Biodiversity Assessment and Vegetation Management Plan for 110 Gibbons Road, Lara VIC 3212

March 2026

Amended

Document version: draft v.1.3 (10.04.2026)

Summary

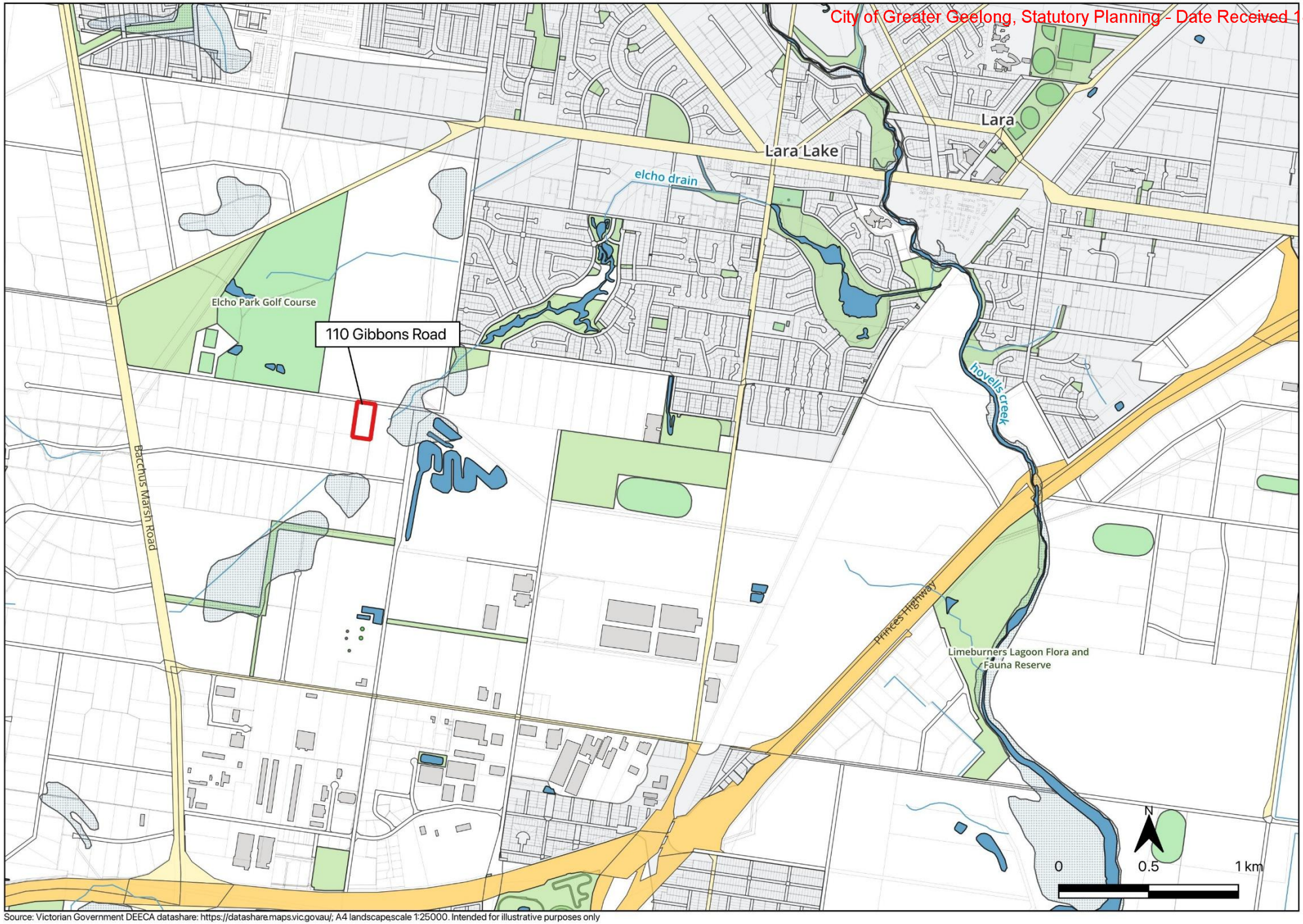
Site Assessment	26.06.2025 & 19.11.2025
Scope	A biodiversity assessment was undertaken for 110 Gibbons Road, Lara VIC 3212, where it is proposed that a place of worship and associated carpark and landscape works be developed. This report has been amended to provide further information in regards to: the positioning of a proposed secondary waste water treatment field, the location of noxious weeds and (re)assessing the remnant grassland within the site and road reserve along Gibbons Road under favourable climactic conditions. A land and vegetation management plan for the site has been incorporated into this document in accordance with Greater Geelong Environmental Significance Overlay – Schedule 4 application requirements.
Site Description	
Features (size, topography, waterbodies and other features of note)	The site is a rectangular residential lot approx. 2.03 ha in size. Topographically the site is flat, the site contains no waterbodies. Elchols drain is located approx. 150m to the east of the site, this area is subject to inundation. The site features an existing single-storey residence, accessway, detached shed/carport and garden shed. The site features an undeveloped paddock area within the southern portion and north-eastern portions of the site.
Municipality & Catchment Management Authority	Greater Geelong and Corangamite CMA
Zoning	Rural Living (RZ)
Overlays	Environmental Significance Overlay – Schedule 4 (ESO4)
Ecological Features & Outcomes	
Bioregion	Victorian Volcanic Plain
Ecological Vegetation Class EVC	EVC 132_63 Low rainfall Plains Grassland; EVC 125 Plains Grassy Wetland was determined to be present within the northern paddock.
Listed FFG Act Species	*Corymbia maculata* was recorded, however, this species is a planted ornamental.
Listed EPBC Act Matters of National Environmental Significance	None recorded
CaLP Act 1998	8 declared noxious weeds were recorded: *Cirsium vulgare* Spear thistle, *Cynara cardunculus* Artichoke thistle, *Lycium ferocissimum* African Boxthorn, *Marrubium vulgare* Horehound, *Nassella trichotoma* Serrated Tussock, *Nassella neesiana* Chilean Needlegrass & *Xanthium spinosum* Bathurst Burr. *Echium plantagineum* Paterson's Curse was also observed within neighbouring lands.
Results	
Assessment Pathway	Intermediate
Location Category	2
No. large trees recorded	0
Vegetation Description	The study site is heavily modified and degraded, mostly dominated by environmental weeds and planted vegetation. Seven (7) degraded and disturbed remnant areas or patches of perennial groundcover were recorded; totalling 0.584 ha in 19.11.2025 assessment, a marked increase from 0.203 in 26.06.25'. The increase was observed under more favourable climactic condition (spring), further there appears to be growth of both exotics and indigenous species (grasses) due to an absence of land maintenance (mowing) which made species more readily observable.

	Nonetheless, the patches remain quite weedy and floristically lacked diversity (and life form categories) consisting predominantly of *Rytidosperma* spp., and chenopods *Atriplex semibaccata* Berry Saltbush, *Einadia nutans* Nodding Saltbush, *Enchylaena tomentosa* var tomentosa Ruby Saltbush, *Mairena brevifolia* Short-leaf Bluebush & *Maireana decalvans* Black Cotton Bush.
Extent of proposed (and past) removal	0.025 ha
General Offset Amount	0.008 general habitat units
Offset type	Third-party
Impacted Vegetation	The proposed development of the secondary effluent field and concrete crossover would result in the removal and/or damage of EVC 132_63 consisting predominantly of *Rytidosperma* spp. Wallaby grass.

Contents

Attachments:

Native Vegetation Removal Report (NVRR ID: 327_20260401_V6L)
Report of Available Native Vegetation Credits (Report ID: 34920)



Source: Victorian Government DEECA datashare: https://datashare.maps.vic.gov.au/; A4 landscape scale 1:25000. Intended for illustrative purposes only

Figure 1 map. Site locality

GD DESIGN

PO BOX 7320
POINT COOK VIC 3030
M. 1300 GDDESIGN
W.www.gddc.com.au

REVISION:

DATE	DESCRIPTION	DONE BY
09.08.2024	TP SET	AJ
19.08.2024	TP CHANGES	AJ
03.09.2025	BICYCLE RACK	AJ
22.10.2025	RFI	AJ

CLIENT SIGN OFF:
I / WE CONFIRM THAT THESE DRAWINGS ACCORD WITH OUR REQUIREMENTS AND AUTHORISE THEIR USE FOR NEXT STAGE PURPOSES.

SIGNED.....DATE.....

SIGNED.....DATE.....

HOUSE:	FACADE:	DATE:	21.03.2026
CLIENT NAME:		SCALE:	1:300 @ A1
SITE ADDRESS:	110 GIBBONS ROAD, LARA	DRAWN:	AJ
DRAWING:	**SITE LAYOUT PLAN**	CHECKED:	GD
		JOB NO:	TP240048

DRG # **02**

Figure 2 Site layout plan

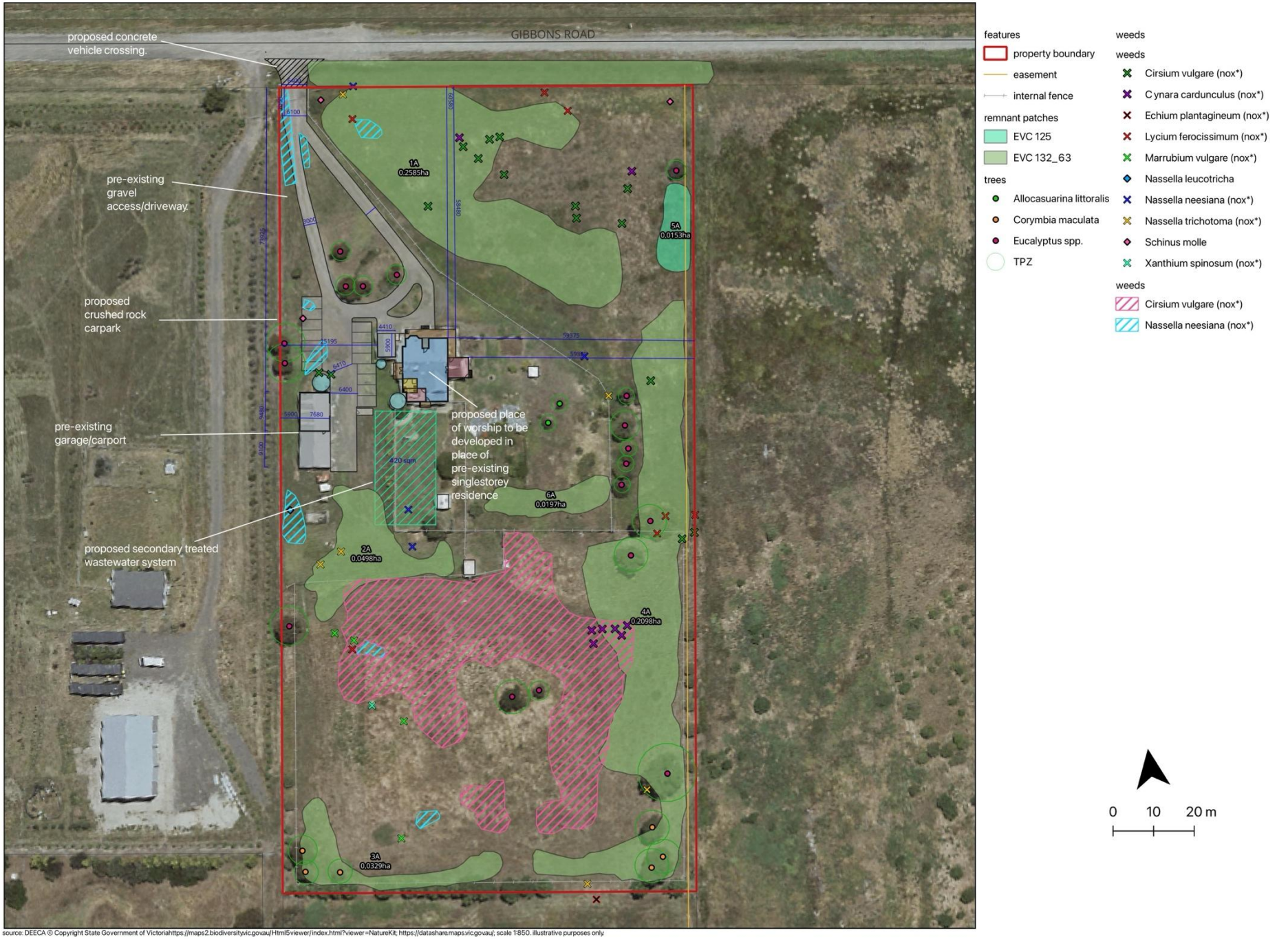


Figure 3 site layout, remnant EVC 132_63, EVC 125 and noxious weeds recorded.

1. Introduction

1.1. Background and Scope

This report has been revised to further clarify and account for impacts to native vegetation, as a result of the proposed development, particularly the proposed concrete crossover.

Further, the threatened species likelihood of occurrence assessment has been updated to provide a more in-depth discussion/rationale as to the site's habitat and the potential for threatened species to inhabit the site particularly as it relates to threatened fauna species such as *Delma impar* Striped Legless Lizard, *Pseudomoia pagenstecheri* Tussock Skink and *Synemon plana* Golden Sun Moth.

Amendments have also been made to the mapping, where the mapped patch of native vegetation along Gibbons Road reserve has been integrated into the patch of native vegetation within the interior of the site.[1] Site plans have also been updated to highlight changes in the site layout and native vegetation removal. Additional photographs of the site have also been included.

1.1.1. Biodiversity Assessment

A biodiversity assessment was requested for 110 Gibbons Road, Lara (henceforth the 'study site' or 'site). Where it is proposed that the pre-existing single-storey residence be developed into a Place of Worship along with the associated development of a crushed rock carpark, secondary waste water treatment system (420m^2) or envelope and concrete vehicle crossing (please refer to figure 2).

Pre-existing features such as the gravel driveway within the interior (approximately 3 metres in width), carports and interior fence-lines are to be retained and repaired. The proposed place of worship is to assume the location of existing single-storey residence.

As per Greater Geelong planning ordinance the site is affected by the *Environmental Significance Overlay – Schedule 4 (ESO4) Grasslands within the Werribbee Plains Hinterland*:

> The areas included within this overlay form part of the Victorian Volcanic Plain Bioregion. The native vegetation of the Victorian Volcanic Plain bioregion is one of the most depleted in the State. Only 4.5 per cent of the State still has a cover of native vegetation, and less than 1.2 per cent is in formal reserves. The Werribee Plains hinterland consists of undulating volcanic plains, a scoria cone and steep gorges formed by the Little and Werribee Rivers. Many elements of the flora reflect the low rainfall of this area, which formerly supported extensive areas of Plains Grassland. Although the native vegetation has been extensively cleared and altered for agricultural, urban and industrial use, there are some large areas of predominantly native vegetation as well as some high-quality wetlands, which are important for many threatened fauna species...

Due to the significance of the Victorian Volcanic Plain (VVP) it is imperative that efforts are made to prevent the further decline in extent and quality of indigenous vegetation and indigenous fauna habitat associated with the VVP.

Consequently, a biodiversity assessment was undertaken in accordance with planning clause 52.17 and the Victorian Government (DELWP [DEECA] 2017) Guidelines for the Removal, Destruction and Lopping of Native Vegetation (or the 'Guidelines') and associated planning and legislative instruments, to: (i) determine the extent and quality of indigenous vegetation within the

[1] This is a correction to previous mapping where the road reserve and interior patches were separated into two habitat zones, they have been incorporated into one (patch 1-A) in accordance with correct mapping procedures. This alteration does not alter the outcome of the results or prior findings.

site; (ii) assess whether the site provides habitat for rare, threatened or endangered flora and fauna and; (iii) assess any implications the proposed development may have on ecological values within the study site and broader environs.

1.1.2. Vegetation Management Plan

In addition, a **vegetation management plan** (VMP) has been incorporated into this report to address the following application requirements of ESO4. As per ESO4 application requirements a vegetation and land management plan must address the following, as appropriate:

- Any proposals for revegetation, including proposed species, and ground stabilisation.
- How any vegetation removal will be offset (an offset plan), in accordance with Victoria's Native Vegetation Management: A Framework For Action (Department of Natural Resources and Environment 2002).
- Weed management, including species to be targeted and proposed management techniques.
- Pest animal management, including species to be targeted and proposed management techniques

Please refer to **section 6** of this report for the vegetation management plan.

1.2. Site Description

The study site is a rectangular lot approximately 2.03 ha in size, situated along Gibbons Road approx. 3.5km west (as the crow flies) of Princes Highway and 3.8km south-west of Lara town-centre.

The site features a pre-existing single-storey residence, a gravel driveway/accessway, detached garage/shed, a landscaped front-yard and backyard area around the dwelling; and two fenced-off paddock areas located to the south and to the north-east/east of the property. An additional fenced off courtyard area resides directly behind the existing residence (please refer to figure 12).

Topographically the site is flat and contains no waterbodies.

Elchol Drain is located approximately 150m to east of the site and what appears to be a retarding basin is located approximately 350m to the east, this area to the east of the site is subject to periodic seasonal inundation.

The site is approximately 2.6km to south-west of Lara Lake Reserve, 4.8km to the west of Port Phillip Bay (Limeburners Bay being the closest point).

1.2.1. bioregion and ecological vegetation class

The historical (pre-1750) Ecological Vegetation Class (EVC)[2] mapped on the property is **EVC 132 Plains Grassland**. EVC 132 has a bioregional conservation status (BcS) of endangered.

The site was assessed against EVC 132_63 Low Rainfall Plains Grassland due to the presence of chenopods (prostrate shrubs life form), which is absent within Heavier Soils Plains Grassland benchmarks.

EVC 132_63 is described as a 'treeless vegetation mostly <1m tall dominated by largely graminoid and herb life forms. Occupies cracking basalt soils prone to seasonal waterlogging in areas receiving <500 mm annual rainfall' (DSE 2004).

EVC 125 Plains Grassy Wetland (BcS of endangered) was observed within the northern paddock moving towards the eastern fence line (this observation is further elaborated upon in the results and discussion section of this report).

EVC 125 'is usually treeless, but in some instances can include sparse River Red Gum *Eucalyptus camaldulensis* or Swamp Gum *Eucalyptus ovata*. A sparse shrub component may also be present. The characteristic ground cover is dominated by grasses and small sedges and herbs. The vegetation is typically species-rich on the outer verges but is usually species-poor in the wetter central areas' (DSE 2004).

Figure 4 map. pre-1750 mapped extant of EVC 132 Plains Grassland as indicated by pink. Navy indicates the extent of EVC 647 Plains Sedgy Wetland.

[2] EVCs are the standard unit or benchmarks for classifying vegetation typed in Victoria. EVCs consist of ecological characteristics, floristics and lifeforms. 'The combination of EVC and bioregion is used to determine the bioregional conservation status of (BCS) of an EVC. This is a measure of the current extent and quality of each EVC, when compared to its original (pre-1750) extent and condition' (DELWP 2021). EVCs are determined by the Victorian Department of Energy, Environment and Climate Action [DEECA] and are used to assess the vegetation quality of the EVC at site scale in comparison to the 'benchmark' condition.

Figures 5 to 8 (taken 26.06.2025). ***Top left*** *facing south-west, from north-east/east paddock area overlooking residence;* ***top right****, facing NNW, back paddock area to the south of residence.* ***Bottom left****, facing north-west, within backyard/garden area to the south-east of the residence;* ***bottom right****, facing south, within backyard/garden area looking at garden shed.*

Figures 9 to 12 (taken 19.11.2025). ***Top left*** *facing south-west, from north-east/east paddock area overlooking residence and* ***patch 1-A****;* ***top right****, facing NNW, back paddock area to the south of residence.* ***Bottom left****, facing north-west (****patch 2-A****, partially impacted by proposed development), within backyard/garden area to the south-east of the residence, pre-existing garage/shed in background;* ***bottom right****, facing north, within backyard/garden area looking at residence (proposed location of secondary waste water envelope).*

2. Planning & Legislation

Local Government Area: Greater Geelong
Catchment Management Authority (CMA): Corangamite CMA

Zoning

Rural Living Zone (RLZ)
Schedule to the Rural Living Zone (RLZ)

Overlays

Environmental Significance Overlay (ESO)
Environmental Significance Overlay – Schedule 4 (ESO4)

Schedule 4 to Clause 42.01 Environmental Significance Overlay: Grasslands within the Werribee Plains Hinterland

Statement of environmental significance

The areas included within this overlay form part of the Victorian Volcanic Plain Bioregion. The native vegetation of the Victorian Volcanic Plain bioregion is one of the most depleted in the State. Only 4.5 per cent of the State still has a cover of native vegetation, and less than 1.2 per cent is in formal reserves.

The Werribee Plains hinterland consists of undulating volcanic plains, a scoria cone and steep gorges formed by the Little and Werribee Rivers. Many elements of the flora reflect the low rainfall of this area, which formerly supported extensive areas of Plains Grassland. Although the native vegetation has been extensively cleared and altered for agricultural, urban and industrial use, there are some large areas of predominantly native vegetation as well as some high-quality wetlands, which are important for many threatened fauna species. There are a number of communities and species in this area that do not occur elsewhere in the bioregion. Important species in this area include, for flora, the Button Wrinklewort, Large-fruit Fireweed, Small Golden Moths, Small Milkwort, Small Scurf-pea, Spiny Rice-flower, and the only remaining wild population of Sunshine Diuris; and, for fauna, the Grassland Earless Dragon, Orange-bellied Parrot, Plains-wanderer, Red-chested Button-quail, Striped Legless Lizard and Swift Parrot.

The landscape consists of undulating volcanic plains with red duplex soils. The Werribee and Little Rivers have incised steep and sometimes spectacular gorges into the basalt plain. The scoria cone of Mount Anakie is a significant landscape feature. A band of Tertiary sediments is located along the western edge of this area.

It has a unique and relatively early history of European settlement due partly to the ease of access of the open grassland plains. Because of this the landscape has been radically altered.

The dry plains of the Werribee plains hinterland formerly supported extensive areas of Plains Grassland. These grasslands integrated with Riverina Plains Grassy Woodland (dominated by Grey Box, Buloke and Drooping Sheoak) to the west and south of Melton, and Plains Grassy Woodland in and around the You Yangs and east of the Brisbane Ranges. Riparian areas supported Floodplain Riparian Woodland and Creekline Grassy Woodland with Escarpment Shrubland on steeper escarpments. A variety of wetland communities formerly occurred throughout including Plains Grassy Wetland, Plains Sedgy Wetland, Canegrass Wetland, Lignum Wetland and Aquatic Herbfield. Scoria Cone Woodland was associated with Mount Anakie and other volcanoes. Areas of Coastal Saltmarsh were found along the shores of Port Phillip Bay. Many elements of the flora reflect the low rainfall including White Cypress-pine and Fragrant Saltbush found along the steep escarpments of the Werribee River, and Woolly Buttons at Little River. The native vegetation has been extensively

cleared and altered for agriculture and (increasingly) for urban and industrial use. However, there are large areas of predominantly native vegetation including woodlands, wetlands and grasslands.

The major issue for biodiversity conservation in the Werribee plains hinterland is loss of native vegetation and habitat through clearing for urban development, cropping and infrastructure. The compounding effects of such clearing are the loss of floristic and habitat diversity and increasing fragmentation of habitats and isolation of remnants. Similarly, changes to management of remnant vegetation and increased urbanisation contribute to the proliferation of weeds and feral animals. Degradation of drainage lines and riparian vegetation through erosion, pollution and uncontrolled grazing, depletion of wetlands and changes to the hydrology of wetlands and streams are also serious threats to biodiversity in the region. However, a range of conservation assets are present and significant opportunities do exist to establish relatively large areas and networks of areas that are managed sympathetically for conservation. Such networks could include a range of vegetation types and land tenures and relatively large and intact areas of open grassland, grassy woodland and wetland communities.

Environmental objective to be achieved

To prevent a decline in the extent and quality of native vegetation and native fauna habitat of the Victorian Volcanic Plain.

To enhance the environmental and landscape values of the area.

To avoid the fragmentation of contiguous areas of native vegetation or native fauna habitat.

To ensure that any use, development or management of the land is compatible with the long-term conservation, maintenance and enhancement of the grasslands.

To avoid the destruction of habitat for native fauna resulting from the modification of land form and disturbance of surface soils and rocks.

To enable areas of environmental significance, due to their native vegetation or habitat values, to be identified.

Permit requirement

A permit is not required to:

- Construct a building or construct or carry out works or to remove, destroy or lop vegetation (including dead vegetation) in accordance with an agreement under Section 69 of the Conservation, Forests and Lands Act 1987.
- Construct or carry out works or to remove, destroy or lop vegetation (including dead vegetation) by or on behalf of a public authority or public land manager involving revegetation, or preparatory works associated with revegetation.
- Construct a building or construct or carry out works for an extension or alteration of an existing dwelling (other than the erection of an outbuilding normal to a dwelling) provided that the gross floor area of that extension or alteration does not exceed 50 square metres and the extension or alteration is more than 5 metres from any existing native vegetation.
- Construct a building or construct or carry out works within an Industrial 1 Zone, Industrial 2 Zone or Low Density Residential Zone.
- Construct a building or construct or carry out works within the Special Use Zone, Schedule 11 (Avalon Airport) and Special Use Zone 12 (Lara Energetic Materials Manufacturing Plant).
- Remove, destroy or lop any vegetation, including dead vegetation:
    - Where the vegetation is non-native.
    - Where the vegetation is a plant proclaimed as a weed under the Catchment and Land Protection Act 1994.

- In order to enable the use and maintenance of a building constructed or approved by a planning permit granted under this planning scheme or by a building permit granted under the Building Act 1993, before 6 August 2010. This exemption does not apply to vegetation located more than 10 metres from a building.
- Where the vegetation has been planted or grown for aesthetic or amenity purposes, including agroforestry (the simultaneous and substantial production of forest and other agricultural products from the same land unit), shelter belts, woodlots, street trees, gardens or the like. This exemption does not apply if public funding was provided to assist in planting or managing the vegetation for conservation purposes and the terms of the funding did not anticipate removal or harvesting of the vegetation.
- For the purpose of maintenance, where no more than one third of the foliage is removed from any individual plant. This exemption does not apply to the pruning or lopping of the trunk of a tree or shrub or to native vegetation within a road or railway reservation.
- To mow or slash grass in a lawn, garden or other planted area for maintenance only.
- To maintain an existing fence where the removal of vegetation is within a combined maximum width of 4 metres either side of the fence.

Application requirements

An application must be accompanied by:

- A description of any proposed disturbance of surface soil or rocks associated with the proposal.
- The total extent of vegetation on the property and the extent of native vegetation proposed to be removed, lopped or destroyed.
- A description of the steps that have been taken to avoid and minimise the removal of native vegetation including the practicality of alternative options which do not require removal of the native vegetation.

An application must also be accompanied by, as appropriate:

- A flora and fauna assessment of the land prepared by a suitably qualified and experienced person to the satisfaction of the responsible authority. The assessment must include:
  - A flora and fauna survey.
  - A habitat hectare assessment.
  - Identification of the vegetation and habitat significance of the property.
  - A description of the effect of the proposed development in relation to other areas of native vegetation or native fauna habitat, including any proposed conservation reserves, streams and waterways.
- A land and environmental management plan prepared by a suitably qualified person identifying, as appropriate:
  - Any proposals for revegetation, including proposed species, and ground stabilisation.
  - How any vegetation removal will be offset (an offset plan), in accordance with Victoria's Native Vegetation Management: A Framework For Action (Department of Natural Resources and Environment 2002).
  - Weed management, including species to be targeted and proposed management techniques.
  - Pest animal management, including species to be targeted and proposed management techniques.

If in the opinion of the responsible authority a flora and fauna assessment of the land or a land and environmental management plan is not relevant to the assessment of an application, the responsible authority may waive or reduce the requirement.

Planning Clause 52.17 Native Vegetation

Planning Clause 52.17 seeks to protect and conserve native Vegetation, by ensuring that there is no net loss to biodiversity as a result of the removal, destruction or lopping of native vegetation. This is achieved through the application of the DELWP [DEECA] 2017 *Guidelines*. Under Clause 52.17 there is the need to:

1. Avoid the removal, destruction or lopping of native vegetation.

2. Minimise impacts from the removal, destruction or lopping of native vegetation that cannot be avoided.

3. Provide an offset to compensate for the biodiversity impact if a permit is granted to remove, destroy or lop native vegetation.

To manage the removal, destruction or lopping of native vegetation to minimise land and water degradation.

In certain discrete scenarios, under 52.17-7 some activities that lead to the destruction, removal and/or lopping of vegetation may be exempt from requiring a permit.

For further information regarding exemptions please refer to Clause 52.17-7 and DELWP (DEECA) 2017. *Exemptions from requiring a planning permit to remove, destroy or lop native vegetation – Guidance.*

Environment Protection and Biodiversity Conservation Act 1999

The Commonwealth Environment Protection and Biodiversity Conservation Act (1999) (EPBC Act) applies to sites where proposed developments or projects may have a significant impact on 'matters of national environmental significance' (MNES). There are currently seven MNES:

- World Heritage Properties
- National Heritage Place
- nationally listed threatened species and ecological communities
- listed migratory species
- Ramsar wetlands of international importance
- Commonwealth marine areas
- nuclear actions (including uranium mining).

Under the EPBC Act (1999), a proponent must refer proposed actions that may have a significant impact on matters on national environmental significance to the Australian Government Environment Minister (or delegate).

No MNES occur at the site. No action required.

The Flora and Fauna Guarantee Act 1988

survival of all Victorian species of flora and fauna and all Victorian communities of plants and animals. The FFG Act provides a number of ways to assist in achieving its objectives, including:

- listing of threatened taxa, communities of flora or fauna and potentially threatening processes, and the creation of Action Statements and Management Plans for all listed taxa communities of flora or fauna and processes

- declaration of a Critical Habitat if the habitat is critical for the survival of a species or a

community of flora or fauna, if listed as Critical Habitat, the Minister for Environment may then make a Habitat Conservation Order (HCO) to conserve and manage the Critical Habitat.

• protection of flora and fauna through listing offences such as penalties relating to not following an HCO and taking, trading in, keeping, moving or processing protected flora without a licence (NB: this does not apply to taking protected flora from private land (other than land which is part of the critical habitat for the flora) except for taking tree-ferns, grass, trees or sphagnum moss for the purpose of sale).[3]

The Department of Energy, Environment and Climate Action (DEECA) is the referral authority for matters under the FFG Act.

It should be noted that the FFG Act has been amended (FFG Amendment Act 2019), which came into effect on 1 June 2020.

FFG Act typically pertains to public land unless otherwise specified.[4]

Environment and Planning Act 1987

The Act sets out procedures for preparing and amending the Victoria Planning Provisions and planning schemes. It is an enabling legislation and does not specifically define the scope of, or how planning should be done in detailed rules. The functions of the Act are to

- Set broad objectives for planning in Victoria.
- Set the main rules and principles for how the Victorian planning system works.
- Set up the key planning procedures and legal instruments in the Victorian planning system
- Define the roles of responsibilities of the Minister, councils, government departments, the community and other stakeholders in the planning system.

A planning permit is required for the removal, lopping and destruction of native vegetation.

Catchment & Land Protection Act 1994

Under section 20 of the CaLP Act, all landowners, including the Crown, public authorities and licensees of Crown lands, must, in relation to their land, take all reasonable steps to (Agriculture Victoria):

• avoid causing or contributing to land degradation which causes or may cause damage to land of another landowner;
• eradicate regionally prohibited weeds;
• prevent the growth and spread of regionally controlled weeds on their land;
• prevent the spread of, and as far as possible, eradicate established pest animals.

[3] Protected flora are native plants that have legal protection under the FFG Act, where it is an offense to take (meaning to kill, injure, disturb or collect), trade, keep, move or process protected flora. Broadly protected plants are species (subspecies or varieties) that are 1) listed under the FFG Act; 2) taxa belonging to a FFG threatened community; and 3) are declared protected by the Governor in Council. Declared Protected Flora are further categorised into 1) Restricted Use Protected Flora, where permits may be required for the taking of declared species for commercial or personal use; and 2) Generally Protected Flora, where a permit may be required to take generally protected species for any reasons (i.e., development, infrastructure, maintenance works, commercial or personal use), further all species listed on the FFG Threatened List are considered to be generally protected.
[4] Relevant authorities must consider impacts to biodiversity in decision-making processes.

Under the Catchment and Land Protection Act 1994 (CaLP Act) it is the *responsibility of the landowner* to control and eradicate regionally controlled weeds. The CaLP Act defines 4 categories of noxious weeds:

State Prohibited: weeds that do not occur in Victoria but pose a significant threat to the community and environs; or weeds that are present in Victoria yet pose a significant threat and are expected to be eradicated. The Victorian Government bears responsibility for their eradication, however under the CaLP Act section 70(1) it is expected that the landowner prevents their spread.

Regionally Prohibited: weeds that are not widely distributed in a region but are invasive and have the potential to spread. Landowners must take reasonable steps to control or eradicate regionally prohibited weeds.

Regionally Controlled: Invasive weeds that are usually widespread in a region. Landowners must control or eradicate regionally controlled weeds to prevent their spreading and growth.

Restricted Weeds: Weeds that pose a significant and unacceptable risk of spreading within that state and are a threat to other states and territories.

It is strongly recommended that noxious species be eradicated and controlled. Weed control and hygiene measures should be observed when removing weeds to prevent their spread.

3. Methodology

Desktop Research

Desktop research was undertaken prior to the site assessment to gain an understanding of the environmental values (ecological communities, flora and fauna records) within the site and broader environs.

The following sites or databases were consulted:

- DEECAs Victorian Biodiversity Atlas
- DEECA Naturekit mapping tool
- DCCEEW Protected Matter Search Tool
- DTP Greater Geelong Planning Scheme
- DEECA Vicflora – Flora of Victoria
- EUCLID – Eucalypts of Australia 4th edition.
- Viridians Biological Database

Field Survey

Site was assessed on the 26th of June 2025. Site was surveyed again on the 19th of November 2025.

The site was traversed to gain an understanding of the extent and quality of the indigenous vegetation within the site.

The vegetation assessment was carried out referring to the *Vegetation Quality Assessment Manual – guidelines for applying the habitat hectares scoring method* (Version 1.3 DSE, DELWP 2004 a).

Other relevant documents include:

- DEECA 2025 (v.1.2). Assessor's handbook. Applications to remove, destroy or lop native vegetation.
- DELWP 2017. Biodiversity Information Explanatory Document: measuring value when removing or offsetting native vegetation.
- DEECA 2025 (v.1.1). Guidelines for the Removal, destruction or lopping of native vegetation.
- DEECA 2023 (v.1.1.) Native vegetation removal regulations, Applicant's Guide.
- DELWP 2017. Exemptions from requiring a planning permit to remove, destroy or lop native vegetation. Guidance.

The identification of exotic or introduced flora was considered secondary, thus, not all exotics and/or planted ornamentals have been formerly identified.

Photographs of the site were taken. Samples of flora were taken for identification purposes.

Indigenous native vegetation present is identified on-site and through the taking of photographs, samples, and using relevant keys, texts and the *Flora of Victoria*.

Under Clause 73.01 Native Vegetation is defined as 'plants indigenous to Victoria, including trees, shrubs, herbs, and grasses.' For the purposes of the assessment, indigenous is defined as species that are indigenous to EVC 132 and Greater Geelong region.

'The Guidelines further classify native vegetation as a patch [5]or a scattered tree[6]. These classifications assist in measuring the value of native vegetation and assessing its removal' (DELWP 2017, p. 6).

Native vegetation patch conditions are assessed using the habitat hectares method (DSE 2004; Parkes et al. 2003). The components of a patch, i.e., the tree canopy, the presence of large tree(s), [7]groundcover and understorey are assessed against the relevant EVC benchmarks. This data is uploaded to DEECA native vegetation regulation map to generate vegetation removal scenarios – in this instance it was determined that the proposed development would not result in the removal or loss of indigenous flora.

The locations of native vegetation for Victoria are as follows (location categories – DELWP 2017 a):

Extent of native vegetation	Location category		
	Location 1	Location 2	Location 3
Less than 0.5 hectares and not including any large trees	Basic	Intermediate	Detailed
Less than 0.5 hectares and including one or more large trees	Intermediate	Intermediate	Detailed
0.5 hectares or more	Detailed	Detailed	Detailed

Location 1 – includes all remaining locations in Victoria. These are low-risk areas of native vegetation loss having an impact upon the habitat for rare or threatened species (DELWP 2017 a).

Location 2 – includes locations that are mapped as endangered EVCs and or sensitive wetlands and coastal areas are not included in Location 3.

Location 3 – includes locations where the removal of less than 0.5 hectares of native vegetation could have a significant impact on habitat for a rare or threatened species.

Mapping

A handheld GPS was used, where features of interest (i.e., flora, patches of vegetation, scattered trees) were recorded.

Noxious weeds (that is declared noxious weeds under the CaLP Act 1994) were marked with a handheld GPS, environmental weeds such as *Aizoon pubescens* Galenia, *Lolium* spp. Rye-grass were not specifically demarcated due to the extensive presence throughout the site.

This data was then uploaded onto a GIS programme to create shapefiles illustrating patches of vegetation etc.

Mapping has been updated to accord with extent and of vegetation as of 19.11.25'.

[5] A patch is defined as an area of vegetation where at least 25% of the perennial understorey plant cover is native, or any area with three or more native canopy trees where the driplines of each tree touches the dripline of at least one other tree, forming a continuous canopy (Ibid., 6).
[6] A scattered tree is a native canopy tree that does not form a part of a patch (Ibid.).
[7] A large tree can be either a large scattered tree or a large tree within a patch. Large scattered canopy trees (or the removal of a canopy tree from a patch) are assigned an area value of 0.0707 and smaller indigenous canopy trees have an area value of 0.0314 ha per tree. EVC 132 is considered a treeless, the default large tree dbh is 40cm.

3.1. Fauna

Incidental observations of fauna were made throughout the vegetation assessment, where species heard and/or sighted were recorded. Scats, trees bearing-hollows etc., were also noted.

Threatened species records were generated using the Victorian Biodiversity Atlas (VBA), which provides species lists within a 5 km radius of the study site. This list is cross-referenced with Flora and Fauna Guarantee Act (1988) lists (Threatened Species List March 2025) and EPBC Act (1999) threatened species status.

Sources such as Birdlife Australia, Museums Victoria, Flora of Victoria, FrogID, Frogs of Australia, Species Profile and Threat Database (SPRAT) and State Wide Integrated Flora and Fauna Team (SWIFFT) are referred to, and with this information it is determined whether the site provides suitable habitat for any threatened native fauna species.

3.2. Limitations

Limitations were GPS drift and the estimating (subjective) process of the VQA (Habitat Hectares) methodology (DSE / DELWP 2004).

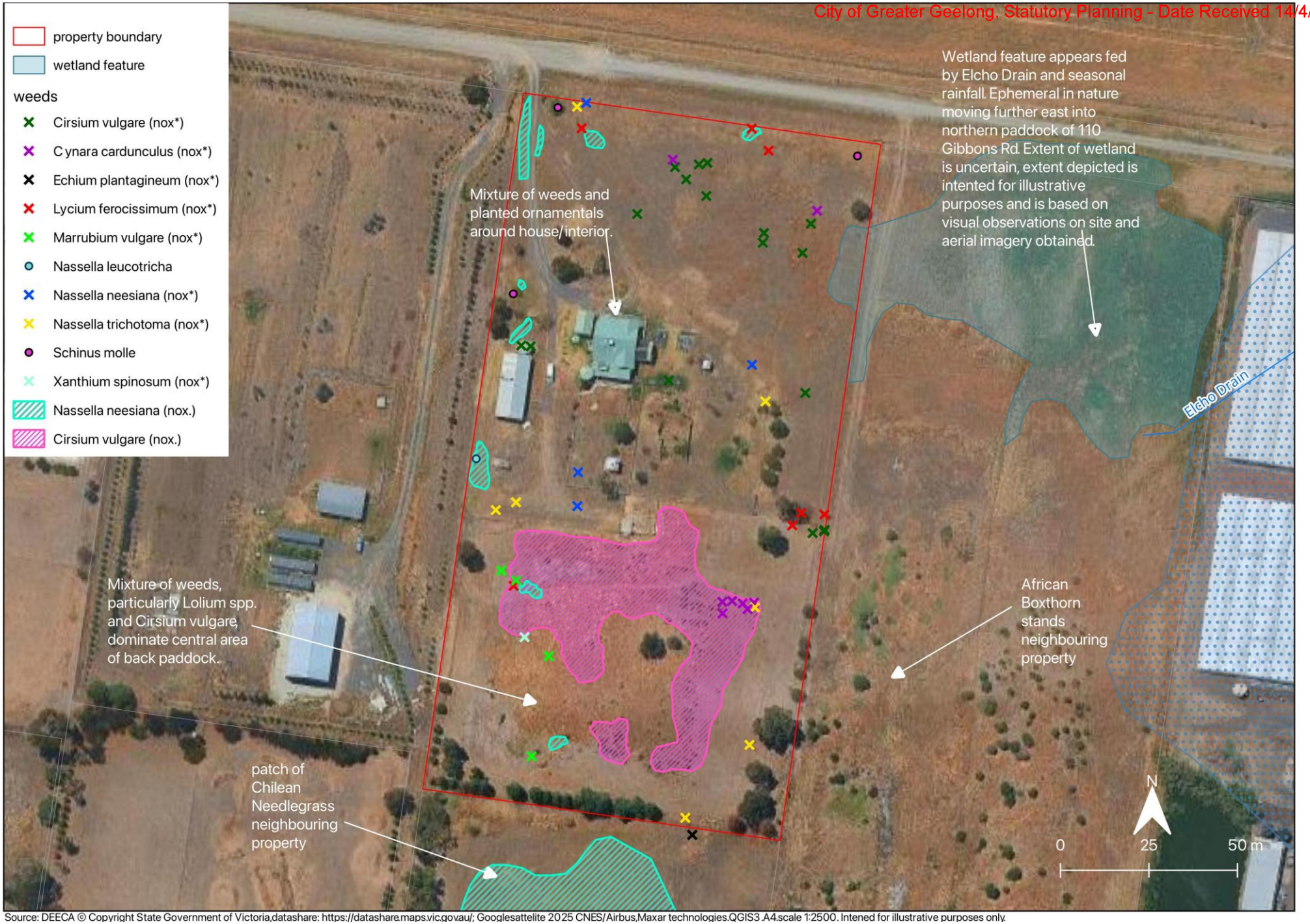
Mapping efforts are subject to the accuracy of the handheld GPS units and limitations of aerial/satellite imagery. Whilst efforts have been made to correct for factors such as GPS drift, the results may not be suitable for precision surveying/technical design purposes.

It should also be noted that surveying endeavours may be subject to change, depending on climatic, seasonal conditions and variation; this is of particular note in regards to native grassland ecosystems which are dynamic.

Due to the seasonal growth cycles and cryptic nature of some species, flora surveys are often unable to detect *all* species that may inhabit the site. In addition, species may be undetected due to human error.

The survey was undertaken in optimal conditions (November/spring) where many species are flowering or within a growth stage.

A visual assessment (peering over the fence) of vegetation was undertaken of neighbouring properties to the east, south and west of the site, consequently, observations of contiguous remnant vegetation are incomplete and may be subject to change upon further investigation; this limitation is particularly pertinent as it relates to the observation of (what appeared to be) a wetland feature that extends into the neighbouring property (115 Minyip Road, Lara) to Elcho Drain.



Source: DEECA © Copyright State Government of Victoria,datashare: https://datashare.maps.vic.gov.au/; Googlesattelite 2025 CNES/Airbus,Maxar technologies.QGIS3.A4.scale 1:2500. Intened for illustrative purposes only.

Figure 13 Map. Extent of noxious weeds recorded 19.11.25. Noxious weed Oxalis pes-caprae is located to east of the residence within the internal paddock.

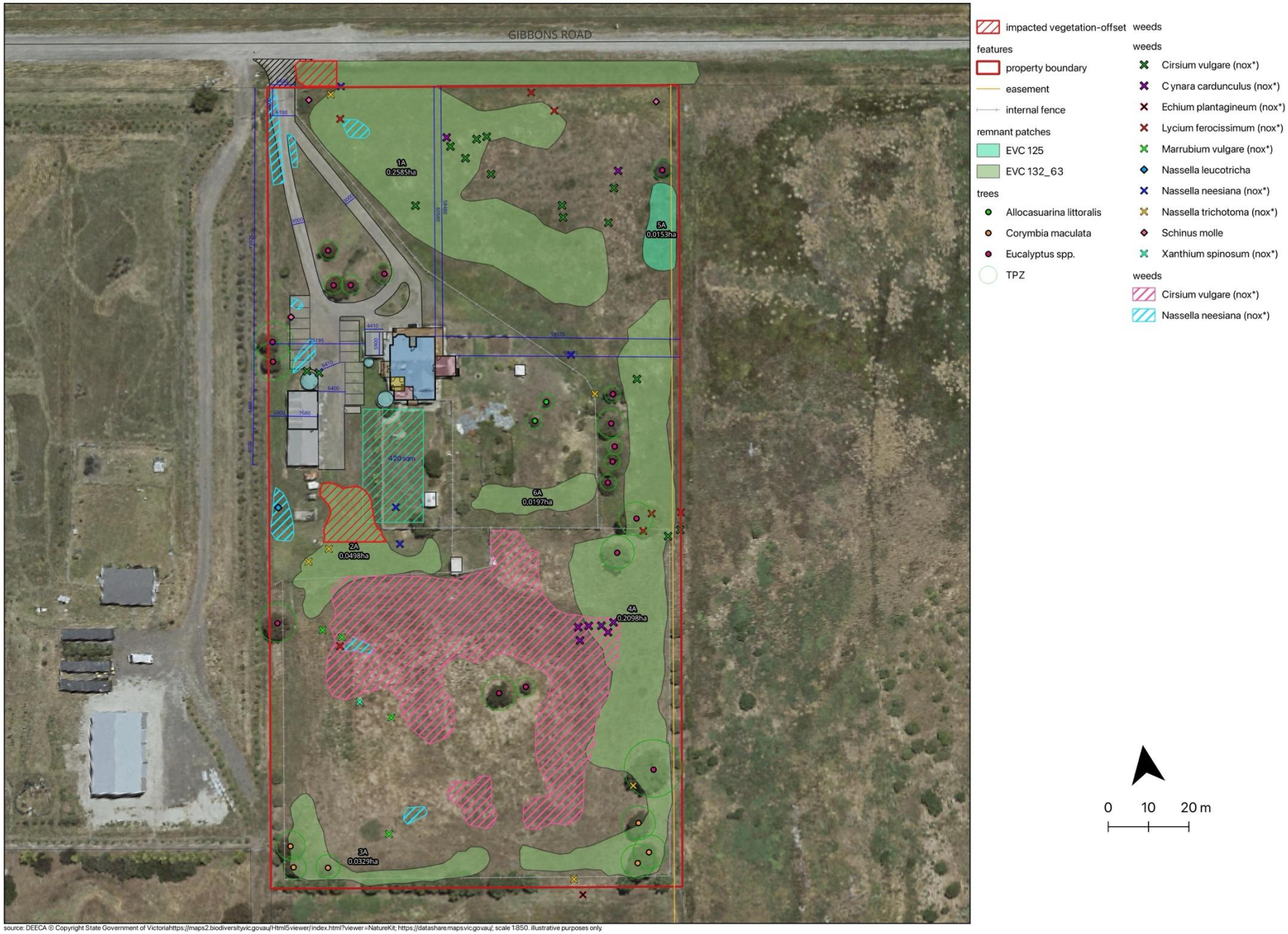


Figure 14 Map. Extent of remnant EVC 132 (EVC 125) recorded during site assessment 19.11.25. Trees (Eucalypts, Corymbia and Allocasaurina) have been planted.

4. Results & Discussion

4.1. Overview

Please refer to appendix 1 for the list of vegetation recorded within the site.

At the time of the assessment 88 species were recorded. 19 indigenous species (self-sown) species, 60 introduced species and nine (9) planted indigenous and native species were recorded. More exotic or introduced species are present than recorded, planted ornamentals around the residence were not formally identified.

One (1) FFG Act vulnerable species *Corymbia maculata* Spotted Gum was recorded, however, this species is non-indigenous to the area and is planted – *Corymbia maculata* is only known in Victoria from the Motte Range south of Buchan and is a commonly planted ornamental outside of its natural distribution. Under 52.17-7 exemptions for requiring a permit for the removal of native vegetation, planted vegetation does not require a permit for its removal.

The site features several Australian native tree species such as: *Eucalyptus camaldulensis* River Red Gum, *Eucalyptus globulus* subsp, *bicostata* Southern Blue Gum, *Eucalyptus gomphocephala* Tuart, *Eucalyptus leucoxylon* (?) Yellow Gum, *Eucalyptus microcarpa* Grey Box and *Eucalyptus ovata* Swamp Gum, *Corymbia maculata* Spotted Gum and *Allocausarina littoralis* Drooping sheaoak.

These species all appear to be planted due to their composition, size (small), their location within the site often along fence lines growing in a uniform manner and occurring outside their usual distribution.

For example, *E. gomphocephala* Tuart, is a species endemic to Western Australia and *Corymbia maculata* Spotted Gum is only known to naturally occur in Motte Range and is a commonly planted ornamental.

The site has undergone considerable amount of growth since the initial 26.06.25 site survey, which was undertaken in sub-optimal (winter) conditions.

The site remains, in the aggregate dominated by a variety of weeds, remaining largely consistent with initial observations made on the 26.06.25 where it was observed that weeds provided >60% coverage within the site.

Fragmented and degraded remnant patches (≥25% coverage of perennial species) appeared to persist within the site, these patches lacked complexity and are typically confined near and along fence lines and in bare-earth areas that have yet to be colonised by weeds.

Small areas of *Rytidosperma* spp. were also noted in areas throughout the site,[8] such as the front-yard within the turning-circle, however*, at the time of the assessment* these areas were estimated to contain *less than* 25% coverage and were being infiltrated by noxious weed *Nassella neesiana* Chilean Needlegrass.

Weeds within the site appear to have proliferated, likely due to favourable climatic conditions, rate of dispersal, and an absence of maintenance i.e., mowing, slashing of the groundcover which has led to their increase.

The coverage of weeds is concentrated around the pre-existing development (residence, sheds and driveway) and within the centre of the back-paddock (or southern paddock). The site is also experiencing edge effects with noxious weeds observed within the neighbouring site.

[8] These areas were not mapped due to providing less than 25% coverage at the time of the assessment.

*Figure 15 and 16: **left image**, back paddock facing east taken on 26.06.25 versus **right image**, facing south-east) taken on 19.11.25. As depicted, there has been a proliferation of weeds, particularly Cirsium vulgare Spear thistle and Lolium spp Rye-grass, other noxious weeds such as Nassella neesiana Chilean needlegrass, Cynara cardunculus Artichoke thistle etc. present. within back paddock; central area of back-paddock consists of a large thick patch of weeds.*

4.1.1. EVC 132_63 *Low-rainfall* Plains Grassland

As stated, degraded patches of Low-rainfall Plains Grassland persist within the site.

The extent of EVC 132_62 has increased from the prior survey conducted in winter. Approximately 0.203 ha of EVC 132_62 was recorded on the 26th of July, increasing to 0.569 ha.

This increase in extent is a result of the inclusion of the road reserve and favourable surveying conditions and recruitment of indigenous species into areas of bare-earth (or more sparsely vegetated areas) that persist within the site itself. The bare-earth areas offer areas for further recruitment of the species; though the indigenous species are under persistent competitive pressure from environmental weeds which have thoroughly invaded the site.

These grassland patches consist almost exclusively of *Rytidosperma* spp., (non-Kangaroo grass dominated system) reaching up to 40% coverage in the interior of the patches before thinning to 25% and lower; and continue to lack complexity and diversity of lifeforms. Further, all patches present have been infiltrated by weeds which heavily detracts from their quality (remaining consistent with observations made in 26.06.25).

*Figure 17 (19.11.25') **top image**, **patch 4-A** within back-paddock facing south. **Bottom image**, facing north, **4-A** within paddock to the east of residence (eastern boundary to the right of image). As depicted, Rytidosperma dominated patch of EVC 132_63 intermixing with weeds. 'Central' area of patch has a higher coverage (~40%) thinning on the margins where weeds have infiltrated and established.*

As mentioned prior, the patches typically consist of *Rytidosperma caespitosum* Common Wallaby-grass, *Rytidosperma duttonianum* Brown-back Wallaby-grass, *R. fulvum* Copper-awned Wallaby-grass and to a lesser extent *Chloris truncata* Windmill-grass (≥25% coverage). Along with chenopods and *Dichondra repens* Kidney weed (which formed weed-like mats within the southern paddock area, where it has perhaps been included as a component of the lawn); intermixing with environmental weeds.

Chloris truncata Windmill-grass was more prevalent along the road reserve than the interior of the site.

Indigenous chenopods were reasonably common, recorded scattered and within patches. *Atriplex semibacatta* Berry Saltbush appeared more dominant, forming mats throughout the site often intergrading with weed *Aizoon pubescens* Galenia and within fragmented patches of *Rytidosperma* spp.

Enchylaena tomentosa var *tomentosa* Ruby saltbush and *Einadia nutans* Nodding Saltbush appeared less common, and more scattered and dispersed particularly within the southern paddock area, and similarly intermixing with weeds or within areas that are less sparsely vegetation (recruitment areas).

Maireana brevifolia Short-leaf Bluebush and *Maireana decalvans* Black Cotton Bush was recorded within the north-eastern paddock area (the species was not observed within the southern paddock or garden surrounds). Though indigenous, both species appear to be colonising the north-east paddock,[9] competing against environmental weeds and indigenous grasses (i.e., *Chloris truncata* Windmill Grass and *Rytidosperma caespitosum* Common Wallaby-grass) for resources.

Few indigenous forbs were observed, the dominant forb present was *Oxalis perennans* Grassland Wood-sorrel (~10%). *Convolvulus angustissimus* subsp. *omnigracilis* Slender Bindweed and *Acaena echinata* Sheep's Burr were also recorded, however, both species persist in very low numbers (≤1% coverage) and are highly scattered and isolated within the site.

Asperula conferta Common Woodruff was recorded, though (at the time of the survey) this species appeared confined to the road reserve.

*Figure 18 (19.11.25'). **Left image**, remnant grassland along the road reserve facing east. **Right image**, facing west at pre-existing crossover into site from Gibbons Rd, as depicted sections of the road reserve have been invaded by weeds. It is proposed that the accessway/crossover be upgraded, a buffer area of 10m into the road reserve fronting the site has been applied to account for any potential damages to the road reserve vegetation.*

[9] Both *Maireana brevifolia* and *Maireana decalvans* are noted as colonising disturbed ground (Vicflora, accessed 11.07.2025).

4.1.2. EVC 125 Plains Grassy Wetland

The north-eastern paddock appears subject to inundation, particularly along the eastern fence-line which was inundated at the time of the assessment, and contained wetland indicator species such as *Eleocharis acuta* Common Spike-rush and *Marsilea drummondii* Common Nardoo. This ephemeral or seasonal wetland feature extends into the neighbouring property, appearing to extend across toward Elcho Drain and was assessed against the EVC 125 Plains Grassy Wetland benchmark.

In addition, *Eleocharis acuta* was observed highly dispersed in shallow (dry) depression within the northern paddock, indicating that the north-eastern paddock likely contains ephemeral wetland-like features.

These wetland features were not observable during the 26.06.2025 survey.

The wetland feature recorded along the eastern fence line (patch 5-A, approximately 0.0153 ha in size) was species poor, *Eleocharis acuta* was the dominant species, with *Marsilea drummondii, Juncus subsecundus* Finger rush and *Rytidosperma duttonianum* Bronze-awned Wallaby-grass were scattered and inter-dispersed throughout.

The wetland feature was fairly weedy at the time of assessment.

*Figure 19 (19.11.25'): **top image**, facing north along eastern boundary fenceline EVC 125 **patch 5-A**, which extends into neighbouring site; **bottom image**, area inundated featuring species Eleocharis acuta and Marsilea drummondii.*

4.1.3. threatened flora

Threatened flora recorded within 5km of the site is provided in appendix 2.1.

As discussed, the site is highly degraded and disturbed, the likelihood of the threatened flora species to occur (naturally) would be negligible as they would be outcompeted by environmental weeds and indigenous species colonising the site.

4.1.4. ecological communities

A 5km radius search utilising DCCEEW protected matter search tool indicates that the following EPBC Act listed ecological communities may, likely or are known to occur:

- critically endangered Natural Temperate Grasslands of the Victorian Volcanic Plains
- critically endangered Grassy Eucalypt Woodland of the Victorian Volcanic Plain
- critically endangered White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland
- critically endangered Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains
- vulnerable Subtropical and Temperate Coastal Saltmarsh

Natural Temperate Grasslands of the Victorian Volcanic Plain

The site contains some key diagnostic criteria of the critically endangered Natural Temperate Grasslands of the Victorian Volcanic Plain (NTGVVP), due to the presence of remnant areas of EVC 132_63, consisting of character species such as, *Rytidosperma* spp. Wallaby-grasses. [10]

However, based on observations the patches fail to meet condition thresholds; where (Threatened Species Scientific Committee [TSSC] 2008, pp. 3-4):

- the total perennial tussock cover represented by the native grass genera *Themeda*, *Austrodanthonia* [*Rytidosperma*], *Austrostipa* or *Poa* is at least 50%;
  OR
- If the total perennial tussock cover represented by the above 4 native grass genera is less than 50%, then the ground cover of native forbs (wildflowers) is at least 50% of total vegetation cover during spring-summer (September to February);
  OR
- The cover of non-grass weeds is less than 30% of total vegetation cover at any time of the year

The remnant patches observed lacked the necessary tussock coverage (the patches were estimated to provide 30-40% coverage at most) and lacked forb coverage. Additional detractors were the weediness (non-grass and grass weeds) of the patches.[11] Areas of patches that contain a higher coverage of *Rytidosperma* spp. (~40%) would also fail to qualify due to not meeting the minimum area 0.05 ha necessary to meet the condition threshold.

[10] EPBC Act NTGVVP has been previously recorded within the Lara locality. Remnant EVC 132_63 within the site would qualify as the FFG Act Western (Basalt) Plains Grasslands Community.
[11] Other criteria include size where 'For a native vegetation remnant ≤1 hectare in size, the minimum contiguous size of the grassland patch is 0.05 hectare and the crown cover of shrubs and trees over one metre tall within the grassland patch should not exceed 5%; For a native vegetation remnant >1 hectare in size, the minimum contiguous size of a grassland patch is 0.5 hectare and the density of mature trees within the grassland patch should not exceed 2 trees per hectare' (TSSC 2008, p.3).

Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains

The remnant EVC 125 within the site is too small to qualify on its own as the ecological community.

Further, based on historical imagery and on-site observations made from peering over the fence, it appears that the wetland feature within neighbouring property to the east may be more permanent in nature. Fed, in part, through Elcho Drain (which outfalls to Hovells Creek) in combination with seasonal rainfall which leads to flooding.

The seasonal herbaceous wetland community *primary* source is rainfall. As the name suggests, the wetland typically undergoes wet and dry phases which are dependent on sustained precipitation events.

Based on hydrological factors it would appear that that the community is not present. However, further investigation would be necessary to come to a conclusion as to its presence.[12]

[12] Thoroughly investigating the presence of the wetland community is outside the scope of the assessment – the 'wetland' system resides in neighbouring private land. The proposed development within 110 Gibbons Rd would not significantly impact the system.

4.1.5. introduced & noxious species

60 introduced species were recorded.

The site has been invaded eight (8) **declared noxious weeds**: *Cirsium vulgare* Spear thistle, *Cynara cardunculus* Artichoke thistle, *Lycium ferocissimum* African Boxthorn, *Marrubium vulgare* Horehound, *Nassella neesiana* Chilean needlegrass, *Nassella trichotoma* Serrated Tussock and *Xanthium spinosum* Bathurst Burr. *Echium plantagineum* Paterson's Curse was observed within the neighbouring property to the south about 1-2 metre from the fence line and has the potential to invade the site.

Figure 20 (19.11.25). Along western fenceline near entrance, facing north. Patch of Nassella neesiana Chilean Needlegrass.

The majority of these species were recorded in the backyard paddock area, where thistle species, primarily *Cirsium vulgare* Spear thistle and to a lesser extent *Cynara cardunculus* Artichoke thistle dominate the paddock, along with environmental weeds such as *Aizoon pubescens* Galenia and *Lolium* spp. Rye-grass which was prevalent throughout the entire site.

Nassella neesiana was observable throughout, forming patches and was scattered throughout the property.

Nassella trichotoma Serrated Tussock was more widely dispersed than previously recorded, though remains relatively scattered in comparison to *Nassella neesiana*.

Nassella leucotricha Texas Needlegrass was also recorded toward the western fenceline. This species though not a declared noxious weed in Victoria, is still considered a high-threat weed especially in grassland habitats and may be more widely dispersed than observed, intermixing with *Nassella neesiana* and other grass-weeds.

Lycium ferocissimum African Boxthorn, *Marrubium vulgare* Horehound and *Xanthium spinosum* Bathurst Burr were less prevalent within the site, though require addressing to prevent further spread and consolidation within the site.

A noticeably large patch of *Nassella neesiana* was observed within the southern neighbouring property, along with *Lycium feroccissimum* African Boxthorn which was observed within the eastern neighbouring site; noxious weeds within neighbouring lands are of particular concern due to their potential to spread and further invade the site (edge effects).

Table 1: VQA results

Patch		1A	2A	3A	4A	5A	6A
		EVC 132_63	EVC 132_63	EVC 132_63	EVC 132_63	EVC 125	EVC 132_63
Assessment Criteria	**Maximum Score**	**Patch Score**	**Patch Score**	**Patch Score**	**Patch Score**	**Patch Score**	**Patch Score**
Large trees	**10**	0	0	0	0	0	0
Canopy Cover	**5**	0	0	0	0	0	0
Lack of Weeds	**15**	6	11	6	11	7	6
Understorey	**25**	5	5	5	5	10	5
Recruitment	**10**	3	3	3	3	3	3
Organic Litter	**5**	4	3	4	5	0	3
Logs	**5**	0	0	0	0	0	0
Standardised site Condition score	**75**	1.36x18	1.36x22	1.36x18	1.36x24	1.36x20	1.36x17
Patch Size	**10**	1	1	1	1	1	1
Neighbourhood	**10**	0	0	0	0	0	0
Distance to core	**5**	1	1	1	1	1	1
Final Habitat Score (out of a possible score of 100)	**100**	**26**	**32**	**26**	**35**	**29**	**25**
Final Score (divided by 100)	1	0.26	0.32	0.26	0.35	0.29	0.25
Area of Patch (hectares)		**0.2592**	**0.0498**	**0.0329**	**0.2098**	**0.0153**	**0.0195**
No. of Large Trees in Patch		0	0	0	0	0	0

4.2. Fauna

4.2.1. fauna habitat

The site appeared to offer limited habitat and habitat connectivity for fauna species. As stated, the site is heavily degraded, lacking complex and diverse vegetation, and sheltering habitat such as logs, organic litter, rocks, typically preferred by fauna species, particularly specialist species.

Cracking soil was evident in some areas, which may provide habitat for some invertebrates.

The planted *Eucalypts* may also provide some limited habitat for more mobile species, such as birds, to move through on an opportunistic basis.

4.2.2. threatened fauna

No threatened fauna species were observed.

Threatened fauna recorded within 5km of the site is provided in appendix 2.

The initial assessment of the site being highly unlikely to provide habitat for threatened species, has been revised to adopt a more circumspect position.

The site particularly during June 2025 assessment had been visibly subjected to garden and lawn care activities such as mowing (grasses were mowed/slashed to the ground) and weeding undertaken by the prior occupants. Further, the previous occupants kept dogs within the site, and a pair of dogs were also observed in the neighbouring property to the west; which may prey upon indigenous fauna. [13]

The September 2025 assessment did show an increase in the extent of *both* indigenous and exotic weed species evidently due, *inter alia*, to the timing of the assessment and lack of maintenance such as mowing, weeding etc. Additionally, it became evident that the site, particularly within the north-east paddock area was subject to inundation, which appeared to function as an ephemeral wetland under sustained precipitation events.

Persistent human-related or induced disturbances to the site such as continual mowing/slashing,[14] removal of logs, branches, weed invasion, has simplified the indigenous groundcover, sward density, age and size of the remnants. Which in turn, has (arguably) significantly degraded and removed key habitat features often relied upon by grassland specialist species. The site also appeared to lack other sheltering habitat such as rocks.

For example, persistent intensive mowing and slashing of the site would likely lead to the destruction or damage of the Golden Sun Moths larvae/food source (DEWHA 2009).

Additionally, the periodic inundation and probable winter waterlogging (often a feature of volcanic plains grasslands) of the site brought in additional questions of the suitability of the site for certain species, such as *Synemon plana* Golden Sun Moth (GSM), *Delma Impar* Striped Legless Lizard (SLL) and *Pseudomoia pagenstecheri* Tussock Skink,[15] especially when taking into

[13] The site was visited prior to the 26 June 2025 assessment; however, the tenants did not grant access to the property. Nonetheless, dogs were visible within the site and the site grounds appeared to be maintained. The site had since been vacated at the time of the formal assessments.
[14] In this instance mowing/slashing was not undertaken as part of grassland management plan. Rather it was undertaken as a form of ground maintenance. Continual mowing/slashing of the site would likely lead to the destruction, or it should also be noted that the process of degradation and fragmentation is a process dating to settlement.
[15] The three (3) species are grassland specialists, particularly the GSM and SLL which are associated with the Victorian Volcanic Plains grasslands, though are known to persist in degraded and disturbed grassland remnants. The GSM is known to adapt and inhabit grassland remnants invaded and/or dominated by noxious weed *Nassella nessiana* Chilean Needlegrass (the species has also been located in remnants containing *Nassella trichotoma* Serrated Tussock). Similarly, SLL has been found to inhabit disturbed and degraded grassland remnants.

consideration the relatively small size and fragmentation of the remnants, limiting available drier areas where the species may move to and/or seek shelter.[16]

Consequently, despite habitat features being present (i.e., cracking soils, tussock grasses) the initial assessment(s) considered it to be unlikely that threatened species such as the GSM, SLL and the Tussock Skink would be able to persist within the site.

Nonetheless, in absence of targeted assessments and due to habitat features persisting within the site and known records of the species within the vicinity of the site, the likelihood determination of it being *highly unlikely* that the site provides habitat has been revised to state that the site *may* (species have a chance of occurring) provide habitat for the aforementioned threatened species.

Given the sites proximity to Elcho Drain and detention basin, along with its relatively close proximity to Lakelands Wetland, Limbeburners Bay (Port Phillip) there is also a possibility that threatened birds such as *Egretta garzetta* Little Egret may be seen moving through the general area.

4.2.3. observed fauna

The following species were observed on the 26.06.25':

- *Abantiades atripalpis* Bardi Moth
- *Dindymus versicolor* Harlequin Bugs
- *Manorina melancocephala Noisy Miner*
- *Pieris rapae* Cabbage White (introduced)
- *Sturnis vulgaris* Common Starling (introduced)

No further species were observed on 19.11.25'.

[16] Species such as the SLL have shown a degree of tolerance for waterlogged sites, likely sheltering in Tussock bases as opposed to cracking soils (DCCEEW 2021). The GSM is particularly sensitive to changes in moisture levels and it would appear unlikely that the species would be able to tolerate waterlogging and inundation as it would likely damage or kill its larva (DEWHA 2021).

5. Implications

5.1. Impacted Vegetation

The native vegetation removal report is provided as an attachment.

Under the current site plans approximately 0.025 ha of EVC 132_63 within a location 2 category, intermediate assessment pathway, would be impacted by the proposed secondary waste water (0.017 ha) treatment system and proposed concrete crossover (0.008 ha).

Secondary Wastewater Treatment System.

Approximately, **0.017 ha** of patch 2-A has been argued to impacted by the proposed development of the secondary wastewater system. Part of the patch, beyond the immediate impact zone (10m to the west and 5m to the south of the secondary wastewater field), was also offset to account for potential construction works within the area related to developing the effluent field and to account for potential impacts to indigenous groundcover (primarily *Rytidosperma* spp. Wallaby grass) due to the hydrological changes and increase nutrient loads to the soil; given the land is topographically flat, the indirect impact as a result of the secondary wastewater field should be minimised. Please refer to figure 11 for photograph of patch 2-A and the figure below for photograph of the proposed secondary wastewater treatment system.

*Figure 21 (19.11.25') **facing north**. Location of proposed secondary wastewater treatment system. Residence (proposed place of worship) and small fenced off court yard to the right. Pre-existing carport and water tanks in background. Location of proposed carpark to the left of the watertank.*

Concrete Crossover from Gibbons Road

Approximately, **0.008 ha of patch 1-A** along the road reserve has been offset to account for the direct and indirect loss of indigenous groundcover as a result of the proposed concrete crossover. In this instance a 10-metre buffer was applied to account for potential damages.

It is understood (and was observed) that indigenous grasses occur along the nature strip of the neighbouring property to the west. However, the proposed development of the concrete crossover would not lead to their loss as the development is an upgrade of the pre-existing gravel accessway.

It should also be noted that the neighbouring properties accessway resides approximately 4m to the west of the site, with a small narrow strip between consisting of exotic species. The proposed development of the crossover is unlikely to impact indigenous vegetation along neighbouring road reserves. Please refer to figure 18.

Crushed Rock Driveway/Carpark

The crushed rock driveway was not offset as it is understood that the pre-existing gravel/crushed rock driveway is to be retained and repaired with additional gravel.

The interior fenceline that separates the accessway and residence/garden area from the north-eastern paddock will assist, along with management techniques, in protecting and avoiding the indigenous vegetation in the paddock (please refer to figure 22).

It may also be argued that 52.17-7 fenceline exemption is applicable to the interior fencelines as the proponent intends to retain the pre-existing fencelines within the site.[17] Native vegetation may be removed, destroyed or lopped to the *minimum extent* necessary for the operation or maintenance of the fenceline providing that the clearing along both side of the fence do not exceed 4 metres in width, except where land has already been cleared 4 metres or more along one side of the fence, then up to 1 metre can be cleared along the other side of the fence.

> Native vegetation can be removed up to a combined maximum total width of 4 metres along the fenceline. This may consist of any combination of width distances on either side of the fence that totals 4 metres. For example, 2 metres on one side and 2 metres on the other, or 1 metre on one side and 3 metres on the other side.
>
> Note that if one side of the fence is already cleared to a width of 4 metres or more, regardless of when this clearing occurred (e.g., a cleared paddock), then up to 1 metre of native vegetation can be removed on the other side of the fence. This is to remove a limited amount of native vegetation that may hamper the construction or maintenance of the fence' (DEWLP [DEECA] 2017, *Exemption Guidance*, pp.11-12).

The proposed carpark/car spaces have been situated in area next to the existing dwelling and carports and consists of gravel and overgrown exotic lawn and ornamentals, noxious weed *Nassella neesiana* was also present. At the time of the assessment scattered tussocks of *Rytidosperma* spp. Wallaby grass was observable amongst the growth of weeds, though did not constitute a patch of indigenous vegetation.

The driveway/carpark would not significantly impact the persisting remnant vegetation within the site.

*Figure 22 & 23 (21.11.25') **Left image**: looking toward Gibbons Rd, interior fenceline separating gravel accessway which has overgrown in parts (to the left of image) from north-eastern paddock (to right of image, patch 1-A consisting of Maireana spp. Rytidosperma spp.). Exotic Schinus molle in corner of paddock. **Right image**: facing west, pre-existing carport/garage, overgrown exotic grasses, gravel with scattered occurrence of Rytidosperma spp.*

[17] The fenceline exemption was not deemed applicable in relation to the development or construction of the secondary wastewater treatment system or concrete crossover as the resulting (or indirect) damages are a result of the proposed development, as opposed to the maintenance of a fenceline.

Place of Worship

The pre-existing residence is to be repurposed or renovated into the proposed place of worship.

The north, east, west and southern flank of the existing residence was dominated by weed species e.g., *Aizoon pubescens* Galenia, *Lolium* spp. Rye-grass, *Brassica fruticulosa* Twiggy Turnip *Vulpia muralis* Wall Fescue, and planted ornamentals.

The development of the place of worship would not result in the loss of remnant grassland within the site.

*Figure 24-26 (19.11.25'). **Top left image**, behind existing residence (southern flank), groundcover dominated by Brassica fruticulosa Twiggy Turnip and other grassy and herbaceous weed species which have overgrown due to lack of maintenance; **top right image**, front of pre-existing residence/proposed place of worship, planted ornamentals grow around the residence. **Bottom left image**, eastern flank, small shed/cubby house, ornamental plants and Aizoon pubescens Galenia forming a large mat.*

5.1.1. Native Vegetation Removal

Proposed removal scenario is as follows:

Assessment Pathway	Intermediate
Extent including past and proposed native vegetation removal	0.025 ha
No. large trees	0
Location category	Location 2
General offset amount	0.008 general habitat units
Minimum strategic biodiversity value score	0.3672
Vicinity	Corangamite CMA or Greater Geelong LGA
Offset Type	Third-party offset

5.1.2. Offset type

The required general offsets are to be purchased third-party offset credits through an accredited native vegetation offset broker.

A search (07.04.2026) of the native vegetation credit register indicates that a third-party offset is available for purchase. The report of available native vegetation credits is provided as an attachment to this report.

5.2. Avoid & Minimise

No opportunities exist to avoid or minimise the loss of 0.008ha vegetation as a result of upgrading the proposed crossover. The proposed loss of 0.008 ha has largely been offset as a precautionary measure and to allow a buffer for potential damages to the road reserve vegetation.

As per the provided site layout plans, the proposed development of the secondary wastewater treatment system would result in the loss of 0.017 ha of indigenous vegetation (*Rytidosperma* spp. Wallaby grass) due to the proposed secondary waste water field.

This loss can likely be avoided by shifting the envelope in an area devoid of native vegetation to ensure that the development is appropriately situated away from remnant vegetation. Though, this may be considered unfeasible due to engineering/wastewater management concerns regarding the placement of the secondary wastewater treatment system in relation to the place of worship.

The gravel accessway leading to the proposed place of worship and carparks, should be retained as is (except for the crossover or where engineering concerns take precedence) and maintenance efforts or upgrading of the accessway should be undertaken in a manner that avoids direct trenching and excessive compaction of the ground.

Though under planning clause 52.17-7 planted vegetation and vegetation not indigenous or native to Victoria may be removed without a permit; the vegetation, particularly planted *Eucalyptus* and *Corymbia* trees, can be retained by incorporating them into landscaping plans and should be protected with appropriate tree protection measures, such as tree protection fencing, during the construction of the driveway/carpark.

Overall, the proposed development significantly reduces the impacts to indigenous vegetation within the site by utilising pre-existing developments within the site and their footprint.

Environmental Significance Overlay – Schedule 4

In regards to **ESO4**, the proposed development would not significantly impact the biodiversity of the Victorian Volcanic Plain and Greater Geelong region.

As discussed, the site has been heavily modified and degraded, and is rather species poor despite the persistence of indigenous understorey vegetation. Further, the proposed development coincides with existing developments within the site, thus, any impact to persistent indigenous vegetation is significantly reduced.

In regards to potential habitat for threatened fauna species, the proposed development itself should not significantly impact the habitat present; the larger areas of remnant EVC 132_63 (and EVC 125) within the site are to be retained and managed, ensuring that habitat, along with habitat linkages persist.

6. Vegetation Management Plan

6.1. Management Objectives

The key management objectives of the site are to:

- Protect and maintain existing conservation and biodiversity values.
- Rehabilitate existing biodiversity values within site.
- Mitigate potential impacts to values within the site as a result of the proposed development.
- To undertake continued monitoring of the site and to identify and manage new threats as they arise.

6.2. General Approach

A shorter-term (5 year) plan has been devised for the purposes of this report. However, successful management and rehabilitation should be considered a long-term on-going project, requiring continual monitoring to identify and manage new threats, and to ensure that the conservation and biodiversity values within the site are improved upon.

A 5-year management timeframe is intended to address immediate key management issues, particularly in addressing the presence of priority weeds and ensuring protection measures are employed to mitigate any potential impacts due to the proposed development, and provide a basis or foundation to achieve longer-term maintenance and rehabilitation of the site.

An incremental and staggered approach to managing the site is recommended. Where immediate targeted interventions are made to control and eliminate weeds, and protect pre-existing values within the site which can then be enhanced and expanded upon in stages going forward.

It is expected that the site continues to be monitored for changes and threats such as established pest fauna[18] (which has not been specifically identified as key management issue within the site) and that pro-active management is undertaken to ensure that the threat is abated.

It also crucially important that landowners do not employ management techniques indiscriminately. For example, if a species is unfamiliar efforts to identify it should be undertaken, otherwise there is a risk that an indigenous species may be accidently removed, damaged or killed.

Relevant resources and website such as Greening Australia, Weeds Australia, Atlas of Living Australia, Landcare Victoria may assist in identifying flora, fauna and managing the site.

6.2.1. Potential Constraints

A potential constraint of the management plan is the presence of environmental weeds, particularly priority weeds such as *Nassella neesiana* Chilean Needlegrass and *Lycium ferocissimum* African Boxthorn, within neighbouring properties and their potential to invade the site and undermine the overall objective of conservation and rehabilitation of the grassland remnants.

[18] The CaLP Act 1994 have identified the following as pest fauna species as pest invasive animals: Red Fox, House Mouse, European Rabbits, European Hares, feral Pigs, feral Goats, feral cats (on Crown Land only). None of the aforementioned pest fauna species were recorded within the site, nor were there any signs indicating their presence within the site. Though Red Fox, European Rabbit, European Hares and House Mouse have been recorded within a 5km radius of the site (Victoria Biodiversity Atlas, accessed 31 March 2026).

It was not possible to investigate the extent and precise location of noxious weeds (or remnant vegetation) within neighbouring properties due to an inability to enter them; observations were made by peering over the fence and by consulting recent records from Victoria Biodiversity Atlas.

A coordinated effort amongst landowner is likely required to properly control and eradicate priority weeds, and to rehabilitate the land as an integrated system.

Other constraints to the management of the grassland regards the size of site, past and (proposed) future land use. Along with overall cost of managing the grassland.

The proposed development of a place of worship and zoning (rural residential) may place additional constraints on effectively managing the site, due to factors such as increased movement of people and vehicles to and from the site.

Managing techniques often employed to manage grasslands such as controlled burning may be considered a potential hazard and/or unfeasible. Further, weed and land management techniques involving heavy machinery (e.g., scalping with a grader to physically remove the top-layer of the soil and weed seed bank) are also unfeasible due to the sites size and limited areas to move machinery whilst avoiding remnant vegetation.

6.2.2. Monitoring

5-year plan with monitoring to be conducted annually. The first year is critical, eradication and control of weeds should commence.

Control and eradication measures should ideally begin before any construction activities to prevent the spread of noxious weeds to and from the site.

Monitoring and maintenance to occur periodically during the year to ensure requirements are being met. The landowner can undertake the monitoring themselves or contact a qualified environmental consultant.

Photographs and notes should be taken of management zones to track changes.

Table 2: VMP monitoring schedule

Task	Timing	Scheduling				
		Year 1	Year 2	Year 3	Year 4	Year 5
Control weeds/eradicate priority weeds	Spring/summer eradication in year 1: suppression onwards					
Erect & Maintain Protection Fencing	Prior to any construction works commence and maintained throughout					
Regeneration/Revegetation	Ensure weed infestation is controlled and managed. Revegetation and/or plantings commence in year 2 or 3. dependent on success of weed control.					
On-going maintenance and monitoring.	On-going. Annually or as appropriate.					

6.2.3. Weed Management

Due to the large infestation of many invasive weed species and sensitivity of the grassland it is recommended that a license contractor be engaged to remove the large infestations of noxious weeds from the site. Ongoing weeding and management thereafter, may be undertaken by the landowner or suitably qualified individuals and experts.

Under the CaLP Act (1994) and Regulations (2002) landowners are required to eradicate and control noxious weeds.

The following prescribed methods are used for weed control:

- Chemical (i.e., herbicides)
- Physical removal
- Cultivation
- Mulching

Other methods such as solarisation may be employed.

Use of herbicides is often the main method for reducing weed coverage and is used in conjunction with other control methods. Optimal spraying time is generally between spring and early summer before most weeds set seed. A second-round of spraying is often required the following year in early summer to control second growth.

Spraying should not occur on windy days or if it is expected to rain, and if conducted near indigenous species then appropriate measures such as physical shielding must be taken to minimise any damage. **Always read the herbicide label, to ensure correct storage, concentration and usage.**

Appropriate safety clothing must be worn including boots, gloves, goggles and a hat.

Noxious weeds should be double bagged ensuring that the taproot, seeds, fruiting material and roots are enclosed and disposed of via kerbside landfill.

Appropriate hygiene and disposal measures must be observed, including washing-down using a high-pressure hose for all construction equipment and vehicles before moving to other areas to minimise risk of transporting weed material

herbicides near waterways

Herbicides cannot be mixed within 50m of watercourse. The use of herbicides near or along waterways (including wetland systems) is generally not recommended unless absolutely necessary and (Tasmanian Government 2012).

6.2.4. Fencing

The pre-existing interior fence-lines should be retained and utilised to create exclusion zones separating larger remnant areas of the grassland from the interior of the site (e.g., the dwelling and its immediate surrounds) where more movement of people and vehicles is expected.

Native vegetation may be removed, destroyed or lopped to the *minimum extent* necessary for the operation or maintenance of the fence-line providing that the clearing along both side of the fence do not exceed 4 metres in width, except where land has already been cleared 4 metres or more along one side of the fence, then up to 1 metre can be cleared along the other side of the fence.

Works along fencelines should be undertaken in manner that avoids excessive soil compaction and trampling.

Additional exclusion and temporary protective fencing may be implemented to protect the environmental assets during the construction phase. Appropriate and visible signage attached to the fence stating “no-go-zone” or “nature conservation area” should be implemented.

Protective fencing must be established prior to construction commencing and retained for the duration of the works.

6.2.5. Regeneration and Revegetation

Encouraging regeneration of indigenous species is preferable to revegetation. Regeneration is the natural process of plants re-establishing and replacing themselves.

The control and eradication of weeds from the site will assist in regeneration.

Supplementary planting, using tube-stock or indigenous seeds collected on site or from a local indigenous nursery may be used to assist in the regeneration process.

Plants must be indigenous to the Werribee Plains or indigenous character species listed in EVC 132_63 *Low Rainfall* Plains Grassland and EVC 125 Plains Grassy Wetland (please refer to appendix 3 and 3.1. of this report).

High density planting or buffer planting of indigenous tussock grasses such as *Poa labillardierei* Common Tussock-grasses, along grassland edges (or along fencelines) can assist in reducing and preventing the incursion of weeds into grasslands, reducing the impact. Buffer planting should be at a minimum of one (1) metre wide from the edge of the existing grassland (Marshall 2013).

Field planting can be undertaken by hand or with a planting tube tool (e.g., *Pottiputki*).

Planting densities for revegetation areas should be 4-12 plants per square metre at minimum (SEWPAC, Greening Australia 2012).

6.2.6. Biomass Control

Biomass control of the grassland remnants should also be conducted periodically or when necessary. An accumulation of biomass (organic plant material) due to a lack of disturbance regime (i.e., fire, light grazing primarily from indigenous fauna) leads to the grassland becoming “closed” and dense preventing the reproduction and recruitment of flora species (Corangamite and Glenelg Hopkins CMA; DSE 2011).

Mowing with a catcher, ensuring that 100mm of the indigenous Tussock-grass remains can assist in removing the accumulated biomass and create inter-tussock spaces within the grassland. Cutting below 100mm may destroy the indigenous vegetation. In Victoria naturally seeded native grass cannot be cut below this height without a planning permit, unless the native grass is growing within a lawn or they are planted.

Mowing should occur before Spring and Summer when most flowering and setting of seed occurs.

Grass cuttings and clippings should be collected and disposed of in the green waste bin or green waste recycling site.

Biomass control of weeds such as *Lolium* spp. Rye grass within the site should also be undertaken as part of the vegetation management plan and as a general land/garden maintenance routine.

Table 3: Management Issues, Goals & Measures

Management Issue	Description	Goals/Measures
Control and eradication of environmental weeds, particularly declared noxious weeds under the CaLP Act 1994 and Weeds of National Significance (WoNS).[19]	The site contains a broad array of environmental weeds, which have overgrown due to a lack of management. Eight (8) noxious weeds were identified and require immediate intervention to prevent their spread. Lack of intervention will threaten grassland remnants within the site and jeopardise conservation and rehabilitation efforts of grassland remnants	**Goal**: Control and eventual eradication of priority weeds within the site. **Measures**: employ appropriate weed management techniques as per weed management table provided in the report. Follow-up weeding measures until issue is controlled, moving towards eradication or elimination of declared noxious weeds within site. Revegetation with indigenous species can assist in the preventing invasion or re-invasion. Continued monitoring of site and removal of weeds as they emerge.
Potential noxious weed invasion from neighbouring sites.	Noxious weeds *Lycium ferocissimum* African Boxthorn, *Echium plantigenium* Paterson's curse, *Nassella neesiana* Chilean Needlegrass and *Nassella trichotoma* Serrated Tussock were observed in neighbouring properties and have the potential to spread into the site.	**Goal**: prevent and manage emergent or early infestation of noxious weeds. **Measures**: continual, long-term monitoring is required to prevent and manage early invasion. Document location of new (or re-emergent) weeds with the site, particularly declared noxious weeds. Immediately remove small infestations or lone noxious plants from site, following-up until eradicated. **A coordinated effort between landowners is likely required to suitably control and eradicate weeds from the site.
Protection of indigenous remnant vegetation, EVC 132_63 *Low rainfall* Plain Grassland and EVC 125 Plains Grassy Wetland.	Approximately, 0.57 ha of degraded EVC 132_63 *Low rainfall* Plain Grassland, this consist of 5 discrete patches of *Rytidosperma* spp. Wallaby grass. The remnants appeared to lack complexity and few forbs were observed.	**Goal**: conserve areas of remnant grassland (EVC 132_63 & EVC 125) within the site. **Measures**: mitigate further damage to grassland by retaining pre-existing fence-lines.

[19] Weeds of National Significance (WoNS) are weeds that have been identified by the Australian Government under the Australian Weed Strategy due to their: a) invasiveness, b) potential to spread and c) environmental, social and economic impacts. Presently there are 32 Weeds of National Significance.

	It is proposed that 0.025 of EVC 132_63 be removed (or is assumed lost). 0.0153 EVC 125 Plains Grassy Wetland was recorded within the site at the time of the assessment. The site, particularly within the north-eastern paddock appears subject to inundation, with ephemeral wetland features becoming apparent after sustained precipitation events.	Removal and/or damage to indigenous vegetation in the course of fence maintenance should be limited to the minimum extent necessary as per planning clause 52.17-7 fence exemption. Avoid excessive compaction or disruption to the soil when conducted works along the fenceline. Limit movement, trampling and machinery within the grassland remnants through the use of fencelines, signs and direct communication conveying the sensitivity of the site. Activities should ideally be concentrated around the pre-existing dwelling (e.g., residence, driveway, carpark and garden area to the east and south of site). Erecting protective vegetation fencing (e.g., bunting fence or high visibility para-webbing, fencing panels) and appropriate “no-go-zone” or “conservation area” signage to protect remnant vegetation during construction and/or rehabilitation efforts. Buffer planting at edges of patches to assist in preventing further weed invasion and expand area of indigenous vegetation. Monitor for any changes to the grassland, particularly for any threats or signs of disturbances (weeds, pest fauna, disease, soil compaction/scraping etc).
Regeneration & revegetation	The remnant grassland patches are fragmented within the site and lack structural complexity and diversity, being almost exclusively dominated by *Rytidosperma* spp. Wallaby grass, with forbs, barring chenopods, appearing mostly absent. The lack of structural complexity and diversity is likely a result of weed invasion and land-use (past and by previous landowner) practices such as excessive slashing or mowing and/or mowing to closely to the ground.	**Goal**: Encourage natural regeneration of indigenous flora through the removal of noxious and environmental weeds. **Measures**: Avoid heavy machinery, or mowers that lead to excessive compaction of the ground. Mowing must not be undertaken in wet conditions. Tube-stock or direct seeding of flora may be employed, plants selected should be those that are found or are typical of EVC 132_63 or the Werribee Plains. If plants fail to take then repeat planting is recommended.

		Buffer planting consisting of indigenous tussock grasses around edge of existing patches. (optional) plant indigenous species such as *Calocephalus citreus* Lemon beauty-heads, *Pimelea curviflora* Curved Rice-flower. Weed removal should be prioritised before any revegetation efforts, failure to do so may threaten revegetation efforts. Undertake biomass control measure (i.e., mowing). See below. Monitor for any changes to the grassland, particularly for any threats or signs of disturbances (weeds, pest fauna, disease, soil compaction, scraping etc).
Biomass control	Biomass control of indigenous groundcover may become appropriate when the growth of grasses becomes too dense restricting inter-tussock spaces or patches between tussocks which allows for the germination of native forbs such as wildflowers. Biomass control of environmental weeds should also be employed to address overgrown (non-noxious) lawn/pastural weeds e.g., *Brassica fruticolusa* Twiggy Turnip, *Lolium* spp. Rye-grasses, Bromus spp. Brome grasses.	**Goal**: Reduce biomass of indigenous groundcover to encourage recruitment spaces. **Measure**: Reducing the indigenous Tussock coverage by mowing or slashing (ensuring that grasses are cut to 100mm or more) when or if appropriate to “open-up” the grassland. Confine the mowing to periods of least disruption to native plants, that is before Spring and Summer when most flowering and setting of seed occurs. Lawn/pastural weeds should also be mown to reduce their biomass. Mow using a catcher to collect grass cuttings. Grass cuttings and clippings should be collected and disposed of in the green waste bin or green waste recycling site.

Other: Construction Works	Vegetation protection measures must be employed prior to construction works beginning. Areas not subject to development must be a	**Goals**: protect and minimise disturbances to native vegetation during construction works or activities. **Measures**: a general site induction should be held to ensure personnel are aware of the environmental assets within the site and area proposed for removal and/or loss. Hygiene protocols must be observed to prevent the spread or introduction of invasive flora and fauna species or diseases into the site. Site plans must clearly show mapped grassland remnants, areas impacted and offset, and weeds recorded during the biodiversity assessment. Areas outside the proposed development area must be avoided. The use of temporary exclusion fencing (e.g., bunting fence or high visibility para-webbing, fencing panels) and signage stating “no-go-zone” may be employed to limit the movement of personnel in the site and to protect environmental assets. Tree protection fencing in accordance with Australian Standard Protection of Trees on Development Sites (AS4970-2025) should be established around trees within the construction area. Fencing and signage should be implemented prior to any works commencing and maintained for the duration of the works. Construction materials, chemical or vehicles must not be stored or parked in the location of environmental assets such as the grassland patches as identified in this report.

Table 4 Weed Management

CaLP Act 1994 Declared Noxious Weed W=Weed of National Significance (WoNS)
R = Restricted
C = Controlled
P = Prohibited

Scientific	Common Name	CaLP Act/WoNS	Method
Cirsium vulgare	Spear Thistle	R	Physically remove small populations or single plant digging/chipping at roots, particularly effective option when plants are young. Herbicide (eg., Glyphosate Roundup®) application, spraying of mature plants. Plant material should be double-bagged and disposed of via landfill ensuring plant is destroyed before disposing of via land-fill.
Cynara cardunculus	Artichoke thistle	C	Physically remove small populations or single plant digging out as much root as possible. Ensure plant is immediately disposed of by double bagging. Herbicide (eg., Glyphosate Roundup®) application, spraying of plants when at seedhead stage.
Echium plantagineum	Paterson's Curse	C	Small infestation/individuals can be dug out (ensure taproot is removed). Spot-spraying, apply at rosette stage or early flowering period.
Lycium ferocissimum	African Boxthorn	C, W	Cut and paint, or other appropriate herbicide application. Immature plants may be physically removed Immature plants should ideally be removed within first year, follow-up efforts required to ensure species is eradicated, immediately remove seedlings when they first emerge
Marrubium vulgare	Horehound	C	Application of appropriate herbicide via spot-spraying or boom spraying. Spray prior to flowering. Dig up small or lone plants.
Nassella leucotricha	Texas Needlegrass	N/A *highly invasive, weed	Treatment same as for other *Nassella* species. Digging up whole plant with mattock or hoe. Spot spraying with appropriate herbicide for individual plants or small infestations. Boom spraying for larger infestation required. Spray before seed set. Removed plant (or clippings) should be burnt to ensure proper destruction.
Nassella neesiana	Chilean Needlegrass	R, W	Treatment same as for other *Nassella* species. Digging up whole plant with mattock or hoe. Spot spraying with appropriate herbicide for individual plants or small infestations. Boom spraying for larger infestation required. Spray before seed set. Removed plant (or clippings) should be burnt to ensure proper destruction.
Nassella trichotoma	Serrated Tussock	C, W	Treatment same as for other *Nassella* species. Digging up whole plant with mattock or hoe. Spot spraying with appropriate herbicide for individual plants or small infestations. Boom spraying for larger infestation required. Spray before seed set. Removed plant (or clippings) should be burnt to ensure proper destruction.
*Schinus molle**	Pepper Tree	N/A	Cut-paint/drill-frill method on small seedlings/saplings. Manually excavate seedlings/saplings. Follow up spot-spraying of herbicide may be required. Plant material should be double-bagged and disposed of via landfill or solarisation ensuring plant is destroyed before disposing of via land-fill.

			Immature plants should be removed within five-year time frame. Immediately remove seedlings when they emerge
Xanthium spinosum	Bathurst Burr	C	Application of foliar herbicide. Individual plants can be removed by hoeing or grubbing. Removed plants, along with seeds should be gathered and burned.
Lawn grasses and herbs e.g., Aira spp., Avena spp. Bromus spp., Lolium spp., Vulpia spp.	Air-grass, Oats, Bromes, Rye-grass, Fescue	N/A	Mow (using catcher) groundcover before plants set seed to reduce biomass, dispose of cuttings via landfill/green-waste. Application of selective herbicides may assist in managing larger infestations or troublesome plants. Dig out herbaceous weeds such as *Hypochaeris glabra* Smooth Cat's Ear, ensuring taproot is removed. **Some grasses such as Brome (Bromus spp.) may develop resistance to herbicide if used too frequently.
Mat forming perennial herb: Aizoon pubescens	Galenia	N/A	Foliar spray on actively growing plants (spring and summer), ensuring coverage of all foliage. Individual plant may be pulled or dug out ensuring the removal of the taproot. Repeated treatment required to control and remove species. Large areas of bare earth should be revegetated with indigenous species to prevent re-infestation.
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Appendices

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Appendix 1 flora recorded

*=introduced; P = planted; C = controlled noxious weed, R = restricted noxious weed

scientific name	common name	notes
Acacia salinga	Golden Wreath Wattle	*P
Acaena echinata	Sheep's Burr	
Acetosella vulgaris	Sheep's Sorrel	*
Acmena smithii ?	Lilly Pilly	*P
Agapnthus praecox	African Lily	*P
Aizoon pubescens	Galenia	*
Allocasuarina littoralis	Drooping sheaok	P
Arctotheca calendula	Capeweed	*
Asperula conferta	Common Woodruff	on road reserve
Asphodelus fistolosus	Onion Weed	*
Atriplex semibaccata	Berry Saltbush	
Avena fatua	Wild Oat	*
Brassica fruticulosa	Twiggy Turnip	*
Bromus hordeaces	Soft Brome	*
Bromus spp.	Brome-grasses	*
Callistemon spp.	Bottlebrush	P
Chenopodium murale	Sowbane	*
Chloris truncata	Windmill grass	
Cirsium vulgare	Spear Thistle	* R
Convolvulus angustissimus subsp. *omnigracilis*	Slender Bindweed	
Corymbia maculata	Spotted Gum	P, outside usual distribution.
Crassula sieberiana	Australian stonecrop	
Cynara cardunculus	Artichoke Thistle	*C
Cynodon dactylon	Couch	*
Cynosurus echinatus	Rough Dog's-tail	*
Dichondra repens	Kidney Weed	
Ecballium elaterium	Squirting cucumber	*
Echium plantagineum	Paterson's Purse	*C recorded neighbouring property.
Einadia nutans	Nodding Saltbush	
Eleocharis acuta	Common Spike-rush	
Enchylaena tomentosa var *tomentosa*	Ruby Saltbush	
Erharta erecta	Panic Veldt-grass	*
Erodium botrys	Big Heron's-bill	*
Erodium moschatum	Musky Heron's-bill	*
Erodium spp.	Stork's-bill	*
Eucalyptus camaldulensis	River Red Gum	P
Eucalyptus globulus subsp. bicostata	Southern Blue Gum	P
Eucalyptus gomphocephala	Tuart	*P native to WA
Eucalyptus leucoxylon ?	Yellow Gum	P
Eucalyptus microcarpa	Grey Box	P
Eucalyptus ovata	Swamp Gum	P
Helminthotheca echioides	Ox-tongue	*
Holcus lanatus	Yorkshire Fog	*
Hordeum spp.	Barley	*

Hypochaeris glabra	Smooth Cat's-ear	*
Juncus subsecundus	Finger Rush	
Lepidium africanum	Common Peppercress	*
Lolium spp.	Rye-grass	*
Lycium ferocissimum	African Boxthorn	*C
Lythrum hyssopifolia	Small Loosestrife	
Maireana brevifolia	Short-leaf Bluebush	
Maireana decalvans	Black Cotton Bush	
Malva parviflora	Small-flower Mallow	*
Marrubium vulgare	Horehound	*C
Marsilea drummondii	Common Nardoo	
Melaleuca spp.	Paperbark	P
Modiola caroliniana	Red-flower Mallow	*
Nassella leucotricha	Texas Needlegrass	*
Nassella neesiana	Chilean Needlegrass	*R
Nassella trichotoma	Serrated Tussock	*C
Nothoscordum borbonicum	Fragrant False Garlic	*
Olea europaea	Olive	*P
Oxalis corniculata	Creeping woodsorrel	*
Oxalis incarnata	Pale pink-sorrel	*
Oxalis perennans	Grassland Woodsorrel	
Panicum capillare	Common Millet	*
Paspalum dilatum	Paspaulum	*
Phalaris aquatica	Toowoomba Canary-grass	*
Plantago coronopus	Buck's-horn Plantain	*
Platago lanceolata	Ribwort	*
Polygonum aviculare	Prostrate Knot Weed	*
Portulaca oleracea	Common Purslane	
Rapistrum rugosum	Giant Mustard	*
Rumex conglomeratus	Clustered Dock	*
Rumex crispus	Curly Dock	*
Rytidosperma caespitosum	Common Wallaby-grass	
Rytidosperma duttonianum	Brown-back Wallaby-grass	
Rytidosperma fulvum	Copper-awned Wallaby-grass	
Schinus molle	Peppercorn Tree	*
Sonchus spp.	Sow thistle	*
Stellaria media	Chickweed	*
Trifolium spp.	Clovers	*
Vulpia bromoides	Squirrel-tail Fescue	*
Vulpia muralis	Wall Fescue	*
Vulpia myuros	Rat's-tail Fescue	*
Xanthium spinosum	Bathurst Burr	*C
Yucca spp.	Yucca	*P
Zantedeschia aethiopica	White Arum Lily	*P

Appendix 2 (table): threatened fauna recorded within 5km of site.

vu VU = vulnerable; en EN = endangered; cr CR = critically endangered

scientific Name	common Name	last recorded	FFG Act	EPBC Act	Habitat	Likelihood of Occurrence
Accipter novaehollandiae	Grey Goshawk	2008	en		Open forests, rainforests, woodlands, plantations, may move through open farmland & urban areas outside of breeding season Preference for tall, wet forests (Merchant & Higgins 1990; SWIFFT).	Preferred habitat absent.
Actitis hypoleucos	Common Sandpiper	1990	vu		Migratory. Coastal & inland wetlands, estuaries. Found on muddy margins/rocky shores.	habitat absent.
Anseranas semipalmata	Magpie Goose	2023	vu		Associated with wetlands, floodplains and rivers, wet grasslands.	Unlikely. Species may be sighted in general area/neighbouring lands under inundation/flooding conditions.
Antigone rubicunda	Brolga	2019	en		Breeding, wetlands habitats: freshwater meadows, shallow freshwater marshes. Non breeding habitats, include permanent open water and deep freshwater marshes. May forage in nearby crops and paddocks (SWIFFT).	Habitat not present.
Ardea intermedia plumifera	Plumed Egret	2022	cr		Wetlands. Dense aquatic vegetation in (mainly terrestrial) freshwater wetlands, also billabongs, lakes, swamps.	Habitat not present.
Biziura lobata	Musk Duck	2019	vu		Almost entirely aquatic. Terrestrial wetlands, deep freshwater lagoons. Preference for deep waters, with dense, abundant aquatic vegetation.	Habitat not present.
Botaurus poiciloptilus	Australasian Bittern	1990	cr	EN	Brackish and shallow wetlands with abundant emergent vegetation (reedy habitat). Also, rice crops.	Habitat not present.
Calidris acuminata	Sharp-tailed Sandpiper	2015	vu	VU	Migratory. Freshwater & saline habitat. Inland & coastal locations. Also found from sewage farms, flooded fields, rocky shores, mudflats, mangroves, beaches.	Habitat not present.
Calidris canutus	Red Knot	1981	en	VU	Migratory. Intertidal mudflats, sandflats of sheltered coasts, estuaries, bays, inlets, lagoons and harbours. Also, occasionally seen on saline wetlands, sewage farms and saltworks.	Habitat not present.
Calidris ferruginea	Curlew Sandpiper	2019	cr	CR	Migratory. Intertidal mudflats of estuaries, lagoons and mangroves. Also, beaches, rocky shores, salt lakes	Habitat not present.
Callocephalon fimbriatum	Gang-gang Cockatoo	2016	en	EN	Altitudinal migrant, dispersing from highlands to lower elevation during autumn-winter. Breeding occurs in highlands, in forests and woodlands. Often sighted in suburban environments foraging.	Unlikely. May be seen in general Lara area. Site does not provide abundant foraging sources.
Calyptorhynchus lathami	Glossy Black-Cockatoo	2023	vu	VU	Forests and woodlands. Associated with *Allocasuarina* spp. & *Casuarina* spp. which is the species primary food source.	Unlikely. Site contained two (2) small poor condition, (likely planted) *Allocasuarina*

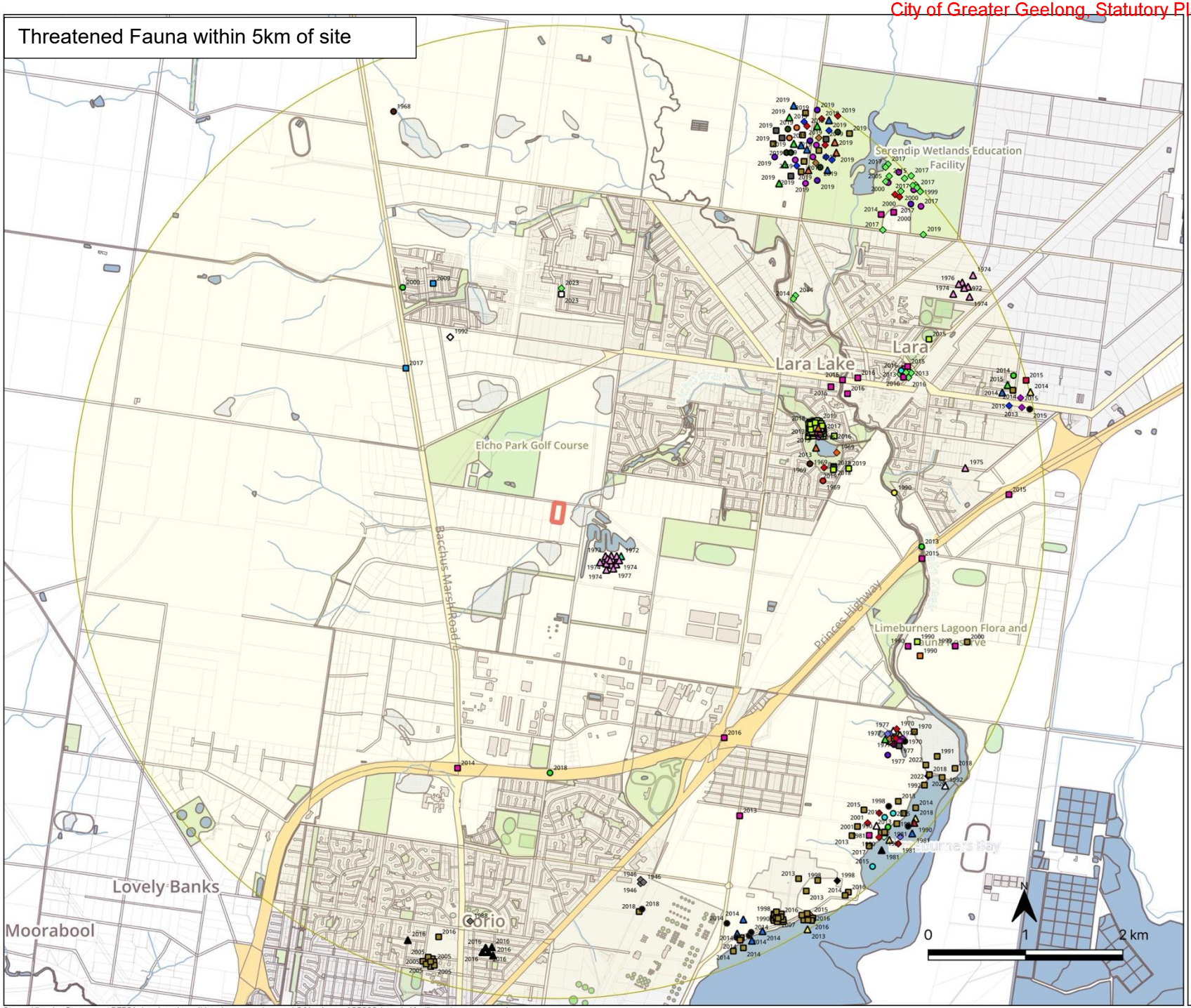
						spp. Unlikely to provide sufficient habitat/food source for species.
Climacteris picumnus	Brown Treecreeper (south-eastern)	1969	vu	VU	Dry open eucalypt forests & woodlands. South-eastern subspecies mainly inhabits woodlands dominated by stringybarks/rough-barked eucalypts, with open grassy understorey.	Habitat not present.
Delma impar	Striped Legless Lizard	1992	en	VU	Grasslands dominated by *Austrostripa* spp. *Rytidosperma* spp. & *Themeda triandra*. Preference for high grass structural complexity (Howland et al 2016). Sheltering in deep-cracking soils, logs and/or scattered surface rock. Known to inhabit degraded grasslands with tussock forming exotics (Roberston & Coventry 2019). Recorded from Moorabool (2020) approx. 6.5km west of site.	Moderate. Some habitat features present e.g., tussock grasses (exotic and indigenous), cracking-soils. Land-use practices/potential flooding, and lack of structural complexity of remnants, brings doubt to its potential occurrence/ability to persist within the site.
Egretta garzetta	Little Egret	2022	en		Swamps, billabongs, mudflats, floodplains, mangroves. Utilises reed beds, trees in standings for breeding.	Habitat not present.
Falco subniger	Black Falcon	2018	cr		Diverse range of habitats. Shrublands, grasslands, woodlands and farmlands. Typically in association with streams, rivers, wetlands, utilising dead trees, large old trees for perching and nesting.	Habitat not present.
Gallinago hardwickii	Latham's Snipe	2019		VU	Migratory. Permanent and ephemeral wetlands. Preference for open freshwater wetlands, with dense vegetation.	Preferred habitat not present.
Haliaeetus leucogaster	White-bellied Sea-Eagle	2019	en		Maritime habitats, associated with nearby terrestrial waterways, wetlands and rivers. Nest in trees or occasionally on rocks when lacking suitable nesting trees.	Habitat not present.
Hesperilla flavescens	Yellow Sedge-skipper Butterfly	1988	en		Swamps, sedgelands dominated by *Gahnia* spp. Saw-sedge.	Site lacks preferred habitat, i.e., *Gahnia* spp.
Hieraaetus morphnoides	Little Eagle	2016	vu		Woodlands, forests, riparian areas and open country. Avoids heavy rainforest. Nests in mature trees.	Site lacks preferred habitat. May be seen in general area.
Hirundapus caudacutus	White-throated Needletail	1981	vu	VU	Migratory. Almost exclusively aerial, occurring over a variety of habitat, particularly wood u. mjk. nhgffed areas.	Site lacks preferred habitat. May be seen in general area.
Hydroprogne caspia	Caspian Tern	2018	vu		Coasts, in sheltered embayments, harbours, inlets, lagoons, estuaries.	Habitat not present.
Ixobrychus dubius	Australian Little Bittern	1970	en		Wetlands. Freshwater habitats, strong preference for tall dense aquatic vegetation.	Habitat not present.
Lathamus discolor	Swift Parrot	1998	cr	CR	Breeding occurs in Tas, migrating to the mainland during autumn, winter and early spring. On the mainland occurs mostly in association with its preferred flowering *Eucalypts* (Red Ironbark, Mugga Ironbark, Yellow Gum, Grey Box, also River Red Gum and White Box).	Habitat not present.
Lewinia pectoralis	Lewin's Rail	1990	vu		Densely vegetated wetland habitats. Also, densely vegetated farm dams, saline lakes and river flats.	Habitat not present.

Limosa limosa	Black-tailed Godwit	2019	cr	EN	Mostly coastal habitats, oft in sheltered bays, estuaries and lagoons with large intertidal mudflats and/or sandflats. Has been recorded from sewerage treatment works, wet fields.	Habitat not present.
Litoria raniformis	Growling Grass Frog	N/A**	vu	VU	**species not recorded within 5km of site. Species last recorded in 2020 (10km radius search) and is known to inhabit the WGGA (e.g., Cowies Ck population). Inhabits slow-flowing or still waterbodies with surrounding emergent vegetation. Also, grassland and areas of improved pasture, but is typically found in dams, ponds and marshes and appears to prefer aquatic and riparian vegetation.	Low. Site lack preferred habitat. Potential to reside in waterbodies in neighbouring lands.
Neophema chrysogaster	Orange-bellied Parrot	1977	cr	CR	Breeds in Tas, migrating to mainland VIC & SA during winter, where they typically occur in coastal and near coastal areas, preferencing saltmarshes, littoral heathlands and low scrublands. Also seen in grassy areas.	Habitat not present.
Neophema chrysostoma	Blue-winged Parrot	2016	vu	VU	Range of habitats: coastal, sub-coastal and inland areas, to semi-arid zones. Appear to favour grasslands, grassy woodlands often near wetlands. Has been sighted in airfields, golf-courses and paddocks foraging on seeds from native and introduced grasses, shrubs & herbs. Nesting occurs in heathy forests, woodlands, wetter forests in hollow-bearing trees and stumps.	Breeding habitat not present. Site may provide some limited foraging habitat in the form of exotic and indigenous grasses.
Ninox connivens	Barking Owl	1969	cr		Open woodlands, along edges of forests, farmlands. Typically, in settings dominated by Eucalyptus spp. with a higher density of large trees, near waterways.	Habitat not present.
Ninox strenua	Powerful Owl	1969	vu		Open forests, woodlands, along sheltered gullies in wet forests with dense understorey. Typically, near or along watercourses. May be seen in urbanised areas in remnant bushlands and parks. Requires old growth trees for nesting.	Habitat not present.
Numenius madagascariensis	Eastern Curlew	1992	cr	CR	Migratory shorebird. Coastal areas, wetlands, intertidal mudflats and/or sandflats, often with seagrass. Also, sheltered coasts, estuaries, mangroves and lagoons.	Habitat not present.
Oxyura australis	Blue-billed Duck	2019	vu		Almost wholly aquatic. Preference for deep, permanent, densely vegetated water bodies.	Habitat not present.
Perameles gunnii	Eastern Barred Bandicoot	1980	en	EN	Structurally complex habitat with dense cover of grasses, sedges, shrubs. Original habitat native grasslands and grassy woodlands, particularly along watercourses, now, heavily modified habitats e.g., farmlands, gardens and parklands. Requires a dense, structurally complex, ground cover (exotic and indigenous) for nesting and foraging; Apparently rarely observed for from thick cover (Hill, Winnard & Watson 2010).	Low-to-moderate. Site does not contain sufficient groundcover, in conjunction with disturbances related to human-activity and/or predation from species such as dogs, there is doubt to its persistence. Though species was sighted approx. 720m east of the site.
Pseudemoia pagenstecheri	Tussock Skink	2016	en		Grassland habitats of the western volcanic plains (and alpine ecosystems in the High Country). In western volcanic plains, typically found in grassy treeless areas or grassy woodlands, often	Moderate. Some habitat features present e.g., tussock grasses, cracking-

					in association with rocks on the volcanic plains, where they bask on fallen timber, rocks or within grass tussocks (Robertson & Coventry 2019).	soils. Land-use practices/potential flooding, and lack of structural complexity of remnants, brings doubt to its potential occurrence/ability to persist within the site.
Sminthopsis crassicaudata	Fat-tailed Dunnart	1972	vu		Variety of open habitats, woodlands, low shrublands, grassland ecosystem. More common in arid & semi-arid regions of Aus. In Vic, associated with grassy ecosystems, requiring sheltering habitat such as timber, rocks, or deep cracks in soil.	Low-to-moderate, due to degree of modification within the site, presence of dogs (formerly within site and within neighbouring properties) and last recording. Some cracking soil is present though other sheltering habitat such as rocks and logs (or discarded material i.e., fence-posts, corrugated iron) appeared absent. Species was recorded approx. 720m east of site.
Spatula rhynchotis	Australasian Shoveler	2019	vu		Large deep freshwater wetlands with abundant aquatic vegetation. Also, inshore estuarine waters, farms dams.	Habitat not present.
Sternula albifrons	Little Tern	2019	cr	VU	Migratory. Sheltered coastal habitats, including lagoons, estuaries, river mouths and deltas, particularly those with exposed sandbanks, sand-spits. Also occasionally, exposed ocean beaches. Roost or loafs on sand-spits surrounded by narrow shallow channels within lakes, or more exposed spite in larger lakes. Forages in shallow waters.	Habitat not present.
Sternula nereis	Fairy Tern	2018	cr	VU	Variety of habitats across its range, associated with coastal environments; embayments, estuaries, inlets, coastal lakes. Forage in shallow waters.	Habitat not present.
Stictonetta naevosa	Freckled Duck	2019	en		Terrestrial freshwater wetlands, floodplains and swamps with dense vegetation (lignum, cumbungi). Moves from ephemeral breeding waters to more permanent waterbodies e.g., lakes, reservoirs, farm dams and sewerage ponds.	Habitat not present.
Synemon plana	Golden Sun Moth	2017	vu	VU	Typically, closely correlated to native temperate grasslands with high densities of *Rytidosperma* spp. Wallaby grasses, and to a lesser extent *Themeda triandra* Kangaroo grass and *Austrostipa* spp. Spear grasses, 'that are generally low to moderate in grass height and have a moderate to high grass cover with areas of bare ground (inter-tussock space)' (ACT 2017, Golden Sun Moth Action Plan, p.192). GSM is also recognised to inhabit grassland sites infested by *Nassella neesiana* Chilean Needlegrass and other exotic species (e.g., *Nassella trichotoma* Serrated Tussock).	Moderate. Site contains remnant grassland patches consisting of *Rytidposperma* spp., *Nassella neesiana* was also recorded within the site, though, not particularly abundant within the site. Continual disturbance to the groundcover in the form of mowing/slashing and

						periodic flooding brings doubt to viability of the habitat present.
Tringa brevipes	Grey-tailed Tattler	2015	cr		Migratory. Sheltered coasts, rock platforms, intertidal mudflats. Also, embayments, estuaries and coastal lagoons.	Habitat not present.
Tringa nebularia	Common Greenshank	2019	en	EN	Migratory. Ephemeral and permanent inland wetlands, sheltered coastal wetlands.	Habitat not present.
Tringa stagnatilis	Marsh Sandpiper	2019	en		Migratory. Fresh or brackish wetlands, swamps, rivers, water meadows, sewage farms, lagoons, drains. Mostly along coastal areas.	Unlikely. Species may be sighted in general area/neighbouring lands under inundation/flooding conditions.
Tympanocryptis pinguicolla	Grassland Earless Dragon	N/A	cr	CR	Rediscovered in 2023. Grassland Earless Dragons are generally associated with relatively undisturbed temperate grasslands, with deep cracking clay soils. The grasslands with the 'greatest likelihood of harbouring a remnant Victorian grassland earless dragon population are likely to have (DCCEEW 2023): i) native vegetation cover with open patches of bare earth and/or naturally short open swards due to low-level disturbance (e.g., managed fire, grazing); ii) invertebrate burrows and/or rock cover and/or cracking vertisol soils; iii) adequate invertebrate prey; iv) minimal weed cover and v) not been de-rocked, ploughed or fertilised to improve pasture quality.'	Low. Features such as cracking soil are present, however, the level of disturbance and degradation within the site significantly detracts from the quality of the habitat. The site also lacked rock cover which appears to be favoured by the speices.

Threatened Fauna within 5km of site



study site
5km radius

Threatened fauna within 5km of site

- Australasian Bittern
- Australasian Shoveler
- Australian Little Bittern
- Barking Owl
- Black Falcon
- Black-tailed Godwit
- Blue-billed Duck
- Blue-winged Parrot
- Brolga
- Brown Treecreeper
- Caspian Tern
- Common Greenshank
- Common Sandpiper
- Curlew Sandpiper
- Eastern Barred Bandicoot
- Eastern Curlew
- Fairy Tern
- Fat-tailed Dunnart
- Freckled Duck
- Gang-gang Cockatoo
- Glossy Black-Cockatoo
- Golden Sun Moth
- Grey-tailed Tattler
- Latham's Snipe
- Lewin's Rail
- Little Eagle
- Little Egret
- Little Tern
- Magpie Goose
- Marsh Sandpiper
- Musk Duck
- Orange-bellied Parrot
- Plumed Egret
- Powerful Owl
- Red Knot
- Sharp-tailed Sandpiper
- Striped Legless Lizard
- Swift Parrot
- White-bellied Sea-Eagle
- White-throated Needletail
- Yellow Sedge-skipper Butterfly

Source: Victorian Government DEECA datashare: https://datashare.maps.vic.gov.au/; 34 landscape 1:35000. Intended for illustrative purposes only.

Appendix 2.1 (table): threatened flora within 5km of site

vu VU = vulnerable; en EN = endangered; cr CR = critically endangered

scientific Name	common Name	last recorded	FFG Act	EPBC Act	Habitat/distribution	Likelihood of Occurrence
Atriplex paludosa subsp. *paludosa*	Marsh Saltbush	1924	en		Common on fringes of coastal and near-coastal saltmarshes west from Wilsons Promontory.	Habitat not present.
Avicennia marina subsp. *australasica*	Grey Mangrove	2003	en		Tidal mudflats (bays, estuaries and creek-mouths) from western-half of Port Phillip Bay to Corner Inlet.	Habitat not present.
Calotis anthemoides	Cut-leaf Burr-daisy	1923	cr		Scattered north & west of Melbourne (e.g., Sunshine, Camperdown, Moyston, Dunkeld, Numurkah regions) on heavy soils prone to waterlogging. Flowers Sep.-Dec.	Site likely too disturbed and modified to support species. Species was not recorded.
Comesperma polygaloides	Small Milkwort	1923	cr		Occasional heavier soils (clays, alluvium) supporting grassland and grassy woodland communities in central and south-western areas. Flowers Nov.-Jan.	Appears unlikely. Site likely too disturbed and modified to support species. Not recorded.
Cullen parvum	Small Scurf-pea	1924	en		Rare in Vic, generally, grows in drier parts of the state in grassland and grassy woodland on heavy soils. Flowers Oct.-Jan.	Low. Site likely too disturbed and modified to support species. Not recorded.
Diuris palustris	Swamp Diuris	1965	en		Swampy depressions within grasslands or open woodland communities, scattered throughout western vic. Probably now extinct in all former sites near Melbourne. Flowers Aug.-Oct.	Low. Site likely too disturbed and modified to support species. Not recorded.
Lachnagrostis robusta	Salt Blown-grass	1997	en		On margins of salt lakes & saline depressions across the VVP.	Habitat not present.
Pimelea spinescens subsp. *spinescens*	Spiny Rice-flower	2013	cr	CR	Associated with Natural Temperate Grasslands of the Victorian Volcanic Plains & Natural Grasslands of the Murray Valley Plains. Typically found in intact grassland remnants, lowland grasslands, grassy woodlands and open shrublands. May persist in degraded grassland patches.	Low. Site likely too disturbed and modified to support species, though may persist in degraded remnants. Species was not recorded.
Podolepis linearifolia	Basalt Podolepis	1923	en		Usually grows on heavy clay soils in grasslands but also recorded for grassy woodlands, open forests and around swamps. Flowers Sep.-Dec.	Low. Site likely too disturbed and modified to support species. Not recorded.

Prasophyllum spicatum	Dense Leek-orchid	1934	cr	VU	Sandhills and coastal heaths. Localised across southern Vic in coastal heathland/near heathy forests on sandy soils. Flowers Oct.-Dec.	Habitat not present
Prasophyllum suaveolens	Fragrant Leek-orchid	1924	cr	EN	Endemic to the basalt plains of south-western Victoria where it grows in grassland and grassy woodland on brown water-retentive clay loams. Flowers Oct-Nov.	Appears unlikely. Site likely too disturbed and modified to support species. Not recorded.
Pterostylis truncata	Brittle Greenhood	2021	cr		Restricted to south-central Vic. Apparently limited to an area within 65 km radius of Melbourne. Recorded from Lara, particularly The You Yangs. Basalt plains grasslands & woodlands or granite outcrops. Flowers Feb-July.	Low. Site likely too disturbed and modified to support species. Not recorded.
Rhagodia parabolica	Fragrant Saltbush	2024	vu		Steep rocky slopes and broad ridges between Sunbury and Geelong. Also, in mallee in the north-west.	Habitat not present. Not recorded.
Rumex crystallinus s.s.	Glistening Dock	1982	en		Rare in Vic. Occurring in the far north-west of the state on the Murray River floodplain. Recorded from margins and drying beds of Lakes Wallawalla, Hattah & Lalbert.	Habitat not present. Not recorded.
Rutidosis leptorhynchoides	Button Wrinklewort	1923	en	EN	In Victoria confined to basaltic grasslands between Rokewood and Melbourne.	Low. Site likely too disturbed and modified to support species. Not recorded.
Rytidosperma richardsonii	Straw Wallaby-grass	1961	en		Recorded from grassy woodlands in few localities in north-east Vic. A specimen was recorded from Geelong Grammar School at Corio, though may have been cultivated (Vicflora 2026).	Unlikely, as distribution suggests only one specimen has been recorded from Geelong Grammar Grounds. Not recorded.
Senecio macrocarpus	Large-headed Fireweed	1998	cr	VU	Variety of habitats including grasslands, sedgelands, shrublands & woodlands. Grows on sparsely vegetated sites on sandy to heavy clay soils, often in depression that are waterlogged during winter. Often occurs in Themeda triandra, herb-rich grasslands. Flowers Aug-Oct.	Low. Site likely too disturbed and modified to support species. Not recorded.
Swainsona behriana	Southern Swainson-pea	1926	en		Usually in grasslands & grassy woodland on relatively fertile soils. Flowers Aug.-Jan. Widespread, but sporadic in Vic. Mostly in lowlands west of Melbourne.	Low. Site likely too disturbed and modified to support species. Not recorded.
Thelymitra gregaria	Basalt Sun-orchid	1925	cr		Endemic to Vic. Found in species-rich tussock grassland (dominated by *Themeda triandra*) on red-brown loams derived from basalt. Often at sites with	Low. Site likely too disturbed and modified to support species. Not recorded.

					embedded basalt boulders. Flowers Sep.-Nov.	
Tripogonella loliiformis	Rye Beetle-grass	1998	en		An uncommon grass of scattered occurrence through drier areas of the state (e.g. Mt Arapiles, basalt plains just west of Melbourne, Strathbogie Ranges, Killawarra Forest near Wangaratta, Beechworth, Suggan Buggan). Usually occurring on shallow soils overlying rock.	Unlikely, preferred habitat is not present. Not recorded.

Threatened Flora within 5km of site

Source: Victorian Government DEECA datashare: https://datashare.maps.vic.gov.au/; 34 landscape 1:35000. Intended for illustrative purposes only.

Appendix 3

EVC/Bioregion Benchmark for Vegetation Quality Assessment

Victorian Volcanic Plain bioregion

EVC 132_63: *Low-rainfall* Plains Grassland

Description:
Treeless vegetation mostly < 1 m tall dominated by largely graminoid and herb life forms. Occupies cracking basalt soils prone to seasonal waterlogging in areas receiving < 500 mm annual rainfall.

Life forms:

Life form	#Spp	%Cover	LF code
Small Shrub*	1	5%	SS
Prostrate Shrub	1	5%	PS
Large Herb*	2	5%	LH
Medium Herb	8	20%	MH
Small or Prostrate Herb*	3	10%	SH
Large Tufted Graminoid	1	5%	LTG
Medium to Small Tufted Graminoid	10	30%	MTG
Medium to Tiny Non-tufted Graminoid*	2	5%	MNG
Bryophytes/Lichens and Soil Crust**	na	20%	BL

* Largely seasonal life form
** Note: treat as one life form in this EVC

LF Code	Species typical of at least part of EVC range	Common Name
SS	*Pimelea curviflora* s.s.	Curved Rice-flower
PS	*Atriplex semibaccata*	Berry Saltbush
LH	*Ptilotus macrocephalus*	Feather-heads
MH	*Acaena echinata*	Sheep's Burr
MH	*Plantago gaudichaudii*	Narrow Plantain
MH	*Maireana enchylaenoides*	Wingless Bluebush
MH	*Calocephalus citreus*	Lemon Beauty-heads
SH	*Solenogyne dominii*	Smooth Solenogyne
SH	*Oxalis perennans*	Grassland Wood-sorrel
SH	*Chamaesyce drummondii*	Flat Spurge
SH	*Goodenia pinnatifida*	Cut-leaf Goodenia
LTG	*Austrostipa bigeniculata*	Kneed Spear-grass
MTG	*Austrostipa scabra*	Rough Spear-grass
MTG	*Austrostipa nodosa*	Knotty Spear-grass
MTG	*Whalleya proluta*	Rigid Panic
MTG	*Austrodanthonia duttoniana*	Brown-back Wallaby-grass
TTG	*Centrolepis strigosa* ssp. *strigosa*	Hairy Centrolepis
TTG	*Centrolepis aristata*	Pointed Centrolepis
SC	*Convolvulus erubescens* spp. agg.	Pink Bindweed

Recruitment:
Episodic/Fire or Grazing. Desirable period between disturbances is 5 years.

Organic Litter:
10% cover

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EVC 132_63: *Low-rainfall* Plains Grassland - Victorian Volcanic Plain bioregion

Weediness:

LF Code	Typical Weed Species	Common Name	Invasive	Impact
LH	*Plantago lanceolata*	Ribwort	high	low
LH	*Cirsium vulgare*	Spear Thistle	high	high
LH	*Sonchus oleraceus*	Common Sow-thistle	high	low
MH	*Hypochoeris radicata*	Cat's Ear	high	low
MH	*Leontodon taraxacoides* ssp. *taraxacoides*	Hairy Hawkbit	high	low
MH	*Trifolium subterraneum*	Subterranean Clover	high	low
MH	*Plantago coronopus*	Buck's-horn Plantain	high	low
MH	*Trifolium striatum*	Knotted Clover	high	low
MH	*Trifolium dubium*	Suckling Clover	high	low
MTG	*Romulea rosea*	Onion Grass	high	low
MTG	*Vulpia bromoides*	Squirrel-tail Fescue	high	low
MTG	*Briza minor*	Lesser Quaking-grass	high	low
MTG	*Bromus hordeaceus* ssp. *hordeaceus*	Soft Brome	high	low
MTG	*Briza maxima*	Large Quaking-grass	high	low
MTG	*Lolium rigidum*	Wimmera Rye-grass	high	low
MTG	*Lolium perenne*	Perennial Rye-grass	high	low
MTG	*Nassella neesiana*	Chilean Needle-grass	high	high
MNG	*Cynosurus echinatus*	Rough Dog's-tail	high	low
MNG	*Juncus capitatus*	Capitate Rush	high	low

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EVC/Bioregion Benchmark for Vegetation Quality Assessment

Victorian Volcanic Plain bioregion

EVC 125: Plains Grassy Wetland

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

Life Forms:

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

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

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

Organic Litter:
20% cover

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

Victoria
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EVC 125: Plains Grassy Wetland - Victorian Volcanic Plain bioregion

Weediness:

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

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