

ALTONA CSR LANDCARE RESERVE MANAGEMENT PLAN



WILLIAMSTOWN, LYNDOKH LANDCARE GROUP INC

DECEMBER 2022

**Editors: Peter Clark and Tina Woods
Revision 0.1**

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FOREWORD TO THE 2022 MANAGEMENT PLAN

The first management plan for the Altona CSR Landcare Reserve was published in December 1999 after work by the Williamstown, Lyndoch Landcare Group Inc had commenced.

This plan was subsequently updated in August 2005, December 2012 and August 2017.

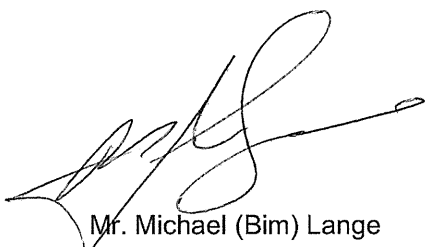
The first plan has formed the basis and direction for the work carried out within the reserve since that time and has contributed greatly to the three subsequent management plans.

The 2022 Management Plan continues on this work further refining the management objectives, strategies and actions used to program and monitor work in the reserve.

Since 1995 thousands of hours of work has been performed by volunteers and contractors within the reserve. An important part of this work has been the record keeping in particular photo points which document the work undertaken and the regeneration of native vegetation which has occurred.

An important question to ask is has all the work over the last 27 years been worthwhile and the answer would still have to be an emphatic yes.

At present the Altona CSR Landcare Reserve stands as an important example of what can be achieved by a dedicated band of volunteers and skilled professional contractors in habitat restoration and management of Australia's native woodland ecosystems.



Mr. Michael (Bim) Lange

Mayor

The Barossa Council

Date: 7/06/2023



Mr. Angus Atkinson

Chairman

Williamstown, Lyndoch Landcare Group Inc.

Date: 24/05/2023

EXECUTIVE SUMMARY

Since 1995 the Williamstown, Lyndoch Landcare Group Inc management committee and members have through their dedication and vision developed a variety of skills in the management of the reserve and contributed selflessly to the conservation of the remnant native flora and fauna within the reserve.

This restoration and rehabilitation work promoted a burst of natural regeneration which has seen the recovery of a number of native species. The success of this past work has seen a change in direction from mature weed removal to follow up weed seedling control work programs.

As a conservation success the reserve is significant as it contains native vegetation associations which once covered the region and of which now only 8% remains.

This valuable remnant provides habitat for a wide range of conservation rated native flora and fauna species. The diversity includes two hundred and sixty-nine species of native plants with seventy-six species having a National, State or Regional Conservation Rating (Northern Lofty).

The reserve also provides habitat for one hundred and thirty-nine species of native birds, fifty of which have State conservation rating of Endangered, Vulnerable or Rare, seventeen species of reptile and amphibians and seven species of bat.

As a recreational success it is a wonderful experience for visitors to walk tracks and to be able to view at close proximity a variety of native birds, animals and plants as well as take in the aesthetic landscape values provided by the lookouts and other physical features.

All flora species lists in this report have been compiled using the *Environment Protection and Biodiversity Conservation Act (EPBC) 1999, National Parks and Wildlife Act 1972 Schedules* and the Adelaide & Mount Lofty Ranges Regional Species Conservation Assessment Project.

It is recognised that there are continual changes to plant names and species conservation ratings occurring but until a species name or conservation rating change has been included in the relevant acts or reports there will be no change made to the species lists contained within the management plan.

The 2022 Management Plan continues on from the 1999, 2005, 2012 and 2017 plans refining the management objectives, strategies and actions used to program and monitor work in the reserve and is intended that the plan will be reviewed again in 5 years' time (2027).

1 INTRODUCTION

The Altona CSR Landcare Reserve combined with a number of adjacent properties form the area known locally in The Barossa Council region as the Altona Woodlands (previously known as the Altona Scrub). Altona Woodlands makes up approximately 155 hectares.

The region surrounding the Altona Woodland has been extensively cleared for agricultural pursuits. The Altona CSR Landcare Reserve together with these adjacent properties represents the only remnant native vegetation available for conservation in the region.

Altona CSR Landcare Reserve (approximately 70 ha) provides one of the last natural vestiges of pre-European vegetation remaining within The Barossa Council District (outside of conservation parks). The reserve in isolation is a viable patch of vegetation and in conjunction with the remainder of Altona Woodland forms an area large enough to retain a significant assemblage of biodiversity.

Not all the vegetation associations and plant species found in Altona Woodland are represented in the Altona CSR Landcare Reserve and this fact necessitates the conservation and management of the reserve in conjunction with these other adjoining properties.

In 1995 the Williamstown, Lyndoch Landcare Group Inc., purchased the first section of land from CSR and transferred the ownership of the reserve to The Barossa Council.

In 2004 an additional 12 ha of land known as the Grundy Block was acquired by the landcare group which increased the reserve area to its current size.

The landcare group, in conjunction with The Barossa Council, manages the reserve for conservation and recreational purposes and since June 2003 the reserve has been opened to the general public.

This conservation management plan for the reserve seeks to outline:

- Physical and biological features.
- Management objectives, issues and constraints relating to recreational and biological enhancement opportunities.
- Ongoing general management recommendations.

2 RESERVE DESCRIPTION

2.1 Area and Location

The Reserve is located adjacent to the north-eastern boundary of the township of Altona; 1 km north east of Barossa Valley Way and access to the reserve is gained from Altona Road (Refer Map 1).

There are three parcels of land that together make up Altona CSR Landcare Reserve. The larger section consists of 61.4 ha, while two smaller parcels (8.9 ha and 0.2 ha) adjoin the north western corner and mid-way on the banks of the North Para River.

The Reserve is surrounded by rural living allotments and a small vineyard on the east side, the North Para River on the north and north east side, and the west boundary abuts a mixed farm and Heritage Agreement.

The main channel of the North Para River flows across the eastern and northern boundaries of the reserve in a north-westerly direction (Refer Map 1).

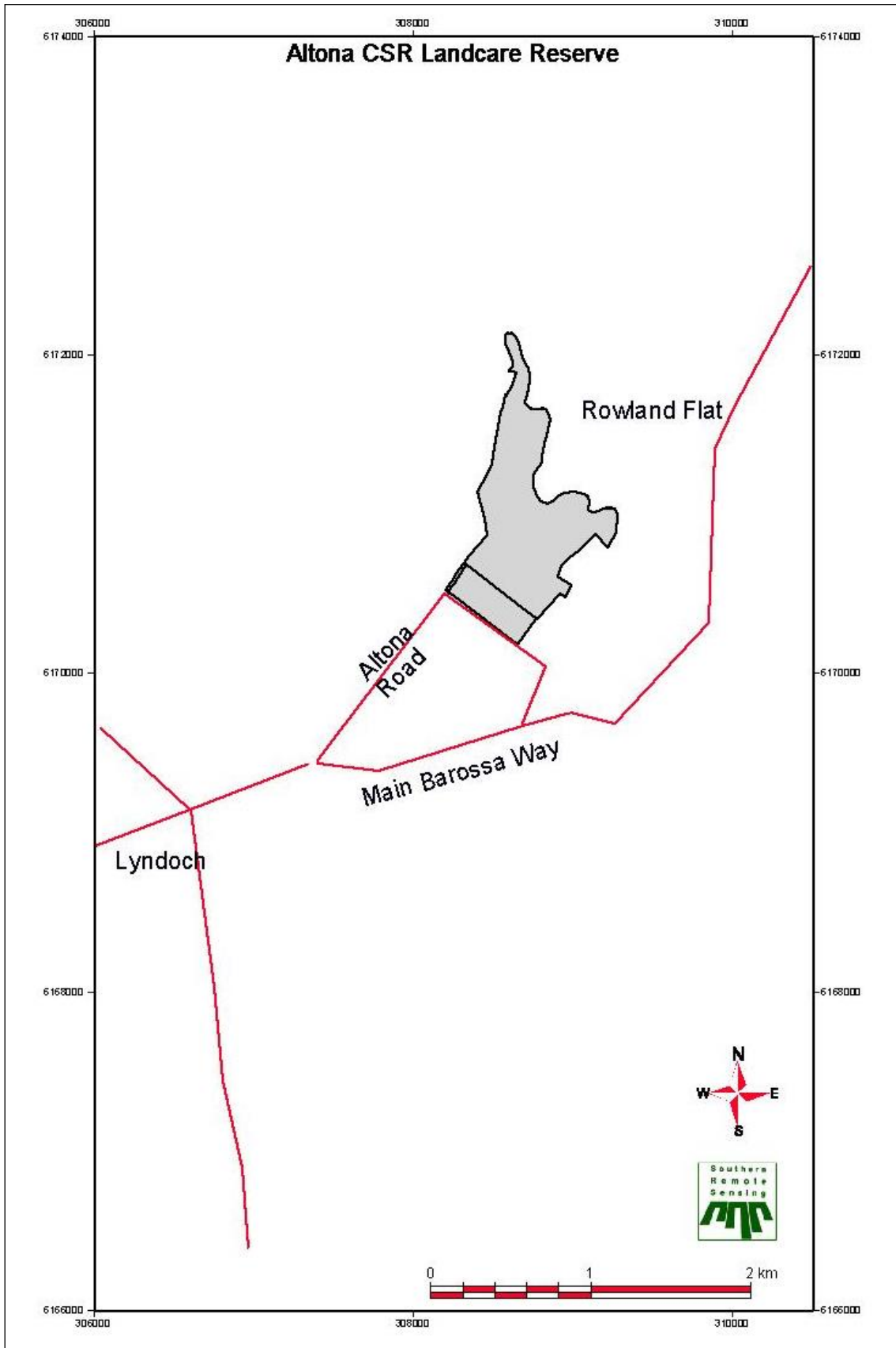
TITLE:	Altona CSR Landcare Reserve
ADDRESS:	Altona Road, Altona
LEGAL DESCRIPTION:	Certificate of Title Register Book Volume 5937 Folio 498 – Altona CSR Landcare Reserve
PROPRIETOR:	The Barossa Council
MANAGEMENT:	Williamstown, Lyndoch Landcare Group Inc.
PURPOSE OF LAND:	Conservation, Education and Recreation

2.2 Legal Restrictions

Any area that contains remnant native vegetation is subject to the regulations of the Native Vegetation Act 1991. Landholders also have to fulfil obligations under the following government acts and legislation;

- Environment Protection and Biodiversity Conservation Act 1999
- Environment Protection and Biodiversity Conservation Act Regulations 2000
- Native Vegetation Act 1999
- National Parks and Wildlife Act 1972
- Landscape South Australia Act 2019
- The Native Vegetation Act 1999.

The Native Vegetation Act 1999 should have very little effect upon the activities of the Williamstown, Lyndoch Landcare Group Inc. Any woodcutting, fires, buildings, track construction, fencing, improvements, etc must comply with the Act and are subject to approval by the Native Vegetation Council and conditions imposed by the Heritage Agreement.



Map 1: Location of Altona CSR Landcare Reserve

2.3 Heritage Listing

The Altona CSR Landcare Reserve was nominated for heritage listing in 2005. This listing includes a number of conditions which apply directly to the management and preservation of the native flora and fauna within the reserve.

The heritage listing is seen as a means of protecting the reserve for future generations solely for the purpose of conservation.

Our Heritage Agreement Number is 1345.

2.4 Infrastructure & Access

Infrastructure consists of hard packed walking tracks that are maintained by the landcare group on an as needs basis with significant regrading or maintenance being undertaken by The Barossa Council in consultation with the landcare group.

At selected points along the walking tracks bench seats have been placed giving visitors panoramic views of the reserve. Signposts are located within the reserve to warn of dangerous cliffs, point out places of interest and direct visitors to exits.

Vehicle traffic within the reserve is restricted to the following for maintenance related activities only - Council staff, Country Fire Service (CFS) and the landcare group members or contractors.

A large container with a veranda is utilised by the landcare group to store equipment and to hold informal meetings and information sessions for visiting groups. Bench seats are located under the veranda for visitors and volunteers.

The reserve is accessed from Altona Road through a locked gate. Visitors enter on foot through a bicycle proof access point adjacent to the main signboard, which contains information relating to the reserve. Persons with a disability may gain access via the main gate with prior arrangement with the landcare group.

Altona is within The Barossa Council area, and the surrounding land is primarily used for farming and viticultural activities. The reserve is classified as RECREATION in the Council's current Development Plan.

2.5 Climate

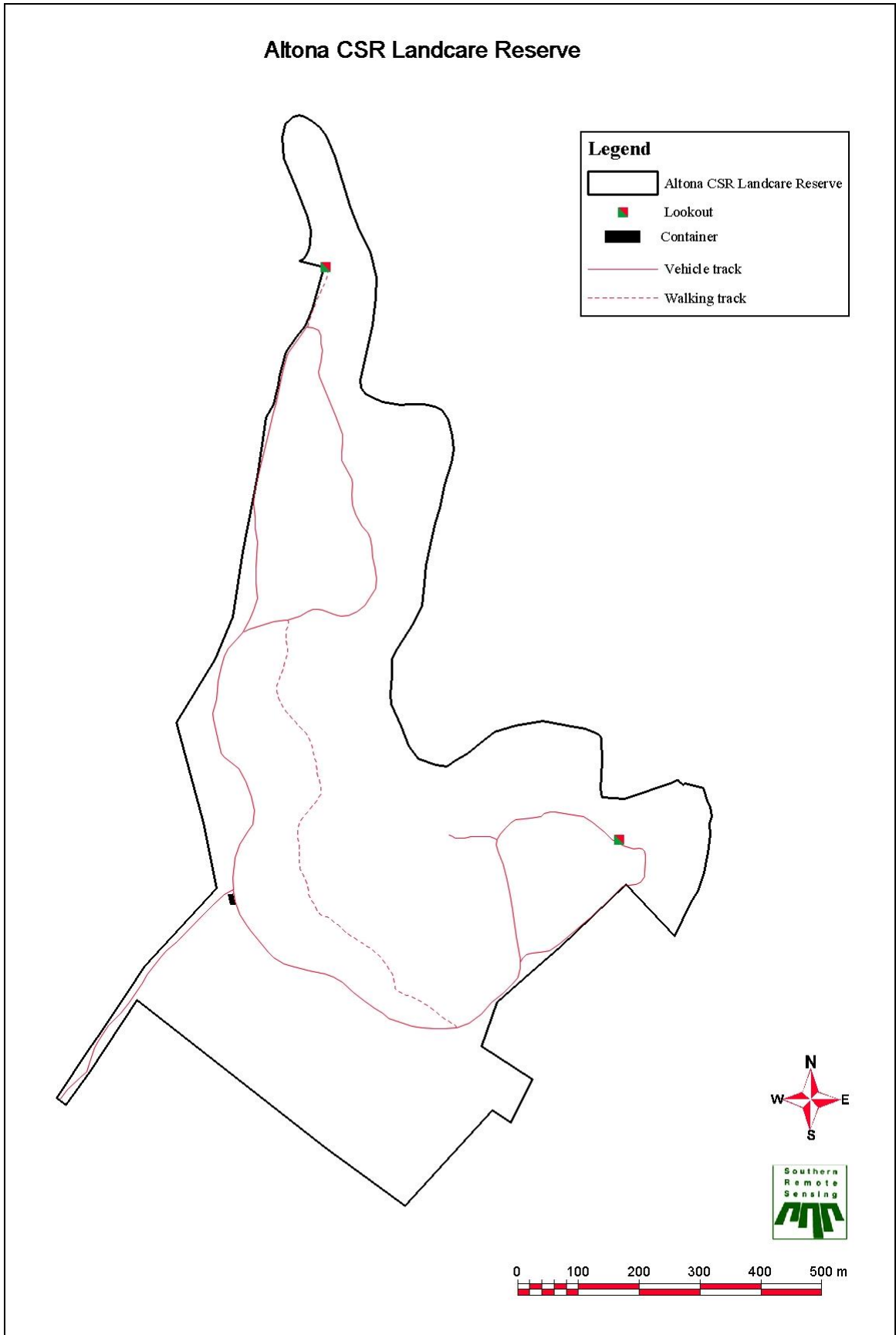
Altona CSR Landcare Reserve is situated in the Northern Lofty Biological Region and is situated at the southern boundary of the Northern Agricultural Districts Region.

The reserve is characterised by mild to cool and wet winters, with hot dry summers.

Summer storms can occur with heavy rainfall in very short periods. Rainfall averages approximately 600 mm per annum, with the bulk falling between April and October.

The rainfall pattern at Altona is not directly comparable to the hill country to the south, having fewer wet days but correspondingly heavier falls. Mean annual temperature is 20.5° C.

Altona CSR Landcare Reserve



Map 2: Infrastructure and Access

2.6 Topography

The area between Gawler and Rowland Flat is a well-known source of construction sand for the Adelaide Metropolitan Region (Gawler River Sand). Altona PM27 was chosen as a site for sand extraction with five main sites being operated until the mid-1980's (Keane,1996).

Altona slopes from an elevated ridge 230 metres above sea level to 200 metres above sea level in the North Para River Valley.

The soil in Altona is generally coarse textured sand, with a marked contrast between surface and sub surface soil.

At the surface approximately 35 mm of light brownish-grey loose sand grades into about 60 cm of loose white sand; below this are variable river deposits (Wells,1976).

The sand occurs in pockets on an irregular surface of weathered Precambrian shale. In some places it has become cemented by ferruginous material to form hard brown rocky masses, some of which are preserved as resistant capping on hills (Selby,1984).

2.7 Natural Resources

The wide range of landforms and soil types within the reserve is reflected in the diversity of vegetation communities present. The understorey species composition for each community can vary throughout the reserve depending on soil type, topography, past mining; revegetation and woody weed control programs.

This variety in vegetation associations can be broadly divided into three main habitat types:

- Open Woodland with dominant native grass species understorey
- Woodland with a dominant heath species understorey
- Riparian associations influenced by the North Para River watercourse.

The Open Woodland with dominant native grass understorey associations includes both native grasslands and mixed native/exotic grasslands. They are distinguished by the scattered occurrence of medium and tall shrubs, and the dominance of native grasses, sedges, lilies and/or other low-growing ground cover species.

These Open Woodlands are a major feature of the native vegetation of the district. The overstorey includes *Eucalyptus camaldulensis* var. *camaldulensis* (Red Gum), *E. leucoxylon* ssp. *leucoxylon* and *E. leucoxylon* ssp. *pruinosa* (Blue Gums), *E. odorata* (Peppermint Box) and *Allocasuarina verticillata* (Drooping Sheoak). In general, these habitats occur on the more fertile soils.

The Woodland with a dominant heath understorey is primarily determined by the presence of sandy-textured soils, most of which were extensively exploited by mining. These sandy soils are generally of low fertility with little moisture holding capacity.

Many of the common understorey stratum plants surviving in this harsh environment are low growing sclerophyllous ericoid (elongated sharp pointed) small thick-leaved shrubs with extensive root systems.

The most common overstorey species are *Callitris preissii* (Southern Cypress Pine) and *Eucalyptus fasciculosa* (Pink Gum), with smaller areas of *E. leucoxylon* ssp. *pruinosa* (Inland Blue Gum) and *Banksia marginata* (Silver Banksia).

The Riparian associations include the *Eucalyptus camaldulensis* var. *camaldulensis* (Red Gum) areas, which are found along the North Para River channel (reserve boundary) and adjacent banks and lower slopes still under the influence of the river system.

Scattered tall shrubs include *Acacia retinodes* (Wirilda), *Acacia pycnantha* (Golden Wattle) and *Dodonaea viscosa* (Sticky Hop-bush). Some of the more common and widespread native understorey plants are reeds and rushes including *Cyperus vaginatus* (Stiff Flat sedge) and *Juncus kraussii* (Sea Rush) while the river channel is dominated by *Typha domingensis* (Narrow-leaf Bulrush) and *Phragmites australis* (Common Reed). (Croft, SJ and Prescott, AM 2006).

There are at least seven vegetation associations identified within the three habitat types found in the reserve. The vegetation condition of these associations range from Category 1-2 condition (little or no exotic plant invasion - resembling probable pre-European condition) to Category 4-5 (little or no remnant native understorey – highly modified).

Further details are contained in Section 3.1.

3 FLORA

3.1 Vegetation Associations

Altona has seven major vegetation associations (Refer Map 3). These vegetation associations are:

- ***Eucalyptus fasciculosa* +/- *E. leucoxylon* ssp. *leucoxylon* +/- *Callitris gracilis* Woodland** (Vulnerable) is the most common association in the reserve with a complex and varied understorey with excellent orchid diversity. *Eucalyptus fasciculosa* (Pink Gum) is rated as Rare in the Northern Lofty Region. Sub dominant overstorey species include *Eucalyptus odorata*, *Allocasuarina verticillata* and *Banksia marginata*. This association is considered vulnerable due to the widespread poor health of *E. fasciculosa* in the surrounding districts. The best example of this association within the reserve is along the entrance track between the gate and the container. *Callitris gracilis* was utilised by early settlers in the district as furniture and building material. The reserve has some old and very large specimens remaining which are hard to find elsewhere in the Barossa Valley. This association also provides habitat for *Melithreptus gularis* (Black chinned Honey-eater, Conservation Rating - Vulnerable SA, Critically Endangered Northern Lofty Ranges).
- ***Eucalyptus leucoxylon* ssp. *leucoxylon* +/- *Callitris gracilis* Woodland** occurs on the heavier sandy loam soils.
- ***Eucalyptus odorata* / *E. fasciculosa* / *E. leucoxylon* ssp. *pruinosa* Low Open Woodland** occurs on loamy soils of low hills. Understorey species include *Dianella longifolia*, *Cheilanthes sieberii*, *Acacia acinacea*, *A. calamifolia*, *A. cupularis* and *Pultenaea largiflorens*.
- ***E. fasciculosa* / *E. leucoxylon* ssp. *pruinosa* Low Open Woodland** occurs on the western boundary where the soils preclude the presence of native pines.
- ***Eucalyptus camaldulensis* var. *camaldulensis* / *E. leucoxylon* ssp. *leucoxylon* Open Woodland** is found along the North Para River, the drainage lines, and low-lying areas. This riparian vegetation is the most degraded association within the reserve. Understorey species include *Acacia retinodes* "Hills Form", *Callistemon sieberii*, *Cullen australasicum*, *Ajuga australis* Form A, *Samolus repens*, *Callitris gracilis*, *Acacia pycnantha* and *Allocasuarina verticillata*.
- ***Banksia marginata* Open Shrubland** was located in deep pockets of river sand where most of the sand extraction occurred. This association is considered by Davies (1982) and Neagle (1992) to be threatened in South Australia. Only very small remnants occur on the edges of their original distribution where the soils contain slightly more loam or sand (not as deep) and therefore not suitable for extraction. Large populations of *Lomandra juncea* (Conservation Rating - Uncommon Northern Lofty) and a single *Cryptandra leucopactra* (Conservation Rating - Rare Northern Lofty) specimen are found in this association.

There has been some signs of *Banksia marginata* dieback and evidence of damage from kangaroo grazing, this should be monitored in the following years.



- ***Eremophila longifolia* Open Shrubland** is found at the start of the Peninsula on the right side of the track on the slopes above the North Para River. This species is rated as Vulnerable within the region and the association is showing signs of senescence and this association/species could be considered for regeneration work in the future.

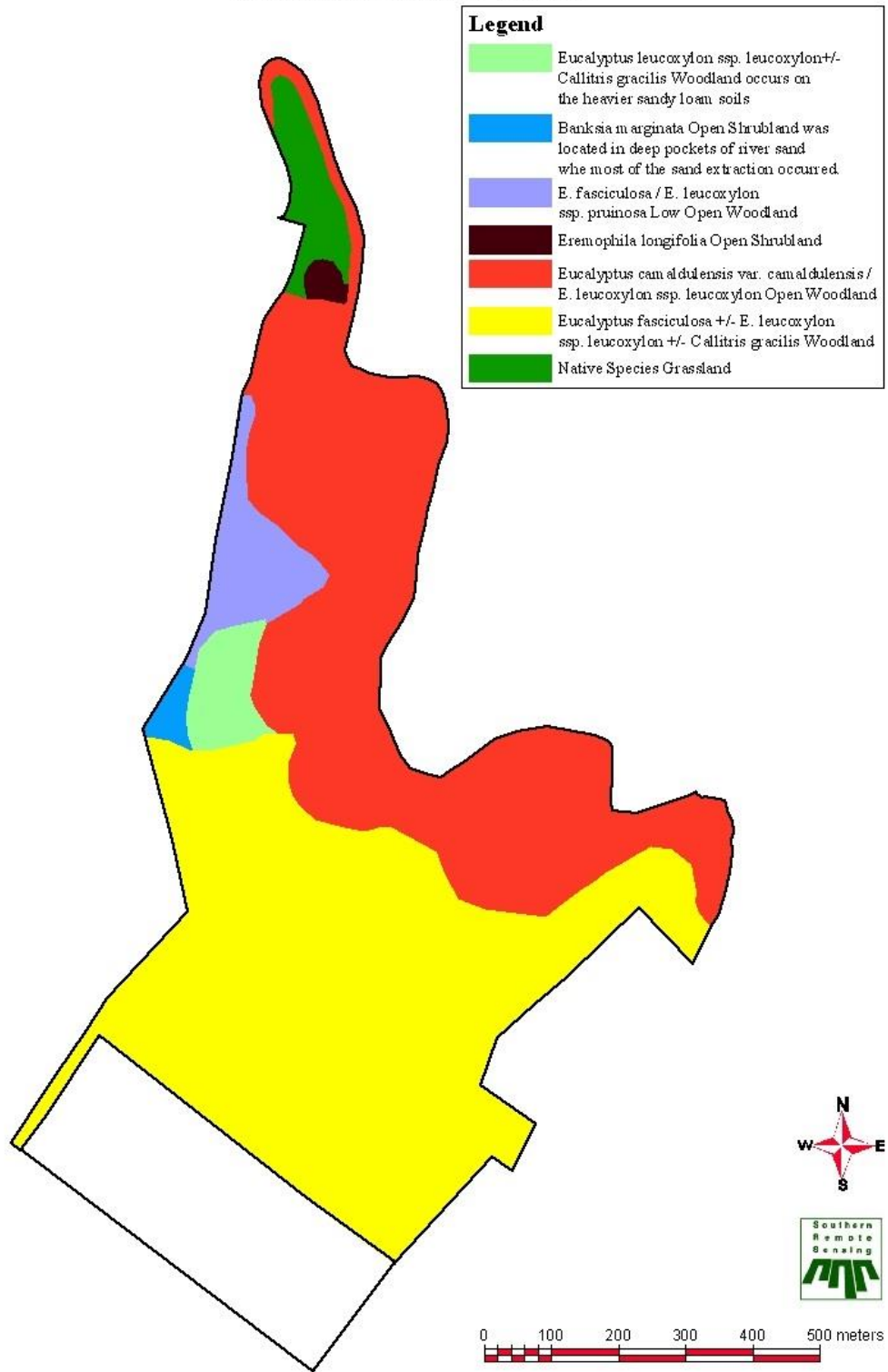
The known population in the reserve is suffering from severe ill health and dieback. The cause is unknown but may be possible insect attack. At the current rate of dieback it could be expected to lose this population. (Pearce, 2021)



Eremophila longifolia (Weeping Emubush)

- ***Themeda triandra* / *Austrostipa* sp. Tussock Grassland** is found on the Peninsula and is most likely the result of past clearing and grazing activities. This association is an important seed resource for understory restoration within the degraded areas of the reserve. The greatest threat to this association will be the invasion/regeneration by tree species notably *Callitris gracilis* which will eventually overshadow the grass species leading to their reduced dominance.

Altona CSR Landcare Reserve



Map 3: Distribution of Vegetation Associations within Altona CSR Landcare Reserve

3.2 Plant Species of Conservation Significance in Altona CSR Landcare Reserve

The Altona CSR Landcare Reserve has a population of conservation rated native plant species of which two native species have a National Rating, eight species with a State Conservation Rating.

Australia's threatened species are listed under the EPBC Act, whereas South Australia's threatened plants and animals are listed under the threatened species schedules of the *National Parks and Wildlife Act 1972* (NPW Act).

Appendix B provides the full list of conservation rated plants based on the EPBC Act, the NPW Act and the IUCN Red List Categories and Criteria for Adelaide and Mount Lofty Ranges. (Flora Conservation Assessments 2014).

It should be recognised that these status ratings are continually changing and the stated codes were current as the dates of the references, and may be different at the time of reading this plan. For current conservation status refer to the relevant government websites:

- [EPBC Act List of Threatened Flora](#)
- [Government of South Australia Department of Environment and Water](#)

Regional Status Codes	
EPBC Act (National Rating)	
EX	Extinct
CE	Critically Endangered
E	Endangered
V	Vulnerable
NPW Act (State Rating)	
X	Extinct
E	Endangered
V	Vulnerable
R	Rare
Adelaide and Mount Lofty Ranges (Regional Rating) ¹	
RE	Regionally Extinct
CR	Critically Endangered
EN	Endangered
VU	Vulnerable
RA	Rare
NT	Near Threatened
LC	Least Concern
DD	Data Deficient
Northern Lofty (Regional Rating)	
X	Presumed extinct

E	Endangered
V	Vulnerable
NT	Near Threatened
R	Rare
LC	Least Concern; less common species but not rare

Note 1. Based on IUCN Red List Categories and Criteria.

3.2.1 Nationally Rated Plant Species of Conservation Significance

3.2.1.1 *Prasophyllum pruinosum* (Plum Leek Orchid)

EPBC Act Listing Status – Endangered (Date effective 19-Aug-2010).

Listed as Endangered (National Parks and Wildlife Act 1972 (South Australia): January 2020 list).

For further information refer to the [Australian Government Dept. of Climate Change, Energy, the Environment and Water Species Profile and Threats Database – Plum Leek-orchid](#).



Photograph courtesy of the Adelaide and Mount Lofty Ranges South Australia Department of Environment and Heritage Threaten Species Profile published 2008.

Described as a Leek-orchid, slender, rigid, to 40 cm tall. Flowers numerous, in a narrow crowded spike, in tones of yellow-green, brown, purple-plum and white. Flowers have light minty or musty-sweet odour. Leaf red at base.

Link to [Fact sheet](#).

3.2.1.2 *Prasophyllum pallidum* (Pale Leek Orchid)

EPBC Act Listing Status – Vulnerable (Date effective 16-Jul-2000).

Listed as Rare (National Parks and Wildlife Act 1972 (South Australia): Rare species: January 2020 list).

For further information refer to the [Australian Government Dept. of Climate Change, Energy, the Environment and Water Species Profile and Threats Database – Pale Leek-orchid](#).



Photograph courtesy of the Adelaide and Mount Lofty Ranges South Australia Department of Environment and Heritage Threaten Species Profile published 2008.

Described as a slender plant, to 30 cm tall. Leaf long and lax, base green. Flowers many, to 7 mm across, wholly pale green, in loose spikes, standing well out from the spike. Flowers are sweetly fragrant.

Link to [Fact sheet](#).

3.2.2 State Rated Plant Species of Conservation Significance

In addition to the two plants having a national rating, the following plant species are listed as Rare (National Parks and Wildlife Act 1972 (South Australia): Rare species: January 2020 list).

- *Ptilotus erubescens* – Hairy-tails
- *Centrolepis cephaliformis* ssp. *cephaliformis* - Cushion Centrolepis
- *Austrostipa gibbosa* - Swollen Spear-grass
- *Dianella longifolia* var. *grandis* - Pale Flax-lily
- *Eucalyptus fasciculosa* - Pink Gum
- *Prasophyllum australe* - Austral Leek-orchid



Dianella longifolia var *grandis* flower stems and close up of flower within the reserve (Pearce)



3.2.3 *Pultenaea densiflora* (Dense Pea-bush)

Currently listed as Regionally Vulnerable. Notes from Regional Species Conservation Assessments, February 2014 for Adelaide and Mount Lofty Ranges region. *Pultenaea*

densiflora (Dense Pea-bush) “1 record from Rowland Flat. Only known pop. Checked by P Lang”.

Two plants were present along the Sand Track in October 2016, Jerry Smith and Amanda Pearce visited. These plants have since died back. No young plants have been observed. Possibly now extinct in the area. *Pultenaea densiflora* is listed on the 2017 Altona Species List as being present, although they have not been located in the reserve recently. (Pearce).



Photograph taken along the Sand Track adjacent to the reserve (Pearce, 2021).

Photo: Amanda Pearce

3.3 Vegetation Associations of Conservation Significance

The Altona CSR Landcare Reserve contains three vegetation associations of state conservation significance as well as one which is not rated as having conservation significance but should be considered as important within the reserve.

Association: *Eucalyptus fasciculosa* +/- *E. leucoxylon* Woodland with heath understorey.

Conservation Significance: VULNERABLE

Although widespread in the higher rainfall regions of the State, this vegetation association is found mainly on the sandy loams of flats and slopes within the landcare reserve. The Vulnerable rating is due to the widespread poor health of the Pink Gums in South Australia.

Association: *Eucalyptus odorata* +/- *E. leucoxylon* ssp. *pruinosa* Low Open Woodland.

Conservation Significance: ENDANGERED

Eucalyptus odorata is largely confined to SA and this association was previously extensive throughout the Mid North from The Barossa to the Southern Flinders Ranges. It has been extensively cleared, and remaining examples are highly modified by grazing, with little regeneration occurring. This vegetation association is found mainly on the loam soils of hill slopes within the landcare reserve.

Association: *Banksia marginata* Low Open Woodland.

Conservation
Significance ENDANGERED

This vegetation association is found mainly on the sandy loam plains within the higher sections of the landcare reserve.

Association: *Eremophila longifolia* Tall Open Shrubland

Conservation
Significance Not Rated

This vegetation association is not listed with a conservation significance rating but it does have a degree of importance and is found at the top of the peninsula.

The species has a Vulnerable Conservation Rating for the Region and its presence within the landcare reserve is possibly close to the extent of the plants' eastern distribution in the Northern Lofty Region.

Reported as being extremely stressed in 2022 (Pearce,2022) with no known cause for the stress. There is some speculation that this could possibly be a climatic or insect problem. A similar occurrence has been recorded in Gawler East Rail Reserve and the Gawler Belt Rail Reserve which was initially thought to be an off target chemical spray drift issue.

3.4 Introduced Plants

A majority of the introduced plants in Altona have all the characteristics to indicate potential for weed invasion in native ecosystems. The characteristics are as follows:

- High output of propagules (seedlings)
- Short time to reproductive maturity (<2 years)
- Seeds with a long dormancy time (>5 years)
- High rate of biomass production, particularly under conditions of low light, water or nutrient availability
- Dense and spreading foliage canopy
- Presence of specialised vegetative food storage organs (e.g., bulbs)
- Successful coloniser of disturbed or bare ground
- Reproductive strategies that allow survival in fire prone environments
- Broad distribution over a range of climate types
- Low susceptibility to attack by other organisms
- Efficient, long distance (1 km) dispersal techniques.

Major weed species that currently have a management program for removal include:

- **Opuntia* sp. (Cactus)
- **Chrysanthemoides monilifera* (boneseed)
- **Scabiosa atropurpurea* (scabious)
- **Myrsiphyllum asparagoides* (bridal creeper)
- **Echium plantagineum* (Salvation Jane)
- **Fraxinus rotundifolia* (desert ash)
- **Olea europaea* ssp. *europaea* (olive)
- **Cynara carunculosa* (artichoke)
- **Watsonia* sp. (watsonia)

Refer to Appendix C and D for complete weed species list and weed control methods.

4 FAUNA

4.1 Native Mammals

A number of surveys and opportunistic sightings by landcare group members, visitors and contractors confirm that there are individuals/healthy populations of native mammals present within the park. These include the following:

- **Western Grey kangaroo** (*Macropus fuliginosus melanops*) and the Common Wallaroo also known as **Euro** (*Macropus robustus*) (Pitman 1997, Pearce).

There have been reports of extensive grazing pressure on regenerating native seedlings which needs assessment and possibly a kangaroo population count and discussion on control. (Pearce 2022).



Dodonaea viscosa grazed very close to death (Pearce July 2021)



Heavy kangaroo traffic in Grundy block (Pearce July 2021)

- **Echidna** (*Trachyglossus aculeatus*) diggings are widespread throughout the reserve. Olive control contractors have confirmed visual sightings within the reserve as have visitors and landcare volunteers (Clark, 2005, Van den Ierssel 2022).



Recent sighting of an Echidna drinking from the pond built adjacent to the landcare container (Van den Ierssel, 2022)

- **Water rats** (*Hydromys chrysogaster*) are frequently seen in the permanent pools of the North Para River (Pitman, 1997, Clark, 2005).
- **Common ringtail** (*Pseudocheirus peregrinus*) and **common brushtail possums** (*Trichosurus vulpecula*) are permanent residents. The common brushtail possum has a state conservation rating of rare.
- **Koala** (*Phascolarctos cinereus*) are occasional visitors to the reserve and surrounding Altona Woodlands (Clark, Weiss, 2011, Martin, 2022)



Recent photo of a koala sighted within the reserve. (Martin 2022)

- Seven species of **bats** were recorded in the Wetlands and Amphitheatre area in February 2005. Further studies are required to obtain a better understanding of the number of species in the reserve. (Refer to Appendix F for list of bats recorded).

4.2 Birds

A total of one hundred and forty species of native birds have been recorded at the reserve over the last 30 years and fifty-one species have a conservation status for the State and/or Region (Refer to Appendix G for list of birds recorded).

Species are being added continually and usually consist of species observed by landcare group members, visitors including birdwatching groups and enthusiasts and weed control contractors. Any variation in the species recorded can be influenced by the time of year (seasonal variation), weather conditions (drought etc) and food availability.

The various woodland associations in the reserve occur within the transition zone between the wetter uplands and the drier northern and eastern regions which provide habitat and breeding areas for a large diversity of bird species (Pitman, 1997).



Eastern Spinebill (*Acanthorhynchus tenuirostris*) feeding on Flame Health (*Astroloma conostephioides*) (Woods, 2018)



Southern BooBook photographed by Jack Lange

4.3 Reptiles and Amphibians

In 1996 Brown and Sunstrom undertook a reptile and amphibian survey in Altona Woodland, and 17 species were identified. The report suggests further studies are needed to obtain a better understanding of the number of species in the reserve.

Therefore, a new survey undertaken during appropriate seasonal conditions should be commissioned by the Williamstown, Lyndoch Landcare Group Inc.

Recent sightings of the following have been recorded by visiting members of the public, volunteers, contractors and visiting groups. The Altona CSR Landcare Reserve Facebook page (Facebook) dates listed are when photographs have been most posted:

- Shingleback Skink (or Stump tailed skink) (*Tiliqua rugosa*)
- Eastern Bluetongue (*Tiliqua scincoides*)
- Gould's Sand Goanna (or Monitor) (*Varanus gouldii*)
- Thick-tailed (or Barking) gecko (*Underwoodisaurus milii*)
- Bango Frog (*Limnodynastes dumerilii*)
- Marbled Gecko (*Christinus marmoratus*)
- Three toed Earless Skink (*Hemiergis decresiensis*)
- Bougainville's Skink (*Lerista bougainvilli*)
- Eastern Striped Skink (*Ctenotus robustus*)
- Little Whip Snake (*Suta flagellum*)
- Eastern Brown Snake (*Pseudonaja textilis*)



Left – Shingleback Skink (*Tiliqua rugosa*)

Below – Gould's Sand Goanna (*Varanus gouldii*) (Raines)



4.4 Other Native animals

There are many other native fauna not mentioned in this plan that live in the reserve, however no formal surveys have yet been undertaken. Opportunistic sightings are often captured by landcare group members, visitors and contractors and this will be continually encouraged, with any photographs being uploaded to the [Altona CSR Landcare Facebook](#) page.



Photo of male Mouse spider (*Missulena* Sp) (Woods, July 2022)

4.5 Introduced Species

A number of introduced species have been identified in the reserve including birds, house mice, feral cats, foxes, rats, rabbits, hares, Fallow Deer, European wasp and feral bees.

The locations of a number of active fox dens have been reported which need to be monitored and a program of control be adopted. (Pearce 2022). The monitoring of introduced species is a regular part of volunteering monitoring activity. Contractors have been engaged to deal with pest management

Livestock from adjoining properties have been known to enter the reserve in the past particularly from the north western boundary (Peninsula area) and Grundy Block boundary. Dogs occasionally roam the reserve from neighbouring properties.

5 CULTURAL HERITAGE

5.1 Indigenous Heritage

The whole of the Barossa Valley is known to have been highly significant to the Peramangk nation. The Altona CSR Landcare Reserve possibly contains sites of significance for Peramangk people, however as yet there has been no comprehensive survey undertaken of the reserve. It is likely that some sites of significance were destroyed during the period of past mining operations.

5.2 European Heritage

The reserve is an area of both natural and cultural historical interest. The historical interest particularly European is easily recognisable and has been preserved for various reasons e.g. some of the sand pits have not been rehabilitated due to the costs of the work which included the need to import equipment, labour, materials and the prohibitive removal costs). An opportunity has been provided to show the resilient capabilities of native vegetation to regenerate without intervention.

6 MANAGEMENT FRAMEWORK

The Williamstown, Lyndoch Landcare Group Inc. is responsible for the management of the whole reserve area.

6.1 Management Context

The Barossa Council is the registered proprietor of Altona CSR Landcare Reserve and the Williamstown, Lyndoch Landcare Group Inc. maintains and manages the reserve as per conditions set out in the Management Agreement signed by both parties.

6.2 Current Management Regime

The management philosophy is to restore and then maintain the reserve to, as close as is possible pre-European condition. The majority of the restoration work has been managed and undertaken by a group of willing and dedicated volunteers some of whom have been members of the Williamstown, Lyndoch Landcare Group Inc since its inception.

Members have acknowledged that a structured method of weed control is required to satisfy long-term flora conservation within the reserve. This has been achieved by removing introduced plant species that have the highest densities and practicing minimum disturbance methods and for the past 27 years contractors have been employed to control weed infestations of olives, boneseed, ash trees, Monodenia, lupins, prickly pear and artichokes.

Funding for this weed control work has been sourced from The Barossa Council and from other grants through a number of organisations which require the landcare group to contribute with in-kind contributions of labour and report writing. In-kind work undertaken by the landcare group includes the burning of large amounts of olive waste, follow up weeding programs in areas of heavy infestation and the establishment of monitoring sites.

The success of these work programs is such that olives and boneseed have been replaced by other smaller weed species as the major woody weed species within the reserve. Total removal of woody weeds and waste products (drilled and filled olives etc) has shown that natural regeneration by native species soon follows and the landcare group has decided to focus all energies on weed control and to allow natural regeneration to take its course.

The landcare group has undertaken revegetation projects to the highest ecological standards with species best suited for the specific soil types, drainage patterns and the general physical landforms found in the reserve. This revegetation work has however since 2004 been largely discontinued as observation has shown that weed control is the best tool for vegetation regeneration.

6.3 Management Zones

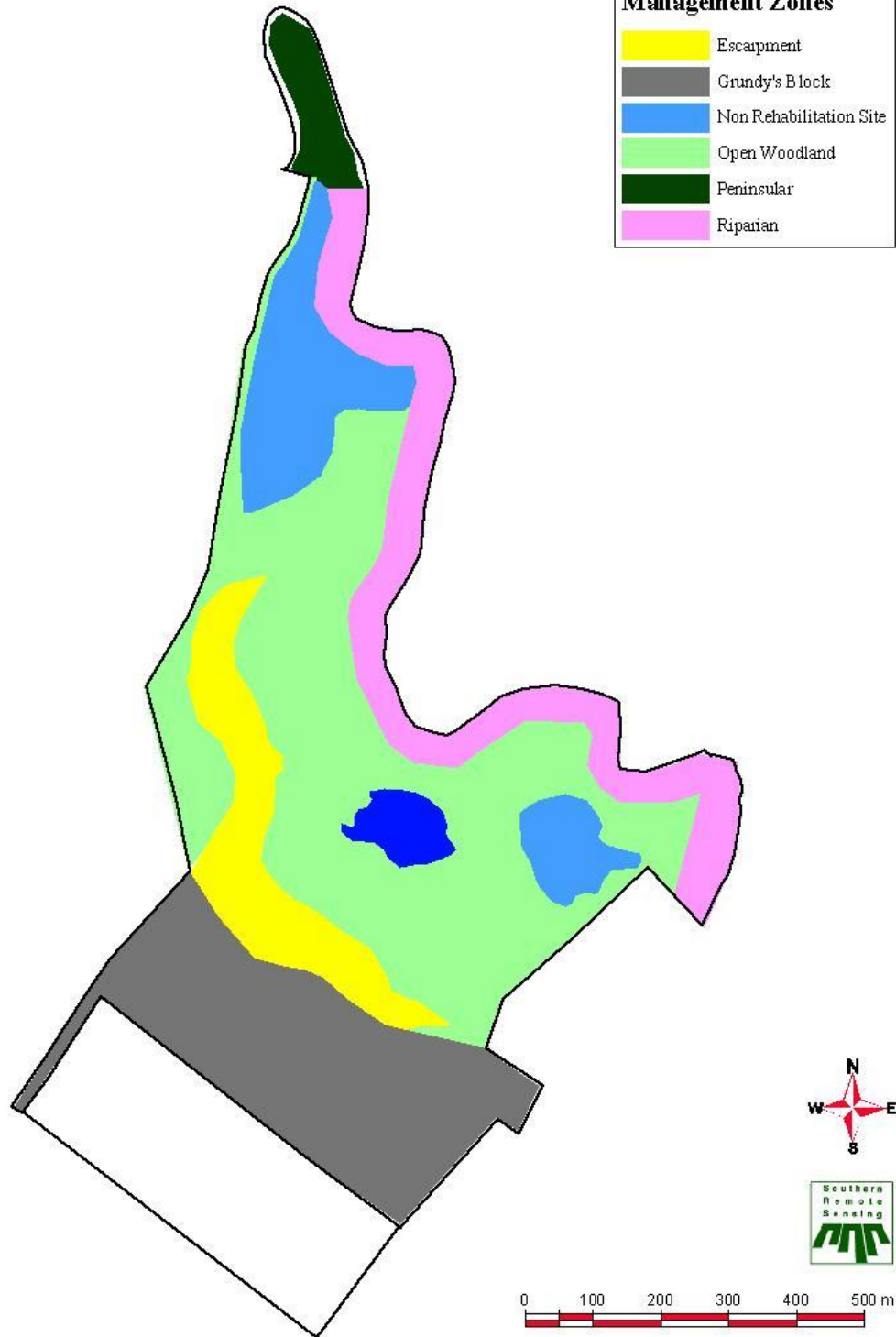
There are essentially seven management zones for operational purposes (Refer to Map 5 – Management Zones for Zone locations). These are:

- **Grundy's Block.** This section of the reserve is closed to general access and used purely for conservation and biological research purposes.
- **Peninsula.** This section of the reserve contains areas of native grasslands that need to be maintained in their present condition and ideally expanded. This area forms an important native grass seed resource for revegetation projects within the Altona Reserve and adjoining properties.
- **Non-Rehabilitated Mining Sites.** These sand extraction sites have not been re profiled. These sites have steep unstable sides with various coloured sands. Native vegetation is regenerating on the old benches, steep slopes and in the basins. The second site in the south eastern end of the reserve has a number of weed management issues relating to boneseed, olive, pine and *Monodenia* control. The steep sides have been fenced with warning signs erected - public access is not allowed to these areas.
- **Wetlands.** This is a human made wetland within an old extraction site that has been re profiled. It is filled by runoff from the surrounding area and is visited by aquatic birds for most of the year (when water is present). Revegetation has been successfully undertaken on this site using seedlings and direct seeding methods (clay balls). A number of methods have also been trialled to control the erosion on the re-profiled slopes.
- **Riparian Zone.** This includes the North Para River and the strip of land 50 metres from its bank. There is a high degree of disturbance in this area but there is a moderate amount of remnant native vegetation and regeneration by colonizing species is occurring over time. Funded olive control has been undertaken in this zone from 1999, which has assisted the regeneration of native species and reducing the elevated fire fuel loading on the northern and eastern boundaries. Since 2014 the influx of **Opuntia* sp. (Cactus) from upstream locations after the annual flood cycle was becoming a concern for the management group. Action has been taken upstream with the introduction of the *Cactoblastis cactorum* moth to control this pest plant species which it is hoped will control this infestation.
- **Escarpment.** This area contains the good populations of pink gum and native pine overstorey and heath understorey. Located between the south and south west boundaries and the central walking track and extends towards the eastern boundary. Due to the steep sides of the escarpment, there is no visitor access allowed. Olive and boneseed control programs have been undertaken in this area since 2009 and follow-up maintenance will be needed to control seedling growth.
- **Open Woodlands.** This area contains populations of mature *Eucalyptus camaldulensis* and *E. leucoxyton* and in the main has been subject to intense grazing pressure and/or mining in the past which has depleted the native understorey. However, there are sections within this management zone which are now undergoing regenerating with native species - primarily invasive colonising native plants such as *Acacia pycnantha*, *Acacia paradoxa*, *Dodonaea viscosa* and a number of native grasses and herbs. This regeneration has benefited by the removal of dense populations of boneseed and olives and this area will need ongoing follow up maintenance.

Altona CSR Landcare Reserve

Legend
Management Zones

Yellow	Escarpment
Grey	Grundy's Block
Blue	Non Rehabilitation Site
Light Green	Open Woodland
Dark Green	Peninsular
Pink	Riparian



Map 4: Management Zones

6.4 Fire Management

Altona CSR Landcare Reserve is in a moderate fire risk area with few fires occurring in the general vicinity of the reserve over the last 30 years. The most recent fires have been over 5 years ago and occurred after lightning strikes during summer in the adjoining property on the western boundary. These fires were suppressed without causing damage to the reserve.

The location of the reserve in relation to fire management resources means that the reserve relies on the local CFS units to respond first to fires in or adjacent to the reserve. Accordingly, liaison with local CFS has been established and a fire control plan has been developed by CFS officers.

The landcare group believes that this fire control plan includes the maintenance of the main vehicle tracks to allow access by CFS vehicles to control minor spot fires and/or grass fires within the reserve or in adjoining properties and, in the event of wildfire CFS crews will not access the reserve but maintain control lines where safely feasible outside the reserve to protect adjoining properties and infrastructure.

SA Power regularly monitors for tree proximity to their overhead power lines and lops trees as necessary.

The reserve is closed to public access on days of extreme fire danger. On days when a Total Fire Ban is declared for the Mount Lofty Ranges District a nominated landcare group member shall close the entrance with a padlocked chain and erect a notice warning that the park is closed to the public.

6.5 Community Use and Context

Community use is passive recreation entailing nature and scenic walks on the official, made tracks that follow old mining roads. Seating has been installed at points of interest along the tracks, with a lookout above the North Para River (donated by Orlando Wines), and overlooking Chatterson's gorge.

The reserve is a popular destination for both locals and visitors to The Barossa Valley. Landcare members occasionally set up information booths at local markets to publicise the reserve and recruit volunteers. The adoption of social media specifically Facebook via the [Altona CSR Landcare](#) page has widely increased the distribution of general reserve information throughout The Barossa Valley and surrounds. The landcare group events including open days, working bees, combined events such as the Nature Festival 2022 birdwatching walk and the Woody Weed Workshop 2022 and general reserve updates are readily available to anyone with access to the Facebook page. Visitors engage with the Williamstown, Lyndoch Landcare Group Inc posting photos, provide feedback. and request information.

Altona CSR Reserve information pamphlets are distributed to information centres and caravan parks in both Gawler and The Barossa area and are also available to visitors at the container within the reserve.

The reserve tracks are signed to assist walkers and are listed on the walkingsa.org.au website. Access outside of the graded and walking tracks is discouraged primarily for two reasons safety with warning signs (and some fences) having been erected above steep slopes and cliffs to protect visitors and for protection of fauna and flora.

Organised visits occur periodically involving local walking groups, local schools, scout groups, birdwatching groups, native orchid clubs and other landcare and bush garden group members etc.

No dogs, bikes, fires, hunting, fishing, the collecting of vegetation specimens or camping are allowed within the reserve.

Right: Landcare members at the local Lyndoch Community Market.

Bottom: Landcare info stall at the Northern Foothills Landcare Group "Environment and Landcare Expo" evening



6.6 Impacts of Removal of Fallen Timber

Branches and trees from native species that fall on the ground are often thought to be insignificant or ideal to collect for firewood. However, fallen timber supplies vital habitat for reptiles, small mammals and insects, and niches for plants to grow. As the timber breaks down nutrients are added to the soil and become available for other plants and animals to use.

The only material to be removed or burnt is noxious or exotic weed species controlled during work programs.

6.7 Research Projects

Whilst research of native vegetation should be encouraged, incidental trampling of plants by large groups of people could have detrimental effects on the flora and fauna of the reserve. Students have conducted research projects within the reserve in the past and in many instances, responsibility for these projects has been forgotten after completion of the research.

This is of great concern to the landcare group as the students were invited to undertake the research in the reserve with the understanding that the resulting data was to be used by the landcare group to prioritise management programs.

Future research projects will need to directly aid the landcare group in their management of the reserve. When research projects are undertaken in the future all evidence of these projects must be removed upon their completion. It would be mandatory that all such projects would comply with animal ethics guidelines and National Parks and Wildlife regulations. Liaison between Williamstown, Lyndoch Landcare Group Inc and projects participants would need to be managed to ensure that results/outcomes from field studies are made available to the committee.

6.8 Flora and Fauna Surveys

A number of surveys have been undertaken within the Altona CSR Landcare Reserve in the past. The quality of the work has always been professional and the landcare group appreciates

the time and effort put into this work especially by volunteers and would welcome any interest from interested parties interested in field studies.

All future surveys should supply current species listings by Family / Genus / Species, Common Name/s with National, State and Regional Conservation Status to assist with conservation and management goals.

All past and future survey records should be uploaded to the Biological Database of South Australia (BDBSA).

Future survey projects need to meet specific requirements so that landcare group members are aware of the ongoing conservation status of species within the reserve.

6.9 Conservation Management Programs

Since the reserve was established a number of conservation management projects have been undertaken within the reserve. These programs have been funded by various government bodies and other groups using youth volunteers and paid contractors. Results of these programs have proved to be variable.

Any future conservation management projects need to directly aid the Landcare Group in their management of the reserve.

- All projects undertaken must meet stringent quality controls.
- Projects will need to comply with guidelines set out by the Williamstown, Lyndoch Landcare Group Inc. Management Committee
- Liaison between the Williamstown, Lyndoch Landcare Group Inc. Management Committee and project participants need to ensure that the results and outcomes from projects conducted in the Altona CSR Landcare Reserve are made available to the committee.

6.10 Boundary Responsibilities

All boundary fences are in good condition and should be checked on a periodical basis to ensure that the fences are intact and that any repairs are scheduled into the maintenance program.

- The eastern boundary runs adjacent to the Chatterton's Heritage Agreement (Section 582). The fence has been replaced to the start of DP 18106. Below DP 18106 the boundary fence is showing signs of age and should be replaced.
- Most of the western boundary was replaced in 1999.
- The North Para River defines the northern boundary. Property owners on the north side of the river have erected fences to stop stock entering the Altona CSR Landcare Reserve when the river level is low.
- The southern boundary has been re-fenced in May 2005.

6.11 Photo Point Management

Since 1999 photo points have been used by the landcare group to record changes to the reserve. These photo point records are important as they contain pictorial evidence of before and after changes to the landscape and the regeneration of native flora.

Initially there were six photo points established primarily to record changes to the sand extraction sites prior to rehabilitation. These photo points have been maintained by volunteers with photographs recorded four times (seasonally) each year.

Since 2000 a number of photo points have been used by olive control contractors to record the work performed for the landcare group. These photographs have been used in the reports provided to the various funding bodies to verify that the work has been performed. Two of

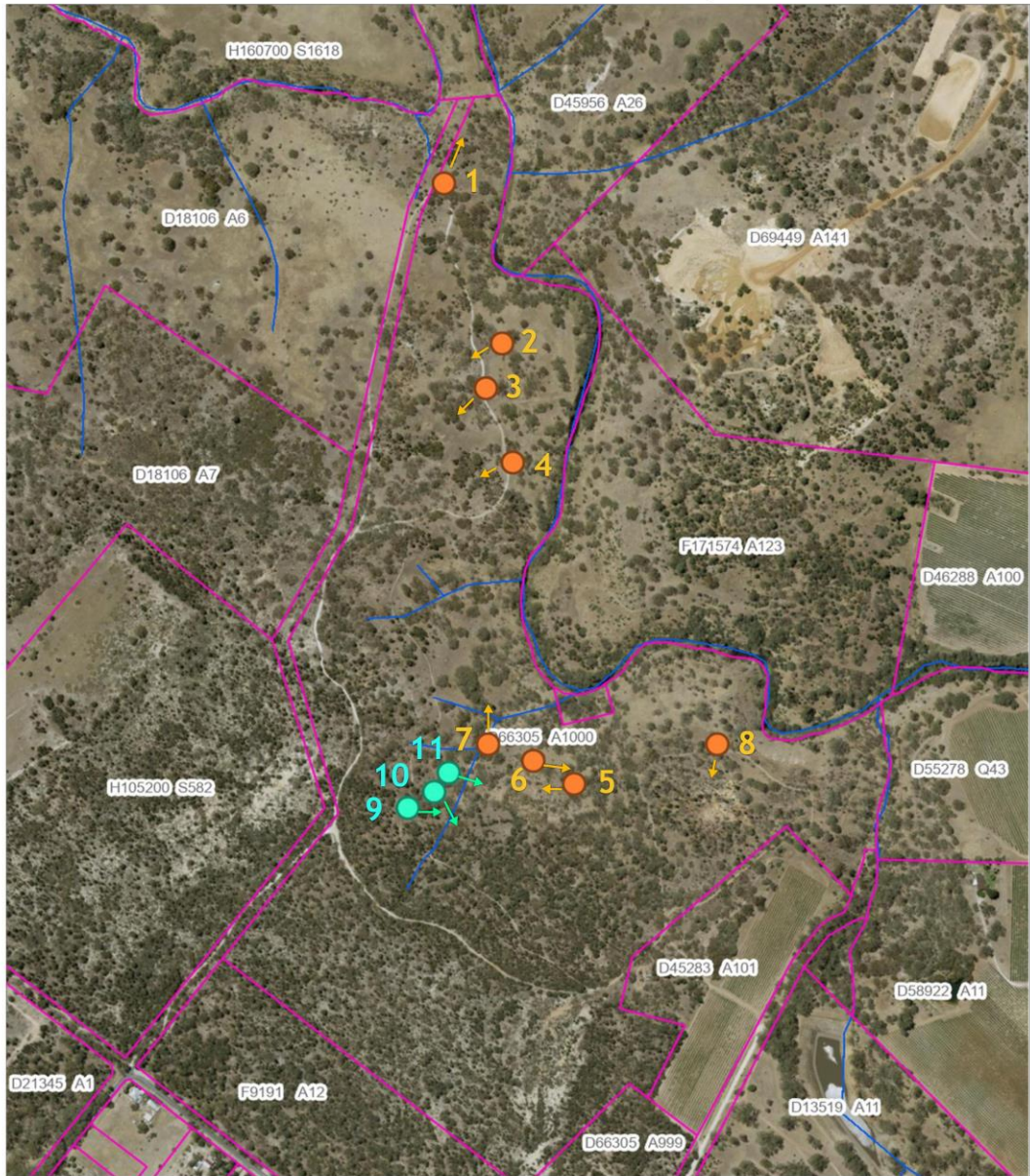
these photo points have been included in the seasonal program providing photographic evidence of change within the reserve can be documented, particularly in the riparian zone where the olive infestation was severe.

Three additional photo points were created in 2021 to monitor Bridal creeper control.

Refer Map 5 for location of photo points within the reserve.

Refer to Appendix M for further photo point information.

Altona CSR Landcare Reserve - Photo points 2021



Map data is compiled from a variety of sources and hence its accuracy is variable.

- Cadastral Bnd
- Water Courses

Compiled: 24-May-2021
 Generated at: <http://maps.ernv.sa.gov.au>
 Datum: Geocentric Datum of Australia, 1994
 Projection: Web Mercator (Auxiliary Sphere)

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0 369 Metres



Map 5: Photo Point Locations

The photographs below were taken in Spring from photo points providing a comparison between 2001 (top) and 2022 (bottom).

Photo point 3 (pre 2010) vs Current Photo point 2:



Photo point 5 (pre 2010) vs Current Photo point 4:



Photo point 9 (pre 2010) vs Current Photo point 6:



6.12 Access Track Maintenance

The access and walking tracks will need to be assessed on an annual basis to determine level of safety present, liability issues and need for repair and/or maintenance.

Minor repairs and clearance envelopes issues will be monitored and work will be undertaken by the landcare group while annual safety inspections and major repairs/upgrades will be undertaken by The Barossa Council.

7 MANAGEMENT STRATEGIES

7.1 Management Objectives

To implement short, medium and long-term strategies to conserve and enhance the natural values of Altona CSR Landcare Reserve and to sustain the passive recreational opportunities on behalf of the community.

The landcare group will endeavour to disseminate information gained by research studies and work programs to other landcare and community-based conservation groups and the general public through a program of educational tours, displays and publications.

7.2 Woody Weed Control

Continue with current weed control programmes including follow up work in all the areas where olive and boneseed controls have been undertaken. These programmes will need to continue for at least ten years to deplete seed stock already present in the soil. Monitoring programmes will also be required to control weed species invading from adjoining properties.

7.3 Revegetation

There are no current revegetation programmes in place and any new revegetation would need Minister approval as the reserve is under a heritage agreement. Any new revegetation strategies should be to:

- Encourage natural regeneration by undertaking/continue weed control programs and other strategies i.e., fire etc.
- Instigate studies into regeneration strategies for Conservation Rated Species (Refer to Appendix B for list of conservation rated species).
- Only undertake revegetation of Conservation Rated Species into sites that mimic their habitat.
- Instigate studies on regeneration of native and weed species. In particular whether weed control programmes have an effect on exotic species other than the target weed species (Refer Weed Management Recommendations Section 7.4 and Appendix D).

7.4 Weed Management Recommendations

Over the last 27 years weed species found within the reserve have been divided into management strategy categories, namely:

- Woody weeds.
- Perennial grasses and herbs.
- Annual grasses and herbs.

Work programs have focused mainly on the woody weeds but other programs especially targeting bridal creeper, artichoke, salvation jane and scabious have also been implemented. These programs include spraying, hand pull, slashing and the introduction of biological control agents. During these control programs a number of observations have been made by contractors and landcare group members, which raise a number of interesting points regarding control methods and cause / effects experienced from these control programs.

The landcare group would like to instigate studies on regeneration for a number of native and weed plant species. In particular questions have arisen regarding whether weed control programmes have an effect on exotic species other than the target weed species i.e.

- Does bridal creeper densities increase or decrease after olive control?
- Is there an increase in herbaceous species e.g., scabious, oxalis and salvation Jane etc after woody weed removal (Boneseed or olives)?

If there is a change in densities of these species there may be a need to implement appropriate control strategies to complement the other work programmes undertaken. For example:

- After completion of olive control work in a particular area if the bridal creeper infestation decreases because of increased sunlight, then it may be appropriate that biological controls be introduced, or spot spray used to further reduce its density.
- After completion of olive control work particularly at sites where olive cuttings have been burnt is there an increase in scabious, oxalis or salvation Jane. If so, is a control program targeting these weeds needed to reduce these new weed populations and spread?

7.5 Grants History previous 5 years

7.5.1 AMLR Community NRM Action Grant 2017-18

7.5.1.1 Project Name: Management of Altona CSR Landcare Reserve

Application Number: AMLRCA2017/18-1/0001 (#78554)

Project Start date: 2 December 2017 (as per application form)

Project End date: 1 December 2018

Activities covered by project"

- Weed control and mapping:
 - Reduce weed density and distribution – work undertaken by Environmental Weed Control & Revegetation
 - Joint working bees – held with Barossa Bush garden volunteers on the Grundy Block
- Increase reserve's publicity:
 - Hold Open Day – Held 16 October 2018 and was successful
 - Supply and install additional walking signs - installed
- Supply & install Phytophthora Boot cleaning station – included in grant budget but not installed

7.5.2 Revitalising Private Conservation in SA Small Grant Application

7.5.2.1 Project Name: Reducing threats in Altona CSR Landcare Reserve

Application Number: RCSA20-21SR1-0195

Issued from: The Barossa Council (Kim Thompson)

Submitted 29 September 2020

Project Start date: 2 October 2020 (as per application form)

Project End date: 30 September 2020

Activities covered by project"

- Weed control, mapping and/or identification - Undertake targeted and specialist control and follow up of boneseed, olive, opuntia, desert ash, bridal creeper, artichoke, watsonia, cape broom.
- Fox, rabbit or other feral animal control – Undertake timely and appropriate control of foxes and rabbits
- Mapping of native plants or native vegetation communities – GIS mapping of rated plants for addendum to Management Plan

Bridal Creeper Control - As mentioned above three additional photo points were created in 2021 to monitor Bridal creeper control.



Pre Bridal Creeper control July 2021



Post Bridal Creeper control June 2022

Follow up of Bridal Creeper will be undertaken in 2023.

GIS Mapping - GIS mapping of conservation rated plants has been undertaken. These maps will now be continually maintained. Since the grant application it has been determined that it would be inappropriate to append these maps to the management plan due to their sensitive nature. An alternative method of storage and access will be determined.

7.6 Mistletoe Management

Mistletoe is the name given to a number of local indigenous species of semi-parasitic, epiphytic plants, hosted by a range of native trees and shrubs. It is often erroneously regarded as a pest plant.

The native species of Mistletoe perform a vital link in complex eco-systems and all are important in providing habitat for native birds, insects and other fauna.

All indigenous Mistletoe species are protected under the Native Vegetation Act 1991.

In some disturbed areas the perceived infestation of mistletoe plants can appear to be out of balance with their hosts. The factors involved in these infestations appear to be linked with the extent of general vegetation clearance and the accompanying loss of wildlife. Research has shown that the optimum approach to this situation is to revegetate affected areas with a range of native plants species so as to help restore a better balance between mistletoe and host plants.

However, it is also accepted that the removal of mistletoe from badly affected trees and shrubs may help prolong the lives of those trees. This applies in particular to infestations of Box Mistletoe (*Amyema miquelii*).

The removal of Box Mistletoe is exempt under the Native Vegetation Act 1991 (Regulation 3(1) (s)) provided that there is strict compliance with its guidelines (Refer Appendix H).

All other native Mistletoe species under consideration for removal require clearance approvals from the Native Vegetation Council.

7.6.1 Mistletoe Management Project 2019 – Strategic Limited pruning

The Barossa Council supported an application to the Native Vegetation Branch, Department of Environment and Water for Strategic limited pruning of overabundant native species Box Mistletoe (*Amyema miquelii*).

The project plan was to select a small number of affected trees (5) for limited pruning and monitoring in the 2019 management season. The sites were identified by GPS coordinates, photos were to be taken before pruning and follow-up reviews and photos to be taken over the next two years. If improvement was noted and no significant reduction in other Mistletoe sites, or native birdlife, a plan may be submitted for further pruning as required.

In September 2019 the Native Vegetation Council provided endorsement of the pilot project until 30 September 2021 at which time a new endorsement would be required.

The project was commenced, trees were selected and the GPS co-ordinates noted, however no pruning was actually undertaken due to the risk of working at heights to the landcare volunteers.



One of the trees selected for the trial project.

Landcare volunteers continue to visually monitor the effects of mistletoe in the reserve.

7.7 Seed Collection

Seed collection within the reserve can only be undertaken by approved collectors. Collection approval must be sort from the Williamstown, Lyndoch Landcare Group Inc Management Committee (subject to Heritage Agreement provisions) and collection activities must follow the Seed Collection Guidelines set out in Appendix L.

8 OBJECTIVES AND STRATEGIES

The following are the next five year target objectives and strategies some of which flow through from earlier management plans or have been identified since the 2017 plan. It is intended that this next five year period will be used to strategise and prioritise the future focus of the Williamstown, Lyndoch Landcare Group Inc activities in relation to the reserve.

Objectives	Strategies
Flora	
The conservation of all plant species of conservation significance in Altona CSR Landcare Reserve.	<ul style="list-style-type: none"> • Maintain current level of monitoring and location mapping of plant species of conservation of significance • Seek assistance from experts on conservation methods if deemed necessary e.g. regeneration of <i>Eremophila longifolia</i> Open Shrubland, enclosure surrounds rare plants. • Seek additional funding for conservation methods if funds not available
The effective control and removal of all exotic (proclaimed and environmental) weeds from Altona CSR Landcare Reserve.	<ul style="list-style-type: none"> • Maintain current level of weed control programs, weed mapping and monitoring work. • Seek additional funding for proclaimed and environmental weed control work. • Seek assistance from experts on new control methods for proclaimed and environmental weed control work. • Establish trail plots to study the effectiveness of new control methods for proclaimed and environmental weed (grasses and herbs) control work as deemed necessary.
The effective control of any <i>Banksia marginata</i> dieback.	<ul style="list-style-type: none"> • Establish a regular monitoring program of <i>Banksia marginata</i> to determine if dieback is a problem in the reserve.
To manage the seed stocks within the landcare reserve so that no plant species will be affected by the over collection of seed in a season.	<ul style="list-style-type: none"> • Monitoring and control of amount (weight) of seed collected by issuing permits and record keeping. • Ensure that permit guidelines are adhered to. • Monitor the viability of seed collected and locations where seed has been used.
Fauna	
To maintain current populations of native fauna and to improve the quality of the habitat for native fauna so as to encourage the increase in populations of native fauna.	<ul style="list-style-type: none"> • Maintain current levels of weed control programs to enhance habitat suitable for native fauna. • Monitor populations of native fauna and seek professional advice on suitable population sizes for larger marsupials (western greys). • Undertake a program of surveys at intervals to update species lists, including bats, reptiles etc.
To maintain the current programs for monitoring and control of pest animals.	<ul style="list-style-type: none"> • Maintain current management strategies for controlling pest animals including mapping of dens and warrens. • Monitor populations of pest species and seek professional advice on suitable control methods. • Employing contractors to undertake pest management as required

Objectives	Strategies
Flora and Fauna	
To retain naturally fallen timber from native species in situ to provide habitat for ground dwelling native fauna and flora.	<ul style="list-style-type: none"> To educate landcare group members and other volunteer groups on the importance of retaining naturally fallen timber from native species in situ as habitat for native fauna.
All flora and fauna records to be uploaded to the Biological Database of South Australia (BDBSA) in order to be accessible to all who have access to this database	<ul style="list-style-type: none"> Upload all current flora and fauna listings into the Biological Database of South Australia Once uploaded maintain listings.
Cultural Heritage	
To encourage the recording of significant heritage sites within the reserve and to incorporate any site information in the Reserve Interpretative Program.	<ul style="list-style-type: none"> Consult Peramangk people who have a traditional association with the land, Native Title claimants and relevant Commonwealth and State agencies or heritage authorities in decisions regarding the management of indigenous cultural heritage. Before proceeding with any development works within the reserve obtain an assessment and clearance from the appropriate authority, under the provisions of the Aboriginal Heritage Act 1988. Sites or items of archaeological, anthropological, cultural or historical significance located within the reserve should be identified, recorded, protected, restored and/or monitored in cooperation with DAARE and other relevant authorities and organisations. These sites will also require a conservation management plan to assist with appropriate management of the site. Encourage and support archaeological, anthropological and historic studies within the reserve. All sites located during surveys should be recorded to the standards set out by DAARE and submitted for inclusion on the DAARE Central Archive.
Fire Management	
To manage the reserve so as to ensure the maintenance of biodiversity, the protection of natural, cultural and built assets and the protection of life and property.	<ul style="list-style-type: none"> Develop, implement and regularly review a fire management plan for the reserve in consultation with CFS, the District Bushfire Prevention Committee, council officers, the reserve management committee and adjoining landowners. Maintain the main vehicle tracks to allow access by CFS vehicles. Support and promote CFS education programs for local property owners which contain measures for the protection of property and strategies to reduce the likelihood of human error causing fires in the vicinity of the reserve.
Community Use and Context	
Promote the reserve for visitor use which are compatible with the reserves natural and conservation values, and recruit new landcare members.	<ul style="list-style-type: none"> Liaise with The Barossa Council, tourism authorities and the community to encourage the promotion of informal recreational activities. Monitor visitor numbers to the reserve and control any negative impacts on the biodiversity values of the reserve. Monitor inappropriate activities e.g., fishing, mountain bike riding, vandalism etc. and work

Objectives	Strategies
	<p>with The Barossa Council to discourage these activities.</p> <ul style="list-style-type: none"> Continue to promote the landcare reserve through Facebook, ParksSA, Lyndoch Grapevine etc.
Infrastructure Maintenance / On-going Monitoring	
<p>To inspect the fences at regular intervals to determine need for repair and or replacement.</p>	<ul style="list-style-type: none"> Regular monitoring of all boundary fences Undertake repairs to fences as required. If replacement fencing is required then a program of funding and liaison with adjoining landowner/s will need to be implemented. The eastern boundary runs adjacent to the Chatterton's Heritage Agreement (Section 582). The fence has been replaced to the start of DP 18106. Below DP 18106 the boundary fence is showing signs of age. Seek funding to cover the costs.
<p>To continue to provide access and walking tracks which meet council safety guidelines and allow for the safe use by visitors.</p>	<ul style="list-style-type: none"> To undertake annual safety inspections in conjunction with council staff. To maintain tracks in good condition meeting the safety requirements required by council. Landcare group to undertake clearance envelope work and other minor repairs to meet safety requirements. The Council to fund and undertake major repairs as required to meet safety standards.
<p>To continue the use of photo points to document changes to the reserve landscape and vegetation restoration work programs.</p>	<ul style="list-style-type: none"> Continue with the seasonal photograph program for all photo points to allow for comparison of changes to individual sites over time.
Weed Control	
<p>Installation of a boot cleaning station</p>	<ul style="list-style-type: none"> Investigate the installation of a boot cleaning station to control infestation of weeds and control dieback. Seek funding if deemed to be appropriate
<p>To maintain the health of vegetation communities within the reserve recognising that mistletoe is an integral part of any vegetation association</p>	<ul style="list-style-type: none"> Adopt a management policy which will include a monitoring program using mapping and photographic methods to record presence of and to assess changes to the density of mistletoe infestation. Continuing to evaluate on-going research into the role of Mistletoe in ecosystems in consultation with DEH and other consultants. When the landcare group is satisfied that a patch of vegetation is being seriously affected by an imbalance of box mistletoe and likely to jeopardise the long-term health of the remnant vegetation, and; Where no other alternative exists the landcare group will consider the removal of box mistletoe or the pruning of affected limbs, in consultation with the Native Vegetation Council

APPENDICES

A Flora Species List

Family/Genus/Species	Common Name	Conservation Rating		
		AUS	SA	NL
ADIANTACEAE				
<i>Cheilanthes austrotenuifolia</i>	Annual Rock-fern			NT
<i>Cheilanthes distans</i>	Bristly Cloak-fern			RA
<i>Cheilanthes sieberi</i> ssp. <i>Sieberi</i>	Narrow Rock-fern			RA
<i>Carpobrotus rossii</i>	Native Pigface			
AMARANTHACEAE				
<i>Ptilotus erubescens</i>	Hairy-tails		R	RA
<i>Ptilotus spathulatus</i> f <i>spathulatus</i>	Pussy tails			RA
AMARYLLIDACEAE				
<i>Calostemma purpureum</i>	Pink Garland-lily			
ASPLENIACEAE				
<i>Pleurosorus rutifolius</i>	Blanket Fern			
BORAGINACEAE				
<i>Cynoglossum suaveolens</i>	Sweet Hound's-tongue			NT
CAMPANULACEAE				
<i>Lobelia alata</i>	Angled Lobelia			
<i>Lobelia gibbosa</i>	Tall Lobelia			
<i>Wahlenbergia communis</i>	Tufted Bluebell			
<i>Wahlenbergia gracilentata</i>	Annual Bluebell			
<i>Wahlenbergia stricta</i> ssp. <i>Stricta</i>	Tall Bluebell			
<i>Allocasuarina verticillata</i>	Drooping Sheoak			
CENTROLEPIDACEAE				
<i>Aphelia pumilio</i>	Dwarf Aphelia			NT
<i>Centrolepis aristata</i>	Pointed Centrolepis			
<i>Centrolepis cephaloformis</i> ssp. <i>Cephaloformis</i>	Cushion Centrolepis		R	
<i>Centrolepis polygyna</i>	Wiry Centrolepis			
<i>Centrolepis strigosa</i>	Hairy Centrolepis			

Family/Genus/Species	Common Name	Conservation Rating		
		AUS	SA	NL
CHENOPODIACEAE				
<i>Einadia nutans ssp. Nutans</i>	Climbing Saltbush			
<i>Enchylaena tomentosa var. tomentosa</i>	Ruby Saltbush			
<i>Maireana enchylaenoides</i>	Wingless Fissure-plant			
COMPOSITAE				
<i>Actinobole uliginosum</i>	Flannel Cudweed			
<i>Blennospora drummondii</i>	Dwarf Button-flower			
<i>Calocephalus citreus</i>	Lemon Beauty-heads			RA
<i>Chrysocephalum apiculatum</i>	Common Everlasting			
<i>Chrysocephalum semipapposum</i>	Clustered Everlasting			RA
<i>Craspedia glauca</i>	Billy-buttons			
<i>Helichrysum leucopsidium</i>	Satin Everlasting			
<i>Hyalosperma glutinosum ssp. Glutinosum</i>	Golden Sunray			
<i>Lagenifera huegelii</i>	Coarse Bottle-daisy			
<i>Leptorhynchus squamatus</i>	Scaly Buttons			
<i>Microseris lanceolata</i>	Yam Daisy			
<i>Millotia myosotidifolia</i>	Broad-leaf Millotia			NT
<i>Olearia ramulosa</i>	Twiggy Daisy-bush			
<i>Podolepis sp.</i>	Copper-wire Daisy			
<i>Pogonolepis muelleriana</i>	Stiff Cup-flower			
<i>Quinetia urvillei</i>	Quinetia			RA
<i>Senecio picridioides</i>	Purple-leaf Groundsel			
<i>Senecio quadridentatus</i>	Cotton Groundsel			
<i>Stuartina muelleri</i>	Spoon Cudweed			
<i>Vittadinia blackii</i>	Narrow-leaf New Holland Daisy			RA
<i>Vittadinia cuneata</i>	Fuzzy New Holland Daisy			
<i>Vittadinia sp.</i>	New Holland Daisy			

Family/Genus/Species	Common Name	Conservation Rating		
		AUS	SA	NL
CONVOLVULACEAE				
<i>Calystegia sepium</i>	Large Bindweed			
<i>Convolvulus erubescens</i>	Australian Bindweed			
<i>Convolvulus remotus</i>	Grassy Bindweed			
<i>Dichondra repens</i>	Kidney Weed			
CRASSULACEAE				
<i>Crassula colorata</i>	Dense Crassula			
<i>Crassula colorata/sieberana</i>	Crassula			
<i>Crassula sieberiana ssp. Tetramera</i>	Australian Stonecrop			
CUPRESSACEAE				
<i>Callitris preissii</i>	Southern Cypress Pine			LC
CYPERACEAE				
<i>Baumea juncea</i>	Bare Twig-rush			
<i>Bolboschoenus caldwellii</i>	Salt Club-rush			
<i>Bolboschoenus medianus</i>	Marsh Club-rush			RA
<i>Cyperus gymnocaulos</i>	Spiny Flat-sedge			
<i>Cyperus vaginatus</i>	Stiff Flat-sedge			
<i>Isolepis platycarpa</i>	Flat-fruit Club-rush			
<i>Lepidosperma carphoides</i>	Black Rapier-sedge			
<i>Lepidosperma viscidum</i>	Sticky Sword-sedge			
<i>Schoenus apogon</i>	Common Bog-rush			
DILLENIACEAE				
<i>Hibbertia exutiacies</i>	Prickly Guinea-flower			
<i>Hibbertia virgata</i>	Twiggy Guinea-flower			
DROSERACEAE				
<i>Drosera auriculata</i>	Tall Sundew			
<i>Drosera glanduligera</i>	Scarlet Sundew			
<i>Drosera macrantha ssp. planchonii</i>	Climbing Sundew			
<i>Drosera peltata</i>	Pale Sundew			
<i>Drosera whittakeri ssp. whittakeri</i>				

Family/Genus/Species	Common Name	Conservation Rating		
		AUS	SA	NL
EPACRIDACEAE				
<i>Acrotriche depressa</i>	Native Currant			RA
<i>Acrotriche serrulata</i>	Cushion Ground-berry			
<i>Astroloma conostephioides</i>	Flame Heath			
<i>Astroloma humifusum</i>	Cranberry Heath			
<i>Brachyloma ericoides ssp. ericoides</i>	Brush Heath			
<i>Leucopogon cordifolius</i>	Heart-leaf Beard-heath			RA
<i>Leucopogon virgatus</i>	Common Beard-heath			
EUPHORBIACEAE				
<i>Poranthera microphylla</i>	Small Poranthera			
GERANIACEAE				
<i>Geranium potentilloides var. potentilloides</i>	Downy Geranium			
<i>Geranium retrorsum</i>	Grassland Geranium			
<i>Geranium solanderi var. solanderi</i>	Austral Geranium			
GOODENIACEAE				
<i>Brunonia australis</i>	Blue Pincushion			
<i>Goodenia blackiana</i>	Native Primrose			
<i>Goodenia geniculata</i>	Bent Goodenia			
<i>Goodenia pinnatifida</i>	Cut-leaf Goodenia			NT
<i>Scaevola albida</i>	Pale Fanflower			
GRAMINEAE				
<i>Amphipogon caricinus var. caricinus</i>	Long Grey-beard Grass			LC
<i>Aristida behriana</i>	Brush Wire-grass			LC
<i>Aristida contorta</i>	Curly Wire-grass			EN
<i>Aristida holathera var. holathera</i>	Tall Kerosene Grass			EN
<i>Austrodanthonia auriculata</i>	Lobed Wallaby-grass			
<i>Austrodanthonia caespitosa</i>	Common Wallaby-grass			
<i>Austrodanthonia sp.</i>	Wallaby-grass			
<i>Austrostipa elegantissima</i>	Feather Spear-grass			LC

Family/Genus/Species	Common Name	Conservation Rating		
		AUS	SA	NL
GRAMINEAE continued				
<i>Austrostipa gibbosa</i>	Swollen Spear-grass		R	RA
<i>Austrostipa nodosa</i>	Tall Spear-grass			
<i>Austrostipa scabra</i> ssp. <i>falcata</i>	Slender Spear-grass			
<i>Austrostipa</i> sp.	Spear-grass			
<i>Chloris truncata</i>	Windmill Grass			
<i>Cymbopogon ambiguus</i>	Native Lemon-grass			VU
<i>Cymbopogon oblectus</i>	Silky-head Lemon-grass			RA
<i>Dichanthium sericeum</i> ssp. <i>Sericeum</i>	Silky Blue-grass (or just Bluegrass)			VU
<i>Digitaria ammophila</i>	Silky Umbrella grass or Spider Grass			X
<i>Digitaria brownii</i>	Cotton Panic-grass			
<i>Elymus scabrus</i> var. <i>scabrus</i>	Native Wheat-grass			
<i>Enneapogon nigricans</i>	Black-head Grass			
<i>Microlaena stipoides</i> var. <i>stipoides</i>	Weeping Rice-grass			
<i>Neurachne alopecuroidea</i>	Fox-tail Mulga-grass			
<i>Phragmites australis</i>	Common Reed			
<i>Poa labillardieri</i> var. <i>labillardieri</i>	Common Tussock-grass			
<i>Setaria constricta</i>	Knotty-butt Paspalidium or setaria			RA
<i>Themeda triandra</i>	Kangaroo Grass			
HALORAGACEAE				
<i>Glischrocaryon behrii</i>	Golden Pennants			
<i>Gonocarpus elatus</i>	Hill Raspwort			
<i>Gonocarpus mezianus</i>	Broad-leaf Raspwort			
<i>Gonocarpus tetragynus</i>	Small-leaf Raspwort			
<i>Haloragis acutangula</i>	Smooth Raspwort			
<i>Haloragis acutangula</i> forma <i>acutangula</i>	Smooth Raspwort			
<i>Haloragis heterophylla</i>	Variable Raspwort			LC
HYPOXIDACEAE				
<i>Hypoxis vaginata</i> var. <i>vaginata</i>	Yellow Star			

Family/Genus/Species	Common Name	Conservation Rating		
		AUS	SA	NL
JUNCACEAE				
<i>Juncus pallidus</i>	Pale Rush			
<i>Juncus subsecundus</i>	Finger Rush			
<i>Luzula meridionalis</i>	Common Wood-rush			
<i>Triglochin calcitrapum</i>	Spurred Arrowgrass			RA
<i>Triglochin centrocarpum</i>	Dwarf Arrowgrass			
<i>Triglochin procerum</i>	Water-ribbons			NT
LAURACEAE				
<i>Cassytha glabella forma dispar</i>	Slender Dodder-laurel			
<i>Cassytha pubescens</i>	Downy Dodder-laurel			
LEGUMINOSAE				
<i>Acacia acinacea</i>	Wreath Wattle			
<i>Acacia calamifolia</i>	Wallowa			RA
<i>Acacia cupularis</i>	Coastal Umbrella Bush or Cup Wattle			RA
<i>Acacia paradoxa</i>	Kangaroo Thorn			
<i>Acacia pycnantha</i>	Golden Wattle			
<i>Acacia spinescens</i>	Spiny Wattle			
<i>Acacia retinodes var. retinodes (hill form)</i>	Wirilda			
<i>Acacia myrtifolia var. myrtifolia</i>	Myrtle Wattle			
<i>Bossiaea prostrata</i>	Creeping Bossiaea			
<i>Cullen australasicum</i>	Tall Scurf-pea			RA
<i>Daviesia brevifolia</i>	Leafless Bitter-pea			
<i>Daviesia ulicifolia ssp. incarnata</i>				
<i>Dillwynia sericea</i>	Showy Parrot-pea			
<i>Eutaxia diffusa</i>	Large-leaf Eutaxia			VU
<i>Glycine clandestina var. sericea</i>	Twining Glycine			
<i>Hardenbergia violacea</i>	Native Lilac			
<i>Kennedia prostrata</i>	Scarlet Runner			
<i>Pultenaea densifolia</i>	Dense Bush-pea			VU
<i>Pultenaea largiflorens</i>	Twiggy Bush-pea			

Family/Genus/Species	Common Name	Conservation Rating		
		AUS	SA	NL
LILIACEAE				
<i>Arthropodium fimbriatum</i>	Nodding Vanilla-lily			
<i>Arthropodium strictum</i>	Common Vanilla-lily			
<i>Bulbine bulbosa</i>	Bulbine-lily			
<i>Burchardia umbellata</i>	Milkmaids			
<i>Caesia calliantha</i>	Blue Grass-lily			
<i>Chamaescilla corymbosa</i> var. <i>corymbosa</i>	Blue Squill			
<i>Dianella longifolia</i> var. <i>grandis</i>	Pale Flax-lily		R	VU
<i>Dianella revoluta</i> var. <i>revoluta</i>	Black-anther Flax-lily			
<i>Lomandra collina</i>	Sand Mat-rush			RA
<i>Lomandra densiflora</i>	Soft Tussock Mat-rush			
<i>Lomandra effusa</i>	Scented Mat-rush			NT
<i>Lomandra juncea</i>	Desert Mat-rush			LC
<i>Lomandra micrantha</i>	Small-flower Mat-rush			
<i>Lomandra multiflora</i> ssp. <i>dura</i>	Hard Mat-rush			
<i>Lomandra sororia</i>	Sword Mat-rush			NT
<i>Thysanotus patersonii</i>	Twining Fringe-lily			
<i>Tricoryne elatior</i>	Yellow Rush-lily			
<i>Wurmbea dioica</i> ssp. <i>dioica</i>	Early Nancy			
<i>Xanthorrhoea semiplana</i>	Yacca			
<i>Linum marginale</i>	Native Flax			
LORANTHACEAE				
<i>Amyema miquelii</i>	Box Mistletoe			
<i>Amyema preissii</i>	Wire-leaf Mistletoe			
<i>Lysiana exocarpi</i> ssp. <i>exocarpi</i>	Harlequin Mistletoe			
LYTHRACEAE				
<i>Lythrum hyssopifolia</i>	Lesser Loosestrife			
MYOPORACEAE				
<i>Eremophila longifolia</i>	Weeping Emubush			VU

Family/Genus/Species	Common Name	Conservation Rating		
		AUS	SA	NL
MYRTACEAE				
<i>Baeckea behrii</i>	Silver Broombush			NT
<i>Callistemon sieberi</i>	River Bottlebrush			LC
<i>Calytrix tetragona</i>	Common Fringe-myrtle			
<i>Eucalyptus camaldulensis</i> var. <i>camaldulensis</i>	River Red Gum			
<i>Eucalyptus fasciculosa</i>	Pink Gum		R	NT
<i>Eucalyptus leucoxylon</i> ssp. <i>leucoxylon</i>	South Australian Blue Gum			
<i>Eucalyptus leucoxylon</i> ssp. <i>pruinosa</i>	Inland South Australian Blue Gum			
<i>Eucalyptus odorata</i>	Peppermint Box			
<i>Kunzea pomifera</i>	Muntries			LC
<i>Leptospermum myrsinoides</i>	Heath Tea-tree			
ORCHIDACEAE				
<i>Acianthus pusillus</i>	Mosquito Orchid			
<i>Caladenia cardiochila</i>	Heart-lip Spider-orchid			VU
<i>Caladenia dilatata</i> complex	Green-comb Spider-orchid			
<i>Caladenia latifolia</i>	Pink Caladenia			LC
<i>Caladenia reticulata</i>	Veined Spider-orchid			LC
<i>Caladenia stricta</i>	Upright Caladenia			VU
<i>Caladenia tentaculata</i>	King Spider-orchid			
<i>Corybas despectans</i>	Coast Helmet-orchid			RA
<i>Corybas dilatatus</i>	Common Helmet-orchid			
<i>Corybas incurvus</i>	Slaty Helmet-orchid			LC
<i>Cyanicula deformis</i>	Bluebeard Orchid			
<i>Cyrtostylis reniformis</i>	Small Gnat-orchid			
<i>Cyrtostylis robusta</i>	Robust Gnat-orchid			
<i>Diuris</i> aff. <i>corymbosa</i>	Wallflower Donkey-orchid			
<i>Diuris pardina</i>	Spotted Donkey-orchid			
<i>Eriochilus cucullatus</i>	Parson's Bands			

Family/Genus/Species	Common Name	Conservation Rating		
		AUS	SA	NL
ORCHIDACEAE continued				
<i>Genoplesium rufum</i>	Red Midge-orchid			
<i>Glossodia major</i>	Purple Cockatoo			
<i>Microtis arenaria</i>	Notched Onion-orchid			
<i>Microtis frutetorum</i>				
<i>Microtis parviflora</i>	Slender Onion-orchid			
<i>Microtis unifolia</i>	Common Onion-orchid			
<i>Microtis unifolia complex</i>	Onion-orchid			
<i>Orthoceras strictum</i>	Horned Orchid			RA
<i>Prasophyllum australe</i>	Austral Leek-orchid		R	RA
<i>Prasophyllum elatum</i>	Tall Leek-orchid			
<i>Prasophyllum fitzgeraldii</i>	Fitzgerald's Leek-orchid			EN
<i>Prasophyllum pallidum</i>	Pale Leek-orchid	VU	R	EN
<i>Prasophyllum pruinatum</i>	Plum Leek-orchid	EN	E ²	VU
<i>Pterostylis biseta</i>	Two-hair Rustyhood			
<i>Pterostylis sanguinea</i>	Blood Greenhood			NT
<i>Pterostylis longifolia</i>	Tall Greenhood			
<i>Pterostylis nana</i>	Dwarf Greenhood			
<i>Pterostylis pedunculata</i>	Maroon-hood			
<i>Pterostylis plumosa</i>	Bearded Greenhood			
<i>Pterostylis robusta</i>	Large Shell-orchid			
<i>Pterostylis sanguinea</i>	Blood Greenhood			
<i>Pyrorchis nigricans</i>	Black Fire-orchid			
<i>Thelymitra antennifera</i>	Lemon Sun-orchid			
<i>Thelymitra luteocilium</i>	Yellow-tuft Sun Orchid			
<i>Thelymitra nuda</i>	Scented Sun-orchid			
<i>Thelymitra pauciflora</i>	Slender Sun-orchid			
<i>Thelymitra rubra</i>	Salmon Sun-orchid			

Family/Genus/Species	Common Name	Conservation Rating		
		AUS	SA	NL
OXALIDACEAE				
<i>Oxalis perennans</i>	Native Sorrel			
PITTIOSPORACEAE				
<i>Bursaria spinosa</i>	Sweet Bursaria			
<i>Pittosporum phylliraeoides</i> var. <i>microcarpa</i>	Native Apricot			RA
PLANTAGINACEAE				
<i>Plantago gaudichaudii</i>	Narrow-leaf Plantain			LC
POLYGALACEAE				
<i>Comesperma calymega</i>	Blue-spike Milkwort			
<i>Muehlenbeckia adpressa</i>	Climbing Lignum			
PORTULACACEAE				
<i>Calandrinia corrigioloides</i>	Strap Purslane			RA
<i>Calandrinia eremaea</i>	Dryland Purslane			LC
<i>Calandrinia granulifera</i>	Pigmy Purslane			LC
<i>Calandrinia</i> sp.	Purslane/Parakeelya			
PRIMULACEAE				
<i>Samolus repens</i>	Creeping Brookweed			LC
PROTEACEAE				
<i>Banksia marginata</i>	Silver Banksia			
<i>Grevillea lavandulacea</i> var. <i>lavandulacea</i>	Spider-flower			
<i>Hakea rostrata</i>	Beaked Hakea			
RANUNCULACEAE				
<i>Clematis microphylla</i>	Old Man's Beard			
<i>Ranunculus pachycarpus</i>	Thick-fruit Buttercup			RA
RHAMNACEAE				
<i>Cryptandra tomentosa</i>	Heath Cryptandra			
<i>Spyridium vexilliferum</i> var. <i>vexilliferum</i>	Winged Spyridium			
ROSACEAE				
<i>Acaena echinata</i>	Sheep's Burr			

Family/Genus/Species	Common Name	Conservation Rating		
		AUS	SA	NL
RUBIACEAE				
<i>Galium sp.</i>	Bedstraw			
RUTACEAE				
<i>Correa reflexa</i>	Common Correa			
SANTALACEAE				
<i>Santalum murrayanum</i>	Bitter Quandong			RA
SAPINDACEAE				
<i>Dodonaea viscosa</i>	Sticky Hop-bush			
<i>Dodonaea viscosa ssp. spatulata</i>	Sticky Hop-bush			
SCROPHULARIACEAE				
<i>Mimulus repens</i>	Creeping Monkey-flower			RA
PROTEACEAE				
<i>Banksia marginata</i>	Silver Banksia			
<i>Conospermum patens</i>	Slender Smoke-bush			LC
<i>Grevillea lavandulacea var. lavandulacea</i>	Spider-flower			
<i>Hakea rostrata</i>	Beaked Hakea			
STACKHOUSIACEAE				
<i>Stackhousia monogyna</i>	Creamy Candles			
STERCULIACEAE				
<i>Thomasia petalocalyx</i>	Paper-flower			
STYLIDIACEAE				
<i>Levenhookia dubia</i>	Hairy Stylewort			
THYMELAEACEAE				
<i>Pimelea curviflora</i>	Curved Riceflower			RA
<i>Pimelea humilis</i>	Low Riceflower			
<i>Pimelea linifolia ssp. linifolia</i>	Slender Riceflower			
<i>Pimelea stricta</i>	Erect Riceflower			
TYPHACEAE				
<i>Typha domingensis</i>	Narrow-leaf Bulrush			

Family/Genus/Species	Common Name	Conservation Rating		
		AUS	SA	NL
UMBELLIFERAE				
<i>Daucus glochidiatus</i>	Native Carrot			
<i>Hydrocotyle callicarpa</i>	Tiny Pennywort			
<i>Hydrocotyle laxiflora</i>	Stinking Pennywort			
<i>Trachymene cyanopetala</i>	Purple Trachymene			RA
<i>Xanthosia pusilla</i>	Hairy Xanthosia			
VIOLACEAE				
<i>Hybanthus floribundus ssp. floribundus</i>	Shrub Violet			
<i>Melicytus (Hymenanchera dentata)</i>	Tree Violet			RA
ZYGOPHYLLACEAE				
<i>Zygophyllum sp.</i>	Twinleaf			

Regional Status Codes	
EPBC (National Rating)	
EX	Extinct
CE	Critically Endangered
E	Endangered
V	Vulnerable
NPW (State Rating)	
X	Extinct
E	Endangered
V	Vulnerable
R	Rare
Northern Lofty (Regional Rating)	
X	Presumed extinct
E	Endangered
V	Vulnerable
NT	Near Threatened
RA	Rare
LC	Least Concern; less common species but not rare

B Conservation Rated Flora Species List

Family / Genus / Species	Common Name	Conservation Rating			
		Aus	SA	AML	MLR
ADIANTACEAE					
<i>Cheilanthes austrotenuifolia</i>	Annual Rock-fern			LC	LC
<i>Cheilanthes distans</i>	Bristly Cloak-fern			NT	NT
<i>Cheilanthes sieberi ssp. sieberi</i>	Narrow Rock-fern			RA	NT
AMARANTHACEAE					
<i>Ptilotus erubescens</i>	Hairy-tails		R	RA	RA
<i>Ptilotus spathulatus f. spathulatus</i>	Pussy-tails			RA	RA
BORAGINACEAE					
<i>Cynoglossum suaveolens</i>	Sweet Hound's-tongue			NT	NT
CENTROLEPIDACEAE					
<i>Aphelia pumilio</i>	Dwarf Aphelia			NT	LC
<i>Centrolepis cephaliformis ssp. cephaliformis</i>	Cushion Centrolepis		R	VU	VU
COMPOSITAE					
<i>Calocephalus citreus</i>	Lemon Beauty-heads			RA	NT
<i>Chrysocephalum semipapposum</i>	Clustered Everlasting			NT	NT
<i>Millotia myosotidifolia</i>	Broad-leaf Millotia			NT	NT
<i>Quinetia urvillei</i>	Quinetia			NT	LC
<i>Vittadinia blackii</i>	Narrow-leaf New Holland Daisy			RA	NT
CRASSULACEAE					
<i>Crassula colorata/sieberana</i>	Dense Crassula			LC	LC
<i>Crassula sieberiana ssp. tetramera</i>	Australian Stonecrop			DD	DD
CUPRESSACEAE					
<i>Callitris preissii</i>	Southern Cypress Pine				
CYPERACEAE					
<i>Bolboschoenus medianus</i>	Marsh Club-rush			VU	RA
EPACRIDACEAE					
<i>Acrotriche depressa</i>	Native Currant			RA	NT
<i>Leucopogon cordifolius</i>	Heart-leaf Beard-heath			VU	VU
GOODENIACEAE					
<i>Goodenia pinnatifida</i>	Cut-leaf Goodenia			NT	NT
GRAMINEAE					
<i>Amphipogon caricinus var. caricinus</i>	Long Grey-beard Grass			NT	NT

Family / Genus / Species	Common Name	Conservation Rating			
		Aus	SA	AML	MLR
<i>Aristida behriana</i>	Brush Wire-grass			LC	LC
<i>Aristida contorta</i>	Curly Wire-grass			RA	RA
<i>Aristida holathera</i> var. <i>holathera</i>	Tall Kerosene Grass			RA	RA
<i>Austrostipa elegantissima</i>	Feather Spear-grass			LC	LC
<i>Austrostipa gibbosa</i>	Swollen Spear-grass		R	VU	RA
<i>Cymbopogon ambiguus</i>	Lemon-grass			RA	RA
<i>Cymbopogon obtectus</i>	Silky-head Lemon-grass			RA	RA
<i>Dichanthium sericeum</i> ssp. <i>sericeum</i>	Silky Blue-grass			VU	VU
<i>Digitaria ammophila</i>	Spider Grass			RA	RA
<i>Setaria constricta</i>	Knotty-butt Paspalidium			NT	NT
HALORAGACEAE					
<i>Haloragis heterophylla</i>	Variable Raspwort			RA	NT
JUNCAGINACEAE					
<i>Triglochin calcitrapum</i>	Spurred Arrowgrass				
<i>Triglochin procerum</i>	Water-ribbons				
LEGUMINOSAE					
<i>Acacia calamifolia</i>	Wallowa				
<i>Acacia cupularis</i>	Cup Wattle			RA	RA
<i>Cullen australasicum</i>	Tall scurf-pea			RA	NT
<i>Eutaxia diffusa</i>	Large-leaf Eutaxia			RA	RA
<i>Pultenaea densifolia</i>	Dense Bush-pea			VU	EN
LILIACEAE					
<i>Dianella longifolia</i> var. <i>grandis</i>	Pale Flax-lily		R	VU	VU
<i>Lomandra collina</i>	Sand Mat-rush			RA	RA
<i>Lomandra effusa</i>	Scented Mat-rush			NT	RA
<i>Lomandra juncea</i>	Desert Mat-rush			RA	RA
<i>Lomandra sororia</i>	Sword Mat-rush			NT	LC
MYOPORACEAE					
<i>Eremophila longifolia</i>	Weeping Emubush			RA	RA
MYRTACEAE					
<i>Baeckea behrii</i>	Silver Broombush				
<i>Callistemon sieberi</i>	River Bottlebrush			VU	RA

Family / Genus / Species	Common Name	Conservation Rating			
		Aus	SA	AML	MLR
<i>Eucalyptus fasciculosa</i>	Pink Gum		R	NT	NT
<i>Kunzea pomifera</i>	Muntries			RA	RA
ORCHIDACEAE					
<i>Caladenia cardiochila</i>	Heart-lip Spider-orchid			EN	EN
<i>Caladenia dilatata complex</i>	Green-comb Spider-orchid				
<i>Caladenia latifolia</i>	Pink Caladenia			NT	NT
<i>Caladenia reticulata</i>	Veined Spider-orchid			VU	RA
<i>Caladenia stricta</i>	Upright Caladenia			NT	RE
<i>Corybas despectans</i>	Coast Helmet-orchid			RA	RA
<i>Corybas incurvus</i>	Slaty Helmet-orchid			NT	NT
<i>Orthoceras strictum</i>	Horned Orchid			RA	RA
<i>Prasophyllum australe</i>	Austral Leek-orchid		R	EN	EN
<i>Prasophyllum fitzgeraldii</i>	Fitzgerald's Leek-orchid			EN	EN
<i>Prasophyllum pallidum</i>	Pale Leek-orchid	VU	R	EN	VU
<i>Prasophyllum pruinatum</i>	Plum Leek-orchid	EN	E ²	EN	EN
<i>Pterostylis sanguinea</i>	Blood Greenhood or Red-banded greenhood			NT	LC
PITTOSPORACEAE					
<i>Pittosporum phylliraeoides var. microcarpa</i>	Native Apricot				
PLANTAGINACEAE					
<i>Plantago gaudichaudii</i>	Narrow-leaf Plantain			NT	LC
PORTULACACEAE					
<i>Calandrinia corrigioloides</i>	Strap Purslane			RA	RA
<i>Calandrinia eremaea</i>	Dryland Purslane			NT	NT
<i>Calandrinia granulifera</i>	Pigmy Purslane			NT	NT
PRIMULACEAE					
<i>Samolus repens</i>	Creeping Brookweed			NT	NT
PROTEACEAE					
<i>Conospermum patens</i>	Slender Smoke-bush			RA	RA
RANUNCULACEAE					
<i>Ranunculus pachycarpus</i>	Thick-fruit Buttercup			VU	RA
SANTALACEAE					
<i>Santalum murrayanum</i>	Bitter Quandong			VU	VU

Family / Genus / Species	Common Name	Conservation Rating			
		Aus	SA	AML	MLR
SCROPHULARIACEAE					
<i>Mimulus repens</i>	Creeping Monkey-flower			RA	RA
THYMELAEACEAE					
<i>Pimelea curviflora</i>	Curved Riceflower			RA/VU	RA
UMBELLIFERAE					
<i>Trachymene cyanopetala</i>	Purple Trachymene			RA	NT
VIOLACEAE					
<i>Melicytus dentatus</i>	Tree Violet			RA	NT

Regional Status Codes	
EPBC Act (National Rating)	
EX	Extinct
CE	Critically Endangered
E	Endangered
V	Vulnerable
NPW Act (State Rating)	
X	Extinct
E	Endangered
V	Vulnerable
R	Rare
Adelaide and Mount Lofty Ranges (Regional Rating) ¹	
RE	Regionally Extinct
CR	Critically Endangered
EN	Endangered
VU	Vulnerable
RA	Rare
NT	Near Threatened
LC	Least Concern
DD	Data Deficient
Northern Lofty (Regional Rating)	
X	Presumed extinct
E	Endangered
V	Vulnerable

NT	Near Threatened
R	Rare
LC	Least Concern; less common species but not rare

Notes:

1. Based on IUCN Red List Categories and Criteria for Adelaide and Mount Lofty Ranges. (Flora Conservation Assessments 2014) UNO.
2. National Parks and Wildlife Act 1972 (South Australia): January 2020 list

C Exotic / Weed Species List

FAMILY / GENUS / SPECIES	COMMON NAME	CONTROL PRIORITY FOR CONTRACTORS
CONTROL PRIORITY FOR LANDCARE VOLUNTEERS – VERY HIGH		
AIZOACEAE		
* <i>Mesembryanthemum crystallinum</i>	Common Ice plant	Very High
CACTACEAE		
* <i>Opuntia</i> sp.	Prickly Pear	Very High
COMPOSITAE		
* <i>Chrysanthemoides monilifera</i>	Boneseed	Very high
* <i>Cynara cardunculus</i>	Artichoke Thistle	Very high
DIPSACACEAE		
* <i>Scabiosa atropurpurea</i>	Pincushion	
GRAMINEAE		
* <i>Pennisetum macrourum</i>	African Feather-grass	Very High
* <i>Pennisetum setaceum</i>	Fountain Grass	Very High
IRIDACEAE		
* <i>Watsonia</i> sp.	Watsonia	Very High
LILIACEAE		
* <i>Myrsiphyllum asparagoides</i> <i>NB Should only be treated by landcare volunteers when in degraded areas using glyphosate</i>	Bridal Creeper	Very High
OLEACEAE		
* <i>Olea europaea</i> ssp. <i>europaea</i>	Olive	Very High
* <i>Fraxinus rotundifolia</i> ssp. <i>rotundifolia</i>	Desert Ash	Very High
PINACEAE		
* <i>Pinus halepensis</i>	Aleppo Pine	Very High
ROSACEAE		
* <i>Rosa</i> sp.	Wild Rose/Briar	Very High
CONTROL PRIORITY FOR LANDCARE VOLUNTEERS – HIGH		
ASCLEPIADACEAE		
* <i>Asclepias rotundifolia</i>	Broad-leaf Cotton-bush	High
BORAGINACEAE		
* <i>Echium plantagineum</i>	Salvation Jane	
GRAMINEAE		
* <i>Piptatherum miliaceum</i>	Rice Millet	

FAMILY / GENUS / SPECIES	COMMON NAME	CONTROL PRIORITY FOR CONTRACTORS
ORCHIDACEAE		
* <i>Monodenia bracteata</i>	Monodenia	
CONTROL PRIORITY FOR LANDCARE VOLUNTEERS – MEDIUM		
COMPOSITAE		
* <i>Arctotheca calendula</i>	Cape Weed	
* <i>Hypochaeris radicata</i>	Rough Cat's Ear	
GRAMINEAE		
* <i>Ehrharta calycina</i>	Perennial Veldt Grass	
* <i>Pentaschistis pallida</i>	Pussy Tail	
* <i>Phalaris aquatica</i>	Phalaris	
PLANTAGINACEAE		
* <i>Plantago bellardii</i>	Hairy Plantain	
* <i>Plantago lanceolata</i>	Ribwort	
ROSACEAE		
* <i>Malus sylvestris</i>	Apple	
* <i>Prunus sp.</i>	Plum	
CONTROL PRIORITY FOR LANDCARE VOLUNTEERS – LOW		
CARYOPHYLLACE		
* <i>Cerastium pumilum</i>	Chickweed	
* <i>Petrorhagia velutina</i>	Velvet Pink	Medium
GRAMINEAE		
* <i>Aira cupaniana</i>	Small Hair-grass	
* <i>Briza maxima</i>	Large Quaking-grass	
* <i>Briza minor</i>	Lesser Quaking-grass	
* <i>Ehrharta longiflora</i>	Annual Veldt Grass	
* <i>Lagurus ovatus</i>	Hare's Tail Grass	
* <i>Paspalum sp.</i>	Paspalum	
* <i>Pentaschistis airoides</i>	False Hair-grass	
* <i>Vulpia sp.</i>	Fescue	
LEGUMINOSAE		
* <i>Medicago sp.</i>	Medic	
* <i>Trifolium arvense var. arvense</i>	Hare's-foot Clover	

FAMILY / GENUS / SPECIES	COMMON NAME	CONTROL PRIORITY FOR CONTRACTORS
* <i>Trifolium campestre</i>	Hop Clover	
OLEACEAE		
* <i>Ligustrum</i> sp.	Privet	
ONAGRACEAE		
* <i>Oenothera stricta</i> ssp. <i>stricta</i>	Common Evening Primrose	
OXALIDACEAE		
* <i>Oxalis pes-caprae</i>	Soursob	High <i>but only in good native vegetation</i>
POLYGONACEAE		
* <i>Polygonum aviculare</i>	Wireweed	
PRIMULACEAE		
* <i>Anagallis arvensis</i>	Pimpernel	
SOLANACEAE		
* <i>Solanum nigrum</i>	Black Nightshade	
TOTAL NUMBER OF SPECIES 44		

D Weed Management Recommendations

Note – these methods of control and herbicides recommended are based on the assumption that they will be undertaken by un-skilled volunteers. Professional contractors may use different control methods and selective herbicides to target weeds which would most often not be feasible for volunteers as it is a specialised field which takes experience, access to herbicides and appropriate equipment.

Woody Weeds	Method of Control	Time of Year	Comments
<i>Olea europaea</i> ssp. <i>europaea</i> (olive)	Small seedlings Hand pull	Autumn, winter, early spring when soil is moist	
	Large seedlings / small saplings Remove using a Tree Popper	All year	Seedlings that can't be hand pulled, and saplings that are too small to be drilled
	Small saplings Drill and fill with glyphosate 1:5	All year	Saplings and large trees with trunk diameter that is suitable to be drilled
	Saplings and larger trees	All year	Basal spray trunks with 35ml Garlon per L Biosafe Oil This method ONLY recommended for Contractors. Volunteers – Use Drill and Fill method.
<i>Chrysanthemoides monilifera</i> (boneseed)	Seedlings Hand pull	Autumn, winter, early spring when soil is moist	
	Cut and swab 1:50 glyphosate i.e. 20ml/L	All year	
<i>Fraxinus rotundifolia</i> (desert ash)	Seedlings Hand pull	Autumn, winter, early spring when soil is moist	
	Cut and swab 1:50 glyphosate i.e. 20ml/L	All year	Seedlings that can't be hand pulled, and saplings that are too small to be drilled
	Drill and fill with glyphosate 1:5	All year	Saplings with trunk diameter that is suitable to be drilled. Large trees
<i>Rosa</i> sp. (sweet briar/dog rose)	Hand pull (seedlings)	Autumn, winter, early spring when soil is moist	
	Cut and swab 1:50 glyphosate i.e. 20ml/L	All year	
<i>Asclepias rotundifolia</i> (cotton bush)	Seedlings Hand pull	Autumn, winter, early spring when soil is moist	
	Cut and swab 1:50 glyphosate i.e. 20ml/L	All year	

Perennial Grasses and Herbs	Method of Control	Time of Year	Comments
<i>Phalaris aquatica</i> (Phalaris)	Brush cut and spray regrowth with glyphosate at 10ml: 1litre	Winter-Spring	
<i>Piptatherum miliaceum</i> (rice millet)	Brush cut and spray regrowth with glyphosate at 10ml: 1litre	Winter-Spring	
<i>Pentstemonis thunbergii</i> (pussy tails)	Spot spray with glyphosate at 10ml: 1litre	Late Winter-Spring	
<i>Scabiosa atropurpurea</i> (scabious)	Hand pull or slash and spray regrowth with glyphosate at 10ml: 1litre	Autumn, winter, early spring when soil is moist	
<i>Cynara cardunculus</i> (artichoke thistle)	Cut off all leaves and stem, spray stump with glyphosate at 10ml: 1litre	Late winter – spring before flowering	
<i>Oxalis pes-caprae</i> (soursob)	No real effective method for Volunteers. Contractors ONLY to use Metsulfuron	Late July to early September before natural plant yellowing	
Annual Grasses and Herbs	Method of Control	Time of Year	Comments
<i>Watsonia</i> sp. (watsonia)	Cut and swab isolated plants with glyphosate at 10 ml: 1litre or wipe leaves (tonging method)	Spring-summer	
	Slash and spot spray with glyphosate at 10ml: 1litre	Spring-summer	
<i>Myrsiphyllum asparagoides</i> (bridal creeper) NB: If Bridal creeper in good native vegetation control ONLY to be undertaken by Contractors	Spot spray with glyphosate at 10ml: 1litre	Late winter – spring before flowering	A surfactant (aka wetter) is definitely needed but not a Pulse Penetrant.
	Dig up or spot spray isolated plants and small infestations glyphosate at 10ml: 1litre	Late winter – spring before flowering	A surfactant (aka wetter) is definitely needed but not a Pulse Penetrant.
	Distribute biological controls in dense infestations	Late winter – spring before flowering	Propagate hoppers & rust under nursery conditions to ensure continual control.
<i>Monodenia bracteata</i> (Monodenia)	Dig up or cut and swab isolated plants and small infestations	Late spring before flowering	Ensure that the fruiting bulbs (x 2) are removed from the soil. Plants to be treated with lime and buried in deep hole.

E Olive Control

Two methods of control for mature olives have been used in the Altona CSR Landcare Reserve since 1995. These control methods are:

Cut and Swab

This method was the favoured control method used by Green Corp work teams.

This method relied on stumps being treated with a mix of Glyphosate and water (mix rate of 1 part Glyphosate to 5 parts water). This method of control proved to be problematic with a very poor kill rate.

A new method of Cut and Swab was developed and is the current favoured method used by contractors developed from the basil bark spraying method (which used a Garlon/diesel mix).

This new method relies on standing trees and/or stumps being treated with a mix of Garlon and Biosafe. Biosafe is a non-toxic liquid which when mixed with Garlon (500ml/1000ml ratio) creates a very good medium for the transfer of the poison into the trunk of the targeted tree. This reduces the time spent controlling the targeted weed species considerably when compared to Drill and Fill.

Drill and Fill Methodology

This method was developed for the Altona CSR Landcare Reserve in 2000 and was used exclusively in the reserve for the removal of the larger trees during the period 2000 - 2008.

The Drill and Fill method can be used on olives of all sizes including small trees as long as there is enough room to drill two or more holes in the base of the tree remembering the smaller the base of the tree the smaller the diameter of holes drilled.

1. Prune the selected olive tree to allow access to the base of the tree. Remove enough branch and foliage from the tree leaving at least 1/3-1/2 of the original canopy. Pruning allows for easy work space, promotes a vigorous growth response from the tree and enables fast and effective transpiration of the chemical throughout the tree. Trimming also opens the area around the base of the tree to sunlight resulting in the reduction of soil moisture available to the root system and also subjects the branches and trunk to exposure to sunlight and like most fruit trees this can lead to sunburn on the trunk. The last two effects can put the olive under additional stress after drilling and injecting the chemical.
2. Once the trimming operation has been undertaken (within two-three weeks) drilling can commence. Using a dedicated drill (petrol powered is best - fitted with a 12-13 mm drill bit) drill a ring of holes around the base of the olive as close to the ground as practical. Holes are to be placed at intervals of 2.5-5.0 cm and need to be at least 2.5-5.0 cm deep (taking care not to drill right through the tree). These holes need to be filled immediately with neat Glyphosate (360g/l) using a plastic squeeze bottle with a nozzle. Marker dye can be used to indicate all holes have been filled but experience shows that the chemical stains the area around the hole making the identification of correctly filled holes easy. Do not use Bi-active Glyphosate as this chemical is subject to excessive foaming, resulting in numerous refills and excess loss of chemical due to foam overflow during filling.

The removal of dead trees. A number of people think that it is unnecessary to remove the dead olives after control mainly citing cost as the reason for not removing. The landcare group's position is that there are a number of good reasons for removing dead olives after control and these are:

- Removal of dead olives reduces the standing fire fuel load within native vegetation. Why go to all the work of killing pest plants if you intend to leave elevated fuel loads which will threaten the existence of the native vegetation you are trying to protect.

- Total removal reduces the shadow effect caused by the dead tree. Removal has shown in areas a reduction over time in the size and extent of populations of weeds such as bridal creeper and oxalis due to increased levels of sunlight. Populations of native grasses have also benefited from the dead tree removal work.
 - Experience has shown on steep banks with loose friable soils that drilled or sprayed dead olives can become too heavy and this can lead to wind throw causing increased soil disturbance and erosion. By cutting down dead trees and retaining the stumps, soil on steep banks can be stabilised without the undue risk tree throw causes.
 - Removal of dead trees makes follow up work easier and less costly. On a number of sites within the reserve time has been spent clearing material from past work programs. If dead trees are not removed after 12 months (a nominal time frame for the poison to have had the most effect and the wood is still green enough to cut easily with the chain saw) and routine maintenance is not carried out, then sometime in the future someone will have to struggle through sapling growth (from seedlings usually found around mature trees) to carry out control work. Removal costs are insignificant and with most programs' trees can be removed for minimal cost.
3. Site OHS&W: The presence of old dead hard timber in amongst these saplings makes access difficult for a safe working environment. Having to fight a way into this type of area leads to ripped clothing, the potential for sharp stick injuries and accidents caused by chainsaw kickback. Psychology also plays a part here. Providing a safe work environment goes a long way towards encouraging workers to perform efficiently and effectively which also has cost benefits for the project. Effective control and work practices in the initial stages of an olive removal project will also reduce follow up maintenance costs, saving money and time in the long term.

F Bat Species List

Family / Genus / Species	Common Name	Conservation Rating		
		Aus	SA	NL
VESPERTILIONIDAE				
<i>Chalinolobus gouldii</i>	Gould's Wattled Bat			
<i>Chalinolobus morio</i>	Chocolate Wattled Bat			
<i>Myotis macropus</i>	Large-Footed Myotis			
MOLOSSIDAE				
<i>Tadarida australis</i>	White-striped Free-tail Bat			
<i>Mormopterus petersi</i>	Southern Free-tail Bat			
<i>Vespadelus darlingtoni</i>	Large Forest Bat			
<i>Vespadelus regulus</i>	Southern Forest Bat			
These bats were recorded on the 06/02/2005 and 07/02/2005 for the Bats for Diversity Survey.				

G Bird Species List

Family / Genus / Species	Common Name	Conservation Rating		
		Aus	SA	NL
ACANTHIZIDAE				
<i>Acanthiza chrysorrhoa</i>	Yellow-rumped Thornbill			
<i>Acanthiza lineata</i>	Striated Thornbill			
<i>Acanthiza nana modesta</i>	Yellow Thornbill			LC
<i>Acanthiza pusilla</i>	Brown Thornbill			
<i>Acanthiza reguloides australis</i>	Buff-rumped Thornbill			V
<i>Gerygone fusca</i>	Western Gerygone		R	K
<i>Smicromnis brevirostris occidentalis</i>	Weebill			
<i>Sericornis frontalis</i>	White-browed Scrubwren			
ACCIPITRIDAE				
<i>Accipiter cirrocephalus</i>	Collared Sparrowhawk			
<i>Accipiter fasciatus</i>	Brown Goshawk			
<i>Aquila audax</i>	Wedge-tailed Eagle			
<i>Circus assimilis</i>	Spotted Harrier			
<i>Elanus axillaris</i>	Black-shouldered Kite			
<i>Haliastur sphenurus</i>	Whistling Kite			LC
<i>Hieraaetus morphnoides</i>	Little Eagle		V	LC
<i>Lophoictinia isura</i>	Square-tailed Kite		E	
<i>Milvus migrans</i>	Black Kite			
ACROCEPHALIDAE				
<i>Acrocephalus australis</i>	Australian Reed Warbler			
AEGOTHELIDAE				
<i>Aegotheles cristatus</i>	Australian Owlet-nightjar			LC
ALCEDINIDAE				
<i>Dacelo novaeguineae</i>	Laughing Kookaburra			
<i>Todiramphus pyrrhopygius</i>	Red-backed Kingfisher			
<i>Todiramphus sanctus</i>	Sacred Kingfisher			LC
ANATIDAE				
<i>Anas gracilis</i>	Grey Teal			
<i>Anas superciliosa</i>	Pacific Black Duck			
<i>Chenonetta jubata</i>	Maned Duck			
<i>Tadorna tadornoides</i>	Australian Shelduck			

Family / Genus / Species	Common Name	Conservation Rating		
		Aus	SA	NL
APODIDAE				
<i>Apus pacificus</i>	Pacific Swift			
ARDEIDAE				
<i>Ardea pacifica</i>	White-necked Heron			LC
<i>Egretta novaehollandiae</i>	White-faced Heron			
<i>Nycticorax caledonicus</i>	Nankeen Night Heron			
ARTAMIDAE				
<i>Artamus cyanopterus</i>	Dusky Woodswallow			
<i>Artamus personatus</i>	Masked Woodswallow			
<i>Artamus superciliosus</i>	White-browed Woodswallow			
<i>Strepera versicolor melanoptera</i>	Black-winged Currawong (Grey Currawong)		E	
<i>Gymnorhina tibicen</i>	Australian Magpie			
CACATUIDAE				
<i>Cacatua galerita</i>	Sulphur-crested Cockatoo			
<i>Cacatua sanguinea</i>	Little Corella			
<i>Cacatua tenuirostris</i>	Long-billed Corella			
<i>Eolophus roseicapilla</i>	Galah			
<i>Zanda funerea</i>	Yellow-tailed Black Cockatoo			V
CAMPEPHAGIDAE				
<i>Coracina novaehollandiae</i>	Black-faced Cuckoo-shrike			
<i>Lalage tricolor</i>	White-winged Triller			
<i>Eurostopodus argus</i>	Spotted Nightjar			V
CHARADRIIDAE				
<i>Vanellus miles</i>	Masked Lapwing			
CLIMACTERIDAE				
<i>Climacteris picumnus picumnus</i>	Brown Treecreeper			V
<i>Cormobates leucophaeus grisescens</i>	White-throated Treecreeper			LC
COLUMBIDAE				
* <i>Columba livia</i>	Feral Pigeon			
* <i>Spilopelia chinensis</i>	Spotted Dove			
<i>Geopelia placida</i>	Peaceful Dove			V
<i>Ocyphaps lophotes</i>	Crested Pigeon			
<i>Phaps chalcoptera</i>	Common Bronzewing			

Family / Genus / Species	Common Name	Conservation Rating		
		Aus	SA	NL
<i>Phaps elegans</i>	Brush Bronzewing			R
CORCORACIDAE				
<i>Corcorax melanorhamphos</i>	White-winged Cough		R	LC
<i>Corvid coronoides</i>	Australian Raven			
<i>Corvus mellori</i>	Little Raven			
CUCULIDAE				
<i>Cacomantis pallidus</i>	Pallid Cuckoo			
<i>Cacomantis flabelliformis</i>	Fan-tailed Cuckoo			V
<i>Chalcites basalus</i>	Horsefield's Bronze Cuckoo			V
<i>Chalcites lucidus</i>	Shining Bronze Cuckoo			R
<i>Chalcites osculans</i>	Black-eared Cuckoo			
DICAETIDAE				
<i>Dicaeum hirundinaceum</i>	Mistletoebird			
ESTRILDIDAE				
<i>Neochmia temporalis</i>	Red-browed Finch			
<i>Stagonopleura guttata</i>	Diamond Firetail			V
<i>Taeniopygia guttata</i>	Zebra Finch			LC
FALCONIDAE				
<i>Falco berigora</i>	Brown Falcon			
<i>Falco cenchroides</i>	Nankeen Kestrel			
<i>Falco longipennis</i>	Australian Hobby			
<i>Falco peregrinus</i>	Peregrine Falcon		R	
<i>Falco subniger</i>	Black Falcon		R	
FALCUNCULIDAE				
<i>Falcunculus frontatus</i>	Crested Shrike-tit			V
FRINGILLIDAE				
* <i>Carduelis caerulea</i>	European Goldfinch			
HIRUNDINIDAE				
<i>Chermoea leucosternum</i>	White-backed Swallow			
<i>Hirundo neoxena</i>	Welcome Swallow			
<i>Petrochelidon ariel</i>	Fairy Martin			LC
<i>Petrochelidon nigricans</i>	Tree Martin			LC
LOCUSTELLIDAE				

Family / Genus / Species	Common Name	Conservation Rating		
		Aus	SA	NL
Cincloramphus mathewsi	Rufous Songlark			
Poodytes gramineus	Little Grassbird			
MALURIDAE				
Malurus cyaneus leggei	Superb Fairywren			V
MELIPHAGIDAE				
Acanthorhynchus tenuirostris	Eastern Spinebill			
Anthochaera carunculata	Red Wattlebird			
Anthochaera chrysoptera chrysoptera	Little Wattlebird			LC
Caligavis chrysops	Yellow-faced Honeyeater			
Gavicalis virescens	Singing Honeyeater			
Gliciphila melanops	Tawny-crowned Honeyeater			LC
Manorina melanocephala	Noisy Miner			
Melithreptus brevirostris	Brown-headed Honeyeater			R
Melithreptus gularis gularis	Black-chinned Honeyeater		V	V
Melithreptus lunatus	White-naped Honeyeater			LC
Phylidonyris novaehollandiae	New Holland Honeyeater			
Phylidonyris pyrrhopterus pyrrhopterus	Crescent Honeyeater			
Ptilotula ornata	Yellow-plumed Honeyeater			
Ptilotula penicillata	White-plumed Honeyeater			
Purnella albifrons	White-fronted Honeyeater			
MEROPIIDAE				
Merops ornatus	Rainbow Bee-eater			
MONARCHIDAE				
Grallina cyanoleuca	Magpie-lark			
Myiagra cyanoleuca	Satin Flycatcher		E	
Myiagra inquieta	Restless Flycatcher		R	V
NEOSITTIDAE				
Daphoenositta chrysoptera	Varied Sittella			LC
ORIOIIDAE				
Oriolus sagittatus	Olive-backed Oriole		R	R
PACHYCEPHALIDAE				
Colluricincla harmonica	Grey Shrike-thrush			
Pachycephala olivacea hesperus	Olive Whistler		E	

Family / Genus / Species	Common Name	Conservation Rating		
		Aus	SA	NL
<i>Pachycephala pectoralis</i>	Australian Western Whistler			
<i>Pachycephala rufiventris</i>	Rufous Whistler			LC
PARDALOTIDAE				
<i>Pardalotus punctatus punctatus</i>	Spotted Pardalote			LC
<i>Pardalotus striatus</i>	Striated Pardalote			
PASSERIDAE				
* <i>Passer domesticus</i>	House Sparrow			
PETROICIDAE				
<i>Melanodryas cucullata cucullata</i>	Hooded Robin (south-eastern)		R	V
<i>Microeca fascinans</i>	Jacky Winter SA			V
<i>Petroica goodenovii</i>	Red-capped Robin			V
<i>Petroica boodang</i>	Scarlet Robin		R	V
<i>Petroica rosea</i>	Rose Robin			
PHALACROCORACIDAE				
<i>Microcarbo-melanoleucos</i>	Little Pied Cormorant			
<i>Phalacrocorax carbo</i>	Great Cormorant			
PHASIANIDAE				
<i>Coturnix ypsilophora</i>	Brown Quail		V	
PODARGIDAE				
<i>Podargus strigoides</i>	Tawny Frogmouth			LC
PODICIPEDIDAE				
<i>Tachybaptus novaehollandiae</i>	Australasian Grebe			
POMATOSTOMIDAE				
<i>Pomatostomus superciliosa</i>	White-browed Babbler			LC
PSITTACULIDAE				
<i>Glossopsitta concinna</i>	Musk Lorikeet			
<i>Melopsittacus undulatus</i>	Budgerigar			
<i>Neophema elegans</i>	Elegant Parrot		R	
<i>Parvipsitta porphyrocephala</i>	Purple-crowned Lorikeet			
<i>Platycercus elegans</i>	Crimson Rosella			
<i>Platycercus elegans x flaveolus</i>	Adelaide Rosella			
<i>Platycercus eximius</i>	Eastern Rosella			
<i>Psephotus haematonotus</i>	Red-rumped Parrot			LC

Family / Genus / Species	Common Name	Conservation Rating		
		Aus	SA	NL
<i>Trichoglossus moluccanus</i>	Rainbow Lorikeet			
RALLIDAE				
<i>Fulica atra</i>	Eurasian Coot			
<i>Gallinula tenebrosa</i>	Dusky Moorhen			
<i>Lewinia pectoralis</i>	Lewin's Rail			V
<i>Porphyrio melanotus</i>	Australasian Swamphe			
<i>Tribonyx ventralis</i>	Black-tailed Native-hen			
RHIPIDURIDAE				
<i>Rhipidura albiscapa</i>	Grey Fantail			
<i>Rhipidura leucophrys</i>	Willie Wagtail			
STRIGIDAE				
<i>Ninox boobook</i>	Australian Boobook			
STURNIDAE				
* <i>Sturnus vulgaris</i>	Common Starling			
THRESKIORNITHIDAE				
<i>Platalea flavipes</i>	Yellow-billed Spoonbill			
<i>Threskiornis spinicollis</i>	Straw-necked Ibis			
TURDIDAE				
* <i>Turdus merula</i>	Common Blackbird			
TURNICIDAE				
<i>Turnix varius</i>	Painted Buttonquail		R	V
ZOSTEROPIDAE				
<i>Zosterops lateralis</i>	Silvereye			
<p>This List is compiled from previous surveys of the Altona CSR Landcare Reserve, Road Reserve and Grundy's Block including those undertaken by Bird SA and has been generated with species names and common names based on the Annotated List of Birds of South Australia 2020. Fifth edition Version 5.1 (Philippa Horton, Brian Blaylock, Andrew Black).</p> <p>Threatened species and subspecies status codes have been included in the list. the Australian status codes as listed in the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) at: www.environment.gov.au.</p> <p>The South Australian status codes used in Schedules 7, 8 and 9 (revised 2019) in the National Parks and Wildlife Act 1972 at: www.legislation.sa.gov.au.</p>				

Conservation Rating Status Codes

EPBC Act (National Rating)

EX	Extinct
CE	Critically Endangered
E	Endangered
V	Vulnerable

NPW Act (State Rating)

X	Extinct
E	Endangered
V	Vulnerable
R	Rare

Northern Lofty (Regional Rating)

X	Presumed extinct
E	Endangered
V	Vulnerable
NT	Near Threatened
RA	Rare
LC	Least Concern; less common species but not rare

H Native Vegetation Council Box Mistletoe Management Guidelines

Several species of Mistletoe are indigenous to South Australia and all are important in providing habitat for native birds and other fauna.

However, vegetation clearance and land management practices may create situations where there are severe Mistletoe infestations in trees (particularly Eucalypts) that are already stressed by other factors. Research has shown that the optimum approach to this situation is to revegetate affected areas with a range of native plant species, in order to help restore a better balance between Mistletoe and other native species. It is also accepted that the removal of Mistletoe from badly affected trees may prolong the life of those trees. This particularly applies to infestations of Box Mistletoe.

The removal of Box Mistletoe (*Amyema miquelii*) can occur in accordance with the Native Vegetation Regulations 2017, regulation 8(16) provided that it complies with this guideline. Notification must be sent to nvc@sa.gov.au with application and property information, a description of the area, location and the proposed amount to be cleared – including a map and photographs.

1. Consultation and Endorsement

As box mistletoe can be a valuable plant in its own right, any removal on a significant scale must be discussed with, and endorsed by, the Biodiversity Monitoring and Evaluation Section or Native Vegetation Council Secretariat. This requirement applies in all situations except:

- Where the mistletoe is within township boundaries, or;
 - Outside of township boundaries, where the mistletoe removal is from ten trees or less
2. Subject to part 1 above, box mistletoe may be removed from trees where:
- The trees are scattered or isolated trees over pasture, along roadsides, or in other situations
 - Where other native vegetation has been largely replaced by exotics, and where the trees contribute significantly to the amenity of the district or locality; and
 - The trees are showing signs of significant die-back which are clearly linked with the level of mistletoe infestation, and;
 - The removal complies with other conditions as set out below.
3. The following is to be used as a guide where mistletoe is to be removed:
- (a) *Class 1 (low) level infestation*: tree apparently healthy: no significant loss of tree foliage:
- No mistletoe to be removed.

NOTE: Some loss or fluctuation in the foliage cover of eucalyptus is quite natural: as a guide, 30% loss or more can be interpreted as indicating stress in trees where mistletoe is present.

(b) *Class 2 (moderate) level infestations*: tree with signs of stress or dieback; 30% to 40% of tree foliage lost with mistletoe being the only apparent factor: Up to 70% of the box mistletoe can be removed.

NOTE: This percentage can be increased, in consultation with DEH, where it is clear from other trees in the vicinity that Class 2 infestations can eventually contribute to more severe dieback.

- (c) *Class 3 (high) level infestation:* trees clearly stresses: several mistletoe clumps present and more than 40% of tree foliage lost: All mistletoe can be removed from the tree.

I Native Vegetation Pathogen - Mundulla Yellows

Symptoms of Mundulla Yellows

Mundulla Yellows was first discovered at Mundulla in the South East of South Australia in the mid 1970's. The disease attacks eucalypts and at this stage it is not known what causes it or how it is spread.

Research and experimentation is ongoing to find answers to these questions.

The first sign of the disease is yellowing of the leaves (the veins are still green similar to lime induced chlorosis symptoms), and then the leaves turn brown and die which in turn kills the tree.

Mundulla Yellows has spread northward into the Riverland, Adelaide Plains, Kangaroo Island, and Southern Eyre Peninsula and to the Mid North.

Control strategies for Mundulla Yellows

Specific control measures for Mundulla Yellows (MY) cannot be designed until the cause and the disease cycle are known. Until then, the following general plant hygiene practices are suggested:

- 1.** Sterilise cutting implements between plants. Strong alkali for 30 min would be best. Undiluted commercial bleach (3% active hypochlorite) for 1-2 min is the next best choice, but note that solutions may be unstable (see manufacturer's information) and may need to be replaced frequently when used in the field.
- 2.** Do not remove cut material from the site; this will avoid creating new foci as potential sources for the spread of MY, e.g., by insects.
- 3.** Do not distribute seedlings raised in one area to other sites; even if plants appear healthy latent infections may be possible.
- 4.** Use only local seed from asymptomatic trees for new plantings.
- 5.** Clean equipment and machinery before moving to a different area.

These measures will help to minimise the risk due to human activity of spreading intracellular pathogens, including MY, from plant to plant and, most importantly, into new areas. (Hanold D. & Randles J.W., 2002)

J Native Vegetation Pathogen - *Phytophthora cinnamomi*

History of *Phytophthora* in South Australia

Phytophthora cinnamomi is present in many countries throughout the world. The fungus was probably introduced into Australia in infected nursery stock of cultivated plants.

It could have been introduced to the Mount Lofty Ranges in the early 1900 in infested berries from the Dandenong Ranges in Victoria. Areas where the annual rainfall is above 600 mm and soils are neutral to acid are ideal for the establishment of *Phytophthora cinnamomi*.

- *Phytophthora cinnamomi* is found in South Australia mainly in the High-Risk areas of the Fleurieu Peninsula and Kangaroo Island.
- Moderate - Low Risk areas in South Australia include sections of the Lower South East, Southern Lofty, Lower Eyre Peninsula, Mid North and the Barossa Valley.
- This High - Moderate - Low risk category is defined by the presence of soils and rainfall characteristics suitable for the spread of the pathogen.

Given the presence of a number of native species with Conservation Ratings (National, State, Regional) some of which are susceptible to *Phytophthora* (heath species, sheoak etc) it is important that the landcare group develops and implements management strategies to limit the spread of soil pathogens (not only *Phytophthora*) through habitat restoration activities.

What is *Phytophthora cinnamomi* ?

Phytophthora cinnamomi is a soil borne pathogen (a water mould-Class Oomycetes), which can cause disease and death to many Australian native and horticultural plants. The mould invades the roots and stems of plants causing lesions (areas that appear rotten). This causes the plant to die by preventing the uptake of water and nutrients within the plant.

Optimum conditions for *Phytophthora cinnamomi* movement are:

- Soil temperatures between 15°C and 30°C;
- Soil pH 5-6 (acid) and
- Soil moisture content just above field capacity (aerobic).

The disease quickly moves down-slope by water borne zoospores either at or below the surface. Movement up-slope is relatively slow from plant to plant via root contact. Infestations are permanent, and there is at present no cost-effective cure or any way of stopping its autonomous spread once it has infested an area.

Indicator Species

Indicator plant species are plants known to be highly susceptible to *Phytophthora cinnamomi* or other related soil/water borne moulds.

These include a wide range of native and exotic plant species.

The native (indigenous) species include plants from the following families – *Proteaceae*, *Epacridaceae*, *Papilionaceae/Fabaceae* and *Myrtaceae*.

These families contain a number of the more susceptible known species and include a number of important native heath species, which if removed from an association could lead to a reduction in fauna species present, which depend on these plants for habitat etc.

Among the exotic species there are also a number of plants, which have a high commercial value. The spread of *Phytophthora* to these commercial crops could have a widespread economic impact on the state economy.

Not all genera within a family or all species within a genus are necessarily susceptible e.g., some species of *Eucalypt* are highly resistant, while others i.e., *E. baxteri* are affected but have the ability to resist the invasion of the fungus in certain conditions.

The presence of indicator species within the reserve is one method of monitoring for the presence of these fungi.

The absence of indicator species doesn't mean however that *Phytophthora cinnamomi* is not present. Tests on sites at Mt Jagged on the Fleurieu Peninsula, south of Mt. Compass in 2000 revealed *Phytophthora cinnamomi* and *Pythium* sp. present on a hill slope above a watercourse where there were no indicator species present.

These sites was sampled because the watercourse is linked to known *Phytophthora cinnamomi* sites north (downstream) of the test site.

Methods of Dispersal

- Earth works and stock piling
- Earth moving machinery
- Vehicles
- Drainage works and lines
- 4wd vehicles and motorcycles
- Camping equipment and boots
- Soil and garden supplies
- Plant nurseries
- Cycles
- Horses

Phytophthora cinnamomi Management

Because of the wide variety of vectors and the large area potentially under threat from *Phytophthora cinnamomi*, implementing appropriate management strategies is essential.

All management, maintenance workers, contractors, service providers, local interest groups and adjoining landholders need to be informed in the event that a *Phytophthora cinnamomi* site is recorded within the Landcare Reserve.

Recorded sites should be fenced to restrict entry to foot traffic and vehicles where possible and appropriate warning and interpretive signage erected and the movement of maintenance vehicles should be restricted at diseased sites.

If this is not possible, on-site wash down points need to be established to limit the risk of dispersal. Hygiene kits should be issued to group members or contractors working in or near these sites.

Where possible restoration works should be undertaken in dry soil conditions. Importing or exporting infected soil or plant material should be avoided at all costs. Site-specific action plans should be developed, identifying short and long-term outcomes. Areas surrounding known sites should be tested every year to assess any reduction or spread of the disease and management strategies adjusted accordingly.

K Clearance Envelope Maintenance

The clearance of vegetation to reduce damage to maintenance and emergency vehicles using the access roads and to avoid injury to visitors while walking on tracks needs to be addressed and a standard adopted.

To address this problem a standard for clearance is to be adopted. This standard is to follow Transport SA and council guidelines for **Clearance Envelopes** and includes the following provisions:

- The canopy branches, limbs and trunks must allow the passage of a vehicle to 4.6 metres. To allow for regrowth between pruning and sagging of branches when wet or windy a clearance height of 5 metres above the access road measured from the graded edge of the access road will be adopted (Refer Figure 1).
- The canopy branches, limbs and trunks must allow the passage of walkers to 2.25 metres. To allow for regrowth between pruning and sagging of branches when wet or windy a clearance height of 2.5 metres above the walking track measured from the formed edge of the walking track will be adopted (Refer Figure 2).
- Removal of limbs from trees will be undertaken using appropriate level of horticultural skill causing as little injury to the tree as possible (i.e., use appropriate equipment). Trimming and removal should also take into account the structural stability of the tree - inappropriate trimming may cause the tree to become unstable in high winds creating more safety issues.
- Removal of mature trees and tall shrubs (native trees - sheoak, native pines and mallee with a stem diameter of 100 mm at 1.0 metre above ground level) from the edge of or within the clearance envelope will require a vegetation survey / assessment and approval prior to clearance.
- Clearance of trees and shrubs should be undertaken while plants are small and easily removed. This requires the use of personnel who have been trained in plant recognition and have the skills to identify those trees and shrubs which will be a problem at a future time.

This work is undertaken by the CFS.

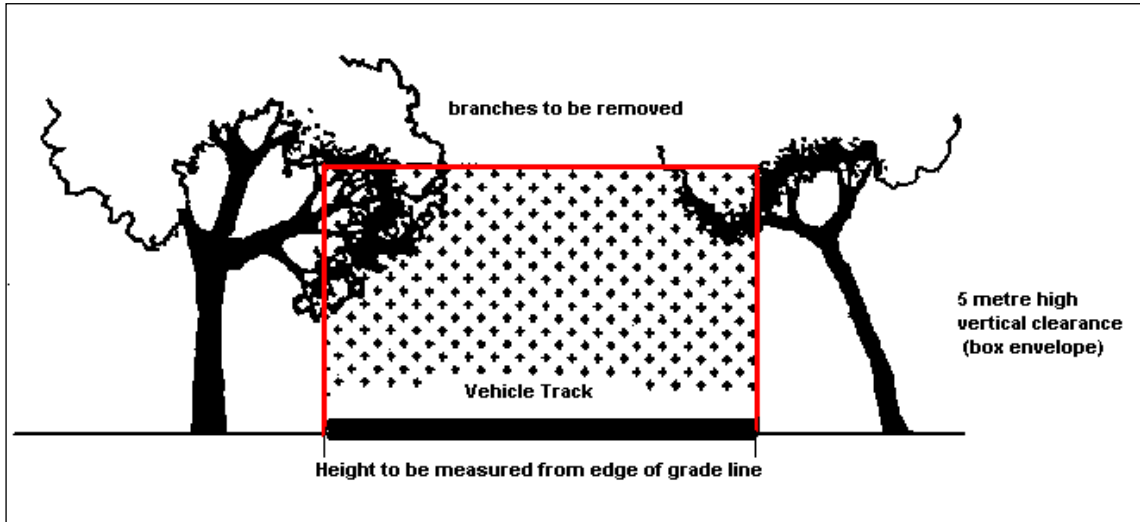


Figure 1: Clearance Envelope for Vehicle Access Tracks

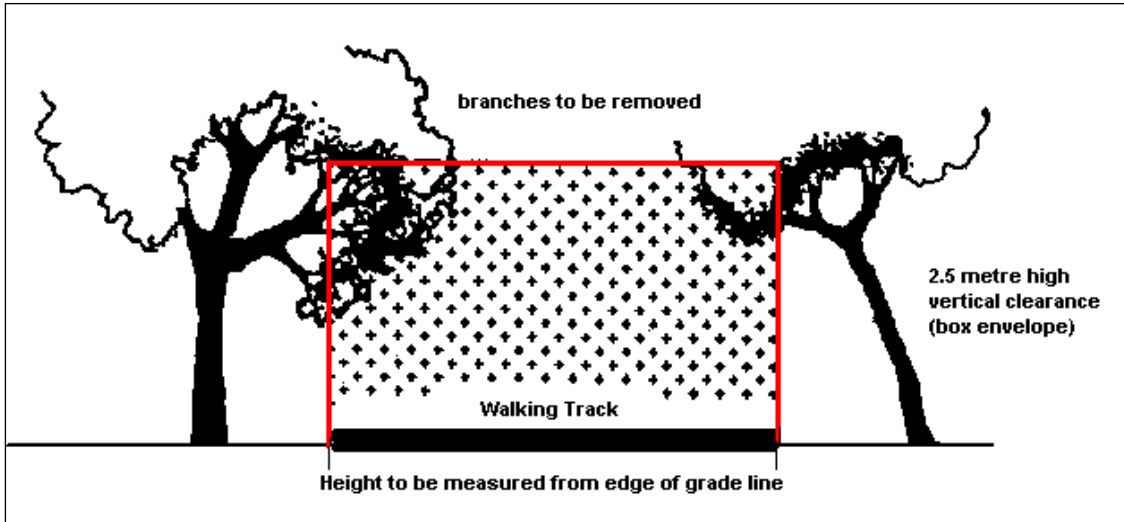


Figure 2: Clearance Envelope for Walking Tracks

L Seed Collection Guidelines

The following guidelines apply for all collection of plant material within the Altona CSR Landcare Reserve.

- No collection is permissible without the written permission of the landcare group Management Committee.
- Applications to be submitted no later than two months prior to anticipated collection date/s. No collecting will be permitted until receipt of the countersigned letter of approval (forms Collection Permit).
- The Collection Permit and National Parks Wildlife Service permit to be carried while collection is being undertaken and presented on request from any landcare member.
- Any threatened species will require a specific permit separate to general species.
- Details of collection purpose (i.e., project information), species targeted, estimated amounts of material to be collected and location of sites within reserve where collection will occur must be provided prior to collection.
- A list of collected material including the target species, actual seed quantity collected (weight) and GPS location within the reserve must be supplied within 14 days of the collection taking place.
- No collection to take place within specified areas – e.g., Grundy's Block.
- Collection target areas must not focus on isolated specimens and must be from only healthy plants having neighbours within 20 metres and over a spread of at least five plants in an area of at least 10 m².
- All cuts must be on limbs no greater than 10 mm diameter and as close to the fruiting capsule as possible. No more than 10% of the fruiting capsule mass present is to be collected from individual plants.
- Collection can only occur in one location / stand of species at 5-year intervals (dependant on weather conditions and regeneration rates of targeted species within the collection zone) unless permission is granted by the landcare group.
- All equipment and footwear must be clean of soil and weed seed from other sites prior to collection on Landcare reserve.
- Excess seed not required for specific project must be returned to the landcare group within 12 months for use within the reserve
- An annual report must be submitted to the landcare group, which contains information on how the seed collected was used and some indication of the germination success rate of seed collected.

M Photo Points

The following table provides details of the photo point historically and currently used.

Current Photo Point Number	Photo Point Number – Pre 2010	Co-ordinates		Comments
		Latitude	Longitude	
1	1	S 34.57783	E 138.91357	Remained unchanged
	2	Point 2 pre 2010 no longer used.		
2	3	S 34.57991	E 138.91448	
3	4	S 34.58044	E 138.91424	
4	5	S 34.58143	E 138.91466	
	6	Point 6 pre 2010 no longer used.		
	7	Point 7 pre 2010 no longer used.		
	8	Point 8 pre 2010 no longer used.		
5	n/a	S 34.58552	E 138.91561	
6	9	S 34.58536	E 138.91494	
7	14	S 34.58523	E 138.91422	
8	10	S 34.58512	E 138.91784	
9	n/a	S 34.58594	E 138.91314	Bridal Creeper point. Created May 2021
	11	Point 11 pre 2010 no longer used.		
	12	Point 12 pre 2010 no longer used.		
10	n/a	S 34.58571	E 138.91353	Bridal Creeper point. Created May 2021
11	n/a	S 34.58549	E 138.91357	Bridal Creeper point. Created May 2021
	13	Point 13 pre 2010 no longer used.		
	15	Point 15 pre 2010 no longer used.		
	16	Point 16 pre 2010 no longer used.		

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O Acronyms

Abbreviation	Meaning
BDBSA	Biological Database of South Australia
CFS	(South Australian) Country Fire Service
DAARE	Department of Aboriginal Affairs and Reconciliation
EPBC	Environment Protection and Biodiversity Conservation Act 1999
IUCN	International Union for Conservation of Nature
NPW	National Parks and Wildlife