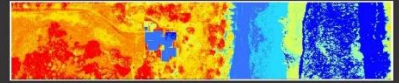




Land Capability Assessment
Biodiversity Survey
Drone Mapping & Survey
Bushfire Attack Level Assessment (BAL)
GIS Mapping & Analysis



Client: Myers Planning Group

Project: Vegetation Assessment
- 373 Old Geelong Road Camperdown 3260

Date: August 8, 2021

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Figure 1 – Proposed study area proximal to the Camperdown racecourse (Source: Google 2021).

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REPORT: Landtech Consulting - Vegetation Assessment – 373 Old Geelong Road, Camperdown, Vic.
Version: 8 August 2021

Document control

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Project number	677
Project manager	Peter Austin (Landtech Consulting)
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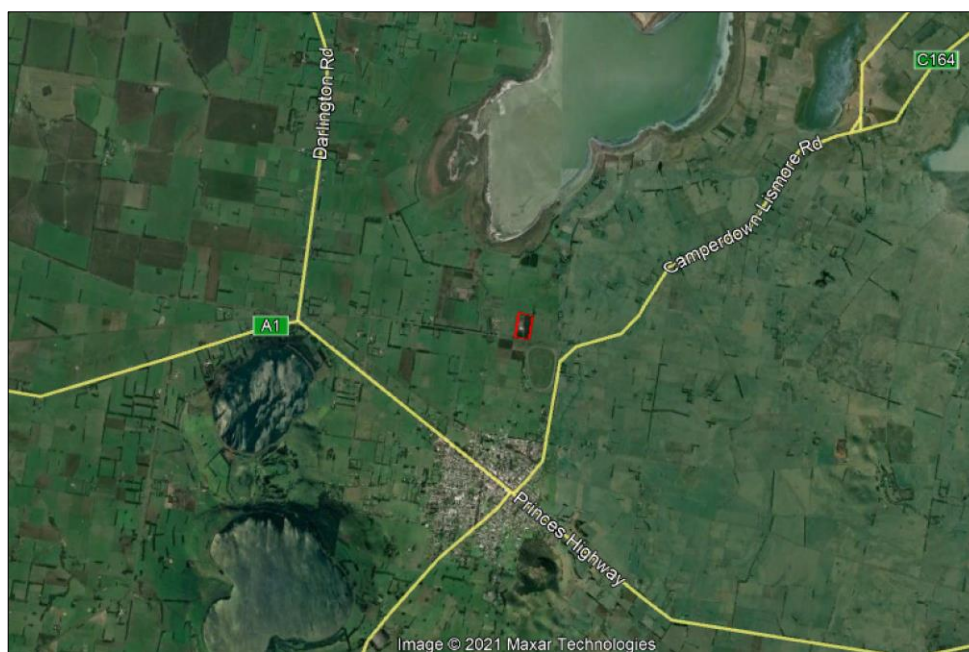


Figure 2 – Camperdown to the south with the Ramsar-listed Lake Colongulac to the north of the site (Source: Google 2021).

SUMMARY

Introduction

Landtech Consulting was commissioned by Myers Planning Group to conduct a Vegetation Assessment for a proposed rezoning at 373 Old Geelong Road, Camperdown, Victoria (see *Figure 1, Appendix 1*).

This assessment was undertaken to identify and characterise persistence of any remnant native vegetation, determine the presence (or likelihood thereof) of any significant flora species and related ecological communities, and address any implications under Commonwealth and State environmental legislation.

The recommendations from this assessment includes guidance on how to manage any identified values/risks as part of the proposed rezoning. A permit requirement exists based on further information regarding potential vegetation impacts associated with the rezoning.

Methods

Site-based field observations were undertaken by Landtech Consulting on 21 July 2021 to support this analysis on terrestrial flora values within the selected study area (see *Section 2 – Methods*). This was combined with results from previous Victorian Biodiversity Atlas ecological assessments and desktop records collected proximal to the survey area to determine the overall impact of the proposed rezoning.

Results

Flora

A total of 136 plant taxa (48 indigenous, 88 introduced) have been recorded within a 5km buffer of the study area (DELWP VBA records).¹

Three State-significant flora records have been recorded within 5km of the study area and include *Lawrencia spicata* Salt Lawrencia (FFG – Endangered), *Lepidium aschersonii* Spiny Peppercress (FFG – Endangered), and *Poa physocline* Wind-blown Tussock Grass (FFG – Endangered).²

No flora species of State significance were recorded within the study area.

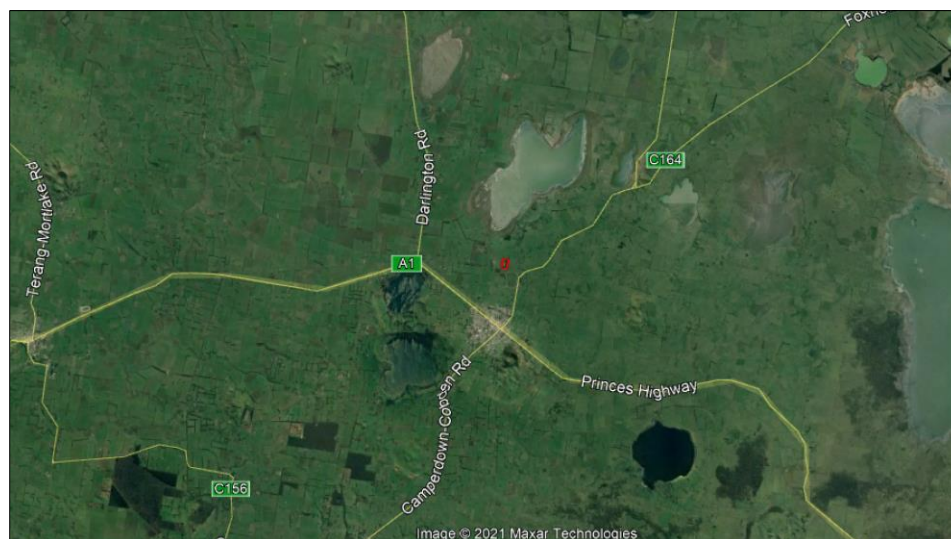


Figure 3 – Site region depicting little significant remnant vegetation persisting (Source: Google 2021).

¹ CERDI (2020), Visualising Victoria's Biodiversity – Online Mapping; Accessed on 23/7/2021 from: http://www.vvb.org.au/vvb_map.php

² CERDI (2020), Visualising Victoria's Biodiversity – Online Mapping; Accessed on 23/7/2021 from: http://www.vvb.org.au/vvb_map.php

Legislative and Policy Implications

Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act - Federal)

The proposed rezoning will not result in the removal of vegetation and therefore there is expected to be no impact to EPBC-listed species or communities; therefore EPBC-Act referral is not required.

Flora and Fauna Guarantee Act 1988 (FFG Act - Victoria)

There are no FFG Act-listed species within the study area.

Environment Effects Act 1978 (Victoria)

The proposed rezoning will not include any vegetation removal.

Based on the reduced impact of proposed rezoning, it is accurate to conclude that from a biodiversity perspective, an EES referral and assessment of the proposal under the EE Act (Vic) is not warranted.

Planning and Environment Act 1987

Planning approval is required to remove, destroy or lop any native vegetation.

All Victorian planning schemes contain state standard particular provisions that require a planning permit to remove, destroy or lop native vegetation. Clauses 52.16 and 52.17 (VPP's) contain tables of exemptions³ that list activities and circumstances where native vegetation can be removed without a permit. Vegetation removal is not proposed.

Permitted Clearing Assessment (the Guidelines)

The study area is within Location 1,⁴ with no 'native' vegetation proposed to be removed.

Offset requirements and a planning permit to remove/prune/lop native vegetation is therefore not required.

Other Legislation and Policy

Implications relating to other local and State policy (Wildlife Act 1975, Catchment and Land Protection Act 1994, local government authorities) as well as additional studies or reporting that may be required (Weed Management Plan, Construction Environment Management Plan) are provided in Section 6.

³ DELWP 2018; Assessors Handbook: Applications to Remove, Destroy or Lop Native Vegetation; Accessed on 23/7/2021 from: https://www.environment.vic.gov.au/_data/assets/pdf_file/0022/91255/Assessors-handbook-Applications-to-remove-lop-or-destroy-native-vegetation-V1.1-October-2018.pdf

⁴ DELWP Native Vegetation Information Management System; Accessed 23/7/2021 from: <https://nvm.delwp.vic.gov.au/Biodiversity/RiskPathway#/step-3>

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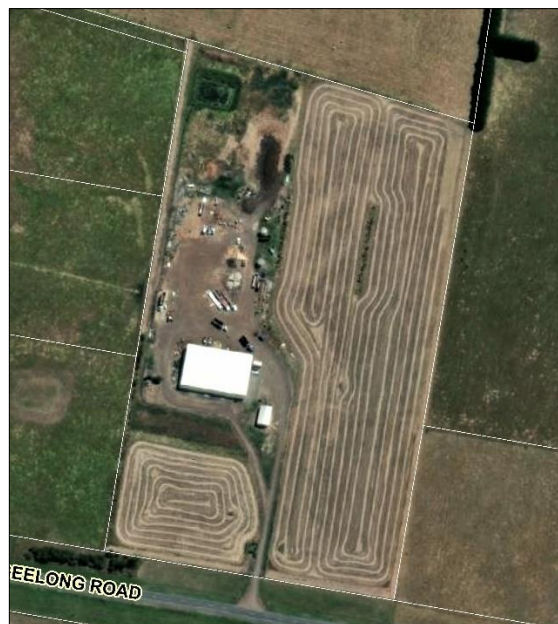
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1 INTRODUCTION

A planning permit requires further information regarding the persistence of any remnant vegetation and related ecological communities within the site.

The basis for this assessment report includes site assessment and desktop analysis of environmental values and environmental risks associated with the proposed rezoning.

The recommendations from this analysis includes guidance on how to manage any identified values/risks as part of the rezoning.



Figures 4 & 5 – Site infrastructure has changed over time but it is clear that entire site modification has occurred (Source: Google 2021).

1.1 Background

Myers Planning Group is proposing the rezoning of the current Farm-Zone lot to Industrial zoning at 373 Old Geelong Road, Camperdown (south-west Victoria).

The study area is approximately 2.6km to the north of the Camperdown township, adjacent to significant Volcanic lake systems and expansive farming zoned landscapes. Such landscapes are now highly fragmented indicative of the state of the subject site that lacks any remnant vegetation; both woodland and grassland. The site has had a history of agricultural modification including ploughing, vegetation clearing, and pasture species seeding.

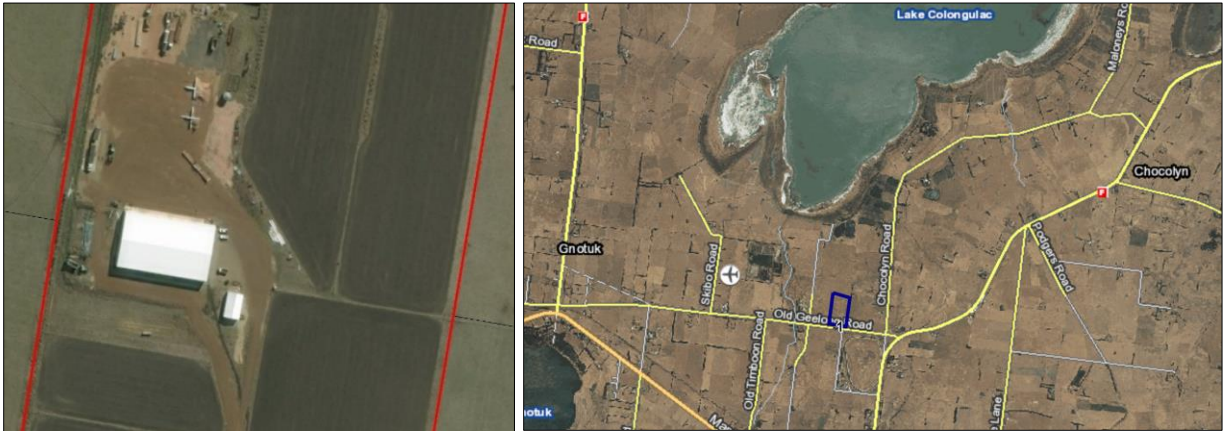
No contiguous habitat links the site to broader significant ecosystems such as within the Victorian Volcanic Plain and lake system landscapes such as Lake Colongulac (Ramsar wetland)⁵, 1.2km to the north of the site.

Accordingly, the aim of this assessment is to identify ecological values (vegetation) known to, or likely to occur within the study area, and determine the potential regulatory and legislative implications associated with the proposed rezoning.

⁵ Victorian Government 2021; Victorian Biodiversity Map; Accessed on 21.7.2021 from: http://www.vvb.org.au/vvb_map.php

1.2 Study Area

The proposed lot to be rezoned is 9.42 hectares and rectangular in size, bordered on three sides by existing grazing landscapes, devoid of significant stands of indigenous vegetation. The site is part of a highly modified flat landscape essentially devoid of significant faunal habitat (see *Figures 6-8*).



Figures 3 & 7 – The site has been ploughed, has had a small dam constructed, and is proximal to Lake Colongulac (Source: Google 2021).

As stated previously, the subject site is located within volcanic and saline lake-bed landscapes that are highly fertile and typically flat to lightly sloping.

The Ramsar-listed Lake Colongulac system although itself fragmented supports remnant patches of assorted vegetation types specific to these systems.

According to the DELWP Native Vegetation Information Management Tool the study area occurs within the Victorian Volcanic Plains bioregion. It is located within the jurisdiction of the Glenelg Hopkins Catchment Management Authority (CMA) and the Corangamite Shire Council municipality.



Figure 8 – Image depicting alternative season site use and site infrastructure elements (Source: Google 2021).

1.3 EVCs PROXIMAL TO SITE

Pre-1750 vegetation mapping⁶ indicates that the study area would have originally supported a single Broad Vegetation Type, Plains Grassland (EVC132). As can be seen from the existing EVCs mapped below fragmentation has reduced these to rare occurrences through the landscape.



Figure 9 – Proximal remaining fragments of EVCs proximal to the site (Data source: DataVic 2021).

⁶ DELWP (2020), Native Vegetation Information Management System; Accessed on 23/7/2021 from: <https://nvim.delwp.vic.gov.au/>

2 METHODS

2.1 Desktop Assessment

Relevant literature, online-resources and numerous databases were reviewed to provide an assessment of flora values associated with the study area. The following information sources were reviewed:

Table 1 - Relevant literature, online-resources, and databases.

The Victorian Department of Environment, Land, Water and Planning (DELWP) Native Vegetation Information Management (NVIM) Tool (DELWP 2016a)	-Modelled data for location risk, remnant vegetation patches, scattered trees and habitat for rare or threatened species; and -The extent of historic and current EVCs.
The VBA (DELWP 2016b), Flora Information System (FIS) (Viridans 2013a) and Atlas of Victorian Wildlife (AVW) (Viridans 2013b)	-Previously documented flora and fauna records within the project locality;
The Federal Department of the Environment (DoE) Protected Matters Search Tool (PMST)	-Matters of National Environmental Significance (NES) protected under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) (DoE 2016);
VicPlan	-To ascertain current zoning and environmental overlays;
Aerial photography of the study area	-To provide spatial and locational support to the process;
Relevant environmental legislation and policies	-Ascertain planning and regulatory requirements;
Previous ecological assessments within the study area (VBA)	-Provide information regarding species surveyed, significance etc.

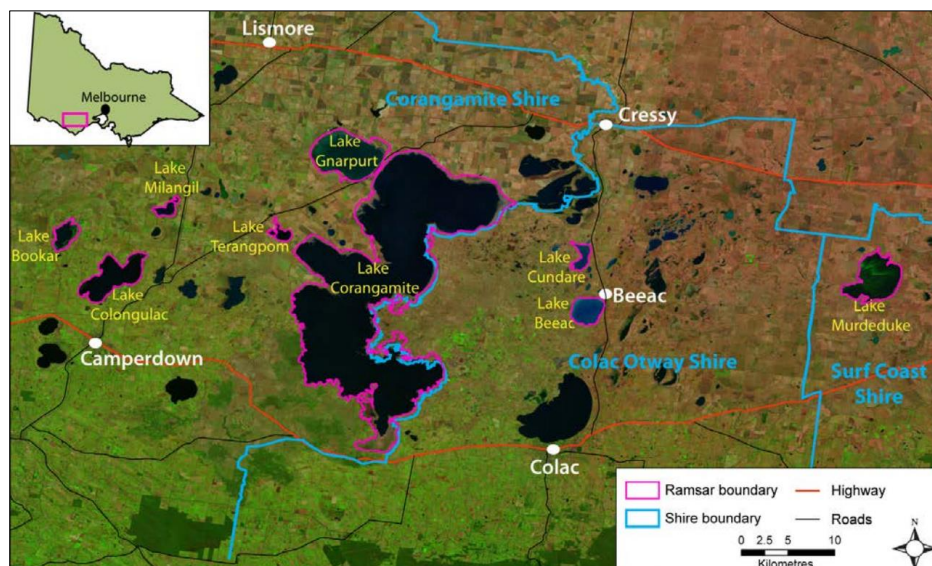


Figure 10 – The Western District Lakes Ramsar site is located in the west of Victoria, within the Southeast Coast Drainage Division (bioregion). The site covers approximately 33 000 hectares and lies within the Shires of Corangamite, Colac Otway and Surf Coast. The site comprises nine separate lakes, which lie to the west, north and east of the town of Colac (population in 2006; 11 000). The Western District Lakes are within the landlocked Lake Corangamite catchment, which covers approximately 4200 square kilometres. Lakes dominate surface water in the catchment and the only significant river, the Woody Yallock River, drains into Lake Corangamite. There are a large number of wetlands within the catchment nine of which comprise the Ramsar site: Lakes Beeac, Bookar, Colongulac, Corangamite, Cundare, Gnarpurt, Milangil, Murdeduke and Terangpom.⁷

⁷ Australian Government 2011; Western District Lakes Ramsar Site Ecological Character Description; Accessed from: <https://www.environment.gov.au/system/files/resources/960e398b-33cd-4ee8-9d76-d7dca895b12d/files/20-ecd.pdf>

2.2 Site Assessment

A site assessment was undertaken on 21 July 2021 to assess vegetation and obtain information and imagery for vegetation survey reporting.

All observed flora species were recorded, any significant records mapped, and the overall condition of vegetation and habitats noted.

Ecological Vegetation Classes (EVCs) were determined⁸ with reference to DELWP pre-1750 and extant EVC mapping and their published descriptions.

Where remnant vegetation was identified a habitat condition scores were undertaken using DELWP tools from the Native Vegetation Information Management (NVIM) system and based on methodology in the Vegetation Quality Assessment Manual "Version 1.3" (DSE 2004).⁹

2.2.1 Significant communities

No EPBC and FFG Act-listed terrestrial communities exist within the study site based on site and desktop survey completed for this report.

The site is however proximal to the critically-endangered *Grassy Eucalypt Woodland of the Victorian Volcanic Plain*.¹⁰

Within this broader context, the Grassy Eucalypt Woodland of the Victorian Volcanic Plain represents certain occurrences of grassy eucalypt woodlands located south of the Great Dividing Range and are specifically limited to the extensive Quaternary basalt plain of south-western Victoria.

2.2.2 Significant flora

Targeted surveys for threatened flora species have not been previously undertaken within the study area based on VBA/VVB¹¹ (DELWP 2020) database records.

However areas within 5km of the study site (particularly partly-intact remnant areas such as the Ramsar-listed Lake Colongulac contain past records of significant species such as three State-significant flora records (no EPBC-listed flora) and include:

1. *Lawrenzia spicata* Salt Lawrenzia (FFG – Endangered)
2. *Lepidium aschersonii* Spiny Peppercress (FFG – Endangered)
3. *Poa physocline* Wind-blown Tussock Grass (FFG – Endangered).¹²

⁸ DELWP (2020), Native Vegetation Information Management System; Accessed on 23/7/2021 from: <https://nvim.delwp.vic.gov.au/>

⁹ DELWP (2013), Vegetation Quality Assessment Guidelines; Accessed on 23/7/2021 from:

https://www.environment.vic.gov.au/_data/assets/pdf_file/0023/51809/VQAM-V1_3-Chapters-1-11.pdf

¹⁰ Australian Government (2020); Species Profile and Threats Database, Accessed on 23/7/2021 from:

<https://www.environment.gov.au/cgi-bin/sprat/public/publicshowcommunity.pl?id=46>

¹¹ CERDI (2020), Visualising Victoria's Biodiversity – Online Mapping; Accessed on 23/7/2021 from: http://www.vvb.org.au/vvb_map.php

¹² CERDI (2020), Visualising Victoria's Biodiversity – Online Mapping; Accessed on 23/7/2021 from: http://www.vvb.org.au/vvb_map.php

2.3 Permitted Clearing Assessment (the Guidelines)

Under the Planning and Environment Act 1987, Clause 52.17 of the Planning Schemes requires a planning permit from the relevant local Council to remove, destroy or lop native vegetation.

The assessment process for the clearing of vegetation follows the 'Permitted clearing of native vegetation - Biodiversity assessment guidelines' (the Guidelines) (DELWP 2017).¹³

No removal of 'native' vegetation as it is defined by DELWP will occur.

2.3.1 Risk-based Pathway

The Guidelines manage the impacts on biodiversity from native vegetation removal using a risk-based approach. Two factors – extent risk and location risk – are used to determine the risk associated with an application for a permit to remove native vegetation.

The location risk (A, B or C) has been determined for all areas in Victoria (and is available on DELWP's *Native Vegetation Information Management NVIM Tool*). Determination of risk-based pathway is summarised in Table 2.

The study site is within Location 1 and if vegetation were proposed for removal would therefore fall within the BASIC risk pathway assessment of removal of vegetation.

Table 2 – Determining the assessment pathway (DELWP 2017).¹⁴

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



Figure 11 – Areas of exotic and seeded pasture grasses persist within the site only.

¹³ DELWP 2017; Guidelines for the removal, destruction or lopping of native vegetation'; Accessed on 23/7/2021 from: https://www.environment.vic.gov.au/_data/assets/pdf_file/0021/91146/Guidelines-for-the-removal-destruction-or-lopping-of-native-vegetation-2017.pdf

¹⁴ DELWP 2017; Guidelines for the removal, destruction or lopping of native vegetation'; Accessed on 23/7/2021 from: https://www.environment.vic.gov.au/_data/assets/pdf_file/0021/91146/Guidelines-for-the-removal-destruction-or-lopping-of-native-vegetation-2017.pdf

2.4 Vegetation Assessment

Native vegetation (as defined in *Table 3*) is assessed using two key parameters: extent (in hectares) and condition. Extent is determined through a site assessment.

All applications in the Detailed Assessment Pathway require a site assessment. The condition score for Detailed pathways must be assessed via a *Habitat Hectare*¹⁵ assessment conducted by a qualified ecologist.

Applications in the Basic Assessment Pathway and Intermediate Assessment Pathway do not require a site assessment by an accredited native vegetation assessor. The condition score for Basic pathways may be based on either modelled data available on the NVIM Tool (DELWP) or through *Habitat Hectare* assessment.

The NVIM mapping system was used to assess biodiversity condition, supported by additional information provided by field survey activities.

Table 3 – Determination of remnant native vegetation (DELWP 2017).

Category	Definition	Extent	Condition
Patch of native vegetation	An area of vegetation where at least 25 per cent of the total perennial understorey plant cover is native, or <ul style="list-style-type: none"> any area with three or more native canopy trees where the drip line of each tree touches the drip line of at least one other tree, forming a continuous canopy, or any mapped wetland included in the current wetlands map, available in DELWP systems and tools. 	Measured in hectares. The extent of a patch is the area of the patch in hectares.	Vegetation Quality Assessment Manual (DSE 2004).
Scattered tree	A native canopy tree that does not form part of a patch.	Measured in numbers. The extent of a scattered tree depends on whether the scattered tree is a small or large tree. All scattered trees that are not large trees are small scattered trees. The extent of a small scattered tree is the area of a circle with a 10 metre radius, with the trunk at the centre. The extent of a large scattered tree is the area of a circle with a 15 metre radius, with the trunk at the centre.	Scattered trees identified by an accredited native vegetation assessor are assigned a standard condition score of 0.20.

Note: Native vegetation is defined in the Victorian Planning Provisions as plants that are indigenous to Victoria including trees, shrubs, herbs, and grasses.

¹⁵ DSE 2013 VQA Vegetation Assessment; A 'habitat hectare' is a unit of measurement which combines the condition and extent of native vegetation.

2.5 Impact Minimisation

Applications under the Intermediate and Detailed pathways must include a statement outlining steps taken to minimise the impact of the removal of native vegetation on Victoria's biodiversity, along with an assessment of whether the proposed removal of native vegetation will have a significant impact on Victoria's biodiversity (DELWP 2017).

2.6 Offsets

Offsets are required to compensate for the permitted removal of native vegetation. Offsets are divided into two categories: General and Species.

When the removal of native vegetation has a significant impact on habitat for a specific rare or threatened species, the offset must compensate for the removal of that particular species' habitat. This is referred to as a species offset. When the removal of native vegetation does not have a significant impact on the habitat of a particular rare or threatened species, a general offset must be obtained (DELWP 2017).

Offset obligations and offset site criteria are determined in accordance with the Guidelines (DELWP 2017) will be provided after the exemption process has been applied. The offset requirements for native vegetation removal are calculated by DELWP, based on the vegetation condition scores determined during the biodiversity assessment.

With the study area highly modified and removal of vegetation not intended, offset requirements are not required in this case.

2.7 Assessment Qualifications and Limitations

Data and information held within the ecological databases and mapping programs reviewed in the desktop assessment (e.g. VBA, PMST, Biodiversity Interactive Maps etc.) are in many cases aged data, unlikely to represent all flora and fauna observations within and surrounding the study area.

It is therefore important to acknowledge that a lack of documented records does not necessarily indicate that a species or community is absent. This level of accuracy is considered adequate to provide an accurate assessment of the ecological values present within the study area, however this data should not be used for detailed surveying purposes.

It should also be noted that field survey was collected during a sub-optimal season for the identification of flora species however as the site lacked indigenous vegetation this did not impact the assessment outcome.

3 RESULTS

3.1 Vegetation Condition

3.1.1 Remnant Patches

Review of pre-1750 vegetation mapping¹⁶ indicates that the study area would have originally supported a single Broad Vegetation Type, Plains Grassland (EVC132). EVC mapping shows the study area has been entirely cleared for agricultural operations (see *Figures 12-13*). The odd remaining re-growth Swamp Gum (*Eucalyptus ovata*) persists within the study site.^{17 18}

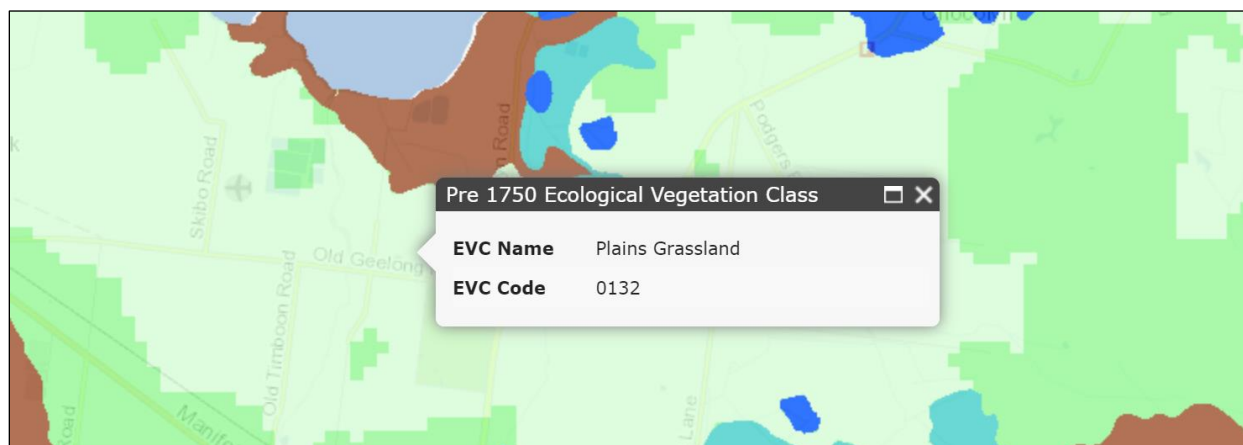


Figure 12 – Pre-1750 Ecological Vegetation Classes or vegetation types once dominated the site and surrounds (Source: NVIM 2020).



Figure 13 – Recently-planted windbreak to the left and regrowth Swamp Gum to the right; the only persistent vegetation within the site.

¹⁶ DELWP (2020), Native Vegetation Information Management System; Accessed on 23/7/2021 from: <https://nvim.delwp.vic.gov.au/>

¹⁷ Department of Environment, Land, Water & Planning (DELWP) 2019. Bioregional Conservation Status, Victorian Bioregions; Accessed on 23/7/2021 from: https://www.environment.vic.gov.au/_data/assets/pdf_file/0012/50511/Bioregional-Conservation-Status-for-each-BioEVC.pdf

¹⁸ DELWP (2020) Victorian Volcanic Plain EVC List Accessed on 23/7/2021 from: https://www.environment.vic.gov.au/_data/assets/pdf_file/0035/48698/GleP_EVCs_combined.pdf

3.1.2 Predominantly Introduced Vegetation

Exotic pasture and sedge species dominate the current site due to ploughing, grazing and land parcel equipment storage and movement actions.

Dominating the site are pasture species provided for historic grazing. The site has been ploughed over recent times which further nullifies potential habitat for even reptile species, once dominant throughout the region (see *Figures 14-15*).

Flora observed within the parcel is highly modified and dominated by exotic vegetation, particularly with introduced pasture grasses (grazing) such as Phalaris (*Phalaris* sp.), Rye Grass (*Lolium* sp.), Yorkshire Fog (*Holcus lanatus*), as well as common agricultural and environmental weeds (e.g. Panic Veldt-grass *Ehrharta erecta*, and Flatweed *Hypochoeris radicata*).



Figure 14 – Native vegetation condition reflected by the degree of site modification depicted in this image.



Figure 15 – Common exotic pasture species such as Rye grass dominate most of the site.

3.2 Significant Vegetation Communities

3.2.1 EPBC Act-listed Communities

No ecological communities listed under the EPBC Act are present within the study area.

3.2.2 FFG Act Listed Communities

No ecological communities listed under the FFG Act are present within the study area.

3.3 Significant Flora Species

3.3.1 Flora Species

A total of 136 plant taxa (48 indigenous, 88 introduced) have been recorded within a 5km buffer of the study area (DELWP VBA records).¹⁹ Three State-significant flora records have been recorded within 5km of the study area and include *Lawrencia spicata* Salt Lawrencia (FFG – Endangered), *Lepidium aschersonii* Spiny Peppercress (FFG – Endangered), and *Poa physocline* Wind-blown Tussock Grass (FFG – Endangered).²⁰ No flora species of State significance were recorded within the study area.

3.3.2 National

Historic surveys have not identified species of national significance within the site or within 1km of the site (terrestrial records).²¹

3.3.3 State

No state significant species were recorded within the proposed rezoned parcel. Three State-significant flora records have been recorded within 5km of the study area and include *Lawrencia spicata* Salt Lawrencia (FFG – Endangered), *Lepidium aschersonii* Spiny Peppercress (FFG – Endangered), and *Poa physocline* Wind-blown Tussock Grass (FFG – Endangered).²²

3.6 Permitted Clearing Assessment (the Guidelines)

3.6.1 Vegetation proposed to be removed / Offset targets

The study area is within Location 1, with no native vegetation persisting within the site. As there will be no removal of remnant vegetation, offset targets are not required.

¹⁹ CERDI (2020), Visualising Victoria's Biodiversity – Online Mapping; Accessed on 23/7/2021 from: http://www.vvb.org.au/vvb_map.php

²⁰ CERDI (2020), Visualising Victoria's Biodiversity – Online Mapping; Accessed on 23/7/2021 from: http://www.vvb.org.au/vvb_map.php

²¹ Dept. of Environment & Energy (2020); Species SRAT Profile; Accessed on 20/2/2020 from:

http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=11896

²² CERDI (2020), Visualising Victoria's Biodiversity – Online Mapping; Accessed on 23/7/2021 from: http://www.vvb.org.au/vvb_map.php

4 LEGISLATIVE AND POLICY IMPLICATIONS

4.1 Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth)

The EPBC Act establishes a Commonwealth process for the assessment of proposed actions likely to have a significant impact on any matters of National Environment Significance (NES), described in *Table 4*.

Table 4 - Potential impacts to Matters of National Environmental Significance (NES)

Matter of NES	Potential impacts
World Heritage Properties	The proposed action will not impact World Heritage Properties.
National Heritage Places	The proposed action will not impact national heritage places. ²³
Ramsar Wetlands of International Significance	The proposed action occurs within 2km of a Ramsar Wetland but will not impact this Ramsar site.
Threatened Species and Ecological Communities	The proposed action ²⁴ will not impact Threatened Species and Communities.
Migratory and Marine species	The proposed action will not impact migratory and marine species.
Commonwealth Marine Area	The proposed action is not in a Commonwealth marine area.
Nuclear Actions (Uranium Mining)	The proposed action is not a nuclear action.
Great Barrier Reef Marine Park	The proposed action will not impact the Great Barrier Reef Marine Park.
Water Resources impacted by Coal Seam Gas or Mining Development	The proposed action is not a coal seam gas or mining development.

4.1.1 Implications

The proposed rezoning does not impact nationally significant communities and matters listed in *Table 4* above due to the modified nature and no vegetation removal proposed within the site.



Figure 16 – The site also suffers a lack of connection to the surrounding landscape (Source: Google 2021).

²³ Dept. Environment & Energy 2018, Matters of National Environmental Significance (NES). Accessed on 23/7/2021 from: <http://www.environment.gov.au/webgis-framework/apps/pmst/pmst.jsf>

²⁴ Dept. Environment & Energy, Species Profile and Threats Database. Accessed on 23/7/2021 from: <https://www.environment.gov.au/cgi-bin/sprat/public/conservationadvice.pl>

4.2 Flora and Fauna Guarantee Act 1988 (Victoria)

The FFG Act is the primary legislation dealing with biodiversity conservation and sustainable use of native flora and fauna in Victoria. Proponents are required to apply for an FFG Act Permit to 'take' listed and/or protected flora species, listed vegetation communities and listed fish species in areas of public land (i.e. within road reserves, drainage lines and public reserves).

An FFG Act permit is generally not required for removal of species or communities on private land, or for the removal of habitat for a listed terrestrial fauna species.

Flora – There were no species listed under the FFG Act identified within the current lot.

Three State-significant flora records have been recorded within 5km of the study area and include *Lawrenzia spicata* Salt Lawrenzia (FFG – Endangered), *Lepidium aschersonii* Spiny Peppercress (FFG – Endangered), and *Poa physoclinia* Wind-blown Tussock Grass (FFG – Endangered).²⁵

Communities – There were no communities listed under the FFG Act within the study area.

Threatening processes – Threatening process listed under Schedule 3 of the FFG Act that require consideration include:

- Alteration to the natural flow regimes of rivers and streams;
- Degradation of native riparian vegetation along Victorian rivers and streams;
- Increase of sediment input into Victorian rivers and streams due to human activities;
- Input of toxic substances into Victorian rivers and streams;
- Invasion of native vegetation by Gorse (*Ulex europaeus*);
- Invasion of native vegetation by 'environmental weeds';
- Loss of hollow-bearing trees from Victorian native forests; and
- Prevention of passage of aquatic biota as a result of the presence of instream structures.

4.2.1 Implications

No FFG Act-listed species were detected within the study area.

²⁵ CERDI (2020), Visualising Victoria's Biodiversity – Online Mapping; Accessed on 23/7/2021 from: http://www.vvb.org.au/vvb_map.php

4.3 Environment Effects Act 1978 (Victoria)

The Environment Effects Act 1978 provides for assessment of proposed actions that are capable of having a significant effect on the environment via the preparation of an Environment Effects Statement (EES). A project with potential adverse environmental effects that, individually or in combination, could be significant in a regional or State context should be referred.

An action may be referred for an EES decision where one of the following occurs:

1. Potential clearing of 10 hectares or more of native vegetation from an area that:
 - is of an EVC identified as endangered by DELWP;
 - is of Very High conservation significance; or,
 - is not authorised under an approved Forest Management Plan or Fire Protection Plan.
2. Potential long-term loss of a significant proportion (1-5% depending on conservation status of species) of known remaining habitat or population of a threatened species within Victoria; or where two or more of the following occur:
 - *Potential clearing of 10 hectares or more of native vegetation, unless authorised under an approved Forest Management Act or Fire Protection Plan;*
 - *Matters listed under the FFG Act;*
 - *Potential loss of a significant area of a listed ecological community;*
 - *Potential loss of a genetically important population of an endangered or threatened species;*
 - *Potential loss of critical habitat; or,*
 - *Potential significant effects on habitat values of a wetland supporting migratory birds.*

4.3.1 Implications

The proposed rezoning does not include vegetation removal and where no native vegetation persists within the subject area.

Based on the extent of the proposed impacts it is accurate to conclude that from a biodiversity perspective a referral under the EE Act is not warranted. An explanation relating to the specific criteria relevant to ecology is provided:

-The will be no change to the site's land cover.

-The project will not lead to the potential long-term loss of a significant proportion (1-5% depending on conservation status of species) of known remaining habitat or population of a threatened species within Victoria.

-The project will not lead to the loss of the following:

- Matters listed under the FFG Act;
- Potential loss of a significant area of a listed ecological community;
- Potential loss of a genetically important population of an endangered or threatened species;
- Potential loss of critical habitat; or,
- Potential significant effects on habitat values of a wetland supporting migratory birds.

4.4 Planning and Environment Act 1987 (Victoria)

The Planning and Environment Act 1987 outlines the legislative framework for planning in Victoria and for the development and administration of planning schemes.

One zone applies to the study area (see *Figure 17* below);

1. Farm Zone – FZ

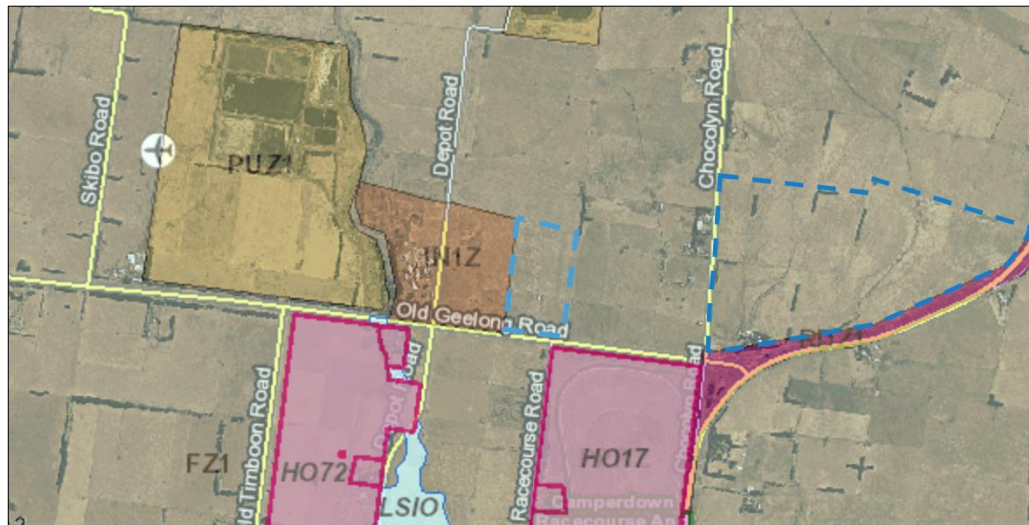


Figure 17 – Zoning covering the study site; with the proposed rezoned lot currently within Farm zoned areas (Source: Vic Govt. 2021).

4.4.1 Victorian Planning Schemes

All planning schemes contain native vegetation provisions at *Clause 52.17 Native Vegetation* which require a planning permit from the relevant local Council to remove, destroy or lop native vegetation on a site of more than 0.4 hectares, unless an exemption under clause 52.17-7 of the Victorian Planning Schemes applies, or a subdivision is proposed with lots less than 0.4 hectares.²⁶

Local planning schemes may contain other provisions in relation to the removal of native vegetation.

4.4.2 Implications

The proposal will not require the removal of native vegetation therefore typical permit triggers do not apply in this case.

²⁶ DELWP (2020) Exemptions from requiring a permit; Accessed on 23/7/2021 from:
<https://www.environment.vic.gov.au/native-vegetation/native-vegetation/exemptions-from-requiring-a-permit>

4.5 Wildlife Act 1975 and Wildlife Regulations 2013 (Victoria)

The Wildlife Act 1975 (and associated Wildlife Regulations 2013) is the primary legislation in Victoria providing for protection and management of wildlife.

Authorisation for habitat removal may be obtained under the Wildlife Act 1975 through a licence granted under the Forests Act 1958, or under any other Act such as the Planning and Environment Act 1987.

Any persons engaged to remove, salvage, hold or relocate native fauna during construction must hold a current Management Authorisation under the Wildlife Act 1975, issued by DELWP.

4.5.1 Implications

Due to the proposal not to remove vegetation, it is unlikely that salvage of fauna will be undertaken, and therefore Management Authorisation under the Wildlife Act 1975 is not required.

4.6 Catchment and Land Protection Act 1994 (Victoria)

The Catchment and Land Protection Act 1994 (CaLP Act) contains provisions relating to catchment planning, land management, noxious weeds and pest animals. Landowners are responsible for the control of any infestation of noxious weeds and pest fauna species to minimise their spread and impact on ecological values.

4.6.1 Implications

A number of weeds listed as noxious under the CaLP Act could be expected within this EVC such as Blackberry (*Rubus sp.*) and Spear Thistle (*Cirsium vulgare*). Yorkshire Fog (*Holcus lanatus*), Cat's Ear (*Hypochoeris radicata*), Delicate Hair-grass (*Aira elegantissima*), and Common Centaury (*Centaurea erythraea*).²⁷

The proposed future site use should include weed and pest animal management controls as part of broader site environmental management planning to control and prevent the introduction of noxious weed species or transfer within the site.

Any infestation of noxious weeds that may become established during and/or after any completion of works should be appropriately controlled in all areas to minimise their spread and overall impact on ecological values.

²⁷ DELWP 2020; Victorian Volcanic Plain EVC list; Accessed on 23/7/2021 from:
https://www.environment.vic.gov.au/data/assets/pdf_file/0035/48698/Vic_Volcanic_Plain_EVCs_combined.pdf

5 POTENTIAL IMPACTS

The proposed rezoning is unlikely to have a direct impact to areas of native vegetation on a site with no native vegetation, significant species, or ecological communities existing; due to the history of site modification, low condition quality, and lack of connectedness within the landscape. Impacts of any future planned site works are likely to include:

- Soil disturbance and compaction which could increase the spread of weeds in the study area and beyond;
- Changed site hydrology;
- Removal of vegetation cover critical to protecting soil environments;
- Potential weed spread via any site excavation, vehicle movement, general construction, dust movement into remnants;
- Weed and pest animal incursion; and
- Potential disturbance to fringing lots.

6 MITIGATION MEASURES

6.1 Minimise Impacts

If no vegetation is planned for removal as is the case at this site minimisation is not required however if any future site activities and development is planned, reasonable steps should be taken to ensure that impacts of any action on biodiversity is minimised.

Minimisation effort is typically commensurate with the contribution that native vegetation makes to Victoria's biodiversity (DELWP 2017).

This report suggests a site-based Environmental Management Plan could be used in future site development or operations that includes all potential within and off-site impacts.

6.1.1 Contribution to Victoria's Biodiversity

The Handbook (DELWP 2018) describes the relevant information to consider when determining the contribution native vegetation makes to Victoria's biodiversity. As no native vegetation will be removed an assessment of the contribution made to Victoria's biodiversity is not applicable.

6.1.2 Environmental Management Plan

As suggested in section 6.1 above any future site activity impact to existing ecological values can be minimised through the implementation of a site-based Environment Management Plan (EMP). The EMP should address management of all pre, during, and post-activity stages, with a focus on reducing impact to site biodiversity values.

6.2 Offset Impacts

The Guidelines (DELWP 2017) require offsetting as the final step in considering the impacts of development on native vegetation. Based on the fact that there will be no vegetation removal provision for offsets are not required.

6.2.1 Offset Strategy

Based on the non-removal of vegetation a current offset requirement is not required.

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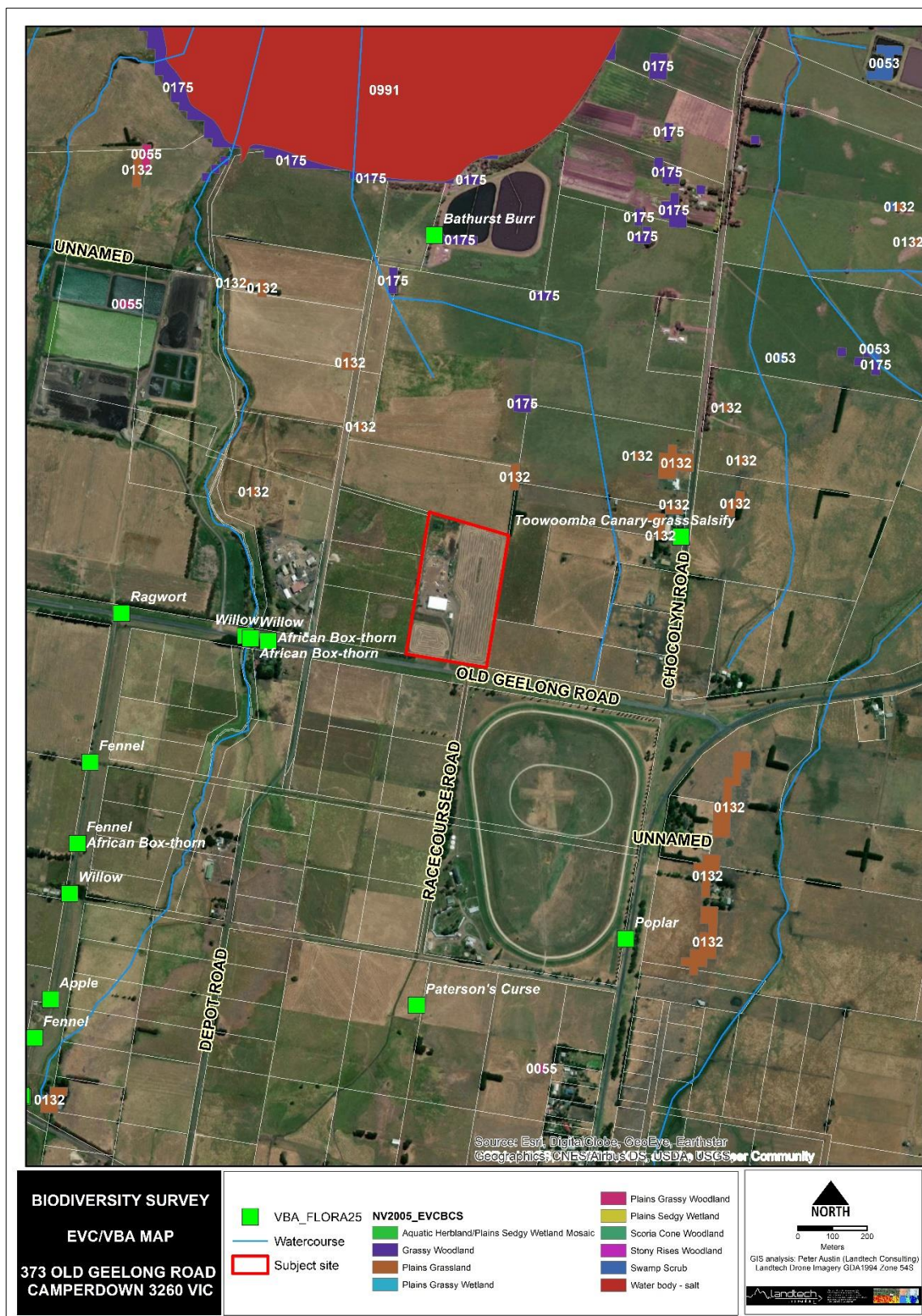
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Appendix 1 – Key site features



Appendix 2 – Mapped EVCs & VBA records





BIODIVERSITY SURVEY

VBA 5km buffer Map

373 OLD GEELONG ROAD
CAMPERDOWN 3260 VIC

■ VBA_FLORA25

□ 5km buffer

□ Subject site



0 500 1,000
Meters

GIS analysis: Peter Austin (Landtech Consulting)
Landtech Drone Imagery GDA1994 Zone 54S



Appendix 3 – Flora/Faunal records (within 5km of study area – VBA)

Taxon ID	Scientific Name	Common Name	FFG Status	Conservation Status	Taxon Origin
500100	Acacia verticillata	Prickly Moses			
502600	Poa labillardierei	Common Tussock-grass			
509000	Rumex spp.	Dock			
500056	Acacia mearnsii	Black Wattle			
500057	Acacia melanoxylon	Blackwood			
500078	Acacia pycnantha	Golden Wattle			
500105	Acaena novae-zelandiae	Bidgee-widgee			
500583	Calocephalus lacteus	Milky Beauty-heads			
500677	Allocasuarina littoralis	Black Sheoak			
500685	Allocasuarina verticillata	Drooping Sheoak			
501133	Einadia nutans	Nodding Saltbush			
501174	Epilobium billardiereanum	Variable Willow-herb			
501189	Eragrostis elongata	Close-headed Love-grass			
501304	Eucalyptus obliqua	Messmate Stringybark			
501307	Eucalyptus ovata	Swamp Gum			
501323	Eucalyptus viminalis	Manna Gum			
501563	Hakea eriantha	Tree Hakea			
501654	Hemarthria uncinata var. uncinata	Mat Grass			
501888	Lawrenzia spicata	Salt Lawrenzia	Endangered	en	
501897	Lepidium aschersonii	Spiny Peppercross	Endangered	VU en	
501956	Leptospermum continentale	Prickly Tea-tree			
502179	Microlaena stipoides var. stipoides	Weeping Grass			
502691	Stuckenia pectinata	Fennel Pondweed			
502777	Pteridium esculentum subsp. esculentum	Austral Bracken			
502844	Pultenaea daphnoides	Large-leaf Bush-pea			
502913	Ranunculus trichophyllus	Water Fennel			
503107	Senecio glomeratus	Annual Fireweed			
503114	Senecio pinnatifolius	Variable Groundsel			
503124	Senecio quadridentatus	Cotton Fireweed			
503387	Themeda triandra	Kangaroo Grass			
504213	Acacia verticillata subsp. verticillata	Prickly Moses			
504463	Eucalyptus viminalis subsp. viminalis	Manna Gum			
504829	Pimelea axiflora subsp. axiflora	Bootlace Bush			
505179	Eucalyptus ovata subsp. ovata	Swamp Gum			
505340	Geranium potentilloides var. potentilloides	Soft Crane's-bill			
505690	Bursaria spinosa	Sweet Bursaria			
506214	Didymodon torquatus	Beard Moss			
507221	Juncus sp. (section Juncotypus)	Leafless Rush			
507311	Oxalis exilis/perennans	Shade/Grassland Wood-sorrel			

507386	Clematis microphylla s.s.	Small-leaved Clematis			
507791	Poa physoclina	Wind-blown Tussock-grass	Endangered	en	
508150	Bromus spp.	Brome			
508222	Chenopodium spp.	Goosefoot			
508397	Epilobium spp.	Willow Herb			
508474	Geranium spp.	Crane's Bill			
508715	Malva spp.	Mallow			
508909	Poa spp.	Tussock Grass			
509122	Taraxacum spp.	Dandelion			
500500	Bromus diandrus	Great Brome		*	Introduced
500014	Acacia baileyana	Cootamundra Wattle		*	Introduced
500164	Aira caryophylla subsp. caryophylla	Silvery Hair-grass		*	Introduced
500183	Alopecurus pratensis	Meadow Fox-tail		*	Introduced
500236	Anthoxanthum odoratum	Sweet Vernal-grass		*	Introduced
500255	Arctotheca calendula	Cape Weed		*	Introduced
500340	Avena barbata	Bearded Oat		*	Introduced
500496	Briza minor	Lesser Quaking-grass		*	Introduced
500498	Bromus catharticus	Prairie Grass		*	Introduced
500620	Carduus pycnocephalus	Slender Thistle		*	Introduced
500621	Carduus tenuiflorus	Winged Slender-thistle		*	Introduced
500759	Chondrilla juncea	Skeleton Weed		*	Introduced
500782	Cirsium vulgare	Spear Thistle		*	Introduced
500803	Conium maculatum	Hemlock		*	Introduced
500812	Erigeron bonariensis	Flaxleaf Fleabane		*	Introduced
500823	Coprosma repens	Mirror Bush		*	Introduced
500827	Lepidium coronopus	Swine-cress		*	Introduced
500867	Crataegus monogyna	Hawthorn		*	Introduced
500888	Hesperocyparis macrocarpa	Monterey Cypress		*	Introduced
500946	Chamaecytisus palmensis	Tree Lucerne		*	Introduced
500948	Dactylis glomerata	Cocksfoot		*	Introduced
501048	Digitaria sanguinalis	Summer Grass		*	Introduced
501123	Echium plantagineum	Paterson's Curse		*	Introduced
501148	Eleusine tristachya	American Crows-foot Grass		*	Introduced
501370	Foeniculum vulgare	Fennel		*	Introduced
501402	Galium aparine	Cleavers		*	Introduced
501421	Genista linifolia	Flax-leaf Broom		*	Introduced
501426	Geranium dissectum	Cut-leaf Crane's-bill		*	Introduced
501599	Hedera helix s.l.	English Ivy		*	Introduced
501690	Hirschfeldia incana	Buchan Weed		*	Introduced
501692	Holcus lanatus	Yorkshire Fog		*	Introduced
501744	Hypericum perforatum subsp. veronense	St John's Wort		*	Introduced
501748	Hypochaeris radicata	Flatweed		*	Introduced
501802	Juncus acutus subsp. acutus	Spiny Rush		*	Introduced

501895	Leontodon saxatilis subsp. saxatilis	Hairy Hawkbit	*	Introduced
502036	Lolium perenne	Perennial Rye-grass	*	Introduced
502078	Lycium ferocissimum	African Box-thorn	*	Introduced
502134	Medicago arabica	Spotted Medic	*	Introduced
502140	Medicago polymorpha	Burr Medic	*	Introduced
502387	Oxalis pes-caprae	Soursob	*	Introduced
502421	Bellardia viscosa	Yellow Bartsia	*	Introduced
502430	Paspalum dilatatum	Paspalum	*	Introduced
502476	Phalaris aquatica	Toowoomba Canary-grass	*	Introduced
502479	Phalaris minor	Lesser Canary-grass	*	Introduced
502511	Helminthotheca echioides	Ox-tongue	*	Introduced
502561	Plantago lanceolata	Ribwort	*	Introduced
502580	Poa annua s.l.	Annual Meadow-grass	*	Introduced
502917	Raphanus raphanistrum	Wild Radish	*	Introduced
502952	Rubus fruticosus spp. agg.	Blackberry	*	Introduced
502966	Acetosella vulgaris	Sheep Sorrel	*	Introduced
502969	Rumex conglomeratus	Clustered Dock	*	Introduced
502970	Rumex crispus	Curled Dock	*	Introduced
502989	Salix babylonica s.l.	Weeping Willow	*	Introduced
503113	Senecio jacobaea	Ragwort	*	Introduced
503156	Silybum marianum	Variegated Thistle	*	Introduced
503161	Sisymbrium officinale	Hedge Mustard	*	Introduced
503183	Solanum nigrum s.l.	Black Nightshade	*	Introduced
503204	Sonchus oleraceus	Common Sow-thistle	*	Introduced
503417	Tragopogon porrifolius subsp. porrifolius	Salsify	*	Introduced
503428	Trifolium fragiferum var. fragiferum	Strawberry Clover	*	Introduced
503435	Trifolium repens var. repens	White Clover	*	Introduced
503471	Ulex europaeus	Gorse	*	Introduced
503495	Verbascum virgatum	Twiggy Mullein	*	Introduced
503518	Vicia sativa	Common Vetch	*	Introduced
503524	Vinca major	Blue Periwinkle	*	Introduced
503544	Vulpia bromoides	Squirrel-tail Fescue	*	Introduced
503586	Xanthium spinosum	Bathurst Burr	*	Introduced
503599	Zantedeschia aethiopica	White Arum-lily	*	Introduced
503638	Agapanthus praecox subsp. orientalis	Agapanthus	*	Introduced
504012	Trifolium resupinatum var. resupinatum	Shaftal Clover	*	Introduced
504923	Sonchus asper subsp. asper	Rough Sow-thistle	*	Introduced
505053	Vicia sativa subsp. nigra	Narrow-leaf Vetch	*	Introduced
505190	Pinus radiata var. radiata	Radiata Pine	*	Introduced
505322	Solanum nigrum s.s.	Black Nightshade	*	Introduced
507288	Melaleuca styphelioides	Prickly Paperbark	*	Introduced
508077	Artemisia spp.	Wormwood	*	Introduced
508148	Brassica spp.	Turnip	*	Introduced

508271	Hordeum spp.	Barley Grass		*	Introduced
508714	Malus spp.	Apple		*	Introduced
508924	Populus spp.	Poplar		*	Introduced
508936	Prunus spp.	Prunus		*	Introduced
509018	Salix spp.	Willow		*	Introduced
509197	Ulmus spp.	Elm		*	Introduced
515429	Hordeum hystrix			*	Introduced
904075	Arctium minus	Small Burdock		*	Introduced
501293	Eucalyptus leucoxylon	Yellow Gum		#	Native but some stands may be alien
502145	Melaleuca armillaris subsp. armillaris	Giant Honey-myrtle	Endangered	en #	Native but some stands may be alien
505346	Geranium sp. 5	Naked Crane's-bill		#	Native but some stands may be alien



Land Capability Assessment
Biodiversity Survey
Drone Survey & Mapping
Bushfire Attack Levels (BAL)
GIS Mapping & Analysis

BIODIVERSITY ASSESSMENT & SURVEY

Biodiversity Survey

Landtech Consulting provides Biodiversity Survey & Ecological Assessment services supported by 30 years field experience as qualified botanist, vegetation and faunal ecologist, which includes 15 years as TAFE environmental management teacher.

A comprehensive Biodiversity Assessment aims to inform management of potential development impacts on vegetation and faunal communities.

Your Council will advise through the Planning Permit process the level of, and type of ecological investigation and reporting required.



Peter Austin has extensive experience and working knowledge of biodiversity legislation, regulation, and planning processes (in Vic, NSW, QLD).

This includes legislation and regulations such as the EPBC, FFG, Wildlife, the Planning & Environment Act (and planning schemes), Native Vegetation Management Framework (Net Gain/Offsets), and the Environment Protection Act.



Landtech provides the following services:

- Ecological (Flora/Fauna) survey and reporting
- Biodiversity assessment
- Targeted EPBC referral survey
- Habitat Hectare assessments
- Significance assessment
- Vegetation & Weed Mapping
- Planning & Approvals advice
- GIS analysis and high-resolution mapping
- Drone-based habitat/vegetation condition



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Landtech has completed the following recent projects such as:

- Post-fire UAV vegetation survey and mapping for Lake Cobrico Peat Fire (DELWP);
- Maam Reserve Fauna Survey Thunder Point/Levy's Coastal Reserve Fauna Survey/Report (for Warrnambool City Council);
- Growing Grass Frog Survey; Arberline Growth Corridor for Warrnambool City Council);
- SFM Sustainable Forest Management (Tasmania) (25 High Conservation Value Assessments, Ecological Consultation);
- Warrnambool Coastcare/Landcare (Queens Road Rehabilitation Report Revegetation Plan
- Basalt to Bay Landcare Network (Woolsthorpe NCR Remote Camera / Biodiversity Survey & Report);
- Glenelg-Hopkins, Condah Aboriginal Corporation (Remote Camera, Hair ID/ Analysis Training);
- Framlingham Aboriginal Trust (Biodiversity Management Services);
- Tozer Reserve Committee (Biodiversity Survey - Teacher Training Workshop)
- Horsham Rural City Council (Post-flood Weed Mapping)
- Basalt to Bay Landcare Network (St. Helens NR Biodiversity Survey)
- Warrnambool City Council (Russell's Creek Weed Mapping Project)
- South-West Institute of TAFE (Teacher—Manage Fauna - AQF5 Diploma CLM).