



Central Highlands Environmental Consultancy



Land Management Plan

Development of a proposed Dwelling within
a Rural Conservation zone

Location: 113 Taggart Drive, DAISY HILL VIC 3465

23 August 2022

Document status

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Project Details

Project Name: Development of a proposed Dwelling within a Rural Conservation Zone

Property Location: 113 Taggart Drive, Daisy Hill Vic 3465

Date of Assessment: 12 July 2022

Planning Consultant: CentralVic Planning Consultants

Client: Kevin and Johanna Geyer

Environmental consultants: Ray Draper and Jennifer Johnson

Declaration and Copyright

Central Highlands Environmental Consultancy has prepared this Land Management Plan (LMP) on behalf of **Kevin and Johanna Geyer** who has provided information relating to the site. This LMP contains the following information:

- Site development plan
- Land management plan with recommended management across property
- Environmental monitoring
- Timeline of recommended work
- Reference information to assist in best practice Land Management

This information is correct as of **August 2022**. Information within this report is based on observations from a field inspection and QIS Near map / Google aerial mapping assessments.

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Central Highlands Environmental Consultancy

Address: 229 Pitfield Road, Scarsdale Vic 3351
Phone: 0427 803 338
Email: raydraper2004@gmail.com

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INTRODUCTION

Background to property (Scope of report)

This Land Management Plan has been produced to guide in the effective decision making for the environmental values at **113 Taggart Drive, Daisy Hill Vic 3465**. The property is located within the Central Goldfields Shire Council area. Future development within the property includes a proposed new dwelling and decommissioning of an existing dwelling within the property. The property is currently used for rural lifestyle living which includes existing hobby farming activities as well as general conservation activities. The property also contains numerous existing shedding to support these activities.

This plan will focus on the future property management by identifying environmental benefits that can be achieved through the development of a new dwelling on the land. The Land Management Plan will include an action plan and time frames which identify activities that will be targeted towards maximising a positive impact on the environment.

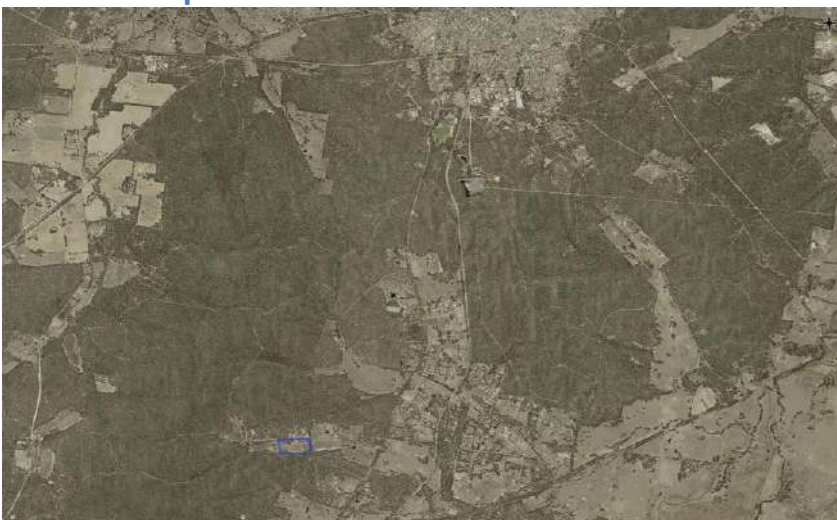
This plan will cover: management of existing remnant native vegetation; environmental assets i.e. flora and fauna values; weed and pest problems, minimising environmental impacts from livestock and addressing bushfire management associated with a new dwelling. It will also address how to avoid any potential erosion / salinity issues and how to improve water quality i.e. dams and Watercourses. Emphasis will be on conservation values and how to preserve those values from future impacts.

The report contains goals, strategies and management actions to deal with land management related issues as well as recommended ongoing monitoring onsite. Action plans and time frames are also included as a guide for any proposed environmental works. Proper management of this property into the future will also to help contribute to the surrounding environmental values of this area designated as **Rural Conservation zone**.

Methodology

A range of resources including: NearMap, VicMap API, Google earth, Data.Vic.gov.au, DELWP Native vegetation maps, Data.vig.gov.au and Land Victoria were used to assist with identifying features on the property such as Ecological vegetation classes (EVC), location of weeds on the property, location of features i.e. built structures, proposed buildings and planning overlays affecting the property.

Location map



VicMap Api image:
Showing location of
property (outlined in
dark blue): Approx.
6.5km southwest of
Maryborough.

Brief description & Current condition of the site

The property: **113 Taggart Drive, Daisy Hill Vic 3465** is located approx. 6.5km southwest of Maryborough. The allotment is approximately 7.3ha (18 acres) in size and is located within a **Rural Conservation Zone (RCZ)**. The site is currently containing approx. 40% (2.9 ha) native vegetation. The remaining area of approx.: 60% (4.4 ha) of the property consists of cleared paddock with exotic pasture grasses. The property currently includes general farming activities as well as general conservation activities, with more environmental rehabilitation works planned.

As part of this Land Management plan, the property will be broken into 3 land management areas: General Use area, Farming areas and Conservation areas.

Remnant vegetation on the property consists of a dominant species of eucalyptus i.e. overstorey of Yellow gum, Yellow box and Red gum with a mainly absent middle storey layer of native plants over 2m and a scattered to low understorey cover of native small shrubs and graminoids. Considering the current use of the property, the current site conditions contain a mainly high infestations of introduced grasses and herbs (most likely invading from adjacent grazing areas) but a very low woody weed cover.

There were very little signs of rabbits (i.e. dropping and scratchings) and little signs of foxes. The overall condition of existing remnant Native Vegetation (trees, shrubs and understorey) on the property, were in a poor to moderate condition with over 30 - 40% of the native vegetation quality intact. There was also very little woody habitat for birds and mammals i.e. fallen branches and logs, with no larger hollow logs present. The current biggest impact is from stock grazing pressure on remaining remnant native vegetation. Excluding stock from these areas would have immediate beneficial impacts on the condition of remaining native vegetation and waterway through the property. There were no obvious signs of salinity (scalding or saline plants), however there was significant erosion present along sections of the watercourse (mainly in the southeast section of the property). Revegetation and stock exclusion will also assist in rehabilitating these areas.

Proposed improvement to the property would benefit from the ongoing presence of a Landholder living on the property to address various Land management issues.

Management Aims & Objectives for the property

1. To create a new dwelling and maintain a defensible space.
2. To protect remnant vegetation within the property (by excluding from livestock).
3. To enhance biodiversity through providing additional habitat and revegetation.
4. To rehabilitate the eroded gully (Revegetation of the gully with native grasses and shrubs).
5. To revegetate around the dam with both terrestrial and Aquatic vegetation.
6. To manage stocking rates to a sustainable level.
7. To monitor and control weeds over the whole property.
8. To monitor and control pest species (i.e. rabbits or foxes).
9. To monitor the health of the property.
10. To create a 10-year management plan for the property.

Land Management Issues

- Monitoring for Pest Animals and Pest plants: i.e. Gorse from adjacent private and public land.
- Dam health, water runoff and livestock related erosion
- Health of existing remnant native vegetation
- Impacts from Livestock grazing.

Site Development Plan Maps included in this report:

Locational Existing and Proposed Feature maps

- Map 1a: Existing features on the site
- Map 1b: Existing and proposed features on the site
- Map 1c: Locational map of existing and key features (supplied)

Proposed Management

- Map 2: Proposed Management Objectives on the Property

Geology, Land Units and Soil maps

- Map 3a: Geology found on the property
- Map 3b: Soil types found on the property

Native Vegetation maps

- Map 4: Ecological Vegetation Class (EVC) on the property
- Map 5: Location map indicating ecological values

SECTION 1: SITE MANAGEMENT PLAN

Map 1a: Existing features on the site



Features of the property including:

- North point.
- Zones and overlays: *Appendix 1*.
- Existing roads.
- Contours (Dark Brown lines).
- Property boundary (Dark blue outline).
- Existing Watercourses or Wetlands (Light blue lines).
- Existing fence line – Dashed black lines (*Around Property boundary and internal fences*).
- Existing Dams (Dams located near the south boundary of the property - smaller dam to southwest and larger dam located near south property boundary).
- Existing native vegetation (Treed native vegetation located along north and south boundaries with scattered paddock trees within cleared grazed areas).
- Existing dwelling (*to be decommissioned*) (Black hashed area).

Map 1a: Existing and proposed features on the site



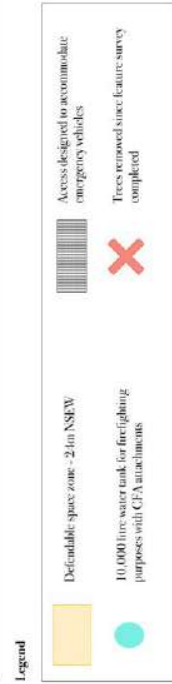
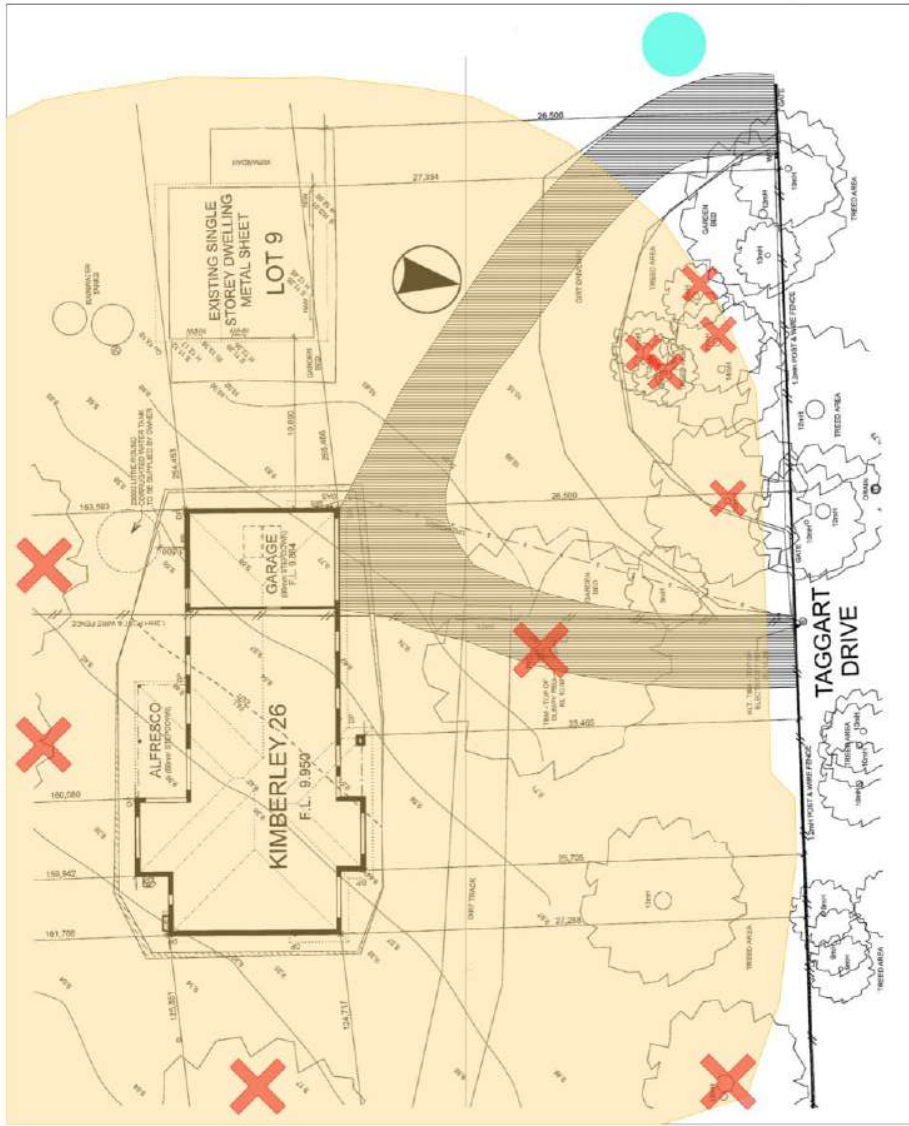
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- Existing native vegetation (Treed native vegetation located along north and south boundaries with scattered paddock trees within cleared grazed areas).
- Existing dwelling (*to be decommissioned*) (Black hashed area).

- Proposed fence lines (Yellow dashed lines).
- Proposed Shelterbelts / revegetation areas (10 x Green shaded areas with yellow numbers).
- Proposed dwelling (yellow shaded) with BAL 19 defendable space (Red dashed outline), 10m clear area around dwelling (White dashed outline); and existing and proposed driveway access (brown shaded).
- Proposed min 10,000 Litre CFA water tank (Blue circle).
- Existing paddocks for stock i.e. Sheep and cattle (Located within Farming Areas 1, 2 & 3).

Map 1c: Locational Map of existing and proposed key features (supplied)

Bushfire Management Plan
 CA 9, Sec 9A, 113 Taggart Drive, Daisy Hill



DWELLING

Construction requirements
 The dwelling be designed and constructed to a Bushfire Attack Level of BAL - 19.

Defendable Space Management

Defendable space to be provided 2.0m north, south, east and west. Vegetation (and other flammable materials) on the property will be modified and managed in accordance with the following requirements:

1. Grass will be short cropped and maintained during the declared fire danger period.
2. All leaves and vegetation debris will be removed at regular intervals during the declared fire danger period.
3. Within 10 metres of a building, flammable objects will not be located close to the vulnerable parts of the building.
4. Plants greater than 10m in height will not be placed within 3m of a window or glass feature of a building.
5. Shrubs will not be located under the canopy of trees.
6. Individual and clumps of shrubs will not exceed 5m² in area and must be separated by at least 5m.
7. Trees will not overhang or touch elements of the building.
8. The canopy of trees will be separated by at least 5m.
9. There will be a clearance of at least 2m between the lowest tree branches and ground level.

Access designed to accommodate CFA <30m

1. All-weather construction
2. A load limit of at least 15 tonnes.
3. Will provide a minimum trafficable width of 3.5m.
4. Will be clear of encroachments for at least 0.5m on each side and at least 4m vertically.
5. Curves will have a minimum inner radius of 10m
6. The average grade will be no more than 1 in 7 (14.4%) (8.1 degrees) with a maximum grade of no more than 1 in 5 (20%) (11.3 degrees) for no more than 50 metres.
7. Dips will have no more than a 1 in 8 (12.5%) (7.1 degrees) entry and exit angle.

Water supply for fire fighting purposes

Provide 10,000L effective water supply for fire fighting purposes which meets the following requirements:

1. Is stored in an above ground water tank constructed of concrete or metal.
2. All fixed above ground water pipes and fittings required for fire fighting purposes must be made of corrosion resistant metal.
3. Incorporate a ball or gate valve (BSP 65mm and coupling CFA 3 thread per inch male fitting).
4. The outlet of the water tank will be within 4m of the accessway and be unobstructed.
5. Be readily identifiable from the building or appropriate identification signage to the satisfaction of the CFA must be provided.
6. Any pipework and fittings will be a minimum for 65mm (excluding the CFA coupling).

Draft Bushfire Management Map above: Provided by CentralVic Planning Consultants.

Map 2: Proposed Management Areas



Proposed management areas on the property:

General Use area (Grey shaded area) approx.: 1 ha containing:

- Proposed Building envelope site with defensible space (also dwelling to be decommissioned), existing sheds, Septic and Current and proposed Access driveways

Issues to be addressed in this area include:

- Management of defensible space.

Farming areas (Brown shaded area) approx.: 3 ha:

- General farming areas – 2 paddocks and a large dam used for livestock i.e. sheep and cattle

Issues to be addressed in this area include:

- Sustainable stock rates
- Exclusion of livestock from remnant native vegetated areas and improve water quality on dam.

Conservation area (Green shaded areas) approx.: 3.3 ha:

- Protect remnant native vegetation, improve erosion on creek and Improve water quality on dam.
- Includes proposed revegetation in excluded areas from stock.

Issues to be addressed in this area include:

- Enhance biodiversity
- Address erosion issues and water quality issues on watercourse.

Map 3a: Geology found on the property



Geology: The main geology present on the property was sedimentary (shaded green). (Source: Geomorphology of Victoria - Data.Vic.gov.au).

Map 3b: Soil types found on the property



Land Unit type found on the property:

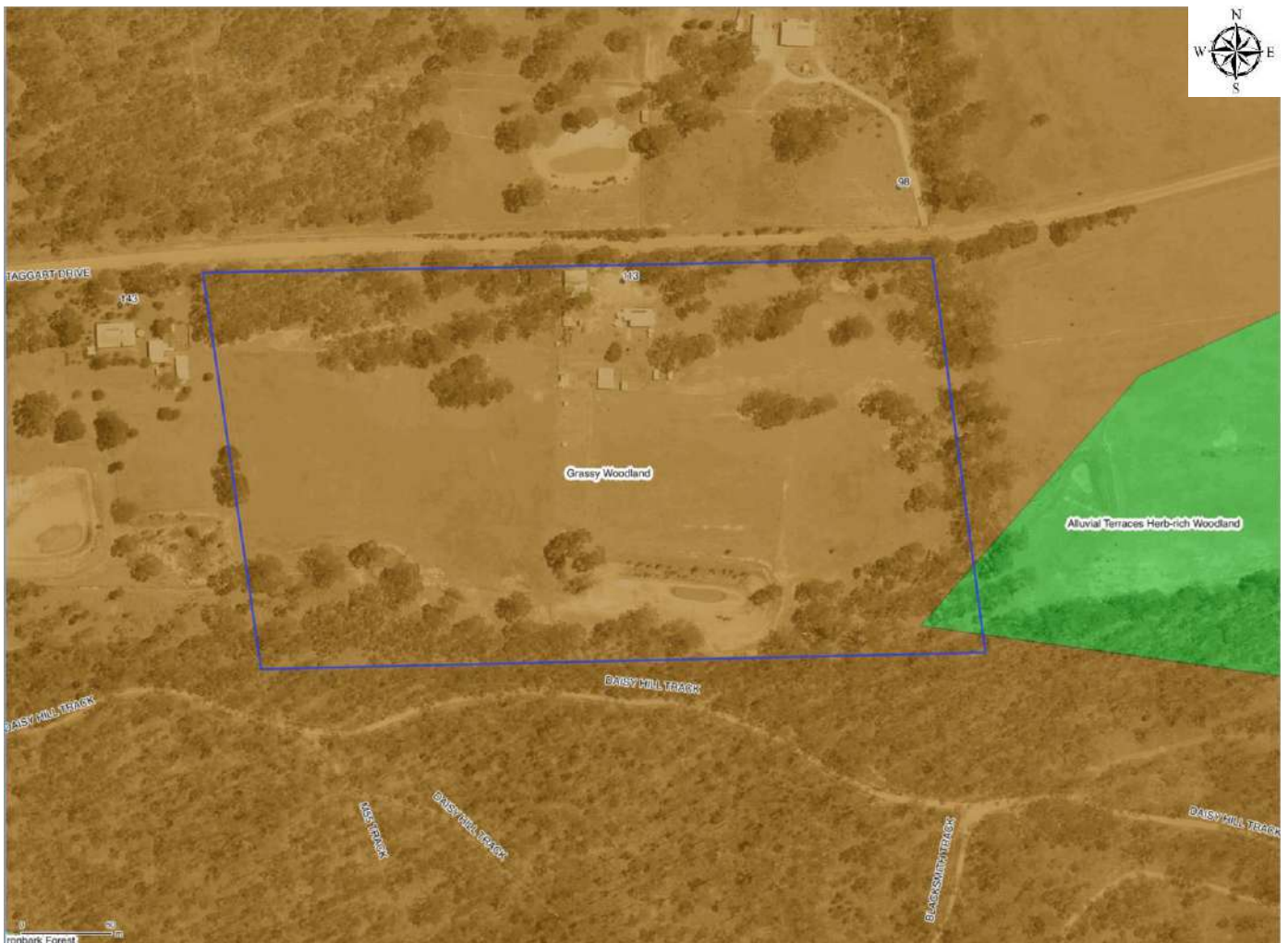
- Rg/uS1 (Shaded blue) – Red Duplex soils.

Source: Soil types of Victoria: Data.Vic.Gov.au.

Reference:

[https://vro.agriculture.vic.gov.au/dpi/vro/vrosite.nsf/pages/landform_land_systems_rees/\\$FILE/TECH_56%20ch6.pdf](https://vro.agriculture.vic.gov.au/dpi/vro/vrosite.nsf/pages/landform_land_systems_rees/$FILE/TECH_56%20ch6.pdf)

Map 4: Ecological Vegetation Classes on the property



The property is located within the **Goldfields Bioregion**.

There is two Ecological Vegetation Classes (EVC) on the property:

- **Grassy Woodlands (EVC 0175)** (Shaded Brown) – covers the majority of the property with a bioregional status of Vulnerable.
- **Alluvial Terraces Herb-rich Foothill Forest (EVC 67)** (Shaded Green) – covers a small section of the southeast section of the property (within the eroded gully area) with a bioregional status of Endangered.

Map 5: Location map indicating ecological values



Location types indicate where (if any) high value biodiversity may be present on site:

- Location 1 is indicated in Light blue (Lower biodiversity values) – **There is Location 1 over the majority of the property.**
- Location 2 is indicated in Darker green (Moderate to high biodiversity values and may indicate that a significant plant or animal is present). **There is Location 2 is located within the far southeast section of the gully (within the eroded gully area).**
- Location 3 is indicated in Brown (generally indicates higher biodiversity values i.e. a significant plant or animal is present – to find out more a DELWP Detailed Biodiversity report would be required to get more information about possible vulnerable, threatened or rare flora and fauna found nearby.). **No Location 3 is mapped for the property.**

SECTION 2: LAND MANAGEMENT PLAN



General Use area



Map above of General Use area (shaded in grey) which contains the proposed dwelling (yellow shaded), existing dwelling to be decommissioned (Black hashed area), existing and proposed driveway access (brown shaded), water tank (blue circle), BAL 19 defendable space (red shaded area) with 10m clear area (White dashed outline).

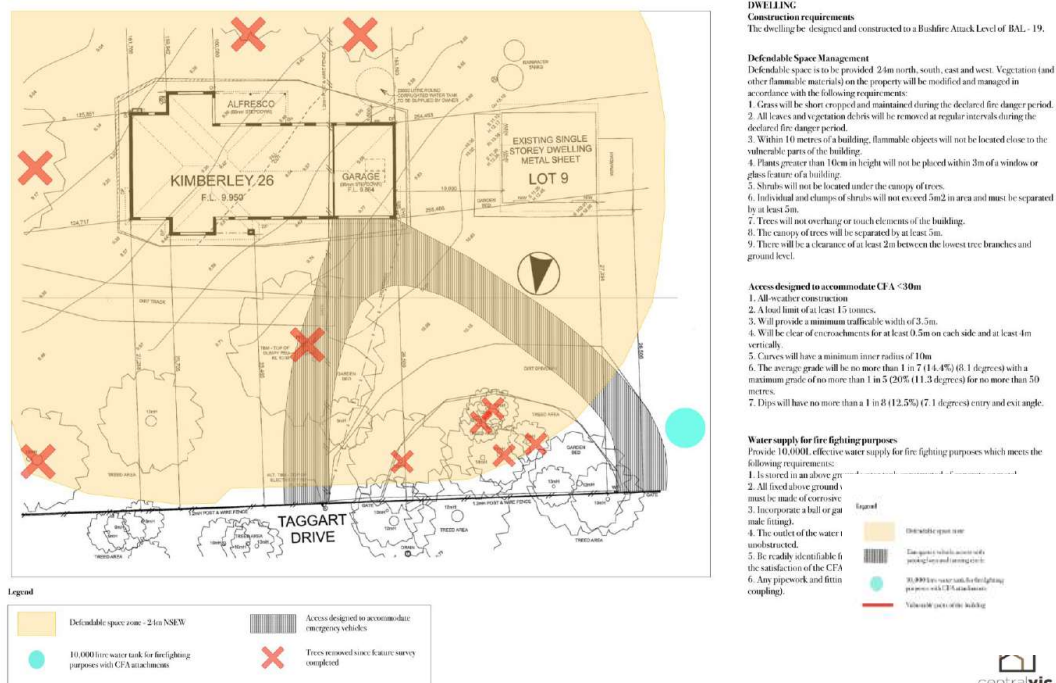


Photo above: Looking south over the proposed dwelling site (located to the east of existing dwelling – to be decommissioned). Some of the existing trees have recently been removed by Arborists as they were either dead or dangerous.

Objective 1: To create a new dwelling and to maintain defendable space

- The proposed dwelling envelope is to be approx.: 13.4 x 25m in size.
- The proposed dwelling will have a BAL 19 defendable space (based on all surrounding slopes being “All upslope or flat” - which will be 24m in all directions).
- The existing dwelling will be decommissioned.
- There will be a native vegetation remnant patch of approx.: 0.057 ha containing that will need to be removed to create the defendable space.
- Some removal of trees has recently taken place by Arborist – deemed to be dead or dangerous.
- As the proposed development falls within a Rural Conservation Zone, there are NO exemptions for removal of native vegetation to create a dwelling envelope and defendable space, therefore an Offset will be required for removal.
- For 10m around the proposed dwelling, there should be no flammable material.
- Some trees can be kept within the defendable space, providing they have a 5m canopy separation (Clause 53.02 – Table 6 Vegetation Management requirements from the CFA).
- A 10,000-L water tank is required for just CFA firefighting purposes, is to be located within 60m of the proposed dwelling and within 4m of access.
- Access (which will need to be upgraded) already exists from Taggart Drive which is currently located approximately 55m away (coming in via the existing dwelling). However, the landholders also plan to put in a new access to Taggart Drive, which runs north from proposed dwelling site and is approx.: 24m to property boundary (33m to Taggart Drive). The two access points will meet up and allow vehicles to drive in and out of the property easily.

Bushfire Management Plan CA 9, Sec 9A, 113 Taggart Drive, Daisy Hill



Map of proposed dwelling and defendable space (Provided by Central Vic Planning Consultants)

The proposed dwelling is located near the north end of the property, close to an existing dwelling to be decommissioned (Close to Taggart Drive). It has existing access to the proposed dwelling site. The Light orange shading is the BAL 19 defendable space and blue circle is the location of the CFA water tank.

Management of Bushfire Defendable Space Zone around a proposed dwelling

The proposed dwelling will be located near the east side of the property (Refer to map on previous map for approximate distances from property boundaries). The defendable space will be at BAL 29 (See map on previous page).

The following vegetation management measures apply to the defendable space around proposed dwelling: **Source: Clause 53.02:**

- Grass must be short cropped and maintained during the declared fire danger period.
- All leaves and vegetation debris must be removed at regular intervals during declared fire danger period.
- Within 10 metres of a building, flammable objects (such as plants & mulches) must not be located close to the vulnerable parts of the building (such as windows, decks and eaves).
- Plants greater than 10 centimetres in height must not be placed within 3m of a window or glass feature of the building.
- Shrubs must not be located under the canopy of trees.
- Individual and clumps of shrubs must not exceed 5 sq. metres in area and must be separated by at least 5 metres.
- Trees must not overhang or touch any elements of the building.
- The canopy of trees must be separated by at least 5 metres.
- There must be a clearance of at least 2m between the lowest tree branches and ground level.



Photo looking west towards proposed dwelling site (with existing dwelling in background): Area within proposed defendable space will need to be maintained by mowing, slashing to ensure fuel levels are kept low.

General description of biodiversity within the property

Native Vegetation:

The whole property is located within the Goldfields bioregion. There is two Ecological Vegetation Classes (EVC) found on the property (Refer to map 4):

EVC 175_61: Low Rises Grassy Woodland – The EVC benchmark is described as: A variable open eucalypt woodland to 15 m tall over a diverse ground layer of grasses and herbs. The shrub component is usually diverse but sparse in cover. In the Goldfields bioregion, Grassy Woodland occurs on sedimentary soils on the lowest slopes at the interface between the plains and the infertile woodlands of the sedimentary hills.

EVC 67: Alluvial Terraces Herb-Rich Foothill Forest – This EVC benchmark is described as: Open woodland to 15 m tall on broad alluvial plains and along ephemeral drainage lines. Soils are generally poorly drained duplex soils with sandy loam overlying a heavier clay subsoil. Understorey consists of few, if any shrubs with the striking feature of this EVC being the high species-richness of the ground-layer and the low biomass of this cover, particularly in summer.

Condition of existing native vegetation:

The majority of remaining remnant vegetation is restricted to the northern and southern sections of the property. The middle section of the property is mainly clear of any native vegetation and used for Livestock grazing.

The majority of the remaining remnant native vegetation is EVC 175_61 Lower Rises Grassy Woodland. There is no middlestorey and very little understorey native vegetation remaining within this EVC. The most likely reason would be attributed to Livestock grazing, slashing and to a lesser degree past droughts in the area. The Grassy Woodland EVC is dominated by Yellow Gum and Yellow Box and some scattered Red Gums along the water course area. Remaining understorey consists of Gold dust wattle, Ruby Saltbush, Grey tussock grass, spear grass, rushes and herbs such as Sticky everlasting.

There were some observed Large Old Trees located within the Grassy Woodland EVC (mainly within the northern sections of the property) which contained some hollows. There was virtually no woody debris for ground habitat. This EVC would be considered to be in a Poor – Moderate condition.

EVC 67 – Alluvial Terraces Herb-rich Foothill Forest was mainly located along the watercourse, particularly closer to the southeast corner of the property. This area is dominated by Yellow Box and contained no middle or understorey native vegetation. It has a high exotic grassy weed cover (which is to be expected along a watercourse with minimal native vegetation understorey cover). There was virtually no woody debris for ground habitat. This EVC would be considered to be in a Poor – moderate condition.

Elsewhere on the property (within Farming areas) was mainly open areas with some Scattered Trees.

However, restoration of both EVC's Biodiversity is still possible. Being adjacent to a large area of Crown Land i.e. Bung Bong State Forest to the south can also assist with future regeneration in terms of being a useful source for local indigenous seed and encouraging more native fauna onto the property to help to restore natural conditions within treed sections on the property.



Photos above: Examples of EVC 175: Grassy Woodland (containing some Large Old Trees mainly within the northwest areas of the property). To the left of the photo over the fence is Bung Bong State Forest.



Photos above: Example of EVC 67: Alluvial Terraces Herb-rich Foothill Forest, located along the eroded gully in the southeast section of the property. To the right of the photo over the boundary fence is Bung Bong State Forest.

Flora species found on the property

Botanical Name	Common Name	Life Form
<i>Acacia acinacea</i>	Gold Dust Wattle	MS
<i>Acacia paradoxa</i>	Hedge Wattle	MS
<i>Amyema sp.</i>	Mistletoe	EP
<i>Austrostipa sp.</i>	Spear Grass	LTG
<i>Cassinia sifton</i>	Sifton bush	MS
<i>Dianella revoluta</i>	Black-anther Flax-lily	MTG
<i>Einadia nutans</i>	Nodding Saltbush	SS
<i>Enchylaena tomentosa</i>	Ruby Saltbush	SS
<i>Eucalyptus camaldulensis</i>	Red Gum	C
<i>Eucalyptus leucoxylon</i>	Yellow Gum	C
<i>Eucalyptus melliodora</i>	Yellow Box	C
<i>Juncus pauciflorus</i>	Loose-flower Rush	MTG
<i>Persicaria sp.</i>	Knotweed	A
<i>Poa sieberiana</i>	Grey Tussock-grass	MTG
<i>Pseudo Gnaphalium luteoalbum</i>	Cudweed	MH
<i>Scencio sp.</i>	Fireweed	LH
<i>Xerochrysum viscosum</i>	Sticky Everlasting	MH
* <i>Briza maxima</i>	Quaking grass	MH
* <i>Lepidium sp.</i>	Peppercress	MH
* <i>Oxalis pes-caprae</i>	Soursob	MH
* <i>Poa annua</i>	Winter grass	MTG

Key to Life Forms

Key to Life Forms	Life form code
Canopy	C
Immature Tree (Canopy) > 5m	IT
Understorey Tree > 5m	T
Medium Shrub 1-5 m	MS
Small Shrub 0.2 - 1m	SS
Large Herb > 50 cm	LH
Medium Herb 5 - 50 cm	MH
Small Herb <5cm	SH
Large Tufted Graminoid >1 m	LTG
Large Non-tufted Graminoid > 1m	LNG
Medium Tufted Graminoid 0.1 - 1 m	MTG
Medium Non-tufted Graminoid 0.1 - 1 m	MNG
Tiny tufted Graminoid <10cm	TTG
Ground Fern	GF
Tree Fern / Palm	TF
Scrambler / Climber	SC
Epiphyte	EP
Bryophytes / Lichens	BL
Aquatic plant	A



Photo above – The presence of any understorey plants was mainly located along the south property boundary. This area could be enhanced with revegetation to boost the diversity and cover of native shrubs.

Fauna Species found on the property

Aim for Fauna management:

- Maintain key habitat in Conservation area i.e. Any hollow bearing trees and fallen branches
- Increase habitat and food source through encouraging natural regeneration of a range of native plant species to provide a multi-layer within areas of existing native vegetation. Distributing collected seeds from shrubs can encourage more shrub diversity in any bare areas.
- By retaining / Increasing shrub and understorey biodiversity this will create more habitat and food sources for a variety of fauna species including birds and mammals.
- Possibly provide additional nest boxes to provide more habitat for mammals and birds in Conservation and General Use areas.
- Monitor for presence of fauna on the property i.e. by using fauna or trail cameras
- Aim to maintain hollows or small holes existing along eroded banks of gully (if possible) as this is suitable breeding habitat for species such as Pardalotes and Rainbow bee-eaters.

Fauna Observed during field inspection:

Scientific Name	Species Common Name	Type of Animal
<i>Acanthiza pusilla</i>	Brown Thornbill	Bird
<i>Alathyria sp.</i>	Freshwater mussel	Mollusc
<i>Amphibolurus muricatus</i>	Jacky Lizard	Reptile
<i>Anas superciliosa</i>	Pacific Black Duck	Bird
<i>Anthochaera carunculata</i>	Red Wattlebird	Bird
<i>Cercophonium squama</i>	Scorpion	Arachnid
<i>Cherax destructor</i>	Common Yabby	Crustacean
<i>Chenonetta jubata</i>	Australian Wood Duck	Bird
<i>Dacelo navaeguineae</i>	Laughing Kookaburra	Bird
<i>Dicaeum hirundinaceum</i>	Mistletoe Bird	Bird
<i>Egretta novaehollandiae</i>	White-faced Heron	Bird
<i>Eolophus roseicapilla</i>	Galah	Bird
<i>Limnodynastes dumerilii</i>	Pobblebonk	Amphibian
<i>Macropus giganteus</i>	Eastern Grey Kangaroo	Mammal
<i>Malurus cyaneus</i>	Superb fairywren	Bird
<i>Microchiroptera sp</i>	Microbats	Mammal
<i>Microeca fascinans</i>	Jacky Winter	Bird
<i>Pachycephala pectoralis</i>	Golden Whistler	Bird

<i>Pardalotus striatus</i>	Striated pardalote	Bird
<i>Platycercus elegans</i>	Crimson Rosella	Bird
<i>Pseudophryne semimarmorata</i>	Southern Toadlet	Amphibian
<i>Psephotus haematonotus</i>	Red-rumped Parrot	Bird
<i>Rhipidura albiscapa</i>	Grey Fantail	Bird
<i>Rhipidura leucophrys</i>	Willie Wagtail	Bird
<i>Smicrornis brevirostris</i>	Weebill	Bird
<i>Strepera versicolor</i>	Grey Currawong	Bird
<i>Tachyglossidae aculeatus</i>	Short-beaked Echidna	Mammal
<i>Wallabia bicolor</i>	Swamp Wallaby	Mammal



Weebill



Striated Pardalote



Jacky Winter



Juvenile Golden Whistler

Leave or Place any logs & fallen timber in Conservation areas for ground habitat

Recommended Management for Fauna



Photos:

Large old trees (pictured left & right top) provide the best habitat for fauna because it provides large hollows for birds, bats and mammals.

Woodland and wetland birds are on the decline.

Maintaining and increasing shrub diversity can assist with increasing bird habitat. Linkages across the property could enhance bird life as well as protecting paddock trees (which can act as stepping stones across the landscape for birds). The northern and southern half of the property had no middle and very little or no lower storey native habitat and more is required to support wildlife habitat.

Dams (middle photo left) can act as refuges for many woodland and wetland birds during the hotter months and are a great source of food for herons and grebes. The dam on the property offers a range of habitats.

Also retaining fallen logs and other woody debris (bottom photo) offer small mammals, birds and reptiles' habitat and are a refuge from predators. Also, woody habitat can play an important role in riparian areas in reducing strong currents during times of flood.

In absence of nesting hollows, artificial habitat can also be created using nest boxes (See Appendix 8).

Recommended Management for Fauna

Potential threats	Management
<p>Larger birds and mammals (e.g. Possums and Owls)</p> <ul style="list-style-type: none"> Minimise any use of poisons used for Rabbits or mice. Loss of Hollow bearing trees 	<ul style="list-style-type: none"> Set up Fauna cameras to monitor for bird or mammal activity. Make a note of favourite trees and monitor for presence of fauna Place nest boxes or large hollow tree branches (converted into nest boxes); onto existing large trees.
<p>All other fauna</p> <ul style="list-style-type: none"> May be disturbed and threatened by human activities, and domestic animals (cats and dogs) may disturb and predate on native fauna, particularly during breeding season. Loss of large hollowing bearing trees Lack of food habitat and cover Loss of biodiversity due to dominant native species, plant decline or mistletoe imbalance. 	<ul style="list-style-type: none"> Native Vegetation within areas of Conservation area will offer protection for wildlife. Retain hollow bearing trees and keep as much woody debris as possible (possibly moving felled tree logs from General use area to Conservation area). Control any non-native plants such as exotic herbs, thistles and woody weeds which will outcompete native plants. Possibly plant back pricklier habitat cover for smaller birds and native nectar plants.
<p>Indigenous Vegetation</p> <ul style="list-style-type: none"> Existing native vegetation values are of medium ecological value. 	<ul style="list-style-type: none"> Maintain remnant vegetation values by encouraging natural regeneration. Improve biodiversity through encouraging natural recruitment of range of plants i.e. trees, shrubs and understorey. Revegetate with local native species. Do not plant non-local indigenous natives within Conservation area(s).



Photo: Example of a nesting box that can be purchased from Latrobe University. By placing nest boxes on nearby trees, it provides additional habitat for fauna which require hollows for breeding.

Refer to Appendix 8 for more information.

Objective 2: To protect the remnant vegetation from stock within the property

It should be noted that natural bushland generally requires minimal management, providing issues such as weeds and pests are kept under control and access is limited into bushland with intact native understorey. However, pressure from livestock by either grazing or rubbing on native trees will continue to reduce the quality of remnant vegetation present on the property.

Benefits of conserving biodiversity across the property:

- Provides wildlife corridors across the property for local fauna and with adjoining crown land.
- Contribute to the ongoing habitat and biodiversity values for the local area.
- Assists in Catchment Health by protecting and maintain a treed area into the future.
- It helps to retain important habitat for birds, mammals, reptiles and amphibians
- Helps to reduce heat and cold stress on Livestock by providing shelter or shade.

Designated Conservation areas on the property:

The property has been split into different sections and conservation areas have been identified as covering the following areas:

- NW Conservation area (located in the northwest area of the property close to Taggart Drive – stock access is already controlled in this area)
- West – Revegetation Corridor (existing shelterbelt area where additional revegetation can take place).
- SW Conservation area (Located in the southwest corner of the property – which currently has unrestricted access to livestock).
- SE Conservation area (Located on the east side of the property, this currently has some restricted access to livestock). This area also includes the Conservation area – Revegetation Erosion Gully, which will be discussed further under objective 4.

Protection should include:

- Fence off remaining remnant native vegetation along the south boundary (see map next page). This will allow better control of livestock access / exclusion into the SW – Conservation area, Farming Area 3 – where large Dam is located and into the SE Conservation area.
- Ongoing monitoring and control any woody weeds from outside property i.e. Gorse.
- To control all exotic herbs i.e. Soursob along watercourse.
- To avoid any activities which may be detrimental to biodiversity conservation which includes:
 - Excessive soil disturbance which exposes areas to weed seed
 - Trail bike use within the treed areas of the property
 - Removal of all logs for firewood (you can take some, but leave the larger hollow logs for wildlife where possible).
- Revegetation within the:
 - NW Conservation area
 - West – Revegetation Corridor
 - SW Conservation area
 - Farming Area 1 – around Large Dam
 - SE Conservation area.

- Detailed information about Revegetation is covered in objectives: 3, 4 and 5.

Although it is recommended that Livestock is totally excluded from all Conservation areas, occasional pulse grazing or slashing to reduce excessive grass growth may still be possible (within areas where no revegetation of livestock or direct seeding has taken place).

However, in areas where revegetation has taken place i.e., Trees, medium and small shrubs, it is not recommended as Livestock can easily destroy any rehabilitation undertaken within a very short period of time. If Long grass is an issue (due to concerns for bushfire risk), mowing or slashing is a preferable option.



Map above: Remaining remnant vegetation on the property is shaded in green. Proposed new fencing (shown as a yellow dashed outline) aims to exclude / control stock access from the southern areas of remnant vegetation.



Aim to exclude or control Livestock entering areas containing intact native understorey.

Any pulse grazing should take place either over Winter or late summer to ensure native grasses can continue to set seed and to reduce weed competition.

Photo: West of Large Dam.

Conservation areas



Map above: Conservation areas (Shaded in green) the focus will be on improving biodiversity through retaining habitat and excluding stock. The main conservation areas include: NW Conservation area, West – Revegetation corridor, SW Conservation area and SE Conservation area (which includes an eroded gully). The Conservation area covers approx.: 45% of the property.



Photo above: Within the NW Conservation area with a Yellow Box dominated overstorey with no middlestorey and very little understorey. Revegetation could enhance the biodiversity values of this area.

Objective 3: To enhance biodiversity through additional habitat and revegetation

The bushland within the property was found to be in Poor - Moderate condition with a mainly exotic pasture grass weed cover and a low diversity of flora, however there was still a range of habitats available for fauna. However further habitat can be provided through the provision of nest boxes, additional log habitat (within the Conservation areas) and through a revegetation program across the property to assist in improving the remnant vegetation condition and promote fauna diversity.

Benefits of the Conservation areas

- Provides wildlife corridors across the property for local fauna
- To improve health of natural areas on the property and through revegetation provide an additional extent of bushland and habitat to adjoining / surrounding State Forest.
- Contribute to the ongoing habitat and biodiversity values for the local area.
- It provides a range of habitat which is a home to a diversity of fauna species.
- Provides shelter for Livestock against extreme weather conditions

Management Aims with the Conservation area:

- To exclude (or be able to control access from) Livestock from all conservation areas
- To monitor and control all woody weeds
- To monitor and control any herbaceous weeds which may invade from General use and Farming areas into Conservation areas
- To retain and add logs or woody debris for wildlife habitat (preferably hollow logs)
- To continue to provide additional habitat for native fauna (i.e. Nest Boxes and plant shrubs).
- Allow natural regeneration (or sow using collect native seed) any bare areas in the property.
- To provide a natural wildlife corridor for fauna from adjoining crown land i.e. State Forest onto the property.

Suggested Management options

1. Remove felled trees from the defendable space area and move the trees into Conservation areas to add to the log habitat (preferably spread out any trees moved into conservation area, so it does not create a future bushfire risk). Also recommend placing any trees as far from the dwelling defendable space as possible (i.e. southwest or southeast end of property).
2. Monitor and control any Woody weeds present within the first 12 months
3. Spray out / grub out any exotic herbaceous weeds within the first 6-12 months (recommend using a qualified contractor who can accurately identify exotic weeds correctly).
4. Revegetate cleared sections within the Conservation areas (refer to pages 33 – 34), concentrating on enhancing middle and understorey native vegetation to enhance biodiversity and habitat. It is also recommended to additionally revegetate areas under existing trees with additional medium and small shrubs.
5. For bare areas, collect seed from native shrubs or grasses and sprinkle over areas. Alternatively revegetate using native tubestock from a local indigenous nursery. Guard young tubestock.
6. Install nest boxes on larger trees.

Objective 4: To rehabilitate the eroded gully

Within the southeast corner of the property is a section of eroded gully, which contains young Yellow box trees but contains no middle or understorey native vegetation. There is a high cover of exotic grasses and herbs within this section.

Primary aims / objectives:

- Where possible exclude all livestock from SE Conservation area. If this is difficult, it is recommended to fence off the Eroded section completely.
- To control invasive weeds i.e. Exotic grasses and herbs.
- To reduce further erosion along the watercourse by improving native vegetation cover through revegetation of middle and understorey native plants.
- Improve water quality leaving the property by planting more sedges and grasses to filter runoff.

Secondary objectives:

- To enhance local habitat and biodiversity values.
- Maintain current habitat i.e. holes for Pardalotes and Rainbow bee-eaters.
- To protect and enhance the values of existing remnant vegetation.
- To stabilise soil and stop erosion continuing up the watercourse into the property.
- To slow down water speed using native vegetation, which will reduce further soil erosion.
- Filter and reducing nutrient runoff from nearby paddocks into creek.

Revegetation Methodology

1. It is recommended to first contact the North Central Catchment Management Authority to check that a work on Waterways permit may be required to work along the watercourse. It may also be possible to access grant assistance with the revegetation and restoration process.
2. Ensure the area is fenced off / excluded from stock access before starting any works.
3. Remove any rubbish that is present in the eroded gully.
4. Control invasive grasses and herbs through: grubbing out weeds or cut and paint any woody weeds present (to minimise use of chemicals around a waterway).
5. Select and order plant species which are locally indigenous to the surrounding area of Daisy Hill – including a range of groundcovers, grasses, shrubs and trees – based on the EVC (best sourced from a native nursery – see last page of report, also see Page 34 and Appendix 4b).
6. Once woody weeds are controlled, proceed to planting back understorey (starting with native grasses, rushes and sedges). The aim is to try and outcompete any exotic grass or herbaceous species as soon as possible through dense planting. Approx.: 200-400 grasses, Rushes and sedges to be planted in gully.
7. Plant out the bottom and sides of the gully with native grasses, sedges and rushes and also the tops of the banks. Where possible, guard plants, otherwise guarding is not normally required for grasses and sedges.
8. It is recommended to add some Woody branches or debris along the floor of the watercourse. This helps to slow down the water speed which can lead to soil erosion during high rainfall or flooding events.
9. Once the groundcover is established, plant out trees, medium and small shrubs (guarding is recommended due to presence of rabbits, Wallabies and kangaroos). Around 100 – 150 plants.
10. Ongoing maintenance should be carried out i.e. replace dead plants on a yearly basis and continue to monitor and control new weed outbreaks.



Photo above of the eroding gully. Rubbish (i.e. Car tires, wire etc) should be removed prior to any planned revegetation work.



Close of photo of the gully. Although it can be sometimes beneficial to batter a gully (smooth off the eroding sides) to assist with rehabilitation. However, there is the chance there could be existing holes or hollows in the bank of the gully which may provide habitat to nesting Pardalotes or Rainbow Bee-eaters. Therefore, it is not recommended to batter the gully.

Revegetation Recommendations for Conservation areas



There are 10 different Revegetation areas recommended:

- Within NW Conservation area – areas 2, 3 and 4 – 0.12 ha (Approx.: 120 – 200 plants)
- Within West – Revegetation Corridor – area 1 – 0.06 ha (Approximately: 50 plants)
- Within SW Conservation area – Areas 7, 8, 9 and 10 – 0.18 ha (Approx.: 200 – 500 plants)
- Within SE Conservation area -
 - Area 5 – 0.73 ha (Approx.: 700 – 1,000 plants) – most is understorey
 - Area 6 – 0.15 ha (Eroded Gully) – (Approx.: 300 – 500 plants) – most is understorey

Recommended:

It is also recommended generally within each of the NW, SW and SE Conservations areas to also plant additionally around 100 - 200 middlestorey and understorey plants within the existing treed sections to create a multi-storey native vegetation layer.

Approximate size of proposed Conservation area: along northern part of the property.

Based on a density of total plants per hectare is generally recommended to be 1,000 – 2,000 per Ha. Areas are split into NW, West, SW and SE Conservation areas (refer to numbered areas on map – P33).

Type	NW (2,3 & 4)	West (1)	SW (7,8, 9 & 10)	SE (5& 6)	Common Name	Botanical Name
Large Trees 10m+		10			Red gum	<i>Eucalyptus camaldulensis</i>
		10		50	Yellow gum	<i>Eucalyptus leucoxydon</i>
		10		50	Yellow box	<i>Eucalyptus melliodora</i>
Tall shrubs 2-5m			20	50	Spreading Wattle	<i>Acacia genistifolia</i>
					Hedge Wattle	<i>Acacia paradoxa</i>
	20	10	20	50	Golden Wattle	<i>Acacia pycnantha</i>
	20		20		Bitter-pea	<i>Daviesia sp.</i>
	20	10	20	50	Bushy Needlewood	<i>Hakea sericea</i>
Low shrubs <2m	20		20		Gold dust wattle	<i>Acacia acinacea</i>
					Ploughshare wattle	<i>Acacia gunnii</i>
	20		20	50	Common Fringe-myrtle	<i>Calytrix tetragona</i>
					Common Correa	<i>Correa reflexa</i>
					Parrot peas	<i>Dillwynia sp.</i>
			20	50	Grey Everlasting	<i>Ozothamnus obcordatus</i>
					Bush-pea	<i>Pultenaea sp.</i>
Grasses/Rushes/Sedges	20		50	50	Black-anther Flax-lily	<i>Dianella revoluta</i>
				50	Rush	<i>Juncus sp.</i>
				50	Variable Sword-sedge	<i>Lepidosperma laterale</i>
	20		50	100	Wattle Matt-Rush	<i>Lomandra filiformis</i>
			100	300	Grey Tussock-grass	<i>Poa sieberiana</i>
Herbs/Lillies					Austral Bugle	<i>Ajuga australis</i>
			50		Chocolate Lily	<i>Arthropodium strictum</i>
			20		Common Everlasting	<i>Chrysocephalum apiculatum</i>
	20		20		Clustered Everlasting	<i>Chrysocephalum semipapposum</i>
	20		20	50	Sticky Everlasting	<i>Xerochrysum viscosum</i>
Total:	180	50	450	950		

** Please note that extra plants have been allowed for 10% plant failure.

Objective 5: To revegetate around the dam with both terrestrial and aquatic plants

Primary aims / objectives:

1. Where possible exclude or control livestock access into Farming Area 3 – Large Dam area
2. To control invasive weeds i.e. Exotic grasses and herbs
3. To improve aquatic vegetation within and around the dam
4. Link conservation area to surrounding revegetation areas to create wildlife corridors.
5. Improve water quality of dam by planting more sedges and grasses.

Revegetating the larger dam with aquatic plants species will assist in cleaning the water and improving water quality. This will not just improve the quality of water on the property, but any water also exiting the property. There are three different types of revegetation that will take place.

1. Terrestrial Revegetation to include the use of sedges and grasses around the edge of the dam (including dam wall), which will aid in filtering any water runoff into dam, assisting to clean the water before it enters the dam. It will also provide habitat for water birds and amphibians.
2. Terrestrial Revegetation along any nearby inflow or overflow areas near dam (drainage lines for example or other pooling areas), to ensure that where ever the water is going or coming from in relation to the dam, is also included in as part of the revegetation program, in assisting to clean water runoff, through revegetation with native grasses and sedges, assisting to further act as a natural filter area for any potential nutrients and sediments that may runoff into adjoining riparian areas.
3. Aquatic Revegetation within the dam water, to help clean the existing water in the dam. Refer to Appendix 5 for detailed information on Wetland species
4. Retain or add Woody Debris such as branches or logs to dams to provide complex fauna habitat for aquatic fauna and provide foraging areas for birds. It can also assist in keeping parts of the water temperature cooler in summer by limiting direct sunlight on parts of the dam.
5. Native vegetation can also slow down water entering and exiting the dam along watercourse.



Example of a native sedge and grass filter along a runoff area.

Source:

<https://www.melbournwater.com.au/water-data-and-education/news/research-and-innovation/catchment-scale-stormwater-control-stream>

Photos of Dams – Located near south side of the property.



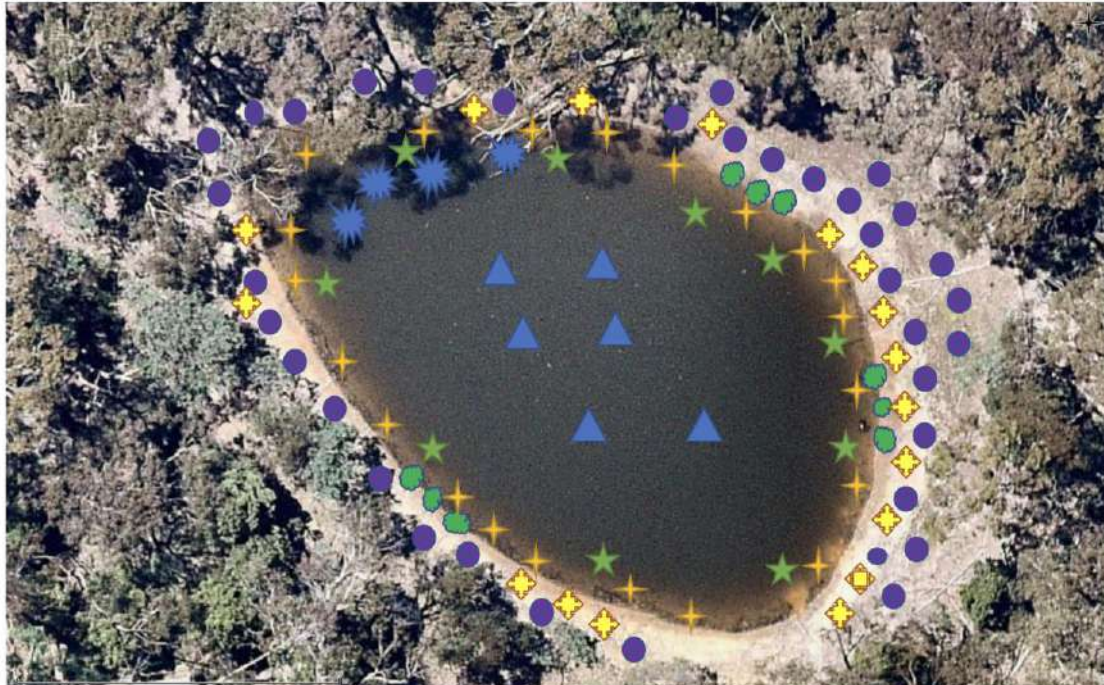
Photo above: **Larger dam located within Farming Area 3.** This will be revegetated to assist in cleaning the water entering the dam, which will also improve the water quality.



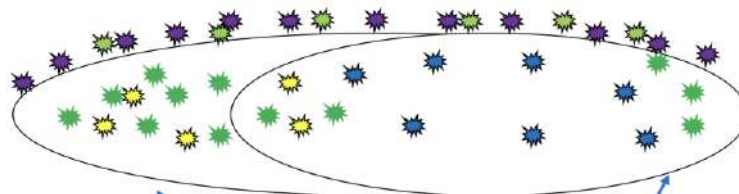
Photo above: **Optional revegetation area** – Smaller dam located within Farming Area 2. This dam has been kept as a Livestock dam for now. However, if the Landholder decides in the future to also exclude stock from this smaller dam, it can also be rehabilitated in a similar way to the larger dam. An Off-site watering points could be supplied instead as alternative water source for livestock.

How to revegetate a dam with aquatic and terrestrial plants to reduce runoff & improve water quality

Dams and Shallow watercourses are a great way to provide habitat for flora and fauna and can be a vital water source for wildlife during hot dry summers. Below are suggested planting designs. A dam or wetland should have 10 m clear area of trees each side of the waterline – which should remain clear of trees to ensure it maintains water.



- ★ Water Milfoil (*Myriophyllum crispatum*) ▲ Eelweed (*Vallisneria americana*) ● Tall Sedge (*Carex appressa*)
- ✦ Swamp Stonecrop (*Crassula helmsii*) ★ Running Marshflower (*Villarsia reniformis*)
- Common Tussock Grass (*Poa billardierei*) ✦ Spiny-headed Matt-Rush (*Lomandra longifolia*)



Create a deep section up to 2m deep

Gradual slope off to 0.5m

Plantings of:

- Poa species. ●
- Running Marsh Flower ★
- Pale Rush ●
- Juncus ★
- Tall Sedge ●

Examples above of Wetland planting designs (plantings should be mindful of water depths for certain plants).

Recommended Detailed Revegetation list for the larger dam (and nearby overflow area)

Type	Qty	Common Name	Botanical Name
Grasses/Rushes/Sedges	500	Tall Sedge	<i>Carex appressa</i>
(edges of dam and inflow /	1000	Rush	<i>Juncas sp.</i>
Overflow areas)	1000	Wattle Matt-Rush	<i>Lomandra filiformis</i>
	1000	Tussock-grass	<i>Poa labillardierei or sieberiana</i>
Total:	3,500		
Aquatic filtering plants	500	Spikerush	<i>Eleocharis acuta</i>
(within dam water)	500	Pale Rush	<i>Juncus pallidus</i>
	200	Milfoil	<i>Myriophyllum crispatum</i>
	200	Running Marsh-flower	<i>Villarsia reniformis</i>
Total:	1,400		



Photo above: Dam on the south side of the property within Farming Area 3. There is some native Rushes (Loose-flower Rush) already growing on the side of the dam. This area can be extended around both sides of the dam to assist in filter water entering the dam.

Revegetation Timeline - Conservation, Dam and Shelterbelt areas

Revegetation with understorey shrubs under trees and widening of treed corridors and patches will enhance the biodiversity of this area. It is recommended to fence off revegetation area to minimise grazing from wallabies, Kangaroos and rabbits.

Cost of revegetation (Also refer to Appendix 4: Revegetation notes and Information)

Activity / Action	Proposed Timeline	Date Completed
Spot spray planting spots 3-4weeks prior to planting	July	
Plant into sprayed areas guard and stake – <i>recommend Wallaby proof mesh tree guards</i>	July / August	
Monitor: control weeds and pest and replant any spots where plants have died in 12 months' time.	12 months on.	
<i>Investigate registering with Trust for Nature and turning the remnant vegetation area into an Offset – this is a way to protect this area for ever and also generate an income from it.</i>	N/A to this property	

Cost of revegetation (Also refer to Appendix 7: Revegetation notes and Information)

Revegetation method	Cost	Advantages and disadvantages
Cost of Plants		
Tubestock (Option 1) <i>(Most recommended)</i>	0.99 c per Hiko OR \$1.00 – 1.20 per tube	Selection of locations and greater chance of survival
Direct Seeding (Option 2)	0.01c – 0.55c	Low cost and provides better diversity. Can be hand cast or via mechanical means. Can ensure provenance (local) seed is used.
Cost of guards and stakes		
Guards and Stakes (Carton guards)	Guards about \$0.30 each Stakes about \$0.10 each	Most commonly used for revegetation projects. Cheap but doesn't keep out wallabies.
Mesh guards and Stakes (Wallaby proof)	Guards about \$1.50 each Stakes about \$1.00 each	More expensive options but will more effective at reducing wallaby grazing.

Farming areas



Map above: There are 3 Farming Areas.

Farming Area 3 has been already discussed under objective 5.

Farming Areas 1 & 2 are primarily used for Sheep and cattle grazing.

New fencing has been proposed (yellow dashed outline) to ensure stock are excluded or controlled from having access to remaining remnant vegetation on the property.



Photos above of the sheep and cattle observed on the property during the Land Management Assessment.

Objective 6: To manage stocking rates to a sustainable level

The Landholders currently keep livestock on the property which consists of both sheep and some cattle. From time to time, the number of sheep are reduced by harvesting some of the stock for meat.

However, it is important to ensure that ongoing stock management is undertaken to ensure that no long-term detrimental impacts to the property or surrounding environment result from keeping stock.

Infrastructure i.e. Fencing and access to water

It is recommended:

- Where possible to exclude sheep and cattle from remnant native bushland located along the north and southern sections of the property to stop ongoing damage to native vegetation.
- New fencing has been recommended (see map on Page 40) to exclude livestock from treed areas. Pulse grazing may be still an option in areas where no revegetation has taken place. However, pulse grazing should be avoided in future revegetated areas.
- It is estimated approx.: 385 – 400m of new fencing will be required to exclude livestock.
- Provide Off-stream watering points as an alternative to stock accessing either watercourses and dams for water. Generally, water within supplied watering troughs can often be cleaner and also better regulated to ensure stock have continued access to water (especially during summer).
- At this point in time, the stock will still continue to have access to a smaller dam in Farming Area 2. However, it is recommended that the landholder eventually exclude stock from this dam and also rehabilitate it with terrestrial and aquatic vegetation as well as the nearby watercourse (mainly existing as a drainage depression across south side of property).
- Long term recommendation – fence off scattered trees in paddocks and plant up further – this would provide more shelter for stock during extreme cold or hot weather conditions.

Stock management

It is recommended:

- To aim to maintain no more than 10 sheep within the property. This is to allow the pasture to recover and be able to provide ongoing grass cover all year around (to reduce the need to purchase hay).
- It is recommended to also not allow more than 2 - 3 Cattle due to ongoing pressure to pasture.
- Occasionally a mesh grate or net can be also run over the paddock (towed behind a car or tractor) to break up dung and allow it to break down quicker across the paddock.

Feeding

It is recommended:

- Livestock should ideally be rotated between two areas i.e. Farming Area 1 & 2 every 1-2 weeks to allow pasture to recover continued grazing.
- Optional – resow the pasture with a more drought tolerant grass species (Recommend consulting a local Agricultural Produce store for pasture species recommendations).
- Optional – consider treating the pasture with “Worm Tea” to boost production level of pasture. Consult a Worm Farm for further information.

Photos of Existing Farming areas used by stock



Photo looking west across Farming Area 1 (towards Farming Area 2).



Photo looking east across Farming Area 2 (closest to west boundary of property) towards Farming Area 2. The landholder has recently reduced the amount of sheep (since this photo was taken in July) to reduce impact of sheep on pasture.

Objective 7: To monitor and control weeds over the whole property

Weed Species Recorded onsite

Scientific name	Common Name	Life Form	Threat
* <i>Briza maxima</i>	Quaking grass	MH	Medium
* <i>Lepidium sp.</i>	Peppercress	MH	Low
* <i>Oxalis pes-caprae</i>	Soursob	MH	High
* <i>Poa annua</i>	Winter grass	MTG	High

Please note:

These species were recorded during field observations and is not a comprehensive list.



Photo above of the eroded gully: Exotic pasture grasses and herbs are the main weeds found across the property – especially along watercourses.

The landholder noted that they have been also monitoring for woody weeds such as Gorse, which is located currently within the adjoining State Forest.

Management issues and Strategies

Taking a proactive approach to weed control is generally much better than waiting for problems to occur. Deciding on a weed management strategy early allows planning activities and the ability to allocate a budget for dealing with weed problems.

Doing nothing may save money in the short term, but your property may suffer from weed impacts, which may cost more in the long term. There is the possibility of facing penalties for non-compliance with weed control laws.

Choosing a weed management strategy

To make cost-effective business decisions on weed control, you need to gather information on:

- The size of the weed problem on the property and how much it will cost
- Total costs of weed control methods and likely benefits of each, including time frames.

Based on this information, a simple cost-benefit analysis can be developed on various pest management strategies for the property weed problem. This may help decision making on which of the broad strategies described below is best for the property.

Planned, ongoing management

Planned, ongoing weed management strategies have high initial and ongoing costs. Yet, this approach is also likely to deliver long-term benefits with reduced weed incursions and impacts.

Local eradication

In relation to a small property with a well-defined weed problem, consider a local eradication strategy. This approach has high initial costs but limited ongoing costs as only monitoring will be required. If successful, local eradication can deliver long-term benefits for the property. Although landowners are not required to develop a property pest management plan for weeds, effective planning is an extremely useful management tool.

Benefits of planning

Developing a pest management plan for weeds will assist in:

- effectively control weeds on the property
- comply with [weed control laws](#)
- integrate weed control activities and other components of the property plan
- coordinate weed control activities with neighbours
- ensuring control activities are prioritised and resources are used at optimal times
- monitor how well control activities are working
- report progress to funding bodies and local governments.

Developing and implementing a property pest management Plan

Generally, a property pest management plan involves both maps and written information.

The plan should:

- give background information on property and ownership details
- include a property map to help in analysing weed-related risks for the property
- define the weed problems on the property
- assess risks and identify priorities for weed control
- set overall goals and specific targets and describe the actions that is planned to undertake to achieve them
- describe how the plan will monitor progress and measure success.
- Also, should seek input from neighbours and weed control experts on the draft plan.

Act: Implement the control activities outlined in the plan within the set time frame and budget.

Check: Monitor control activities and their effect on weed infestations on the property.

Review: The information gathered from monitoring will enable evaluation on how successful implementation of control activities and meeting targets has been. Then review the plan and make necessary changes to future weed control activities.

Land managers are required to actively target **any declared noxious weeds on an ongoing basis. It is also important to target highly invasive weeds as well to ensure they do not spread into native grassland and woodland areas.**

Weed management aims

1. To control or eradicate weed species within property boundaries.
2. Maintain land and biodiversity values by controlling pest plant species.
3. Successfully manage weeds long-term using a systematic approach and a combination of affordable control techniques.
4. Minimize potential for weeds to establish or re-establish by using local indigenous plant species to revegetate disturbed areas.

Recommendations

1. There is a minor weed problem at this site and it requires immediate action before the weeds begin to spread and colonize other parts of the property.
2. Design a Weed Action Plan (WAP) for the property; include timelines for addressing long-term control issues. The Plan should target 'Local Priority' weeds and environmental weed species currently on the property and take potential weeds species into consideration.
3. Integrate weed control works and revegetation works in a section-by-section approach.
4. Plant indigenous species only.
5. Annual follow-up of previously treated sites will be necessary, particularly for dense weed patches and revegetation areas.
6. Where possible, encourage adjoining landholders to undertake weed control works in adjacent areas to reduce potential for re-infestation from off-site sources.

Weed control

1. Weed control will be ongoing and can be undertaken twice a year during spring and autumn.
2. Use appropriately trained, competent operators for all works, including use of chemical sprays.
3. Undertake weed control working systematically:
 - Eradicate large areas of woody weeds through mulching then follow up spraying
 - For scattered weeds, use cut and paste technique or grubbing out
4. Where possible, encourage neighbouring properties to undertake weed control to minimize potential for reinfestation from surrounding areas.
5. Aim to minimise new weeds coming in on car tyres.

Weed management strategy

Management areas	Description	Priority
Conservation areas	Areas of Remnant Native Vegetation	This is a HIGH priority for managing weeds. This area will be monitored for any new woody weeds. Closer to waterways – either slash or cut and paint only – do not spray over water.
Farming area	Cleared areas for Livestock	This is a LOW - MODERATE priority for managing weeds. Most weeds will be eaten by Livestock. However ongoing monitoring to control invasive woody or herbaceous weeds is required.
General use area	Clear areas near Dwellings	This is a LOW priority for managing weeds. This area will be maintained through spot spraying, slashing or possibly occasional grazing of Livestock.

Timing of weed control – focusing on key weeds

Weed name	Control Measure	Jan	Feb	Mar	Apr	May	June	Jul	Aug	Sep	Oct	Nov	Dec
Herbaceous weeds i.e. Spear Thistle	*Spray Herbicide / grub out												
Woody weeds i.e. Gorse and Blackberry	*Mulching												
Woody weeds i.e. Gorse and Blackberry	*Spraying or Cut and Paint												

*For information about chemical use and type – please refer to next page and also **Appendix 6**

Objective 8: To monitor and control pest species (Rabbits and Foxes)

There some old evidence of Rabbits on the property and some evidence of foxes.

There is no easy way to control rabbits or foxes within a rural bushland environment. Baiting is generally not recommended and shooting is not always a safe option (given proximity to other dwellings and domestic animals), which leaves only shooting or live trapping as a possible solution (with mixed results).

The best action to reduce Rabbit and Fox impacts on native wildlife is to plant / retain a variety of habitats which excludes Rabbits from establishing burrows and deters fox predation from taking place.

Planting or encouraging prickly native bushes including Hedge Wattle or Prickly Needlewood provides protection for native birds and thick sedges around dams, wetland or drainage areas which makes it difficult for foxes to access areas within bushland and also around the dam or drainage areas.

Additionally, prickly bushes can also help to exclude other problematic species in high numbers such as Eastern Grey Kangaroo, to discourage them from camping and damaging native bushland.

Monitoring across the property for Rabbit burrows or possible fox dens or habitat should be ongoing and a registered Pest controller can be contacted if foxes prove to be causing issues on the property.

To monitor fox or kangaroo activity, fauna cameras can be purchased to find out more about the Rabbit or fox population in the area and how many Rabbits or foxes frequent the property each night.



Photo above: Example of a fauna camera that can detect fox activity on the property

Rabbit control – guide

Threat	Management Action
<p>Rabbits</p> <ul style="list-style-type: none"> • Graze vegetation, including seedlings. • Scratching and burrows disturb plant roots, soil and create opportunities for pest plant species to establish. • Most problematic in high numbers. 	<ul style="list-style-type: none"> • Reduce harbour such as building material near or around existing burrows. • If rabbits are found to be an issue, DEDJTR and local Landcare groups can often provide local Rabbit Control Programs. • Seek advice about fumigation • Net burrows to stop re-entry. • Avoid poisoning if there is a presence of vulnerable or threatened birds or mammals. • Recommend fencing off revegetation areas with rabbit proof fencing to minimise rabbit grazing. <p><i>More details management is on next page</i></p>

<p>Rabbits <i>(Oryctolagus cuniculus)</i></p>	<p>Burrow fumigation and Netting</p> <p>Notes: Baiting/Shooting Monitor to determine if an issue and seek advice about a baiting program. Monitor to identify the grazing areas preferred by rabbits for ideal bait placement and ensure appropriate levels of free feeding occurs to maximise the uptake of bait. Take appropriate precautions to minimise risk to the user and others (including notification to neighbours, warning signage, minimum distances to dwellings and waterways). Uneaten poison bait should also be removed and disposed of as per the product label. Rabbit control is most cost effective in late summer and early autumn as breeding has generally paused in the rabbit population. Biological control and naturally harsh environmental conditions have also reduced the rabbit population, therefore long-term control can be achieved by reducing next season's breeding stock.</p> <p>Burrow fumigation and Netting A rabbit control program will fail unless all burrows are also fumigated. Locate, map and mark all warrens. Inspect burrow for any signs of native fauna first. Fumigate burrow (utilising moisture within burrow) to eliminate any breeding rabbits. Net the burrow to stop any re-entry. Burrows can be used for native wildlife such as lizards.</p>
--	---

Pest Animal Control timing

Pest name	Control Measure	Jan	Feb	Mar	Apr	May	June	Jul	Aug	Sep	Oct	Nov	Dec
Rabbits	Burrow Baiting (seek advice)												
Rabbits	Fumigate (Seek advice)												
Rabbits / Foxes	Shoot (Seek advice)												

ENVIRONMENTAL MONITORING

Objective 9: To Monitor the health of the property

Continuous monitoring is best managed through the use of photopoints. Photopoints involve taking before and after photos to compare and track change on the property.

Tips on photopoint monitoring:

- Take photos from locations that will not change or be destroyed – i.e. the corner of a paddock or from the top of a known gateway.
- Take photos once a year on the same month and at the same time of day.

Photopoints can be used for the following:

- Revegetation
- Erosion
- Health of plants
- Monitor effect on mistletoe through photopoints and by counting the number of plants in certain trees

Another type of monitoring that can also be used to track change is:

- Percentage cover of tree canopy cover – to assess any changes in tree health
- If possible, note which species of plant are thriving / not thriving
- Count number of plants surviving in revegetated areas to work out percentage survival.
- Do a survey on the number of bird species that you see. (An increase in diversity of bird species will not only improve the biodiversity on the property but also possibly control mistletoe outbreaks).
- Set up wildlife cameras on trees to look for different mammal and bird species.
- Monitoring changes in fauna activity in revegetation areas using Wildlife cameras, to determine if revegetation is having a positive impact on providing habitat for wildlife.
- If you have any bare sandy areas, rake a smooth surface, leave for a few days and then return to look for any footprints left in the sand. Animals can be identified by foot prints.



Example of weed control, before and after photopoints

TIMELINE OF WORK – REVEGETATION & WEED CONTROL

Objective 10: To provide an action plan with time frames of improvement works

Actions, Standards and Timelines

Year	Action	When	Who	How	Completed
1	Review Management Plan Actions	October	landowner	Plan out area and contact contractors.	
1	Construction of New Dwelling and decommission old dwelling.	October	landowner	Once permits have been obtained contact contractors	
1	Monitor and Control Weeds	Spring - Autumn	landowner	Spray or grub out weeds	
1	Monitor for pest species	Autumn-spring	Contractor	fumigate any burrows.	
1	Plan and install Fencing for revegetation areas	Spring - Summer	Contractor	Fence out proposed revegetation areas	
2	Collect seed for Revegetation areas or place order for plants	October - November	Nursery	Place order with local nursery or via local Landcare group	
2	Prepare revegetation areas.	April	landowner	Control Weeds i.e. grub out or pre spot spray planting locations	
2	Plant out Revegetation areas	June / July	landowner	Planting tubestock or direct seed.	
3	General Weed control work in Conservation areas	Oct - Feb	landowner	Spot Spray or grub out weeds	
3	Follow up planting (if required) Collect seed for revegetation of remnant vegetation area or place order for plants	October - November	Nursery	Place order with local nursery i.e. Moorabool Landcare Network	
3	Place order for dam – terrestrial and aquatic plants	October - November	Nursery	Place order with local nursery or via local Landcare group	
3	Prepare planting sites within Conservation area and dam areas (as required)	May	landowner	Control Weeds i.e. grub out or pre spot spray planting locations	
3	Plant out middlestorey trees and / or understorey shrubs / or aquatic plants	June / July	Landowner / contractor	Plant tubestock and guard plants	

Year	Action	When	Who	How	Completed
4	General Pest and Weed control	Oct - March	landowner	Spot Spray or grub out weeds	
4	Review Management Plan Actions	End of year	landowner	Record observations and notes compiled throughout the year. Record action progress.	
5	Review current fencing and Livestock exclusion	Ongoing	Landowner	Replace any old fencing.	
5	Monitor and replant any dead vegetation within Conservation areas or around large dam.	June / July	landowner	Plant tube stock into spot sprayed areas and guard.	
5	General Pest and Weed control	Oct - March	landowner	Spot spray invasive herbaceous or woody weeds and control rabbits	
5	Consider installing nest boxes or placing fauna cameras on trees to monitor wildlife.	Ongoing	landowner	Purchase nest boxes to place on mature trees and Cameras to place in revegetation areas.	
6	Monitor and replant any dead vegetation	June / July	landowner	Plant tube stock into spot sprayed areas and guard.	
6	Monitor pest and weed species	Ongoing	Contractor	Fumigate Rabbit warrens that have established and control weeds	
6	General Pest and Weed control	Oct - March	landowner	Control Rabbits, Foxes & Weeds	
7	Monitor and replant any dead vegetation	June / July	landowner	Plant tube stock into spot sprayed areas and guard.	
8	Monitor and replant any dead vegetation	June / July	landowner	Plant tube stock into spot sprayed areas and guard.	
8	Monitor Weed species	Ongoing	Contractor	Control weeds	
9	Monitor and replant any dead vegetation	June / July	landowner	Plant tube stock into spot sprayed areas and guard.	
10	Review Management Plan Actions	End of year	landowner	Record observations and notes compiled throughout the year. Record action progress.	

REFERENCES

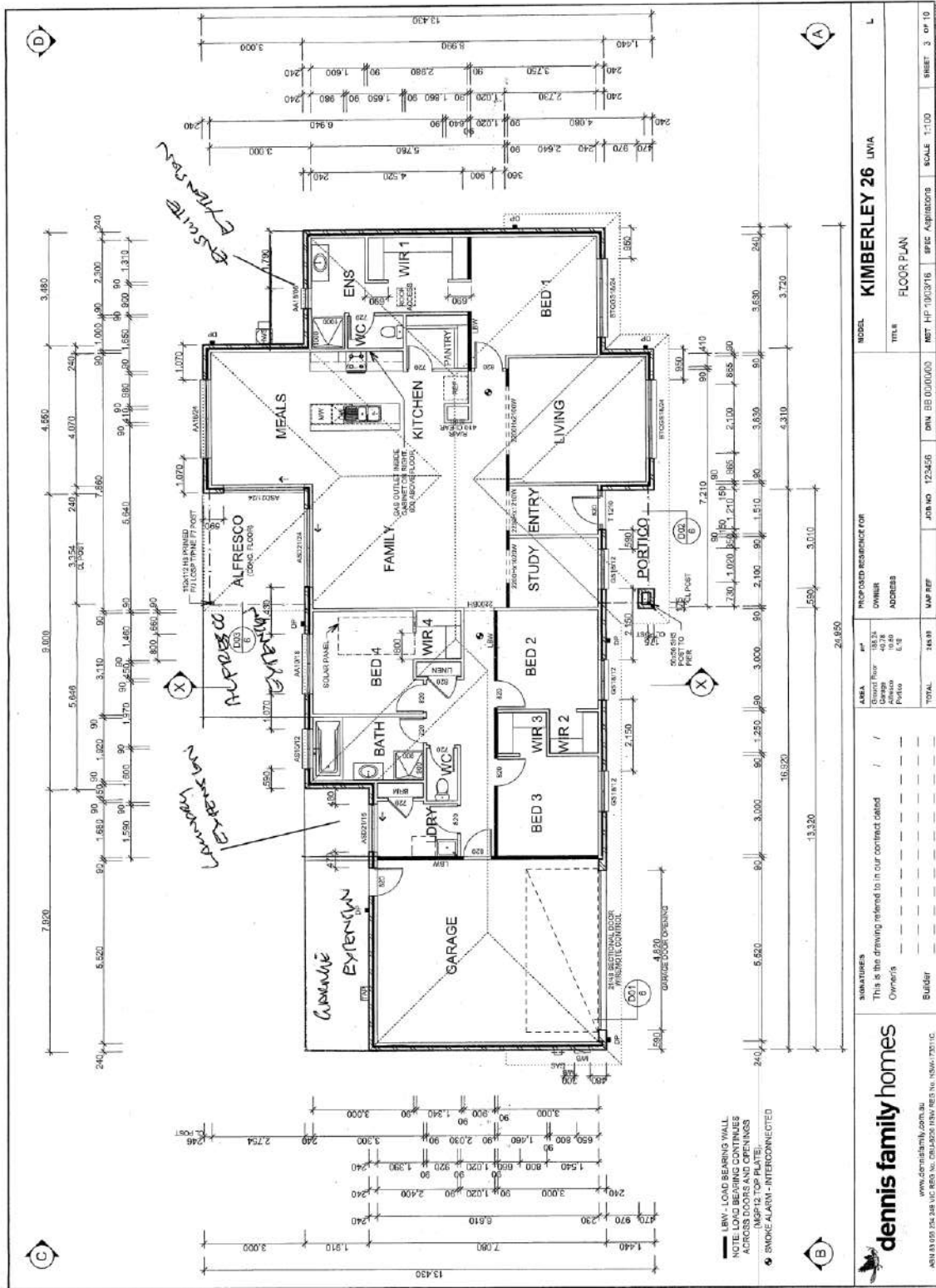
- Agriculture Victoria (2021). Pest, Diseases and Weeds. (Accessed December 2021).
- DELWP (2022). NatureKit Website: <http://maps.biodiversity.vic.gov.au/viewer> (Accessed August 2020).
- Google Earth (2022). Aerial Layer
- Land Victoria (2022). Interactive Map – Land Channel. Website:
<http://services.land.vic.gov.au/maps/interactive.jsp> (Accessed September 2019).
- Near Map (2022). Aerial Layer
- Price, P, Lovett, S & Lovett, J (2005). Wool Industry river management guide: Sheep / wheat Zones, Land & Water Australia.
- VicMap API (1994 and 2020) Aerial Layer

Website references:

- Basalt to Bay Landcare Network (2014). The Economic Benefits of Native Shelter Belts Report 01/14. Accessed from:
<http://sustainabilitygippsland.com/uploads/3fa379507edc480cee0114b1140ca1d2.pdf>
- Bass Coast Landcare Network (2016). Southern Gippsland Agricultural Climate Resilience project: Shade and Shelter on farms by direct seeding workshop. Access from:
<http://sustainabilitygippsland.com/uploads/9f13547e0405ec1e594cc5b243f64042.pdf>
- Wariapendi Nursery (2019). Creating Sustainable Windbreaks. Accessed:
<http://www.wariapendi.com.au/hints-tips/creating-sustainable-windbreaks>
- Sustainable Farms (2019). Shelterbelt wind intercept figure.jpg. Accessed:
<http://www.sustainablefarms.org.au/files/shelterbelt-wind-intercept-figure.jpg>

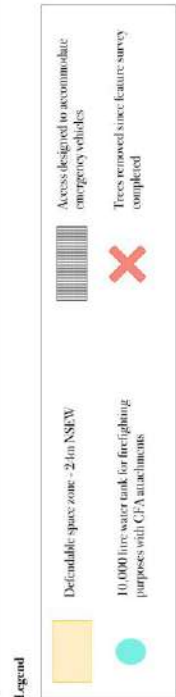
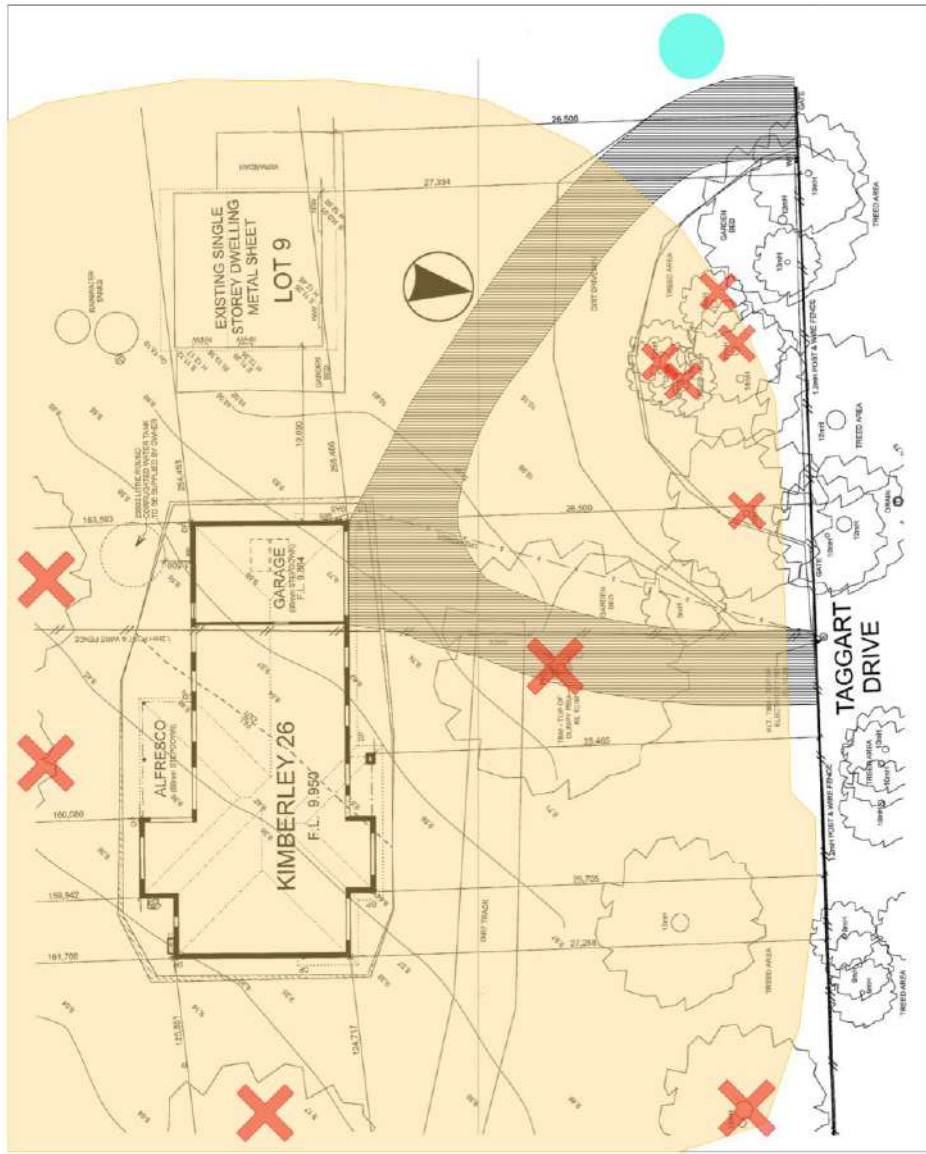
Appendix 1: Planning maps, Council document and supplied information

Planning Information: Supplied by Client or Planning Consultant



Bushfire Management Plan

CA 9, Sec 9A, 113 Taggart Drive, Daisy Hill



DWELLING:

Construction requirements
The dwelling be designed and constructed to a Bushfire Attack Level of BAL - 19.

Defendable Space Management

Defendable space is to be provided 2.4m north, south, east and west. Vegetation (and other flammable materials) on the property will be modified and managed in accordance with the following requirements:

1. Grass will be short cropped and maintained during the declared fire danger period.
2. All leaves and vegetation debris will be removed at regular intervals during the declared fire danger period.
3. Within 10 metres of a building, flammable objects will not be located close to the vulnerable parts of the building.
4. Plants greater than 10cm in height will not be placed within 3m of a window or glass feature of a building.
5. Shrubs will not be located under the canopy of trees.
6. Individual and clumps of shrubs will not exceed 5m² in area and must be separated by at least 5m.
7. Trees will not overhang or touch elements of the building.
8. The canopy of trees will be separated by at least 5m.
9. There will be a clearance of at least 2m between the lowest tree branches and ground level.

Access designed to accommodate CFA <30m

1. All-weather construction
2. A load limit of at least 1.5 tonnes.
3. Will provide a minimum trafficable width of 3.5m.
4. Will be clear of encroachments for at least 0.5m on each side and at least 4m vertically.
5. Curves will have a minimum inner radius of 10m
6. The average grade will be no more than 1 in 7 (14.4%) (8.1 degrees) with a maximum grade of no more than 1 in 5 (20%) (11.3 degrees) for no more than 50 metres.
7. Dips will have no more than a 1 in 8 (12.5%) (7.1 degrees) entry and exit angle.

Water supply for fire-fighting purposes

Provide 10,000L effective water supply for fire-fighting purposes which meets the following requirements:

1. Is stored in an above ground water tank constructed of concrete or metal.
2. All fixed above ground water pipes and fittings required for fire-fighting purposes must be made of corrosion resistant metal.
3. Incorporate a ball or gate valve (BSP 65mm and coupling CFA 3 threaded per inch made fitting).
4. The outlet of the water tank will be within 4m of the accessway and be unobstructed.
5. Be readily identifiable from the building or appropriate identification signage to the satisfaction of the CFA must be provided.
6. Any pipework and fittings will be a minimum for 65mm (excluding the CFA coupling).

PLANNING PROPERTY REPORT



From www.planning.vic.gov.au at 26 April 2022 03:33 PM

PROPERTY DETAILS

Address: **113 TAGGART DRIVE DAISY HILL 3465**
 Crown Description: **Allot. 9 Sec. 9A PARISH OF AMHERST**
 Standard Parcel Identifier (SPI): **9-9A\PP2012**
 Local Government Area (Council): **CENTRAL GOLDFIELDS** www.centralgoldfields.vic.gov.au
 Council Property Number: **56330.0113**
 Planning Scheme: **Central Goldfields** [Planning Scheme - Central Goldfields](#)
 Directory Reference: **Vicroads 58 D3**

UTILITIES

Rural Water Corporation: **Goulburn-Murray Water**
 Urban Water Corporation: **Central Highlands Water**
 Melbourne Water: **Outside drainage boundary**
 Power Distributor: **POWERCOR**

STATE ELECTORATES

Legislative Council: **WESTERN VICTORIA**
 Legislative Assembly: **RIPON**

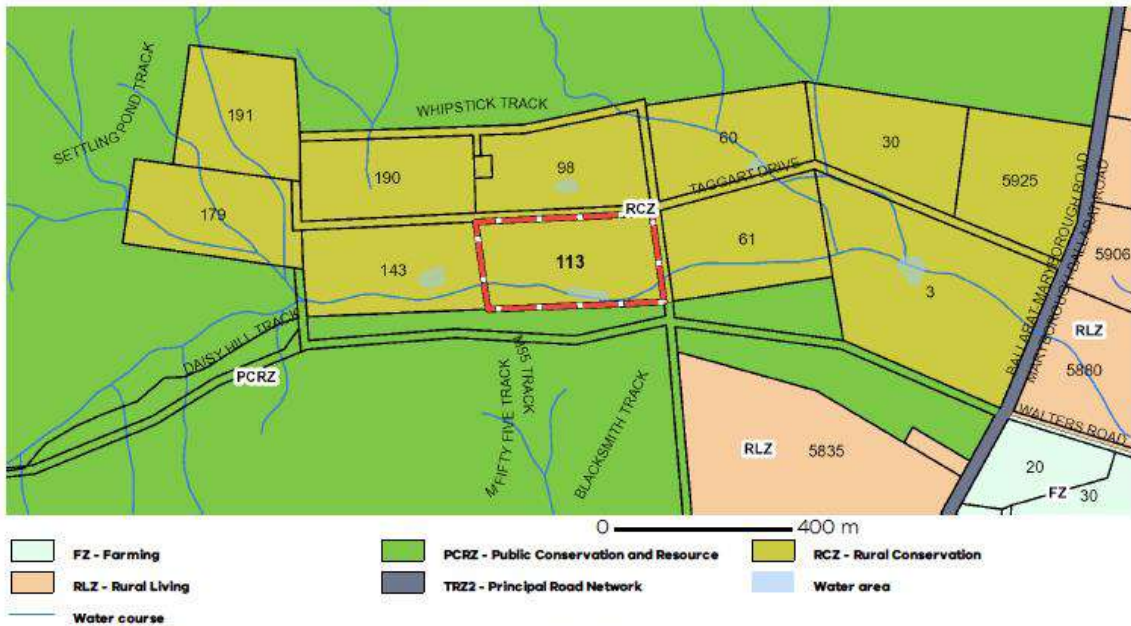
OTHER

Registered Aboriginal Party: **Dja Dja Wurrung Clans Aboriginal Corporation**

[View location in VicPlan](#)

Planning Zones

[RURAL CONSERVATION ZONE \(RCZ\)](#)
[SCHEDULE TO THE RURAL CONSERVATION ZONE \(RCZ\)](#)



Note: labels for zones may appear outside the actual zone - please compare the labels with the legend.

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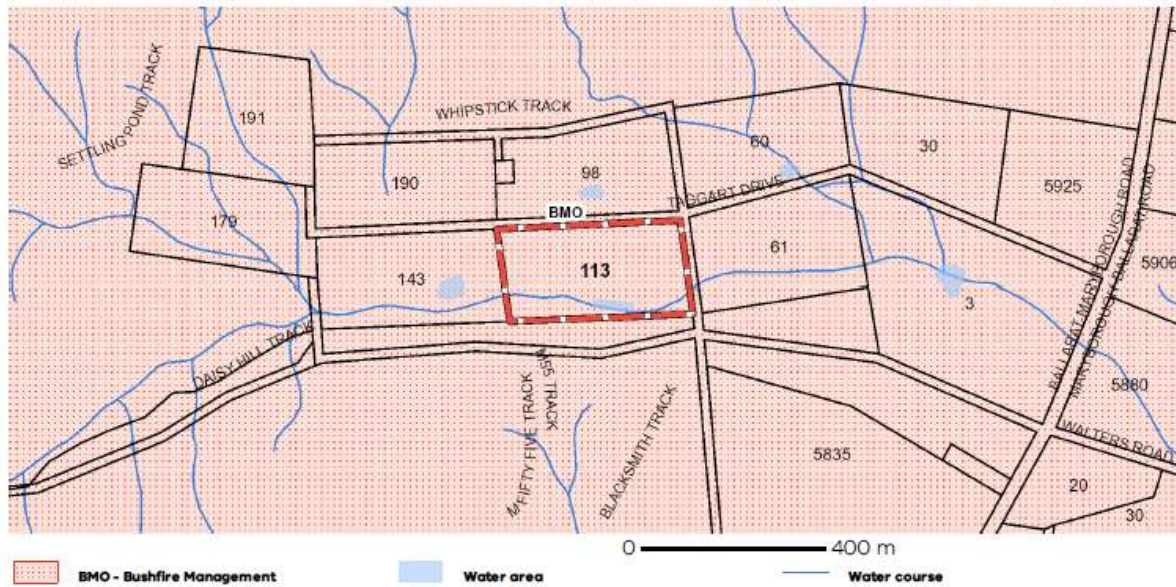
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PLANNING PROPERTY REPORT: 113 TAGGART DRIVE DAISY HILL 3465

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Planning Overlays

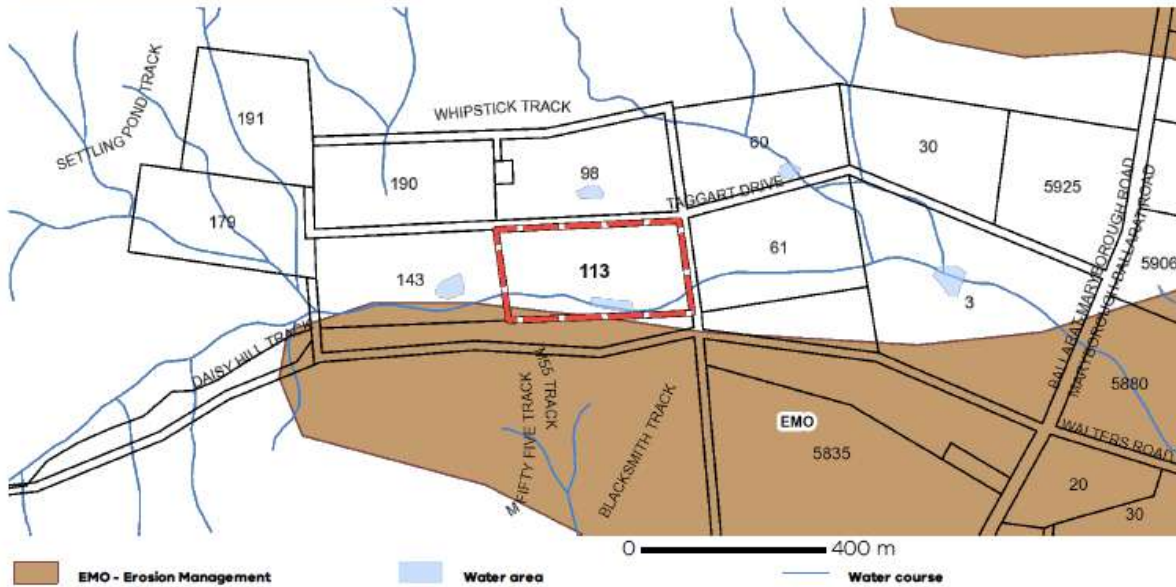
BUSHFIRE MANAGEMENT OVERLAY (BMO)



Note: due to overlaps, some overlays may not be visible, and some colours may not match those in the legend

EROSION MANAGEMENT OVERLAY (EMO)

EROSION MANAGEMENT OVERLAY SCHEDULE (EMO)



Note: due to overlaps, some overlays may not be visible, and some colours may not match those in the legend

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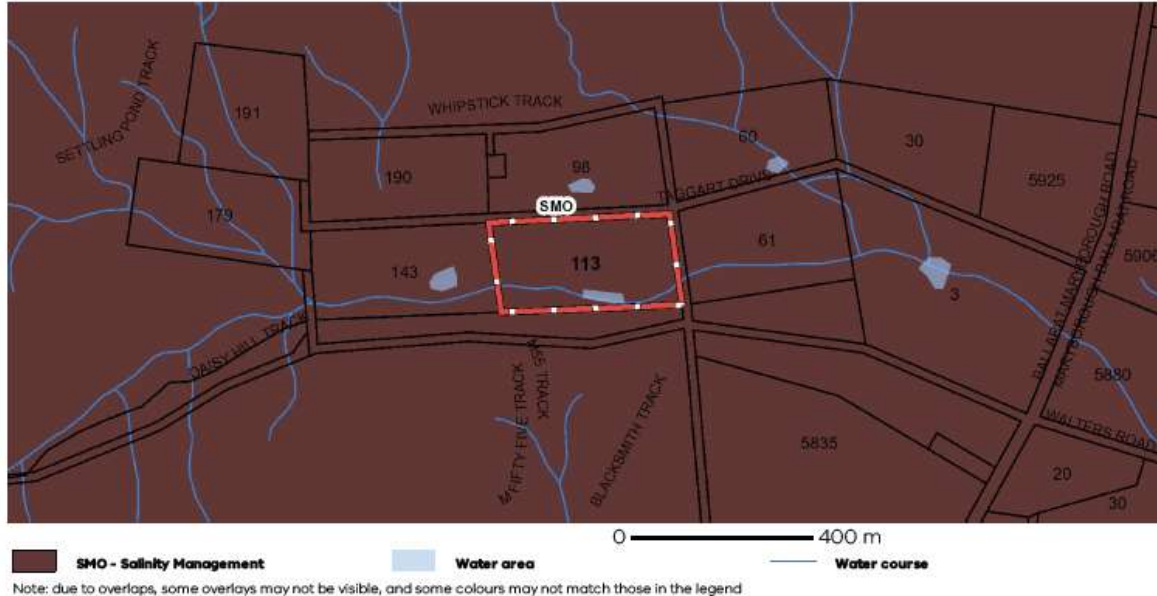
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PLANNING PROPERTY REPORT: T8 TAGGART DRIVE DAISY HILL 3465

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Planning Overlays

[SALINITY MANAGEMENT OVERLAY \(SMO\)](#)
[SALINITY MANAGEMENT OVERLAY SCHEDULE \(SMO\)](#)



Further Planning Information

Planning scheme data last updated on 21 April 2022.

A **planning scheme** sets out policies and requirements for the use, development and protection of land. This report provides information about the zone and overlay provisions that apply to the selected land. Information about the State and local policy, particular, general and operational provisions of the local planning scheme that may affect the use of this land can be obtained by contacting the local council or by visiting <https://www.planning.vic.gov.au>

This report is NOT a **Planning Certificate** issued pursuant to Section 199 of the **Planning and Environment Act 1987**. It does not include information about exhibited planning scheme amendments, or zonings that may affect the land. To obtain a Planning Certificate go to Titles and Property Certificates at Landata - <https://www.landata.vic.gov.au>

For details of surrounding properties, use this service to get the Reports for properties of interest.

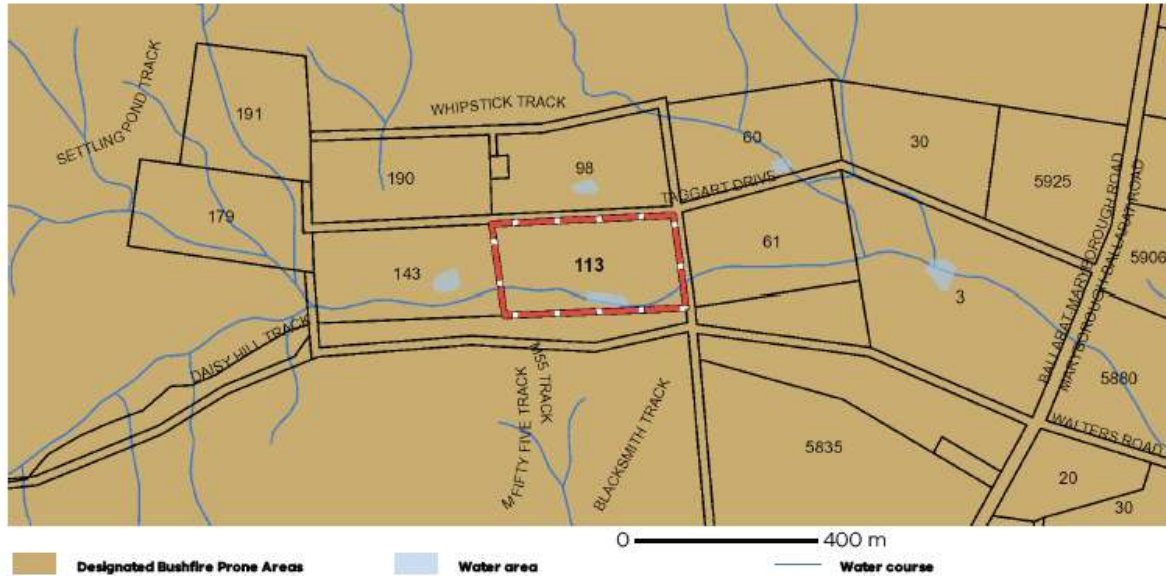
To view planning zones, overlay and heritage information in an interactive format visit <https://mapshare.maps.vic.gov.au/vicplan>

For other information about planning in Victoria visit <https://www.planning.vic.gov.au>

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PLANNING PROPERTY REPORT: 113 TAGGART DRIVE DAISY HILL 3465

Designated Bushfire Prone Areas

This property is in a designated bushfire prone area.
Special bushfire construction requirements apply. Planning provisions may apply.



Designated bushfire prone areas as determined by the Minister for Planning are in effect from 8 September 2011 and amended from time to time.

The Building Regulations 2018 through application of the Building Code of Australia, apply bushfire protection standards for building works in designated bushfire prone areas.

Designated bushfire prone areas maps can be viewed on VicPlan at <https://mapshare.maps.vic.gov.au/vicplan> or at the relevant local council.

Note: prior to 8 September 2011, the whole of Victoria was designated as bushfire prone area for the purposes of the building control system.

Further information about the building control system and building in bushfire prone areas can be found on the Victorian Building Authority website <https://www.vba.vic.gov.au>

Copies of the Building Act and Building Regulations are available from <http://www.legislation.vic.gov.au>

For Planning Scheme Provisions in bushfire areas visit <https://www.planning.vic.gov.au>

Native Vegetation

Native plants that are indigenous to the region and important for biodiversity might be present on this property. This could include trees, shrubs, herbs, grasses or aquatic plants. There are a range of regulations that may apply including need to obtain a planning permit under Clause 52.17 of the local planning scheme. For more information see [Native Vegetation \(Clause 52.17\)](#) with local variations in [Native Vegetation \(Clause 52.17\) Schedule](#)

To help identify native vegetation on his property and the application of Clause 52.17 please visit the Native Vegetation Information Management system <https://nvim.delwp.vic.gov.au/> and [Native vegetation \(environment.vic.gov.au\)](https://www.environment.vic.gov.au) or please contact your relevant council.

You can find out more about the natural values on your property through NatureKit [NatureKit \(environment.vic.gov.au\)](https://www.environment.vic.gov.au/naturekit)

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Appendix 2: Photo identification of some native flora species on property

River Red Gum	Yellow Gum	Yellow Box
<i>Eucalyptus camaldulensis</i>	<i>Eucalyptus leucoxyton</i>	<i>Eucalyptus melliodora</i>
		

Gold dust wattle	Hedge Wattle	Loose-flower Rush
<i>Acacia acinacea</i>	<i>Acacia paradoxa</i>	<i>Juncas pauciflorus</i>
		

Black-anther Flax-lily	Cudweed	Sifton Bush
<i>Dianella revoluta</i>	<i>Pseudo Gnaphalium luteoalbum</i>	<i>Cassinia sifton</i>
		

Sticky Everlasting	Mistletoe	Ruby Saltbush
<i>Xerochrysum viscosum</i>	<i>Amyema sp.</i>	<i>Enchylaena tomentosa</i>
		

Appendix 3: Ecological Vegetation Benchmarks for the site



Description:

Open woodland to 15 m tall on broad alluvial plains and along ephemeral drainage lines. Soils are generally poorly drained duplex soils with sandy loam overlying a heavier clay subsoil. Understorey consists of few, if any shrubs with the striking feature of this EVC being the high species-richness of the ground-layer and the low biomass of this cover, particularly in summer.

Large trees:

Species	DBH(cm)	#/ha
<i>Eucalyptus</i> spp.	70 cm	8 / ha
<i>Allocasuarina</i> spp.	50 cm	

Tree Canopy Cover:

%cover	Character Species	Common Name
15%	<i>Eucalyptus microcarpa</i>	Grey Box
	<i>Eucalyptus melliodora</i>	Yellow Box
	<i>Eucalyptus leucoxylon</i>	Yellow Gum
	<i>Allocasuarina luehmannii</i>	Buloke

Understorey:

Life form	#Spp	%Cover	LF code
Immature Canopy Tree		5%	IT
Understorey Tree or Large Shrub	1	5%	T
Medium Shrub	3	5%	MS
Small Shrub	3	5%	SS
Prostrate Shrub	1	1%	PS
Large Herb	3	5%	LH
Medium Herb	15	30%	MH
Small or Prostrate Herb	5	10%	SH
Large Tufted Graminoid	1	1%	LTG
Medium to Small Tufted Graminoid	12	30%	MTG
Medium to Tiny Non-tufted Graminoid	2	5%	MNG
Ground Fern	1	1%	GF
Bryophytes/Lichens	na	10%	BL
Soil Crust	na	10%	S/C

Recruitment:

Continuous

Organic Litter:

10 % cover

Logs:

15 m/0.1 ha.

EVC 67: Alluvial Terraces Herb-rich Woodland - Goldfields bioregion

LF Code	Species typical of at least part of EVC range	Common Name
MS	<i>Acacia pycnantha</i>	Golden Wattle
MS	<i>Acacia acinacea s.l.</i>	Gold-dust Wattle
MS	<i>Acacia paradoxa</i>	Hedge Wattle
MS	<i>Acacia genistifolia</i>	Spreading Wattle
SS	<i>Lissanthe strigosa ssp. subulata</i>	Peach Heath
SS	<i>Pimelea humilis</i>	Common Rice-flower
SS	<i>Dillwynia cinerascens s.l.</i>	Grey Parrot-pea
PS	<i>Astroloma humifusum</i>	Cranberry Heath
PS	<i>Acrotriche serrulata</i>	Honey-pots
LH	<i>Senecio quadridentatus</i>	Cotton Fireweed
LH	<i>Senecio tenuiflorus</i>	Slender Fireweed
MH	<i>Cynoglossum suaveolens</i>	Sweet Hound's-tongue
MH	<i>Oxalis perennans</i>	Grassland Wood-sorrel
MH	<i>Daucus glochidiatus</i>	Australian Carrot
MH	<i>Cymbonotus preissianus</i>	Austral Bear's-ears
SH	<i>Hydrocotyle laxiflora</i>	Stinking Pennywort
SH	<i>Solenogyne dominii</i>	Smooth Solenogyne
SH	<i>Drosera whittakeri ssp. aberrans</i>	Scented Sundew
SH	<i>Cymbonotus preissianus</i>	Austral Bear's-ear
LTG	<i>Austrostipa mollis</i>	Supple Spear-grass
MTG	<i>Lomandra filiformis</i>	Wattle Mat-rush
MTG	<i>Elymus scaber var. scaber</i>	Common Wheat-grass
MTG	<i>Dianella revoluta s.l.</i>	Black-anther Flax-lily
MTG	<i>Austrostipa scabra</i>	Rough Spear-grass
MNG	<i>Microlaena stipoides var. stipoides</i>	Weeping Grass
TTG	<i>Centrolepis strigosa ssp. strigosa</i>	Hairy Centrolepis
TTG	<i>Centrolepis aristata</i>	Pointed Centrolepis
GF	<i>Cheilanthes austrotenuifolia</i>	Green Rock-fern
SC	<i>Thysanotus patersonii</i>	Twining Fringe-lily

Weediness:

LF Code	Typical Weed Species	Common Name	Invasive	Impact
LH	<i>Sonchus oleraceus</i>	Common Sow-thistle	high	low
LH	<i>Sonchus asper s.l.</i>	Rough Sow-thistle	high	low
MH	<i>Hypochoeris radicata</i>	Cat's Ear	high	low
MH	<i>Hypochoeris glabra</i>	Smooth Cat's-ear	high	low
MH	<i>Arctotheca calendula</i>	Cape Weed	high	low
MH	<i>Anagallis arvensis</i>	Pimpernel	high	low
MH	<i>Trifolium campestre var. campestre</i>	Hop Clover	high	low
MH	<i>Cicendia quadrangularis</i>	Square Cicendia	high	low
MH	<i>Cerastium glomeratum s.l.</i>	Common Mouse-ear Chickweed	high	low
MH	<i>Galium murale</i>	Small Goosegrass	high	low
MH	<i>Petrorhagia velutina</i>	Velvety Pink	high	low
MH	<i>Centaurium erythraea</i>	Common Centaury	high	low
MH	<i>Galium divaricatum</i>	Slender Bedstraw	high	low
LNG	<i>Holcus lanatus</i>	Yorkshire Fog	high	high
MTG	<i>Briza minor</i>	Lesser Quaking-grass	high	low
MTG	<i>Briza maxima</i>	Large Quaking-grass	high	low
MNG	<i>Aira elegantissima</i>	Delicate Hair-grass	high	low
MNG	<i>Juncus capitatus</i>	Capitate Rush	high	low
MNG	<i>Vulpia myuros</i>	Rat's-tail Fescue	high	low
MNG	<i>Vulpia ciliata</i>	Fringed Fescue	high	low
TTG	<i>Cyperus tenellus</i>	Tiny Flat-sedge	high	low

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EVC/Bioregion Benchmark for Vegetation Quality Assessment Goldfields bioregion

EVC 175_61: *Low Rises* Grassy Woodland

Description:

A variable open eucalypt woodland to 15 m tall over a diverse ground layer of grasses and herbs. The shrub component is usually diverse but sparse in cover. In the Goldfields bioregion, Grassy Woodland occurs on sedimentary soils on the lowest slopes at the interface between the plains and the infertile woodlands of the sedimentary hills.

Large trees:

Species	DBH(cm)	#/ha
<i>Eucalyptus</i> spp.	70 cm	15 / ha

Tree Canopy Cover:

%cover	Character Species	Common Name
15%	<i>Eucalyptus microcarpa</i>	Grey Box
	<i>Eucalyptus leucoxylon</i>	Yellow Gum

Understorey:

Life form	#Spp	%Cover	LF code
Immature Canopy Tree		5%	IT
Medium Shrub	6	15%	MS
Small Shrub	3	5%	SS
Prostrate Shrub	1	1%	PS
Large Herb	4	10%	LH
Medium Herb	10	15%	MH
Small or Prostrate Herb	2	5%	SH
Large Tufted Graminoid	2	5%	LTG
Medium to Small Tufted Graminoid	11	25%	MTG
Medium to Tiny Non-tufted Graminoid	3	5%	MNG
Bryophytes/Lichens	na	10%	BL
Soil Crust	na	10%	S/C

LF Code	Species typical of at least part of EVC range	Common Name
MS	<i>Cassinia arcuata</i>	Drooping Cassinia
MS	<i>Acacia pycnantha</i>	Golden Wattle
MS	<i>Acacia acinacea</i> s.l.	Gold-dust Wattle
MS	<i>Dodonaea viscosa</i> ssp. <i>cuneata</i>	Wedge-leaf Hop-bush
PS	<i>Astroloma humifusum</i>	Cranberry Heath
SS	<i>Pultenaea largiflorens</i>	Twiggy Bush-pea
SS	<i>Pimelea humilis</i>	Common Rice-flower
SS	<i>Eutaxia microphylla</i> var. <i>microphylla</i>	Common Eutaxia
PS	<i>Astroloma humifusum</i>	Cranberry Heath
LH	<i>Xerochrysum viscosum</i>	Shiny Everlasting
LH	<i>Chrysocephalum semipapposum</i>	Clustered Everlasting
LH	<i>Wahlenbergia luteola</i>	Bronze Bluebell
LH	<i>Senecio tenuiflorus</i>	Slender Fireweed
MH	<i>Veronica plebeia</i>	Trailing Speedwell
MH	<i>Daucus glochidiatus</i>	Australian Carrot
MH	<i>Einadia nutans</i> ssp. <i>nutans</i>	Nodding Saltbush
MH	<i>Vittadinia cuneata</i>	Fuzzy New Holland Daisy
SH	<i>Crassula sieberiana</i>	Sieber Crassula
SH	<i>Hydrocotyle laxiflora</i>	Stinking Pennywort
LTG	<i>Austrostipa mollis</i>	Supple Spear-grass
MTG	<i>Elymus scaber</i> var. <i>scaber</i>	Common Wheat-grass
MTG	<i>Austrostipa scabra</i> ssp. <i>falcata</i>	Rough Spear-grass
MTG	<i>Poa sieberiana</i>	Grey Tussock-grass
MTG	<i>Austrodanthonia setacea</i>	Bristly Wallaby-grass
MNG	<i>Austrostipa elegantissima</i>	Feather Spear-grass
SC	<i>Thysanotus patersonii</i>	Twining Fringe-lily
SC	<i>Convolvulus erubescens</i> spp. agg.	Pink Bindweed

Ecological Vegetation Class bioregion benchmark

EVC 175_61: *Low Rises* Grassy Woodland - Goldfields bioregion

Recruitment:

Continuous

Organic Litter:

20 % cover

Logs:

15 m/0.1 ha.

Weediness:

LF Code	Typical Weed Species	Common Name	Invasive	Impact
LH	<i>Sonchus oleraceus</i>	Common Sow-thistle	high	low
LH	<i>Cirsium vulgare</i>	Spear Thistle	high	high
MH	<i>Hypochoeris radicata</i>	Cat's Ear	high	low
MH	<i>Petrorhagia velutina</i>	Velvety Pink	high	low
MTG	<i>Vulpia bromoides</i>	Squirrel-tail Fescue	high	low
MTG	<i>Briza minor</i>	Lesser Quaking-grass	high	low
MTG	<i>Briza maxima</i>	Large Quaking-grass	high	low
MTG	<i>Bromus hordeaceus</i> ssp. <i>hordeaceus</i>	Soft Brome	high	low
MTG	<i>Bromus diandrus</i>	Great Brome	high	low
MNG	<i>Aira elegantissima</i>	Delicate Hair-grass	high	low
MNG	<i>Aira cupaniana</i>	Quicksilver Grass	high	low
MNG	<i>Vulpia myuros</i>	Rat's-tail Fescue	high	low

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Appendix 4a: Revegetation notes and information – General Reference

Comparison of options

Once you know what you want to achieve with revegetation, you can decide how to go about it. This section describes and compares the different ways of getting a plant established.

There are three different approaches you can take to establishing native plants: planting, direct sowing or 'natural' regeneration. Of course, you can combine these in any way you like, there is no 'one best way' to go about revegetation.

Revegetation method	<u>Regeneration</u>	<u>Direct Seeding</u>	<u>Planting</u>
Typical cost per established plant (excluding guarding & fencing)	Usually very low or free	\$0.01 -- \$0.55	\$1.20 -- \$5.00
Advantages	<ul style="list-style-type: none"> • Very low cost • Ensures conservation of local provenance genetic diversity • Plant location looks 'natural' • May allow extra species apart from target to regenerate • No transplant shock, so plants healthier and more vigorous • Plants can self-select suitable establishment sites • Higher plant densities after germination can self-shelter seedlings, and reduce weed competition, and allow selection of strongest seedlings without creating gaps needing replanting 	<ul style="list-style-type: none"> • Low cost • With spot sowing, can specify location of seedlings • Can be mechanised, even in rough or rocky terrain • Little labour required • No transplant shock, so plants healthier and more vigorous • Plant location can look • More 'natural' if not spot sown, plants • Can self-select suitable establishment sites • Higher plant densities after germination can self-shelter seedlings, and reduce weed competition, and allow selection of strongest seedlings without creating gaps needing replanting 	<ul style="list-style-type: none"> • Easy to specify location of seedling • Can be mechanised • Less dependent on weather?? • Available for species unable to be grown from seed • Easy to provide long term weed control from planting date • Easier to handle waterlogging • More flexibility in time

		<ul style="list-style-type: none"> Existing machinery can be utilised Dedicated direct sowing machinery is available 	
Disadvantages	<ul style="list-style-type: none"> Requires remnant vegetation, i.e., is dependent on seed stored in soil or in remnant vegetation Very dependent on weather Can't specify location of seedlings Follow on weed control much more difficult 	<ul style="list-style-type: none"> When mechanised, difficult to specify locations for individual species Very dependent on weather Must be carried out at appropriate time Requires great attention to detail Follow on weed control more difficult than with seedlings More difficult in waterlogged areas Large amount of seed required <ul style="list-style-type: none"> Limited to plants that grow readily from seed 	<ul style="list-style-type: none"> Higher cost Mechanisation difficult in rough or rocky terrain Plants can suffer transplant shock Seedling quality variable

Assisted regeneration

Most rural landscapes in Victoria now have invasive plants (weeds) present that can suppress or out-compete regeneration of native species. If these weeds are temporarily eliminated or reduced, increased regeneration becomes possible.

To regenerate from seed, most native plants need some bare ground (free of competition from weeds). Bare ground can be created in various ways.

Herbicides are probably the easiest way to create bare ground. Choose an herbicide that has no residual effect in the soil and is appropriate for the weeds you are targeting. Make sure you are not spraying out existing native vegetation like native grasses or killing already germinating trees and shrubs! Have a look at our plant species [species photos](#) to see what your trees and shrubs look like as germinating seedlings.

Fire of course can be a great stimulant of regeneration within native vegetation. However, in the farmland revegetation context, fires have to be very hot to kill perennial weeds or even have sufficient impact on annual weeds. To create regeneration opportunities, fires have to heat the top ten centimetres or so of soil. This implies a fire that burns a lot of fuel, for example a pile of wood. While this can work, deliberate burning is only likely to provide regeneration opportunities for very small areas.

Physical removal of weeds can be done by grading off the top layers of soil, windrowing the topsoil to one side. The graded areas can stay relatively weed free for an extended time and as long as seed is supplied from nearby native vegetation, good regeneration can result. Any topsoil stored native seed of course will end up in the windrow where the weed regrowth will be concentrated, so is unlikely to regenerate. Cultivation is not usually an effective technique as weeds usually recolonise too quickly.

Fertility reduction treatments. Still somewhat experimental, but anything that reduces the fertility of the site will help reduce the dominance of weeds. Adding metabolizable carbon to the soil will provoke soil bacteria to temporarily reduce the availability of nitrogen nutrients, thereby slowing weed growth. Sugar has been used in experiments, but a longer lasting supply of 'carbon' is sawdust, or other waste plant material high in cellulose. It may also be possible to add iron or aluminum salts to soil to reduce phosphate availability.

Once you have 'assisted' regeneration by doing any or all of the above, you are still reliant on seed stored in the soil or being supplied from nearby native vegetation remnants. This can't be relied on to be available for just when you create a regeneration favourable environment. Why not add some extra seed yourself at the same time? Check out our direct sowing section for more information.

Direct Seeding

What is direct seeding?

Instead of sowing seeds into containers, the seeds can be sown direct into the soil, just like growing a bed of carrots! Direct seeding is very inexpensive compared to tubestock, but may require more planning and preparation.

Selecting the site

If you have not undertaken direct seeding on your property before, choose a site with the following points in mind:

- Access is an important consideration. Weed control and sowing are least expensive if mechanized. These machines need to be towed by tractor or four-wheel drive vehicle, although spray units and some of the smaller direct seeding machines can be handled by a four-wheel motorbike. For most direct sowing methods, access is required in the mid-winter to early spring period when the soil may be very wet and slippery.
- Aspect can play an important part in the success of direct seeding. North and west facing slopes are far drier and less likely to be successful in dry climates or seasons.
- Consider the soil type at the site. Soil type will influence the amount of moisture available for germination. Allow for soil types in the timing of sowing. Coarse-textured sands for example dry out much quicker than clay soils. Some soil types, e.g., clays, will be difficult to work in late winter when very wet.
- The depth of topsoil is very important. Seed should be sown onto topsoil where possible because the subsoil usually has inferior chemical and physical characteristics for direct seeding. This is particularly important if a scalping technique is used.
- Weed control is probably the most important aspect of direct seeding. Wherever possible, choose a site with fewer weeds. The types of weeds are important. Avoid areas with perennial weeds, especially those that are winter dormant and/or regrow from underground parts, e.g., Couch Grass or Sorrel. Areas with these weeds may require an extra year of pre-sowing weed control.
- The competition from mature trees and shrubs makes plant establishment close to them difficult.
- Grazing animals, particularly rabbits, hares and stock, must be excluded from the direct seeding sites.

Species Selection

Local species

The species of trees most likely to grow successfully, provide the most benefit to the environment and regenerate naturally will be those indigenous to the site. At some sites however, the local species may no longer be able to survive due to salting, waterlogging, exposure or pests. Use of non-local species, for these or other reasons e.g., commercial tree growing, will require careful selection of species, in order to maximize tree survival and minimise the risks of introducing invasive species.

Local provenance

When using local species, wherever possible, the seed should be collected locally from similar situations to the proposed site. This means using hill top species seed for hill tops and so on.

What types of plants?

When direct seeding trees, a mixture of local Eucalyptus (Eucalypt or 'Gum' Trees), Acacia (Wattle) and Casuarina (She-oak) species is usually the best choice in most farmland conditions because these species establish and grow well, and constitute the dominant vegetation in most areas. Large-seeded species such as wattles and She-oaks generally germinate better in harsh conditions e.g., dry and/or poor soils. Eucalypts and other species with small seeds such as Leptospermum (tea-tree) and Melaleuca (paperbark) are more dependent on moisture for good germination. Other useful tree and shrub genera to include are: Dodonaea, Callitris, Daviesia, Indigofera, Hakea, Banksia, Cassinia and Ozothamnus. It is also possible to direct sow herbaceous plants like native grasses and lillies.

Seed quality. . .

Seed quality is generally described in terms of 'viability'. This is the number of seeds per unit weight expected to germinate. The viability of seed can vary enormously and depends on many factors. These include the ripeness of the seed at the time of picking, processing or extraction techniques,

storage conditions and age of the seed. Generally, the fresher the seed the better. Most wattles due to their hard seed coat can retain viability for decades. However, She-oak seed stored at room temperature will begin to lose viability after one year (store She-oak and most other seed dry at 4°C i.e., under refrigeration). Eucalypt seed stored at room temperature is unlikely to remain viable after four years. If using seed (other than wattles) older than one year or if a large project is planned, find out the seed viability by germinating a small amount. Simple viability tests can be done by germinating measured seed amounts in a clear plastic container with moist blotting paper, cotton wool or vermiculite in the bottom. Sprinkle a known quantity of seed, say half a gram (less for tiny seed) on top, replace the lid to seal in the moisture and put it in a warm, light room away from direct sun. As seedlings germinate, remove them from the container and keep a tally. After one or two months the viability can be calculated by dividing the total number of seedlings by the seed mass originally weighed. Your local nursery may be able to help you with a similar test. When collecting tree and shrub seed, it is important to obtain the best possible genetic quality. In practice, this translates to collecting from at least ten healthy trees that are unlikely to be closely related. Avoid collecting from isolated trees as lack of cross-pollination may produce inferior and/or non-viable seed.

. . and quantity

To calculate how much seed of each species is required, you need to know;

- How many plants you want established.
- How many viable seeds your seed lot contains.
- The establishment rate you can expect, i.e., the percentage of viable seeds expected to become established seedlings. In wattles (large seeds), for example, establishment rates can be as high as 30%. Successful rates with eucalypts (very small seeds) can be as low as 0.5%

If, for example, you wish to establish 4,000 trees of a species that has 120,000 viable seeds per kilogram (the average for most eucalypt species) and an expected establishment rate of 5%, then the number of kilograms of seed required is: 660 grams.

Average annual Rainfall	Sow from	until
850-1500	September	mid October
750-849	September	early October
650-749	August	mid-September
550-649	August	early September
450-549	July	August
350-449	June	July

Hand Scalp Method

Brief description

This method is basically the same as standard mechanical scalping, except that the scalp is created with hand tools and usually is done in spots rather than strips. Scalping involves chemical (e.g. glyphosate) knock down of competing vegetation, usually in spots 1.2 - 2 m diameter, sometimes followed by application to the soil of a residual pre-emergent herbicide (e.g. simazine). A rake hoe or similar hand tool is used to 'scalp' off the top 2 - 5 cm of soil in a 30 cm square patch in the centre of the weed control strip. The soil in the patch is cultivated to form a seed bed, and the seed is sown onto this seed bed. In some situations, deep ripping beforehand may increase growth rates and thus improve establishment.

Advantages

- Reliable in suitable soil types;
- Suited to a wide variety of species;
- Doesn't require vehicle access;
- No specialised machinery needed;
- Each spot can receive individual attention to detail, increasing success rate;
- With care, can be used on shallower soils than mechanical scalping.

Disadvantages

- Physically demanding;
- Not as quick as mechanised methods;
- Not suited to sites prone to waterlogging, though less a problem than with mechanised scalping;
- Not suited to sites with very shallow topsoil and inimical subsoil;
- More costly than mechanised methods if labour must be paid for.

Seeds

Seeds are available from Seeding Victoria Inc.

PO Box 3, Creswick 3363

Phone: 03 5345 2200

Fax: 03 5345 1357

e-mail: dan@seedbank.com.au

Appendix 4b: List of local plants of Daisy Hill - Reference

SCIENTIFIC NAME	COMMON NAME	VICTORIAN LIFE FORM
<i>Acacia acinacea</i> s.l.	Gold-dust Wattle	Medium shrub
<i>Acacia flexifolia</i>	Bent-leaf Wattle	Medium shrub
<i>Acacia genistifolia</i>	Spreading Wattle	Medium shrub
<i>Acacia gunnii</i>	Ploughshare Wattle	Small shrub
<i>Acacia paradoxa</i>	Hedge Wattle	Medium shrub
<i>Acacia pycnantha</i>	Golden Wattle	Medium shrub
<i>Acaena echinata</i>	Sheep's Burr	Medium herb
<i>Acanthus exsertus</i> s.l.	Gnat Orchid	Medium herb
<i>Acrotriche serrulata</i>	Honey-pots	Prostrate shrub
<i>Actinobole uliginosum</i>	Flannel Cudweed	Small or prostrate herb
<i>Ajuga australis</i>	Austral Bugle	Large herb
<i>Allocasuarina luehmannii</i>	Buloke	Understorey tree or large shrub
<i>Amphibromus neesii</i>	Southern Swamp Wallaby-grass	Large tufted graminoid
<i>Amyema miquelii</i>	Box Mistletoe	Epiphyte
<i>Anthosachne scabra</i> s.l.	Common Wheat-grass	Medium to small tufted graminoid
<i>Aphanes australiana</i>	Australian Piert	Medium herb
<i>Aphelia pumilio</i>	Dwarf Aphelia	Tiny tufted graminoid
<i>Arthropodium fimbriatum</i>	Nodding Chocolate-lily	Large herb
<i>Arthropodium milleflorum</i> s.l.	Pale Vanilla-lily	Large herb
<i>Arthropodium minus</i>	Small Vanilla-lily	Large herb
<i>Arthropodium</i> spp. (s.s.)	Vanilla Lily	Large herb
<i>Arthropodium strictum</i> s.l.	Chocolate Lily	Large herb
<i>Austrostipa mollis</i>	Supple Spear-grass	Large tufted graminoid
<i>Austrostipa</i> spp.	Spear Grass	
<i>Billardiera cymosa</i> s.l.	Sweet Apple-berry	Scrambler or climber
<i>Bossiaea prostrata</i>	Creeping Bossiaea	Prostrate shrub
<i>Brachyloma daphnoides</i>	Daphne Heath	Medium shrub
<i>Brachyscome perpusilla</i>	Rayless Daisy	Medium herb
<i>Brunonia australis</i>	Blue Pincushion	Medium herb
<i>Burchardia umbellata</i>	Milkmaids	Medium herb
<i>Bursaria spinosa</i> subsp. <i>lasiophylla</i>	Hairy Bursaria	Medium shrub
<i>Caladenia carnea</i> sensu Willis (1970)	Pink Fingers	Medium herb
<i>Caladenia catenata</i> s.l.	Pink Fingers/White Fingers	Medium herb
<i>Caladenia cucullata</i>	Hood Orchid	Medium herb
<i>Caladenia dilatata</i> s.l.	Green-comb Spider-orchid	Medium herb
<i>Caladenia moschata</i>	Musk Hood-orchid	Medium herb
<i>Caladenia patersonii</i> s.l.	Common Spider-orchid	Medium herb
<i>Calandrinia calyptrata</i>	Pink Purslane	Small or prostrate herb
<i>Caleana major</i>	Large Duck-orchid	Medium herb
<i>Callitriche</i> spp.	Water Starwort	Small or prostrate herb

<i>Calocephalus citreus</i>	Lemon Beauty-heads	Large herb
<i>Calochilus robertsonii</i> s.l.	Purple Beard-orchid	Medium herb
<i>Calochilus</i> spp.	Beard Orchid	Medium herb
<i>Calytrix tetragona</i>	Common Fringe-myrtle	Medium shrub
<i>Campylopus clavatus</i>	Broody Swan-neck Moss	Small or prostrate herb
<i>Cassinia sifton</i>	Drooping Cassinia	Medium shrub
<i>Cassytha glabella</i>	Slender Dodder-laurel	Scrambler or climber
<i>Cassytha melantha</i>	Coarse Dodder-laurel	Scrambler or climber
<i>Centrolepis aristata</i>	Pointed Centrolepis	Tiny tufted graminoid
<i>Centrolepis polygyna</i>	Wiry Centrolepis	Tiny tufted graminoid
<i>Centrolepis strigosa</i> subsp. <i>strigosa</i>	Hairy Centrolepis	Tiny tufted graminoid
<i>Cephaloziella hirta</i>	Green Threadwort	Small or prostrate herb
<i>Chamaeschilla corymbosa</i> var. <i>corymbosa</i>	Blue Stars	Medium herb
<i>Cheilanthes</i> spp.	Rock Fern	
<i>Cheilanthes</i> spp.	Rock Fern	
<i>Chrysocephalum apiculatum</i> s.l.	Common Everlasting	Large herb
<i>Chrysocephalum semipapposum</i>	Clustered Everlasting	Large herb
<i>Coronidium scorpioides</i> s.s.	Button Everlasting	Medium herb
<i>Correa reflexa</i>	Common Correa	Medium shrub
<i>Craspedia glauca</i> s.l.	Common Billy-buttons	Medium herb
<i>Craspedia variabilis</i>	Variable Billy-buttons	Medium herb
<i>Crassula closiana</i>	Stalked Crassula	Medium herb
<i>Crassula colorata</i>	Dense Crassula	Medium herb
<i>Crassula decumbens</i> var. <i>decumbens</i>	Spreading Crassula	Medium herb
<i>Crassula sieberiana</i> s.l.	Sieber Crassula	Small or prostrate herb
<i>Crassula tetramera</i>	Australian Stonecrop	Medium herb
<i>Cyanicula caerulea</i>	Blue Fairy	Medium herb
<i>Cymbonotus preissianus</i>	Austral Bear's-ear	Small or prostrate herb
<i>Daucus glochidiatus</i>	Australian Carrot	Medium herb
<i>Daviesia leptophylla</i>	Narrow-leaf Bitter-pea	Medium shrub
<i>Daviesia mimosoides</i> s.l.	Blunt-leaf Bitter-pea	Medium shrub
<i>Daviesia ulcifolia</i>	Gorse Bitter-pea	Medium shrub
<i>Dianella longifolia</i> var. <i>longifolia</i> s.l.	Pale Flax-lily	Medium to small tufted graminoid
<i>Dianella revoluta</i> s.l.	Black-anther Flax-lily	Medium to small tufted graminoid
<i>Dianella revoluta</i> var. <i>revoluta</i> s.l.	Black-anther Flax-lily	Medium to small tufted graminoid
<i>Dichelachne sciurea</i> spp. agg.	Short-hair Plume-grass	Medium to small tufted graminoid
<i>Dillwynia cinerascens</i> s.l.	Grey Parrot-pea	Small shrub
<i>Dillwynia hispida</i>	Red Parrot-pea	Small shrub
<i>Dillwynia ramosissima</i>	Bushy Parrot-pea	Small shrub
<i>Dillwynia sericea</i>	Showy Parrot-pea	Small shrub

Dillwynia spp.	Parrot Pea	
Dipodium punctatum s.l.	Hyacinth Orchid	Large herb
Diuris lanceolata s.l.	Golden Moths	Medium herb
Diuris pardina	Leopard Orchid	Medium herb
Diuris spp.	Diuris	Medium herb
Diuris sulphurea	Tiger Orchid	Medium herb
Dodonaea procumbens	Trailing Hop-bush	
Drosera aberrans	Scented Sundew	Small or prostrate herb
Drosera auriculata	Tall Sundew	Medium herb
Drosera glanduligera	Scarlet Sundew	Small or prostrate herb
Drosera macrantha subsp. Planchonii sp	Climbing Sundew	Scrambler or climber
Drosera peltata s.l.	Pale Sundew	Medium herb
Drosera peltata subsp. peltata spp. agg.	Pale Sundew	Medium herb
Einadia nutans	Nodding Saltbush	Medium herb
Eleocharis acuta	Common Spike-sedge	Medium to tiny non-tufted graminoid
Eriochilus cucullatus s.l.	Parson's Bands	Medium herb
Eucalyptus baxteri s.l.	Brown Stringybark	Understorey tree or large shrub
Eucalyptus camaldulensis	River Red-gum	Understorey tree or large shrub
Eucalyptus goniocalyx s.s.	Bundy	Understorey tree or large shrub
Eucalyptus leucoxyton	Yellow Gum	
Eucalyptus macrorhyncha	Red Stringybark	Understorey tree or large shrub
Eucalyptus melliodora	Yellow Box	Understorey tree or large shrub
Eucalyptus microcarpa	Grey Box	Understorey tree or large shrub
Eucalyptus nortonii	Silver Bundy	Understorey tree or large shrub
Eucalyptus polyanthemos	Red Box	Understorey tree or large shrub
Eucalyptus tricarpa subsp. tricarpa	Red Ironbark	Understorey tree or large shrub
Eutaxia microphylla var. microphylla	Common Eutaxia	Small shrub
Exocarpos cupressiformis	Cherry Ballart	Understorey tree or large shrub
Fissidens linearis var. linearis	Pimpled Pocket-moss	Small or prostrate herb
Fissidens spp.	Pocket Moss	Small or prostrate herb
Galium gaudichaudii	Rough Bedstraw	Medium herb
Galium murale	Small Goosegrass	Medium herb
Gamochaeta purpurea s.l.	Purple Cudweed	
Geranium retrorsum s.l.	Grassland Crane's-bill	Medium herb

Geranium solanderi s.l.	Austral Crane's-bill	Medium herb
Glossodia major	Wax-lip Orchid	Medium herb
Gnaphalium indutum	Tiny Cudweed	Medium herb
Gompholobium huegelii	Common Wedge-pea	Small shrub
Gonocarpus tetragynus	Common Raspwort	Medium herb
Goodenia paradoxa	Spur Goodenia	Medium herb
Goodenia pinnatifida	Cut-leaf Goodenia	Medium herb
Goodenia spp.	Goodenia	
Grevillea alpina	Cat's Claw Grevillea	Medium shrub
Grevillea dryophylla	Goldfields Grevillea	Small shrub
Hakea sericea s.l.	Bushy Needlewood	Medium shrub
Hardenbergia violacea	Purple Coral-pea	Scrambler or climber
Hibbertia exutiacies	Spiky Guinea-flower	Small shrub
Hovea heterophylla	Common Hovea	Small shrub
Hyalosperma demissum	Moss Sunray	Small or prostrate herb
Hydrocotyle callicarpa	Small Pennywort	Medium herb
Hydrocotyle foveolata	Yellow Pennywort	Medium herb
Hydrocotyle laxiflora	Stinking Pennywort	Small or prostrate herb
Hypericum gramineum	Small St John's Wort	Medium herb
Isolepis platycarpa	Broad-fruit Club-sedge	Medium to small tufted graminoid
Juncus amabilis	Hollow Rush	Medium to small tufted graminoid
Juncus bufonius	Toad Rush	Medium to small tufted graminoid
Juncus capitatus	Capitate Rush	Medium to tiny non-tufted graminoid
Juncus flavidus	Gold Rush	Large tufted graminoid
Juncus holoschoenus	Joint-leaf Rush	Medium to small tufted graminoid
Juncus homalocaulis	Wiry Rush	Medium to small tufted graminoid
Juncus radula	Hoary Rush	Medium to small tufted graminoid
Juncus remotiflorus	Diffuse Rush	Medium to small tufted graminoid
Juncus spp.	Rush	
Juncus subsecundus	Finger Rush	Medium to small tufted graminoid
Kennedia prostrata	Running Postman	Small or prostrate herb
Lachnagrostis filiformis s.l.	Common Blown-grass	Medium to small tufted graminoid
Lagenophora gunniana	Coarse Bottle-daisy	Medium herb
Lepidosperma curtisiae	Little Sword-sedge	Medium to small tufted graminoid
Lepidosperma laterale	Variable Sword-sedge	Medium to small tufted graminoid

Lepidosperma spp.	Sword Sedge	
Leptomeria aphylla	Leafless Currant-bush	Medium shrub
Leptorhynchos squamatus	Scaly Buttons	Medium herb
Leptorhynchos tenuifolius	Wiry Buttons	Large herb
Leptospermum myrsinoides	Heath Tea-tree	Medium shrub
Leptostomum inclinans	Pincushion Moss	Small or prostrate herb
Leucopogon virgatus	Common Beard-heath	Small shrub
Levenhookia dubia	Hairy Stylewort	Medium herb
Limosella australis	Austral Mudwort	Small or prostrate herb
Lissanthe strigosa subsp. subulata	Peach Heath	Small shrub
Lobelia gibbosa sensu Willis (1973)	Tall Lobelia	Large herb
Lobelia spp.	Lobelia	
Lomandra filiformis	Wattle Mat-rush	Medium to small tufted graminoid
Lomandra filiformis subsp. coriacea	Wattle Mat-rush	Medium to small tufted graminoid
Lomandra filiformis subsp. filiformis	Wattle Mat-rush	Medium to small tufted graminoid
Lomandra micrantha s.l.	Small-flower Mat-rush	Medium to small tufted graminoid
Lomandra multiflora subsp. multiflora	Many-flowered Mat-rush	Medium to small tufted graminoid
Lomandra sororia	Small Mat-rush	Medium to small tufted graminoid
Lomandra spp.	Mat-rush	
Luzula spp.	Woodrush	
Lythrum hyssopifolia	Small Loosestrife	Medium herb
Maireana enchylaenoides	Wingless Bluebush	Medium herb
Melichrus urceolatus	Urn Heath	Small shrub
Microseris walteri	Yam Daisy	Large herb
Microtis unifolia	Common Onion-orchid	Large herb
Millotia muelleri	Common Bow-flower	Small or prostrate herb
Millotia tenuifolia var. tenuifolia	Soft Millotia	Medium herb
Myriocephalus rhozocephalus	Woolly-heads	Small or prostrate herb
Olearia tubuliflora	Rayless Daisy-bush	Medium shrub
Opercularia varia	Variable Stinkweed	Small or prostrate herb
Oxalis corniculata s.l.	Yellow Wood-sorrel	Small or prostrate herb
Ozothamnus obcordatus	Grey Everlasting	Medium shrub
Pauridia glabella var. glabella	Tiny Star	Medium herb
Pelargonium rodneyanum	Magenta Stork's-bill	Medium herb
Pheladenia deformis	Bluebeard Orchid	Medium herb
Philothea verrucosa	Fairy Wax-flower	Small shrub
Phyllangium divergens	Wiry Mitrewort	Small or prostrate herb
Pimelea curviflora s.l.	Curved Rice-flower	Small shrub
Pimelea humilis	Common Rice-flower	Small shrub
Pimelea linifolia	Slender Rice-flower	Medium shrub

<i>Pimelea</i> spp.	Rice Flower	
<i>Plantago varia</i>	Variable Plantain	Medium herb
<i>Poa sieberiana</i>	Grey Tussock-grass	Medium to small tufted graminoid
<i>Poa sieberiana</i> var. <i>hirtella</i>	Grey Tussock-grass	Medium to small tufted graminoid
<i>Podolepis jaceoides</i> s.l.	Showy/Basalt Podolepis	Large herb
<i>Polytrichum juniperinum</i>	Juniper Haircap	Small or prostrate herb
<i>Prasophyllum</i> spp.	Leek Orchid	Medium herb
<i>Prostanthera denticulata</i>	Rough Mint-bush	Small shrub
<i>Prostanthera saxicola</i> var. <i>bracteolata</i>	Slender Mint-bush	Medium shrub
<i>Pterostylis ampliata</i>	Large Autumn Greenhood	Medium herb
<i>Pterostylis curta</i>	Blunt Greenhood	Medium herb
<i>Pterostylis cycnocephala</i>	Swan Greenhood	Medium herb
<i>Pterostylis longifolia</i> s.l.	Tall Greenhood	Large herb
<i>Pterostylis mutica</i>	Midget Greenhood	Medium herb
<i>Pterostylis nana</i>	Dwarf Greenhood	Medium herb
<i>Pterostylis nutans</i>	Nodding Greenhood	Medium herb
<i>Pterostylis parviflora</i> s.l.	Tiny Greenhood	Medium herb
<i>Pterostylis plumosa</i> s.l.	Bearded Greenhood	Medium herb
<i>Pultenaea humilis</i>	Dwarf Bush-pea	Small shrub
<i>Pultenaea largiflorens</i>	Twiggy Bush-pea	Small shrub
<i>Pultenaea prostrata</i>	Silky Bush-pea	Small shrub
<i>Pultenaea</i> spp.	Bush-pea	
<i>Ranunculus pachycarpus</i>	Thick-fruit Buttercup	Medium herb
<i>Ranunculus sessiliflorus</i>	Annual Buttercup	Medium herb
<i>Ranunculus</i> spp.	Buttercup	Medium herb
<i>Rhynchospora procumbens</i>	White Marianth	Small shrub
<i>Rosulabryum campylothecium</i>	Sand Thread-moss	Small or prostrate herb
<i>Rumex brownii</i>	Slender Dock	Medium herb
<i>Rytidosperma fulvum</i>	Copper-awned Wallaby-grass	Medium to small tufted graminoid
<i>Rytidosperma pallidum</i>	Silvertop Wallaby-grass	Large tufted graminoid
<i>Rytidosperma racemosum</i> var. <i>racemosum</i>	Slender Wallaby-grass	Medium to small tufted graminoid
<i>Rytidosperma setaceum</i>	Bristly Wallaby-grass	Medium to small tufted graminoid
<i>Rytidosperma setaceum</i> var. <i>setaceum</i>	Bristly Wallaby-grass	Medium to small tufted graminoid
<i>Rytidosperma</i> spp.	Wallaby Grass	
<i>Schoenus apogon</i>	Common Bog-sedge	Medium to small tufted graminoid
<i>Sebaea ovata</i>	Yellow Sebaea	Medium herb
<i>Senecio glomeratus</i>	Annual Fireweed	Large herb
<i>Senecio quadridentatus</i>	Cotton Fireweed	Large herb

<i>Senecio tenuiflorus</i> s.l.	Slender Fireweed	Large herb
<i>Siloxerus multiflorus</i>	Small Wrinklewort	Small or prostrate herb
<i>Solenogyne dominii</i>	Smooth Solenogyne	Small or prostrate herb
<i>Stenantha conostephioides</i>	Flame Heath	Small shrub
<i>Stuartina muelleri</i>	Spoon Cudweed	Medium herb
<i>Stylidium ecorne</i>	Foot Triggerplant	Small or prostrate herb
<i>Stylidium graminifolium</i> s.l.	Grass Triggerplant	Medium to small tufted graminoid
<i>Styphelia humifusa</i>	Cranberry Heath	Prostrate shrub
<i>Styphelia rufa</i>	Ruddy Beard-heath	Small shrub
<i>Taraxacum</i> spp.	Dandelion	
<i>Tetratheca ciliata</i>	Pink-bells	Small shrub
<i>Thelymitra antennifera</i>	Rabbit Ears	Medium herb
<i>Thelymitra carnea</i>	Pink Sun-orchid	Medium herb
<i>Thelymitra ixioides</i> s.l.	Spotted Sun-orchid	Large herb
<i>Thelymitra nuda</i>	Plain Sun-orchid	Medium herb
<i>Thelymitra pauciflora</i> s.l.	Slender Sun-orchid	Medium herb
<i>Thelymitra peniculata</i>	Trim Sun-orchid	Large herb
<i>Thelymitra</i> spp.	Sun Orchid	
<i>Thelymitra</i> X <i>macmillanii</i>	Crimson Sun-orchid	Medium herb
<i>Themeda triandra</i>	Kangaroo Grass	Medium to small tufted graminoid
<i>Thysanotus patersonii</i>	Twining Fringe-lily	Scrambler or climber
<i>Tortula</i> spp.	Screw Moss	Small or prostrate herb
<i>Tricoryne elatior</i>	Yellow Rush-lily	Large herb
<i>Triglochin nana</i>	Dwarf Arrowgrass	Medium to tiny non-tufted graminoid
<i>Triptilodiscus pygmaeus</i>	Common Sunray	Medium herb
<i>Triquetrella papillata</i>	Common Twine-moss	Small or prostrate herb
<i>Veronica gracilis</i>	Slender Speedwell	Large herb
<i>Veronica perfoliata</i>	Digger's Speedwell	Large herb
<i>Veronica plebeia</i>	Trailing Speedwell	Medium herb
<i>Wahlenbergia gracilentia</i> s.l.	Annual Bluebell	Medium herb
<i>Wahlenbergia</i> spp.	Bluebell	
<i>Wahlenbergia stricta</i> subsp. <i>stricta</i>	Tall Bluebell	Large herb
<i>Wurmbea dioica</i> subsp. <i>dioica</i>	Common Early Nancy	Medium herb
<i>Wurmbea</i> spp.	Early Nancy	
<i>Xerochrysum viscosum</i>	Shiny Everlasting	Large herb

Appendix 5: Wetland Plant Species and design for dams – Reference

Wetland plants

Plants with the green asterisk are recommended Plants cost from \$1.00 to \$3.00



Alisma plantago-aquatica

Water Plantain

DESCRIPTION: A broad leaved tussock forming plant with large leaves to 50cm high and flower spikes to 1.2 metres carrying many small white flowers (less than 1cm diameter). Water Plantain often dies off during winter in colder areas and reemerges in spring.

REQUIREMENTS: Seasonally flooded areas (for 6 months or more) or permanent water to 30cm deep. While Water Plantain likes warmer climates it will grow in colder areas.



Amphibromus nervosus

Swamp Wallaby Grass

DESCRIPTION: A tufted grass of wetlands with flower spikes up to 120cm. Often forms extensive stands where there is insufficient duration of standing water to sustain other species of wetland aquatic plants.

REQUIREMENTS: Prefer shallow waters that last about 6 months, and dry up typically by December, when the seed fall. Tolerates poorer soils than many other wetland plants



Carex appressa

Tall Sedge

DESCRIPTION: Densely tufted sedge of wetlands with leaves up to 80cm high and triangular (in cross section) flower spikes up to 120cm. Leaves are very sharp.

REQUIREMENTS: Grows in soils that are water logged during winter, and remain moist underground all year round. Does not like growing in water, though will handle occasional flooding.



Carex fascicularis

Tassel Sedge

DESCRIPTION: A tufted sedge of wetlands with leaves and flower spikes up to 100cm, though often only 50cm high. Attractive 'tassel' seed heads. Leaves are not as sharp as in other Carex species.

REQUIREMENTS: Grows in rich, permanently wet/moist soils, at water's edge or in up to 10cm of water during winter. Needs a constantly wet area.



Carex tereticaulis

Hollow Sedge

DESCRIPTION: Loosely tufted sedge of wetlands with fine leaves to 60cm high and round flower spikes up to 120cm. Seed heads shorter than Carex appressa.

REQUIREMENTS: Grows in a thick band along creek edges (at the water line), on mass on flood plains (particularly above soaks) and near wetlands on land that is seasonally inundated with shallow water to a depth of 10cm.



Crassula helmsii

Swamp Stonecrop

DESCRIPTION: A short spreading herb that forms a dense carpet to 10cm high when out of water, and a loose tangle underwater with emergent stems to no more than 10cm.

REQUIREMENTS: Grows in water to 30cm deep (though should be planted at water's edge or up to 10cm depth), or on waterlogged ground. Crassula helmsii needs moisture in the soil year round that its roots are able to tap into.



Cyperus gunnii

Fleeked Flat Sedge

DESCRIPTION:

REQUIREMENTS: Grows at the edges of water, or on ground that is seasonally flooded, but which dries out for many months.



Eleocharis acuta

Common Spikerush

DESCRIPTION: Cylindrical erect stems grow up to 60cm tall (with or without flower spike at top) grow up from underground rhizome, often forming dense stands.

REQUIREMENTS: Grows in seasonal water to 30cm deep (though should be planted at water's edge or up to 20cm depth). While *E. acuta* does best with permanent moisture, once established it is able to cope with longer dry periods than many other wetland plants.



Eleocharis sphacelata

Tall Spikerush

DESCRIPTION: Cylindrical erect (or sharply bent over where damaged) stems of 4 to 12mm diameter grow up to 1.5 metres out of the water and in water up to 2 metres deep. Spreads by underground rhizome forming dense stands.

REQUIREMENTS: Grows in permanent water (20cm to 2m), or seasonal water above soaks or springs. Should be planted at a depth that allows a little of stem to be above water.

Ficinia nodosa

Knobby Clubrush



DESCRIPTION: A dense tufted sedge growing to 50cm high, with narrow round tough stems with a spherical, tightly packed seed heads (approximately 10 to 15mm diameter) near the tops of the stems. This sedge is very drought hardy given planting in the right place.



REQUIREMENTS: While *Ficinia nodosa* can withstand seasonal flooding in shallow water, it general grows above the water line where its deep roots can access moisture.



Gratiola peruviana

Austral Brooklime

DESCRIPTION: An emergent broad-leafed herb standing up to 10cm out of the water. Grows as individual plants up to 30cm across or as large carpet of many stems.

REQUIREMENTS: Grows in seasonal water to 15cm deep. As it flowers late and sets seed late in autumn it prefers areas that remain inundated well into summer and that remain moist even in autumn. The small light mauve trumpet flowers are hidden amongst leaves.



Isolepis fluitans

Floating Clubrush

DESCRIPTION: The Thread like stems (approximately 1mm diameter and 10cm long) of this stringy net like plant forms open tangles in water. Seed heads are small (3 to 5mm long) flattened and elliptic in shape. Out of water forms grassy tufts or carpet to 10cm high.

REQUIREMENTS: Grows as a tangle net in shallow seasonal water to 15cm deep, or grass like to 10cm high when the water has receded.



Isolepis inundata

Swamp Clubrush

DESCRIPTION: The stems (up to 1.5mm dia. and up to 40cm long) of this stringy grass like plant form long open tangles in water, with new stems branching from the seed heads (clumps of 2 to 6mm long flower spikes). Out of water forms grassy tussocks to 20cm high.

REQUIREMENTS: Grows in seasonal water to 30cm deep (though should be planted at water's edge or up to 10cm depth), or on waterlogged ground.



Juncus bufonius

Toad Rush

DESCRIPTION: A small grass like annual rush really more than 10cm high It often forms a dense green lawn that without closer inspection can easily be mistaken for lawn grass. If seed is present in the soil, it readily colonises disturbed or bare areas given enough moisture.

REQUIREMENTS: This little rush grows at water's edge, or on soils that remain waterlogged though winter, spring and moist to wet into early summer.



Juncus holoschoenus Joint-leaf Rush

DESCRIPTION: A loosely tufted rush of wetlands with translucent round leaves (to 30cm high) and stems (to 60cm high).

REQUIREMENTS: This is the most aquatic of the rushes we grow, being able to grow in seasonal water up to 30cm deep. As with many wetland plants needs to be in water (even if only 5cm deep) for at least part of the year but also not to be permanently inundated.



Juncus kraussii Sea Rush

DESCRIPTION: Forms thick, largely vertical tussocks (or extensive stands) of dark green stems between 30 to 120cm (often around 1m) with dark reddish brown seed capsules. While the leaves are sharp, they are not nearly as sharp as the introduced Spiny Rush.

REQUIREMENTS: As the name suggests, this rush love salty areas, such as shallow tidal waters or along the edges of brackish or saline creeks.



Juncus pallidus Pale Rush

DESCRIPTION: A tall light green robust rush forming open tussocks up to 2 metres tall, though more often 1.5 metres tall. Seed capsules yellow-brown, stems 3 to 8mm diameter.

REQUIREMENTS: While this rush can grow in shallow seasonal water (to 15cm deep) it usually grows at water's edge or on ground feed by underground water, sometime well away from wetlands. Does best on waterlogged or wet areas, with permanent moisture at depth.



Juncus pauciflorus Loose-flower Rush PAGE 4

DESCRIPTION: Fine (0.4 to 2.2mm diameter) often weeping dark green shiny stems form a tussock or stand up to 1 metre, often 50cm tall. Can hybridise with *Juncus pallidus*.

REQUIREMENTS: While this rush can grow in shallow seasonal water (to 10cm deep) it usually grows at water's edge, or on waterlogged or very wet ground with permanent moisture at depth. Can also grow on soaks (ground feed by underground water).



Juncus planifolius Broad-leaf Rush

DESCRIPTION: A leafy species of *Juncus*, forming a grassy tussock of flat (1 to 11mm wide) green leaves to 40cm long (often shorter), often pinkish red near the base. Flower stems taller than leaves, carrying multiple heads of clustered dark red-brown seed casuals.

REQUIREMENTS: Grows as an annual at water's edge, or on seasonally waterlogged or wet ground. Larger plants are short-lived perennials on permanently waterlogged ground.



Juncus procerus Tall Rush

DESCRIPTION: A tall dull to light green robust rush forming dense tussocks up to 2.5 metres tall. Stems are 3 to 10mm diameter. Seed heads are densely clustered with straw yellow to reddish brown seed capsules.

REQUIREMENTS: Grows in seasonal water or shallow permanent water and at the water's edge. Also grows on waterlogged or wet areas, with permanent moisture at depth.



Juncus sarophus Broom Rush

DESCRIPTION: Fine, tightly packed bluish-green stems (1 to 4mm diameter) form upright plants to 1.5 metres. On larger plants outside stems tend to bend out from the tussock.

REQUIREMENTS: Loves to grow at water's edge of seasonal wetlands and dams. Under the right conditions can be very hardy, thus making it more suitable for sites that dries out.



Marsilea drummondii Common Nardoo

DESCRIPTION: The hairy "four leaf clover" leaves (1 to 2cm diameter) of this plant stand on narrow tough stems up to 30cm above the water's surface. Forms extensive stands in shallow water and persists on wet ground once the seasonal water has receded.

REQUIREMENTS: Grows in shallow seasonal water near the water's edge. Plant in water up to 15cm deep.

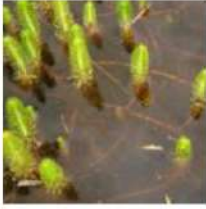


Marsilea mutica

Smooth Nardoo

DESCRIPTION: The multi coloured “four leaf clover” leaves (1 to 5cm diameter) of this plant float on the water’s surface and are attached to soil by stems as long as the water is deep. Forms extensive stands and when stranded out of water grows with smaller leaves.

REQUIREMENTS: Grows in permanent or seasonal water to 1 metre deep (though should be planted in a maximum of 30cm of water, or less if muddy).



Myriophyllum crispatum

Upright Milfoil

DESCRIPTION: An emergent wetland herb, with feathery compact upright stems rising up to 15cm above water. Underwater leaves vary from emergent leaves. Grows well in among other wetlands herbs and can form extensive mixed or pure, tightly packed stands.

REQUIREMENTS: Plant in shallow seasonal water, up to 20cm deep. Will continue to grow on wet ground once water has receded, and can spread into water 80cm deep.



Myriophyllum simulans

Amphibious Milfoil

DESCRIPTION: A small emergent wetland herb, with feathery stems, though not as finely divided as M crispatum, and more slender in appearance. Underwater leaves vary from emergent leaves. Grows well in among wetland rushes (even tall ones) and their shade.

REQUIREMENTS: Plant in shallow seasonal water, up to 10cm deep. Will continue to grow on wet ground once water has receded.

Myriophyllum variifolium

Milfoil

DESCRIPTION: A small emergent wetland herb, with feathery stems, though not as finely divided as M crispatum or M simulans, and slightly more robust in appearance. Underwater leaves vary from emergent leaves. Forms extensive stands often with other wetland herbs.

REQUIREMENTS: Plant in shallow seasonal water, up to 15cm deep. Will continue to grow on wet ground once water has receded.

No Picture



Persicaria decipiens

Slender Knotweed

DESCRIPTION:

REQUIREMENTS:



Philydrum lanuginosum

Woolly Waterlily

DESCRIPTION: Slightly succulent, translucent strappy leaves rise to a point at 20 to 35cm tall. Flower spikes can be from 15 to 60cm tall carrying a series of pea like yellow flower tucked tightly into the “woolly” stem.

REQUIREMENTS: Grows in shallow seasonal water between 10 to 15cm deep. Needs soil that remains moist year round.



Pseudognaphalium luteoalbum

Jersey Cudweed

DESCRIPTION: A small daisy like plant (usually 10 to 20cm tall) with grey hairy leaves and clusters of small indistinct flowers. An annual that grows on wet to waterlogged soils particularly near the water’s edge and colonizing ground where water has receded.

REQUIREMENTS: Plant on soils that will remain wet till early summer, so that seed will have time to form to produce next year’s plants. Likes sandy soils. Don’t plant in water.



Poa labillardierie

DESCRIPTION:
Medium Tussock grass
REQUIREMENTS:
Terrestrial species

Silver Tussock Grass



Triglochin procerum

Water Ribbons

DESCRIPTION: Long strappy leaves (to 1 metre long) float on the surface of the water or stand erect, emerging from the water to a height of 50cm high. Flower spikes up to 70 cm tall carry many seeds cluster tightly to stem for its upper half. Plants can often be smaller.
REQUIREMENTS: Grows in seasonal water to 60cm deep (though should be planted at depth that allows the leaves to emerge above the water or float on it).



Villarsia reniformis

Running Marsh Flower

DESCRIPTION: Water Lilly like leaves (approximately 5cm diameter) mainly float on the water, with bright yellow flowers (2cm diameter) supported on stems up to 40cm high. The plant send out runners from which new plants grow, thus spreading in area year by year.
REQUIREMENTS: Grows in shallow seasonal water up to 30cm deep (though can also be planted in water as shallow as 5cm). Does best where the soil remains moist year round.

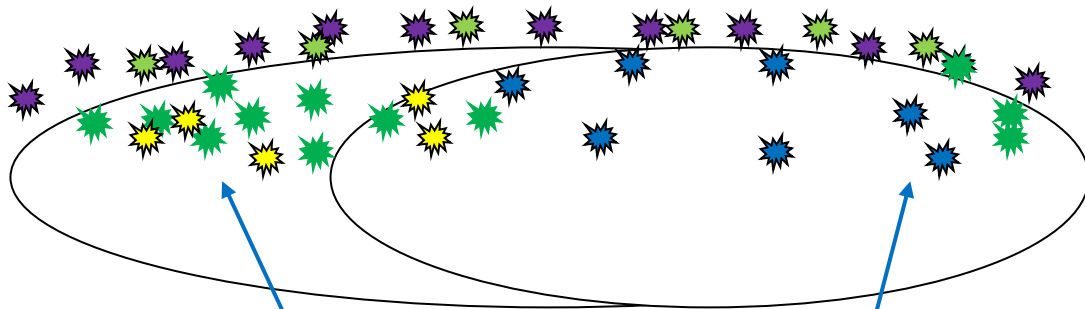


Lomandra longifolia

Spiny-headed Matt-rush

A terrestrial species for holding banks together along with *Poa labillardierie* - *Silver Tussock Grass*

Shallow Wetland Design



Plantings of :

- Milfoil 
- Running Marsh Flower 
- Pale Rush 
- Ribbon Weed 
- Tall Sedge 

Create a deep section up to 2m deep

Gradual slope off to 0.5m

Appendix 6: Weed control Notes – General Reference

Integrated Weed Management

Integrated weed management (IWM) is the control of weeds through a long-term management approach, using several weed management techniques such as:

Physical control

Physical control is the removal of weeds by physical or mechanical means, such as mowing, grazing, mulching, tilling, burning or by hand. The method used often depends on the area of weeds to be managed, what the land is used for, physical characteristics and the value of the land.

It is important that, when using physical control, any item that can move from a weed-infested site to an un-infested site, such as machinery, vehicles, tools and even footwear, is cleaned free of weed seed before moving, to stop the spread of weeds to new areas.

As with most control methods long-term suppression of weeds requires follow up [weed prevention](#).

Mulching

Mulching, by covering the ground with a layer of organic material, suppresses or kills weeds by providing a barrier between the weeds and sunlight. Mulching has an added advantage in that it improves the condition and moisture level in the soil. Planting competitive and desirable plants that provide a dense cover over the weeds suppresses weed growth in a similar way to mulching.

Chemical control

Although the use of chemicals is not always essential, herbicides can be an important and effective component of any weed control program.

In some situations, herbicides offer the only practical, cost-effective and selective method of managing certain weeds. Because herbicides reduce the need for cultivation, they can prevent soil erosion and water loss, and are widely used in conservation farming.

In some cases, a weed is only susceptible to one specific herbicide and it is important to use the correct product and application rate for control of that particular weed. Common mistakes include incorrect identification of the weed or using inappropriate products.

In most cases, weeds must be actively growing to be vulnerable to herbicide treatments. Herbicide resistance can also be an issue with some species.

Conditions such as wind speed and direction, the possibility of rain and proximity to waterways should also be considered when preparing to use herbicides.

Label information

It is extremely important to read and follow the information contained on the herbicide label. This includes:

- the signal heading (indicating the product's hazard level)
- the trade names
- the claims for use
- the active constituent
- the net contents
- directions for use
- limitations for use
- withholding period
- important notes
- storage instructions
- safety directions and first aid
- dangerous goods notification
- expiry date
- mode of action (type of herbicide)

By law, herbicides can only be used in accordance with the label.

The [Australian Pesticides and Veterinary Medicines Authority](#) (APVMA) is the Australian Government authority responsible for the independent assessment and registration of pesticides and veterinary medicines. The APVMA keeps a record of all registered pesticides in Australia, and their approved uses and also reviews older chemicals to make sure that they continue to meet contemporary high standards.

Declared Noxious Weed Categories

Weeds are classified into three categories:

- **Declared noxious weeds**
- **Environmental weeds**
- **Agricultural weeds**

All declared weeds require control.

There is no legal obligation to control **Non-declared weeds**. Some non-declared species may have a minor impact in comparison to the effort required to control them. Others will decline as a result of changed site conditions, such as shading due to revegetation.

Declared Noxious Weeds

In Victoria these weeds are plants which have been proclaimed under the *Catchment and Land Protection Act 1994* (the CaLP Act). Legislation requires that these weeds are controlled or eradicated.

There are four categories of weeds defined under the Act:

- **State Prohibited**
- **Regionally Prohibited**
- **Regionally Controlled**
- **Restricted**

Different requirements apply to each category. In addition to the specific requirements for each category ALL noxious weeds must be prevented from spreading, e.g. as Contaminants in hay, grain, soil or sand, or on vehicles. Sale or purchase of noxious weeds is also prohibited.

Weeds that are not declared noxious can still have adverse effects on biodiversity. These are considered environmental weeds. There is no complete list of environmental weeds. Any non-native plant that is spreading in the riparian zone, or affecting other native biodiversity values is a potential problem.

Status of declared weeds may change and new weed species are declared from time to time. The Department of Primary Industries can provide an up-to-date listing.

State Prohibited Weeds

Either do not occur in Victoria but pose a significant threat if they invade, or if they are present in Victoria, pose a serious threat and can reasonably be expected to be eradicated.

State Prohibited Weeds are to be eradicated if possible, from Victoria or excluded from the state. The Department of Primary Industries (DPI) is responsible for their control and should be notified of their occurrence.

Regionally Prohibited Weeds

In general, Regionally Prohibited Weeds are not widely distributed in a Region but are capable of spreading further. It is reasonable to expect that they can be eradicated from a Region and they must be controlled in or eradicated from the Region.

Landowners, including public authorities responsible for the management of Crown lands, are responsible for control of these weeds on their lands:

- the Department of Environment, Land, Water and Planning (DELWP) is responsible for control on Crown land;
- private landholders are responsible for control on private land but not on roadsides adjoining their property;
- Regionally Prohibited Weeds on roadsides are the responsibility of Vic Roads, municipalities, or DELWP, depending on the class of road.

Regionally Controlled Weeds

These weeds are usually widespread and are considered important in a particular region. To prevent their spread, continuing control measures are required. Declaration of a Regionally Controlled Weed can be made for the whole Region or certain local governments within the Region.

Landowners have the responsibility to take all reasonable steps to control and prevent the spread of Regionally Controlled Weeds on their land and any undeclared roads that adjoin their land.

Restricted Weeds

The category of Restricted Weeds is intended to include plants that are a serious threat to primary production, Crown land, the environment or community health in another State or Territory of Australia, which have the potential to spread into and within Victoria, and pose an unacceptable risk of spreading in this State or to other parts of Australia if they were to be sold or traded in Victoria.

To date no weeds have been declared Restricted Weeds for Victoria.

Priority Weeds

State Priority Weeds

State Priority Weeds include all the weeds declared as State Prohibited, and Serrated Tussock and Ragwort for which State-wide strategies are in place.

Regional Priority Weeds

The CCMA Weed Action Plan has identified a number of Regional Priority weeds, in addition to the State Priority Weeds. These weeds were identified on the basis of having detrimental economic, environmental and social impacts. Regional Priority Weeds are species already established in an area and require actions to reduce the impacts of existing infestations, and to prevent their distribution from reaching its potential. The Regional Priority list includes declared Regionally Prohibited Weeds as well as other weeds of high community concern.

Examples of Regional, Local and New & Emerging weeds:

Regional Weeds	Local Priority Weeds ¹	New & Emerging Weeds
Bridal Creeper Prairie Ground-cherry Hardheads Silver-leaf Nightshade	Blackberry Boxthorn Cape Broom Cape Tulip Gorse Horehound Patterson's Curse Spiny Burrgrass Spiny Rush St John's Wort Wild Garlic Wheel Cactus	Chilean Needle Grass Serrated Tussock Arrowhead

Other Weed Categories

Agricultural Weeds

Agricultural weeds threaten crops, horticulture and pasture production and may be declared noxious weeds. Most declared noxious weeds are agricultural weeds but some are not. For example, Boneseed and Japanese knotweed are declared noxious but are not threats to agriculture. Some species are capable of having several harmful effects. Blackberry for example (a Local priority weed) is both a pasture weed and an environmental weed. Non-native plants that are useful in one place may be weeds in another depending on land use, for example pines grown as a commercial plantation compared to pines growing in a flora reserve.

Environmental Weeds

Environmental weeds are plants that threaten the values of natural ecosystems. They are invasive to native plant communities and may out-compete native species. Reduced plant diversity results in the loss of habitat for native animals, and may also threaten indigenous flora values. Environmental weeds may be Declared Noxious Weeds, but include many non-declared species. Environmental weeds can invade native plant communities.

Weeds of natural ecosystems can be native species that are not indigenous to an area but have the potential to damage local plant communities, such as Ovens Wattle.

¹ Region Priority Weeds include all Regionally Prohibited Weeds, plus some other species identified as priority within the region.

Weed Control Methods

Method	Suitable application	Comments
Slashing	<p>Slash to suppress and weaken perennial weeds or to prevent seed production.</p> <p>May not suit some areas where native species occur.</p>	<p>Some weeds need frequent slashing to weaken them. Care should be taken to control weed spread by cleaning equipment before and after use.</p>
Cut-paint herbicide	Trees and shrubs that re-shoot following slashing or other treatment.	Reduces the risk of off-target damage to native plants or waterways due to spray drift or run off.
Herbicide by knapsack spray	<p>Small infestations of grasses, herbs or small shrubs.</p> <p>Basal bark treatment or seedlings of larger species.</p>	<p>Good where weeds are amongst sensitive native plants, but care must be taken to cover or avoid native plants.</p> <p>Not suitable for large areas or dense/tall bushes.</p>
Herbicide by handgun	Larger infestations and tall/dense bushes.	High output requires care to avoid drift or runoff affecting waterways or non-target plants.
Controlled burn	Fire-sensitive weeds in native vegetation where fire is appropriate.	<p>Follow-up weed control needed. Should be undertaken with care; safety is the top priority.</p> <p>May require co-operation between DELWP, CMA, CFA and local residents.</p>
Goats	Graze all woody weeds	May require several grazing times

Effective weed control approaches

- Heavily infested areas usually revert to being weedy very quickly if follow-up work is postponed. Highest priority should go to maintaining places that are in the best condition.
- Remove outlying weeds before they can reproduce and then work on the large clumps. This way the natural regeneration or replanting of native species can keep up with the clearing.
- Ensure that natural regeneration or replanting keeps pace with weed removal.
- Large weeds are harder to dig out or kill. They require larger amounts of herbicide and disturb larger areas if mechanically removed. Many weed seeds or fragments are often left in the soil following their removal.
- Soil disturbance should be kept to a minimum. Disturbed soil can promote seed germination of weed seeds and opportunities for new weed species to establish.
- Prevent weed material from entering wet grassland and riparian areas. Seed and vegetative material may colonize downstream areas and rotting vegetation may have adverse impacts on stream and water health.
- Avoid blanket spraying.
- Do not attempt to remove large weed infestations in one go. Weeds may be stabilizing soils or providing habitat for native birds and animals.
- Fire is a useful tool in eliminating the weed seed bank, but needs constant follow up work by either re-burning, grazing, slashing or spraying.

Planning weed control

- Find out about control methods for each weed and decide if they are practical, safe and legally allowable.
- Target weed activity to suit both the site and the target weed species.
- Identify the best methods of control for each weed present.
- Decide whether eradication, suppression or containment is possible for each weed.
- Identify the areas and species of highest priority.
- Estimate the time and materials required for control.
- Review what can be achieved for the whole site. Set goals and timeframes.
- Develop a site map with weedy areas indicating areas to be treated or re-treated in the coming year.
- Use goats to graze heavily until weeds are under control then graze periodically.
- Keep records:
 - when to undertake weed control actions
 - seeding or planting of native species (plan ahead 6-12 months to ensure the appropriate species will be available during suitable planting times)
 - when to implement weed control plans (include how and where)

- monitor results; how have weeds responded, any follow-up requirements
 - native plant establishment and regeneration
- Continue to monitor the area to identify emerging weed problems and treat them early.

Safe and Legal Herbicide Use

A number of herbicides are **restricted chemicals** in Victoria. An Agricultural Chemical User Permit (ACUP) is required to be held by any user of restricted chemicals in Victoria unless exempted, such as spraying contractors holding a commercial operator license. A person working under the direct supervision of an ACUP holder may also use restricted chemicals. The user must also make certain prescribed records of use and keep these records for a period of two years.

Restricted chemicals are:

- Schedule 7 (S7) poisons that are agricultural chemicals
- metham sodium
- atrazine
- ester formulations of triclopyr, MCPA, 2,4-D, and 2,4DB

Further restrictions on herbicide use exist within Chemical Control Areas, but there are no such areas in southwest Victoria.

Many environmental weeds do not currently have any herbicides registered for their control. Using an herbicide to control a weed when it is not registered for that particular species or situation (**'off-label' use**) is sometimes legal in Victoria without a permit.

Off-label use without a permit is subject to certain conditions and does not apply to restricted chemicals. Your Regional Chemical Standards Officer can provide information on the conditions for legal off-label use and may be able to recommend off-label treatments for particular weeds.

Some herbicides that are persistent in soil carry warnings not to use them over the roots of desirable vegetation such as trees, or in places where they may be washed into contact with the roots.

Always read the label before using any herbicide and follow all the directions given on the label.

Herbicides and streams or wetlands

Some formulations of glyphosate are registered for aquatic situations and these are widely used when weeds are in or overhanging waterways. Other formulations of glyphosate that lack instructions for aquatic situations on the label must not be used in this way. Some other herbicides are registered for a smaller range of weeds in aquatic situations; labels of these products carry detailed instructions for aquatic use, which must be followed carefully. Additional surfactants (wettors) or penetrants should **not** be added during aquatic use of glyphosate because none of them is registered for this purpose and they may be harmful to aquatic organisms (e.g. frogs).

Sometimes riparian weeds are not well controlled by glyphosate, or a selective herbicide is preferable to avoid damage to non-target plants.

Products without instructions for aquatic situations specified on the label may be used so long as contamination of the waterway can be avoided.

Spray must not be allowed to drift over water or applied to weeds overhanging water. Generally, no minimum distance from the water's edge to prevent contamination is specified on herbicide labels. The safe distance has to be assessed on a case-by-case basis taking into account how much herbicide is being used, method of application, mobility, persistence and toxicity of the particular herbicide and local conditions such as soil type and slope. Predicting herbicide behaviour requires specialized knowledge. For advice on your particular situation contact your DPI Regional Chemical Standards Officer or the herbicide manufacturers.

Protecting native plants

All native vegetation is legally protected. Care should be taken to protect indigenous vegetation when undertaking weed control activities. Weeds, which generally reduce local flora values, may also provide protection for native plants in some instances.

A permit is required to remove native vegetation under the local planning scheme. Moorabool Shire Council is the responsible authority. Approval from the Department of Environment, Land, Water and Planning (DELWP) is also required.

If your weed problem involves native vegetation in any way always check with local government office to determine if a planning permit is required. Conditions will apply to any native vegetation removed.

Prepare a weed management plan

Keep a simple plan to guide your weed control activities. Sketch a rough map of the location of high priority weeds. Note why certain weeds are high priority and make a short list of works planned, including the time of year.

Consider the ecological effects of your management and how removing weeds will affect wildlife. For example, it may be better to drill and fill with herbicide weeds such as Gorse rather than cut them down, so that the structure can remain as wildlife habitat.

Priorities

Preventing new invasions of weeds is very important and is cheaper and more successful than eradicating weeds once established. Prevent the invasion of weeds by minimizing disturbance of soil, avoiding importing foreign soil, keeping tools, equipment, footwear and vehicles clean of weed seeds or fragments, by removing stock and stock feed from the site, using local native species and avoid planting potential environmental weeds such as Cootamundra Wattle.

Highest priority should go to maintaining places that are in best condition. Remove outlying weeds before they can reproduce and then work on the large clumps. This way the natural regeneration or replanting of native species can keep up with the clearing.

Follow-up work will be required to eliminate seeds or fragments, which may reshoot.

Large weeds are usually harder to dig out or kill than smaller plants and their removal can create a large area of disturbance. Heavily infested areas usually revert to being weedy if follow-up work is postponed.

Plan control works carefully for weeds that may be stabilizing banks, providing shade to native flora, or providing cover for native birds and other animals. Sudden removal of weeds on a large scale may cause considerable harm.

Aquatic weeds may have a negative impact on water quality if killed in large numbers. Oxygen levels are depleted through the decay process and water will become fouled by the rotting weeds.

Inspect your property regularly to catch new weeds and weed areas in the early stages of development. Eradicate weeds that are just starting to invade while their numbers are small and the time, effort and expense required for removal is lowest.

Keep in touch with neighbours regarding weed problems and the appearance of new weeds on their property.

Keys to successful weed control

- Work from the least weedy places into the most weedy
- Choose a method to keep disturbance to a minimum
- Ensure that natural regeneration or replanting keeps pace with weed removal
- Monitor the results
- Don't expect to solve all weed problems in one go

What are you going to do first?

There are a number of things to consider when determining management priorities. Consider:

- the background information you have gathered including maps, lists, observations ;
- which are the most threatening environmental weeds (i.e. those that are invasive, have a high impact on the environment, have a rapid rate of spread);
- Which are your highest priority sites (sites may need to attend first that have a high biological significance).

To help you decide on your priorities, it is also important to:

- eliminate potentially threatening weeds before or as they expand
- eliminate potentially threatening environmental weeds where action is likely to be successful
- control environmental weeds in small infestations before they have produced seed or other propagules
- control environmental weeds in areas of high conservation value
- contain known environmental weeds by securing/protecting uninfested areas

Design appropriate actions

The following principles, techniques and options will help determine your plan of action.

Basic management principles:

- Prevention and early intervention will reduce considerable future costs.
- Identify the cause of the problem. Weeds are usually a symptom of another problem such as burning practices, soil disturbance, grazing or planting invasive species.
- Consider what the wildlife will use when you remove weeds. It may be appropriate to remove the weeds and replace with appropriate indigenous plants at the same time.
- Are your actions benefiting the ecosystem? Using large amounts of herbicides may be harmful to some species, such as frogs. Actions may be causing more harm than good, even though they may appear beneficial because the action is something visible.
- Look beyond boundaries. Weeds don't distinguish between fences and other management boundaries.
- Start at the top of best habitat. Start treatment at the top of a catchment to avoid reinfestation of lower areas through seed roll (gravity) and by being washed down slopes.
- Hygiene is important. Remember to keep your tools, vehicles, boots and clothing clean of weed seeds, etc.
- Minimize site disturbance (particularly soil) which will reduce the opportunity for more weeds to establish at the site.
- Work from most intact habitat, since prevention of degradation is cheaper than eventual rehabilitation.
- Choose from a variety of techniques such as slashing, mowing, hand-pulling, grazing, chemical control, fire, heat, smothering, moisture and nutrient manipulation.

Rehabilitate the site

It is possible that once you remove an environmental weed from natural vegetation, that it may be replaced by the same or different species. By encouraging the site to rehabilitate naturally or revegetating with plants grown from local seed supplies, this problem may be avoided.

Rehabilitation can also replace habitat and food that the weeds provided for wildlife, for example: replace blackberries, which can be protective habitat for wrens and other wildlife, with prickly hakeas or wattles. Rehabilitation should be a feature throughout your strategy, not just at the end.

Determine time lines

How long are you going to take to reach desired goals? Develop a weed calendar, which includes flowering times and times for best treatment. This will help you determine what to do each month and when attention should be given to the priority species. Relate this to flowering/seeding times of indigenous plants, to make decisions on timing for activities such as burning and slashing.

Monitor the results

Keep records of any weed control works to help determine whether if any efforts are succeeding. Take photographs before starting any works, and then each year thereafter. Use a fence post or a distinct landmark if possible and keep the direction, time of year and lens the same each time. Any records will help with decision making on what works and what doesn't to avoid wasting effort. (Land for Wildlife News Vol. 3, No. 3 has an article on how to monitor your property.)

Review

Incorporate any new information into the management plan for the property. Learn from success and failures and incorporate new technology when appropriate. There may be the need to modify the plan over time. If there is not have enough background information, take the time to do further research, assessment and monitoring.

APPENDIX 7: Weed Control notes for property

Gorse

Management strategies

How to treat

Gorse is a weed of national significance.

No method alone will give total control of existing gorse plants and subsequent seedlings. A combination of methods must be employed to give long-term success.

1. Treating isolated patches and limited infestations

Whilst the largest thickets may appear the most obvious place to commence works, ideally the smaller, outlying infestations should be tackled first. This allows a greater area of land to be cleaned up first, and follow-up maintenance will be less in these areas as a smaller seed bank is likely to be present.

2. Treating extensive infestations

Mechanical clearing is an ideal method of controlling large infestations of gorse on land that is suitable for sowing down to pasture. Bulldozers with rippers or medium to heavy tractors with dozer blades and rippers attached can be used.

Regrowth of well established gorse bushes after burning or mechanical control is not suitable for herbicide treatment until it is up to 1 m high.

Grazing by sheep is moderately effective for controlling gorse seedlings. After a dense gorse infestation has been removed and the pasture established, it should be subjected to periodic heavy grazing by sheep during the spring and summer to prevent the establishment of gorse seedlings.

In dense gorse stands satisfactory spray coverage is not likely to be obtained beyond a range of 4–5 m. If the stand is larger, access paths should be cleared to allow complete coverage.

With large plants or thickets, a high spray volume, up to 4000 L/ha, should be applied to ensure the entire plant is contacted, not just the outer leaves and stems.

For best results

- When gorse is 1 to 1.5 m tall use Grazon Extra at 250 mL/100 L of water during spring and summer only.
- For plants over 1.5 m tall or during autumn use Grazon Extra at 350 mL/100 L of water.
- If treating in winter, use Grazon Extra at 500 mL/100 L of water. Brownout may not be complete until summer.
- Ensure thorough spray penetration and coverage of the whole plant.

Treatment tips

Always add a 100% concentrate non-ionic surfactant at 100 mL/100 L of water when using Grazon Extra.

Always spray the crown of the plant to ensure coverage of root system.



Gorse (*Ulex europaeus*)



Grazon® Extra
HERBICIDE



Gorse (*Ulex europaeus*)

Description

Gorse is a woody, deep-rooted perennial legume, capable of growing to 4 m tall. It has numerous small green leaves that form hard spines up to 5 cm long. Bright yellow flowers emerge in autumn and spring and plants produce large quantities of seed. The hard-coated seeds are spread up to 6 m by an explosive opening of the pods in mid summer.

Flowers are bright yellow, pea-like, approximately 20 mm long, and are borne all over the plant. The buds develop during February and March; however, flowering occurs in two distinct seasons,

spring and autumn. Gorse seedlings can be eaten by livestock but mature plants have spines that can cause injury. Gorse is very competitive and reduces the productivity of pasture. Dense infestations restrict movement of livestock and provide a haven for rabbits and other pests.



Timing

As with most weeds, the optimum time for herbicide application is when plants are actively growing. This is generally during spring to early summer, and after the autumn break.

Product	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	KEY:
Grazon® Extra Herbicide	🔄	🔄	✓	✓	✓	✓	🔄	🔄	🔄	🔄	🔄	🔄	✓ Best time to spray/treat 🔄 Can spray/treat if conditions are suitable

Herbicides for control of gorse

Product*	Method of application	Rate ¹	State
Grazon® Extra Herbicide	Foliar spray	250, 350 or 500 mL/100 L of water	All
Gaflon® 600 Herbicide	Foliar spray	170 or 360 mL/100 L of water	All
Toxdor® 75-D Herbicide	Foliar spray	500 mL/100 L of water	Vic
Toxdor® RegrowthMaster Herbicide	Foliar spray	375 mL/100 L of water	NSW, Vic, Tas, SA
Grazon® Extra Herbicide	Aerial (helicopter only)	10 L/ha	Tas
Vigilant® II Herbicide	Cut stump	Apply neat: 3–5 mm layer	All

*Note: Refer to product label in bold. ¹ Consultable for details of growth stage and use, especially where range of rates is given. Data¹ is a registered trademark of Nutrien Australia Limited.



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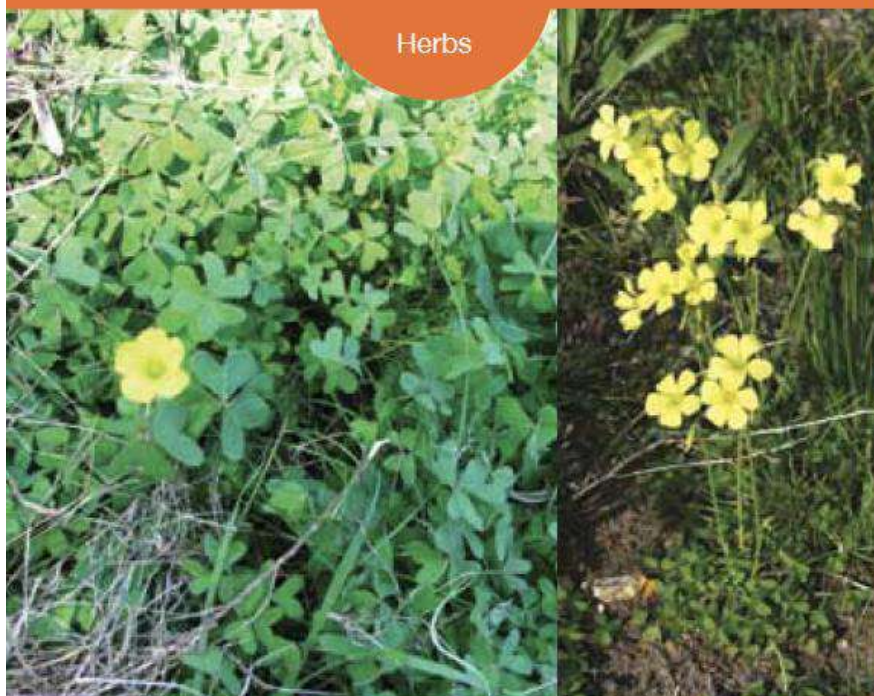
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Source: <https://www.woodyweedspecialists.com.au/weed-identification/gorse-control/>

SOURSOB

Oxalis pes-caprae

Herbs



Description: Cool season perennial herb that produces underground bulbs or rhizomes. The leaves are similar to clovers and often have brown blotches. Soursob flowers are bright yellow trumpets to 4cm, whilst other varieties of oxalis have bright pink and purple flowers. The leaves typically close in low light or at night. Very hard to control once established. Poisonous to sheep under some circumstances.

Occurring in areas with above 350mm rainfall Soursob is invasive to many ecosystems especially riparian areas.

Tips: Chemical control using selective or non-selective herbicide or careful manual removal. Well-timed control before seed set over several years is required. Soursob can be misidentified with native Oxalis species. The weedy species features include longer flower stalk, larger flowers and leaves.

Classification: Restricted

Perennial



Control options



Method of spread



Appendix 8: Nest Boxes

By installing nest boxes, this can greatly enhance the habitat for a range of animals immediately. Photos of nest boxes are sourced from the Latrobe university nest box site:

<http://www.latrobe.edu.au/wildlife/retail-shop/nestboxes>

These boxes could either be ordered as flat packs and assembled.

MAMMAL NEST BOXES



Bat Nest Box



Brush Tail Possum Nest Box



Ringtail Possum Nest Box



Sugar Glider Nest Box



Squirrel Glider Nest Box



Feather-tail Glider Nest Box



Tuan / Brush Tailed Phascogale or Antechinus Nest Box

BIRD NEST BOXES



Pardalote Nest Box



Lorikeet Nest Box



Rosella Nest Box



Large Parrot Box



Duck Nest Box



Kookaburra Nest Box



Owl Nest Box

Wildlife Net Boxes

<http://www.wildlifeneboxes.com.au/>

Miles Geldard (Wildlife Nestboxes)

[wildlifeneboxes.com.au](http://www.wildlifeneboxes.com.au)

www.facebook.com/Wildlife-Nestboxes

ph: 0427 591 269



HOME NESTBOXES ORDER SERVICES CONTACT



Contact Miles on 0427 591 269 or email: miles@wildlifeneboxes.com.au to get advice, purchase nest boxes or to get a free quote on delivery and installation.

Pick up available call Miles on 0427 591 269

APPENDIX 9: Responsible Authorities & Funding assistance

Agriculture Victoria

- Provide advice about weed control.

Central Goldfields shire Council

- Planning & Building permits for site development.

Department of Economic Development, Jobs, Transport and Resources (DEDJTR)

- Fox and Rabbit control programs
- Agriculture
- Fisheries

Department of Environment, Land, Water and Planning (DELWP)

- Management of natural values: indigenous flora and fauna, habitat conservation & enhancement
- Permit approval for removal of native vegetation
- Off-site discharge of water

Country Fire Authority (CFA)

- Bushfire defendable zones, Fire safety and Fire restrictions and burn-offs

North Central Catchment Management Authority (NCCMA)

- Catchment and waterway related issues.

Potential funding sources

North Central Catchment Management Authority: 5448 7124

- CCMA Streamside funded programs
- They can provide some assistance with weeds and pest control as well as revegetation

Native Plant Nurseries

Avalon Nursery: 41 Kopkes Rd, Haddon Vic 3351. Phone: 5342 4519

Ballarat Wild Plants: (Matt Pywell): 435 Joseph St, Canadian Vic 3350. Phone: 0409 388 014

Goldfield Revegetation Nursery (Ashley Elliott) 230 Tannery Lane, Mandurang Vic. Ph: 5439 5384.

Revegetation Contractor planters

- **Chris Callahan:** 0428 366 254 (Colac)
- **Nigel Cook:** 0407 246 782 (Ballan)

Important Note to Applicant:

This document belongs to Central Highlands Environmental Consultancy (CHEC) until payment in full has been received (based on agreed quote).

For further information about payment (or payment plans), please email: raydraper2004@gmail.com

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