

Department for Environment and Heritage
Management Plan



Kaiserstuhl Conservation Park
2006



Government
of South Australia

This plan of management was adopted on 11 January 2006 and was prepared in pursuance of section 38 of the *National Parks and Wildlife Act 1972*.



Government of South Australia

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FOREWORD

Kaiserstuhl Conservation Park is located approximately 80 kilometres north-east of Adelaide and approximately 12 kilometres south-east of Tanunda, in the northern Mount Lofty Ranges. The 392 hectare park was proclaimed in 1979 to conserve a remnant block of native vegetation, in particular the northern-most population of Brown Stringybark (*Eucalyptus baxteri*). Kaiserstuhl Conservation Park preserves a substantial number of habitats for native fauna and helps to protect the soil and watershed of Tanunda Creek.

More than 360 species of native plant are found within the reserve, many of which are of conservation significance. Bird species of conservation significance recorded within the reserve include the Diamond Firetail, White-browed Treecreeper, Elegant Parrot and Crescent Honeyeater.

Kaiserstuhl Conservation Park also has a rich cultural heritage. The reserve is of significance to the Peramangk people and Ngadjuri people who have traditional associations with the land. Kaiserstuhl Conservation Park has also been a valuable source of material for botanical research. Dr Ferdinand von Mueller and Dr Hans Herman Behr collected Barossa Ranges plants from the area between 1844 and 1851.

Kaiserstuhl Conservation Park will be managed to conserve this exceptional biodiversity in a region where remnant native vegetation is relatively sparse. The park will also be managed to provide limited public access for use and enjoyment, consistent with the focus of biodiversity conservation.

The plan of management for Kaiserstuhl Conservation Park is now formally adopted under the provisions of section 38 of the *National Parks and Wildlife Act 1972*.



JOHN HILL

MINISTER FOR ENVIRONMENT AND CONSERVATION



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1 PARK LOCATION AND FEATURES

Kaiserstuhl Conservation Park is located approximately 80 kilometres north-east of Adelaide in the northern Mount Lofty Ranges. It is situated approximately 12 kilometres south-east of Tanunda in the Barossa Valley. Access is via Mengler Hill Road then along Tanunda Creek Road (Figure 1).

The park covers an area of 392 hectares and comprises sections 531, 623, 730, 732, 733, 736, 737, 844, 848 (*Government Gazette* 3 May 1979, p1313), 860, 861, 862 (*Government Gazette* 3 December 1987, p1732) and 910 (*Government Gazette* 5 June 1986, p1458), Hundred of Moorooroo. The park was proclaimed under the *National Parks and Wildlife Act 1972* and does not provide for mining access.

The park is situated approximately one kilometre east of Kaiserstuhl and is bordered on its western side by a ridge, part of which culminates as the park's highest point (589 metres). The north-western corner entrance area provides panoramic views of the surrounding Barossa Valley region.

Two ridges run in a north-south direction, divided by a small watercourse. Drainage from the ridge and slopes toward the eastern side of the park forms the headwater tributaries of the Tanunda Creek, which is a significant tributary of the North Para River. Historically, semi-permanent pools of water used to form along Tanunda Creek in the park. However, recent neighbouring land use changes have reduced flows in the creeks and altered the water regime in the park.

Many interesting and unusual rock formations (granitic gneisses) occur throughout the park, along the watercourses as well as in remote outcroppings.

Kaiserstuhl Conservation Park experiences a typical Mediterranean climate, with cool, wet winters and warm, dry summers. The park has an average annual rainfall of more than 750 mm, of which approximately 80% falls in the seven months from April to October.

Biogeographic Regionalisation and Environmental Associations

Kaiserstuhl Conservation Park lies within the Flinders Lofty Block IBRA region, which has been described as "temperate to arid Proterozoic ranges, alluvial fans and plains, and some outcropping volcanics, with the semi-arid to arid north supporting Native Cypress, Black Oak and mallee open woodlands, *Eremophila* and *Acacia* shrublands, and bluebush/saltbush chenopod shrublands on shallow, well-drained loams and moderately-deep, well-drained red duplex soils. The increase in rainfall to the south corresponds with an increase in low open woodlands of Messmate Stringybark (*Eucalyptus obliqua*) and Brown Stringybark (*E. baxteri*) on deep lateritic soils, Pink Gum (*E. fasciculosa*) and Cup Gum (*E. cosmophylla*) on shallower or sandy soils." (Environment Australia, 2000).

The Flinders Lofty Block IBRA region totals 7,131,816 hectares and has been extensively cleared of native vegetation for agriculture and urban development. Remaining native vegetation is highly fragmented and only 5.5% of the Flinders Lofty Block area is conserved in protected areas.

Within the region, Laut et al. (1977) recognised a series of Environmental Associations. The park falls within the Para Environmental Association, described as a "hilly upland with broad crests and dissected slopes on schist and gneiss. There is a mixed cover of pine plantation and open parkland with an understorey of sown pasture. The latter is used for livestock grazing." Kaiserstuhl Conservation Park conserves approximately 1.15% of the Para Environmental Association.

There is a widely recognised benchmark that at least 15% of an original ecosystem should be conserved where possible and, including Kaiserstuhl Conservation Park and adjacent Heritage Agreements, only 5.8% of the Para Environmental Association is well protected. Remaining intact areas are considered a high priority for conservation and acquisition, though very few remnants now exist. This highlights the need to protect these core remnant areas from negative impacts.

Regional Setting

The majority of the Barossa Valley region in the northern Mount Lofty Ranges has been cleared for intensive agriculture and horticulture (mostly grapevines) or severely modified by livestock grazing. Land uses adjoining the park are predominantly rural in character, and include grazing and vineyards. The western boundary adjoins land purchased in 1977 by the (then) Woods and Forests Department to establish a commercial pine plantation. *Pinus radiata* was progressively established on parts of the land until 1983, when development of the *Native Vegetation Act 1991* curtailed further plantings. Remnant native vegetation on ForestrySA land is now being

recommended for dedication as Kaiserstuhl Native Forest Reserve under the *Forestry Act 1950*. Other nearby tracts of remnant native vegetation are managed in accordance with Heritage Agreements placed on the privately owned land under the *Native Vegetation Act 1991*.

Pre-European vegetation in the region consisted of a range of forest and woodland formations, depending on topography, aspect and soil types, usually with a sclerophyllous, shrubby understorey or native grassland. The park conserves several plant associations found more commonly to the south such as Brown Stringybark (*Eucalyptus baxteri*) woodlands. Plants such as Tufted Grass-tree (*Xanthorrhoea semiplana* ssp. *semiplana*) and Brown Stringybark occur here near their northern limit. This park lies at the intersection of three botanical regions, as delineated by the State Herbarium of South Australia - the Southern Mount Lofty, Northern Mount Lofty and Murraylands Regions.

Kaiserstuhl Conservation Park, along with the adjacent forest reserve and several private properties with patches of remnant vegetation, protects one of the last remaining examples of Barossa hills vegetation, which is somewhat isolated from other naturally vegetated land. The nearest tracts of equivalent habitat are more than ten kilometres to the south-west (Hale, Warren and Sandy Creek Conservation Parks, Para Wirra Recreation Park and Altona CSR Landcare Reserve). This isolation is significant and should be addressed in regional conservation initiatives, as it is likely to have a negative effect on the park's long-term ecological sustainability.

Yurrebilla - The Greater Mount Lofty Parklands

Kaiserstuhl Conservation Park and other National Parks and Wildlife Act reserves, along with Native Forest Reserves (*Forestry Act 1950*) and other Crown land within the Adelaide Region, are being managed in the broader context of a planning initiative known as Yurrebilla – The Greater Mount Lofty Parklands. The name was assigned in recognition of Kaurana culture and heritage. The aim of this project is to establish an integrated and cooperative management framework for approximately 40,000 hectares of land throughout the Mount Lofty Ranges that is variously managed by DEH, ForestrySA, SA Water and Planning SA. 'Yurrebilla' can also include local government land and voluntarily nominated, privately owned areas.

This initiative seeks to identify common natural, heritage and recreation resources and to develop regional-level policies that will enable a consistent management approach to be adopted throughout the region.

There is a forest reserve (Pewsey Vale Block), part of the greater Mount Crawford forest reserves, adjacent to the western boundary of the park that is partly cleared and planted with *Pinus radiata*, but which also contains significant remnants of native vegetation, including rare species not found within Kaiserstuhl Conservation Park. It is expected that conservation of the native vegetation in this forest reserve will be improved with the establishment of the Kaiserstuhl Native Forest Reserve by ForestrySA. DEH will liaise with ForestrySA to develop cooperative conservation and recreational trail strategies.

Heritage Agreements

Within the local region, there are several private properties protected by Heritage Agreements under the *Native Vegetation Act 1991* that assist with the preservation of biodiversity. Two such properties abut the north-western boundary of the park and another property is situated on the eastern boundary (Figure 1). These protected areas provide stepping stones or links that can facilitate movement of species, improve overall genetic diversity and boost ecosystem sustainability in accordance with the Government's *NatureLinks* strategy, which aims to maximise biodiversity conservation through the linking of core protected areas across the landscape. Every attempt will be made to include these properties when planning and implementing biodiversity conservation programs.

Local Council

The park lies in the Barossa Council local government area. The council area includes six main towns of varying sizes, of which Nuriootpa is the main population growth centre. The rest of the council area includes the valley floor and ranges where sheep and cattle grazing, lifestyle hobby farms and horticultural activities occur in the rural area. By far the biggest industry in both the valley and ranges is vineyard development, wineries and associated tourism activities.

Council's major reserves are within or on the edge of towns and generally contain sporting and picnicking facilities. Barossa Bushgardens is a new council and community project, which aims to

provide a seed source of local plants for revegetation projects and is developing walking trails and educational tours and programs. The closest council reserve to the park is Mengler Hill Lookout and Sculpture Park. There is very little native vegetation of good quality left along council roadsides or on its unmade road reserves. However, roads in the vicinity of the park contain good stands of native vegetation, including some under the care of Bushcare groups. These are important wildlife corridors that enable species movement beyond the core conservation park, in accordance with *NatureLinks* principles. The land tenure of Kaiserstuhl as a conservation park is consistent with The Barossa Council's Development Plan, which zones remnant native vegetation so as to protect and enhance its biodiversity.

1.1 History Prior to Proclamation

Around the period 1958-1962, the SA Field Naturalists Society recommended that an area of land near Kaiserstuhl (then Mount Kitchener) be acquired for conservation purposes. In 1970, while surrounding bushland was still being cleared for agriculture, Mr CW Bonython made a submission to the National Parks Commission seeking the creation of a national park in the Mount Kitchener region, where an area of approximately 1,000 hectares was still available. Both the Chairman of the Land Board (Mr CE Rix) and Director of National Parks (Mr RG Lyons) inspected the land separately and reported favourably to the Commissioner in October 1971. Following the Commissioner's recommendations, in November 1971 an approach was made to the principal landowner without success.

In 1974, in a submission to the Commonwealth Government for a grant under the *State Grants (Nature Conservation) Act*, a report was included on the Kaiserstuhl proposed area. However, because the assessor from the Federal Department of Environment did not inspect this locality, no further action was taken and no funds to purchase land in the Barossa Ranges were made available.

In March 1975, the Society for Growing Australian Plants wrote to the Premier expressing concern that the (then) Woods and Forest Department had acquired land in the Kaiserstuhl region that they felt would be better suited for a national park. The Society had previously presented a submission, included in the Mount Lofty Ranges Study released by the State Planning Authority in August 1974, recommending that a new national park be established in the Barossa Ranges. The Outer Metropolitan Planning Area Development Plan had also recommended investigations of areas around the Tanunda Creek headwaters for possible acquisition for open space purposes.

In February 1978, Mr MA Picard, Project Officer with the Nature Conservation Society of SA, presented a report to the Society on the conservation value of land known as the Pohlner Estate, situated in the vicinity of Kaiserstuhl. When the area became available for sale, a portion was purchased at auction with funds provided by Mr Leo Waken Nicholls, who left the sum of \$30,000 to the Field Naturalists' Society of SA Inc in a bequest. A small plaque in the park is dedicated to the memory of the late Mr Nicholls (21 July 1894–24 August 1971), who was a keen bushwalker. The plaque was unveiled on 30 November 1984 by Mr RI Nichols, Director of National Parks and Wildlife.

Kaiserstuhl Conservation Park was proclaimed on 3 May 1979 and named after the nearby prominent hill, Kaiserstuhl. The park is important for the conservation of local flora (of which a significant number of species are rare or endangered), for its value as wildlife habitat and for the protection of the headwaters of Tanunda Creek. It is also noteworthy as a collecting area of a number of Barossa Range plants collected by Drs Ferdinand von Mueller and Hans Herman Behr from 1844 to 1851.

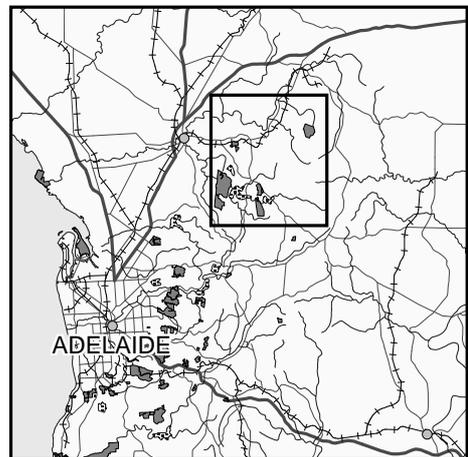


Figure 1

**Kaiserstuhl Conservation Park
Location**

LEGEND

- | | |
|--|---|
|  NP&W Act Reserve |  Drainage |
|  Heritage Agreement |  Major & Minor Roads |
|  Forest Reserve (native vegetation) |  Railway |
|  Forest Reserve (pine plantation) |  Railway Station |
|  Barossa Council Property | |



Map designed and created by
Reserve Planning using PAMS
Projection: MGA Zone 54 (GDA 94)
Date: December 2005

2 LEGISLATIVE FRAMEWORK

2.1 National Parks and Wildlife Act 1972

Reserves are managed by the Director of National Parks and Wildlife subject to any direction by the Minister for Environment and Conservation or the Chief Executive of the Department for Environment and Heritage (DEH). When managing reserves, the Director is required under section 37 of the *National Parks and Wildlife Act 1972* to have regard to, and provide actions that are consistent with the following objectives of management stated in the Act:

- preservation and management of wildlife;
- preservation of historic sites, objects and structures of historic or scientific interest within reserves;
- preservation of features of geographical, natural or scenic interest;
- destruction of dangerous weeds and the eradication or control of noxious weeds and exotic plants;
- control of vermin and exotic animals;
- control and eradication of disease of animals and vegetation;
- prevention and suppression of bush fires and other hazards;
- encouragement of public use and enjoyment of reserves and education in, and a proper understanding and recognition of, their purpose and significance;
- generally, the promotion of the public interest; and
- preservation and protection of Aboriginal sites, features, objects and structures of spiritual or cultural significance within reserves.

Section 38 of the Act states that a management plan is required for each reserve. A management plan should set forth proposals in relation to the management and improvement of the reserve and the methods by which it is intended to accomplish the objectives of the Act in relation to that reserve.

DEH is responsible for preparing management plans and undertaking the prescribed community consultation process for the park. A standard management planning process is mandated, to ensure that all statutory obligations are met. Help and guidance with plan preparation is sought and obtained from individuals, community groups or relevant advisory committees, although ultimately the decision on whether or not to adopt a management plan remains a ministerial prerogative.

The draft plan for Kaiserstuhl Conservation Park was released for public comment in May 2005 and, at the close of the comment period, 13 submissions had been received. All comments and concerns were considered by the Northern Lofty Consultative Committee and forwarded to the South Australian National Parks and Wildlife Council for review and endorsement before the plan was presented to the Minister for adoption.

In accordance with the Act, the provisions of this management plan must be carried out and no actions undertaken unless they are in accordance with this plan. In order to achieve this, each year park managers, taking regional and district priorities into account, draw up work programs to implement strategies proposed in management plans. Implementation of these projects is determined by, and subject to, the availability of resources (eg staffing and funding).

2.2 Native Title Act 1993

Native title is used to describe the interests Aboriginal and Torres Strait Islander People have in land and waters according to their traditional laws and customs. The Commonwealth *Native Title Act 1993* was enacted to:

- provide for the recognition and protection of native title;
- establish ways in which future dealings affecting native title may proceed and to set standards for those dealings;
- establish a mechanism for determining claims to native title; and

- provide for, or permit, the validation of past acts, and intermediate period acts, invalidated because of the existence of native title.

This management plan is released and will be adopted subject to any native title rights and interests that may continue to exist in relation to the land and/or waters. Before undertaking any acts that might affect native title, DEH will follow the relevant provisions of the *Native Title Act 1993*.

2.3 Environment Protection and Biodiversity Conservation Act 1999

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) establishes a Commonwealth approval process for assessment of proposed actions that are likely to have a significant impact on matters of national environmental significance and provides an integrated system for biodiversity conservation and management of important protected areas.

With regard to Kaiserstuhl Conservation Park, several species, suspected to be nationally threatened, occur within the park. Although insufficient data exist for a more confident assessment, Commonwealth approval is required for any action that has, will have, or is likely to have, a significant impact on these potentially nationally threatened species in addition to any state approval that may be required.

Furthermore, in consultation with relevant state authorities, the Commonwealth Minister for the Environment and Heritage may develop and implement recovery plans and threat abatement plans for threatened species and ecological communities listed under the EPBC Act. Where applicable, DEH will contribute to and incorporate these plans into park management regimes and operational procedures.

3 VISION

The land comprising Kaiserstuhl Conservation Park was initially acquired in recognition of its scientific and scenic value, being part of the only tract of native vegetation of any size in the Northern Mount Lofty Ranges. It has some unique features, including ephemeral wetlands and a large variety of rare and threatened plant species. It preserves a substantial number of habitats for native fauna and helps to protect the soil and watershed.

For the term of this management plan, the focus of management will be on biodiversity conservation while permitting public access consistent with that focus.

4 ZONING

Section 39 of the *National Parks and Wildlife Act 1972* provides for the designation of zones in a reserve and constrains the use of land in those zones to the conditions specified in an adopted management plan. Zoning aims to ensure that public use and management strategies remain compatible with the protection of park values.

Kaiserstuhl Conservation Park contains some of the most intact remnant native vegetation within the Barossa Region and as such is of prime conservation value. A precautionary approach to the conservation of such a key ecological asset is considered strategic for the region. Any threats to the health of habitat need to be identified and controlled.

Visitors are requested to remain on the signposted walking trail network, as modified from time to time, and refrain from walking indiscriminately throughout the majority of the reserve. Visitors are provided with the opportunity to clean their footwear of soil and seeds prior to entering the reserve, to prevent the spread of weeds (see Section 5.5 Introduced Plants) and pathogens (see Section 5.6 Introduced Pathogens). A sign informs visitors of this need to do so.

Public Access Zone

This zone includes the signposted walking trail network and information shelter (Figure 3). Visitors may access the park by foot on this trail network only. Picnic facilities or toilets will not be provided and visitors are asked to use alternative facilities in the region for outdoor social events such as picnics and weddings. Access by vehicle, bicycle or horse within the park is prohibited. Nature study on foot is appropriate, however, and interpretive information is provided to encourage an understanding of the park's natural values.

The park's high conservation value renders it unsuitable for any activities (eg orienteering and organised running events) that may damage that conservation value or may interfere with the quiet enjoyment of its natural values by other visitors.

Biodiversity Protection Zone

The park protects a very small portion (1.15%) of the original extent of similar native vegetation in the region, including some vulnerable and rare plant associations. However, since native vegetation has been either removed or severely modified throughout the region, the park is a very significant protected area. Disturbance through unregulated access is not appropriate due to the potential for weeds and pathogens to be introduced. The soils are highly erodible and many plants and animals are small and fragile and can be easily damaged or destroyed.

Consequently, the majority of the park is included in this zone and access will only be permitted for valid research or management purposes with the permission of the park manager.

Objective

Zone Kaiserstuhl Conservation Park to protect the vegetation, riparian systems, ephemeral wetlands, floodplains, habitats, plant associations and fauna, while providing sustainable access for visitors to enjoy and study the park's natural values.

Strategy

- Designate and adopt the management zones described in Section 4 Zoning.

5 MANAGING NATURAL HERITAGE

5.1 Geology, Soils and Landform

The rocks that underlie Kaiserstuhl Conservation Park date back to the Proterozoic-Palaeozoic Period, about 1,400 million years ago. These belong to the Barossa Complex, which is comprised of a number of small basement inliers throughout the Mount Lofty Ranges, of an age equivalent to those of the Gawler Craton. Unlike the Gawler Craton on Eyre and Yorke Peninsulas, these rocks have been variably affected by the Cambro-Ordovician, Delamerian Orogeny, a dramatic mountain-building event more than 500 million years ago that folded basement and sedimentary rocks at great depth in the crust.

The dominant rock type of the area is granite and gneiss, and many outcrops may be seen throughout the park. Associated metamorphic rocks of quartzite, shale, schist and marble also exist in the reserve. The underlying geology and the soils that derive from them have a profound impact on the vegetation type, composition and distribution in the region.

Three soil types are evident in the park:

- Grey-Brown Podsollic Soils are gravelly with stony light sandy loam topsoil, about 30 cm thick, found over mottled plastic clay subsoils, usually stony and about 25-38 cm thick. This soil type is usually found on the low ridges within the park;
- Yellow Podsollic Soils are coarse textured, often with a loose sandy topsoil 25-30 cm thick, overlying mottled yellow, red and grey, soapy clay subsoil 75-150 cm thick, and passive to pallid zone and decomposed rock materials. The parent material consists of white quartz, often split, affected by previous lateritic processes. This soil type exists on the high ridges and long, tapering slopes; and
- Skeletal Soils on the peaks and upper slopes of steep ridges typically contain light grey-brown to grey loose sand over broken rock at about 30-38 cm in depth. The parent material common to these soils includes white quartz gneisses and schists with variable outcrops.

The soils are generally shallow, fragile and highly erodible, and there have been soil erosion problems associated with the fire track, walking trails and old wood carting tracks in the reserve. Most of the trails have historic origins relating to woodcutting and stock management in the past. Consequently, they are poorly placed, having been developed for ease of traverse, rather than for long-term, sustainable maintenance or the protection of the park's conservation values.

The issue of soil salinity is probably related to previous broad-scale clearing in the region, although it is not considered serious at this stage. There is, however, some evidence of soil salinity on neighbouring land and on the flats where Behr Creek emerges into Tanunda Creek Valley. DEH will liaise with the Adelaide and Mount Lofty Ranges NRM Board to manage this issue across the region.

Objectives

Conserve the geological features of the park.

Maintain healthy soil condition and limit erosion to natural levels.

Strategies

- Ensure the importation of stone or other material does not compromise the geological values of the park.
- Avoid inappropriate development and control activities that may unduly erode soils.
- Monitor soil salinity and liaise with the Adelaide and Mount Lofty Ranges NRM Board to manage salinity on a regional scale.

5.2 Hydrology

The park's creek systems contain diverse riparian and semi-aquatic native vegetation (Taplin and Kernich, 1996). Macro-invertebrate samples, taken as part of the national Monitoring River Health Initiative (MRHI) by McEvoy and Madden (1999), found a new water mite species, of the genus *Austrotombella*, in Tanunda Creek within Kaiserstuhl Conservation Park. Of the 230 water mite species recorded in the Gawler River Catchment survey, this species is one of only four considered significant for biodiversity conservation (Pikusa, 1999).

One of the original reasons for proclaiming Kaiserstuhl Conservation Park was to protect the headwaters of Tanunda Creek. However, much of the water that flows into the creek, and to a lesser extent Pohlner Creek within the park boundaries, originates on neighbouring land. Neighbouring land uses include sheep and cattle grazing, viticulture and privately owned native vegetation. Past activities, such as large-scale native vegetation clearance in this catchment, together with current land-use practices, may be having an impact on the water quality and health of the park's aquatic ecosystems.

The Water Protection Area, allocated to the majority of The Barossa Council region under the provisions of the *Development Act 1993*, seeks to protect native vegetation, soils, watercourses and associated natural values from detrimental farming and development practices (Planning SA, 2004). Kaiserstuhl Conservation Park and the surrounding land are incorporated in the Water Protection Area, however regional education is essential to ensure appropriate practices are established and maintained.

Several farm and large irrigation dams have been constructed in the Tanunda Creek catchment and to a lesser extent the Pohlner Creek catchment, upstream of the park. It is likely that these have significantly altered the surface water flows in Tanunda Creek and, as a result, the North Para River. In its State of the Catchment Report (Volume 5 of the North Adelaide and Barossa Catchment Water Management Plan) the North Adelaide and Barossa Catchment Water Management Board (2001) states that "practices that impact on water flow rates in the Barossa watercourses, such as farm dams and direct water extraction, will have significant impacts on downstream water salinity."

Concerns were raised about the health of Tanunda Creek with the disappearance of the semi-aquatic Lax Marsh-flower (*Villarsia umbricola* var. *umbricola*) from the southern section of the creek in the early 1990s. A working group, established by DEH to monitor water quality, recommended that silting be minimised by the use of silt traps on road drains and those on upstream properties. Silt traps along road drains became less necessary in 1999 when Tanunda Creek Road was sealed. Water quality was monitored from 1996 until 2002 by the Friends of Kaiserstuhl Conservation Park, in association with programs such as "Waterwatch" and "Frogwatch" and the MRHI. Data collected includes water chemistry, riparian vegetation, and frog and macro-invertebrate populations. There is some indication from these data that altered flow regimes may lead to high salinity levels in Tanunda Creek, both within the park and downstream at Bethany (Friends of Kaiserstuhl unpublished data, 1996 – 2002; McEvoy & Madden, 1998).

In 1997, the Water Resources Group of the (then) Department of Environment and Natural Resources proposed an Environmental Flows Program for Tanunda Creek. This proposal was not implemented, partly due to the advent of the new Northern Adelaide and Barossa Catchment Water Management Board (NABCWMB), which took over control and research into catchment issues, including for prescribed creeks such as Tanunda Creek. More modelling work for Tanunda Creek flow regimes has been undertaken by the NABCWMB since then, along with information on water usage from irrigation dams in the catchment.

The quantity and timing of environmental flows needs to be determined, so as to establish and maintain a healthy ecosystem in the park's riparian systems. It is important that the Adelaide and Mount Lofty Ranges NRM Board and DEH negotiate a formal agreement for 'environmental water' release and monitoring along Tanunda Creek. In this regard, DEH will consult with catchment authorities in any review of the Water Allocation Plan for the region.

Objective

Establish and maintain adequate stream flows and acceptable water quality within Kaiserstuhl Conservation Park to sustain healthy riparian ecosystems.

Strategies

- With the help of the Adelaide and Mount Lofty Ranges NRM Board establish a scientific program to monitor the effects of water quality and quantity on the water-dependent ecosystems of the park.
- In collaboration with the Adelaide and Mount Lofty Ranges NRM Board, negotiate a formal agreement with landholders in the catchment to ensure adequate environmental stream flows (water quality and quantity), as required for water-dependent ecosystems in the park, particularly to support the unique water mite (*Austrotombella* sp.) and the uncommon semi-aquatic Lax Marsh-flower (*Villarsia umbricola* var. *umbricola*).
- Contribute to any review of the Water Allocation Plan for the Barossa prescribed area.

5.3 Native Vegetation

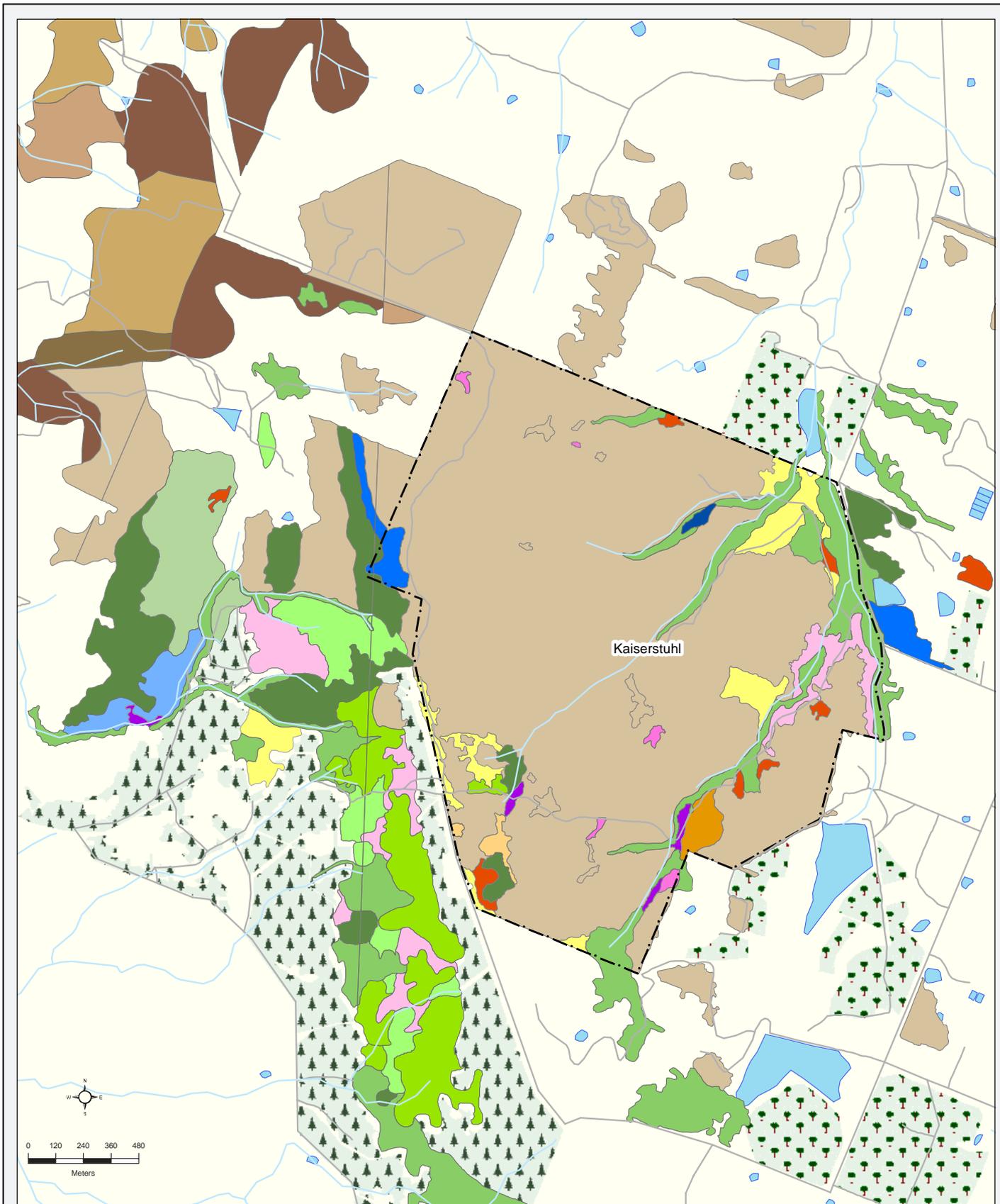
Native vegetation in Kaiserstuhl Conservation Park is very diverse, with numerous vegetation communities present (Figure 2):

- **Forest:** The main forest association is Brown Stringybark (*Eucalyptus baxteri*), often with South Australian Bluegum (*E. leucoxydon*), Drooping Sheoak (*Allocasuarina verticillata*), Golden Wattle (*Acacia pycnantha*) and Yacca (*Xanthorrhoea semiplana* ssp. *semiplana*). This is the northernmost limit of Brown Stringybark in South Australia. In places, Drooping Sheoak forms low, open forest, with occasional Rough-barked Manna Gum (*E. viminalis* var. *cygnetensis*) over a Yacca and grassy understorey.
- **Woodland:** A River Red Gum (*E. camaldulensis*) woodland association occurs along creek lines and floodplains, often with Silver Banksia (*Banksia marginata*) creating the midstorey. Other trees forming woodland associations are South Australian Blue Gum, Rough-barked Manna Gum and Drooping Sheoak. In most of these woodland habitats, Golden Wattle and/or Yacca form the major component of the understorey.
- **Shrubland:** The smaller patches of shrubland include those dominated by Wallowa (*Acacia calamifolia*), Wirilda (*A. retinodes*), Yacca, tea-trees (*Leptospermum continentale*, *L. myrsinoides*) or the less common Prickly Tree Violet (*Hymenanthera dentata*).
- **Sedgeland, Herbland and Grassland:** Sedgelands border streams in places and include a range of sedge and rush species (*Lepidosperma* spp., *Isolepis* spp., *Cyperus* spp., *Chorizandra* spp. and *Eleocharis* spp.). Herblands include open patches with sundews (*Drosera* spp.) and New Holland Daisy (*Vittadinia* sp.) or consist of moss beds with herbs on rocky outcrops. Native grassland vegetation in open areas appears to be in decline and exotic weeds such as Salvation Jane (*Echium plantagineum*) have become more widespread. It is thought that this may be due to the grazing pressure of rabbits and what is considered to be an artificially large population of kangaroos.

Evidence of clearance of *Eucalyptus camaldulensis* and *Xanthorrhoea semiplana* ssp. *semiplana* on the floodplains of the creeks in the park exists as well as two other smaller areas. These areas were grazed and in one area several rows of grapevines were planted but proved unsuccessful and were removed.

Kaiserstuhl Conservation Park supports an abundant population of Western Grey Kangaroos, which are commonly observed grazing the open areas in the early mornings and evenings. Modified land uses surrounding the park provide resources such as permanent water and palatable, introduced fodder. These factors contribute to maintaining an artificially large population of macropods within the park. As a result, vegetation cover and abundance has declined within the park, particularly palatable species. Kangaroo populations will need to be managed to protect threatened plant species and maintain viable and diverse vegetation communities (see Section 5.4 Native Fauna).

More than 360 indigenous plant species have been identified in the park, more than 30 of which are native orchids. The plant biodiversity in Kaiserstuhl Conservation Park is reflected in the high number of species that are listed as being of conservation significance, highlighting the conservation value of the reserve. Almost 30 species are of state conservation significance, and the White-beauty Spider-orchid (*Caladenia argocalla*) is nationally endangered. A list of plant species within the park and their conservation status is included in Appendix A.



Woodland

- *Allocasuarina verticillata*, +/- *Acacia pycnantha* Low Open Forest
- *Eucalyptus camaldulensis* var. *camaldulensis* Mid Woodland
- *Eucalyptus leucoxylo* ssp., *Eucalyptus viminalis* ssp., *cygnetensis* Mid Woodland
- *Eucalyptus viminalis* ssp., *cygnetensis*, +/- *Eucalyptus obliqua*, +/- *Eucalyptus fasciculosa*, +/- *Eucalyptus leucoxylo* ssp. Mid Woodland
- *Eucalyptus viminalis* ssp. Mid Open Woodland
- *Acacia pycnantha*, +/- *Allocasuarina verticillata*, +/- *Banksia marginata* Low Woodland
- *Eucalyptus baxteri*, +/- *Eucalyptus leucoxylo* ssp., +/- *Allocasuarina verticillata* Low Woodland

Shrubland

- *Leptospermum continentale* Tall Closed Shrubland
- *Acacia calamifolia*, *Banksia marginata* Tall Shrubland
- *Acacia retinodes* var. Tall Shrubland
- +/- *Banksia marginata* Tall Shrubland
- *Rubus* sp. Mid Closed Shrubland

Herbland

- *Drosera* sp., *Vittadinia* sp. Low Closed Forbland
- Moss beds with herbs (on rocky outcrops) Herbland

Grassland

- Disturbed Grassland with introduced grasses, *Echium plantagineum* and some native grasses

- *Eucalyptus odorata*, +/- *Eucalyptus leucoxylo* ssp. Low Woodland
- *Allocasuarina verticillata*, *Eucalyptus fasciculosa* Low Open Woodland
- *Eucalyptus camaldulensis* var. *camaldulensis*, +/- *Eucalyptus leucoxylo* ssp. Low Open Woodland
- *Eucalyptus leucoxylo* ssp., +/- *Eucalyptus odorata* Low Open Woodland

Sedgeland

- *Lepidosperma longitudinale*, *Lepidosperma concavum* Low Sedgeland

Mid Shrubland

- *Hymenanthera dentata*, *Xanthorrhoea semiplana* ssp. Mid Shrubland
- *Leptospermum* sp., *Xanthorrhoea semiplana* Mid Shrubland
- *Xanthorrhoea semiplana* ssp. Mid Shrubland

Plantations

- Orchards / Vineyards

Water Bodies

- Water Bodies

Water Courses

- Water Courses

Roads

- Roads

Kaiserstuhl CP

- Kaiserstuhl CP

Figure 2

Kaiserstuhl Conservation Park Vegetation Communities

A vegetation management plan will be developed and implemented to monitor plant species of conservation significance, and to identify and manage any factors that threaten the integrity of the park's native vegetation.

Kaiserstuhl Conservation Park provides a source of genetic material and habitat reference areas that will become increasingly important for ecological restoration programs throughout the local area. Permission to collect such genetic material from the reserve should be sought from DEH and will be granted in the form of a collecting permit.

Native vegetation plays an important function in helping to control stream and watertable salinity both within and outside the park. It also improves the water quality in the catchment by filtering run-off and groundwater entering the creek systems and reducing turbidity. It provides significant wind protection for surrounding grazing land and vineyards. Hence, maintaining the structure and quality of native vegetation within Kaiserstuhl Conservation Park is integral for the entire region.

Objective

Conserve the park's flora as a representative sample of regional vegetation and to maintain the diversity of native fauna habitat.

Strategies

- Prepare a vegetation management plan to coordinate conservation and threat abatement programs.
- Survey and monitor populations of plants and plant communities of conservation significance and undertake management actions if necessary for their conservation.
- Manage fire and total grazing pressure to ensure maximum plant species diversity and to protect threatened species. This may include prescribed burning or kangaroo population control (culling).
- Provide, by means of collecting permits, genetic material for community-based habitat restoration projects within the biogeographic region.
- Consider introducing plants at risk elsewhere in the region that could have formed part of the vegetation associations in the park in order to secure viable populations, giving consideration to negative impacts and species sustainability.
- Investigate and promote coordinated management programs with neighbouring landowners to protect and conserve the native vegetation in the region.

5.4 Native Fauna

Little is known of the fauna within the park, apart from the presence or absence of individual species. There is a need for better information, including further surveys, analysis of population dynamics and the identification of threatening factors. Despite the lack of detailed formal surveys, many informal observations of native fauna have been recorded. A list of species observed in the park and their conservation status is provided in Appendix A.

Mammals

Native mammals observed in the park by rangers and Friends of Kaiserstuhl members include Western Grey Kangaroos (*Macropus fuliginosus*), Euros (*M. robustus*), Short-beaked Echidnas (*Tachyglossus aculeatus*), Common Brushtail Possums (*Trichosurus vulpecula*) and Common Ringtail Possums (*Pseudocheirus peregrinus*).

A bat survey by the Mammal Club of South Australia and the Friends of Kaiserstuhl identified eight bat species, and a bird survey for the "Bushcheck" project along Tanunda creek also gathered data scientifically. The Friends of Kaiserstuhl identified several frog species during recording for "Frogwatch".

Birds

The park provides habitat for numerous birds, with over 100 species being recorded to date. Several species that are in serious decline in the Mount Lofty Ranges still find refuge in this small park. More research needs to be undertaken to determine the status of these remnant populations and recovery programs are required to help their longer-term survival.

Some of the passerine birds found within the reserve make considerable migrations throughout the Mount Lofty Ranges, but return annually, usually in the winter months. Their migratory movements are probably associated with the flowering and fruiting of various native plants. This park has several large stands of mature *Banksia marginata* and the understorey plant, *Astroloma conostephioides*, both of which provide important food sources during flowering for birds, particularly honeyeaters. The dense vegetation makes viewing birds difficult, but patience will be rewarded. The most commonly seen birds are Common Bronzewing, Laughing Kookaburra, Adelaide Rosella, and various honeyeaters, wrens and finches. It is probable that a change in abundance of bird species within the reserve will continue as a reflection of population dynamics outside of the reserve. It may be expected that those species reliant on native forest and understorey plant species will become increasingly rare, replaced by fruit eating and grain eating birds.

Reptiles

Understorey vegetation density makes viewing reptiles difficult, but a warm day will usually entice some species to bask in more open areas. Walkers regularly see Eastern Bearded Dragons (*Pogona barbata*), Sleepy Lizards (*Tiliqua rugosa*) and the smaller skinks. The herpetofauna of the park comprises a small number of recorded species. The Eastern Brown Snake (*Pseudonaja textiles*) and Red-bellied Black Snake (*Pseudechis porphyriacus*) are also present.

There are some important areas of moderately intact native vegetation on nearby private land and along the roadsides near the park, which are likely to provide corridors and habitat for some of the park's wildlife. Fauna in the park and region would benefit from conservation effort being put into better protection of all these remnants, in accordance with *NatureLinks* principles.

Past land use practices (eg grazing by domestic stock and timber collection) have modified fauna habitat within the park. Large areas in the vicinity of the park have been cleared. Consequently, the native mammal, bird, reptile, amphibian and invertebrate populations are presumed to have been adversely affected in the region.

Past logging is likely to have reduced the number of nesting and refuge hollows in trees in the park, which also would have negatively impacted the native fauna. However, the large rocky outcrops, ephemeral creeks and wetlands, high plant biodiversity, leaf litter and fallen logs provide habitat for a variety of smaller species, particularly reptiles, frogs and invertebrates.

Throughout the Mount Lofty Ranges, artificial water points and increased grazing opportunities from vegetation clearance and more nutritious, introduced pasture have provided resources for an artificially high population of Western Grey Kangaroos. Annual surveys in the district since 1995 have determined that the population is as high as 20 to 40 individuals per km². The impact of this population upon native vegetation is being monitored within the park and region, using photopoints, exclosures and vegetation transects established with the assistance of the Friends of Kaiserstuhl. Evidence indicates that overgrazing by kangaroos threatens plant species, the health of vegetation communities and the fauna dependent on these habitats.

There are few options available for the control of the grazing impacts of such a high population of Western Grey Kangaroos. Fencing to curtail kangaroo access and quarantining of artificial water sources are not practically achievable and the most effective means of protecting vegetation from high grazing pressure is the removal of some animals by culling. In order to protect vegetation in the park and to meet ecological restoration objectives, strategic culling of kangaroos will be undertaken, in accordance with section 38(10)(a) of the *National Parks and Wildlife Act 1972*. Management of the Western Grey Kangaroo population will be conducted in a regional context, by linking on-park control with that of adjoining landowners.

Objectives

Conserve populations of indigenous animals in the park and region.

Manage total grazing pressure to enhance the floristic complexity of the reserve and provide habitat for the most diverse faunal assemblage possible.

Strategies

- Survey and monitor populations of animals of conservation significance and develop and implement species management plans where necessary to reduce threats and ensure their survival.

- Record information on animal species in the park and region, including location, extent, condition and threats.
- Monitor kangaroos to determine numbers and their impact on vegetation and undertake strategic culling of animals to maintain a sustainable population in the park that does not compromise ecological restoration objectives.

5.5 Introduced Plants

Certain sections of the park that have been cleared in the past have reverted to modified grassland that will require rehabilitation and possibly revegetation. The remaining vegetation associations are in reasonable condition, with some weed infestation including large patches of Blackberry (*Rubus ulmifolius*), mainly along the creeks. The recent influx of the vigorous South African weed orchid, *Disa bracteata* (formerly *Monadenia bracteata*) throughout the park, and the noticeable spread of Salvation Jane (*Echium plantagineum*) in previously modified areas are current priorities for management.

In order to control Salvation Jane, the Root Weevil (*Mogulones geographicus*), a biological control agent, was released in the Old Vineyard area of the park in liaison with the South Australian Research and Development Institute (SARDI) and the Friends of Kaiserstuhl Conservation Park, during the summer of 2003. The Friends of Kaiserstuhl have successfully obtained additional funding for weed control through the Australian Government Natural Heritage Trust.

Along the creek and drainage lines, Blackberry has been slashed. Although this has reduced infestations, re-growth is a persistent problem. Control needs to be ongoing, as seed is distributed by foxes and birds throughout the region.

Other pest plant species present in the park include Stinkwort (*Dittrichia graveolens*), St John's Wort (*Hypericum perforatum*), South African Daisy (*Senecio pterophorus*), Briar (*Rosa rubiginosa*), Olive (*Olea europaea*), Monterey Pine (*Pinus radiata*) and various thistle and grass species. A coordinated, regional approach needs to be undertaken to control these and other weed outbreaks. Introduced plants are included in the plant list for the park (Appendix A).

Objective

Control, and eradicate where possible, pest plant species within the park.

Strategies

- As part of the vegetation management plan, record the location and extent of pest plant populations in the park, building on information already provided by the Friends of Kaiserstuhl. Monitor the effectiveness of control programs and revise the vegetation management plan as necessary.
- Contribute to the development and implementation of regional pest plant programs in association with neighbouring landholders, local government authorities and the Adelaide and Mount Lofty Ranges NRM Board.
- Consider fire as a management tool for the control of pest plant species in areas where management vehicles will create minimal damage and where other less invasive measures have proved unsuccessful.

5.6 Introduced Pathogens

Phytophthora

Cinnamon Fungus (*Phytophthora cinnamomi*) is an introduced soil-borne pathogen that kills a wide range of native plant species by attacking their root system and reducing or stopping the movement of water and nutrients within the plant. The pathogen spreads quickly downhill with the movement of water through soil, but it can also spread slowly in any direction through root-to-root contact. It is spread most rapidly when rainfall coincides with warm temperatures, generally in spring, summer and early autumn. Human activities, such as maintaining and using roads and tracks, landscaping, conducting biological surveys and research, recreational use and fire management practices can easily introduce and spread Cinnamon Fungus in the reserve, in particular when moist soil sticks to vehicles, machinery, equipment, tools or footwear.

In the Mount Lofty Ranges, *Phytophthora cinnamomi* has been noticed since the 1970s. It is present in Para Wirra Recreation Park, Humbug Scrub and the Kersbrook area, and the disease is suspected to be present in Kaiserstuhl Conservation Park. A suspected infestation should be treated the same way as a confirmed infestation. A boot cleaning station is located just inside the entrance of the park to reduce the potential of visitors introducing and spreading the pathogen.

Mundulla Yellows

Mundulla Yellows is a dieback syndrome of eucalypts and other woody native species. It was first recognised in the 1970s by Mr Geoff Cotton, an apiarist in the upper south-east of South Australia. It causes progressive, slow yellowing and dieback, characterised by interveinal chlorosis (yellowing of the leaves) that begins at the periphery of the plant, usually on a single branch, and may take several years or decades to finally kill the plant. Although largely confined to trees in disturbed environments, Mundulla Yellows is always fatal and appears to be contagious and spreading.

The syndrome in South Australia appears to be present as far west as Streaky Bay and as far north as Wilpena Pound. While not yet recorded in Kaiserstuhl Conservation Park, it is present in the Barossa Valley, where it threatens the long-term survival of River Red Gums. To date, there has been no success in re-establishing plants on sites with Mundulla Yellows dieback. Research is being undertaken to discover causative agents or at least unambiguous markers for its recognition. This will be important in order to avoid inadvertently spreading the syndrome through revegetation efforts using potentially infected propagation stock.

A causal agent is yet to be identified. The latest research (Luck et al., 2004; Mundulla Yellows Task Group, 2004) indicates it may be caused by a complex interaction of soil properties (texture and parent material), nutrients, soil compaction, water availability, increased alkalinity and salinity, and the accumulation of bicarbonate in the soil solution.

Objective

Prevent the introduction and spread of exotic pathogens in the reserve.

Strategies

- Maintain boot-cleaning stations at strategic locations and ensure that all vehicles or other equipment do not introduce foreign or contaminated soil.
- Utilise strict hygiene procedures when undertaking management actions that have the potential to redistribute soil.
- Ensure that propagation material sourced in the park is from healthy plants, to avoid accidentally spreading any potential pathogens in the region.
- Comply with strategies outlined in the Threat Abatement Plan for Dieback Caused by the Root-rot Fungus *Phytophthora cinnamomi* (Environment Australia, 2001), as revised from time to time.
- Increase community awareness of the potential for the introduction and establishment of *Phytophthora cinnamomi* in the district, the plant species susceptible to it and indicators of its presence.

5.7 Introduced Animals

The high conservation value of Kaiserstuhl Conservation Park and its regional significance justify a comprehensive and regional approach to pest animal and plant control. The Animal and Plant Control Commission has conducted a partially successful goat eradication program in the past. However, goat numbers are again increasing in the district. A control program is currently being implemented under direction of the Adelaide and Mount Lofty Ranges NRM Board with the support of ForestrySA and neighbouring landowners.

Rabbits are not major pests in the park at present, although even small populations can have adverse impacts on restoration programs, and will need to be controlled. Foxes and other pest animals will be monitored and controlled as required.

Objective

Control, and eradicate where possible, introduced animals within the park.

Strategies

- In association with the Adelaide and Mount Lofty Ranges NRM Board, develop and implement regional pest animal control programs.
- Continue to control, and if possible eradicate, rabbits, goats, foxes, deer, dogs and cats within the park.

6 MANAGING FIRE

Only a few fires are known to have occurred in the general area surrounding Kaiserstuhl Conservation Park. The most recent fire in the area was in 1982, when a fire started on adjacent property to the north-west but did not enter the park.

Fire management works have been limited to the construction and maintenance of fire access tracks and liaison with local fire authorities.

Many of the plant species within the reserve are resistant to wildfire or have mechanisms to regenerate after a fire. The park's fire management plan may identify habitats that require a specific fire regime for their maintenance. Planned fires, where appropriate and ecologically sustainable, may be used to reduce fuel hazards with the aim of protecting life and property.

Two historic tracks in the park have been maintained for fire access as part of the district network. These tracks are inspected annually and maintained at DEH standards.

DEH will integrate fire management at Kaiserstuhl Conservation Park with District Bush Fire Prevention Plans, maintain representation on the relevant District Bushfire Prevention Committees, and continue to liaise closely with local Country Fire Service (CFS) brigades, as local brigades may be the first to respond to fires in the park.

DEH has a responsibility to manage fire in its reserves. A fire management plan for Kaiserstuhl Conservation Park will be developed in consultation with CFS, District Bushfire Prevention Committees and other key stakeholders, interest groups and neighbours. The plan will be reviewed and updated regularly and form the basis of ongoing fire management.

Fire management planning will:

- identify natural and cultural heritage values and built assets;
- provide a framework for the management of wildfire suppression, including identification of strategic access and control lines;
- provide a framework for prescribed burning for ecological management and fuel reduction purposes; and
- identify performance indicators.

Objective

Manage fire to ensure the protection of life and property, the maintenance of biodiversity, and the protection of natural, cultural and built assets.

Strategies

- Develop, implement and regularly review a fire management plan for the park in consultation with CFS, the district Bushfire Prevention Committee and other key stakeholders, interest groups and neighbours.
- Until a fire management plan is developed:
 - maintain existing fire access tracks; and
 - support CFS programs to educate property owners in the vicinity about measures they can take to protect their own property from fire and to reduce the likelihood of human error starting fires in the neighbourhood of the park.

7 MANAGING CULTURAL HERITAGE

7.1 Indigenous Heritage

Peramangk and Ngadjuri

The land comprising Kaiserstuhl Conservation Park was traditionally associated with the Peramangk and Ngadjuri people. The park is located on the boundary of their tribal areas (Tindale, 1974). Peramangk country is the Mount Lofty Ranges from Myponga north to Gawler and Angaston, east to Wright Hill, Strathalbyn, Kanmantoo, and along the eastern scarp of the range to near Towitta. The Ngadjuri occupied land from Angaston and Freeling north to Clare, Crystal Brook, Gladstone, Carrieton, and north of Waukaringa to Koonamore, east to Mannahill, in Rororo, Peterborough, Burra, and Robertstown districts (Tindale, 1974).

Dreaming stories and ceremonies were important to Peramangk and Ngadjuri people. Corroborees and meetings were held to settle disagreements and to share stories and experiences. The park contains two sites of significance to the Ngadjuri and Peramangk people, who still have strong physical and spiritual connections to the area.

With European settlement came diseases, dispersal and the occupation of land and water supplies, which often resulted in violent conflict. The Peramangk and Ngadjuri were progressively dispossessed and their ability to maintain a traditional lifestyle diminished, which led to segregation and the loss of language, traditional stories, ceremonies, significant and sacred sites, hunting and gathering techniques, and many other important cultural and heritage issues. These issues had a huge impact on the Peramangk and Ngadjuri populations, which dwindled significantly. Some of the language and traditional stories were recorded and are now being re-established.

Today, the Peramangk and Ngadjuri people have survived and continue to live on their traditional lands. There is a large number of Peramangk and Ngadjuri descendants living in Adelaide and other parts of the state. The Peramangk and Ngadjuri people continue to practice their culture, language and traditional associations.

Aboriginal Heritage Act 1988

The purpose of the *Aboriginal Heritage Act 1988* is to protect and preserve Aboriginal sites, objects and remains. "Aboriginal site" and "Aboriginal object" are defined to mean an area of land or an object that is of significance according to Aboriginal tradition or that is of significance to Aboriginal archaeology, anthropology or history. The Department for Aboriginal Affairs and Reconciliation (DAARE) maintains a Central Archive, including the Register of Aboriginal Sites and Objects.

Certain landforms at Kaiserstuhl Conservation Park are likely to contain evidence of Aboriginal pre-historic occupation include:

- rocky outcrops (quarries, rock art, rock holes, stone arrangements, ceremonial religious sites, stone artefact scatters); and
- bush or forested areas (stone artefact scatters, campsites or ovens).

Currently, two sites are listed on the Central Archive for Kaiserstuhl Conservation Park. However, these recordings do not reflect a comprehensive survey of the park. To promote better cultural heritage management in Kaiserstuhl Conservation Park, further research needs to be undertaken to identify and record sites of significance on the park.

Objective

Conserve and protect significant cultural heritage sites.

Strategies

- Consult Peramangk and Ngadjuri people who have a traditional association with the land, Native Title Claimants and relevant State and Commonwealth Aboriginal heritage authorities, in decisions regarding the management of Peramangk or Ngadjuri cultural heritage.
- Before proceeding with any development works within the park, obtain an assessment and clearance from the appropriate authority, under the provisions of the *Aboriginal Heritage Act 1988*.

- Identify and protect known or relocated sites and items of archaeological, anthropological, cultural and historical significance located in the park, in cooperation with DAARE and other relevant authorities and organisations. Peramangk and Ngadjuri sites require conservation plans to facilitate appropriate management.
- In consultation with the Peramangk and Ngadjuri communities and other relevant authorities, research and inventory cultural and historic sites and stories that relate to the park and, where appropriate, develop interpretive material for visitors.
- Encourage and support archaeological, anthropological and historic studies within the park. All sites located during these surveys should be recorded to the standards set by DAARE and submitted for inclusion on the DAARE Central Archive.

7.2 Non-Indigenous Heritage

Soon after colonisation, European settlers immediately claimed ownership of the land and began to survey the countryside. Kaiserstuhl became noteworthy as a collecting area for a number of Barossa Ranges plants collected by Drs Ferdinand von Mueller and Hans Herman Behr from 1844 to 1851. Others, such as JGO Pepper and J Menge, collected there and a large plaque in the park, which was unveiled on 2 December 1983, is dedicated to the work of these early botanists.

Settlers cleared the surrounding land for agricultural purposes and introduced (both intentionally and inadvertently) a variety of alien plants and animals, leaving only a relatively small island of native vegetation standing in an otherwise highly modified landscape. Kaiserstuhl Conservation Park is the core part of this small island.

The land now constituting the reserve did not, however, escape the settlement period entirely unscathed. A small area was cleared and planted with vines, but proved unprofitable. Much of the Brown Stringybark was harvested to fuel the district's winery boilers and the brick kilns at Nuriootpa. This left the stumps to grow into the distinctive multi-stemmed specimens seen in the park today. Granite was quarried from the site. Some of the flat floodplain areas in the vicinity of the major creeks were partly cleared and grazed by sheep.

There are no significant sites of non-indigenous heritage within the park, but impacts of past land use remain.

8 MANAGING TOURISM AND RECREATION

8.1 Visitor Use

Kaiserstuhl Conservation Park was established with the aim of protecting one of the last remnant stands of native vegetation in the Barossa region and the watershed of Tanunda Creek (one of the largest tributaries of the North Para River). The primary objective of management is to conserve these features so that natural ecosystems can flourish and provide important ecological services for the community for current and future generations, while permitting sustainable access for visitors to appreciate, understand and support the protection of the park.

Since the opening of the first of two nature trails in the park in 1990, visitor numbers have increased. The sealing of Tanunda Creek Road in recent years by The Barossa Council has meant a further increase in local, interstate and overseas visitors. Annual visitor numbers are estimated to be between 5,000 and 10,000.

As Kaiserstuhl Conservation Park is the core conservation area in the region, the enjoyment and study of wildlife from the park's nature trails is regarded as the most appropriate form of recreational use by visitors. Tourism ventures are not sustainable in Kaiserstuhl Conservation Park, as large organised groups may threaten and damage the reserve's natural values that this management plan is seeking to protect.

It is considered that Kaiserstuhl Conservation Park has reached, or is reaching, maximum sustainable visitor levels. This is indicated by the fact that, on peak days, the carpark is full to overflowing. DEH is of the opinion that the reserve should not accommodate more than the number of visitors able to utilise the carpark, as this would place unmanageable pressure on the park's high conservation values. Furthermore, the absence of toilet facilities at Kaiserstuhl Conservation Park is such that the current low-impact nature of visitor activities is suitable and should be adhered to. Hence, regional tourism promotion and future visitor developments should be directed towards Para Wirra Recreation Park, where there are rangers on duty and facilities exist. Private land and reserves managed by Council or ForestrySA may also provide alternative sites for sustainable tourism developments.

Informal, rather than organised, recreational activities are considered to be most sustainable and in keeping with the protection of the conservation values of the park. However, informal activities should be restricted to those of a low impact nature, including activities on designated walking trails such as bird watching, photography, nature study and other similar activities.

Objective

Provide for visitor use that is compatible with the park's natural values.

Strategies

- Liaise with The Barossa Council, tourism authorities, tourist operators in the area and the community to develop interpretation programs that explain the significance of the region's native vegetation remnants. Encourage the development of visitor facilities at sites that are more suitable to accommodate high visitor numbers.
- Monitor the level of usage of the park and control any negative impacts on the park's biodiversity values.

8.2 Visitor Access

Vehicle Access

There is no public vehicle access within the park. The Barossa Council has constructed a carpark on Tanunda Creek Road that is capable of accommodating approximately 12 vehicles. At times, especially weekends and public holidays, this carpark is filled and excess vehicles park informally along the roadside.

The formal provision of additional parking would adversely impact the important remnant native vegetation on Tanunda Creek Road. Roadside vegetation provides valuable habitat and linkages to other remnant bush in the vicinity. Due to the close proximity of Tanunda Creek to the entrance of the park and its periodic flooding during winter and spring, it is neither feasible nor

sustainable to provide car parking inside the reserve. A carpark at this location in the park would also negatively affect the conservation value of the wetlands and floodplains.

Vehicle tracks within the park are used for fire and management purposes only but also form part of the walking trail network, including part of the Heysen Trail. During winter and spring, parts of the track are boggy, and vehicle usage during these seasons can cause severe damage.

Walking Trails

Two nature trails, the Wallowa Trail and the Stringybark Loop Trail, with interpretive information and footbridges over Tanunda, Pohlner and Behr Creeks, allow visitors to explore the park. The Heysen Trail traverses the park along the western part of the Wallowa Trail (Figure 3).

The two current trails are considered to provide sufficient access to the range of environments in the park for visitor enjoyment without exposing the core areas of the park to undue disturbance (eg invasion by introduced pathogens, plants and animals). To reduce impacts, visitors are required to access the reserve only on the marked trail network. Access elsewhere in the reserve is limited to management activities, where precautions will be taken to limit the spread of pest plants and pathogens and to minimise trampling of fragile species.

The nature trails have historic origins relating to old woodcutting and stock management tracks. Consequently, they are not necessarily well placed, having been developed for ease of traverse rather than for long-term, sustainable maintenance. In some sections, nature trails had been constructed utilising gullies, which made erosion control difficult and unsustainable. In addition, these gully trails reduced the important microhabitat value of these environments for wildlife. In other areas, the trails become slippery, wet or often inundated with water during the wetter months. Trails are better located where water can be shed more effectively.

Consequently, part of the Wallowa Trail, that formerly permitted visitors to undertake a circuit of the park, will be closed and rehabilitated to restore wildlife habitat. Although the partial closure prevents visitors from returning to the main park entrance via a loop, the trail still provides access to the main habitats and features of the park and permits enjoyment of the natural qualities of the area. The Wallowa Trail links the main park entrance with the Heysen Trail.

There are currently several walking trails in the adjacent ForestrySA land, linked to the Heysen Trail, that pass through the length of the Pewsey Vale forest including some areas of the proposed Native Forest Reserve. At several points along these ForestrySA trails, impressive landscape views of the ranges and valley floor are available, as well as the large rocky outcrops which dominate this area. These trails include a short spur to a lookout, which is signposted from the park. Trails within ForestrySA land complement the nature trails in the conservation park.

As the need arises, in partnership with ForestrySA, other walking trails may be developed in the adjacent proposed Native Forest Reserve and pine plantation that complement those within the park and have the potential to provide additional walking opportunities to offset the proposed closure of the unsustainable section of the Wallowa Trail.

Some sections of the nature trails are prone to erosion and others to waterlogging. These sections may require stabilisation or rerouting. There may be a need, for example, to construct additional footbridges where walking trails cross boggy ground and cross the three main creeks. Otherwise, the existing trails are considered appropriate for the sustainable use of the park.

Objectives

Ensure that vehicles do not compromise the natural values of the park or adjacent roadside vegetation.

Provide safe, sustainable walking opportunities for visitors to enjoy the park, while protecting the park's core conservation values.

Strategies

- Maintain the existing carpark on Tanunda Creek Road in liaison with The Barossa Council.
- Maintain internal tracks for fire and management purposes only.
- Avoid unnecessary use of management vehicles in the park during wet conditions or fire bans.

- If necessary, undertake works to avoid those seasonally waterlogged areas that may be subject to *Phytophthora* infestation.
- Work cooperatively with The Barossa Council to protect remnant native vegetation on adjacent roadsides.
- Continue to engage the Friends of Kaiserstuhl Conservation Park, Walking SA, ForestrySA, The Barossa Council, community groups, stakeholders and nearby landholders in the development and maintenance of sustainable, safe walking trails for the park and surrounding region, while protecting remnant native vegetation and wildlife habitats.

8.3 Visitor Facilities

Kaiserstuhl Conservation Park does not provide car parking (see Section 8.2 Visitor Access), toilet or picnic facilities. Apart from a few directional and interpretive signs, two walking trails and three foot-bridges, there are no developments or built assets within the park and none are proposed.

Visitor facilities in the park are considered to be adequate for the current level of usage. The provision of additional facilities, which might encourage increased visitor use, may compromise the park's core conservation role and diminish its natural value. The impacts of visitor usage on the park will be monitored, reviewed and controlled if necessary.

District Council and tourism bodies will be encouraged to develop other sites in the region as tourist destinations to minimise visitor impact on the conservation values of Kaiserstuhl Conservation Park. Additionally, several Native Forest or Council reserves in the district, such as those maintained under the Barossa Bushgardens project, may also accommodate visitor needs.

Objective

Protect the conservation values of the park by minimising the impacts of infrastructure and the built environment.

Strategy

- Liaise with local government and regional tourism authorities to promote nature-based tourism at alternative sites in the region, while maintaining a low and sustainable level of use of Kaiserstuhl Conservation Park.

8.4 Information and Interpretation

Information is provided to visitors by means of brochures and signs at an information bay located near the Tanunda Creek Road entrance (see Figure 3). Two other information boards are located on the Heysen Trail where it enters the park to the north and south. Additionally, common plant species are labelled along the nature trails.

Objective

Provide information for visitors to safely explore the park and to improve their environmental understanding and appreciation.

Strategy

- Maintain interpretive information in the park to enhance visitor experience and advise on appropriate and safe behaviour.

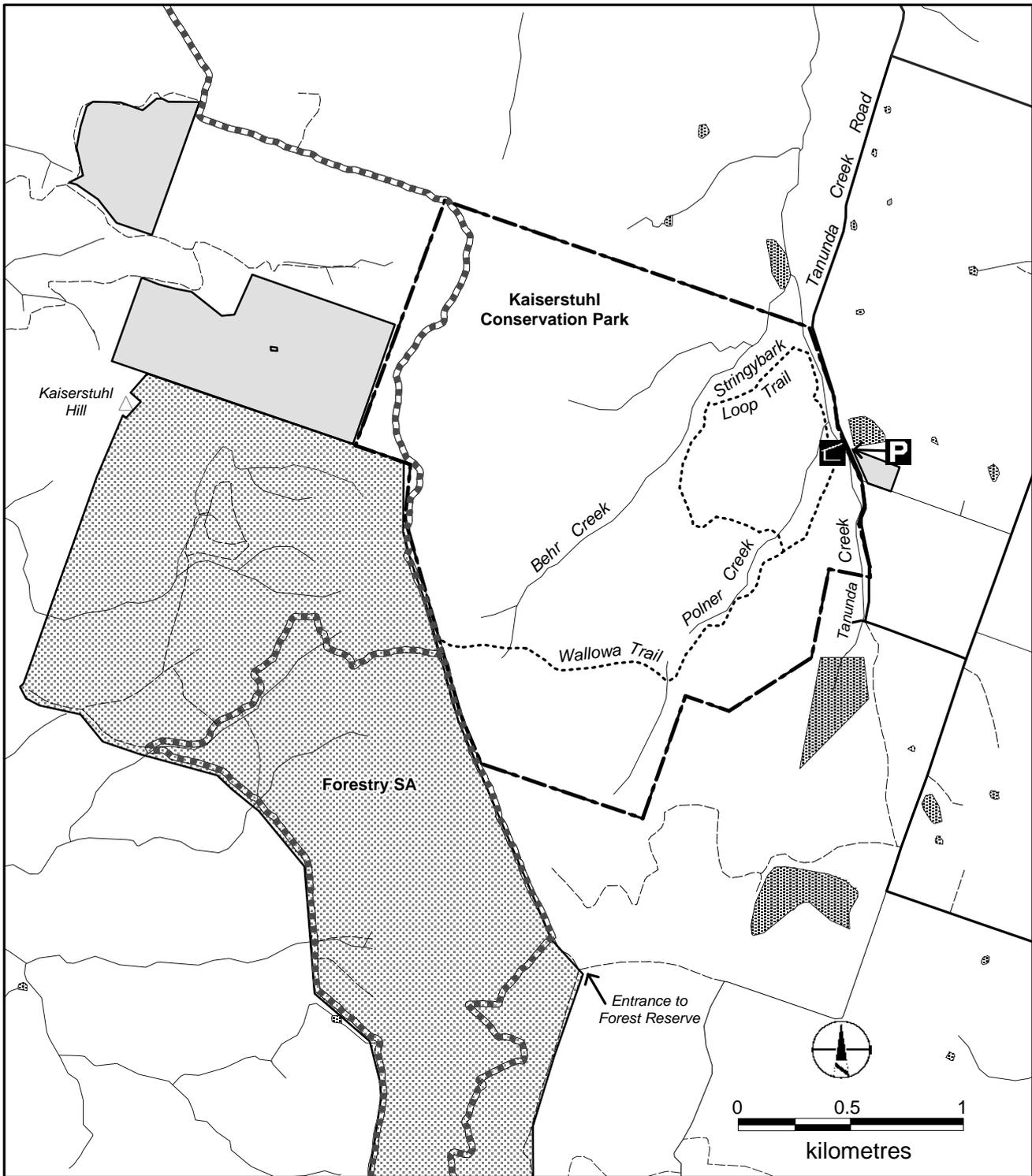


Figure 3

Kaiserstuhl Conservation Park

Features

Map designed and created by Reserve Planning using PAMS
 Projection: MGA Zone 54 (GDA 94)
 Date: December 2005

LEGEND

- | | |
|--------------------|-----------------------------------|
| Park Boundary | Major & Minor Roads |
| Heritage Agreement | Heysen Trail |
| Forest Reserve | Walking Trail |
| Drainage | Information Shelter/Park Entrance |
| | Carpark (The Barossa Council) |

9 INVOLVING THE COMMUNITY

Community and Volunteer Involvement

The importance of Kaiserstuhl Conservation Park to the local community has generated a base of community support. Community assistance will continue to be of great value in maintaining acceptable standards of management.

The Friends of Kaiserstuhl Conservation Park formed in March 1990 and have been involved in ongoing park support programs. Their achievements include:

- flora and fauna surveys;
- weed removal and ongoing control;
- liaison with neighbouring landholders to coordinate native vegetation conservation;
- undertaking total grazing pressure surveys;
- erosion control, revegetation and rehabilitation;
- walking trail construction and maintenance;
- negotiating regional cooperation with catchment management;
- participation in the annual Waterwatch catchment program and frog census; and
- successful application for grants from both State and Commonwealth Governments.

This voluntary contribution has been invaluable and DEH gratefully acknowledges their dedication and enthusiasm. Volunteers often require the provision of materials, equipment and supervision by park staff. It is important for DEH to maintain liaison with the Friends of Kaiserstuhl and provide ongoing support and assistance, including legal and policy advice, technical, planning and management direction.

DEH recognises that an integrated approach to coordinate priorities for conservation in consultation with the Friends of Kaiserstuhl, adjoining property owners and other volunteer organisations and individuals is required.

Regional Communities and Park Neighbours

Kaiserstuhl Conservation Park lies within the boundaries of the Adelaide and Mount Lofty Ranges NRM Board, established under the *Natural Resource Management Act 2004*.

Currently, there are two community-based steering committees in the Barossa Council area which are coordinating the devolution of various NRM-related Government funding programs: the South Para Biodiversity Project and the relatively new North Para NRM Project.

The South Para Biodiversity Project has been in progress for several years and is a community-based, regional, natural resource management program supported in the past by Natural Heritage Trust grants and funding from the Northern Adelaide and Barossa Catchment Water Management Board (NABCWMB). Other contributing members include DEH, ForestrySA, SA Water, Animal and Plant Control Boards, local governments and a large number of private and corporate landholders. The project area contains the largest contiguous block of native vegetation in the Mount Lofty Ranges and aims to improve biodiversity conservation by protecting and linking core areas and undertaking rehabilitation and threat abatement programs in an integrated fashion.

Until 2004 in the North Para River catchment, some funding assistance was available from the South Para Biodiversity Project and the NABCWMB rural land management assistance programs. However, there was no single regional coordinated funding program. Consequently, in 2004 the NABCWMB coordinated the development of a 'community funding package', which includes the South Para and North Para River catchments. The new NRM Delivery Program is supported by the Natural Heritage Trust, National Action Plan on Salinity & Water Quality (through the Adelaide and Mount Lofty NRM Board) and NABCWMB funds. The Board is coordinating the delivery of this funding through community-based steering committees, including the existing South Para Biodiversity Project and the newly created North Para NRM Project. The North Para NRM Project committee comprises at least ten members of the North Para community, with membership reflecting a broad range of agricultural, social and environmental interests and expertise. Local

Government, Catchment Board and biodiversity managers (including the DEH Ranger in charge of Kaiserstuhl and Sandy Creek Conservation Parks) are also represented.

It is anticipated that this regional community-based approach to funding will continue in some form under the new Adelaide and Mount Lofty Ranges NRM Board arrangements.

Kaiserstuhl Conservation Park conserves the headwaters of Tanunda, Pohlner and Behr Creeks, which feed the North Para River. The park also protects the largest and most biodiverse remnant of native vegetation in the North Para Catchment. The Friends of Kaiserstuhl have signalled their interest in tapping into the North Para NRM Project funding package for habitat protection and rehabilitation projects in the park and neighbouring ForestrySA land. Cooperative partnerships should be maintained with the North Para NRM Project to achieve and maintain adequate environmental flows in the park's streams (see Section 5.2 Hydrology).

DEH will liaise with The Barossa Council, Friends of Kaiserstuhl, Landcare groups, and other appropriate bodies with regard to regional programs, including pest plant and animal control, bushfire prevention planning, road access, carparks, tourism development, regional biodiversity conservation and threat abatement strategies.

Aboriginal Partnerships

DEH is committed to reconciliation and to the development of partnerships with indigenous communities to cooperatively manage Kaiserstuhl Conservation Park in a way that respects both contemporary and traditional culture, knowledge and skills. Partnerships involve the delivery of programs that promote reconciliation, cultural awareness, Indigenous employment and training, cooperative management and Indigenous cultural heritage management on parks.

Furthermore, the South Australian Government is keen to pursue Indigenous Land Use Agreements (ILUAs) which are voluntary agreements between native title groups and other people about the use and management of country.

Objectives

Develop partnership arrangements with neighbours and appropriate bodies to provide a positive direction for the shared management of the park and to assist in the fulfilment of the objectives of this plan.

Develop a cooperative relationship with indigenous people in order to manage the park in a way that respects contemporary and traditional culture, history, knowledge and skills.

Encourage and support the local community, volunteer organisations and interested individuals in the development of conservation programs in collaboration with DEH.

Strategies

- Encourage and contribute to the development of partnership arrangements to integrate biodiversity and recreation management in the region, with organisations that have an interest in contributing to the sustainable management of the park.
- Contribute to the South Para Biodiversity Project and the North Para Natural Resource Management Project, in order to protect or improve the core conservation values of Kaiserstuhl Conservation Park and other protected areas in the region.
- Involve the Peramangk and Ngadjuri communities, Native Title Claimants and the nominated Aboriginal Heritage Committee in the cooperative management of the reserve and the preservation of their indigenous cultural heritage.
- Support and encourage the Friends of Kaiserstuhl and others to continue their voluntary contribution to park management.
- Encourage and facilitate the involvement of schools and universities in research that will benefit the park's conservation values and volunteer programs.

10 MANAGING RESERVE TENURE

Additional Land

Native vegetation exists on neighbouring and nearby properties. These include Kaiserstuhl Native Forest Reserve and private land, some parts of which have Heritage Agreements over them. Consideration should be given to the acquisition of any neighbouring or nearby land that has natural values, or which could buffer the reserve from threats.

Pine plantations on the forest reserve abut Kaiserstuhl Conservation Park and opportunistic pine seedlings are a management issue in the park. However, much of the forest reserve contains intact and degraded native vegetation that is of conservation value. Some vegetation associations are better represented in the ForestrySA land than in the park. The ForestrySA reserve also includes most of Kaiserstuhl itself, a 588 m high hill, prominent in the area. The summit is separately contained within a 1.158 hectare Crown land property. It is highly appropriate to consider acquiring land that would include Kaiserstuhl Hill within Kaiserstuhl Conservation Park.

Heritage Agreements on land to the west of the park conserving intact vegetation are currently well managed in cooperation with DEH and ForestrySA.

Objective

Improve the conservation value of the park by acquiring suitable land when available.

Strategies

- Assess adjacent and nearby land if it becomes available and consider its acquisition to add to the park.
- Manage all land additions to the park according to the principles outlined in this management plan.

SUMMARY OF MANAGEMENT STRATEGIES

STRATEGY	PRIORITY	DURATION
ZONING		
Designate and adopt the management zones described in Section 4 Zoning.	High	Ongoing
MANAGING NATURAL HERITAGE		
Geology, Soils and Landform		
Ensure the importation of stone or other material does not compromise the geological values of the park.	Medium	Ongoing
Avoid inappropriate development and control activities that may unduly erode soils.	High	Ongoing
Monitor soil salinity and liaise with the Adelaide and Mount Lofty Ranges NRM Board to manage salinity at a regional scale.	High	Ongoing
Hydrology		
With the help of the Adelaide and Mount Lofty Ranges NRM Board, establish a scientific program to monitor the effects of water quality and quantity on the water-dependent ecosystems of the park.	High	Ongoing
In collaboration with the Adelaide and Mount Lofty Ranges NRM Board, negotiate a formal agreement with landholders in the catchment to ensure adequate environmental stream flows (water quality and quantity), as required for water-dependent ecosystems in the park, particularly to support the unique water mite (<i>Austrotombella</i> sp.) and the uncommon semi-aquatic Lax Marsh-flower (<i>Villarsia umbricola</i> var. <i>umbricola</i>).	High	Ongoing
Contribute to any review of the Water Allocation Plan for the Barossa prescribed area.	Medium	Ongoing
Native Vegetation		
Prepare a vegetation management plan to coordinate conservation and threat abatement programs.	High	2 years
Survey and monitor populations of plants and plant communities of conservation significance and undertake management actions if necessary for their conservation.	High	Ongoing
Manage fire and total grazing pressure to ensure maximum plant species diversity and to protect threatened species. This may include prescribed burning or kangaroo population control (culling).	Medium	Ongoing
Provide, by means of collecting permits, genetic material for community-based habitat restoration projects within the biogeographic region.	Medium	Ongoing
Consider introducing plants at risk elsewhere in the region that could have formed part of the vegetation associations in the park in order to secure viable populations, giving consideration to negative impacts and species sustainability.	Low	Ongoing
Investigate and promote coordinated management programs with neighbouring landowners to protect and conserve the native vegetation in the region.	Medium	Ongoing
Native Fauna		
Survey and monitor populations of animals of conservation significance and develop and implement species management plans where necessary to reduce threats and ensure their survival.	High	Ongoing
Record information on animal species in the park and region, including location, extent, condition and threats.	Medium	Ongoing

STRATEGY	PRIORITY	DURATION
Monitor kangaroos to determine numbers and their impact on vegetation and undertake strategic culling of animals to maintain a sustainable population in the park that does not compromise ecological restoration objectives.	High	Ongoing
Introduced Plants		
As part of the vegetation management plan, record the location and extent of pest plant populations in the park, building on information already provided by the Friends of Kaiserstuhl. Monitor the effectiveness of control programs and revise the vegetation management plan as necessary.	Medium	Ongoing
Contribute to the development and implementation of regional pest plant programs in association with neighbouring landholders, local government authorities and the Adelaide and Mount Lofty Ranges NRM Board.	Medium	Ongoing
Consider fire as a management tool for the control of pest plant species where management vehicles will create minimal damage and where other less invasive measures have proved unsuccessful.	Low	Ongoing
Introduced Pathogens		
Maintain boot-cleaning stations at strategic locations and ensure that all vehicles or other equipment do not introduce foreign or contaminated soil.	High	Ongoing
Utilise strict hygiene procedures when undertaking management actions that have the potential to redistribute soil.	High	Ongoing
Ensure that propagation material sourced in the park is from healthy plants, to avoid accidentally spreading any potential pathogens in the region.	High	Ongoing
Comply with strategies outlined in the Threat Abatement Plan for Dieback Caused by the Root-rot Fungus <i>Phytophthora cinnamomi</i> (Environment Australia, 2001), as revised from time to time.	High	Ongoing
Increase community awareness of the potential for the introduction and establishment of <i>Phytophthora cinnamomi</i> in the district, the plant species susceptible to it and indicators of its presence.	High	Ongoing
Introduced Animals		
In association with the Adelaide and Mount Lofty Ranges NRM Board, develop and implement regional pest animal control programs.	High	Ongoing
Continue to control and, if possible, eradicate rabbits, goats, foxes, deer, dogs and cats from the park.	High	Ongoing
MANAGING FIRE		
Develop, implement and regularly review a fire management plan for the park in consultation with CFS, the district Bushfire Prevention Committee and other key stakeholders, interest groups and neighbours.	High	Ongoing
Until a fire management plan is developed: <ul style="list-style-type: none"> - maintain existing fire access tracks; and - support CFS programs to educate property owners in the vicinity about measures they can take to protect their own property from fire and to reduce the likelihood of human error starting fires in the neighbourhood of the park. 	High	Ongoing

STRATEGY	PRIORITY	DURATION
MANAGING CULTURAL HERITAGE		
Indigenous Heritage		
Consult Peramangk and Ngadjuri people who have a traditional association with the land, Native Title Claimants and relevant State and Commonwealth Aboriginal heritage authorities, in decisions regarding the management of Peramangk or Ngadjuri cultural heritage.	High	Ongoing
Before proceeding with any development works within the park, obtain an assessment and clearance from the appropriate authority, under the provisions of the <i>Aboriginal Heritage Act 1988</i> .	High	Ongoing
Identify and protect known or relocated sites and items of archaeological, anthropological, cultural and historical significance located in the park, in cooperation with DAARE and other relevant authorities and organisations. Peramangk and Ngadjuri sites require conservation plans to facilitate appropriate management.	High	Ongoing
In consultation with the Peramangk and Ngadjuri communities and other relevant authorities, research and inventory cultural and historic sites and stories that relate to the park and, where appropriate, develop interpretive material for visitors.	Medium	Ongoing
Encourage and support archaeological, anthropological and historic studies within the park. All sites located during these surveys should be recorded to the standards set by DAARE and submitted for inclusion on the DAARE Central Archive.	Low	Ongoing
MANAGING TOURISM AND RECREATION		
Visitor Use		
Liaise with The Barossa Council, tourism authorities, tourist operators in the area and the community to develop interpretation programs that explain the significance of the region's native vegetation remnants. Encourage the development of visitor facilities at sites that are more suitable to accommodate high visitor numbers.	High	Ongoing
Monitor the level of usage of the park and control any negative impacts on the park's biodiversity values.	Medium	Ongoing
Visitor Access		
Maintain the existing carpark on Tanunda Creek Road in liaison with The Barossa Council.	High	Ongoing
Maintain internal tracks for fire and management purposes only.	High	Ongoing
Avoid unnecessary use of management vehicles in the park during wet conditions or during fire bans.	Medium	Ongoing
If necessary, undertake works to avoid those seasonally waterlogged areas that may be subject to <i>Phytophthora</i> infestation.	Medium	Ongoing
Work cooperatively with The Barossa Council to protect remnant native vegetation on adjacent roadsides.	High	Ongoing
Continue to engage the Friends of Kaiserstuhl Conservation Park, Walking SA, ForestrySA, The Barossa Council, community groups, stakeholders and nearby landholders in the development and maintenance of sustainable, safe walking trails for the park and surrounding region, while protecting remnant native vegetation and wildlife habitats.	Medium	Ongoing
Visitor Facilities		
Liaise with local government and regional tourism authorities to promote nature-based tourism at alternative sites in the region while maintaining a low and sustainable level of use of Kaiserstuhl Conservation Park.	Medium	Ongoing

STRATEGY	PRIORITY	DURATION
Interpretive Information		
Maintain interpretive information in the park to enhance visitor experience and advise on appropriate and safe behaviour.	Medium	Ongoing
INVOLVING THE COMMUNITY		
Encourage and contribute to the development of partnership arrangements to integrate biodiversity and recreation management in the region, with organisations that have an interest in contributing to the sustainable management of the park.	Medium	Ongoing
Contribute to the South Para Biodiversity Project and the North Para Natural Resource Management Project, in order to protect or improve the core conservation values of Kaiserstuhl Conservation Park and other protected areas in the region.	High	Ongoing
Involve the Peramangk and Ngadjuri communities, Native Title Claimants and the nominated Aboriginal Heritage Committee in the cooperative management of the reserve and the preservation of their indigenous cultural heritage.	Medium	Ongoing
Support and encourage the Friends of Kaiserstuhl and others to continue their voluntary contribution to park management.	High	Ongoing
Encourage and facilitate the involvement of schools and universities in research that will benefit the park's conservation values and volunteer programs.	Low	Ongoing
MANAGING RESERVE TENURE		
Assess adjacent and nearby land if it becomes available and consider its acquisition to add to the park.	Medium	Ongoing
Manage all land additions to the park according to the principles outlined in this management plan.	Medium	Ongoing

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APPENDIX A: SPECIES IN KAISERSTUHL CONSERVATION PARK

See Appendix B for Conservation Status Codes

* = Introduced Species

Source: DEH database, Friends of Kaiserstuhl, South Australian Ornithological Association, SAM database.

Plants

SCIENTIFIC NAME	COMMON NAME	STATUS		
		AUS	SA	Southern Lofty
<i>Acacia acinacea</i>	Wreath Wattle			
<i>Acacia calamifolia</i>	Wallowa			R
<i>Acacia melanoxylon</i>	Blackwood			
<i>Acacia myrtifolia</i> var. <i>myrtifolia</i>	Myrtle Wattle			
<i>Acacia paradoxa</i>	Kangaroo Thorn			
<i>Acacia pycnantha</i>	Golden Wattle			
<i>Acacia retinodes</i> var. <i>retinodes</i> (hill form)	Wirilda			
<i>Acacia spinescens</i>	Spiny Wattle			
<i>Acaena agnipila</i> var.	Downy Sheep's Burr			U
<i>Acaena echinata</i> var. <i>retrosumpilosa</i>	Sheep's Burr			
<i>Acaena novae-zelandiae</i>	Biddy-biddy			
* <i>Acetosella vulgaris</i>	Sorrel			
<i>Acianthus caudatus</i> var. <i>caudatus</i>	Mayfly Orchid			
<i>Acianthus pusillus</i>	Mosquito Orchid			
<i>Acrotriche depressa</i>	Native Currant			R
<i>Acrotriche serrulata</i>	Cushion Ground-berry			
<i>Actinobole uliginosum</i>	Flannel Cudweed			U
<i>Adiantum aethiopicum</i>	Common Maiden-hair			
<i>Agrostis aemula</i>	Blown-grass			
<i>Agrostis avenacea</i> var. <i>avenacea</i>	Common Blown-grass			
* <i>Agrostis capillaris</i> var. <i>capillaris</i>	Brown-top Bent			
* <i>Aira cupaniana</i>	Small Hair-grass			
* <i>Aira elegantissima</i> ssp. <i>elegantissima</i>	Delicate Hair-grass			
<i>Allocasuarina muelleriana</i> ssp. <i>muelleriana</i>	Common Oak-bush			
<i>Allocasuarina verticillata</i>	Drooping Sheoak			
<i>Amphibromus archeri</i>	Pointed Swamp Wallaby-grass		R	R
<i>Amhipogon strictus</i> var. <i>setifer</i>	Spreading Grey-beard Grass			
<i>Amyema miquelii</i>	Box Mistletoe			
<i>Amyema pendulum</i> ssp. <i>pendulum</i>	Drooping Mistletoe			U
* <i>Anagallis arvensis</i>	Pimpernel			
* <i>Anagallis minima</i>	Chaffweed			
<i>Angianthus preissianus</i>	Salt Angianthus			R
<i>Anogramma leptophylla</i>	Annual Fern		R	U
<i>Aphanes australiana</i>	Australian Piert			R
<i>Aphelia gracilis</i>	Slender Aphelia			R
<i>Aphelia pumilio</i>	Dwarf Aphelia			
<i>Aristida behriana</i>	Brush Wire-grass			U
<i>Arthropodium fimbriatum</i>	Nodding Vanilla-lily			
<i>Arthropodium strictum</i>	Common Vanilla-lily			

SCIENTIFIC NAME	COMMON NAME	STATUS		
		AUS	SA	Southern Lofty
<i>*Asclepias rotundifolia</i>	Broad-leaf Cotton-bush			
<i>Asperula conferta</i>	Common Woodruff			
<i>Asplenium flabellifolium</i>	Necklace Fern			
<i>*Aster subulatus</i>	Aster-weed			
<i>Astroloma conostephioides</i>	Flame Heath			
<i>Astroloma humifusum</i>	Cranberry Heath			
<i>*Avena barbata</i>	Bearded Oat			
<i>Banksia marginata</i>	Silver Banksia			
<i>Baumea arthropphylla</i>	Swamp Twig-rush			R
<i>Baumea juncea</i>	Bare Twig-rush			
<i>Billardiera cymosa</i>	Sweet Apple-berry			
<i>Blennospora drummondii</i>	Dwarf Button-flower			
<i>Bossiaea prostrata</i>	Creeping Bossiaea			
<i>Brachycome parvula</i> var. <i>lissocarpa</i>	Coast Daisy		R	R
<i>Brachycome perpusilla</i>	Tiny Daisy			
<i>Brachyloma ericoides</i> ssp. <i>ericoides</i>	Brush Heath			
<i>*Briza maxima</i>	Large Quaking-grass			
<i>*Briza minor</i>	Lesser Quaking-grass			
<i>*Bromus diandrus</i>	Great Brome			
<i>*Bromus hordeaceus</i> ssp. <i>hordeaceus</i>	Soft Brome			
<i>*Bromus madritensis</i>	Compact Brome			
<i>Brunonia australis</i>	Blue Pincushion			
<i>Bulbine bulbosa</i>	Bulbine-lily			
<i>Burchardia umbellata</i>	Milkmaids			
<i>Bursaria spinosa</i>	Sweet Bursaria			
<i>Caesia calliantha</i>	Blue Grass-lily			
<i>Caladenia argocalla</i>	White-beauty Spider-orchid	E	E	E
<i>Caladenia carnea</i> var. <i>carnea</i>	Pink Fingers			
<i>Caladenia latifolia</i>	Pink Caladenia			U
<i>Caladenia leptochila</i>	Narrow-lip Spider-orchid			
<i>Caladenia patersonii</i> complex	White Spider-orchid			
<i>Caladenia prolata</i>	Shy Caladenia			R
<i>Caladenia reticulata</i>	Veined Spider-orchid			U
<i>Caladenia tentaculata</i>	King Spider-orchid			
<i>Calandrinia calypttrata</i>	Pink Purslane			U
<i>Calandrinia granulifera</i>	Pigmy Purslane			U
<i>*Callitriche stagnalis</i>	Common Water Starwort			
<i>Callitris preissii</i>	Southern Cypress Pine			U
<i>Calocephalus citreus</i>	Lemon Beauty-heads			R
<i>Calochilus robertsonii</i>	Purplish Beard-orchid			
<i>Calostemma purpureum</i>	Pink Garland-lily			
<i>Calytrix tetragona</i>	Common Fringe-myrtle			
<i>*Carduus tenuiflorus</i>	Slender thistle			
<i>Carex appressa</i>	Tall Sedge			
<i>Carex breviculmis</i>	Short-stem Sedge			
<i>Carex inversa</i> var. <i>major</i>	Knob Sedge		R	K

SCIENTIFIC NAME	COMMON NAME	STATUS		
		AUS	SA	Southern Lofty
<i>Carex tereticaulis</i>	Rush Sedge			
* <i>Carthamus lanatus</i>	Saffron Thistle			
<i>Cassytha glabella</i> forma <i>dispar</i>	Slender Dodder-laurel			
<i>Cassytha pubescens</i>	Downy Dodder-laurel			
* <i>Centaurium erythraea</i>	Common Centaury			
* <i>Centaurium maritimum</i>	Sea Centaury			
* <i>Centaurium tenuiflorum</i>	Branched Centaury			
<i>Centipeda cunninghamii</i>	Common Sneezeweed			
<i>Centrolepis aristata</i>	Pointed Centrolepis			
<i>Centrolepis glabra</i>	Smooth Centrolepis		R	T
<i>Centrolepis polygyna</i>	Wiry Centrolepis			
<i>Centrolepis strigosa</i>	Hairy Centrolepis			
<i>Chamaescilla corymbosa</i> var. <i>corymbosa</i>	Blue Squill			
<i>Cheilanthes austrotenuifolia</i>	Annual Rock-fern			
<i>Cheilanthes sieberi</i> ssp. <i>sieberi</i>	Narrow Rock-fern			R
<i>Cheiranthra alternifolia</i>	Hand-flower			
* <i>Chondrilla juncea</i>	Skeleton Weed			
<i>Chorizandra enodis</i>	Black Bristle-rush			
<i>Chrysocephalum apiculatum</i>	Common Everlasting			
* <i>Cicendia filiformis</i>	Slender Cicendia			
* <i>Cirsium vulgare</i>	Spear Thistle			
<i>Clematis microphylla</i>	Old Man's Beard			
<i>Comesperma calymega</i>	Blue-spike Milkwort			
<i>Convolvulus erubescens</i>	Australian Bindweed			
<i>Convolvulus remotus</i>	Grassy Bindweed			
<i>Correa</i> aff. <i>aemula</i>	Hairy Correa		V	V
<i>Corybas dilatatus</i>	Common Helmet-orchid			
<i>Corybas incurvus</i>	Slaty Helmet-orchid			U
<i>Cotula australis</i>	Common Cotula			
* <i>Cotula coronopifolia</i>	Water Buttons			
<i>Craspedia glauca</i>	Billy-buttons			
<i>Crassula closiana</i>	Stalked Crassula			
<i>Crassula colorata</i> var. <i>acuminata</i>	Dense Crassula			
<i>Crassula decumbens</i> var. <i>decumbens</i>	Spreading Crassula			
* <i>Crassula natans</i> var. <i>minus</i>	Water Crassula			
<i>Crassula peduncularis</i>	Purple Crassula		R	R
<i>Crassula sieberiana</i> ssp. <i>tetramera</i>	Australian Stonecrop			
* <i>Critesion marinum</i>	Sea Barley-grass			
<i>Cryptandra tomentosa</i>	Heath Cryptandra			
<i>Cyanicula deformis</i>	Bluebeard Orchid			
<i>Cymbonotus preissianus</i>	Austral Bear's-ear			U
<i>Cymbopogon ambiguus</i>	Lemon-grass			V
* <i>Cynara cardunculus</i>	Artichoke Thistle			
* <i>Cynodon dactylon</i>	Couch			
<i>Cynoglossum suaveolens</i>	Sweet Hound's-tongue			U
* <i>Cynosurus echinatus</i>	Rough Dog's-tail Grass			

SCIENTIFIC NAME	COMMON NAME	STATUS		
		AUS	SA	Southern Lofty
<i>Cyperus gunnii</i> ssp. <i>gunnii</i>	Flecked Flat-sedge			U
<i>Cyperus tenellus</i>	Tiny Flat-sedge			
<i>Cyperus vaginatus</i>	Stiff Flat-sedge			
<i>Cyrtostylis reniformis</i>	Small Gnat-orchid			
<i>Danthonia auriculata</i>	Lobed Wallaby-grass			
<i>Danthonia caespitosa</i>	Common Wallaby-grass			
<i>Danthonia duttoniana</i>	Brown-back Wallaby-grass			R
<i>Danthonia eriantha</i>	Hill Wallaby-grass			U
<i>Danthonia geniculata</i>	Kneed Wallaby-grass			
<i>Danthonia pilosa</i> var. <i>pilosa</i>	Velvet Wallaby-grass			
<i>Danthonia racemosa</i> var. <i>racemosa</i>	Slender Wallaby-grass			
<i>Danthonia setacea</i> var. <i>setacea</i>	Small-flower Wallaby-grass			
<i>Daucus glochidiatus</i>	Native Carrot			
<i>Daviesia arenaria</i>	Sand Bitter-pea			K
<i>Daviesia brevifolia</i>	Leafless Bitter-pea			
<i>Daviesia leptophylla</i>	Narrow-leaf Bitter-pea			
* <i>Desmazeria rigida</i>	Rigid Fescue			
<i>Deyeuxia quadriseta</i>	Reed Bent-grass			
<i>Dianella longifolia</i> var. <i>grandis</i>	Pale Flax-lily		R	V
<i>Dianella revoluta</i> var. <i>revoluta</i>	Black-anther Flax-lily			
<i>Dichelachne crinita</i>	Long-hair Plume-grass			
<i>Dichondra repens</i>	Kidney Weed			
<i>Dillwynia hispida</i>	Red Parrot-pea			
<i>Dipodium roseum</i>	Pink Hyacinth Orchid			
* <i>Dittrichia graveolens</i>	Stinkweed			
<i>Diuris</i> aff. <i>corymbosa</i>	Wallflower Donkey-orchid			
<i>Diuris behrii</i>	Behr's Cowslip Orchid		R	V
<i>Diuris lanceolata</i>	Cowslip Orchid		E	E
<i>Diuris pardina</i>	Spotted Donkey-orchid			
<i>Dodonaea viscosa</i> ssp. <i>spatulata</i>	Sticky Hop-bush			
<i>Drosera auriculata</i>	Tall Sundew			
<i>Drosera glanduligera</i>	Scarlet Sundew			
<i>Drosera macrantha</i> ssp. <i>planchonii</i>	Climbing Sundew			
<i>Drosera peltata</i>	Pale Sundew			
<i>Drosera pygmaea</i>	Tiny Sundew			
<i>Drosera whittakeri</i> ssp. <i>whittakeri</i>				
* <i>Echium plantagineum</i>	Salvation Jane			
* <i>Ehrharta calycina</i>	Perennial Veldt Grass			
<i>Eleocharis acuta</i>	Common Spike-rush			
<i>Elymus scabrus</i> var. <i>scabrus</i>	Native Wheat-grass			
<i>Enneapogon nigricans</i>	Black-head Grass			
<i>Epilobium billardierianum</i> ssp. <i>billardierianum</i>	Robust Willow-herb			
<i>Epilobium billardierianum</i> ssp. <i>X. intermedium</i>	Variable Willow-herb			
<i>Epilobium hirtigerum</i>	Hairy Willow-herb			
<i>Eragrostis benthamii</i>	Bentham's Love-grass			
<i>Eriochilus cucullatus</i>	Parson's Bands			

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		AUS	SA	Southern Lofty
<i>*Erodium botrys</i>	Long Heron's-bill			
<i>Eryngium vesiculosum</i>	Prostrate Blue Devil		R	K
<i>Eucalyptus baxteri</i>	Brown Stringybark			
<i>Eucalyptus camaldulensis</i> var. <i>camaldulensis</i>	River Red Gum			
<i>Eucalyptus leucoxylon</i> ssp. <i>leucoxylon</i>	South Australian Blue Gum			
<i>Eucalyptus viminalis</i> ssp. <i>cygnetensis</i>	Rough-bark Manna Gum			
<i>Euchiton gymnocephalus</i>	Creeping Cudweed			
<i>Euchiton involucratus</i>	Star Cudweed			
<i>Euphorbia drummondii</i>	Caustic Weed			
<i>Eutaxia microphylla</i> var. <i>microphylla</i>	Common Eutaxia			
<i>Exocarpos cupressiformis</i>	Native Cherry			
<i>*Festuca arundinacea</i>	Tall Meadow Fescue			
<i>*Ficus carica</i>	Edible Fig			
<i>*Fraxinus rotundifolia</i> ssp. <i>rotundifolia</i>	Desert Ash			
<i>*Galium divaricatum</i>	Slender Bedstraw			
<i>Galium gaudichaudii</i>	Rough Bedstraw			
<i>Galium migrans</i>	Loose Bedstraw			
<i>*Galium murale</i>	Small Bedstraw			
<i>*Gastridium phleoides</i>	Nit-grass			
<i>Genoplesium rufum</i>	Red Midge-orchid			
<i>*Geranium molle</i> var. <i>molle</i>	Soft Geranium			
<i>Geranium retrorsum</i>	Grassland Geranium			
<i>*Gladiolus undulatus</i>	Wild Gladiolus			
<i>Glischrocaryon behrii</i>	Golden Pennants			
<i>Glossodia major</i>	Purple Cockatoo			
<i>Glycine clandestina</i> var. <i>sericea</i>	Twining Glycine			
<i>Gompholobium ecostatum</i>	Dwarf Wedge-pea			
<i>Gonocarpus elatus</i>	Hill Raspwort			
<i>Gonocarpus meianus</i>	Broad-leaf Raspwort			
<i>Gonocarpus tetragynus</i>	Small-leaf Raspwort			
<i>Goodenia blackiana</i>	Native Primrose			
<i>Goodenia geniculata</i>	Bent Goodenia			
<i>Gratiola peruviana</i>	Austral Brooklime			
<i>Gratiola pumilo</i>	Dwarf Brooklime		R	
<i>Grevillea lavandulacea</i> var. <i>lavandulacea</i>	Spider-flower			
<i>*Hainardia cylindrica</i>	Common Barb-grass			
<i>Hakea rostrata</i>	Beaked Hakea			
<i>Haloragis aspera</i>	Rough Raspwort			R
<i>Haloragis heterophylla</i>	Variable Raspwort			U
<i>Hardenbergia violacea</i>	Native Lilac			
<i>Helichrysum scorpioides</i>	Button Everlasting			
<i>Hibbertia exutiacies</i>	Prickly Guinea-flower			
<i>Hibbertia incana</i>				
<i>Hibbertia sericea</i> var.	Silky Guinea-flower			
<i>*Holcus lanatus</i>	Yorkshire Fog			
<i>*Homeria miniata</i>	Two-leaf Cape Tulip			

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		AUS	SA	Southern Lofty
<i>Hyalosperma demissum</i>	Dwarf Sunray			
<i>Hybanthus floribundus</i> ssp. <i>floribundus</i>	Shrub Violet			
<i>Hydrocotyle callicarpa</i>	Tiny Pennywort			
<i>Hydrocotyle foveolata</i>	Yellow Pennywort			
<i>Hydrocotyle hirta</i>	Hairy Pennywort			U
<i>Hydrocotyle laxiflora</i>	Stinking Pennywort			
<i>Hymenantha dentata</i>	Tree Violet			R
<i>Hypericum gramineum</i>	Mall St John's Wort			
<i>Hypericum japonicum</i>	Matted St John's Wort		R	R
* <i>Hypericum perforatum</i>	St John's Wort			
* <i>Hypochoeris radicata</i>	Rough Cat's Ear			
<i>Hypoxis glabella</i> var. <i>glabella</i>	Tiny Star			
<i>Hypoxis vaginata</i> var. <i>vaginata</i>	Yellow Star			
<i>Imperata cylindrica</i>	Blady Grass			R
<i>Isoetes drummondii</i> ssp. <i>drummondii</i>	Plain Quillwort		R	R
<i>Isoetopsis graminifolia</i>	Grass Cushion			
<i>Isolepis cernua</i>	Nodding Club-rush			
<i>Isolepis fluitans</i>	Floating Club-rush			U
<i>Isolepis hookeriana</i>	Grassy Club-rush			R
<i>Isolepis inundata</i>	Swamp Club-rush			
<i>Isolepis marginata</i>	Little Club-rush			
<i>Isolepis nodosa</i>	Knobby Club-rush			
<i>Isolepis platycarpa</i>	Flat-fruit Club-rush			
<i>Isopogon ceratophyllus</i>	Horny Cone-bush			
<i>Ixodia achillaeoides</i> ssp. <i>alata</i>	Hills Daisy			
* <i>Juncus articulatus</i>	Jointed Rush			
<i>Juncus bufonius</i>	Toad Rush			
* <i>Juncus capitatus</i>	Dwarf Rush			
<i>Juncus flavidus</i>	Yellow Rush			R
<i>Juncus holoschoenus</i>	Joint-leaf Rush			
<i>Juncus kraussii</i>	Sea Rush			
<i>Juncus pallidus</i>	Pale Rush			
<i>Juncus planifolius</i>	Broad-leaf Rush			
<i>Juncus subsecundus</i>	Finger Rush			
<i>Kennedia prostrata</i>	Scarlet Runner			
* <i>Lactuca serriola</i>	Prickly Lettuce			
<i>Lagenifera huegelii</i>	Coarse Bottle-daisy			
<i>Laxmannia orientalis</i>	Dwarf Wire-lily			
* <i>Leontodon taraxacoides</i> ssp. <i>taraxacoides</i>	Lesser Hawkbit			
<i>Lepidosperma carphoides</i>	Black Rapier-sedge			
<i>Lepidosperma concavum</i>	Spreading Sword-sedge			
<i>Lepidosperma curtisiae</i>	Little Sword-sedge			
<i>Lepidosperma laterale</i> s.str.	Tall Sword-sedge			U
<i>Lepidosperma longitudinale</i>	Pithy Sword-sedge			
<i>Lepidosperma semiteres</i>	Wire Rapier-sedge			
<i>Lepidosperma viscidum</i>	Sticky Sword-sedge			

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		AUS	SA	Southern Lofty
<i>Leptocarpus brownii</i>	Coarse Twine-rush			U
<i>Leptoceras menziesii</i>	Hare Orchid			
<i>Leptorhynchos squamatus</i>	Scaly Buttons			
<i>Leptospermum continentale</i>	Prickly Tea-tree			
<i>Leptospermum myrsinoides</i>	Heath Tea-tree			
<i>Leucopogon virgatus</i>	Common Beard-heath			
<i>Levenhookia dubia</i>	Hairy Stylewort			
<i>Limosella australis</i>	Australian Mudwort			U
<i>Linum marginale</i>	Native Flax			
<i>Lissanthe strigosa</i>	Peach Heath			
<i>Lobelia alata</i>	Angled Lobelia			
<i>Lobelia gibbosa</i>	Tall Lobelia			
<i>Logania recurva</i>	Recurved Logania			U
* <i>Logfia gallica</i>	Narrow Cudweed			
* <i>Lolium perenne</i> X <i>rigidum</i>	Hybrid Ryegrass			
<i>Lomandra densiflora</i>	Soft Tussock Mat-rush			
<i>Lomandra fibrata</i>	Mount Lofty Mat-rush			
<i>Lomandra micrantha</i> ssp. <i>micrantha</i>	Small-flower Mat-rush			
<i>Lomandra multiflora</i> ssp. <i>dura</i>	Hard Mat-rush			
<i>Lomandra nana</i>	Small Mat-rush			
<i>Lomandra sororia</i>	Sword Mat-rush			U
<i>Luzula meridionalis</i>	Common Wood-rush			
<i>Luzula ovata</i>	Clustered Wood-rush		R	R
* <i>Lycium ferocissimum</i>	African Boxthorn			
<i>Lysiana exocarpi</i> ssp. <i>exocarpi</i>	Harlequin Mistletoe			
<i>Lythrum hyssopifolia</i>	Lesser Loosestrife			
* <i>Malus sylvestris</i>	Apple			
* <i>Medicago polymorpha</i> var. <i>polymorpha</i>	Burr-medic			
* <i>Mentha pulegium</i>	Pennyroyal			
<i>Microlaena stipoides</i> var. <i>stipoides</i>	Weeping Rice-grass			
<i>Microseris lanceolata</i>	Yam Daisy			
<i>Microtis arenaria</i>	Notched Onion-orchid			
<i>Microtis atrata</i>	Yellow Onion-orchid		R	R
<i>Microtis parviflora</i>	Slender Onion-orchid			U
<i>Microtis unifolia</i>	Common Onion Orchid			
<i>Millotia muelleri</i>	Common Bow-flower			
<i>Millotia tenuifolia</i> var. <i>tenuifolia</i>	Soft Millotia			
* <i>Moenchia erecta</i>	Erect Chickweed			
* <i>Molineriella minuta</i>	Small Hair-grass			
* <i>Monadenia bracteata</i>				
<i>Montia fontana</i> ssp. <i>chondrosperma</i>	Waterblinks		V	V
<i>Myosotis australis</i>	Austral Forget-me-not			R
<i>Myriocephalus rhizocephalus</i> var. <i>rhizocephalus</i>	Woolly-heads			E
<i>Myriophyllum integrifolium</i>	Tiny Milfoil		R	R
<i>Neurachne alopecuroidea</i>	Fox-tail Mulga-grass			
* <i>Olea europaea</i> ssp. <i>europaea</i>	Olive			

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		AUS	SA	Southern Lofty
<i>Olearia ciliata</i> var. <i>ciliata</i>	Fringed Daisy-bush			
<i>Olearia ramulosa</i>	Twiggy Daisy-bush			
<i>Opercularia ovata</i>	Broad-leaf Stinkweed			U
<i>Opercularia turpis</i>	Twiggy Stinkweed			
<i>Ophioglossum lusitanicum</i>	Austral Adder's-tongue			U
<i>Orthoceras strictum</i>	Horned Orchid			R
<i>Oxalis perennans</i>	Native Sorrel			
* <i>Oxalis pes-caprae</i>	Soursob			
* <i>Oxalis purpurea</i>	One-o'clock			
* <i>Parentucellia latifolia</i>	Red Bartsia			
* <i>Parentucellia viscosa</i>	Yellow Bartsia			
<i>Parietaria debilis</i>	Smooth-nettle			
<i>Paspalidium</i> sp.	Summer-grass			
* <i>Paspalum dilatatum</i>	Paspalum			
<i>Pentapogon quadrifidus</i> var. <i>quadrifidus</i>	Five-awn Spear-grass		R	K
* <i>Pentaschistis airoides</i>	False Hair-grass			
* <i>Pentaschistis pallida</i>	Pussy Tail			
<i>Persicaria prostrata</i>	Creeping Knotweed			U
* <i>Petrorhagia velutina</i>	Velvet Pink			
* <i>Phalaris aquatica</i>	Phalaris			
<i>Phyllangium distylis</i>	Tiny Mitrewort		R	K
<i>Phyllangium divergens</i>	Wiry Mitrewort			
<i>Phylloglossum drummondii</i>	Pigmy Clubmoss		R	R
<i>Pilularia novae-hollandiae</i>	Austral Pillwort		R	K
<i>Pimelea humilis</i>	Low Riceflower			
<i>Pimelea octophylla</i>	Woolly Riceflower			
* <i>Pinus halepensis</i>	Aleppo Pine			
* <i>Pinus radiata</i>	Radiata Pine			
* <i>Plantago bellardii</i>	Hairy Plantain			
* <i>Plantago coronopus</i> ssp. <i>coronopus</i>	Bucks-horn Plantain			
<i>Plantago gaudichaudii</i>	Narrow-leaf Plantain			R
<i>Plantago hispida</i>	Hairy Plantain			
* <i>Plantago lanceolata</i> var. <i>lanceolata</i>	Ribwort			
<i>Plantago</i> sp. B	Little Plantain			
<i>Plantago varia</i> complex	Native Plantain			
<i>Platylobium obtusangulum</i>	Holly Flat-pea			
<i>Pleurosorus rutifolius</i>	Blanket Fern			U
<i>Poa clelandii</i>	Matted Tussock-grass			
<i>Poa crassicaudex</i>	Thick-stem Tussock-grass			
<i>Poa labillardieri</i> var. <i>labillardieri</i>	Common Tussock-grass			
<i>Podolepis tepperi</i>	Delicate Copper-wire Daisy			R
<i>Pogonolepis muelleriana</i>	Stiff Cup-flower			U
* <i>Polycarena heterophylla</i>				
* <i>Polygonum aviculare</i>	Wireweed			
* <i>Polypogon monspeliensis</i>	Annual Beard-grass			
<i>Poranthera microphylla</i>	Small Poranthera			

SCIENTIFIC NAME	COMMON NAME	STATUS		
		AUS	SA	Southern Lofty
<i>Prasophyllum elatum</i>	Tall Leek-orchid			
<i>Prasophyllum odoratum</i>	Scented Leek-orchid			
<i>Prostanthera behriana</i>	Downy Mintbush			U
* <i>Prunus</i> sp.	Plum			
<i>Pseudognaphalium luteoalbum</i>	Jersey Cudweed			
<i>Pterostylis foliata</i>	Slender Greenhood		R	R
<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>Ptilotus erubescens</i>	Hairy-tails		R	R
<i>Ptilotus spathulatus</i> forma <i>spathulatus</i>	Pussy-tails			R
* <i>Puccinellia fasciculata</i>	Borrer's Saltmarsh-grass			
<i>Pultenaea largiflorens</i>	Twiggy Bush-pea			
<i>Pultenaea pedunculata</i>	Matted Bush-pea			
<i>Pyrorchis nigricans</i>	Black Fire-orchid			
<i>Quinetia urvillei</i>	Quinetia			R
<i>Ranunculus lappaceus</i>	Native Buttercup			
* <i>Ranunculus muricatus</i>	Pricklefruit Buttercup			
<i>Ranunculus pachycarpus</i>	Thick-fruit Buttercup			R
<i>Ranunculus pentandrus</i> var. <i>platycarpus</i>	Smooth Buttercup			
<i>Ranunculus sessiliflorus</i> var. <i>sessiliflorus</i>	Annual Buttercup			
* <i>Romulea minutiflora</i>	Small-flower Onion-grass			
* <i>Romulea rosea</i> var. <i>australis</i>	Common Onion-grass			
* <i>Rosa canina</i>	Dog Rose			
* <i>Rosa rubiginosa</i>	Sweet Briar			
* <i>Rostraria cristata</i>	Annual Cat's-tail			
* <i>Rubus ulmifolius</i>	Blackberry			
<i>Rumex brownii</i>	Slender Dock			
* <i>Rumex crispus</i>	Curled Dock			
<i>Rutidosia multiflora</i>	Small Wrinklewort			
* <i>Salvia verbenaca</i> form A	Wild Sage			
<i>Samolus repens</i>	Creeping Brookweed			U
<i>Scaevola albida</i>	Pale Fanflower			
<i>Schoenus apogon</i>	Common Bog-rush			
<i>Schoenus breviculmis</i>	Matted Bog-rush			
<i>Schoenus latelaminatus</i>	Medusa Bog-rush		V	T
<i>Schoenus nanus</i>	Little Bog-rush			R
<i>Sebaea ovata</i>	Yellow Sebaea			
<i>Senecio glomeratus</i>	Swamp Groundsel			
<i>Senecio lautus</i>	Variable Groundsel			
<i>Senecio picridioides</i>	Purple-leaf Groundsel			
* <i>Senecio pterophorus</i> var. <i>pterophorus</i>	African Daisy			
<i>Senecio quadridentatus</i>	Cotton Groundsel			

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		AUS	SA	Southern Lofty
<i>Senecio tenuiflorus</i>	Woodland Groundsel			
* <i>Sherardia arvensis</i>	Field Madder			
* <i>Silene gallica</i> var. <i>gallica</i>	French Catchfly			
* <i>Sisymbrium</i> sp.	Wild Mustard			
* <i>Solanum nigrum</i>	Black Nightshade			
<i>Solenogyne dominii</i>	Smooth Solenogyne			U
* <i>Sonchus asper</i> ssp. <i>asper</i>	Rough Sow-thistle			
* <i>Sonchus asper</i> ssp. <i>glaucescens</i>	Rough Sow-thistle			
* <i>Sonchus oleraceus</i>	Common Sow-thistle			
* <i>Spergularia diandra</i>	Lesser Sand-spurrey			
<i>Sphaerolobium minus</i>	Leafless Globe-pea		R	R
<i>Spyridium parvifolium</i>	Dusty Miller			
* <i>Stachys arvensis</i>	Stagger Weed			
<i>Stackhousia aspericocca</i> ssp. "One-sided inflorescence" (WR Barker 697)	One-sided Candles			
<i>Stipa densiflora</i>	Fox-tail Spear-grass		R	R
<i>Stipa flavescens</i>	Coast Spear-grass			
<i>Stipa mollis</i>	Soft Spear-grass			
<i>Stipa nodosa</i>	Tall Spear-grass			
<i>Stipa scabra</i> ssp. <i>falcata</i>	Slender Spear-grass			
<i>Stipa semibarbata</i>	Fibrous Spear-grass			
<i>Stipa setacea</i>	Corkscrew Spear-grass			U
<i>Stuartina muelleri</i>	Spoon Cudweed			
<i>Stylidium calcaratum</i>	Spurred Trigger-plant			
<i>Stylidium graminifolium</i>	Grass Trigger-plant			
<i>Stylidium inundatum</i>	Hundreds And Thousands			
* <i>Taraxacum officinale</i>	Dandelion			
<i>Tetraloche pilosa</i> ssp. <i>pilosa</i>	Hairy Pink-bells			
<i>Thelymitra antennifera</i>	Lemon Sun-orchid			
<i>Thelymitra aristata</i>	Great Sun-orchid			
<i>Thelymitra grandiflora</i>	Great Sun-orchid			U
<i>Thelymitra ixioides</i>	Spotted Sun-orchid			
<i>Thelymitra juncifolia</i>	Spotted Sun-orchid			
<i>Thelymitra luteociliium</i>	Yellow-tuft Sun Orchid			
<i>Thelymitra mucida</i>	Plum Sun-orchid		R	R
<i>Thelymitra nuda</i>	Scented Sun-orchid			
<i>Thelymitra pauciflora</i>	Slender Sun-orchid			
<i>Thelymitra rubra</i>	Salmon Sun-orchid			
<i>Themeda triandra</i>	Kangaroo Grass			
<i>Thomasia petalocalyx</i>	Paper-flower			
<i>Thysanotus juncifolius</i>	Rush Fringe-lily			
<i>Thysanotus patersonii</i>	Twining Fringe-lily			
* <i>Tolpis barbata</i>	Yellow Hawkweed			
<i>Tricoryne elatior</i>	Yellow Rush-lily			
* <i>Trifolium angustifolium</i>	Narrow-leaf Clover			
* <i>Trifolium arvense</i> var. <i>arvense</i>	Hare's-foot Clover			
* <i>Trifolium campestre</i>	Hop Clover			

SCIENTIFIC NAME	COMMON NAME	STATUS		
		AUS	SA	Southern Lofty
<i>*Trifolium dubium</i>	Suckling Clover			
<i>*Trifolium fragiferum</i> var. <i>fragiferum</i>	Strawberry Clover			
<i>*Trifolium glomeratum</i>	Cluster Clover			
<i>*Trifolium repens</i>	White Clover			
<i>*Trifolium subterraneum</i>	Subterranean Clover			
<i>Triglochin calcitrapum</i>	Spurred Arrowgrass			R
<i>Triglochin centrocarpum</i>	Dwarf Arrowgrass			
<i>Triptilodiscus pygmaeus</i>	Small Yellow-heads			U
<i>Typha domingensis</i>	Narrow-leaf Bulrush			
<i>*Ulex europaeus</i>	Gorse			
<i>*Urospermum picroides</i>	False Hawkbit			
<i>Utricularia tenella</i>	Pink Bladderwort			R
<i>*Vellereophyton dealbatum</i>	White Cudweed			
<i>*Vicia sativa</i> ssp. <i>nigra</i>	Narrow-leaf Vetch			
<i>Villarsia umbricola</i> var. <i>umbricola</i>	Lax Marsh-flower			U
<i>Viola hederacea</i>	Ivy-leaf Violet			R
<i>Viola sieberiana</i>	Tiny Violet			
<i>Vittadinia cuneata</i> var. <i>cuneata</i> forma <i>cuneata</i>	Fuzzy New Holland Daisy			
<i>Vittadinia gracilis</i>	Woolly New Holland Daisy			
<i>*Vulpia ciliata</i>	Fringed Fescue			
<i>*Vulpia muralis</i>	Wall Fescue			
<i>*Vulpia myuros</i> forma <i>megalura</i>	Fox-tail Fescue			
<i>Wahlenbergia gracilentia</i>	Annual Bluebell			
<i>Wahlenbergia multicaulis</i>	Tadgell's Bluebell			U
<i>Wahlenbergia stricta</i> ssp. <i>stricta</i>	Tall Bluebell			
<i>Wurmbea dioica</i> ssp. <i>dioica</i>	Early Nancy			
<i>Xanthorrhoea quadrangulata</i>	Rock Grass-tree			
<i>Xanthorrhoea semiplana</i> ssp. <i>semiplana</i>	Yacca			
<i>Xanthosia pusilla</i>	Hairy Xanthosia			
<i>*Zaluzianskya divaricata</i>	Spreading Night-phlox			

Mammals

SCIENTIFIC NAME	COMMON NAME	STATUS	
		AUS	SA
<i>Chalinolobus gouldii</i>	Gould's Wattled Bat		
<i>Chalinolobus morio</i>	Chocolate Wattled Bat		
<i>Macropus fuliginosus</i>	Western Grey Kangaroo		
<i>Macropus robustus</i>	Euro		
<i>Mormopterus</i> sp. 4	Southern Freetail Bat		
<i>*Mus musculus</i>	House Mouse		
<i>Nyctophilus geoffroyi</i>	Lesser Long-eared Bat		
<i>*Oryctolagus cuniculus</i>	Rabbit		
<i>Pseudocheirus peregrinus</i>	Common Ringtail Possum		
<i>Rattus rattus</i>	Black Rat		

SCIENTIFIC NAME	COMMON NAME	STATUS	
		AUS	SA
<i>Tachyglossus aculeatus</i>	Short-beaked Echidna		
<i>Tadarida australis</i>	White-striped Freetail Bat		
<i>Trichosurus vulpecula</i>	Common Brushtail Possum		
<i>Vespadelus darlingtoni</i>	Large Forest Bat		
<i>Vespadelus regulus</i>	Southern Forest Bat		
<i>Vespadelus vulturinus</i>	Little Forest Bat		
* <i>Vulpes vulpes</i>	Fox		

Birds

SCIENTIFIC NAME	COMMON NAME	STATUS		
		AUS	SA	Mount Lofty
<i>Acanthiza chrysorrhoa</i>	Yellow-rumped Thornbill			
<i>Acanthiza lineata</i>	Striated Thornbill			
<i>Acanthiza nana</i>	Yellow Thornbill			U
<i>Acanthiza pusilla</i>	Brown Thornbill			
<i>Acanthiza reguloides</i>	Buff-rumped Thornbill			C
<i>Acanthorhynchus tenuirostris</i>	Eastern Spinebill			
<i>Accipiter cirrhocephalus</i>	Collared Sparrowhawk			U
<i>Accipiter fasciatus</i>	Brown Goshawk			
<i>Acrocephalus australis</i>	Australian Reed-warbler			
<i>Aegotheles cristatus</i>	Australian Owlet-nightjar			U
<i>Alauda arvensis</i>	Skylark			
<i>Anas superciliosa</i>	Pacific Black Duck			
<i>Anthochaera carunculata</i>	Red Wattlebird			
<i>Anthochaera chrysoptera</i>	Little Wattlebird			U
<i>Anthus australis</i>	Australian Pipit			
<i>Aquila audax</i>	Wedge-tailed Eagle			
<i>Ardea pacifica</i>	White-necked Heron			U
<i>Artamus cyanopterus</i>	Dusky Woodswallow			
<i>Cacatua galerita</i>	Sulphur-crested Cockatoo			U
<i>Cacatua roseicapilla</i>	Galah			
<i>Cacatua sanguinea</i>	Little Corella			
<i>Cacomantis flabelliformis</i>	Fan-tailed Cuckoo			
* <i>Carduelis carduelis</i>	European Goldfinch			
<i>Cincloramphus cruralis</i>	Brown Songlark			
<i>Cincloramphus mathewsi</i>	Rufous Songlark			
<i>Chenonetta jubata</i>	Australian Wood Duck			
<i>Chrysococcyx basalis</i>	Horsfield's Bronze-cuckoo			
<i>Chrysococcyx osculans</i>	Black-eared Cuckoo			O
<i>Climacteris picumnus</i>	Brown Treecreeper			V
<i>Colluricincla harmonica</i>	Grey Shrike-thrush			
* <i>Columba livia</i>	Rock Dove			
<i>Coracina novaehollandiae</i>	Black-faced Cuckoo-shrike			
<i>Cormobates leucophaeus</i>	White-throated Treecreeper			U

SCIENTIFIC NAME	COMMON NAME	STATUS		
		AUS	SA	Mount Lofty
<i>Coturnix pectoralis</i>	Stubble Quail			
<i>Corvus mellori</i>	Little Raven			
<i>Cracticus torquatus</i>	Grey Butcherbird			U
<i>Cuculus pallidus</i>	Pallid Cuckoo			
<i>Cygnus atratus</i>	Black Swan			
<i>Dacelo novaeguineae</i>	Laughing Kookaburra			
<i>Daphoenositta chrysoptera</i>	Varied Sittella			
<i>Dicaeum hirundinaceum</i>	Mistletoebird			
<i>Dromaius novaehollandiae</i>	Emu			
<i>Egretta novaehollandiae</i>	White-faced Heron			
<i>Elanus axillaris</i>	Black-shouldered Kite			
<i>Euseiornis melanops</i>	Black-fronted Dotterel			
<i>Epthianura albifrons</i>	White-fronted Chat			
<i>Eurostopodus argus</i>	Spotted Nightjar			V
<i>Falco berigora</i>	Brown Falcon			
<i>Falco cenchroides</i>	Nankeen Kestrel			
<i>Falco longipennis</i>	Australian Hobby			U
<i>Falco subniger</i>	Black Falcon			U
<i>Falcunuculus frontatus</i>	Crested Shrike-tit		V	U
<i>Gallinula ventralis</i>	Black-tailed Native-hen			
<i>Geopelia placida</i>	Peaceful Dove			V
<i>Glossopsitta concinna</i>	Musk Lorikeet			U
<i>Glossopsitta porphyrocephala</i>	Purple-crowned Lorikeet			
<i>Grallina cyanoleuca</i>	Magpie Lark			
<i>Gymnorhina tibicen</i>	Australian Magpie			
<i>Haliastur sphenurus</i>	Whistling Kite			U
<i>Hirundapus caudacutus</i>	White-thorated Needletail			
<i>Hirundo neoxena</i>	Welcome Swallow			
<i>Lalage tricolor</i>	White-winged Triller			
<i>Lichenostomus chrysops</i>	Yellow-faced Honeyeater			
<i>Lichenostomus ornatus</i>	Yellow-plumed Honeyeater			
<i>Lichenostomus penicillatus</i>	White-plumed Honeyeater			
<i>Malurus cyaneus</i>	Superb Fairy-wren			C
<i>Melanodryas cucullata</i>	Hooded Robin			V
<i>Melithreptus brevirostris</i>	Brown-headed Honeyeater			
<i>Melithreptus lunatus</i>	White-naped Honeyeater			C
<i>Melopsittacus undulatus</i>	Budgerigar			
<i>Merops ornatus</i>	Rainbow Bee-eater			
<i>Microeca fascinans</i>	Jacky Winter			V
<i>Myiagra inquieta</i>	Restless Flycatcher			V
<i>Neochima temporalis</i>	Red-browed Finch			
<i>Neophema elegans</i>	Elegant Parrot			K
<i>Ninox boobook</i>	Southern Boobook			
<i>Nymphicus hollandicus</i>	Cockatiel			
<i>Ocyphaps lophotes</i>	Crested Pigeon			
<i>Pachycephala pectoralis</i>	Golden Whistler			

SCIENTIFIC NAME	COMMON NAME	STATUS		
		AUS	SA	Mount Lofty
<i>Pachycephala rufiventris</i>	Rufous Whistler			C
<i>Pardalotus punctatus</i>	Spotted Pardalote			
<i>Pardalotus striatus</i>	Striated Pardalote			
* <i>Passer domesticus</i>	House Sparrow			
<i>Petrochelidon ariel</i>	Fairy Martin			
<i>Petrochelidon nigricans</i>	Tree Martin			
<i>Petroica goodenovii</i>	Red-capped Robin			
<i>Petroica multicolor boodang</i>	Scarlet Robin			U
<i>Phalacrocorax melanoleucos</i>	Little Pied Cormorant			
<i>Phalacrocorax varius</i>	Pied Cormorant			
<i>Phaps chalcoptera</i>	Common Bronzewing			
<i>Phaps elegans</i>	Brush Bronzewing			U
<i>Phylidonyris albifrons</i>	White-fronted Honeyeater			
<i>Phylidonyris melanops</i>	Tawny-crowned Honeyeater			U
<i>Phylidonyris novaehollandiae</i>	New Holland Honeyeater			
<i>Phylidonyris pyrrhoptera</i>	Crescent Honeyeater			
<i>Platycercus elegans</i>	Crimson Rosella			
<i>Podargus strigoides</i>	Tawny Frogmouth			C
<i>Pomatostomus superciliosus</i>	White-browed Babbler			U
<i>Psephotus haematonotus</i>	Red-rumped Parrot			C
<i>Rhipidura albiscapa</i>	Grey Fantail			
<i>Rhipidura leucophrys</i>	Willie Wagtail			
<i>Smicrornis brevirostris</i>	Weebill			
<i>Stagonopleura guttata</i>	Diamond Firetail		V	V
<i>Strepera versicolor</i>	Grey Currawong			
* <i>Sturnus vulgaris</i>	Common Starling			
<i>Taeniopygia guttata</i>	Zebra Finch			
<i>Threskiornis molucca</i>	Australian White Ibis			
<i>Threskiornis spinicollis</i>	Straw-necked Ibis			
<i>Todiramphus sanctus</i>	Sacred Kingfisher			C
* <i>Turdus merula</i>	Common Blackbird			
<i>Tyto alba</i>	Barn Owl			
<i>Vanellus miles</i>	Masked Lapwing			
<i>Zoothera lunulata</i>	Bassian Thrush			
<i>Zosterops lateralis</i>	Silvereye			

Reptiles

SCIENTIFIC NAME	COMMON NAME	STATUS	
		AUS	SA
<i>Bassiana duperreyi</i>	Eastern Three-lined Skink		
<i>Christinus marmoratus</i>	Marbled Gecko		
<i>Ctenophorus decresii</i>	Tawny Dragon		
<i>Ctenotus orientalis</i>	Eastern Spotted Ctenotus		
<i>Diplodactylus vittatus</i>	Eastern Stone Gecko		
<i>Egernia striolata</i>	Eastern Tree Skink		
<i>Egernia whitii</i>	White's Skink		
<i>Hemiernis decresiensis</i>	Three-toed Earless Skink		
<i>Lampropholis guichenoti</i>	Garden Skink		
<i>Lerista bougainvillii</i>	Bougainville's Skink		
<i>Menetia greyii</i>	Dwarf Skink		
<i>Pogona barbata</i>	Eastern Bearded Dragon		
<i>Pseudechis porphyriacus</i>	Red-bellied Black Snake		
<i>Pseudonaja textilis</i>	Eastern Brown Snake		
<i>Suta flagellum</i>	Little Whip Snake		
<i>Tiliqua rugosa</i>	Sleepy Lizard		

Amphibians

SCIENTIFIC NAME	COMMON NAME	STATUS	
		AUS	SA
<i>Crinia signifera</i>	Common Froglet		
<i>Pseudophryne bibroni</i>	Brown Toadlet		

APPENDIX B: CONSERVATION STATUS CODES

Australian Conservation Status Codes

The following codes are derived from the current listing of species under section 179 of the *Environment Protection and Biodiversity Conservation Act 1999*.

- EX Extinct:** there is no reasonable doubt that the last member of the species has died.
- EW Extinct in the Wild:** known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; or it has not been recorded in its known and/or expected habitat, at appropriate seasons, anywhere in its past range, despite exhaustive surveys over a time frame appropriate to its life cycle and form.
- CE Critically Endangered:** facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with the prescribed criteria.
- E Endangered:** facing a very high risk of extinction in the wild in the near future, as determined in accordance with the prescribed criteria.
- V Vulnerable:** facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with the prescribed criteria.
- CD Conservation Dependent:** the species is the focus of a specific conservation program, the cessation of which would result in the species becoming vulnerable, endangered or critically endangered within a period of 5 years.

Note: Prescribed criteria as defined under the IUCN Red List of Threatened Species.

South Australian Conservation Status Codes

The following codes are based on the current listing of species under Schedules of the *National Parks and Wildlife Act 1972*, as amended in 2000.

- E Endangered:** (Schedule 7) in danger of becoming extinct in the wild.
- V Vulnerable:** (Schedule 8) at risk from potential or long term threats which could cause the species to become endangered in the future.
- R Rare:** (Schedule 9) low overall frequency of occurrence (may be locally common with a very restricted distribution or may be scattered sparsely over a wider area). Not currently exposed to significant threats, but warrants monitoring and protective measures to prevent reduction of population sizes.

Regional Conservation Status Codes

The categories below apply to the species distribution at a regional level.

Mammals, Reptiles & Amphibians

There are no regional conservation status categories developed for mammals, reptiles or amphibians to date (2005).

Birds

Regional conservation status for birds follow Carpenter and Reid (1998) *The Status of Native Birds in the Agricultural Areas of South Australia*.

Declining species (D) derived from Mount Lofty Ranges (interim) Integrated Natural Resource Management Group Case Study #12, P Cale, 2004.

The regions are defined as follows:

ML	Mount Lofty	MN	Mid-North	SE	South-Eastern	KI	Kangaroo Island
MM	Murray Mallee	EP	Eyre Peninsula	YP	Yorke Peninsula		

Plants

Regional conservation ratings for plants follow:

- Lang, PJ & Kraehenbuehl, DN (2001), *Plants of Particular Conservation Significance in South Australia's Agricultural Regions*.
- January (2001) update of unpublished database: *Florlist*. Department for Environment and Heritage.

The regions are as defined by the State Herbarium (Plant Biodiversity Centre), illustrated in the back cover of *Census of South Australian Vascular Plants (Edition V)* (Eds. B Barker, R Barker, J Jessop and H Vonow, 2005).

NW	North-Western	FR	Flinders Ranges	NL	Northern Lofty	SL	Southern Lofty
LE	Lake Eyre	EA	Eastern	MU	Murray	KI	Kangaroo Island
NU	Nullarbor	EP	Eyre Peninsula	YP	Yorke Peninsula	SE	South-Eastern
GT	Gairdner-Torrens						

In order of decreasing conservation significance:

- X Extinct/Presumed Extinct:** not located despite thorough searching of all known and likely habitats; known to have been eliminated by the loss of localised population(s); or not recorded for more than 50 years from an area where substantial habitat modification has occurred.
- E Endangered:** rare and in danger of becoming extinct in the wild.
- T Threatened:** (*Plants only*) likely to be either Endangered or Vulnerable but insufficient data available for more precise assessment.
- V Vulnerable:** rare and at risk from potential threats or long term threats that could cause the species to become endangered in the future.
- K Uncertain:** likely to be either Threatened or Rare but insufficient data available for a more precise assessment.
- R Rare:** has a low overall frequency of occurrence (may be locally common with a very restricted distribution or may be scattered sparsely over a wider area). Not currently exposed to significant or widespread threats, but warrants monitoring and protective measures to prevent reduction of population sizes.
- U Uncommon:** less common species of interest but not rare enough to warrant special protective measures.
- Q Not Yet Assessed:** but flagged as being of possible significance.
- N Not of Particular Significance:** (*Plants only*) also indicated by a blank entry.
- C Common:** (*Birds only*) also indicated by a blank entry.
- O Occasional Visitor Only:** (*Birds only*) not considered of conservation status.