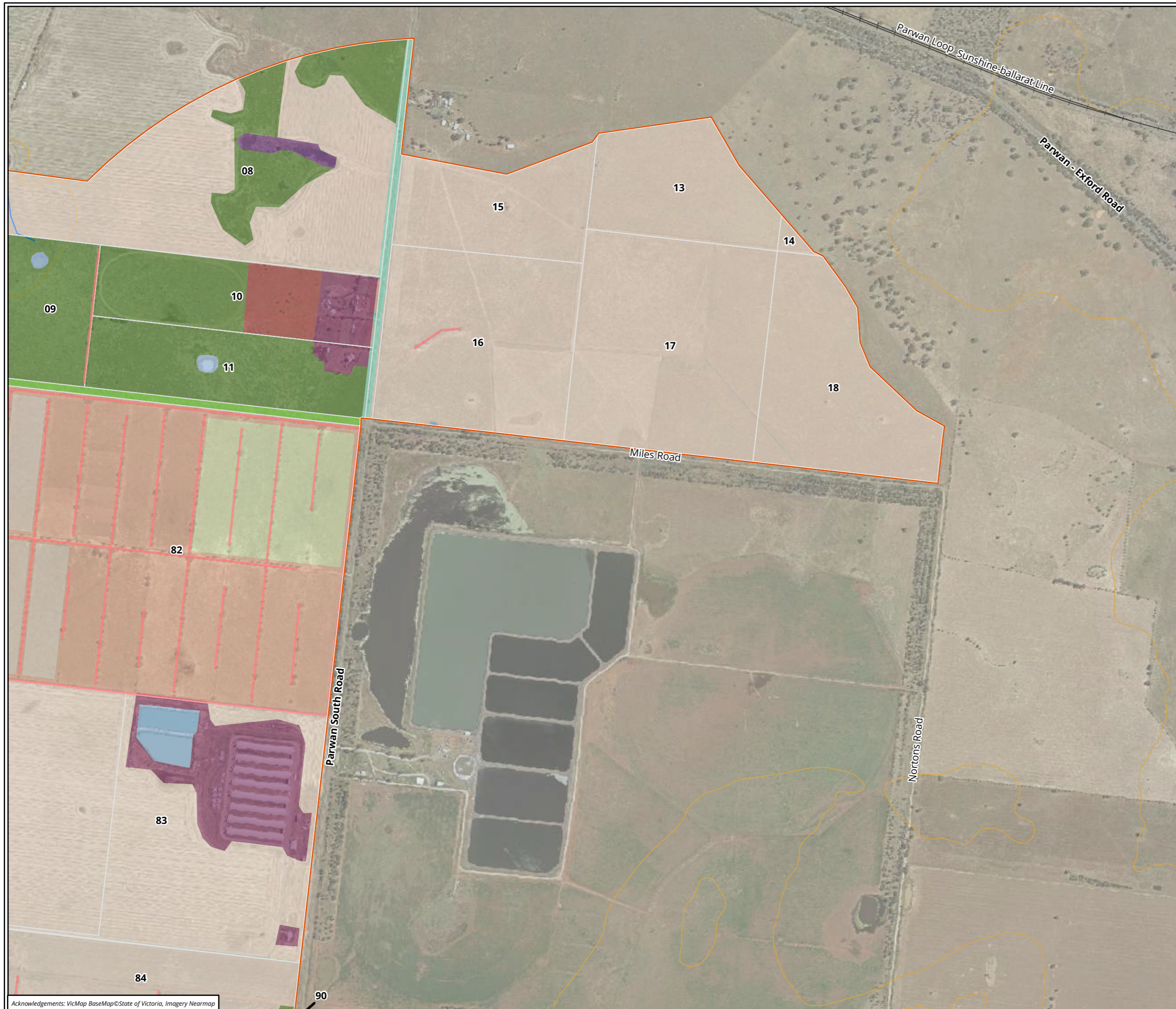
**Figure 3.3 VGED Detailed habitat assessment - Parwan PEP**

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 Scale: 1:10,000 @ A3  
 Coordinate System: GDA2020 MGA Zone 55



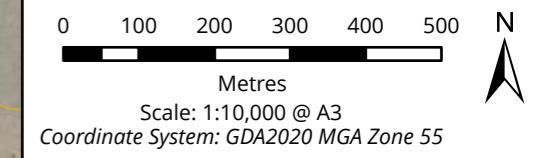
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 Project: P:\42500s\42598\Mapping\42598\_Parwan\_VGED\_Habitat.aprx

Acknowledgements: VicMap BaseMap © State of Victoria, Imagery Nearmap



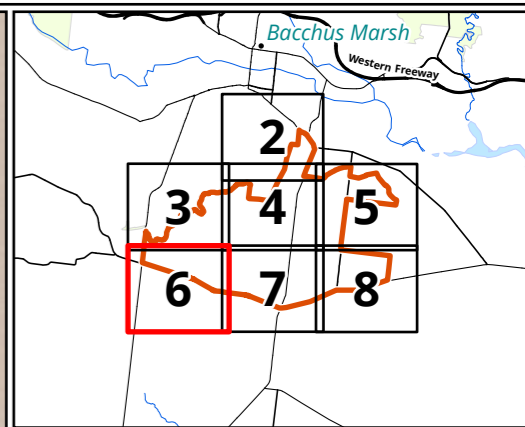
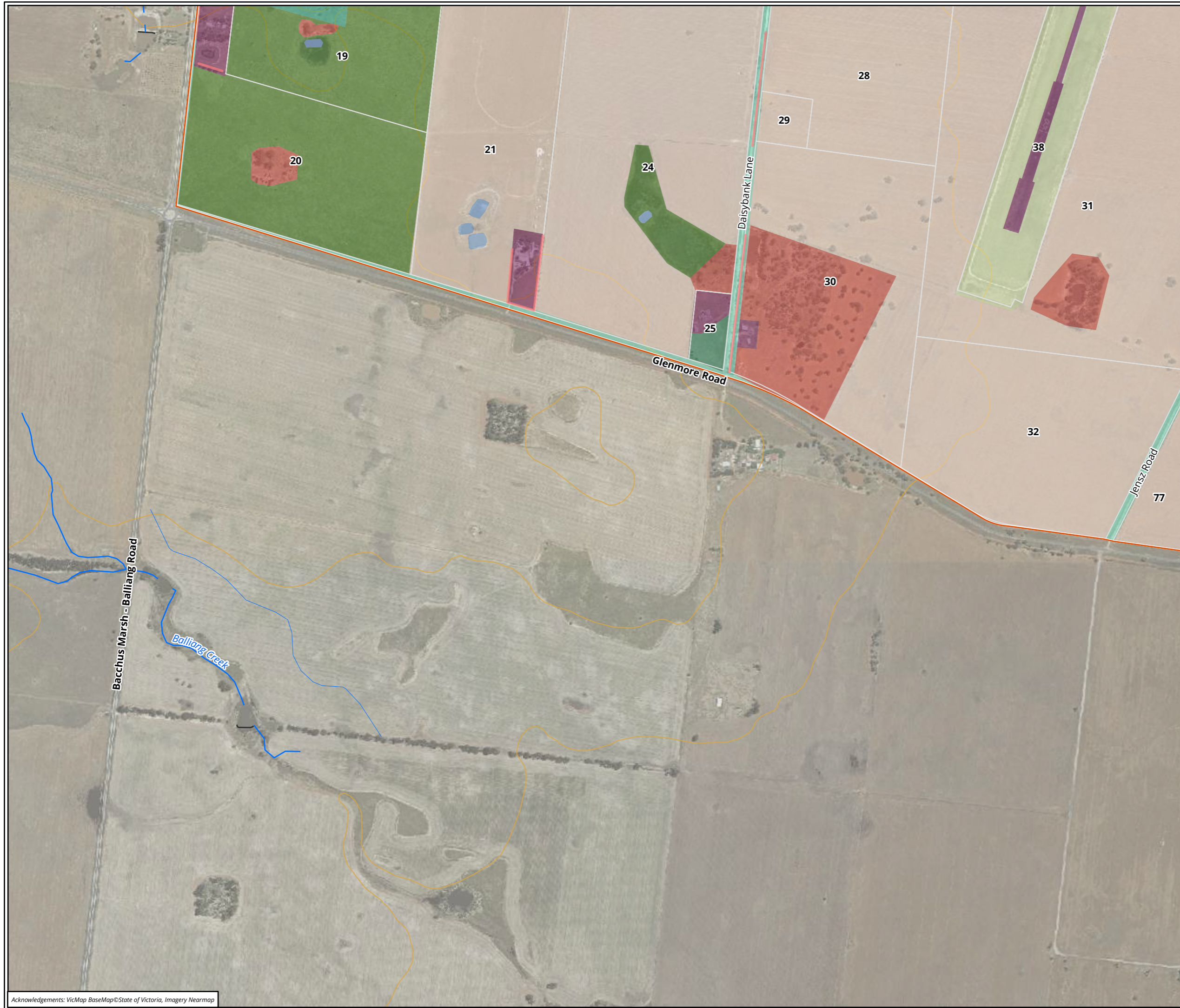
- Legend**
- Study area
  - Parcel boundary
- Potential VGED Habitat**
- Uncultivated grassland - Good
  - Uncultivated grassland - Moderate
  - Lightly grazed or mown grassland
  - Vegetated roadside reserve
- Unsuitable VGED Habitat**
- Buildings, infrastructure and gardens
  - Recent soil disturbance
  - Wetland
  - Cultivated
  - Heavily grazed pasture
  - Uncultivated grassland - Low
  - Trees and shrubs

**Figure 3.4 VGED Detailed habitat assessment - Parwan PEP**



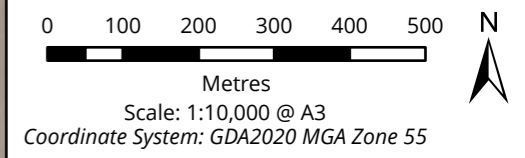
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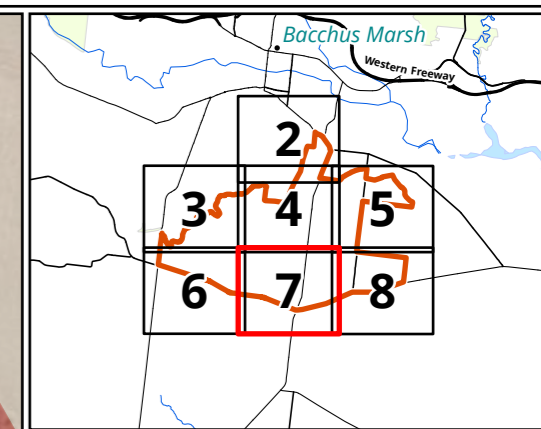
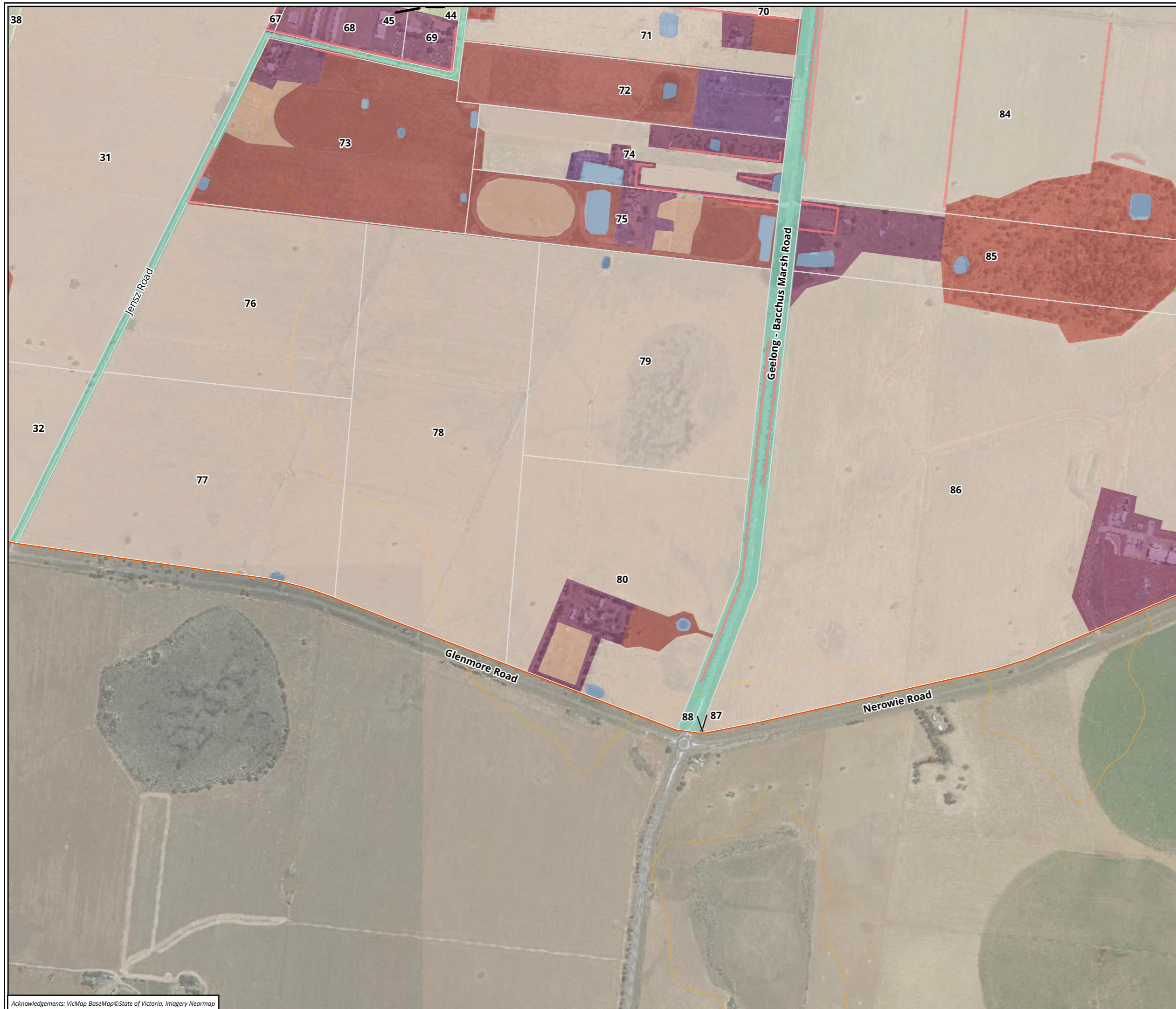
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- Study area
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- Potential VGED Habitat**
- Historical cultivation
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  - Lightly grazed or mown grassland
  - Uncultivated creekline
  - Vegetated roadside reserve
- Unsuitable VGED Habitat**
- Buildings, infrastructure and gardens
  - Wetland
  - Cultivated
  - Trees and shrubs
  - Trees and shrubs

**Figure 3.5 VGED Detailed habitat assessment - Parwan PEP**



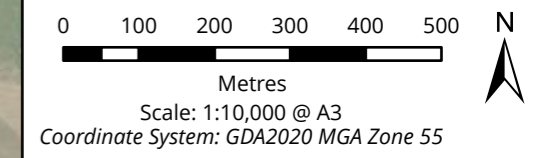
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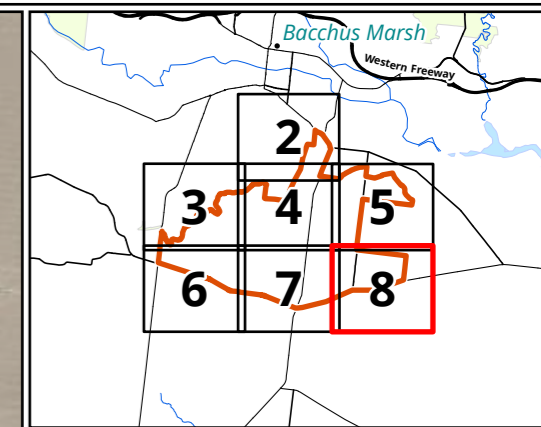
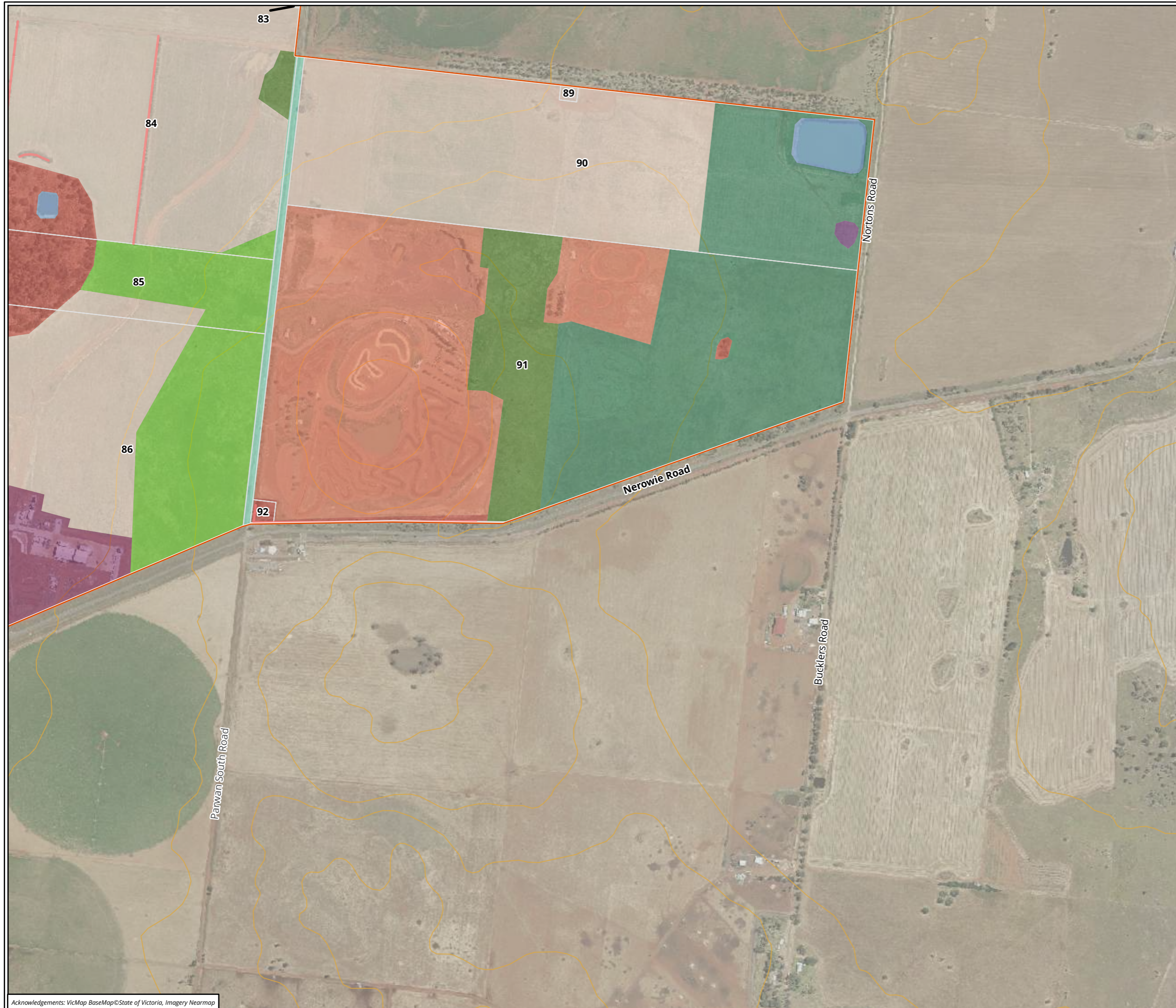


- Legend**
- Study area
  - Parcel boundary
- Potential VGED Habitat**
- Uncultivated grassland - Good
  - Lightly grazed or mown grassland
  - Vegetated roadside reserve
- Unsuitable VGED Habitat**
- Buildings, infrastructure and gardens
  - Recent soil disturbance
  - Wetland
  - Cultivated
  - Heavily grazed pasture
  - Trees and shrubs
  - Uncultivated grassland - Low
  - Trees and shrubs

**Figure 3.6 VGED Detailed habitat assessment - Parwan PEP**

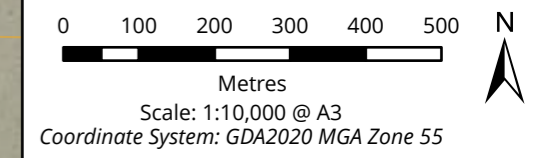


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Project: P:\42500s\42598\Mapping\42598\_Parwan\_VGED\_Habitat.aprx



- Legend**
- Study area
  - Parcel boundary
- Potential VGED Habitat**
- Historical cultivation
  - Uncultivated grassland - Good
  - Uncultivated grassland - Moderate
  - Vegetated roadside reserve
- Unsuitable VGED Habitat**
- Buildings, infrastructure and gardens
  - Recent soil disturbance
  - Wetland
  - Cultivated
  - MX Track
  - Trees and shrubs
  - Trees and shrubs

**Figure 3.7 VGED Detailed habitat assessment - Parwan PEP**



Matter: 42598,  
Date: 09 February 2026,  
Prepared for: WR, Prepared by: PG, Last edited by: PGidley  
Layout: 42598\_F3\_VGED\_Habitat  
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## 4 Targeted survey and conservation recommendations

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### 4.1 Targeted survey recommendations

Targeted surveys for VGED are recommended in areas identified as supporting potentially suitable habitat, to inform conservation, regulatory decisions, and approvals for clearing and development. They include the following land use categories outlined in Table 1 and Figure 3:

- Uncultivated grassland - good and moderate condition.
- Uncultivated creekline.
- Vegetated roadside reserves (particularly sections adjacent to larger patches of potentially suitable habitat).
- Historical cultivation, and lightly grazed or mown grassland.
- Uncultivated grassy woodland (targeted surveys underway, recommended to continue).

Due to the uncertainty in VGED ability to persist in disturbed habitat, targeted surveys are also recommended at several large areas of 'uncultivated grassland – low condition', and 'heavily grazed pasture' that have not been recently cultivated (identified at property parcels 53, 72, 73, 75, and 82).

Surveys should also be considered for small to medium areas of 'uncultivated grassland – low condition', and 'heavily grazed pasture' that have not been recently cultivated if they are near other potentially suitable VGED habitat.

#### 4.1.1 Pre-development survey permit condition

A pre-development survey permit condition is recommended to be established under the PEP for areas of potential VGED habitat which are not surveyed during development of the PEP. The permit condition should require that targeted VGED surveys are conducted following appropriate survey guidelines and methodology in areas of potential habitat ahead of any habitat clearing or development. Areas of potentially suitable habitat are summarised in Figure 4.

The permit condition is recommended to be specified for areas of identified potential habitat in properties where access consent for targeted surveys cannot be obtained, and for areas where VGED surveys are not conducted during development of the PEP due to other development constraints.

#### 4.1.2 Development constraints and survey prioritisation

Areas of potential VGED habitat that may be developed are a priority for targeted surveys.

Several development constraints occur throughout the PEP area, including areas of TECs NTGVVP and GBGW-DNG. Some large areas of these TECs were identified during the biodiversity assessment undertaken in 2022 (Ecology & Heritage Partners 2022). Additional unidentified areas of these TECs are likely to occur in areas of uncultivated native grassland and woodland throughout the PEP which were not assessed during the EHP biodiversity assessment due to access consent constraints.

Offsets for NTGVVP are currently in extremely short supply, and can cost in excess of \$150,000 per hectare. Clearing of even small areas of NTGVVP may require several hectares of offsets to compensate for the loss,

which may not be readily available. Areas of NTGVVP within the PEP are recommended to be retained and incorporated into conservation areas where possible. NTGVVP is also likely to support threatened flora species and habitat for threatened grassland fauna, potentially requiring additional offsets if cleared.

Further native vegetation assessments are recommended in properties where access consent has been obtained since the 2022 assessment, to identify areas of TECs. Access consent should be sought for properties that may contain native grasslands, woodland, or wetlands supporting TECs.

Areas mapped during the VGED habitat assessment as uncultivated grassland, uncultivated creekline, and lightly grazed or mown grassland are most likely to support native vegetation that constitutes NTGVVP or GBGW-DNG. Areas that are dominated by weeds or that have been cultivated are unlikely to support TECs but should be included in native vegetation assessments.

Other potential development constraints include:

- Cultural heritage values within and adjacent to Parwan Creek.
- Growling Grass Frog *Ranoidea raniformis* overwintering and dispersal habitat within 200 metres of Parwan creek. Impacts to dispersal and overwintering habitat can constitute a significant impact to the species, as outlined within the species significant impact guidelines (DEWHA 2009).
- Presence of other threatened flora, fauna, or threatened ecological communities.

Areas with one or more significant development constraint are a low priority for VGED targeted surveys at this stage. The inclusion of a pre-development VGED survey condition may be appropriate for these areas to ensure that they are appropriately surveyed ahead of any future development or habitat disturbance.

A summary of VGED habitat assessment, targeted survey recommendations, and current constraints is presented in Figure 4, and property-specific details and recommendations in Table 2.

## 4.2 Further VGED habitat assessment recommendations

Further VGED habitat assessments to inform the need for targeted surveys are unnecessary at this stage. Detailed habitat assessments are recommended in any areas confirmed to be occupied by VGED following targeted surveys in potentially suitable habitat, to inform conservation management plans.

Properties that could not be directly accessed were assessed from adjacent properties and roads, and through current and historical aerial imagery to provide targeted survey recommendations. Areas of uncultivated grassland within inaccessible properties that were not clearly visible have been assessed as potentially suitable habitat as a precautionary approach, and targeted surveys or pre-development survey conditions are recommended.

If access consent can be obtained, general biodiversity and native vegetation assessments are recommended to be undertaken at all outstanding properties ahead of any targeted surveys commencing, to identify any areas of NTGVVP, or other ecological constraints which may preclude development.

## 4.3 Conservation priorities and strategies

Establishment of conservation areas is likely to be critical to the survival and recovery of VGED in the wild. Any areas confirmed to be occupied by VGED are a priority to be secured in perpetuity and appropriately managed for their conservation. Areas of uncultivated grassland within local waterway reserves, including Parwan Creek, are also high priority for conservation and focus of habitat improvement works, including

woody weed management. Areas that are unlikely to be developed due to presence of NTGVVP or other ecological or cultural heritage constraints are also a high priority for conservation as potential VGED reintroduction sites. Priority conservation areas and areas of known NTGVVP are presented in Figure 4. Further consultation with species experts is recommended to establish if 'conservation interface areas' identified in Figure 4 are suitable for rehabilitation and conservation.

A conservation management plan (CMP) should be prepared for any areas of the PEP established as conservation reserves. The CMP should consider conservation recommendations and habitat management strategies outlined below.

### 4.3.1 Weed and pest control

High-threat weeds can significantly alter natural grassland structure and outcompete native grasses and herbs. Pest predators (cats and foxes) may predate on VGED, while pest herbivores such as rabbits can cause significant soil disturbance and damage to native grassland vegetation.

The *Catchment and Land Protection Act 1994* (CaLP Act) identifies and classifies certain species as noxious weeds or pest animals and provides a system of controls on noxious species. Landholders 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.

Several high-threat weeds and pest animals were recorded throughout the study area, including:

- Serrated Tussock *Nassella trichotoma*
- Galenia *Aizoon* spp.
- Prickly Pear and Wheel Cactus *Opuntia* spp.
- African Boxthorn *Lycium ferocissimum*
- Red Fox *Vulpes vulpes*
- Feral Cat *Felis catus*
- European Rabbit *Oryctolagus cuniculus*

Weeds and pest animal control should be conducted within and surrounding VGED conservation areas and known habitat to minimise direct predation of VGED, and degradation of habitat.

### 4.3.2 Cat-free areas and curfews

Implementation of 24-hour cat containment curfews within the PEP, or surrounding conservation areas and confirmed VGED habitat, may reduce cat predation on VGED. Cat curfews would also allow for pest predator baiting programs without risk to domestic cats.

Night-only curfews are unlikely to be effective as VGED is a diurnally active species, and likely to be most at risk during the day. Night-only curfews will not reduce risk of domestic cat poisoning during pest baiting programs.

### 4.3.3 Buffering of unsuitable land-use and urban development

Development buffers surrounding known habitat or conservation areas will be required to minimise the indirect impacts of adjacent unsuitable land-use. Ideally, buffer areas should be managed as grassland habitat suitable for VGED, however, at a minimum, buffer areas should only support land-uses that will not significantly impact VGED habitat attributes of the buffered habitat (outlined in Section 1.4.1). Potentially unsuitable land-uses likely to negatively impact VGED habitat attributes include:

- Construction of buildings or planting of tall trees which may shade grassland habitat, and increase perching habitat for predatory birds.
- Residential development which may increase predation pressure from domestic cats and other pets, increase disruption from human activity, and potentially increase litter and pollution.
- Construction activities that may create dust, noise, and litter, which may degrade habitat and disturb VGED, particularly during breeding seasons.
- Installation of artificial lights which may disrupt the natural behaviour of VGED or their prey.
- Sealed roads, which increase disruption from vehicles, and reduce the opportunity of natural dispersal of the species.

Low-impact land-uses of adjacent areas, which may also be appropriate within buffer zones, include:

- Low to moderate intensity livestock grazing.
- Open parks and gardens with low vegetation, walking tracks, wetlands, and water treatment ponds or retarding basins.

The impacts of agricultural land-use (e.g. cropping, greenhouses, or low orchards) are less certain but may be sufficiently low impact if constructed and managed appropriately.

The size of buffers to effectively minimise indirect impacts will vary based on the specific adjacent land-use, landscape features (slope and aspect), and duration of the impact. Consultation with DEECA, DCCEEW, and species experts will be required to determine appropriate buffers and suitable low-impact land-use.

### 4.3.4 Revegetation

Revegetation of conservation areas with a variety of local native grassland plant species is recommended. Revegetation should be conducted in conjunction with weed and pest herbivore management to maximise results. Revegetation strategies should be specified as part of a conservation management plan, including schedules outlining revegetation methods, timing, and monitoring, and a list of appropriate native flora species.

Ongoing consultation with the VGED Recovery Team is recommended to ensure that any revegetation programs are informed by the most recent VGED habitat suitability assessments.

### 4.3.5 Grazing

Consistent low to moderate intensity grazing by sheep or other herbivores may be a suitable biomass management method in grasslands, maintaining an open grassland structure. Larger livestock such as cattle and horses can cause significant soil disturbance through trampling and soil compaction and are not recommended for biomass management until further research is conducted on VGED habitat requirements, and the effects of large livestock.

Soft-hoofed and local native herbivores (e.g. kangaroos) may also be suitable for biomass management, as they are less likely to damage delicate spider burrows and soil cracks, compared to hard-hoofed animals. Hard-hoofed stock may also cause significant soil degradation during winter, and in wetland areas, where soil is soft and susceptible to trampling.

#### 4.3.6 Controlled burning

Low-intensity and small-scale controlled burns are often used in grassland ecosystems to manage grassland biomass and control weeds. However, fire poses a significant mortality risk to VGED and is not recommended in areas that are known to, or may contain VGED, until further research is conducted on its potential direct impacts.

#### 4.3.7 Rock replacement

Rocks provide shelter and basking opportunities for VGED, habitat for prey invertebrates, and other threatened grassland fauna. Replacement of local surface rock from stockpiles may be appropriate, particularly in areas where rock removal is known to have occurred.

Surface and/or embedded rock has not been determined to be an essential habitat aspect for VGED. Ongoing consultation with the VGED Recovery Team is recommended, as the importance of rock is unknown, and it may be found to support other natural processes beneficial for VGED, such as providing microsites for native vegetation germination, or habitat for key invertebrate prey species.

### 4.4 Targeted survey methodology and approach

Targeted surveys are recommended to follow contemporary survey guidelines and should incorporate ongoing input from the VGED Recovery Team and species experts, as knowledge of the species and survey techniques continues to develop.

The Department of Climate Change, Energy, the Environment and Water (DCCEEW) published survey guidelines for earless dragons (DCCEEW 2024), which includes recommended methodology and timing, but does not include specific recommendations regarding appropriate survey intensity. These survey guidelines outline that *“the number and arrangement of sites within a target area must optimise detectability while being proportional to the size of the target area and the survey method/s used”*.

Three primary detection methods are recommended to be applied concurrently at a minimum: artificial arthropod burrows ('spider tubes'), artificial shelter (concrete or terracotta roof tiles), and endoscope inspections (of natural soil cracks and arthropod burrows).

#### 4.4.1 Pitfall trapping

In addition to the three primary detection methods, the DCCEEW survey guidelines recommend the use of mini pitfall traps in areas with abundant soil cracks, to maximise detection of active VGED which utilise an abundance of shelter sites and may not be adequately detected by artificial spider burrows or artificial shelter (tiles). Recent communication with DEECA has indicated that they are in the process of developing specific VGED survey guidelines, in consultation with the VGED Recovery Team, which may include recommendations to conduct pitfall trapping in all potential habitat, regardless of the presence of soil cracks.

Pitfall trapping has significant animal ethics and logistical considerations associated. The DCCEEW survey guidelines outline that pitfalls should be checked daily. Animal ethics conditions may require that pitfalls left

open overnight are checked twice per day (morning and evening) to reduce the chance of mortality of the target species, and off-target species captures such as small mammals. Pitfalls that are left closed overnight between checks must be opened in the early morning on check days, and then checked and closed in the afternoons. The time and cost required to deploy and use pitfall traps can be prohibitive at a large scale.

Areas of abundant soil cracks were not observed within the PEP during the habitat assessment; however, the assessment was conducted over winter months when soil is relatively moist. Soil cracks may develop in some areas in drier conditions during spring and summer months, or during years of drought.

Further consultation with DCCEEW and DEECA is recommended to determine if pitfall trapping is required as part of a targeted survey program. Unless abundant soil cracks are present within the local area, pitfall traps may not be a necessary or cost-effective survey method. Additional survey sites of artificial spider burrows and tiles will likely provide greater detection probability and coverage for the same effort.

#### 4.4.2 Local VGED movement patterns

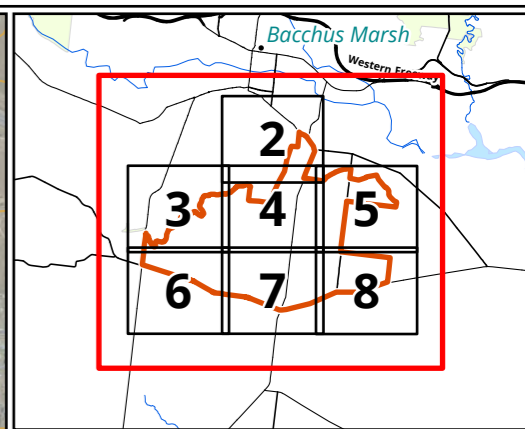
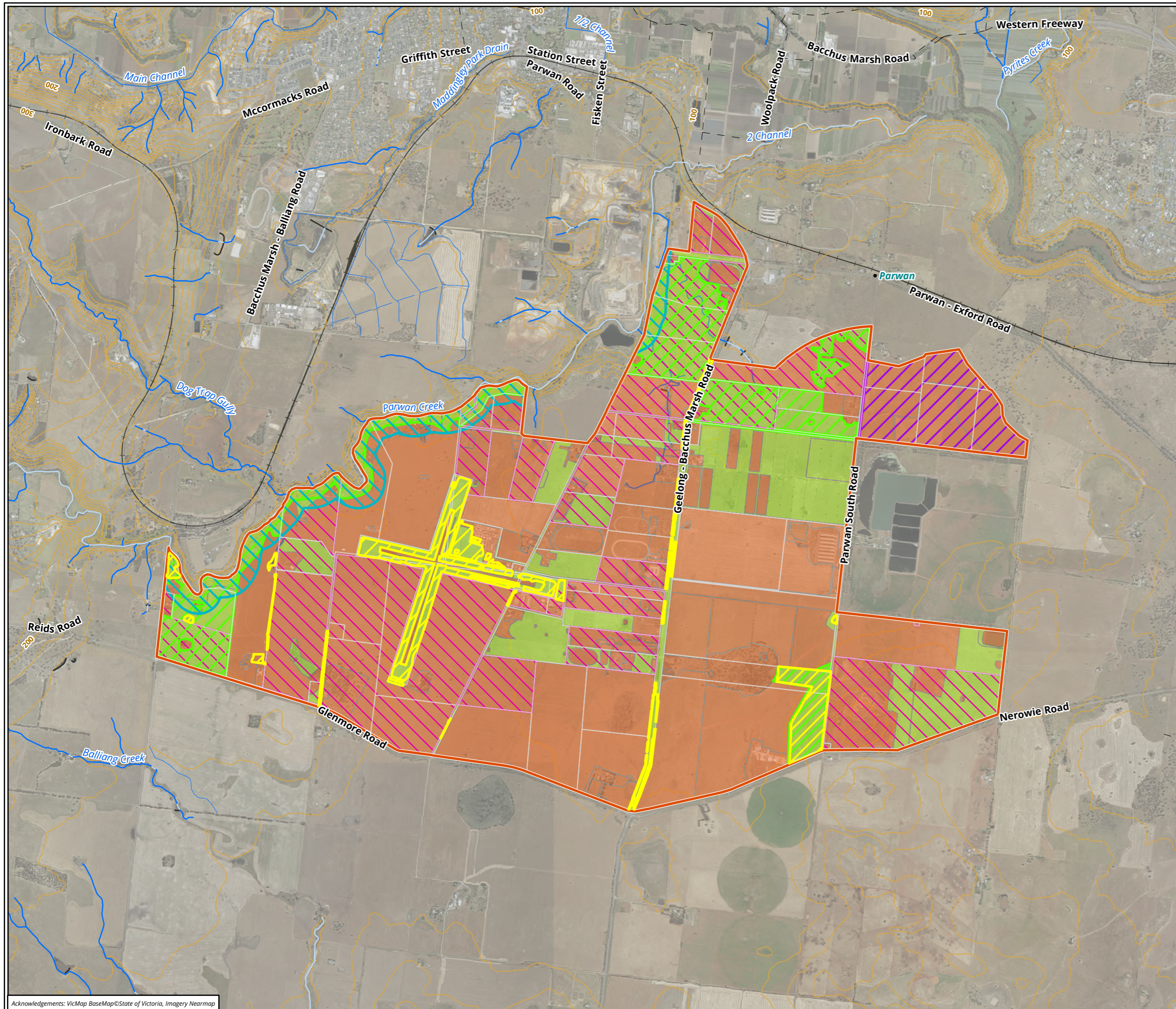
Targeted VGED surveys within the rediscovery site have shown that detection rates can vary significantly between nearby survey sites across time. This may be due to unpredictable variation in local detection rates, or seasonal/annual changes in VGED density at a local scale.

Targeted surveys should be conducted concurrently throughout all potential habitat within a property, and adjacent properties, when possible, to reduce the chance of failing to detect a local population. This may require that livestock is removed from adjacent paddocks and properties to facilitate concurrent surveys.










### 4.5 Summary of recommendations

Biosis recommends that the VPA undertake the following actions:

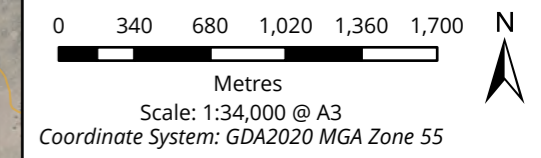
- Obtain access consent for remaining properties throughout the PEP, where possible.
- Conduct biodiversity assessments at properties that were not assessed during the 2022 EHP biodiversity assessment, to identify areas of TECs, native vegetation, and other threatened fauna species habitat which may constrain future development.
- Consult with regulators and the VGED Recovery Team to determine appropriate VGED targeted survey methodology for habitat throughout the PEP, as the need for pitfall trapping is uncertain.
- Conduct VGED targeted surveys initially in high-priority areas that meet the following criteria:
  - Property access consent is obtained.
  - Potential VGED habitat is identified (see Figure 4 and Table 2).
  - No other major development constraints are identified.
- Conduct VGED targeted surveys in any other properties supporting potentially suitable habitat where access is obtained following the initial survey program.
- Establish the framework for a pre-development VGED survey permit condition to be established over areas of potential VGED habitat where targeted surveys are not conducted.
- Establish conservation areas encompassing all known occupied VGED habitat, and potentially suitable habitat. Areas identified as containing other significant development constraints are high priority for conservation (e.g. wetlands, Parwan Creek and remnant riparian habitat within 200 m, TECs, areas of mapped native vegetation, and other threatened flora or fauna habitat).



**Legend**

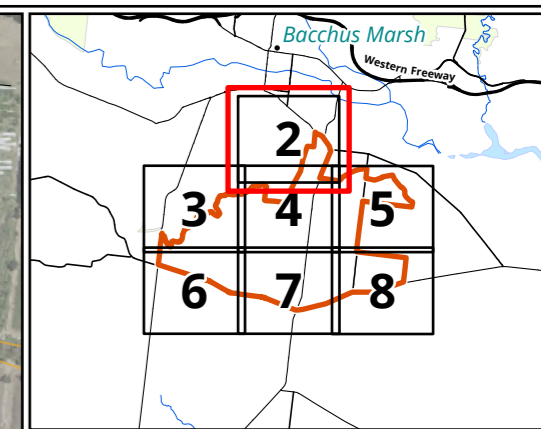
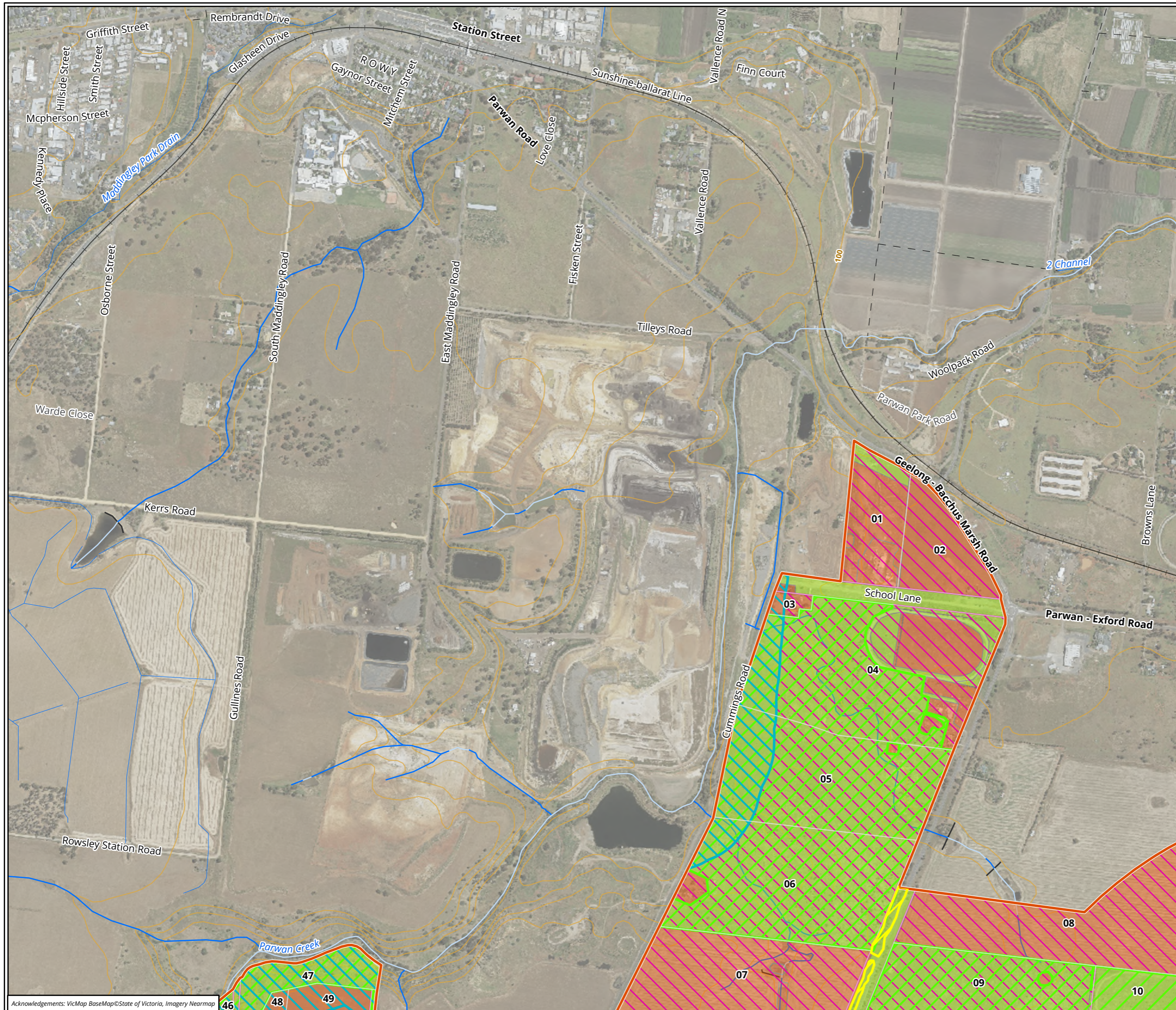
-  Study area
-  No access consent
-  Parcel boundary
-  Existing development constraint – Natural Temperate Grassland of the Victorian Volcanic Plain
-  Existing development constraint – Creekline and cultural heritage
-  Potential conservation interface
-  Conservation priority
- Survey recommendations**
-  No targeted surveys required
-  Targeted VGED surveys recommended

**Figure 4.1 VGED assessment summary and targeted survey recommendations**



Matter: 42598,  
 Date: 08 April 2026,  
 Prepared for: WR, Prepared by: PG, Last edited by: mknudsen  
 Layout: 42598\_F4\_VGED\_Targeted  
 Project: P:\42500s\42598\Mapping\42598\_Parwan\_VGED\_Habitat.aprx

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- Legend**
- Study area
  - No access consent
  - Parcel boundary
  - Existing development constraint - Natural Temperate Grassland of the Victorian Volcanic Plain
  - Existing development constraint - Creekline and cultural heritage
  - Conservation priority
- Survey recommendations**
- No targeted surveys required
  - Targeted VGED surveys recommended

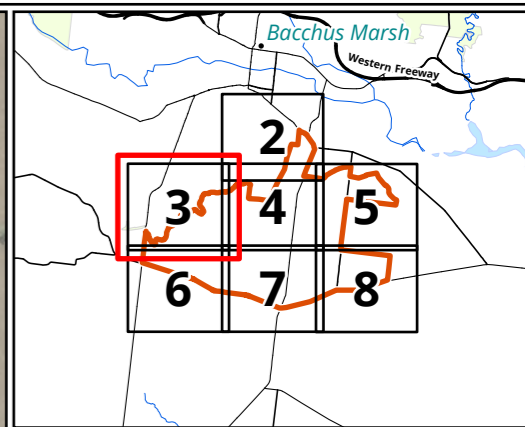
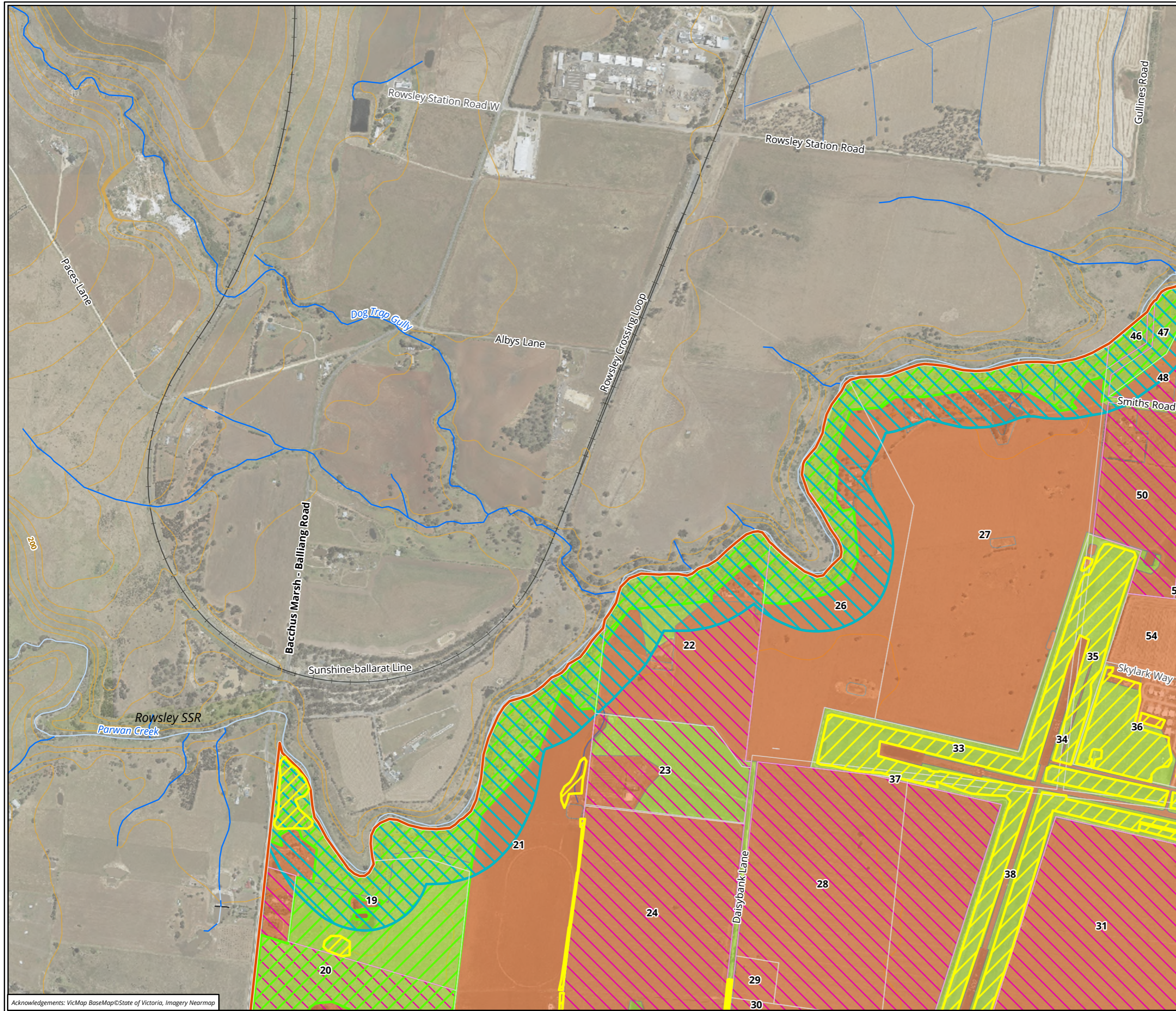
**Figure 4.2 VGED assessment summary and targeted survey recommendations**

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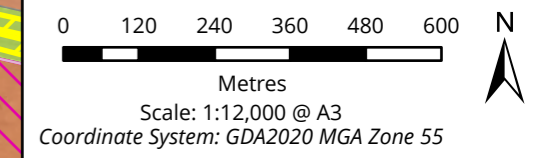
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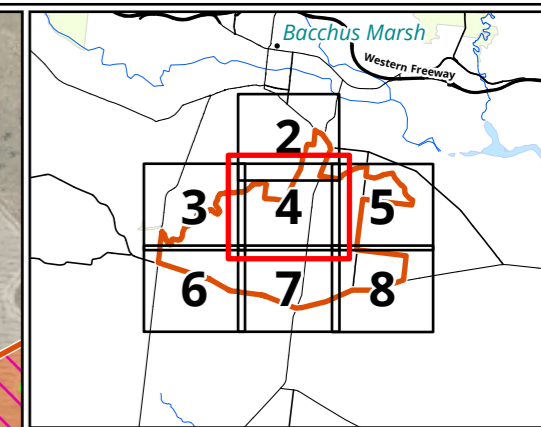
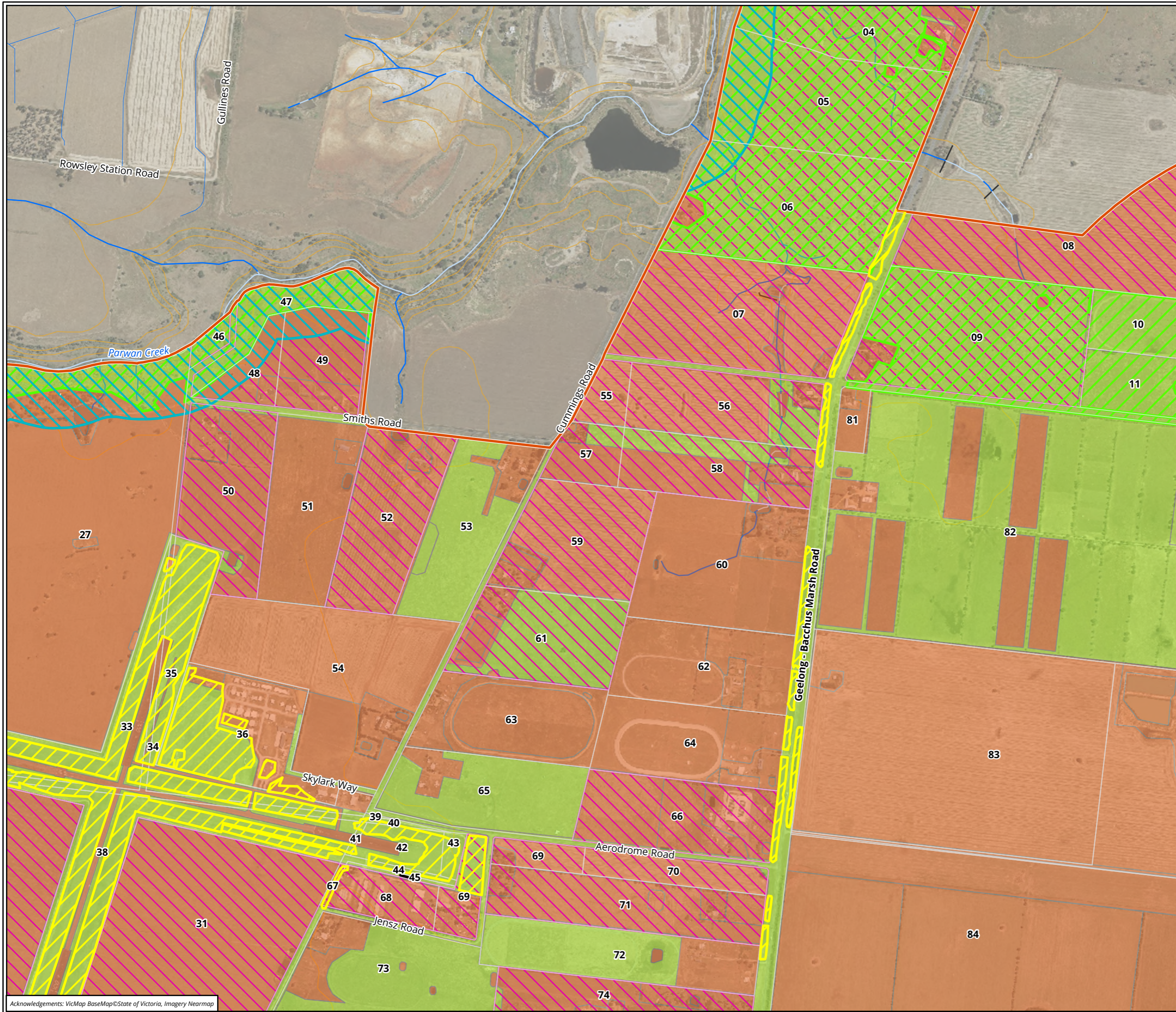
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  - Parcel boundary
  - Existing development constraint - Creekline and cultural heritage
  - Natural Temperate Grassland of the Victorian Volcanic Plain
  - Existing development constraint - Conservation priority
  - Conservation priority
- Survey recommendations**
- No targeted surveys required
  - Targeted VGED surveys recommended

**Figure 4.3 VGED assessment summary and targeted survey recommendations**



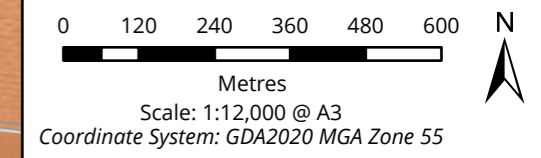
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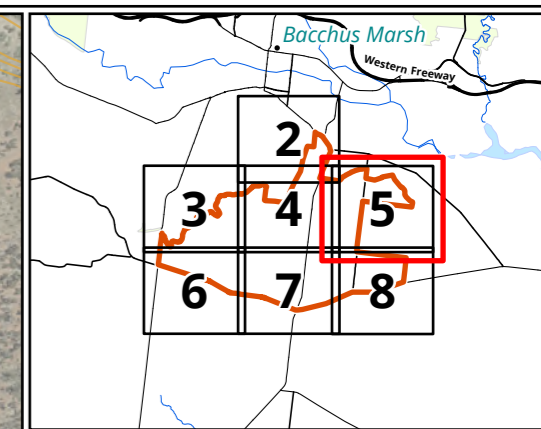
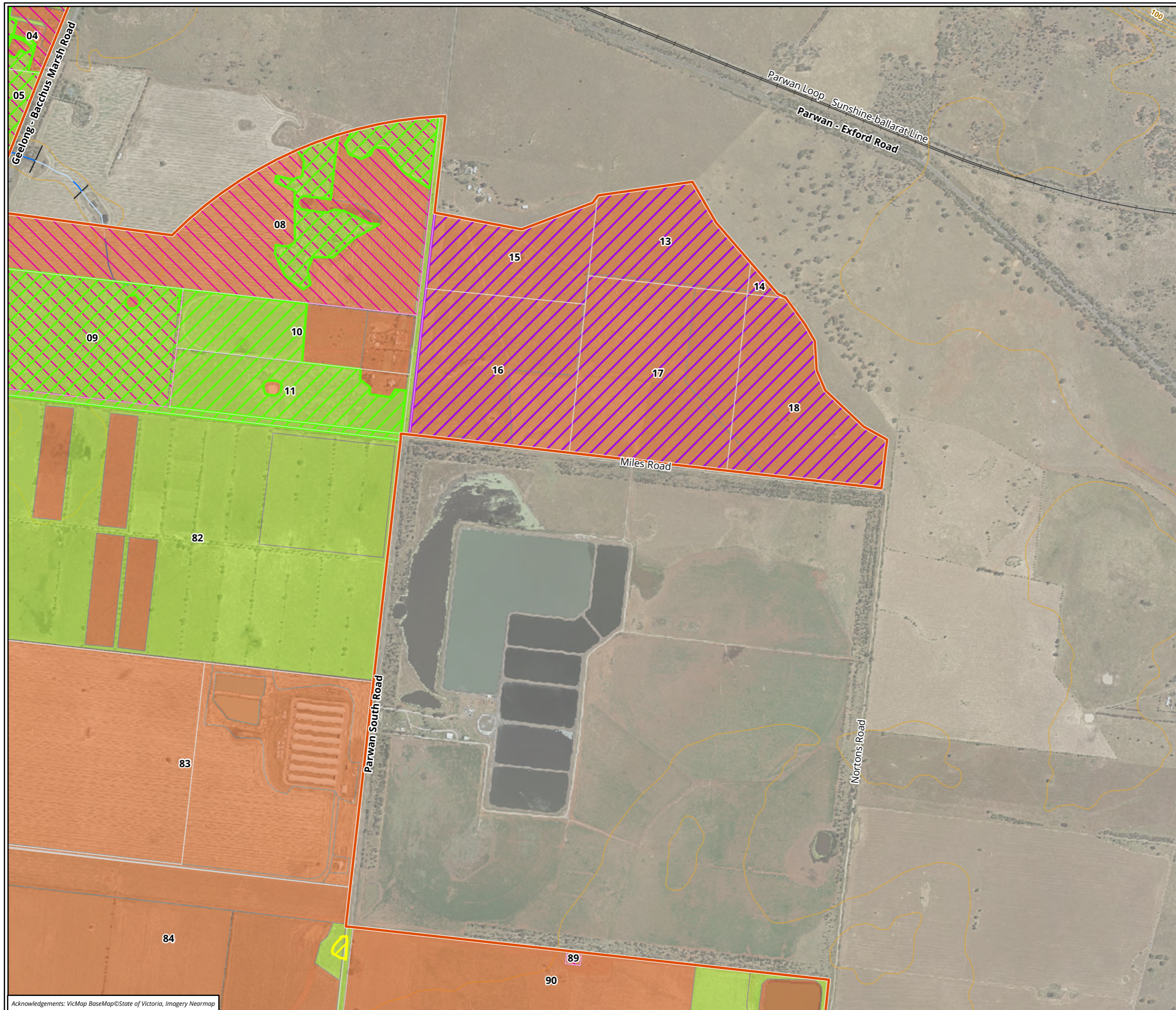
- Legend**
- Study area
  - No access consent
  - Parcel boundary
  - Existing development constraint - Natural Temperate Grassland of the Victorian Volcanic Plain
  - Existing development constraint - Creekline and cultural heritage
  - Conservation priority
- Survey recommendations**
- No targeted surveys required
  - Targeted VGED surveys recommended

**Figure 4.4 VGED assessment summary and targeted survey recommendations**



Matter: 42598,  
 Date: 08 April 2026,  
 Prepared for: WR, Prepared by: PG, Last edited by: mknudsen  
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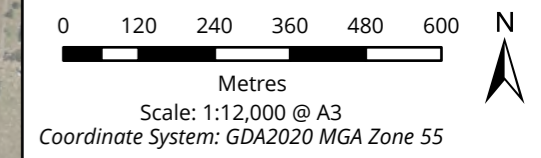
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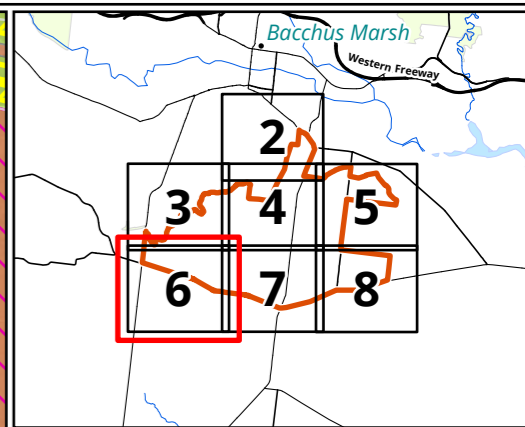
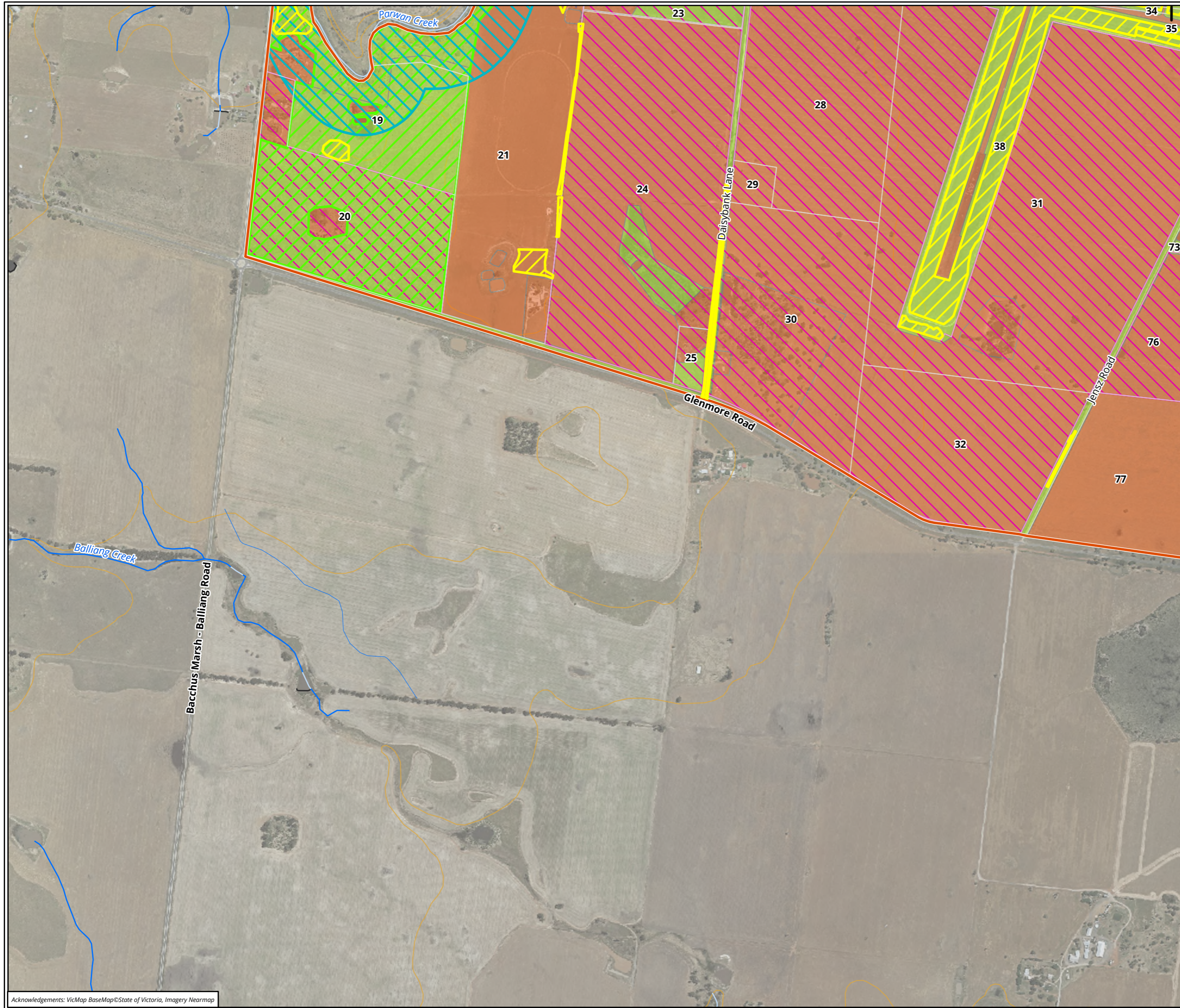
- Study area
  - No access consent
  - Parcel boundary
  - Existing development constraint -  
Natural Temperate Grassland of the Victorian Volcanic Plain
  - Potential conservation interface
  - Conservation priority
- Survey recommendations**
- No targeted surveys required
  - Targeted VGED surveys recommended

**Figure 4.5 VGED assessment summary and targeted survey recommendations**



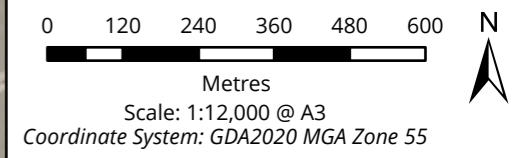
Matter: 42598,  
Date: 08 April 2026,  
Prepared for: WR, Prepared by: PG, Last edited by: mknudsen  
Layout: 42598\_F4\_VGED\_Targeted  
Project: P:\42500s\42598\Mapping\42598\_Parwan\_VGED\_Habitat.aprx

Acknowledgements: VicMap BaseMap © State of Victoria, Imagery Nearmap



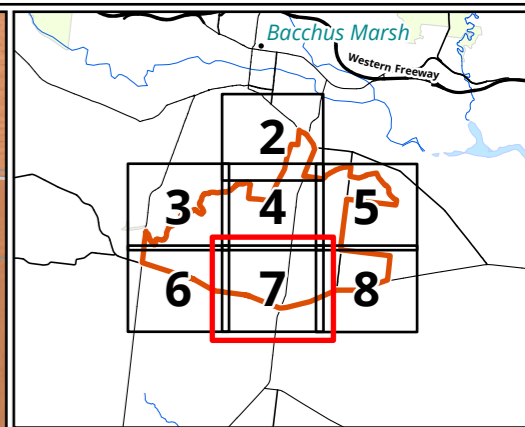
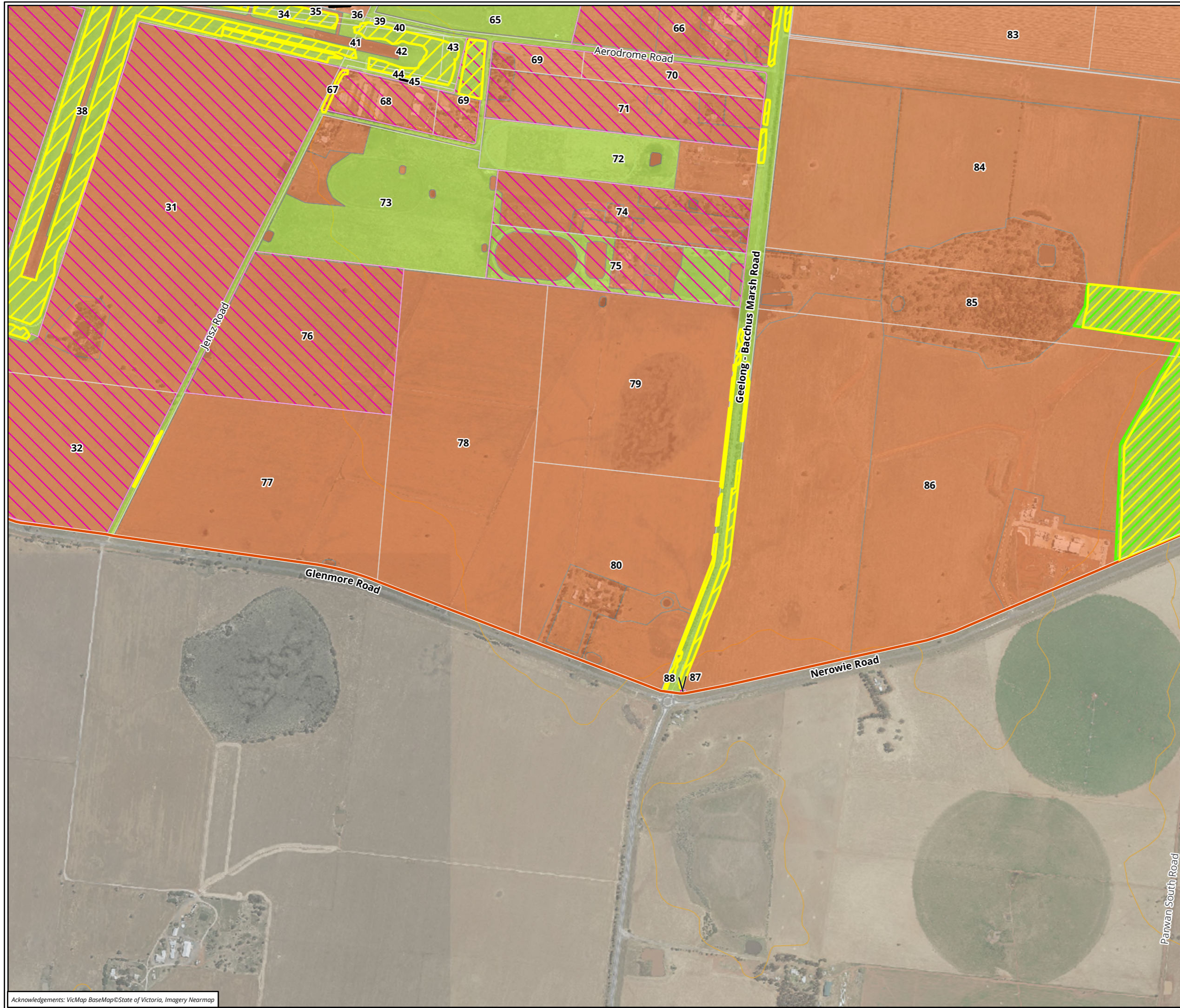
- Legend**
- Study area
  - No access consent
  - Parcel boundary
  - Existing development constraint – Natural Temperate Grassland of the Victorian Volcanic Plain
  - Existing development constraint – Creekline and cultural heritage
  - Conservation priority
- Survey recommendations**
- No targeted surveys required
  - Targeted VGED surveys recommended

**Figure 4.6 VGED assessment summary and targeted survey recommendations**



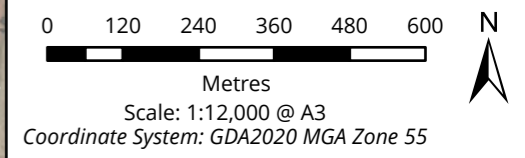
Matter: 42598,  
 Date: 08 April 2026,  
 Prepared for: WR, Prepared by: PG, Last edited by: mknudsen  
 Layout: 42598\_F4\_VGED\_Targeted  
 Project: P:\42500s\42598\Mapping\42598\_Parwan\_VGED\_Habitat.aprx

Acknowledgements: VicMap BaseMap © State of Victoria, Imagery Nearmap

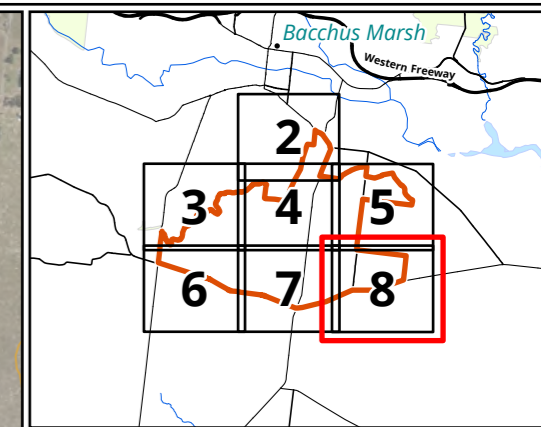
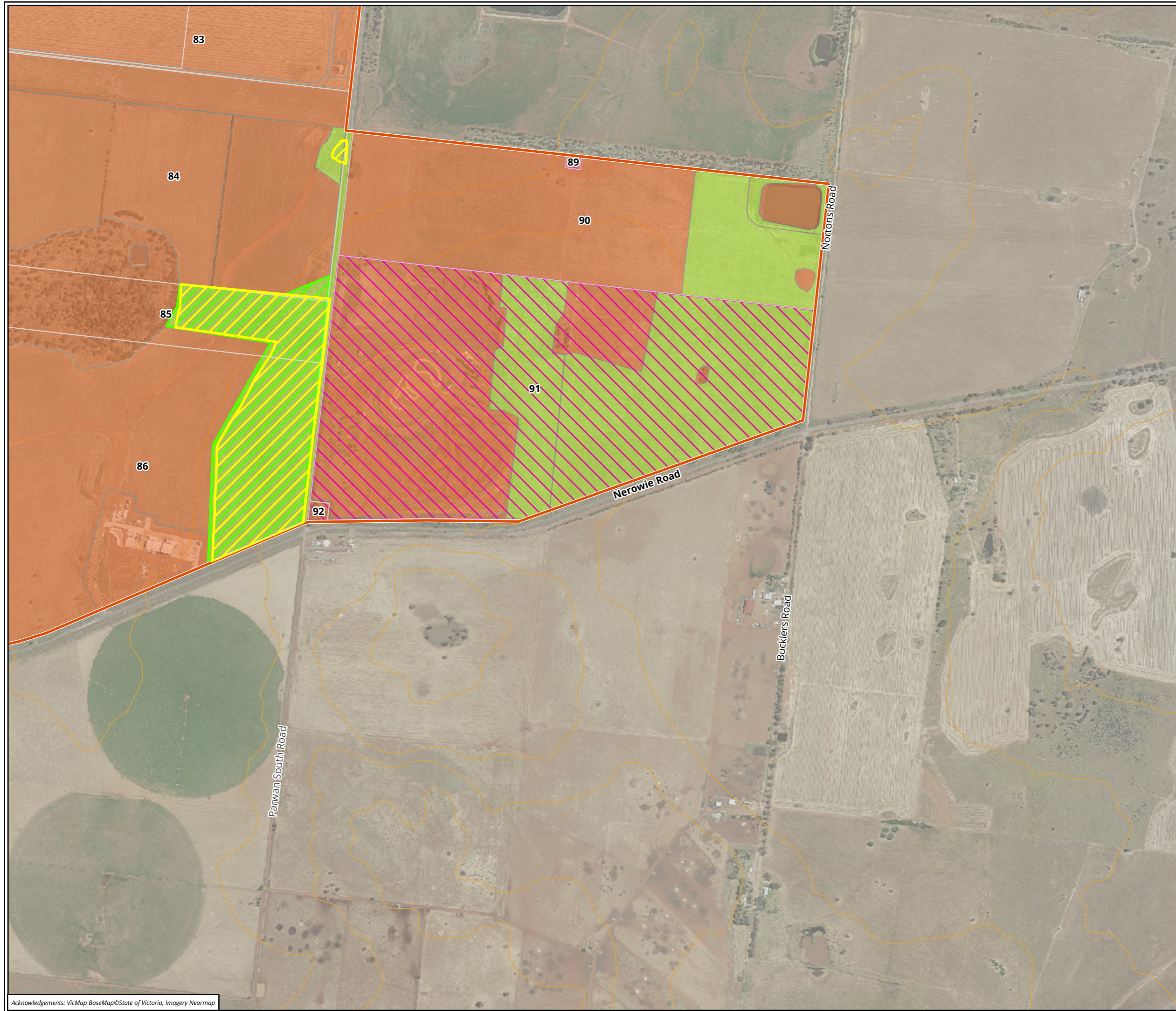


- Legend**
- Study area
  - No access consent
  - Parcel boundary
  - Existing development constraint -
  - Natural Temperate Grassland of the Victorian Volcanic Plain
  - Conservation priority
- Survey recommendations**
- No targeted surveys required
  - Targeted VGED surveys recommended

**Figure 4.7 VGED assessment summary and targeted survey recommendations**

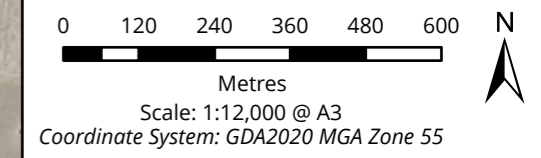


Matter: 42598,  
 Date: 08 April 2026,  
 Prepared for: WR, Prepared by: PG, Last edited by: mknudsen  
 Layout: 42598\_F4\_VGED\_Targeted  
 Project: P:\42500s\42598\Mapping\42598\_Parwan\_VGED\_Habitat.aprx



- Legend**
- Study area
  - No access consent
  - Parcel boundary
  - Existing development constraint -
  - Natural Temperate Grassland of the Victorian Volcanic Plain
  - Conservation priority
- Survey recommendations**
- No targeted surveys required
  - Targeted VGED surveys recommended

**Figure 4.8 VGED assessment summary and targeted survey recommendations**



Matter: 42598,  
Date: 08 April 2026,  
Prepared for: WR, Prepared by: PG, Last edited by: mknudsen  
Layout: 42598\_F4\_VGED\_Targeted  
Project: P:\42500s\42598\Mapping\42598\_Parwan\_VGED\_Habitat.aprx

#### 4.5.1 Property-based VGED habitat assessment results and recommendations

Individual properties, roadside reserves, and grassland within the unused road easement (Miles Road) have been individually assessed based on present land use and condition.

**Table 2 PEP individual property VGED habitat assessments and further survey recommendations**

Parcel ID	EHP Parcel ID	Access consent for assessment	EHP/WSP assessment conducted	Assessment methods	Potential VGED Habitat identified	Primary land uses and VGED habitat (mapped in Figure 3)	Other development constraints	Notes and other recommendations
<b>Miles Road</b>	Miles Road	Yes	No	Road directly accessed.	Yes - Targeted surveys required, or pre-development condition.	Uncultivated grassland – good condition.	May support unidentified TECs.	Native vegetation assessment recommended. Potential conservation area.
<b>Public road reserves</b>	Public road reserves	Yes	Yes – EHP and WSP	Roads directly accessed.	Yes - Targeted surveys required, or pre-development condition.	Condition varies significantly throughout the precinct, and along individual roads. Condition somewhat influenced by adjacent properties. Roadsides adjacent to cultivated properties generally have a higher proportion of exotic grasses. High proportion of native grasses along Nerowie Rd and Glenmore Rd.	Areas of NTGVVP.	Targeted surveys recommended may be conducted as part of surveys for road-widening works outside the scope of the PEP.
<b>1</b>	1	No	No	No access consent. Assessed from adjacent properties, roads, and/or aerial imagery.	Yes - Targeted surveys required, or pre-development condition.	Uncultivated grassland – moderate condition. Recent soil disturbance. Buildings, infrastructure, and gardens. Wetland (dam).	May support unidentified TECs.	Native vegetation assessment recommended.
<b>2</b>	2	No	No	No access consent. Assessed from adjacent properties, roads, and/or aerial imagery.	Unlikely	Cultivated.	-	No further assessments recommended. Low priority for conservation.

Parcel ID	EHP Parcel ID	Access consent for assessment	EHP/WSP assessment conducted	Assessment methods	Potential VGED Habitat identified	Primary land uses and VGED habitat (mapped in Figure 3)	Other development constraints	Notes and other recommendations
3	3	No	No	No access consent. Assessed from adjacent properties, roads, and/or aerial imagery.	Unlikely	Buildings, infrastructure, and gardens.	-	No further assessments recommended. Low priority for conservation.
4	38	No	No	No access consent. Assessed from adjacent properties, roads, and/or aerial imagery.	Yes - Targeted surveys required, or pre-development condition.	Significant areas of moderate/good condition uncultivated grassland (Photo 1, Photo 2, Photo 3).	May support unidentified TECs.	Native vegetation assessment recommended. Potential conservation area.
5	4	No	No	No access consent. Assessed from adjacent properties, roads, and/or aerial imagery.	Yes - Targeted surveys required, or pre-development condition.	Significant areas of moderate/good condition uncultivated grassland (Photo 1, Photo 2, Photo 3).	May support unidentified TECs.	Native vegetation assessment recommended. Potential conservation area.
6	5	No	No	No access consent. Assessed from adjacent properties, roads, and/or aerial imagery.	Yes - Targeted surveys required, or pre-development condition.	Significant areas of moderate/good condition uncultivated grassland (Photo 1, Photo 2, Photo 3).	May support unidentified TECs.	Native vegetation assessment recommended. Potential conservation area.
7	14	No	No	No access consent. Assessed from adjacent properties, roads, and/or aerial imagery.	Unlikely	Cultivated Uncultivated grassland – low condition (small section along drainage line). (Photo 4)	-	Native vegetation assessment recommended.
8	6	No	No	No access consent. Assessed from adjacent properties, roads, and/or aerial imagery.	Yes - Targeted surveys required, or pre-development condition.	Uncultivated grassland – moderate condition.	May support unidentified TECs.	Native vegetation assessment recommended. Potential conservation area.
9	15	No	Yes - EHP	No access consent. Assessed from adjacent properties, roads, and/or aerial imagery.	Yes - Targeted surveys required, or pre-development condition.	Uncultivated grassland – moderate condition (Photo 5).	-	Potential conservation area.

Parcel ID	EHP Parcel ID	Access consent for assessment	EHP/WSP assessment conducted	Assessment methods	Potential VGED Habitat identified	Primary land uses and VGED habitat (mapped in Figure 3)	Other development constraints	Notes and other recommendations
10	16	Yes	Yes - EHP	Property directly accessed.	Yes - Targeted surveys required, or pre-development condition.	Uncultivated grassland – moderate condition (Photo 6). Uncultivated grassland – low condition (Photo 7). Buildings, infrastructure and gardens. Heavily grazed pasture (Photo 8).	-	Potential conservation area.
11	17	Yes	Yes - EHP	Could not arrange access with landholder. Assessed from adjacent properties or roads, and aerial imagery.	Yes - Targeted surveys required, or pre-development condition.	Uncultivated grassland – moderate condition (Photo 9).	-	Potential conservation area.
12	7	Yes	Yes – EHP and WSP	Property directly accessed.	Property parcel outside the current boundary of the PEP and is not shown on Figures 2-4.			
13	8	Yes	Yes – EHP and WSP	Property directly accessed.	Unlikely	Cultivated.	Areas of GBGW-DNG.	Potential conservation interface area. Parcels in close proximity to recommended conservation areas.
14	9	Yes	Yes – EHP and WSP	Assessed from adjacent road or property, and aerial imagery.	Unlikely	Cultivated.	Areas of GBGW-DNG.	Unlikely to currently support suitable VGED habitat.
15	10	Yes	Yes - EHP	Property directly accessed.	Unlikely	Cultivated.	Areas of GBGW-DNG.	Consultation between VPA, DEECA and the VGED Recovery Team required to establish rehabilitation and conservation potential.
16	11	Yes	Yes – EHP. Not accessed by WSP, no habitat identified	Assessed from adjacent properties or roads, and aerial imagery.	Unlikely	Cultivated.		

Parcel ID	EHP Parcel ID	Access consent for assessment	EHP/WSP assessment conducted	Assessment methods	Potential VGED Habitat identified	Primary land uses and VGED habitat (mapped in Figure 3)	Other development constraints	Notes and other recommendations
17	12	Yes	Yes – EHP. Not accessed by WSP, no habitat identified	Assessed from adjacent properties or roads, and aerial imagery.	Unlikely	Cultivated.		
18	13	Yes	Yes - EHP	Assessed from adjacent properties or roads, and aerial imagery.	Unlikely	Cultivated.	Areas of GBGW-DNG.	
19	56	Yes	Yes – EHP and WSP	Property directly accessed.	Yes - Targeted surveys required, or pre-development condition.	Uncultivated creekline (Photo 12). Uncultivated grassland – good condition (Photo 13). Uncultivated grassland – moderate condition (Photo 15). Buildings, infrastructure, and gardens.	Areas of NTGVVP, BGGW-DNG, and Seasonal Herbaceous Wetland. Areas within 200 m of creekline.	Potential conservation area.
20	69	No	No	No access consent. Assessed from adjacent properties, roads, and/or aerial imagery.	Yes - Targeted surveys required, or pre-development condition.	Uncultivated grassland – moderate condition (Photo 15). Trees and shrubs.	May support unidentified TECs.	Native vegetation assessment recommended. Potential conservation area.
21	44, 45	Yes	Yes – EHP and WSP	Property directly accessed.	Yes - Targeted surveys required, or pre-development condition.	Uncultivated creekline. Cultivated. Buildings, infrastructure, and gardens.	Areas of NTGVVP and GBGW-DNG. Areas within 200 m of creekline.	-
22	37	No	No	No access consent. Assessed from adjacent properties, roads, and/or aerial imagery.	Yes - Targeted surveys required, or pre-development condition.	Uncultivated creekline. Uncultivated grassland – moderate condition. Cultivated. Buildings, infrastructure, and gardens.	Areas within 200 m of creekline.	Native vegetation assessment recommended.

Parcel ID	EHP Parcel ID	Access consent for assessment	EHP/WSP assessment conducted	Assessment methods	Potential VGED Habitat identified	Primary land uses and VGED habitat (mapped in Figure 3)	Other development constraints	Notes and other recommendations
23	46	No	No	No access consent. Assessed from adjacent properties, roads, and/or aerial imagery.	Yes - Targeted surveys required, or pre-development condition.	Heavily grazed pasture (cultivated within prior 15 years). Buildings, infrastructure, and gardens.	May support unidentified TECs.	Native vegetation assessment recommended.
24	70	No	No	No access consent. Assessed from adjacent properties, roads, and/or aerial imagery.	Yes - Targeted surveys required, or pre-development condition.	Uncultivated grassland – moderate condition. Trees and shrubs. Cultivated.	May support unidentified TECs.	Native vegetation assessment recommended.
25	82	No	No	No access consent. Assessed from adjacent properties, roads, and/or aerial imagery.	Yes - Targeted surveys required, or pre-development condition.	Buildings, infrastructure, and gardens. Historical cultivation.	-	Targeted surveys recommended in areas of historical cultivation, particularly as they are contiguous with Glenmore Rd roadside reserve supporting potentially suitable habitat. Targeted surveys conducted in immediately adjacent roadside reserve may be sufficient to assess presence/absence within parcel 25 if access cannot be obtained.
26	27, 30	Yes	No	Assessed from adjacent road or property, and aerial imagery.	Yes - Targeted surveys required, or pre-development condition for area of uncultivated creekline.	Uncultivated creekline. Cultivated Buildings, infrastructure, and gardens.	Areas within 200 m of creekline.	Native vegetation assessment recommended.
27	28, 29	Yes	No	Assessed from adjacent road or property, and aerial imagery.	Yes - Targeted surveys required, or pre-development condition for area of uncultivated creekline.	Uncultivated creekline. Cultivated. Buildings, infrastructure, and gardens. Wetland (dam).	Areas within 200 m of creekline.	Native vegetation assessment recommended in uncultivated areas.

Parcel ID	EHP Parcel ID	Access consent for assessment	EHP/WSP assessment conducted	Assessment methods	Potential VGED Habitat identified	Primary land uses and VGED habitat (mapped in Figure 3)	Other development constraints	Notes and other recommendations
28	47	No	Yes - EHP . Not accessed by WSP, no habitat identified	No access consent. Assessed from adjacent properties, roads, and/or aerial imagery.	Unlikely	Cultivated.	-	No further assessments recommended. Low priority for conservation.
29	51	No	Yes – EHP. No access - WSP	No access consent. Assessed from adjacent properties, roads, and/or aerial imagery.	Unlikely	Cultivated.	-	No further assessments recommended. Low priority for conservation.
30	49	No	Yes – EHP. No access - WSP	No access consent. Assessed from adjacent properties, roads, and/or aerial imagery.	Unlikely	Cultivated. Trees and shrubs.	-	No further assessments recommended. Low priority for conservation.
31	48	No	Yes – EHP. No access by WSP, no habitat identified	No access consent. Assessed from adjacent properties, roads, and/or aerial imagery.	Unlikely	Cultivated. Trees and shrubs.	-	No further assessments recommended. Low priority for conservation.
32	50	No	Yes – EHP. No access - WSP	No access consent. Assessed from adjacent properties, roads, and/or aerial imagery.	Unlikely	Cultivated.	-	No further assessments recommended. Low priority for conservation.
33-45	83-95	Yes	Yes – EHP and WSP	Could not arrange access with landholder. Assessed from adjacent properties or roads, and aerial imagery.	Yes - Targeted surveys required, or pre-development condition.	Lightly grazed or mown grassland. Buildings, infrastructure and gardens. Paved airstrips (excluded as mapped habitat).	Areas of NTGVVP.	Potential conservation area.
46	25	No	No	No access consent. Assessed from adjacent properties, roads, and/or aerial imagery.	Yes - Targeted surveys required, or pre-development condition.	Uncultivated creekline.	Areas within 200 m of creekline.	Native vegetation assessment recommended. Potential conservation area.

Parcel ID	EHP Parcel ID	Access consent for assessment	EHP/WSP assessment conducted	Assessment methods	Potential VGED Habitat identified	Primary land uses and VGED habitat (mapped in Figure 3)	Other development constraints	Notes and other recommendations
47	24, 71	No	No	No access consent. Assessed from adjacent properties, roads, and/or aerial imagery.	Yes - Targeted surveys required, or pre-development condition.	Uncultivated creekline.	May support unidentified TECs. Areas within 200 m of creekline.	Native vegetation assessment recommended.
48	26	No	No	No access consent. Assessed from adjacent properties, roads, and/or aerial imagery.	Unlikely	Buildings, infrastructure, and gardens. Heavily grazed pasture (cultivated within prior 15 years).	Areas within 200 m of creekline.	Native vegetation assessment recommended.
49	39	No	No	No access consent. Assessed from adjacent properties, roads, and/or aerial imagery.	Unlikely	Buildings, infrastructure, and gardens. Heavily grazed pasture (cultivated within prior 15 years).	Areas within 200 m of creekline.	Native vegetation assessment recommended.
50	40	No	No	No access consent. Assessed from adjacent properties, roads, and/or aerial imagery.	Yes - Targeted surveys required, or pre-development condition.	Cultivated. Buildings, infrastructure, and gardens. Lightly grazed or mown grassland.	-	Small 0.3 ha area of 'Lightly grazed or mown grassland' surrounding dam, and contiguous with grassland in aerodrome. Surveys within contiguous grassland of aerodrome would likely be sufficient to assess presence/absence within parcel 50.
51	32	Yes	No	Assessed from adjacent road or property, and aerial imagery.	Unlikely	Heavily grazed pasture (cultivated within prior 10 years). Buildings, infrastructure, and gardens.	-	No further assessments recommended. Low priority for conservation.
52	33	No	No	No access consent. Assessed from adjacent properties, roads, and/or aerial imagery.	Unlikely	Heavily grazed pasture (cultivated within prior 2 years). Buildings, infrastructure, and gardens.	-	No further assessments recommended. Low priority for conservation.

Parcel ID	EHP Parcel ID	Access consent for assessment	EHP/WSP assessment conducted	Assessment methods	Potential VGED Habitat identified	Primary land uses and VGED habitat (mapped in Figure 3)	Other development constraints	Notes and other recommendations
53	34	Yes	No	Property directly accessed.	Yes - Targeted surveys required, or pre-development condition.	Uncultivated grassland – low condition (Photo 16). Uncultivated grassland – moderate condition (small isolated patch).	May support unidentified TECs.	Native vegetation assessment recommended. Targeted surveys recommended in areas of low condition uncultivated grassland due to uncertainty in VGED ability to persist in disturbed habitat.
54	31	Yes	No	Assessed from adjacent road or property, and aerial imagery.	Unlikely	Cultivated. Heavily grazed pasture (significant disturbance from horses). Buildings, infrastructure, and gardens.	-	No further assessments recommended. Low priority for conservation.
55	18	No	No	No access consent. Assessed from adjacent properties, roads, and/or aerial imagery.	Unlikely	Cultivated.	-	No further assessments recommended. Low priority for conservation.
56	19	No	No	No access consent. Assessed from adjacent properties, roads, and/or aerial imagery.	Yes - Targeted surveys required, or pre-development condition.	Uncultivated grassland – moderate condition. Cultivated (Photo 17).	May support unidentified TECs.	Native vegetation assessment recommended.
57	22	No	No	No access consent. Assessed from adjacent properties, roads, and/or aerial imagery.	Yes - Targeted surveys required, or pre-development condition.	Uncultivated grassland – moderate condition. Cultivated. Trees and shrubs. Buildings, infrastructure, and gardens.	May support unidentified TECs.	Native vegetation assessment recommended.
58	23	No	No	No access consent. Assessed from adjacent properties, roads, and/or aerial imagery.	Yes - Targeted surveys required, or pre-development condition.	Uncultivated grassland – moderate condition. Cultivated. Trees and shrubs. Buildings, infrastructure, and gardens.	May support unidentified TECs.	Native vegetation assessment recommended.

Parcel ID	EHP Parcel ID	Access consent for assessment	EHP/WSP assessment conducted	Assessment methods	Potential VGED Habitat identified	Primary land uses and VGED habitat (mapped in Figure 3)	Other development constraints	Notes and other recommendations
59	35	No	No	No access consent. Assessed from adjacent properties, roads, and/or aerial imagery.	Unlikely	Uncultivated grassland – low condition (small isolated patch). Cultivated. Buildings, infrastructure, and gardens.	-	No further assessments recommended. Low priority for conservation.
60	36	Yes	No	Could not arrange access with landholder. Assessed from adjacent properties or roads, and aerial imagery	Unlikely	Heavily grazed pasture. Buildings, infrastructure, and gardens.	-	No further assessments recommended. Low priority for conservation.
61	42	No	No	No access consent. Assessed from adjacent properties, roads, and/or aerial imagery.	Yes - Targeted surveys required, or pre-development condition.	Cultivated. Uncultivated grassland – low condition. Uncultivated grassland – moderate condition (Photo 18). Buildings, infrastructure, and gardens.	May support unidentified TECs.	Native vegetation assessment recommended.
62	43	Yes	No	Could not arrange access with landholder. Assessed from adjacent road or property, and aerial imagery.	Unlikely	Heavily grazed pasture (significant disturbance from horses). Buildings, infrastructure, and gardens.	-	No further assessments recommended. Low priority for conservation.
63	52	Yes	No	Property directly accessed.	Unlikely	Heavily grazed pasture. Recent soil disturbance (Photo 19, Photo 20). Buildings, infrastructure, and gardens.	-	No further assessments recommended. Low priority for conservation.
64	53	Yes	Yes – EHP and WSP	Property directly accessed.	Unlikely	Heavily grazed pasture (significant disturbance from horses, Photo 21, Photo 22). Buildings, infrastructure, and gardens.	-	No further assessments recommended. Low priority for conservation.

Parcel ID	EHP Parcel ID	Access consent for assessment	EHP/WSP assessment conducted	Assessment methods	Potential VGED Habitat identified	Primary land uses and VGED habitat (mapped in Figure 3)	Other development constraints	Notes and other recommendations
65	54	Yes	No	Property directly accessed.	Yes - Targeted surveys required, or pre-development condition.	Uncultivated grassland - moderate condition (Photo 23, Photo 24). Buildings, infrastructure, and gardens.	May support unidentified TECs.	Native vegetation assessment recommended.
66	55	No	No	No access consent. Assessed from adjacent properties, roads, and/or aerial imagery.	Unlikely	Cultivated. Buildings, infrastructure, and gardens.	-	No further assessments recommended. Low priority for conservation.
67	58	No	No	No access consent. Assessed from adjacent properties, roads, and/or aerial imagery.	Unlikely	Buildings, infrastructure and gardens.	Areas of NTGVVP.	No further assessments recommended. Low priority for conservation.
68	59	No	No	No access consent. Assessed from adjacent properties, roads, and/or aerial imagery.	Unlikely	Buildings, infrastructure and gardens.	-	No further assessments recommended. Low priority for conservation.
69	60	No	No	No access consent. Assessed from adjacent properties, roads, and/or aerial imagery.	Yes - Targeted surveys required, or pre-development condition (western extent of parcel).	Lightly grazed or mown grassland. Buildings, infrastructure and gardens. Cultivated. Trees and shrubs.	May support unidentified TECs.	Native vegetation assessment recommended.
70	61	No	No	No access consent. Assessed from adjacent properties, roads, and/or aerial imagery.	Unlikely	Cultivated.	-	No further assessments recommended. Low priority for conservation.
71	73	No	No	No access consent. Assessed from adjacent properties, roads, and/or aerial imagery.	Unlikely	Cultivated. Buildings, infrastructure and gardens. Uncultivated grassland - low condition.	-	No further assessments recommended. Low priority for conservation.

Parcel ID	EHP Parcel ID	Access consent for assessment	EHP/WSP assessment conducted	Assessment methods	Potential VGED Habitat identified	Primary land uses and VGED habitat (mapped in Figure 3)	Other development constraints	Notes and other recommendations
72	74	Yes	No	Property directly accessed.	Yes - Targeted surveys required, or pre-development condition.	Recent soil disturbance (Photo 25). Uncultivated grassland – low condition (ploughed in ~2006) (Photo 26, Photo 27).	May support unidentified TECs.	Native vegetation assessment recommended. Targeted surveys recommended in areas of low condition uncultivated grassland due to uncertainty in VGED ability to persist in disturbed habitat. Property is adjacent to large areas of potential VGED habitat.
73	72	Yes	No	Assessed from adjacent road or property, and aerial imagery.	Yes - Targeted surveys required, or pre-development condition.	Uncultivated grassland – low condition. Buildings, infrastructure and gardens.	May support unidentified TECs.	Native vegetation assessment recommended. Targeted surveys recommended in areas of low condition uncultivated grassland due to uncertainty in VGED ability to persist in disturbed habitat. Property is adjacent to large areas of potential VGED habitat.
74	75	No	No	No access consent. Assessed from adjacent properties, roads, and/or aerial imagery.	Unlikely	Buildings, infrastructure and gardens. Cultivated (Photo 26). Uncultivated grassland - Low	-	No further assessments recommended. Small area of low quality uncultivated grassland present, and continuous with grassland in adjacent property 73. Surveys in larger contiguous area of grassland likely sufficient to assess presence or absence within property 75.
75	76	Yes	No	No access consent. Assessed from adjacent properties, roads, and/or aerial imagery.	Yes - Targeted surveys required, or pre-development condition.	Uncultivated grassland – low condition (ploughed in ~2006). Buildings, infrastructure and gardens.	May support unidentified TECs.	Native vegetation assessment recommended. Targeted surveys recommended in areas of low condition uncultivated grassland due to uncertainty in VGED ability to persist in disturbed habitat. Property is adjacent to large areas of potential VGED habitat.
76	80	No	No	No access consent. Assessed from adjacent properties, roads, and/or aerial imagery.	Unlikely	Cultivated.	-	No further assessments recommended. Low priority for conservation.

Parcel ID	EHP Parcel ID	Access consent for assessment	EHP/WSP assessment conducted	Assessment methods	Potential VGED Habitat identified	Primary land uses and VGED habitat (mapped in Figure 3)	Other development constraints	Notes and other recommendations
77	81	Yes	No	Assessed from adjacent road or property, and aerial imagery.	Unlikely	Cultivated.	-	No further assessments recommended. Low priority for conservation.
78	77	Yes	No	Assessed from adjacent road or property, and aerial imagery.	Unlikely	Cultivated.	-	No further assessments recommended. Low priority for conservation.
79	78	Yes	No	Assessed from adjacent road or property, and aerial imagery.	Unlikely	Cultivated.	-	No further assessments recommended. Low priority for conservation.
80	79	Yes	Yes – EHP and WSP	Assessed from adjacent road or property, and aerial imagery.	Unlikely	Cultivated. Heavily grazed pasture. Buildings, infrastructure and gardens. Uncultivated grassland – low condition (small isolated patch in drainage line).	-	No further assessments recommended. Low priority for conservation.
81	20	Yes	No	Assessed from adjacent road or property, and aerial imagery.	Unlikely	Heavily grazed pasture (significant disturbance from high stocking rate) Buildings, infrastructure and gardens.	-	No further assessments recommended. Low priority for conservation.
82	21	Yes	No	Property directly accessed.	Yes - Targeted surveys required, or pre-development condition.	Trees and shrubs (Photo 28). Cultivated (Photo 29). Heavily grazed pasture (Photo 30, Photo 31). Buildings, infrastructure and gardens. Lightly grazed or mown grassland (Photo 32).	May support unidentified TECs.	Native vegetation assessment recommended. Late spring or summer timing recommended to assess presence of native vegetation, and variation in vegetation biomass. Targeted surveys recommended in areas of heavily grazed pasture due to uncertainty in VGED ability to persist in disturbed habitat. Property is adjacent to large areas of potential VGED habitat. Capacity for VGED to occupy heavily grazed pasture is uncertain.

Parcel ID	EHP Parcel ID	Access consent for assessment	EHP/WSP assessment conducted	Assessment methods	Potential VGED Habitat identified	Primary land uses and VGED habitat (mapped in Figure 3)	Other development constraints	Notes and other recommendations
83	41	Yes	Yes – EHP. No access - WSP	Assessed from adjacent road or property, and aerial imagery.	Unlikely	Cultivated. Wetland (large constructed dams). Buildings, infrastructure and gardens (poultry farm).	-	No further assessments recommended. Low priority for conservation.
84	62	Yes	Yes – EHP. No access - WSP	Assessed from adjacent road or property, and aerial imagery.	Yes - Targeted surveys required, or pre-development condition.	Uncultivated grassland – moderate condition. Cultivated. Trees and shrubs.	Areas of NTGVVP.	Potential conservation area in uncultivated grassland. No further assessments recommended
85	64	Yes	Yes – EHP. No access - WSP	Assessed from adjacent road or property, and aerial imagery.	Yes - Targeted surveys required, or pre-development condition.	Uncultivated grassland – good condition. Cultivated. Trees and shrubs. Buildings, infrastructure and gardens.	Areas of NTGVVP.	Potential conservation area in uncultivated grassland. No further assessments recommended
86	65	Yes	Yes – EHP. No access - WSP	Assessed from adjacent road or property, and aerial imagery.	Yes - Targeted surveys required, or pre-development condition.	Uncultivated grassland – good condition. Cultivated. Trees and shrubs. Buildings, infrastructure and gardens (protein and tallow factory).	Areas of NTGVVP.	Potential conservation area in uncultivated grassland. No further assessments recommended
87	66	Yes	Yes - EHP	Assessed from adjacent road or property, and aerial imagery.	Unlikely	Buildings, infrastructure, and gardens.	-	No further assessments recommended. Low priority for conservation.
88	67	Yes	Yes - EHP	Assessed from adjacent road or property, and aerial imagery.	Unlikely	Buildings, infrastructure, and gardens.	-	No further assessments recommended. Low priority for conservation.
89	63	Yes	Yes – EHP. No access by WSP, no habitat identified	Property directly accessed.	Unlikely	Cultivated.	-	No further assessments recommended. Low priority for conservation.
90	63	Yes	Yes – EHP. No access by WSP, no habitat identified	Property directly accessed.	Yes - Targeted surveys required, or pre-development condition.	Historical cultivation (Photo 34). Cultivated. Wetland (large constructed dam, Photo 35).	-	Disturbed grassland low priority for conservation if VGED are not recorded during targeted surveys.

Parcel ID	EHP Parcel ID	Access consent for assessment	EHP/WSP assessment conducted	Assessment methods	Potential VGED Habitat identified	Primary land uses and VGED habitat (mapped in Figure 3)	Other development constraints	Notes and other recommendations
91	57	No	No	No access consent. Assessed from adjacent properties, roads, and/or aerial imagery.	Yes - Targeted surveys required, or pre-development condition.	MX Track. Buildings, infrastructure and gardens. Historical cultivation. Uncultivated grassland – moderate condition.	May support unidentified TECs.	Native vegetation assessment recommended.
92	68	No	No	No access consent. Assessed from adjacent properties, roads, and/or aerial imagery.	Unlikely	Buildings, infrastructure, and gardens. Trees and Shrubs.	-	No further assessments recommended. Low priority for conservation.

## References

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DCCEEW 2023a. *Conservation Advice for Tympanocryptis pinguicolla (Victorian grassland earless dragon)*, Author: Department of Climate Change, Energy, the Environment and Water, Canberra, ACT.

DCCEEW 2023b. *Draft National Recovery Plan for Four Grassland Earless Dragons (Tympanocryptis spp.) of Southeast Australia*, Author: Department of Climate Change, Energy, the Environment and Water, Canberra, ACT.

DCCEEW 2024. 'Survey guidelines for four Grassland Earless Dragons (Tympanocryptis spp.) of Southeast Australia.', <https://www.dcceew.gov.au/sites/default/files/documents/survey-guidelines-4-grassland-earless-dragons-tympanocryptis-spp-se-australia.pdf>.

DEECA 2024. 'Victorian Grassland Earless Dragon (Tympanocryptis pinguicolla) Habitat Distribution Model', accessed 11 November 2024, [https://www.environment.vic.gov.au/\\_\\_data/assets/pdf\\_file/0020/721811/Victorian-Grassland-Earless-Dragon-Habitat-Distribution-Model.pdf](https://www.environment.vic.gov.au/__data/assets/pdf_file/0020/721811/Victorian-Grassland-Earless-Dragon-Habitat-Distribution-Model.pdf).

DEWHA 2009. *Significant impact guidelines for the vulnerable Growling Grass Frog (Litoria raniformis). Nationally threatened species and ecological communities EPBC Act policy statement 3.14*, Australian Government Department of the Environment, Water, Heritage, and the Arts. Canberra, Australian Capital Territory.

Ecology & Heritage Partners 2022. *Biodiversity Assessment: Parwan Employment and parwan Station Precinct Structure Plan*,.

Robertson P & Evans M 2009. 'National Recovery Plan for the Grassland Earless Dragon Tympanocryptis pinguicolla', ACT Department of Territory and Municipal Services. <https://www.dcceew.gov.au/sites/default/files/documents/tympanocryptis-pinguicolla.pdf>.

WSP 2023. *Parwan employment precinct targeted ecological surveys*,.

## Appendix 1 Photos of the study area

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**Photo 1** Property parcel 4 (EHP parcel 38) (western extent, facing east). Potentially suitable VGED habitat in uncultivated grassland with open structure and surface/embedded rock.



**Photo 2** Property parcel 5 (EHP parcel 4) (eastern extent, facing west). Potentially suitable VGED habitat in uncultivated grassland with open structure and surface/embedded rock.



**Photo 3** Property parcel 6 (EHP parcel 5) (eastern extent, facing west). Potentially suitable VGED habitat in uncultivated grassland with open structure and surface/embedded rock. Grassland in foreground, scattered shrubs in small area of hillside.



**Photo 4** Property parcel 7 (EHP parcel 14) (central extent, facing north). Cropped paddocks with small partially isolated area of low condition uncultivated grassland in drainage line.



**Photo 5** Property parcel 9 (EHP parcel 15) (eastern extent, facing west from adjacent property). Uncultivated grassland – moderate, with high cover of Serrated Tussock.



**Photo 6** Property parcel 10 (EHP parcel 16) (western extent, facing southwest). Uncultivated grassland – moderate.



**Photo 7** Property parcel 10 (EHP parcel 16) (south-eastern extent, facing south). Heavily grazed pasture in left of image, low condition uncultivated grassland in right of image with high weed cover.



**Photo 8** Property parcel 10 (EHP parcel 16) (eastern extent, facing southwest). Heavily grazed pasture in horse paddocks, with low mown grassland in roadside reserve in foreground.



**Photo 9** Property parcel 11 (EHP parcel 17) (south-east extent of property, facing north-west). Uncultivated grassland – moderate, with high cover of Serrated Tussock.



**Photo 10** Property parcel 16 (EHP parcel 11) (south-west extent, facing north). Cultivated paddock with remnant large eucalypts in background, native grassland and ploughed firebreak along Glenmore Road in foreground.



**Photo 11** Glenmore Road. Vegetated roadside reserve (southern side of road, facing south). Good condition native grassland in foreground, ploughed firebreak along fence line in background. Potential VGED habitat and dispersal corridor between properties.



**Photo 12** Property parcel 19 (EHP parcel 56) (northern extent, facing west). Uncultivated creek with native grassland and surface/embedded rock. Some cover of weedy shrubs and grasses. Potential VGED habitat and dispersal corridor along uncultivated and undeveloped creek.



**Photo 13 Property parcel 19 (EHP parcel 56) (north-west extent, facing north-west). Good condition native grassland. Some scattered weeds, including Serrated Tussock and Feathertop Grass.**



**Photo 14 Property parcel 19 (EHP parcel 56). Example of natural spider burrow observed and inspected with endoscope during habitat assessment. Occupied by large Wolf Spider. Typical of spider burrows observed within areas of uncultivated grassland throughout the precinct.**



**Photo 15** Property parcels 19 and 20 (EHP parcel 56 and 69) (central boundary fence, facing south-east). Moderate condition uncultivated grassland. Habitat largely consistent across both adjacent properties. High proportion of Serrated Tussock, but with some open areas and scattered remnant native grassland plant species. Potential VGED habitat.



**Photo 16** Property parcel 53 (EHP parcel 34) (central western extent, facing north-east). Small patch of moderate condition uncultivated grassland in foreground, larger patch of low condition uncultivated grassland in background with high cover of Serrated Tussock.



**Photo 17** Property parcels 56 (EPH parcels 19) and Smiths Road vegetated roadside (north-east extent of property, facing west). Cultivated area within property 56. Uncultivated grassy roadside reserve along Smiths Road.



**Photo 18 Property parcel 61 (EHP parcel 42) (southern extent, facing north from adjacent property). Moderate condition uncultivated grassland. Potential VGED habitat. No access to property, further habitat assessment recommended to assess impact of grazing on grassland structure**



**Photo 19 Property parcel 63 (EHP parcel 52) (centre of property, facing north). Recently ploughed grassland within horse paddock, not previously cultivated. Any VGED population present likely destroyed.**



**Photo 20** Property parcel 63 (EHP parcel 52) (eastern extent, facing south-east). Recently ploughed grassland on eastern side of central horse track, not previously cultivated. Any VGED population present likely destroyed.



**Photo 21** Property parcel 64 (EHP parcel 53). Heavily grazed pasture within horse paddocks, typical of similar regularly utilised horse paddocks within the precinct.



**Photo 22 Property parcel 64 (EHP parcel 53). Heavily grazed pasture and disturbed soil within small horse paddocks, typical of similar small regularly utilised horse paddocks within the precinct.**



**Photo 23** Property parcel 65 (EHP parcel 54) (centre of property, facing east). Moderate condition uncultivated grassland. Low cover of Serrated Tussock, some remnant native grassland vegetation, some open inter-tussock space. Potential VGED habitat, targeted surveys recommended.



**Photo 24** Property parcel 65 (EHP parcel 54). Example of moderate condition uncultivated grassland. Low cover of Serrated Tussock, some remnant native grassland vegetation, some open inter-tussock space. Potential VGED habitat, targeted surveys recommended.



**Photo 25** Property parcel 72 (EHP parcel 74) (eastern extent, facing south-east). Recently cleared and ploughed area at eastern third of property, previously supporting buildings and uncultivated pasture paddocks.



**Photo 26** Property parcels 72 and 74 (EHP parcels 74 and 75). Foreground low condition grassland in western extent of property 72 (almost total cover of dense Serrated Tussock, ploughed in 2006). Background recently ploughed area of property 74.



**Photo 27** Property parcel 72 (EHP parcel 74) (western extent, facing south-east). Low condition grassland (almost total cover of dense Serrated Tussock, ploughed in 2006). Weedy horse track comprised of crushed glass.



**Photo 28** Property parcel 82 (EHP parcel 21) (centre, facing west). Central laneway with fenced planted treelines.



**Photo 29** Property parcel 82 (EHP parcel 21) (central extent, facing north). Recently cultivated paddock.



**Photo 30** Property parcel 82 (EHP parcel 21) (central extent, facing south). Heavily grazed cattle paddock.



**Photo 31** Property parcel 82 (EHP parcel 21) (central extent, facing south). Heavily grazed cattle paddock.



**Photo 32** Property parcel 82 (EHP parcel 21) (north-east extent, facing north). Example of pasture with lighter recent grazing history within northeastern paddocks of property. Adjacent to uncultivated unused road easement. Potential VGED habitat.



**Photo 33** Unused road easement north of property parcel 82 (EHP parcel 21) (eastern extent, facing west). Uncultivated moderate condition grassland with some remnant native grassland vegetation, and open inter-tussock space. Potential VGED habitat and movement corridor.



**Photo 34** Property parcel 90 (EHP parcel 63) (central extent, facing south). Historically cultivated paddock with regrowth of weeds. Negligible native grassland plant species. Scattered *Cassinia sifton* throughout historically cultivated portion of property.



**Photo 35** Property parcel 90 (EHP parcel 63) (north-east extent, facing north). Large plastic-lined constructed dam and surrounding soil disturbance in corner of property.

