

VCAT ISSUED (3 FEBRUARY 2023)

Jacksons Creek Reserve – 89 Ross Watt Road, Gisborne

Conservation Management Plan

**Prepared for
ID Ross Watt Road Pty Ltd**

January 2023
Report No. 21137 (1.2)



**Nature
Advisory**

(Formerly Brett Lane & Associates Pty Ltd)

5/61-63 Camberwell Road
Hawthorn East, VIC 3123
PO Box 337, Camberwell VIC 3124

(03) 9815 2111
www.natureadvisory.com.au

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1. Introduction

ID Ross Watt Road Pty Ltd engaged Nature Advisory (Pty) Ltd to prepare a Conservation Management Plan (CMP) of a 15.39-hectare area of land at 89 Ross Watt Road, Gisborne. The subject land, herein referred to as the study area, is located on the southern section of the property where the land slopes down a steep escarpment to Jacksons Creek. A linear conservation reserve is also proposed along the northern boundary of the property. The remainder of the property is proposed for subdivision and residential development. This CMP is covered by the Macedon Ranges Planning Scheme and has been prepared to protect and conserve the environmental values in the area.

Observations of Platypus (*Ornithorhynchus anatinus*) have been recorded nearby along Jacksons Creek and populations of Growling Grass Frog were considered to have potential to occur (although the nearest record along Jacksons Creek is south of Sunbury, >40 km away). This CMP therefore aims to protect and improve the natural habitat for these species.

It is also a requirement for the landowner (or a third party to whom responsibilities have been legally transferred) to prevent the growth and spread of listed weeds under the *Catchment and Land Protection Act 1994* (CaLP Act). Other high threat weeds that pose a risk to native vegetation, or risk spreading into surrounding vegetation will also be controlled.

The conservation area to be protected, maintained and enhanced comprises Jackson Creek reserve including the embankment and waterway, a linear conservation reserve, and drainage and tree reserves. This area will be managed by the landowner or nominated authority/agent for the 10-year duration of the CMP, after which ownership and management of the conservation area may be handed over to Macedon Ranges Shire Council (TBC).

This CMP documents the environmental values of the study area and prescribes management actions for a 10-year period and is divided into the following sections:

Section 2 outlines definitions and the methods used to undertake the field assessment.

Section 3 describes the environmental values of the study area and the threats to these values.

Section 4 provides management prescriptions for the study area, including fencing, weed control, pest control and revegetation.

This plan was prepared by a team at Nature Advisory including Kylie Payze (Botanist), Nhung Nguyen (Senior GIS Analyst) and Inga Kulik (Project Manager and Director).

2. Definitions, methods and assessment process

2.1. Definitions

2.1.1. Study area

The study area is approximately 15-hectares of land, located in the southern section of 89 Ross Watt Road, Gisborne.

2.1.2. Infestation site

An infestation site comprises the following:

- The location of a woody weed; or
- A defined area or the location of an herbaceous high-threat weed.

2.1.3. High-threat weed

A high-threat weed is determined as any of the following:

- All woody weeds;
- Declared noxious weeds under the *CaLP Act 1994*;
- Any other weed deemed to be high-threat due to the potential risk the species poses to the surrounding landscape; or
- Weeds not otherwise accounted for above that are on DELWP's *Advisory List of Environmental Weeds* and occurred above a negligible cover.

2.1.4. Noxious weeds listed under the *CaLP Act*

Noxious weeds are those listed under the *Catchment and Land Protection Act 1994* (CaLP Act). There are four categories of noxious weeds defined under the CaLP Act:

- State prohibited weeds – species that do not occur in Victoria but pose a significant threat, or do occur in Victoria but it is reasonable to expect that they can be eradicated.
- Regionally prohibited weeds – species are not widely distributed in a region but are capable of spreading further. It is reasonable to expect they can be eradicated from a region. Landowners must take all reasonable steps to eradicate the spread of regionally prohibited weeds on their land.
- Regionally controlled weeds – species are usually widespread in the region. Landowners have the responsibility to take all reasonable steps to prevent the growth and spread of regionally controlled weeds on their land.
- Restricted weeds – species is a serious threat to another state or territory in Australia. Trade in these weeds and their propagules is prohibited.

The noxious weeds category assigned to each species within the study area is for the Port Phillip and Westernport catchment management area.

2.2. Field methods

A field assessment of the flora and fauna values within the study area was undertaken on 22nd June 2022. An additional assessment was undertaken on the 21st November 2022 to document the weeds and other management issues of the site. During this assessment, the study area was surveyed on foot.

High-threat weed species encountered in the study area were recorded and sites mapped using ArcGIS Field Maps© (accurate to approximately five metres). This includes all CaLP Act listed weeds. Where high threat weeds such as grasses are scattered across the entire study area, the extent of the infestation has been described, rather than mapped.

3. Environmental values and threats

3.1. Existing conditions

The study area for this investigation (Figure 1) is approximately 14 hectares of private land located at 89 Ross Watt Road, Gisborne, about 50 kilometres from Melbourne's CBD. The site is bordered by an area of farmland proposed for subdivision and development to the north, Jacksons Creek to the south and west, and residential housing to the east.

The study area supports heavy soils on an undulating landscape sloping down a steep escarpment to Jacksons Creek. The farmland to the north is currently used for grazing livestock.

There are small areas of native vegetation along Jacksons Creek that are dominated by Narrow-leaf Cumbungi, Broad-leaf Cumbungi and Common Reed. Large patches of Herb-rich Foothill Forest and (EVC 23) and *Higher Rainfall* Plains Grassy Woodland (EVC 55_63) were previously mapped on the escarpment (Nature Advisory 2021). These include large Eucalypts such as Manna Gum and Swamp Gum. However, the understorey in these patches now has a greater cover of introduced species and does not qualify as a patch where there are no native canopy trees, understorey trees or shrubs. Large infestations of noxious and high threat weeds were observed, particularly within the escarpment, and include Blackberry, Hawthorn, Gorse, Spear Thistle, Variegated Thistle, Prunus sp., and Desert Ash. Other introduced species were scattered throughout, such as Sweet Vernal-grass, Rat-tail Grass, Brown-top Bent, Toowoomba Canary-grass, Yorkshire Fog, Ribwort, Cat's-ear, Perennial Rye-grass and Rat's-tail Fescue.

Fauna habitat within the study area consists of native treed vegetation, grassland and aquatic areas. Large scattered remnant trees are numerous and hollow-bearing, however most are isolated from patches of treed vegetation adjacent to Jacksons Creek.

The following key fauna habitat areas occurred within the region:

- Gisborne Nature Conservation Reserve to the northeast. This reserve was separated from the study area by Ross Watt Road.
- Jacksons Creek along the southern and western boundaries of the study area.
- Rosslynne Reservoir approximately 200 metres to the northwest. A narrow strip of grassland and treed vegetation separated the reservoir from the study area.
- Lerderderg State Park approximately 4 kilometres to the southwest. A mixture of pastoral land and remnant bush separated the study area from the State Park.

The study area provides an important link between Gisborne Nature Conservation Reserve and Jacksons Creek and Rosslynne Reservoir.

The study area lies within the Victorian Volcanic Plain and Central Victorian Uplands bioregions and falls within the Port Phillip and Westernport catchment management area.

3.2. Environmental values

The reserve area supports the following sensitive environmental values that will be retained and managed:

- One patch of Higher Rainfall Plains Grassy Woodland (EVC 55_63)
- One patch of Herb-rich Foothill Forest (EVC 23)
- Eight patches of Tall Marsh (EVC 821)
- 25 large trees in patches
- Four large scattered trees

- Jacksons Creek which is habitat for Platypus (recorded nearby) and potential habitat for Growling Grass Frog

3.3. Management issues (threats)

The following sections describe current and future threats to environmental values in the reserve and the management strategy designed to respond to these threats.

3.3.1. Unauthorised/inappropriate access

Unauthorised vehicular access to the reserve poses a risk to the environmental values, both during the construction phase of future development (i.e. by construction work personnel, equipment and activities) and during the post-occupancy phase. Unauthorised or inappropriate access may lead to the following:

- Habitat destruction and soil compaction;
- Destruction or degradation of health of environmental values;
- Weed invasion; and
- Introduction of pests and diseases.

Vehicular access to the reserve however will be provided for authorised/management vehicles.

3.3.2. Rubbish

There was no rubbish observed within the study area. Given that public access to the site is limited, it is unlikely that rubbish will be dumped. However, if rubbish and scrap accumulates during the construction stages, it will need to be removed to avoid providing harbor for invasive species and impacting Jacksons Creek.

3.3.3. Pest plants

High-threat weeds pose a significant risk to the native vegetation within the conservation reserve. Many of these species are currently out-competing indigenous species and will continue to do so if left untreated. The definition of a high threat weed is outlined in Section 2.1.3.

Weed cover was extensive across the study area, comprising high threat weeds such as Blackberry, Gorse, Desert Ash, Sweet Briar, Hawthorn, Spear Thistle, Variegated Thistle and Sweet Vernal-grass (see Figure 3). Woody weed infestations formed dense thickets on the escarpment, preventing the growth and recruitment of native species. The woody weeds that had the greatest cover were Blackberry, Gorse and Hawthorn. Grassy weeds were scattered throughout the entire study area.

A total of 13 high threat weeds were recorded during the field study, of which six were woody weeds, seven were high-threat herbaceous weeds and eight were listed under the CaLP Act.

Land managers are required to meet the obligations under the CaLP Act regarding preventing the growth and spread of regionally controlled weeds. A management strategy for pest plants is described in Section 4.4.4.

3.3.4. Pest animals

Evidence of rabbits (scats) were observed within the study area. Rabbits pose a risk to the native vegetation through overgrazing and digging around roots. Furthermore, rabbits can cause soil erosion, establishment of opportunistic weeds and encourage permanent populations of introduced species including foxes. Foxes are a threat to native wildlife in general, including Platypus and Growling Grass Frog.

Under the *Catchment and Land Protection Act 1994* all site managers must take reasonable steps to prevent the spread of, and as far as possible eradicate, established pest animals on their land, including, but not limited to rabbits and foxes. A management strategy for pest plants is described in Section 4.4.3












Photo 1: View across Jacksons Creek to the South



Figure 1: Study area and native vegetation


Project: 89 Ross Watt Road, Gisborne
Client: ID Land
Date: 23/01/2023

-  Study area
-  Jacksons Creek
- Native vegetation**
 -  Large scattered tree
 -  Large tree in patch
 -  Herb-rich Foothill Forest (EVC 23)
 -  Higher Rainfall Plains
 -  Grassy Woodland (EVC 55_63)
 -  Riparian Woodland (EVC 641)
 -  Tall Marsh (EVC 821)

N

Metres

0 90

 **Nature Advisory**

PO Box 337, Camberwell, VIC 3124, Australia
www.natureadvisory.com.au
03 9815 2111 - info@natureadvisory.com.au

4. Conservation Management Plan

4.1. Management Plan period

The following management strategy to be undertaken for a 10-year period beginning prior to the completion of the last stage of the Permit Area 1 Development..

A baseline survey was undertaken by a botanist from Nature Advisory as part of the preparation of this report. This survey determined the status of the environmental values and management issues within the reserve.

4.2. Security and management responsibility

The developer will be responsible for the implementation of this CMP for a duration of three years. Subsequently, the responsible authority will fulfill the balance of management actions until the reserve is handed over to Council in a condition suitable for transfer.

4.3. Construction environmental management measures

Detailed construction environmental management actions are provided in the subsections below. Management actions are to be reviewed and adapted as required. All construction contractors must be inducted into the content of this plan prior to accessing the site for the first time.

The following mitigation measures will be employed to ensure that there are no adverse impacts on the environmental values in the conservation area from adjacent construction works.

4.3.1. Fencing requirements

Prior to any further construction works within 10m of the conservation areas, the conservation area will be delineated to the standards detailed within Section 4.4.2. Markers will have 'NO GO ZONE' signs affixed at 20-metre intervals. This will prevent inappropriate access and subsequent damage to the environmental values within the conservation reserve.

4.3.1. Stockpiling, equipment lay down and rest areas

Stockpiling and equipment lay down must be located outside the conservation area to prevent adverse impacts on the conservation reserve.

4.4. Management actions

The following section outlines the management strategy to be undertaken for the ten-year period commencing on approval of the CMP. A summary of management actions is provided in Table 4. These actions are outlined in detail below.

4.4.1. Removal of rubbish

The reserves must remain clear of all rubbish associated with estate development at all times. This includes pipe material, structures, stockpiles, plastics, polystyrene, metals, tyres, rubble, furniture, car bodies, general rubbish, and agricultural assets (farm fencing, watering troughs etc.). Any construction waste must be disposed of at an approved landfill site. Exclusion fencing must be maintained throughout construction to prevent rubbish being dumped or blown into the reserves.

4.4.2. Fencing

The site manager has an obligation under this CMP to install, upgrade and maintain fencing. Fencing helps manage threats to native vegetation from people as well as overgrazing by native herbivores, pest animals and domestic stock. Fences must be installed and upgraded (if required) at the commencement of this CMP as triggered under Section 4.1 of this plan.

Temporary fencing

Temporary exclusion fencing must be installed one metres beyond the defined reserve boundary along the interface between the reserve and any areas undergoing construction (see Figure 2). The fence must be erected prior to the commencement of construction of any works within 10m of the conservation area and remain in place for the duration of construction of these works. Exclusion fencing (e.g. chain link or welded mesh) must be to a height of 1.8 metres, mounted on vertical steel pipes at 3 metre intervals, and driven 0.7 metres into the ground. No-go zone signage consistent with council requirements must be securely affixed to fencing at a maximum of 30 metre intervals and at a height of 1.5 metres. This must be installed prior to the commencement of construction and maintained for the duration of the works.

The fencing specifications may be adapted by an experienced contractor as necessary considering factors such as access requirements, pest animals and herbivores and impacts to native vegetation.

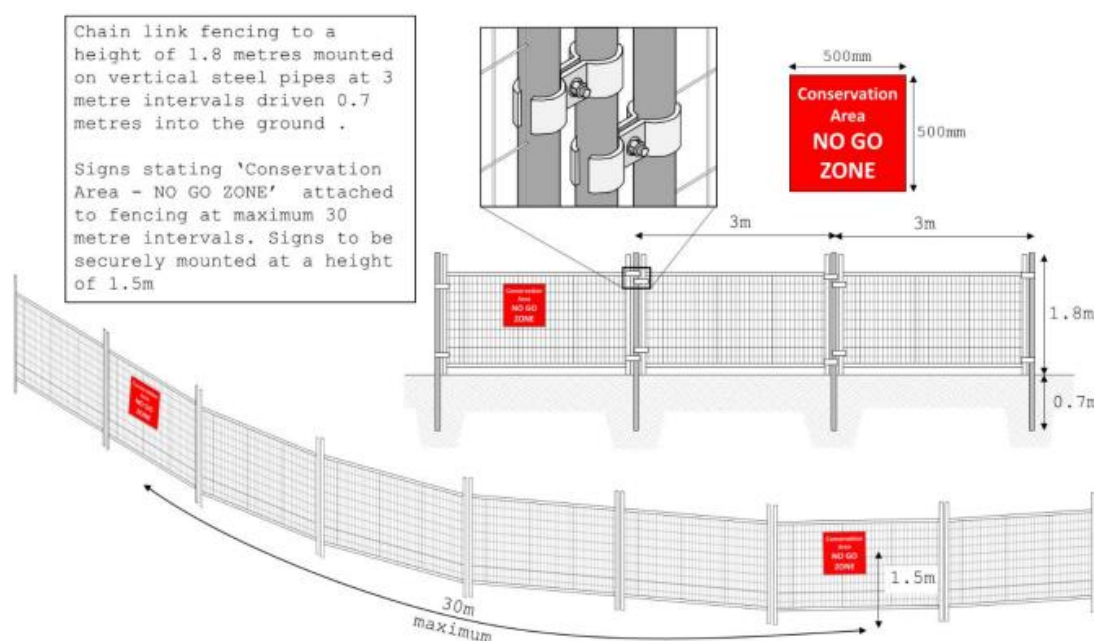


Figure 2: Exclusion fencing and no-go signage.

Permanent perimeter fencing

Permanent perimeter fencing (plain-strand post and wire fencing) with an access gate must be installed along the perimeter of each reserve that acts as the interface between the reserve the rest of the estate. Permanent fencing will prevent vehicular access to the reserve, other than management/monitoring personnel.

Fences must be installed and upgraded (if required) within three months of this plan being approved by the responsible authority, and prior to the commencement of construction.

Fencing must be Friendly Wildlife fencing to reduce risks of injury to fauna in the local area. It is unlikely to be applicable to SRW boundary fence but should be applied to other fences. Friendly Wildlife fencing characteristics include:

- A 40cm gap between the ground and bottom wire to allow animals to pass underneath;
- The use of plain high-tensile fencing wire;

- Avoidance of barbed wire if possible and if not, avoid placing it on the top three strands of the fence and bottom wire;
- A maximum fence height of 1.2m;
- Use white wire on the top wire so wildlife can see the fence more easily; and
- Avoidance of ringlocks on fences.

These characteristics are adopted from the 'Macedon Ranges Shire Council – Wildlife Friendly Fencing' brochure (MRSC, 2022). An example of Friendly Wildlife fencing is provided in Figure 3.

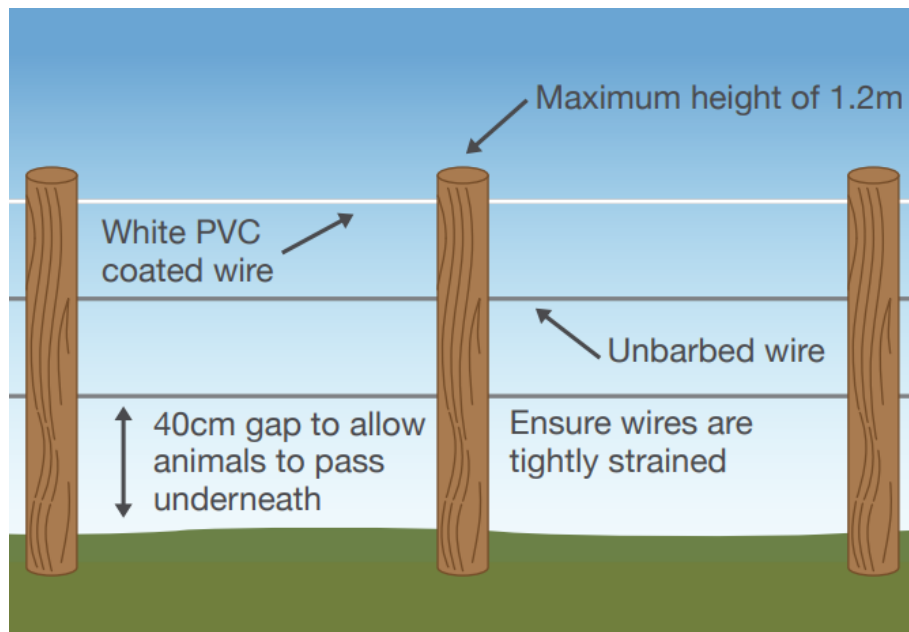


Figure 3: Example of Friendly Wildlife fencing (MRSC, 2022)

Adaptive management

If new threats arise in the future, such as inappropriate access from humans or pest animals, fencing may have to be upgraded to such a standard which adequately protects the environmental values of the site.

4.4.3. Pest animals

Under this management plan, all pest animals listed under the *Catchment and Land Protection Act 1994* must be controlled, with abundance, activity, and disturbance reduced to negligible levels (including no active rabbit warrens and fox dens).

All pest animals, including rabbits and foxes should be monitored every three months and controlled throughout the year, as required. Suitable methods for the control of pest animals include:

- Fumigating and hand collapsing of warrens; and
- Removal of harbour (except for native vegetation).

Fumigating when combined with hand collapsing of warrens is an effective control method. Warrens will be destroyed manually as required using a shovel, mattock or pick to avoid damage to native vegetation.

The removal of harbour such as rubbish and woody weeds will also reduce the habitat for pest animals and assist in their control; however, care must be taken to retain leaf litter, rocks and indigenous grass tussocks that provide habitat for native species.

4.4.4. Weed management

A total of 13 priority weeds to be controlled were identified during the field assessment. These weeds were assessed as being a priority for management based on the following criteria:

- All woody weeds;
- Declared noxious weeds under the CaLP Act 1994;
- Any other weed deemed to be high-threat due to the potential risk the species poses to the surrounding landscape; or
- Weeds not otherwise accounted for above that are on DELWP's *Advisory List of Environmental Weeds* and occurred above a negligible cover.

Management targets for priority weeds to be controlled are discussed in the following sections. Recommended methods for their control, optimal timing for control and current infestation status are detailed in Table 1. The location of major weed infestations on the site are presented in Figure 4.

Weed control will be undertaken at least quarterly each year for the duration of the CMP. All weed control is to be carried out by a suitably qualified revegetation and/or weed control contractor, with experience working in ecologically sensitive areas approved by Macedon Ranges Shire Council.

Any spot-spraying must be undertaken on days with minimal wind to prevent off-target damage by spray-drift. Weeds in proximity to Jacksons Creek should not be managed with herbicide, to ensure sensitive aquatic habitats and water quality are protected. Furthermore, complete removal of weeds in this area is not recommended, as Growling Grass Frogs require low vegetation such as grassland adjacent to water bodies. Instead, it is recommended that weeds are gradually removed and replaced with suitable indigenous plants (DEHWA 2009). If Toowoomba Canary Grass or other weedy grasses are too dense adjacent to Jacksons Creek, it is recommended that they are slashed to approximately 10 cm high, to provide suitable habitat for Growling Grass Frog.

Woody weeds

This plan requires the land manager **to reduce the total cover of all woody weeds to <1%**. The cut-and-paint method is recommended for controlling some of the woody weeds in the study area, while spraying with a selective herbicide is recommended for others. The cut and paint method involves a clean cut to the main stem/s of the plant followed by immediate application of a non-selective herbicide to the entire surface of the cut stem. The dead branches should be removed immediately and disposed of at a municipal landfill or burnt on site. Seedlings must be sprayed with an appropriate herbicide during their active growth period. The weed species and their recommended control methods are provided in Table 1.

The removal of woody weeds such as Hawthorn along the banks of Jacksons Creek must be done using the cut and paint method, leaving the roots in the soil to prevent erosion. The roots will rot over time, so if they are providing stability to the banks, revegetation of trees or shrubs may be required to prevent erosion.

High-threat herbaceous weeds

This plan requires the land manager **to reduce the total cover of all high threat broad-leaf herbaceous weeds to <1% and to maintain all high threat grassy weeds at current levels.**

Spraying a selective herbicide is the most effective means of controlling high threat broad-leaf herbaceous weeds in the study area. For all high threat grassy weeds, slashing/mowing is recommended. This should be undertaken prior to seed production in spring, and as required to keep the vegetation short with an open structure for Growling Grass Frog near Jacksons Creek. Slashing broad-leaf

herbaceous plants prior to seed formation may also be useful as this prevents plant recruitment and will make it easier to target before spraying.

Slashing/mowing should occur outside of GGF active times (October to March) near Jacksons Creek, except where required to address fire risk management or to prevent extensive losses of GGF habitat caused by very long grass. Plant material must be disposed of as outlined in Section 4.6 below. In addition, all mowing and brush cutting equipment should be cleaned before entering and exiting the reserve to avoid weed spread/introduction.

Disposal of weed material

Any fertile weed material, especially that of any CaLP Act-listed weeds **must** be legally disposed of using appropriate permits for disposal and transportation.

Stockpiling and burn areas will not be located on-site. Woody weeds and other material will need to be taken off-site immediately after removal and disposed of appropriately.



Photo 2: Typical vegetation along Jacksons Creek

4.4.5. Erosion control

Following treatment of weeds, bare ground is likely to be exposed and prone to erosion. Similarly, a future shared path and maintenance track is proposed that will be located adjacent to both reserves and within Jacksons Creek reserve. This poses a threat to the structural integrity of the conservation reserve, as well as the water quality of the adjacent Jacksons Creek. Furthermore, a narrow gully has been noted to the east of Jacksons Creek. Rainfall may lead to this gully expanding and carrying sediment into Jacksons Creek. In conjunction with careful consideration to these risks during the design and planning stages, in order to control these threats, the following measures are advised.

Revegetation

Where treatment and removal of weeds has occurred, revegetation with indigenous trees, shrubs and grasses should be prioritised. This will promote erosion control, through the stabilising effect of the plant's root systems. Native grasses are considered to be especially effective, as they are prone to forming dense mats when successfully established.

Rock Chutes

The gully noted to the east of Jacksons Creek could be repaired through the provision of a rock chute. This will involve lining the gully with quarry rocks, to slow the flow of water in the event of heavy rainfall and prevent further erosion. Ultimately, the rock chute should be capped with topsoil, to allow for the regrowth of vegetation, which will further stabilise the soil (Terrain NRM 2022).

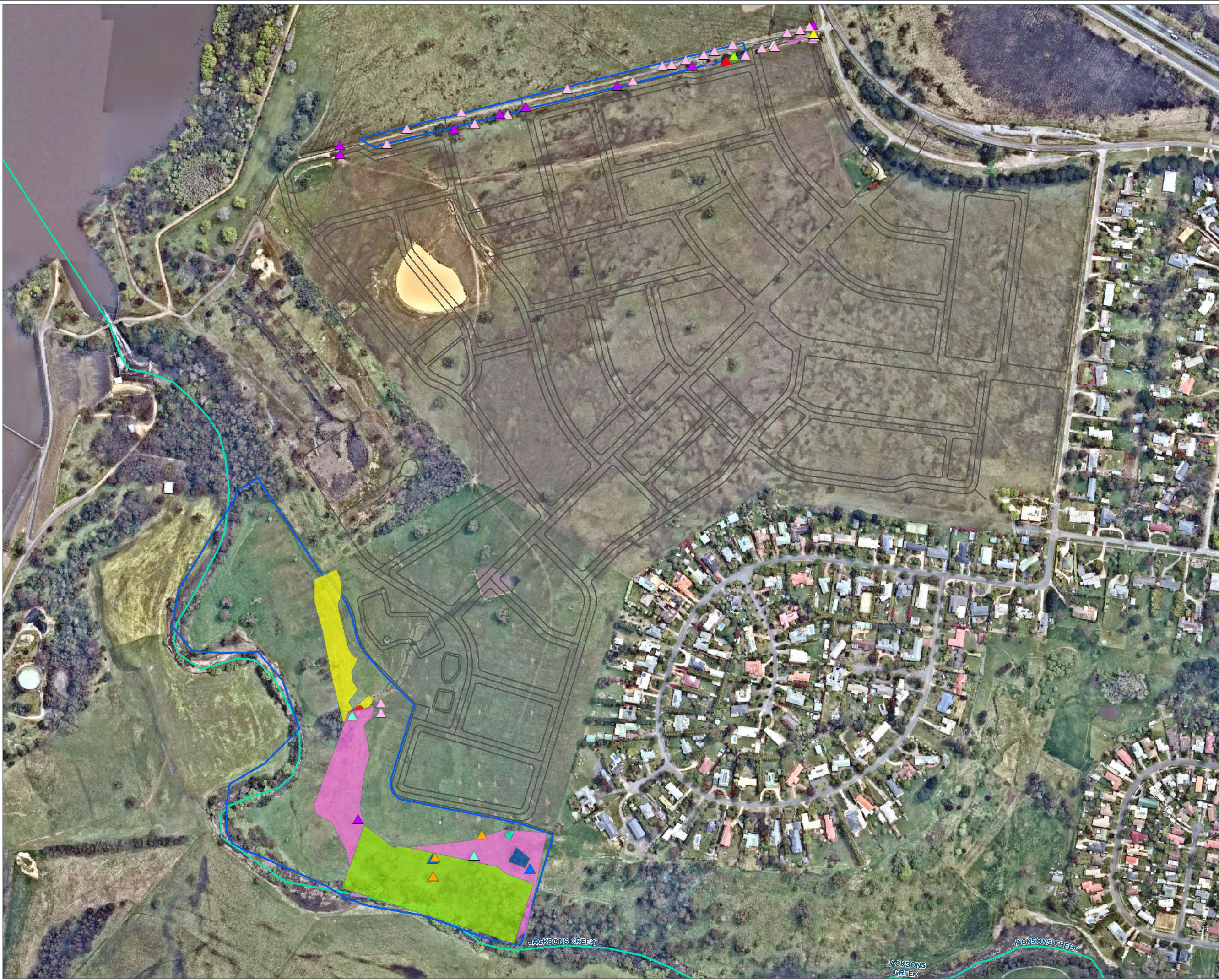


Figure 4: Location of high-threat weeds

Project: 89 Ross Watt Road, Gisborne

Client: ID Land

Date: 23/01/2023

Study area

Jacksons Creek

Weed infestations

Blackberry

Blackberry, Sweet Briar

Sweet Briar

Gorse

Hawthorn

Prunus

Spear Thistle

Blackberry

Blackberry and Gorse

Blackberry and Paterson's Curse

Desert Ash

Spear Thistle

Spear Thistle and Variegated Thistle

Spear Thistle and Variegated Thistle

Spear Thistle and Variegated Thistle

Spear Thistle and Variegated Thistle

Spear Thistle and Variegated Thistle

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PO Box 337, Camberwell, VIC 3124, Australia
www.natureadvisory.com.au
03 9815 2111 - info@natureadvisory.com.au

Table 1: Weed control management actions for high-threat weeds

Weed type	Common name	Scientific name	Listing	Recommended control method	Timing	Current infestation status/% cover	Management outcome to be achieved and maintained per species
Woody weeds	Blackberry	<i>Rubus fruticosus</i> spp. agg.	C, DELWP	Spray with appropriate herbicide or cut and paint and remove cuttings from site. Spot spray seedlings with appropriate herbicide.	Late spring to summer (Between flowering and leaf fall)	Dense infestations (3%)	<1% cover
	Desert Ash	<i>Fraxinus angustifolia</i>	DELWP		All year round	A few individuals (<1%)	
	Gorse	<i>Ulex europaeus</i>	C, DELWP			Dense infestation on escarpment (1%)	
	Hawthorn	<i>Crataegus monogyna</i>	C, DELWP		Spring to summer (before fruit ripens)	Scattered throughout study area (1%)	
	Prunus	<i>Prunus</i> spp.	DELWP		All year round	A few individuals (<1%)	
	Pussy Willow	<i>Salix X reichardtii</i>	DELWP			A few individuals (<1%)	
	Sweet Briar	<i>Rosa rubiginosa</i>	C, DELWP		Spring to early summer	A few individuals (<1%)	
Broad-leaf herbaceous weeds	Hemlock	<i>Conium maculatum</i>	C, DELWP	Spray with an appropriate herbicide	Early spring	A few individuals (<1%)	<1% cover
	Paterson's Curse	<i>Echium plantagineum</i>	C, DELWP		Spring	Low density, scattered (<1%)	
	Spear Thistle	<i>Cirsium vulgare</i>	C, DELWP		Prior to flowering in late autumn and spring	Low density, scattered (<1%)	
	Variegated Thistle	<i>Silybum marianum</i>	C, DELWP		Spring	A few individuals (<1%)	
	St John's Wort	<i>Hypericum perforatum</i>	C, DELWP		Spring to early Summer	A few individuals along northern access track (<1%)	
Grassy weeds	Sweet Vernal-grass	<i>Anthoxanthum odoratum</i>	DELWP	Slash	Winter to spring (before seeds ripen)	Dispersed throughout study area (20%)	Maintain at current levels
	Toowoomba Canary-grass	<i>Phalaris aquatica</i>	DELWP		Prior to seed set in late spring and continually every three months or as required.	Scattered near Jacksons Creek (1%)	

CaLP Act: declared noxious weeds under the CaLP Act (S = State Prohibited Weeds [any infestations are to be reported to DELWP. DELWP is responsible for control of State Prohibited Weeds]; P = Regionally Prohibited Weeds [Land owners must take all reasonable steps to eradicate regionally prohibited weeds on their land]; C = Regionally Controlled Weeds [Land owners have the responsibility to take all reasonable steps to prevent the growth and spread of Regionally controlled weeds on their land]; R = Restricted Weeds [Trade in these weeds and their propagules, either as plants, seeds or contaminants in other materials is prohibited], WoNS = Weed of National Significance, DELWP = DELWP Advisory List of Environmental Weeds.

4.4.6. *Revegetation and habitat enhancement*

Revegetation must not commence until after the fencing, rubbish removal and weed control. This is to ensure no works will interfere with revegetation efforts. It is therefore important for weed control and fencing to commence as soon as possible so revegetation can occur in early spring. The conservation area has been divided into zones with different revegetation requirements or recommendations. Revegetation is only prescribed in areas that are considered likely to be successfully revegetated, such as areas with better quality soil or has been subject to soil disturbance. These areas are shown below in Figure 5 and discussed in the following sections.

Revegetation timing

Revegetation works must be initiated in early spring and prior to a forecast of a significant rain event to encourage successful establishment of new plants. If fencing and weed control works have not been completed by early spring, revegetation will have to be delayed until the following Autumn.

Given the large volume of plants required to be planted, it is recommended that an indigenous plant nursery is engaged upon endorsement of this Plan so they can propagate the volume and diversity of species required.

Planting preparation

Weed control must be undertaken prior to planting to reduce competition from weeds and increase the likelihood of plant establishment and survival.

The location of planting sites must be prepared appropriately as follows:

- Clear surrounding area of non-native grasses;
- Plant tube-stock to a depth of just below ground-level;
- Install guards around plants to prevent grazing from rabbits and kangaroos (if fencing isn't complete and effective at restricting access); and
- Water in if there is no forecast of a significant rain event within 24 hours.

Direct seeding must be undertaken as per the following guidelines.

- Ideally, direct seeding should occur immediately after a rainfall event and during a period of little to no wind, with more rain forecast within the following days. If it is not feasible to seed following a rainfall event the rehabilitation area shall be soaked both prior to and after seeding.
- Seeding efforts (germination and mortality) must be monitored two and six months after seeding to determine the necessity and timing of further management actions (if required).
- Direct seeding may be spread by hand (manually) or with a seed spreader
- Recommended direct seeding densities should be used as a guide only and may be adjusted subject to an experienced contractor's recommendation to achieve the desired grass cover objectives outlined in this CMP.

Ecological burning

Prior to revegetation, ecological burns should be undertaken to reduce biomass and encourage the germination and recruitment of native grasses. Ecological burning may also be utilised in conjunction with spraying as an integrated weed management tool. Controlled burning is recommended to be undertaken in spring to encourage growth and establishment of C4 grasses. Ecological burning will also promote inter-tussock space, which is conducive to the sowing of native seeds and subsequent establishment of native graminoids.

Ecological burns should be restricted to grassland vegetation and should not be conducted in areas of existing woodland or within close proximity of Jacksons Creek.

A burn plan should be drafted by a suitably qualified bushland contractor who is experienced in ecological burns to achieve the desired outcomes.

Revegetation objectives

The main objective of this revegetation strategy is to maintain and improve the current condition of the reserves. Rather than aim to rehabilitate the site back to its pre-1750 EVC status, this strategy has been prepared with consideration to the approach that would be most efficient and effective at enhancing the biodiversity values of the site. Canopy trees and understorey trees, large and medium shrubs and grass seeds sown on bare ground are considered to be the most robust lifeforms and will more easily re-establish on site. More fragile species, such as those categorised as tufted grasses and perennials, are at a higher risk of exotic species outcompeting the newly planted individuals. The intention is that supplementary planting could be undertaken to infill areas of the reserves after initial revegetation efforts have proven successful. Established trees, shrubs and grasses will enable more opportunity for smaller species to flourish, resulting in a more abundant and dense mosaic of vegetation.

Planting design and revegetation zones

Planting design for the site have been categorised based on EVC type and level of rehabilitation required. Strategic planting of native trees, shrubs and grasses should be undertaken within Jackson Creek and linear conservation reserves to enhance biodiversity values of the area, as well as assist with erosion control following weed removal near the creek. Existing vegetation and planting recommendations for this zone are based on the benchmarks for Higher Rainfall Plains Grassy Woodland (EVC 55_63), Herb-rich Foothill Forest (EVC 23), Riparian Woodland (EVC 641) and Tall Marsh (EVC 821).

The management strategy for the two reserves will comprise three different levels of rehabilitation. These are described below and are shown in Figure 5.

Maintenance areas

Areas containing existing native vegetation and sufficient canopy cover do not require revegetation. These areas will only be subject to weed control as described earlier in the report.

EVC enhancement areas

Revegetation in the form of tree plantings and introduction of native shrubs is required for areas within the reserves supporting native vegetation, but lacking a canopy component. The aim of these areas is to enhance the current condition of the native vegetation to better reflect the characteristics of relevant EVC by restoring the midstorey and canopy.

Full revegetation

Within areas devoid of native vegetation, full revegetation of the understorey, midstorey and canopy is required. Planting assemblages have been selected to increase indigenous understorey species diversity as well as to encourage native insects in the conservation area. Detailed planting lists and quantities for each zone requiring revegetation are discussed in the 'Planting guide' section of this report.

Planting guide

Species recommendations for revegetation have been sourced from the relevant Victorian Volcanic Plain and Central Victorian Uplands bioregions EVC benchmarks and species observed on-site. The planting guide provided is intended to inform revegetation with respect to the density of planting and species selection. This planting schedule is intended as a guide only. Given the large quantity of plants required, we recommend that a local indigenous nursery be consulted as soon as possible to enable the preparation of tube-stock for planting by spring.

The following planting guide (Table 2) outlines the species and quantities of plants needed within each area corresponding to a reserve and the relevant EVC, as well as the level of revegetation required. For each revegetation zone, shown in Figure 5, a total number of plants for each lifeform is given. This total should comprise a combination of suitable species for the relevant lifeform (indicated by the ✓). Species should be planted in clustered groups to aid in establishment and provide a mosaic effect within the reserves.

Planting density has been calculated based on the Victorian Department of the Environment, Land, Water and Planning's revegetation planting standards (DSE 2006) and using the area of each zone.

Table 2: Suggested planting schedule

Common name	Scientific name	Plains Grassy Woodland (EVC 55_63)				Herb-rich Foothill Forest (EVC 23)		Riparian Woodland (EVC 641)
		Linear reserve		Jackson Creek reserve				
		Enhance	Full reveg	Enhance	Full reveg	Enhance	Full reveg	Full reveg
		Number of plants						
Canopy trees (6-inch pot size)								
		25	25	50	25	50	50	100
Manna Gum	<i>Eucalyptus viminalis</i>	✓	✓	✓	✓	✓	✓	
Swamp Gum	<i>Eucalyptus ovata</i>	✓	✓	✓	✓	✓	✓	
River Red-gum	<i>Eucalyptus camaldulensis</i>							✓
Understorey trees and large shrubs (6-inch pot size or tube stock)								
		50	50	250	100	400	300	650
Black Wattle	<i>Acacia mearnsii</i>	✓	✓	✓	✓	✓	✓	
Blackwood	<i>Acacia melanoxylon</i>	✓	✓	✓	✓	✓	✓	✓
Medium shrubs (tube stock)								
		250	100	1000	300	543	400	1300
Golden Wattle	<i>Acacia pycnantha</i>	✓	✓	✓	✓			
Sweet Bursaria	<i>Bursaria spinosa</i>							✓
Hedge Wattle	<i>Acacia paradoxa</i>	✓	✓	✓	✓			
Grasses (seed)								
			9kg		24kg			96kg
Kangaroo Grass	<i>Themeda triandra</i>		✓		✓			
Wallaby Grass	<i>Rytidosperma</i> spp.		✓		✓			
Spear Grass	<i>Austrostipa</i> spp.		✓		✓			
Weeping Grass	<i>Microlaena stipoides</i>		✓		✓			✓

Revegetation protection

Native fauna and pest animals can access the property from surrounding bushland, making it necessary to protect individual trees and plants with plant guards immediately after they have been planted. The installation of fencing, such as rabbit-proof fencing, can also deter herbivores from newly planted trees and plants (DELWP 2019).

Watering

Relocation plants will require ongoing watering to aid in establishment and survival, particularly through the dry summer months. The frequency and amount of watering will be guided by monitored conditions on the site. It is unlikely that plants will require regular watering for 12 months after planting, more frequently and for longer if conditions are particularly harsh and the plants are displaying signs of stress. Plants will not be required to be watered after a significant rainfall event (> 20 mm).

The table below suggests the frequency of watering for the initial 12 months.

Table 3: Watering requirements

Months after planting	Watering schedule
0–3	Weekly
3–6	Fortnightly
6–12	Monthly
12 onwards	Only if plants display signs of stress

General maintenance

Tree guards and fencing should be inspected every three months to determine the ongoing integrity of these protective measures. If damage is identified, tree guards should be replaced and fencing repaired.

The success of planted vegetation should also be inspected within this time frame. Infilling with replacement plantings should occur where plant mortality has occurred.

4.5. Future access to reserves

Under the current development, a shared path and access track is proposed that will run along the perimeter of each reserve and into Jacksons Creek reserve, shown in Figure 5. The shared path has been aligned to predominately avoid any areas of native vegetation. Impacts to native vegetation as a result of construction works for these works have been considered in a separate report prepared by Nature Advisory. Prior to commencement of construction, the work area should be established and fenced in its entirety in order to protect existing biodiversity values and revegetation efforts. Supplementary planting should be considered post construction in order to revegetate disturbed areas.

Any proposals for future unlimited access to the reserves or conversion to open space should not be considered until revegetation efforts have proven successful and management actions are achieved.

4.6. Annual reporting and monitoring

This CMP requires the site manager to undertake/coordinate monitoring and management of the reserve at the times indicated in Table 3. Annual monitoring should be undertaken by a suitably qualified ecologist until the completion of the CMP, and a report submitted to the responsible authority. Annual reports must be submitted no later than 3 months after the end of each year. Annual reports must provide enough detail in the form of written comments and supporting evidence that an assessor can easily determine the completion of the commitments.

4.7. Ongoing management

The reserve will be managed for environment beyond the 10-year period of this plan by Macedon Ranges Shire Council following handover of the land to the council (TBC), under the assumption that the reserve will be in a satisfactory condition based on targets set within this CMP.

4.8. Adaptive management

By monitoring the outcomes of actions, management may be adapted to ensure the stated commitments in the plan are upheld. For example, new techniques for controlling high-threat weeds may become available, or further information on the ecology and status of vegetation communities may necessitate adjustment to management actions, if agreed to by all parties.

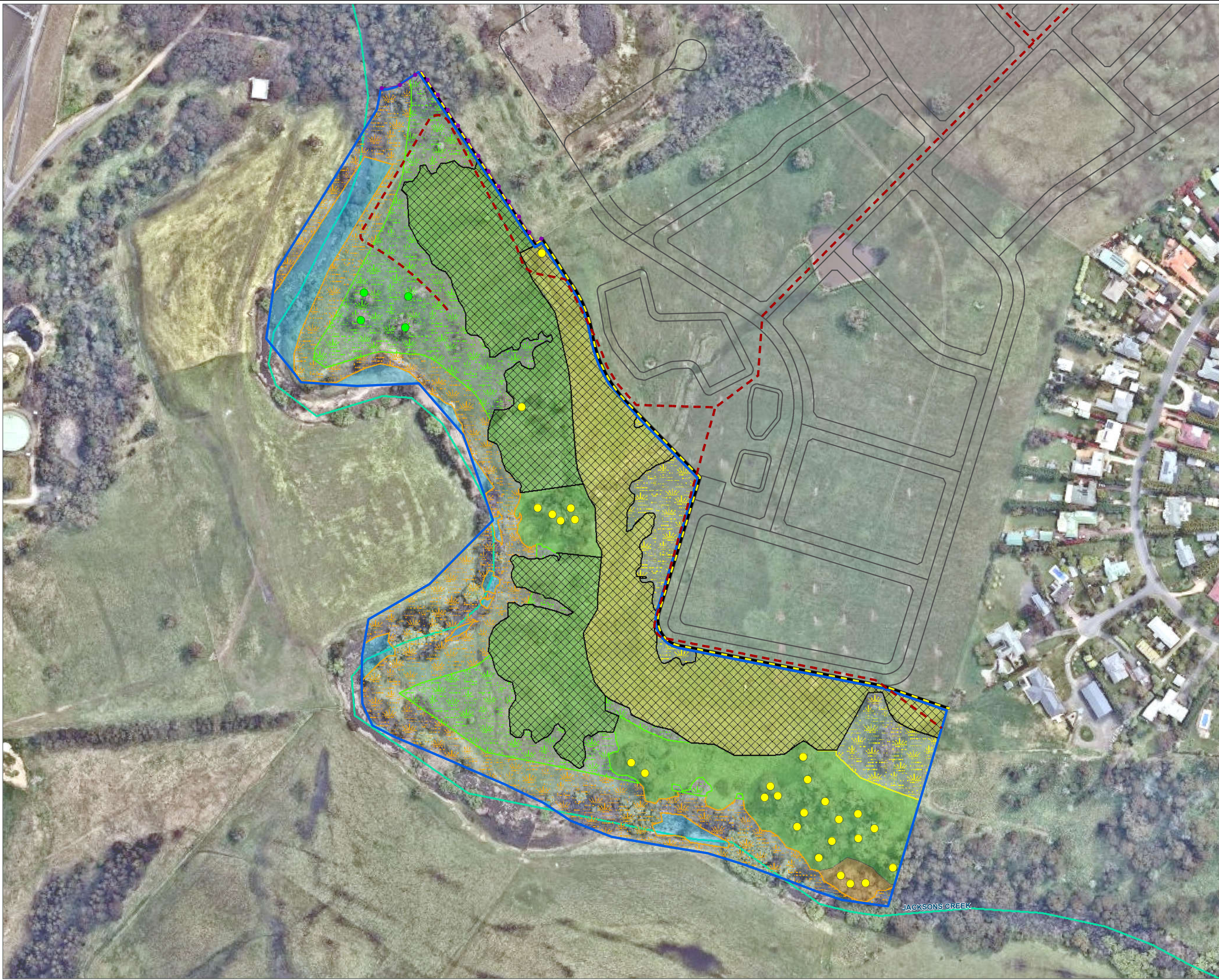


Figure 5a: Revegetation areas, fencing and construction features









Project: 89 Ross Watt Road, Gisborne
Client: ID Land
Date: 23/01/2023

- Conservation reserve area
- Jacksons Creek
- Maintenance track and shared path
- Temporary fencing
- Exclusion fencing
- Native vegetation**
 - Large scattered tree
 - Large tree in patch
 - Herb-rich Foothill Forest (EVC 23)
 - Higher Rainfall Plains Grassy Woodland (EVC 55_63)
 - Riparian Woodland (EVC 641)
 - Tall Marsh (EVC 821)
- Revegetation areas**
 - EVC Enhancement
 - Herb-rich Foothill Forest
 - Higher Rainfall Plains Grassy Woodland
 - Riparian Woodland



Figure 5b: Revegetation areas, fencing and construction features

Project: 89 Ross Watt Road, Gisborne
Client: ID Land
Date: 23/01/2023

-  Conservation reserve area
-  Public open space
-  Maintenance track and shared path
-  Temporary fencing
- Native vegetation**
 -  Large tree in patch
 -  Higher Rainfall Plains Grassy Woodland (EVC 55_63)
- Revegetation areas**
 -  EVC Enhancement
 -  Higher Rainfall Plains Grassy Woodland



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PO Box 337, Camberwell, VIC 3124, Australia
www.natureadvisory.com.au
03 9815 2111 - info@natureadvisory.com.au

Table 4: Timing of management actions and timing

Management Action	Management target	Responsible person	Proposed timeline	Date completed
Year 1				
Fencing installed	Temporary fencing: Install appropriate fencing on the perimeter of the reserve before construction begins	Site manager	At the commencement of this plan. Must remain in place until construction is complete and permanent fencing is installed.	
	Permanent fencing: Install appropriate fencing and access gate on the perimeter of the reserve		Must be constructed before construction commences.	
Fencing maintained	Monitor to determine fencing integrity	Site manager	Monitoring to be undertaken annually	
Rubbish removal	Ensure reserve remains clear of rubbish.	Site manager	Monitor every 3 months.	
Weed control	High threat weeds that require management are outlined in Section 4.4.4. The control method and targets to be achieved are set out in Table 1.	Experienced and specialised environmental contractor engaged by site manager that is approved by the responsible authority	Every 3 months/as required.	
Monitor and control emergent weeds	Identify and control any new and emerging weeds.	Experienced and specialised environmental contractor engaged by site manager that is approved by the responsible authority	Every 3 months/as required.	
Pest control	Monitor and control rabbits and foxes.	Experienced and specialised environmental contractor engaged by site manager that is approved by the responsible authority	Every 3 months/as required.	
Ecological burning	Exotic grassy biomass layer reduced Inter-tussock space increased to encourage establishment of native grasses	Experienced and specialised environmental contractor engaged by site manager that is approved by the responsible authority	Prior to revegetation in spring, or as advised by a qualified contractor	
Revegetation	Follow the planting guide in Table 2 for areas that require revegetation. Areas that have had weeds removed should be prioritised for revegetation to prevent erosion, enhance the area and to prevent the weeds from growing back.	Experienced and specialised environmental contractor engaged by site manager that is approved by the responsible authority	Early spring or autumn	
Annual monitoring	Undertake annual monitoring of the site including: <ul style="list-style-type: none"> Temporary and perimeter fencing adequately maintained No rubbish on site Extent of native vegetation mapped Overall estimate of native vegetation cover Monitor weed cover to compare against baseline survey to ensure weed management goals are being met Identification of any new emergent weeds Evidence of pest animals 	Ecologist engaged by site manager	Monitoring to be undertaken at the end of Year 1	

Management Action	Management target	Responsible person	Proposed timeline	Date completed
	<ul style="list-style-type: none"> Status of revegetation works 			
Reporting	Assessment of results of annual monitoring against management actions set out in CMP and review of required management actions. Report to be provided to Macedon Ranges Shire Council at the end of Year 1.	Ecologist engaged by site manager	Report to be provided to responsible authority no later than 3 months after the end of Year 1.	
Years 2-10 (and beyond if required)				
Fencing maintained	Monitor to determine fencing integrity	Site manager	Monitoring to be undertaken annually	
Weed control and monitoring	Undertake weed monitoring every three months and apply appropriate weed control to achieve targets listed in Table 1.	Experienced and specialised environmental contractor engaged by site manager that is approved by the responsible authority	Every 3 months/as required	
Check revegetation zones	<ul style="list-style-type: none"> Monitor vegetation zones with 95% plant survival rate as minimum. Achieve at least 50% cover of direct seeding Repair/reinstate tree guards if below survival rate. Habitat logs must be retained and left in conservation areas. 	Ecologist engaged by site manager	Monitoring to be undertaken annually	
Pest animal control	Monitor and control rabbits and foxes.	Experienced and specialised environmental contractor engaged by site manager that is approved by the responsible authority	Monitoring to be undertaken annually	
Annual monitoring	<ul style="list-style-type: none"> Undertake annual monitoring of the site including: Temporary and perimeter fencing adequately maintained No rubbish on site Extent of native vegetation mapped Overall estimate of native vegetation cover Monitor weed cover to compare against baseline survey to ensure weed management goals are being met Identification of any new emergent weeds Evidence of pest animals Status of revegetation works 	Ecologist engaged by site manager	Monitoring to be undertaken annually	
Reporting	Assessment of results of annual monitoring against management actions set out in CMP and review of required management actions. Report to be provided to Macedon Ranges Shire Council annually.	Ecologist engaged by site manager	Report to be provided to responsible authority no later than 3 months after the anniversary of the endorsement of this plan.	

5. References

- DELWP 2020, NatureKit, Department of Environment, Land, Water and Planning, East Melbourne, Victoria, viewed 28th Nov 2022, <https://www.environment.vic.gov.au/biodiversity/naturekit>.
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