



MOUNT CRAWFORD FOREST RESERVE
WATTS GULLY NATIVE FOREST RESERVE
MANAGEMENT PLAN

September 2016



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INTRODUCTION

Watts Gully Native Forest Reserve (NFR) consists of 342.4 hectares of native vegetation disturbed in the past by activities such as mining and timber cutting. It is recognised as a significant remnant of the original vegetation in the area and has been proclaimed as a NFR under the *Forestry Act 1950*.

The Mount Lofty Ranges Forest Reserves Management Plan (ForestrySA 2014) is the overarching plan for management of forest reserves in the Mount Lofty Ranges and describes the management context and planning framework in greater detail. The Watts Gully Native Forest Reserve Management Plan provides a statement of purpose for the area based upon an assessment of its natural features, management philosophies and community use. It is intended to replace these plans in the future with conservation management plans which will cover the management of all conservation areas within a forest reserve.

The Management Program identifies priority tasks for the reserve. The natural resources data (Appendices 1-2) provides the latest available information on flora and fauna.

Purpose of Reserve

Watts Gully NFR will be managed and protected to conserve their biodiversity by sustaining its indigenous plant and animal communities as an enduring and dynamic ecosystem.

ForestrySA currently manages approximately 42 000 hectares of Crown Land in South Australia dedicated as Forest Reserves under the *Forestry Act 1950*. Approximately 23 000 hectares of this land is native forest, woodland or wetland, located in the Southern Flinders Ranges, the Mount Lofty Ranges and the Lower South East of South Australia.

Location

Watts Gully NFR is accessible from either Watts Gully Road via Rocky Creek Road, approximately 3km from Warren Road/Forreton Road junction, or Watts Gully Road via Little Para Road, approximately 7km north of Kersbrook. The reserve is shown in the Emergency Services Map book Mount Lofty Ranges, (Edition 3, 2014), Grid Reference 095 525, Map 178B. Watts Gully NFR map is displayed in Figure 2.

Watts Gully NFR comprises Sections 106, 107 and Part Section 111 in the Hundred of Para Wirra. Sections 106 and 107 are within the Adelaide Hills Council and Part Section 111 in the District Council of Barossa.

The area is surrounded by a variety of land uses. Some of the larger farms have been subdivided for hobby farms, particularly along the northern side of Watts Gully Road. A grazing property abuts the southern boundary. Pine plantations under the management of ForestrySA occur on the eastern and south-western boundaries of the reserve.

Administration and Access

The area is under the management control of the Mount Crawford Forest Office, located 745 Warren Road (Williamstown to Gumeracha) 7km south-east of Williamstown. Pedestrian access is permitted during daylight hours except on days when a Total Fire Ban is imposed or where erected signs or notices restrict access to specified areas.

There is no vehicular access in to Watts Gully NFR although Watts Gully Road passes through the reserve. Vehicle access by the public is restricted by provision of Regulations under the *Forestry Act 1950*.

Access through NFRs by ForestrySA vehicles and vehicles of contractors employed by ForestrySA on existing tracks and firebreaks, will be permitted for management purposes, including fire prevention and suppression, and pest plant and animal control.

Management Objectives

ForestrySA manages some of the few remnant areas of native forest, woodland and wetland predominantly in the higher rainfall areas of South Australia, together with their associated fauna. These areas contribute significantly to the natural assets of the State and have been managed as Forest Reserves under the *Forestry Act* 1950 by the former Woods and Forests Department (now ForestrySA) which was established in 1882.

The primary management objective for areas of native forest under its control is to conserve and enhance native flora and fauna, and preserve biodiversity for the long-term benefit of the South Australian community.

In managing native forests, ForestrySA:

- recognises that the size and relative isolation of many native forest reserves increases the risk of species loss due to fire, drought or disease, where isolation is a barrier to re-colonisation;
- recognises that native forest reserves contribute to the conservation of valuable remnant habitats for many species and provide, in part, a representation of land cover before clearance and other changes following European settlement;
- recognises ecosystems will continue to change with time;
- will make decisions for the management of ecosystems, communities and processes, based on the information available;
- will use the least disturbed sites as scientific benchmark areas to monitor changes due to natural succession, and as reference sites for restoration of adjacent disturbed areas;
- will vary management programs, as required, to maximise biological diversity; and
- may involve regional co-ordination with neighbouring landowners (private individuals, Local Government and other Government agencies) to maximise the conservation value of an area.

Prior to the early 1950s, most areas were disturbed by activities such as timber cutting, grazing, fire and invasion by introduced plants and animals. Since then, most of these areas have remained relatively undisturbed. Compared with other remnant areas of native vegetation in South Australia, those managed by ForestrySA are often the least disturbed due to their long history of consistent land tenure. Areas of native vegetation may require specific management prescriptions to achieve management objectives, depending upon their disturbance histories.

VALUES AND CURRENT USES

Conservation

- The Watts Gully NFR is an IUCN (International Union for the Conservation of Nature & Natural Resources 2005) Category IV Reserve. Category IV Reserves are habitat or species management areas, protected areas managed mainly for conservation through management intervention to ensure the maintenance of habitats and/or to meet the requirements of species.
- The reserve conserves remnant native vegetation characteristic of the region where it is estimated less than 15% of the original vegetation remains (Long 1999).
- The reserve is a large block of predominantly *Eucalyptus obliqua* (Messmate stringybark) and *E. gonicalyx* (Long-leaved box) Woodland, and is the most southerly part of the mosaic of native vegetation consisting of Hale and Warren Conservation Parks, the Warren Reservoir Reserve and Tower Hill NFR.

- The reserve contains plant species with high conservation significance, including the Nationally vulnerable species, *Glycine latrobeana* (Clover glycine).
- The least disturbed areas have not been burnt for approximately 50 years and have been designated as Scientific Benchmark Areas.
- The reserve contains mature trees with hollows. These scattered habitat trees occur in the steeper gullies and provide important nesting and roosting sites for hollow-dependent birds and animals.
- The area contains a permanent natural water supply, important for fauna in summer.

Cultural Heritage

- According to Tindale (1974), the area containing the reserve was occupied by the Peramangk Aboriginal people, and most likely the Kaurna Aboriginal people, as the approximate boundary of both these groups is close to the reserves. Many archeological deposits have cultural significance for Aboriginal people today and many may have scientific significance. Certain sites have landforms that are more likely to contain evidence of Aboriginal historic occupation than others, such as claypans; rocky outcrops; dunes; and bush or forested areas. A site may also be important for historic events that occurred there. Such places may contain no archeological evidence, but can have great significance to Aboriginal people.

The South Australian Government is responsible for the protection and preservation of sites, objects and remains of sacred, ceremonial, mythological or historical significance to Aboriginal people. Known sites of significance to Aboriginal archaeology, anthropology, history and tradition are listed on the Register of Aboriginal Sites and Objects (*Aboriginal Heritage Act 1988*). There are no known registered sites within these reserves.

- The area is historically significant due to its mining heritage. Gold was discovered in the late 1800s and led to the gold rush of 1885.

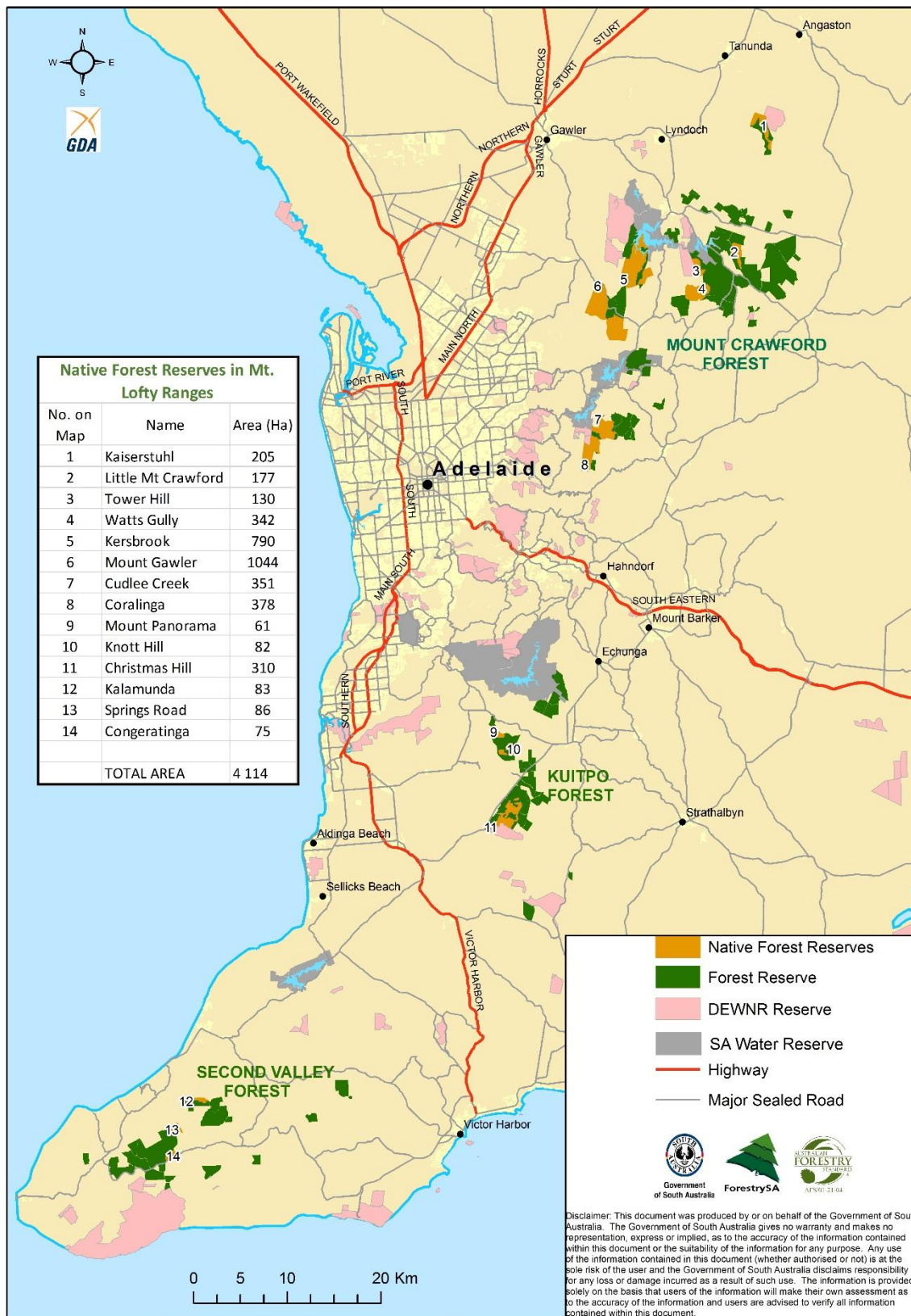
Recreation

- The Heysen Trail is a long-distance walking trail, which traverses the Mount Lofty Ranges, extending from Cape Jervis in the south to the Flinders Ranges in the north. The trail passes along the western boundary of Watts Gully NFR and is shown in Figure 2. ForestrySA allows cycling on fire access tracks only and it is not permitted on single tracks (i.e. any track less than a standard vehicle in width) set up exclusively for walkers, or where tracks and roads are signposted to restrict bicycle access. Horse riding is not permitted in NFRs within the Mount Crawford Forest region.

Fossicking

- The north east section of the reserve is currently part of the Mount Crawford fossicking area (Figure 2). Fossickers are required to obtain a permit from the Mount Crawford Forest Information Centre and they must comply with the conditions set out in the permit. ForestrySA is reliant upon the co-operation of fossickers in order to protect the forest environment, and to safeguard the recreational nature of fossicking. Fossicking activities has increased recently and it requires ongoing monitoring to ensure conservation values are protected.

Figure 1-Location of Native Forest Reserves in Mt. Lofty Ranges



PLANNING AND MANAGEMENT FRAMEWORK

Land use within forest reserves is defined through a forest zoning agreement with the Department for Environment - Native Vegetation Council which identifies three main management zones-

- General Forestry zone – commercial plantation areas exempt from requirements of the *Native Vegetation Act 1991*
- Conservation zone – includes gazetted native forest reserves and other areas of remnant native vegetation managed for conservation
- Transition zone – areas of former plantation managed to increase conservation value through removal of pine and other weeds with the ultimate goal to transfer to conservation zone.

Watts Gully NFR is one of fourteen NFRs in the Mount Lofty Ranges. There is also approximately 2,500ha of smaller areas of native vegetation within forest reserves managed as conservation zone. Annual operational plans are prepared for all forest reserves targeting pest plants and animals.

Planning for community use covers both commercial plantation forest and native forest areas. Community use of forest reserves is not restricted to specific areas, but determined according to compatibility and level of impact.

The management objectives for the NFRs complement existing state and regional plans, including:

- Our Place. Our Future, State Natural Resources Management Plan, South Australia 2012-2017.
- Adelaide and Mount Lofty Ranges Natural Resources Management Plan 2014-15 to 2023-24
- Informing Biodiversity Conservation for the Adelaide and Mount Lofty Ranges Region South Australia.
- Regional Recovery Plan for Threatened Species and Ecological Communities of Adelaide and the Mount Lofty Ranges, South Australia.

ForestrySA maintains certification to the AFS (AS 4708) via the Forest Management System (FMS), which provides a framework of sustainable forest management practices and processes.

A large part of ensuring appropriate management of these forests is to understand, identify, assess and manage environmental aspects and impacts. ForestrySA achieves this through a formal process identified within the FMS and records the details of these in its Aspects & Impacts Register. The controls from this process flow into management procedures and actions on the ground.

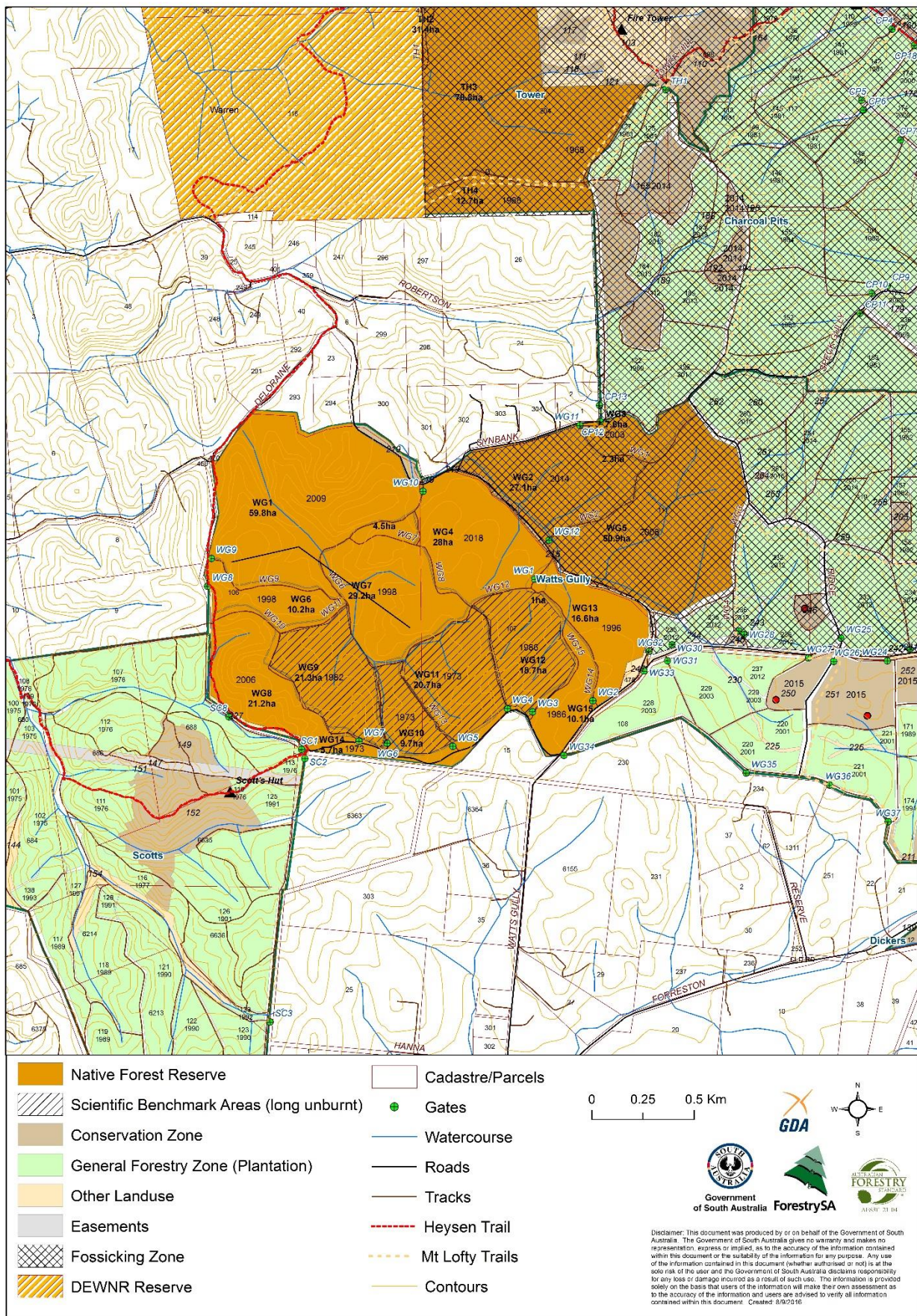
Community Engagement

There is regular engagement with other agencies and community projects to implement integrated work programs and to foster cross agency and community relationships. ForestrySA has a long working relationship with the South Para Biodiversity Project (SPBP) in this management area. This community based natural resource management project started in 2000 and aims to improve integrated land management throughout the region by engaging public and private land managers and natural resource management boards. ForestrySA has been a committee member of SPBP, in its many different guises, since inception.

There is also a long working relationship with Urrbrae TAFE who utilise forest areas for study purposes every year while providing ForestrySA with useful on-ground resources.

ForestrySA also runs a community focussed Friends of the Forest volunteer program which engages community volunteers to undertake various tasks in the forest including feral animal control, weed control, flora and fauna surveys and other monitoring.

Figure 2 – Watts Gully Native Forest Reserve



NATURAL RESOURCES

Climate

The area typically experiences a climate with cool, wet winters and warm, dry summers. The area receives an average rainfall of over 750 millimetres, in which approximately 80% falls in the seven months from April to October.

Typical of the Mount Lofty Ranges, the average maximum temperatures exist from November to March and are between 20°C and 28°C, but with periods of over 35°C in hotter years. Winter temperatures are recognised as some of the coldest in the Mount Lofty Ranges, with frequent days of less than 8°C.

Detailed climatological information has been collected at the Mount Crawford Forest office since 1954. This information is available on the Bureau of Meteorology website (www.bom.gov.au).

Geomorphology and Soils

The land surface of Watts Gully comprises dissected ridges and valleys that have been formed by stream erosion. The area generally has a bedrock of highly metamorphosed rock described generally as Aldgate sandstone, consisting of mica schist, quartzites, sandstones and gneissic rocks. The soils in this area are complex and depend upon parent material, climate and topographic position. The dominant soils on the ridges and valleys tend to be yellow and grey-brown podzols, laterised podzols and lithosols on parent material of coarser grain quartz material, with some finer grained feldspar rich material as well (Twidale *et al.*, 1976).

G. Beckman of CSIRO (Division of Soils) mapped the soil associations for the Watts Gully area based on an association survey in 1959/60. This showed Section 106 and the western part of Section 107 as sandy yellow podsollic, the north-eastern edge of Section 107 along Watts Gully Road as yellow podzolic on schist, and the south-eastern corner as red podzolic and lithosols.

Hydrology and Topography

Watts Gully lies along a north/south ridge system between 430 to 470 m above sea level. There are two major drainage systems in the area, both in Section 106. The northern creek is the lower reaches of Dead Horse Gully which follows Watts Gully Road through Section 111 on the northern side of the road, and was the scene of a gold rush in the 1880s.

The southerly creek contains a number of permanent waterholes through summer in Section 106, which range in length from 3 - 10 m, are up to 2 m deep and reportedly contain native fish. The creek lines run through steep hills along most of its length in Section 106. The second creek runs diagonally north-west/south-east across Section 106 and only carries water in winter. There are quite a number of other minor drainage lines throughout the area, with relatively broader valleys between gentle slopes, all of which drain northwards into the South Para Reservoir, within the South Para sub-catchment of the Gawler River.

Vegetation

The former Woods and Forests Department did two vegetation surveys in the reserve in 1979 and 1985. The Department for Environment, Water & Natural Resources (DEWNR) established four vegetation monitoring sites in 1986 and another two sites in 2000. The area of grassy woodland in the southern central section of the reserve was surveyed in 2002 (Roche, M. 2002). Appendix 1 includes plant species recorded from these surveys.

The following broad vegetation associations have been identified during on-site assessments:

***Eucalyptus obliqua* (Messmate stringybark) Woodland**

This Eucalypt is the dominant overstorey species on the moderate slopes. The understorey tends to be a moderately dense and diverse shrub and ground flora comprising *Acacia pycnantha*, *A. myrtifolia*, *Astroloma conostephioides*, *Xanthorrhoea semiplana*, *Hakea carinata*, *Hibbertia exutiacies*, *Spyridium parvifolium*, *Platylobium obtusangulum* and *Lepidosperma semiteres* (Plate 1).

***Eucalyptus obliqua*/E. *fasciculosa* (Stringybark/Pink gum) Woodland**

The gentle slopes are characterised by woodland of *Eucalyptus obliqua* with *E. fasciculosa*, over a sparse to moderately dense and diverse understorey of *Acacia pycnantha*, *A. myrtifolia*, *Xanthorrhoea semiplana*, *Hakea carinata*, *Isopogon ceratophyllus*, *Astroloma conostephiodes*, *Leptospermum myrsinoides*, *Pultenaea canaliculata* and *Lepidosperma semiteres* (Plate 2).

***Eucalyptus goniocalyx* +/- *Eucalyptus obliqua*/E. *fasciculosa*/ (Long leaf-box/Stringybark/Pink gum) Woodland**

Eucalyptus goniocalyx occurs both as pure stands on some north facing slopes and in a mixed association with both *E. obliqua* and *E. fasciculosa*. The understorey comprises *Acacia pycnantha*, *A.*



Plate 1 – *E. obliqua* Woodland



Plate 2 – *E. obliqua*/E. *fasciculosa* Woodland

paradoxa, *A. myrtifolia*, *Hakea carinata*, *Astroloma conostephiodes*, and *Exocarpus cupressiformis*.

***Eucalyptus leucoxylon*/E. *camaldulensis* (Blue gum/Red gum) Grassy Woodland**

There are small areas of *Eucalyptus leucoxylon* and *E. camaldulensis* Grassy Woodland (Plate 3) in the southern part of the reserve. The Nationally Vulnerable species, *Glycine latrobeana* (Clover glycine) has been located in these grassy woodland areas (Plate 4). There is an abundance of multi-stemmed coppice regeneration of *E. obliqua* and *E. goniocalyx*. This re-sprouting is the consequence of previous timber cutting. Large diameter trees that produce hollows are scarce, although the presence of numerous large stumps indicates that the area may once have comprised trees of various age classes, with some containing hollows.



Plate 3 – *E. leucoxylon*/E. *camaldulensis*
Grassy Woodland



Plate 4 - *Glycine latrobeana* (Clover glycine)

The reserve also contains areas of dense (e.g. 10-20 stems per m²) *Acacia pycnantha* regeneration, presumably as a result of prescribed burning schedules. Many species of *Acacia* shed seed during periods when there is no fire, but the seed is stored in the soil and does not germinate until the seed coat is cracked by the heat from a fire. *Acacia* seed is produced early in the lifecycle of a wattle tree and, as its germination is largely dependent on fire, prolific seedling growth is likely to follow a hot bushfire (Luke and McArthur, 1978). *Acacia* species can fix nitrogen and so increase soil fertility, which may affect the persistence of some indigenous species. Dense stands will shade out many ground-flora species, crowd out shrubs and severely impede overstorey regeneration (Muys 2001).

Introduced Plants

A number of weeds are present in Watts Gully NFR. Blackberry (*Rubus fruticosus*) is present along creek lines in areas inaccessible by vehicles. Most drainage lines are affected to some degree, particularly near permanent waterholes in Section 106. Other exotic species include Gorse (*Ulex europaeus*) and Dog Rose (*Rosa canina*). These are present in relatively small numbers of localised occurrence and seem to be otherwise restricted to the boundaries of the reserve.

The grassy woodland areas within the NFR are also threatened by Gorse and other herbaceous weeds. A priority for monitoring and control in the more open grassy areas is the bulbous weed, Star of Bethlehem (*Ornithogalum thyrsoides*). This is currently in low densities but requires annual monitoring and control. Weed occurrences are regularly monitored and are subject to annual control programs.

Fauna

Fauna surveys have been carried out within the reserve by the former Woods and Forests Department and by DEWNR. Research on Bibron's Toadlet (*Pseudophryne bibroni*) was conducted by Adelaide University in 1999 (Mitchell, N.). Fauna species list is included in Appendix 2.

Birds

The reserve provides a diverse and important habitat for birds. Numerous species are of conservation significance including the Brown Treecreeper (*Climacteris picumnus picumnus*), which is rated as Endangered for the region. The Nature Conservation Society conduct annual bird surveys as part of the long running Mt. Lofty Ranges Woodland Bird Survey. There is one monitoring site located within compartment WG13.

Mammals

Surveys have recorded five native and six introduced mammal species. The native species are well represented within the Mount Lofty Ranges with relatively large, widespread populations.

Bats have not been formally surveyed, however, Adelaide University surveys in 1999 recorded the White-striped Mastiff bat (*Tadarida australis*), a common species of forest and urban areas. Most species known to occur in the Mount Lofty Ranges would likely be present within the reserve. The availability of suitable roost sites however, may be a limiting factor as the reserve contains few trees able to provide the hollows these species are dependent upon for nesting and roosting sites.

Reptiles and Amphibians

List of reptile and three species of amphibian have been identified within the reserve (Appendix 2). The reserve would be expected to provide niches for many species known to occur throughout the Mount Lofty Ranges, as it provides a range of microhabitats, such as trees with grassy groundcover, trees with shrubby understorey, dense small trees or shrubs, riparian zones and rocky outcrops. Permanent waterholes and damp drainage lines would provide suitable habitat for frog species expected to occur in the area. Bibron's toadlet will use small abandoned mine shafts and litter piles as nesting sites along the creekline in the fossicking area. Fossicking activity in the creekline may conflict with the breeding and nesting behaviour of the toadlet and this should be monitored.

Introduced Animals

A number of introduced animals have been detected within the reserve including Fallow Deer (*Cervus dama*), House Mouse (*Mus musculus*), European Rabbit (*Oryctolagus cuniculus*), Black Rat (*Rattus rattus*) and the Red Fox (*Vulpes vulpes*).

Abundant Native Animals

Western Grey Kangaroos (*Macropus fuliginosus*) live mostly in native vegetation, but often feed on adjacent pastures. In large numbers they may damage fences when moving to and from feeding or drinking sites and prevent regeneration of native vegetation.

Control for abundant native species occurs only when there are regional control programs in place involving private landholders and other public land managers. Private landholders can obtain destruction permits under the *National Parks & Wildlife Act* from DEWNR, which allows the shooting of a prescribed number of animals.

Introduced Disease

Many root pathogens are known to cause root-rot disease in Australian flora species, but the introduced *Phytophthora cinnamomi* (Pc) has had the greatest effect and poses the greatest threat. Dieback caused by *Phytophthora cinnamomi* is listed as a key threatening process under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) (Commonwealth of Australia 2014)

Pc grows in a thread-like fashion through the roots and trunks of infected plants. The only outward sign of its presence is sickness, or death, of the infected plant. Infestation is permanent – spores are long-lived and can remain dormant in cool, dry soils, until conditions are right for fungal growth. It is dispersed by water and other vectors, such as native animals, vehicles and bushwalkers. Yaccas and Banksias are particularly sensitive and have been regarded as indicator species.

A suspected outbreak of Pc within the reserve has been located adjacent the fire track (off Synbank Road) dividing compartments WG2 and WG3. A positive result has been confirmed on Watts Gully Road (adjacent the Warren Conservation Park) approximately 1km from the north-western boundary of the reserve.

The whole of the Mount Lofty Ranges is deemed to be a High Risk Area, where Pc is known to be present, or is likely to become established (Phytophthora Technical Group 2003). Within the region there are Risk Management Zones that have been designated by DEWNR. Watts Gully NFR falls predominately within a Moderate Risk Management Zone, apart from the area surrounding the suspected Pc presence near Synbank Road, which is classed as a High Risk Zone. The adoption of management strategies appropriate to the zone, and any activities in that zone, can minimise the spread of Pc. These strategies, as outlined in the *Phytophthora Management Guidelines* (Government of South Australia 2006), must be incorporated into the planning of high-risk activities.

LAND USE

History

The natural history of the Tower Hill area has been broadly described in the "*Natural History of the Adelaide Region*", published by the Royal Society of SA in 1976.

Mining

There was a gold rush in 1885 when at least 200 miners lived and worked in the area following Watts' discover in 1884 (Gordon and Manser 1969). The major mining activity in the area of Watts Gully NFR took place in the two short gullies draining into Dead Horse Gully, in the north-west corner of Section 107. Another minor rush occurred in 1931/32 when a 20 ounce nugget, and smaller pieces, were found on Section 110 (outside the reserve) and most of the old diggings were prospected again. Some shafts and pits are scattered over Section 106 and 107. It appears that most of the area did not attract concentrated mining activity.

The northern side of Watts Gully Road is popular today with fossickers looking for gold and gems, and now forms part of the Mount Crawford Fossicking Area.

Acquisition and Name

Land tenure prior to dedication as a Forest Reserve is outlined in Appendix 3. The name Watts Gully is likely to have come from Mr James Watts, who in 1884 discovered gold in the area. He was a Norwegian sailor who settled in the hills west of Forreston in the 1850's. There was a popular local landmark called the Lone Pine picnic ground located south of Watts Gully Road, but vehicular access had to be restricted due to four-wheel drive damage. The site was originally the site of a miner's hut built in the late 1800's but all that remained was a large pine tree which gave the area its name. The tree was in decline and was becoming a hazard so was cut down in 2011.

Grazing

All areas now reserved are likely to have been exposed to grazing by introduced herbivores from the time of James Watts and William Carter's lease, both for grazing and cultivation purposes in 1898, until the area was dedicated as a Forest Reserve in 1918. No sheep or a cattle grazing occurs now within the reserve.

Timber Cutting

The area has been used extensively in the past for timber. Evidence of stumps and coppice regrowth indicates that most of the eucalypt overstorey has been cut at some time, presumably to provide timber and firewood, particularly in the 1920s to 1950s. Most timber cutting in the area ceased about 1950. The tree cover and forest density has therefore been significantly altered due to past activities.

Fire

ForestrySA manages the reserve for conservation and protection from bushfires. Fire protection work in Watts Gully NFR has consisted of track maintenance and a prescribed burning program to create a mosaic of mixed age vegetation classes and reduce fuel loads. ForestrySA has supplied fire history information to DEWNR and it is available online at 'NatureMaps'.

Due to the regional impacts from the Sampson Flat bushfire in January 2014 there are no immediate plans to implement prescribed burning in Watts Gully NFR. Compartments WG9 – WG12 on the southern boundary of the reserve are classed as Scientific Benchmark Areas (Figure 2). These compartments are selected as representative areas of least disturbance from activities such as fire and vegetation clearance, enabling reference to other areas within the reserve. Scientific Benchmark Areas are excluded from prescribed burning activities.

Watts Gully NFR is within the planning area covered in the *South Para Collaborative Fire Management Plan* (DEWNR 2015), a plan developed through a partnership between State Government land management agencies (ForestrySA, DEWNR & SA Water) and the South Australian Country Fire Service (CFS) to promote collaborative bushfire risk mitigation.

ForestrySA is also a member of the Mt Lofty Ranges Fire Cooperative, which includes DEWNR, SA Water, and the CFS. This cooperative seeks to integrate prescribed burning programs and to coordinate bushfire responses in the region.

MANAGEMENT PROGRAM

The Management actions proposed will be carried out in accordance with guidelines contained in the relevant procedural policies. In determining priority for management of the reserve's natural or physical resources, it is considered that:

- 1 = High priority; threat has a high capacity to degrade the resource;
- 2 = Medium priority;
- 3 = Low priority; threat has a low capacity to degrade the resource.

OBJECTIVE: Conservation Management		Priority for Action
Goals	Performance Indicator(s)	
Manage the reserve for the conservation of biodiversity.	No loss of species identified within the survey results.	1
Continue occasional biological monitoring to assist in long term management decisions	Maintain monitoring programs .	1
New survey information is provided to DEWNR for inclusion in Biological Database of SA	Survey data is supplied to DEWNR and is available to ForestrySA and other agencies/groups/individuals for retrieval	1

OBJECTIVE: Community Use		Priority for Action
Goals	Performance Indicator(s)	
Provide visitors with appropriate information regarding the reserve values.	Educational material available at reserve and/or Mount Crawford Forest Information Centre. Signs erected at appropriate locations.	2
Maintain walking trails and signage to acceptable specified standards.	Condition of walking trails and signage in the reserve - trails should be free from erosion, clear and accessible. Signs maintained in good condition. Trails relocated if required.	3

OBJECTIVE: Protection		Priority for Action
Goals	Performance Indicator(s)	
Implement management actions to reduce the spread of <i>Phytophthora</i> , other plant pathogens and weed seeds within the reserve.	Area affected by <i>Phytophthora</i> does not increase. No new pathogens or weed species introduced.	1
Minimise the impact of wildfire using a range of fire protection measures.	Annual wildfire prevention programs are completed. Fire-breaks are maintained. Public access and use is regulated in periods of high fire danger.	1
Identify activities with the potential for deleterious impacts and facilitate monitoring programs, including activities resulting from forest operations in adjacent forest reserves.	Impacts of permitted activities are monitored and reported by recreation users or ForestrySA. Monitoring of damage from fossicking activities	1

OBJECTIVE: Protection		Priority for Action
Goals	Performance Indicator(s)	
Minimise the impact of introduced plants and/or animals on the conservation values of the reserve.	A reduction in the distribution and number of introduced plant and animal species in the reserve. Annual weed control program in place.	2
	Continue implementation of wild pine control programs within the reserve	1
Continue to maintain boundary fences.	Boundary fence line is in a serviceable condition.	3

OBJECTIVE: Rehabilitation		Priority for Action
Goals	Performance Indicator(s)	
Rehabilitate and/or revegetate degraded areas within the reserve.	Number of hectares rehabilitated relative to the previous year	2
Rehabilitate and/or revegetate tracks and/or firebreaks no longer required for vehicle access.	Number of tracks and/or firebreaks relative to previous year.	3
Remove infrastructure, e.g. fence, wire, posts no longer in use	Redundant infrastructure removed from reserve	3

OBJECTIVE: Stakeholder Involvement		Priority for Action
Goals	Performance Indicator(s)	
Maintain links with other natural resource and environmental agencies, and community groups – their programs, activities and/or projects.	Established and/or maintained links with other agencies and groups.	2
Maintain communication with adjacent landholders and pursue opportunities for co-operative management.	Number of complaints received regarding management.	As required
Encourage involvement by volunteers and community groups in the control of pest plants and animals, and rehabilitation and monitoring of sites within the reserve.	Participation of volunteers and community groups.	1

APPENDIX 1 FLORA SPECIES LIST

*Weed

	SPECIES	COMMON NAME	AUS	SA	AMLR	FAMILY
*	<i>Acacia baileyana</i>	Cootamundra wattle				Leguminosae
	<i>Acacia continua</i>	Thorn wattle			RA	Leguminosae
*	<i>Acacia longifolia</i>	Sallow wattle				Leguminosae
	<i>Acacia melanoxylon</i>	Blackwood				Leguminosae
	<i>Acacia myrtifolia</i>	Myrtle wattle				Leguminosae
	<i>Acacia paradoxa</i>	Kangaroo thorn				Leguminosae
	<i>Acacia pycnantha</i>	Golden wattle				Leguminosae
	<i>Acacia retinodes</i> var. <i>retinodes</i>	Wirilda				Leguminosae
	<i>Acacia verticillata</i>	Prickly Moses				Leguminosae
	<i>Acaena echinata</i>	Sheep's burr				Rosaceae
	<i>Acaena novae-zelandiae</i>	Biddy-biddy				Rosaceae
	<i>Acaena X anserovina</i>	Hybrid burr				Rosaceae
*	<i>Acetosella vulgaris</i>	Sorrel				Polygonaceae
	<i>Acianthus pusillus</i>	Mosquito orchid				Orchidaceae
	<i>Acrotriche depressa</i>	Native currant			RA	Epacridaceae
	<i>Acrotriche serrulata</i>	Cushion ground-berry				Epacridaceae
	<i>Adiantum aethiopicum</i>	Common maiden-hair				Adiantaceae
*	<i>Agrostis stolonifera</i>	Blown-grass				Gramineae
	<i>Agrostis venusta</i>	Pretty blown-grass				Gramineae
*	<i>Aira elegantissima</i>	Delicate hair-grass				Gramineae
	<i>Allocasuarina muelleriana</i> ssp. <i>muelleriana</i>	Common oak-bush				Casuarinaceae
	<i>Allocasuarina striata</i>	Stalked oak-bush				Casuarinaceae
	<i>Allocasuarina verticillata</i>	Drooping sheoak				Casuarinaceae
	<i>Alternanthera denticulata</i>	Lessser joyweed			NT	Amaranthaceae
	<i>Amphibromus archeri</i>	Pointed swamp wallaby-grass		R	RA	Gramineae
	<i>Amphipogon strictus</i>	Spreading grey-beard grass				Gramineae
	<i>Amyema miquelii</i>	Box mistletoe				Loranthaceae
*	<i>Anagallis arvensis</i>	Pimpernel				Primulaceae
*	<i>Anthoxanthum odoratum</i>	Sweet vernal grass				Gramineae
	<i>Aphelia gracilis</i>	Slender aphelia			RA	Centrolepidaceae
	<i>Aphelia pumilio</i>	Dwarf aphelia				Centrolepidaceae
	<i>Aristida behriana</i>	Brush wire-grass				Gramineae
	<i>Arthropodium fimbriatum</i>	Nodding vanilla-lily				Liliaceae
	<i>Arthropodium strictum</i>	Common vanilla-lily				Liliaceae
	<i>Asperula conferta</i>	Common woodruff				Rubiaceae
	<i>Asplenium flabellifolium</i>	Necklace fern				Aspleniaceae
*	<i>Aster subulatus</i>	Aster-weed				Compositae
	<i>Astroloma conostephioides</i>	Flame heath				Epacridaceae
	<i>Astroloma humifusum</i>	Cranberry heath				Epacridaceae
	<i>Austrostipa mollis</i>	Soft spear grass				Gramineae
	<i>Austrostipa pilata</i>	Prickly spear-grass		V	VU	Gramineae
	<i>Austrostipa semibarbata</i>	Fibrous spear-grass				Gramineae

	SPECIES	COMMON NAME	AUS	SA	AMLR	FAMILY
	<i>Austrostipa setacea</i>	Corkscrew spear-grass			NT	Gramineae
*	<i>Avena barbata</i>	Bearded oat				Gramineae
	<i>Banksia marginata</i>	Silver banksia				Proteaceae
	<i>Baumea arthropphylla</i>	Swamp twig-rush				Cyperaceae
	<i>Baumea juncea</i>	Bare twig-rush				Cyperaceae
	<i>Blechnum minus</i>	Soft water-fern			NT	Blechnaceae
	<i>Bossiaea prostrata</i>	Creeping bossiaea				Leguminosae
*	<i>Briza maxima</i>	Large quaking-grass				Gramineae
*	<i>Briza minor</i>	Lesser quaking-grass				Gramineae
*	<i>Bromus</i> sp.	Brome				Gramineae
	<i>Brunonia australis</i>	Blue pincushion				Goodeniaceae
	<i>Bulbine bulbosa</i>	Bulbine lily				Liliaceae
	<i>Bunochilus smaragdinus</i>	Tall greenhood				Orchidaceae
	<i>Burchardia umbellata</i>	Milkmaids				Liliaceae
	<i>Bursaria spinosa</i>	Sweet bursaria				Pittosporaceae
	<i>Caesia calliantha</i>	Blue grass-lily				Liliaceae
	<i>Caladenia carnea</i>	Pink fingers				Orchidaceae
	<i>Caladenia leptochila</i>	Narrow-lip spider-orchid				Orchidaceae
	<i>Caladenia prolata</i>	Shy caladenia			RA	Orchidaceae
	<i>Caladenia reticulata</i>	Veined spider-orchid			VU	Orchidaceae
	<i>Caladenia tentaculata</i>	King spider-orchid				Orchidaceae
	<i>Calandrinia</i> sp.	Purslane				Portulacaceae
	<i>Callitris gracilis</i>	Southern cypress pine			LC	Cupressaceae
	<i>Callitris rhomboidea</i>	Oyster Bay pine			NT	Cupressaceae
	<i>Calochilus robertsonii</i>	Purplish beard-orchid				Orchidaceae
	<i>Calytrix tetragona</i>	Common fringe-myrtle				Myrtaceae
	<i>Carex appressa</i>	Tall sedge				Cyperaceae
	<i>Carex breviculmis</i>	Short-stem sedge				Cyperaceae
	<i>Carex inversa</i> var. <i>inversa</i>	Knob sedge			VU	Cyperaceae
	<i>Carex tereticaulis</i>	Rush sedge				Cyperaceae
	<i>Cassytha glabella</i> f. <i>dispar</i>	Slender dodder-laurel				Lauraceae
	<i>Cassytha pubescens</i>	Downy dodder-laurel				Lauraceae
*	<i>Centaurium erythraea</i>	Common centaury				Gentianaceae
	<i>Centipeda cunninghamii</i>	Common sneezeweed				Compositae
	<i>Centrolepis aristata</i>	Pointed centrolepis				Centrolepidaceae
	<i>Centrolepis strigosa</i> ssp. <i>strigosa</i>	Hairy centrolepis				Centrolepidaceae
	<i>Chamaescilla corymbosa</i> var. <i>corymbosa</i>	Blue squill				Liliaceae
	<i>Cheilanthes austrotenuifolia</i>	Annual rock-fern				Adiantaceae
	<i>Cheiranthra alternifolia</i>	Hand flower				Pittosporaceae
	<i>Chorizandra enodis</i>	Black bristle-rush				Cyperaceae
	<i>Chrysocephalum apiculatum</i>	Common everlasting				Compositae
	<i>Chrysocephalum baxteri</i>	Fringed everlasting				Compositae
	<i>Clematis microphylla</i>	Old man's beard				Ranunculaceae
	<i>Convolvulus angustissimus</i>	Australian bindweed				Convolvulaceae
*	<i>Conyza bonariensis</i>	Flax-leaf fleabane				Rubiaceae

	SPECIES	COMMON NAME	AUS	SA	AMLR	FAMILY
*	<i>Cordyline australis</i>	Cordyline				Agavaceae
	<i>Coronidium scorpioides</i>	Button everlasting				Compositae
	<i>Corybas diemenicus</i>	Veined helmet-orchid				Orchidaceae
	<i>Corybas dilatatus</i>	Common helmet-orchid				Orchidaceae
	<i>Craspedia variabilis</i>	Billy-buttons				Compositae
	<i>Crassula closiana</i>	Staked crassula				Crassulaceae
	<i>Crassula colligata</i>	Crassula				Crassulaceae
*	<i>Crataegus sinaica</i>	Hawthorn				Rosaceae
*	<i>Crepis</i> sp.	Hawksbeard				Compositae
	<i>Cryptandra hispidula</i>	Rough cryptandra			RA	Rhamnaceae
	<i>Cryptandra tomentosa</i>	Heath cryptandra				Rhamnaceae
*	<i>Cynara cardunculus</i>	Artichoke thistle				Asteraceae
	<i>Cynoglossum suaveolens</i>	Sweet hound's-tongue			NT	Boraginaceae
*	<i>Cynosurus echinatus</i>	Rough dog's-tail grass				Gramineae
	<i>Cyperus gunnii</i> ssp. <i>gunnii</i>	Flecked flat-sedge			NT	Cyperaceae
	<i>Cyperus tenellus</i>	Tiny flat-sedge				Cyperaceae
	<i>Cyrtostylis reniformis</i>	Small gnat-orchid				Orchidaceae
	<i>Cyrtostylis robusta</i>	Robust gnat-orchid				Orchidaceae
*	<i>Cytisus scoparius</i>	English broom				Leguminosae
	<i>Dampiera dysantha</i>	Shrubby dampiera				Goodeniaceae
	<i>Daucus glochidiatus</i>	Native carrot				Umbelliferae
	<i>Daviesia brevifolia</i>	Leafless bitter-pea				Leguminosae
	<i>Daviesia leptophylla</i>	Narrow-leaf bitter-pea				Leguminosae
	<i>Daviesia ulicifolia</i> ssp. <i>incarnata</i>	Gorse bitter-pea				Leguminosae
	<i>Deyeuxia densa</i>	Heath bent-grass		R	RA	Gramineae
	<i>Deyeuxia quadriseta</i>	Reed bent-grass				Gramineae
	<i>Dianella revoluta</i> var. <i>revoluta</i>	Black-anther flax lily				Liliaceae
	<i>Dichelachne crinata</i>	Long-hair plume-grass				Gramineae
	<i>Dichelachne micranthe</i>	Short-hair plume-grass				Gramineae
	<i>Dichelachne rara</i>	Plume-grass				Gramineae
	<i>Dichondra repens</i>	Kidney weed				Convolvulaceae
	<i>Dillwynia hispida</i>	Red parrot-pea				Leguminosae
	<i>Dipodium roseum</i>	Pink hyacinth orchid				Orchidaceae
*	<i>Disa bracteata</i>	South-African orchid				Orchidaceae
	<i>Diuris</i> aff. <i>corymbosa</i>	Wallflower donkey-orchid				Orchidaceae
	<i>Diuris orientis</i>	Bulldog orchid				Orchidaceae
	<i>Diuris pardina</i>	Spotted donkey-orchid				Orchidaceae
	<i>Dodonaea viscosa</i> ssp. <i>spatulata</i>	Sticky hop-bush				Sapindaceae
	<i>Drosera auriculata</i>	Tall sundew				Droseraceae
	<i>Drosera glanduligera</i>	Scarlet sundew				Droseraceae
	<i>Drosera macrantha</i> ssp. <i>planchonii</i>	Climbing sundew				Droseraceae
	<i>Drosera peltata</i>	Pale sundew				Droseraceae
	<i>Drosera whittakeri</i> ssp. <i>whittakeri</i>	Scented sundew				Droseraceae
*	<i>Echium plantagineum</i>	Salvation Jane				Boraginaceae
*	<i>Ehrharta longifolia</i>	Annual veldt grass				Gramineae

	SPECIES	COMMON NAME	AUS	SA	AMLR	FAMILY
	<i>Eleocharis acuta</i>	Common spike-rush				Cyperaceae
	<i>Elymus scaber</i> var. <i>scaber</i>	Native wheat-grass				Gramineae
	<i>Epilobium billardierianum</i> ssp. <i>billardierianum</i>	Robust willow-herb				Onagraceae
	<i>Epilobium billardierianum</i> ssp. <i>cinereum</i>	Variable willow-herb			NT	Onagraceae
	<i>Eragrostis brownii</i>	Bentham's love-grass				Gramineae
	<i>Eriochilus cucullatus</i>	Parson's bands				Orchidaceae
	<i>Eucalyptus baxteri</i>	Brown stringybark				Myrtaceae
	<i>Eucalyptus camaldulensis</i> var. <i>camaldulensis</i>	River red gum				Myrtaceae
	<i>Eucalyptus fasciculosa</i>	Pink gum		R	NT	Myrtaceae
	<i>Eucalyptus goniocalyx</i> ssp. <i>goniocalyx</i>	Long-leaf box				Myrtaceae
	<i>Eucalyptus leucoxylon</i> ssp. <i>leucoxylon</i>	South Australian blue gum				Myrtaceae
	<i>Eucalyptus obliqua</i>	Messmate stringybark				Myrtaceae
*	<i>Eucalyptus sideroxylon</i>	Ironbark				Myrtaceae
	<i>Eucalyptus viminalis</i> ssp. <i>cygnetensis</i>	Rough-bark manna gum				Myrtaceae
	<i>Euchiton collinus</i>	Creeping cudweed				Compositae
	<i>Euchiton involucratus</i>	Star cudweed				Compositae
	<i>Euchiton sphaericus</i>	Annual cudweed				Compositae
	<i>Exocarpos cupressiformis</i>	Native cherry				Santalaceae
	<i>Fincinia nodosa</i>	Knobby club-rush				Cyperaceae
	<i>Galium compactum</i>	Compact bedstraw				Rubiaceae
*	<i>Galium divaricatum</i>	Slender bedstraw				Rubiaceae
	<i>Galium gaudichaudii</i> ssp. <i>gaudichaudii</i>	Rough bedstraw				Rubiaceae
	<i>Galium migrans</i>	Loose bedstraw				Rubiaceae
*	<i>Galium murale</i>	Small bedstraw				Rubiaceae
	<i>Genoplesium rufum</i>	Red midge-orchid				Orchidaceae
	<i>Geranium potentilloides</i> var. <i>potentilloides</i>	Downy geranium			LC	Geraniaceae
	<i>Geranium retrorsum</i>	Grassland geranium				Geraniaceae
	<i>Geranium solanderi</i> var. <i>solanderi</i>	Austral geranium				Geraniaceae
*	<i>Gladiolus</i> sp.	Gladiolus				Iridaceae
	<i>Gleichenia microphylla</i>	Coral fern		R	RA	Gleicheniaceae
	<i>Glischrocaryon behrii</i>	Golden pennants				Haloragaceae
	<i>Glossodia major</i>	Purple cockatoo				Orchidaceae
	<i>Glyceria australis</i>	Australian sweet-grass			VU	Gramineae
	<i>Glycine latrobeana</i>	Clover glycine	VU	V	RA	Leguminosae
*	<i>Gomphocarpus cancellatus</i>	Cotton bush				Asclepiadaceae
	<i>Gompholobium ecostatum</i>	Dwarf wedge-pea				Leguminosae
	<i>Gonocarpus elatus</i>	Hill raspwort				Haloragaceae
	<i>Gonocarpus meianus</i>	Broad-leaf raspwort				Haloragaceae
	<i>Gonocarpus tetragynus</i>	Small-leaf raspwort				Haloragaceae
	<i>Goodenia blackiana</i>	Native primrose				Goodeniaceae
	<i>Goodenia geniculata</i>	Bent goodenia				Goodeniaceae
	<i>Goodenia ovata</i>	Hop goodenia				Goodeniaceae
	<i>Goodia medicaginea</i>	Western golden-tip				Leguminosae
	<i>Gratiola peruviana</i>	Austral brooklime				Scrophulariaceae
	<i>Grevillea lavandulacea</i> var. <i>lavandulacea</i>	Spider flower				Proteaceae

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	<i>Hakea carinata</i>	Erect hakea				Proteaceae
	<i>Hakea rostrata</i>	Beaked hakea				Proteaceae
	<i>Hakea rugosa</i>	Dwarf hakea				Proteaceae
	<i>Haloragis heterophylla</i>	Variable raspwort			RA	Haloragaceae
	<i>Hemarthria uncinata</i> var. <i>uncinata</i>	Mat grass				Gramineae
	<i>Hibbertia exutiacies</i>	Prickly guinea-flower				Dilleniaceae
	<i>Hibbertia riparia</i>	Bristly guinea-flower			LC	Dilleniaceae
	<i>Hibbertia riparia</i>	Bristly guinea-flower			LC	Dilleniaceae
*	<i>Holcus lanatus</i>	Yorkshire fog				Gramineae
	<i>Hybanthus floribundus</i> ssp. <i>floribundus</i>	Shrub violet				Violaceae
	<i>Hydrocotyle callicarpa</i>	Tiny pennywort				Umbelliferae
	<i>Hydrocotyle foveolata</i>	Yellow pennywort				Umbelliferae
	<i>Hydrocotyle laxiflora</i>	Stinking pennywort				Umbelliferae
	<i>Hypericum gramineum</i>	Small St John's wort				Guttiferae
	<i>Hypoxis vaginata</i> var. <i>vaginata</i>	Yellow star				Hypoxidaceae
	<i>Isoetes drummondii</i> ssp. <i>drummondii</i>	Plain quillwort		R	RA	Isoetaceae
	<i>Isolepis cernua</i>	Nodding club-rush				Cyperaceae
	<i>Isolepis fluitans</i>	Floating club-rush			NT	Cyperaceae
	<i>Isolepis inundata</i>	Swamp club-rush				Cyperaceae
	<i>Isolepis marginata</i>	Little club-rush				Cyperaceae
*	<i>Isolepis trachysperma</i>	Club-rush				Cyperaceae
	<i>Isopogon ceratophyllus</i>	Horny cone-bush				Proteaceae
	<i>Ixodia achilloides</i> ssp. <i>alata</i>	Hills daisy				Compositae
*	<i>Juncus articulatus</i>	Jointed rush				Juncaceae
	<i>Juncus bufonius</i>	Toad rush				Juncaceae
	<i>Juncus caespiticius</i>	Grassy rush				Juncaceae
*	<i>Juncus capitatus</i>	Dwarf rush				Juncaceae
	<i>Juncus flavidus</i>	Yellow rush			RA	Juncaceae
	<i>Juncus holoschoenus</i>	Joint-leaf rush				Juncaceae
	<i>Juncus pallidus</i>	Pale rush				Juncaceae
	<i>Juncus pauciflorus</i>	Loose-flower rush				Juncaceae
	<i>Juncus subsecundus</i>	Finger rush				Juncaceae
	<i>Juncus usitatus</i>	Common rush				Juncaceae
	<i>Kennedia prostrata</i>	Running postman				Leguminosae
	<i>Lachnagrostis aemula</i>	Blown grass				Gramineae
	<i>Lachnagrostis filiformis</i>	Common blown-grass				Gramineae
	<i>Lachnagrostis</i> ssp. ' <i>grandis</i> '	Blown-grass				Gramineae
	<i>Lagenophora huegelii</i>	Coarse bottle-daisy				Compositae
	<i>Laxmannia orientalis</i>	Dwarf wire-lily				Liliaceae
*	<i>Leontodon taraxacoides</i> ssp. <i>taraxacoides</i>	Lesser hawkbit				Compositae
	<i>Lepidosperma carphoides</i>	Black rapier-sedge				Cyperaceae
	<i>Lepidosperma curtisiae</i>	Little sword-sedge				Cyperaceae
	<i>Lepidosperma laterale</i>	Tall sword-sedge			LC	Cyperaceae
	<i>Lepidosperma semiteres</i>	Wire rapier-sedge				Cyperaceae
	<i>Lepidosperma viscidum</i>	Sticky sword-sedge				Cyperaceae

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	<i>Leporella fimbriata</i>	Fringed hare-orchid				Orchidaceae
	<i>Leptoceras menziesii</i>	Hare orchid				Orchidaceae
	<i>Leptorhynchos squamatus ssp. squamatus</i>	Scaly buttons				Compositae
	<i>Leptospermum continentale</i>	Prickly tea-tree				Myrtaceae
	<i>Leptospermum lanigerum</i>	Silky tea-tree			RA	Myrtaceae
	<i>Leptospermum myrsinoides</i>	Heath tea-tree				Myrtaceae
	<i>Leucopogon virgatus</i>	Common beard-heath				Epacridaceae
	<i>Levenhookia pusilla</i>	Tiny stylewort				Stylidiaceae
*	<i>Linum trigynum</i>	French flax				Linaceae
	<i>Lissanthe strigosa ssp. subulata</i>	Peach heath				Epacridaceae
	<i>Lobelia anceps</i>	Angled lobelia				Campanulaceae
	<i>Lobelia gibbosa</i>	Tall lobelia				Campanulaceae
	<i>Lobelia rhombifolia</i>	Tufted lobelia			RA	Campanulaceae
	<i>Logania recurva</i>	Recurved logania			RA	Loganiaceae
*	<i>Logfia sp.</i>	Cudweed				Asteraceae
*	<i>Lolium sp.</i>	Ryegrass				Gramineae
	<i>Lomandra collina</i>	Sand mat-rush				Liliaceae
	<i>Lomandra densiflora</i>	Soft tussock matt-rush				Liliaceae
	<i>Lomandra fibrata</i>	Mount Lofty matt-rush				Liliaceae
	<i>Lomandra micrantha ssp. micrantha</i>	Small-flower mat-rush				Liliaceae
	<i>Lomandra micrantha ssp. tuberculata</i>	Small-flower mat-rush				Liliaceae
	<i>Lomandra multiflora ssp. dura</i>	Hard mat-rush				Liliaceae
	<i>Lomandra sororia</i>	Sword mat-rush			NT	Liliaceae
	<i>Lysiana exocarpi ssp. exocarpi</i>	Harlequin mistletoe				Loranthaceae
	<i>Lythrum hyssopifolia</i>	Lesser loosestrife				Lythraceae
*	<i>Melaleuca armillaris</i>	Bracelet honey-myrtle				Myrtaceae
	<i>Melicytus dentatus</i>	Tree violet			RA	Violaceae
*	<i>Mentha sp.</i>	Mint				Labiatae
	<i>Microlaena stipoides var. stipoides</i>	Weeping rice-grass				Gramineae
	<i>Microseris lanceolata</i>	Yam daisy				Compositae
	<i>Microtis arenaria</i>	Notched onion-orchid				Orchidaceae
	<i>Microtis frutetorum</i>	Onion orchid				Orchidaceae
	<i>Microtis parviflora</i>	Slender onion-orchid			LC	Orchidaceae
	<i>Microtis unifolia complex</i>	Onion-orchid				Orchidaceae
	<i>Millotia tenuifolia var. tenuifolia</i>	Soft millotia				Compositae
	<i>Neurachne alopecuroides</i>	Fox-tail mulga-grass				Gramineae
*	<i>Oenanthe pimpinelloides</i>	Water dropwort				Umbelliferae
*	<i>Olea europaea ssp. europaea</i>	Olive				Oleaceae
	<i>Olearia ramulosa</i>	Twiggy daisy-bush				Compositae
	<i>Olearia tubuliflora</i>	Rayless daisy-bush				Compositae
	<i>Opercularia ovata</i>	Broad-leaf stinkweed			RA	Rubiaceae
	<i>Opercularia scabrida</i>	Stalked stinkweed				Rubiaceae
	<i>Opercularia turpis</i>	Twiggy stinkweed				Rubiaceae
	<i>Opercularia varia</i>	Variable stinkweed				Rubiaceae
*	<i>Ornithogalum thyrsoides</i>	Star of Bethlehem				Asparagaceae

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	<i>Oxalis perennans</i>	Native sorrel				Oxalidaceae
*	<i>Paspalum dilatatum</i>	Paspalum				Gramineae
	<i>Patersonia fragilis</i>	Short purple-flag			VU	Iridaceae
	<i>Pentapogon quadrifidus</i> var. <i>quadrifidus</i>	Five-awn spear-grass		R	VU	Gramineae
*	<i>Pentaschistis pallida</i>	Pussy tail				Gramineae
	<i>Persicaria decipiens</i>	Slender knotweed				Polygonaceae
	<i>Persicaria prostrata</i>	Creeping knotweed			NT	Polygonaceae
*	<i>Phalaris</i> sp.	Canary-grass				Gramineae
	<i>Philotheca angustifolia</i> ssp. <i>angustifolia</i>	Narrow-leaf wax-flower		R	RA	Rutaceae
	<i>Phragmites australis</i>	Common reed				Gramineae
	<i>Phyllangium divergens</i>	Wiry mitrewort				Loganiaceae
	<i>Pimelea glauca</i>	Smooth riceflower				Thymelaeaceae
	<i>Pimelea humilis</i>	Low riceflower				Thymelaeaceae
	<i>Pimelea linifolia</i> ssp. <i>linifolia</i>	Slender riceflower				Thymelaeaceae
	<i>Pimelea octophylla</i>	Woolly riceflower				Thymelaeaceae
	<i>Pimelea phyllicoides</i>	Heath riceflower				Thymelaeaceae
	<i>Pimelea stricta</i>	Erect riceflower				Thymelaeaceae
*	<i>Pinus radiata</i>	Radiata pine				Pinaceae
*	<i>Plantago lanceolata</i> var. <i>lanceolata</i>	Ribwort				Plantaginaceae
	<i>Plantago</i> sp. <i>B</i>	Little plantain				Plantaginaceae
	<i>Platylobium obtusangulum</i>	Holly flat-pea				Leguminosae
	<i>Platysace heterophylla</i> var. <i>heterophylla</i>	Slender platysace				Umbelliferae
	<i>Plumatichilos plumosum</i>	Bearded greenhood				Orchidaceae
	<i>Poa clelandii</i>	Matted tussock-grass				Gramineae
	<i>Poa crassicaudex</i>	Thick-stem tussock-grass				Gramineae
	<i>Poa umbricola</i>	Shady tussock-grass		R	RA	Gramineae
	<i>Podolepis tepperi</i>	Delicate copper-wire daisy			NT	Compositae
	<i>Poranthera microphylla</i>	Small poranthera				Euphorbiaceae
	<i>Prostanthera behriana</i>	Downy mintbush			RA	Labiatae
	<i>Prostanthera chlorantha</i>	Green mintbush		R	RA	Labiatae
	<i>Pseudognaphthium luteoalbum</i>	Jersey cudweed				Compositae
	<i>Pteridium esculentum</i>	Bracken fern				Dennstaedtiaceae
	<i>Pterostylis alata</i>	Tall shell-orchid			NE	Orchidaceae
	<i>Pterostylis foliata</i>	Slender greenhood		R	RA	Orchidaceae
	<i>Pterostylis longifolia</i>	Tall greenhood				Orchidaceae
	<i>Pterostylis nana</i>	Dwarf greenhood				Orchidaceae
	<i>Pterostylis nutans</i>	Nodding greenhood				Orchidaceae
	<i>Pterostylis pedunculata</i>	Maroon-hood				Orchidaceae
	<i>Pterostylis robusta</i>	Large shell-orchid				Orchidaceae
	<i>Pterostylis sanguinea</i>	Blood greenhood				Orchidaceae
	<i>Pultenaea acerosa</i>	Bristly bush-pea			LC	Leguminosae
	<i>Pultenaea daphnoides</i>	Large-leaf bush-pea				Leguminosae
	<i>Pultenaea largiflorens</i>	Twiggy bush-pea				Leguminosae
	<i>Pultenaea pedunculata</i>	Matted bush-pea				Leguminosae
	<i>Ranunculus lappaceus</i>	Native buttercup				Ranunculaceae

	SPECIES	COMMON NAME	AUS	SA	AMLR	FAMILY
*	<i>Rosa canina</i>	Dog rose				Rosaceae
*	<i>Rubus fruticosus</i>	Blackberry				Rosaceae
	<i>Rubus parvifolius</i>	Native raspberry			RA	Rosaceae
	<i>Rumex brownii</i>	Slender dock				Polygonaceae
*	<i>Rumex sp.</i>	Dock				Polygonaceae
	<i>Rutidosia multiflora</i>	Small wrinklewort				Compositae
	<i>Rytidosperma caespitosum</i>	Common wallaby-grass				Gramineae
	<i>Rytidosperma geniculatum</i>	Kneed wallaby-grass				Gramineae
	<i>Rytidosperma pilosum</i>	Velvet wallaby-grass				Gramineae
	<i>Rytidosperma racemosum</i> var. <i>racemosum</i>	Slender wallaby-grass			LC	Gramineae
	<i>Rytidosperma setaceum</i>	Small-flower wallaby-grass				Gramineae
	<i>Rytidosperma tenuius</i>	Short-awn wallaby-grass		R	RA	Gramineae
*	<i>Sagina apetala</i>	Annual pearlwort				Caryophyllaceae
	<i>Scaevola albida</i>	Pale fanflower				Goodeniaceae
	<i>Schoenus apogon</i>	Common bog-rush				Cyperaceae
	<i>Schoenus breviculmus</i>	Matted bog-rush				Cyperaceae
	<i>Schoenus nanus</i>	Little bog-rush			RA	Cyperaceae
	<i>Senecio glomeratus</i> ssp. <i>glomeratus</i>	Swamp groundsel				Compositae
	<i>Senecio glomeratus</i> X <i>S. pterophorus</i>	Hybrid groundsel				Compositae
	<i>Senecio hispidulus</i>	Rough groundsel			LC	Compositae
	<i>Senecio odoratus</i> X <i>S. hispidus</i>	Hybrid groundsel				Compositae
	<i>Senecio phellus</i>	Woodland groundsel				Compositae
	<i>Senecio phellus</i> X <i>S. glomeratus</i>	Hybrid woodland groundsel				Compositae
	<i>Senecio picridioides</i>	Purple-leaf groundsel				Compositae
*	<i>Senecio pterophorus</i> var. <i>pterophorus</i>	African daisy				Compositae
	<i>Senecio quadridentatus</i>	Cotton groundsel				Compositae
*	<i>Sherardia arvensis</i>	Field madder				Rubiaceae
	<i>Siloxerus multiflorus</i>	Small wrinklewort				Compositae
*	<i>Solanum nigrum</i>	Black nightshade				Solanaceae
	<i>Solenogyne dominii</i>	Smooth solenogyne			NT	Compositae
*	<i>Sonchus sp.</i>	Sow-thistle				Compositae
	<i>Spyridium parvifolium</i>	Dusty miller				Rhamnaceae
	<i>Spyridium vexilliferum</i> var. <i>vexilliferum</i>	Winged spyridium				Rhamnaceae
	<i>Stackhousia aspericocca</i> ssp. "Cylindrical inflorescence"	Bushy candles				Stackhousiaceae
	<i>Stenanthemum leucophractum</i>					Rhamnaceae
	<i>Stuartina muelleri</i>	Spoon cudweed				Compositae
	<i>Stylidium calcaratum</i>	Spurred trigger-plant				Stylidiaceae
	<i>Stylidium graminifolium</i>	Grass trigger-plant				Stylidiaceae
	<i>Stylidium inundatum</i>	Hundreds and thousands				Stylidiaceae
*	<i>Taraxacum officinale</i>	Dandelion				Compositae
	<i>Tetradlea pilosa</i> ssp. <i>pilosa</i>	Hairy pink-bells				Tremandraceae
	<i>Thelymitra albiflora</i>	White sun-orchid				Orchidaceae
	<i>Thelymitra antennifera</i>	Lemon sun-orchid				Orchidaceae
	<i>Thelymitra brevifolia</i>	Short leaf sun-orchid				Orchidaceae

	SPECIES	COMMON NAME	AUS	SA	AMLR	FAMILY
	<i>Thelymitra grandiflora</i>	Great sun-orchid		R	RA	Orchidaceae
	<i>Thelymitra holmesii</i>	Blue star sun-orchid		V	EN	Orchidaceae
	<i>Thelymitra juncifolia</i>	Spotted sun-orchid				Orchidaceae
	<i>Thelymitra luteociliium</i>	Yellow-tuft sun-orchid				Orchidaceae
	<i>Thelymitra nuda</i>	Scented sun-orchid				Orchidaceae
	<i>Thelymitra pauciflora</i>	Slender sun-orchid				Orchidaceae
	<i>Thelymitra peniculata</i>	Peniculate sun-orchid		V	VU	Orchidaceae
	<i>Thelymitra rubra</i>	Salmon sun-orchid				Orchidaceae
	<i>Thysanotus patersonii</i>	Twining fringe-lily				Liliaceae
*	<i>Tolpis barbata</i>	Yellow hawkweed				Compositae
	<i>Trachymene pilosa</i>	Dwarf trachymene				Umbelliferae
	<i>Tricoryne elatior</i>	Yellow rush-lily				Liliaceae
*	<i>Trifolium campestre</i>	Hop clover				Leguminosae
*	<i>Trifolium</i> sp.	Clover				Leguminosae
	<i>Triglochin alcockiae</i>	Water ribbons		R	VU	Juncaginaceae
	<i>Triglochin procea</i>	Water-ribbons			NT	Juncaginaceae
*	<i>Ulex europaeus</i>	Gorse				Leguminosae
	<i>Veronica derwentiana</i> ssp. <i>homalodonta</i>	Mount Lofty speedwell	CR	E	EN	Scrophulariaceae
	<i>Villarsia umbricola</i> var. <i>umbricola</i>	Lax marsh-flower			RA	Menyanthaceae
	<i>Viola eminens</i>	Ivy-leaf violet				Violaceae
	<i>Viola hederacea</i>	Ivy-leaf violet			RA	Violaceae
	<i>Viola sieberiana</i>	Tiny violet				Violaceae
*	<i>Vulpia</i> sp.	Squirrel-tail fescue				Gramineae
	<i>Wahlenbergia gracilentia</i>	Annual bluebell				Campanulaceae
	<i>Wahlenbergia gracilis</i>	Sprawling bluebell			RA	Campanulaceae
	<i>Wahlenbergia litticola</i>	Coast bluebell				Campanulaceae
	<i>Wahlenbergia stricta</i> ssp. <i>stricta</i>	Tall bluebell				Campanulaceae
	<i>Wurmbea dioica</i> ssp. <i>dioica</i>	Early nancy				Liliaceae
	<i>Xanthorrhoea semiplana</i> ssp. <i>semiplana</i>	Yacca				Liliaceae
	<i>Xanthorrhoea semiplana</i> ssp. <i>tateana</i>	Tate's grass tree		R	RA	Liliaceae
	<i>Xanthosia huegeli</i>	Hairy xanthosia				Umbelliferae

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APPENDIX 2 FAUNA SPECIES LIST

Birds

*introduced species

	Species	Common Name	AUS	SA	AMLR
	<i>Acanthiza lineata</i>	Striated Thornbill			
	<i>Acanthiza pusilla</i>	Brown Thornbill			
	<i>Acanthiza reguloides</i>	Buff-rumped Thornbill			
	<i>Acanthorhynchus tenuirostris</i>	Eastern Spinebill			
	<i>Accipiter fasciatus</i>	Brown Goshawk			
	<i>Anthochaera carunculata</i>	Red Wattlebird			
	<i>Cacatua galerita</i>	Sulphur-crested Cockatoo			
	<i>Cacomantis flabelliformis</i>	Fan-tailed Cuckoo			NT
	<i>Cacomantis pallidus</i>	Pallid cuckoo			RA
*	<i>Carduelis carduelis</i>	Goldfinch			
	<i>Chalcites basal</i>	Horsfield's Bronze Cuckoo			NT
	<i>Climacteris picumnus picumnus</i>	Brown Treecreeper			EN
	<i>Colluricincla harmonica</i>	Grey Shrikethrush			
	<i>Coracina novaehollandia</i>	Black-faced Cuckooshrike			
	<i>Corcorax melanorhamphos whataea</i>	White-Winged Chough		R	RA
	<i>Cormobates leucophaeus</i>	White-throated Treecreeper			NT
	<i>Corvus mellori</i>	Little Raven			
	<i>Coturnix pectoralis</i>	Stubble Quail			
	<i>Cracticus torquatus leucopterus</i>	Grey Butcherbird			VU
	<i>Dacelo novaeguineae</i>	Laughing Kookaburra			
	<i>Daphoenositta chrysoptera</i>	Varied Sitella			VU
	<i>Dicaeum hirundinaceum</i>	Mistletoebird			
	<i>Eolophus roseicapilla</i>	Galah			
	<i>Glossopsitta concinna</i>	Musk Lorikeet			
	<i>Glossopsitta porphyrocephala</i>	Purple-crowned Lorikeet			
	<i>Gymnorhina tibicen</i>	Australian Magpie			
	<i>Lichenostomus chrysops</i>	Yellow-faced Honeyeater			
	<i>Malurus cyaneus leggei</i>	Superb Fairy-wren			
	<i>Melithreptus brevirostris pallidiceps</i>	Brown-headed Honeyeater			NT
	<i>Melithreptus lunatus</i>	White-naped Honeyeater			VU
	<i>Neochima teporalis</i>	Red-Browed Finch			
	<i>Ninox novaezealandiae</i>	Southern Boobook			
	<i>Pachycephala pectoralis fuliginosa</i>	Golden Whistler			
	<i>Pachycephala rufiventris rufiventris</i>	Rufous Whistler			NT
	<i>Paradalotus striatus</i>	Striated Pardalote			
	<i>Pardalotus punctatus punctatus</i>	Spotted Pardalote			NT
	<i>Petrochelidon ariel</i>	Fairy martin			
	<i>Petroica boodang boodang</i>	Scarlet Robin			VU
	<i>Phaps chalcoptera</i>	Common Bronzewing			
	<i>Phaps elegans</i>	Brush Bronzewing			RA
	<i>Phylidonyris novaehollandiae</i>	New Holland Honeyeater			

	Species	Common Name	AUS	SA	AMLR
	<i>Phylidonyris pyrrhoptera pyrrhoptera</i>	Crescent Honeyeater			
	<i>Platycercus elegans x flaveolus</i>	Adelaide Rosella			
	<i>Pomatostomus superciliosus</i>	White-browed Babbler			
	<i>Rhipidura fuliginosa</i>	Grey Fantail			
	<i>Todiramphus sanctus santus</i>	Sacred Kingfisher			NT
*	<i>Turdus merula</i>	Common Blackbird			
	<i>Zosterops lateralis</i>	Silvereye			

Mammals

	Species	Common Name	AUS	SA	AMLR
*	<i>Cervus dama</i>	Fallow deer			
*	<i>Lepus capensis</i>	Brown hare			
	<i>Macropus fuliginosus</i>	Western grey kangaroo			
*	<i>Mus musculus</i>	House mouse			
*	<i>Oryctolagus cuniculus</i>	European rabbit			
	<i>Pseudocheirus peregrinus</i>	Common ringtail possum			
	<i>Phascogale carolinensis</i>	Koala			
*	<i>Rattus rattus</i>	Black rat			
	<i>Tachyglossus aculeatus</i>	Short-beaked echidna			NT
	<i>Trichosurus vulpecula</i>	Brush-tail possum			
*	<i>Vulpes vulpes</i>	Red fox			

Reptiles and Amphibians

	Species	Common Name	AUS	SA	AMLR
	<i>Aprasia striolata</i>	Lined worm lizard			
	<i>Bassiana duperreyi</i>	Eastern three-lined skink			
	<i>Christinus marmoratus</i>	Marbled gecko			
	<i>Ctenophorus decresii</i>	Tawny dragon			
	<i>Ctenotus robustus</i>	Eastern striped skink			
	<i>Egernia whitii</i>	White's skink			
	<i>Gehyra variegata</i>	Tree dtella			
	<i>Hemiergis decresiensis</i>	Three-toed earless skink			
	<i>Lampropholis guichenoti</i>	Garden skink			
	<i>Lerista bougainvillii</i>	Bougainville's skink			
	<i>Limnodynastes tasmaniensis</i>	Spotted marsh frog			
	<i>Pogona barbata</i>	Eastern bearded dragon			
	<i>Pseudechis porphyriacus</i>	Red-bellied black snake			
	<i>Pseudonaja textilis</i>	Eastern brown snake			
	<i>Pseudophryne bibroni</i>	Bibron's toadlet			
	<i>Suta flagellum</i>	Little whip snake			
	<i>Tiliqua rugosa</i>	Sleepy lizard			
	<i>Tiliqua scincoides</i>	Eastern bluetongue lizard			

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APPENDIX 3 LAND TENURE HISTORY

TENURE	LESSEE	TERM
Section 106, 107		
Miscellaneous Lease 911	William Scott	1/1/1884 – 31/12/1897
Miscellaneous Lease 6292	James Watts	1/1/1898 – 1/3/1917
Dedicated as Forest Reserve		30/5/1918
Section 111		
Miscellaneous Lease 934	John Murray	1/1/1884 – 31/12/1897
Miscellaneous Lease 6293	William Carter	1/1/1898 – 28/9/1916
Dedicated as Forest Reserve		7/12/1918

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