

ForestrySA

KANGAROO FLAT NATIVE FOREST RESERVE

MANAGEMENT PLAN

MT GAMBIER FOREST

GREEN TRIANGLE REGION

FOREWORD

The Kangaroo Flat Native Forest Reserve Management Plan has been prepared by ForestrySA to clearly state the purpose and objectives for this Native Forest Reserve.

The Reserve will be managed according to this Management Plan which includes details of specific work to be undertaken under the proposed management program, and relevant biological data.

The Interim version of this Plan was submitted to the Native Vegetation Council, other land management authorities and relevant community organisations, the Final Plan has been amended where appropriate as a consequence of advice received.

This Plan includes a general proposal for prescribed burning, however this will not be undertaken until approval has been received from the Native Vegetation Council pending their resolution of monitoring requirements.

The Reserve was proclaimed as a Native Forest Reserve under the Forestry Act 1950, and gazetted 15 March 2001.

The administrative details contained in this document are current as at April 2002.

I hereby approve the Kangaroo Flat Native Forest Reserve Management Plan for implementation.



Ian B Millard
CHIEF EXECUTIVE
SOUTH AUSTRALIAN FORESTRY CORPORATION

16 / 4 / 2002

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1. Purpose, Legal Designation, Planning and Protection

1.1 Kangaroo Flat Native Forest Reserve

1.1.1 Statement of Purpose

Kangaroo Flat Native Forest Reserve will be managed and protected to maintain and enhance its bio-diversity as an enduring and dynamic ecosystem.

1.1.2 Significant Values

The *Biodiversity Plan for the South East of South Australia* acknowledges that ForestrySA manages the largest inland areas of remnant native vegetation in the Lower South East containing populations of plant and animal species, and plant communities of high conservation significance at both the State and Regional level. The Kangaroo Flat Native Forest Reserve conserves native flora and fauna which contribute to the bio-diversity of the Region

The following attributes have been used to determine the conservation and cultural values of Kangaroo Flat Native Forest Reserve:

Conservation Values

- This Reserve of 302.8 hectares and is one of twenty managed by ForestrySA under the Forestry Act 1950 located between Millicent and Mount Gambier. Kangaroo Flat Native Forest Reserve was severely disturbed when cleared and planted with pines in the years 1932 - 1934. In spite of this disturbance and because the pine crop failed on most of the area now reserved, it now supports much of the original vegetation and makes an important contribution to bio-diversity in this region.
- The Reserve includes swamps which in periods of normal rainfall hold water throughout the year to support aquatic vegetation associations adding significantly to its conservation value.
- A total of 223 native plant species have been recorded for this Reserve to date. Of these 72 have a conservation status rating equal to or greater than Uncommon for the South East Region of South Australia.
- Red-necked Wallabies (*Macropus rufogriseus*) and Eastern Grey Kangaroos (*Macropus giganteus*) rated as Rare, and Southern Brown Bandicoots (*Isodon obesulus*) rated as Vulnerable in South Australia occur in this Reserve.
- The conservation value of this Reserve is enhanced by Honan Native Forest Reserve (1051 hectares) adjoining on its western boundary.

Cultural Heritage

- According to Norman B. Tindale's '*Tribal Boundaries in Aboriginal Australia*' this Reserve is in the territory previously occupied by the Bunganditj Tribe.
- A map of Pastoral Leases in the South-East of SA circa 1865 places this Reserve on the boundary between Lease No. 210 leased by A. Cunningham and R. and E. Leake's 'Glencoe' Lease No. 183.
- Following land surveys for closer settlement in the 1885, the areas now reserved formed part of Titles and Leases owned by those listed in 3.1.1. Descendants of the original and subsequent family leaseholders still reside in this district.

1.1.3 Location and Access

Location

Kangaroo Flat Native Forest Reserve is located 17 kilometres north west from Mount Gambier (Figures 1 and 2.) and is shown but not named on the SA Department for Environment and Heritage 1:50,000 Topographic Map 'Kalangadoo' 7022-4 grid reference 690:255.

The Reserve, compartments and areas are shown in Figure 3.

Cadastral location

The Reserve contains 302.8 hectares occupying part Sections 15, 24,27, 104, 105, 106 and 240 Hundred of Young in the Wattle Range District Council area.

Foot Access

Foot access to all areas is unrestricted during daylight hours except on days when a Total Fire Ban is imposed or where erected signs or notices restrict access to specific areas.

Vehicle Access

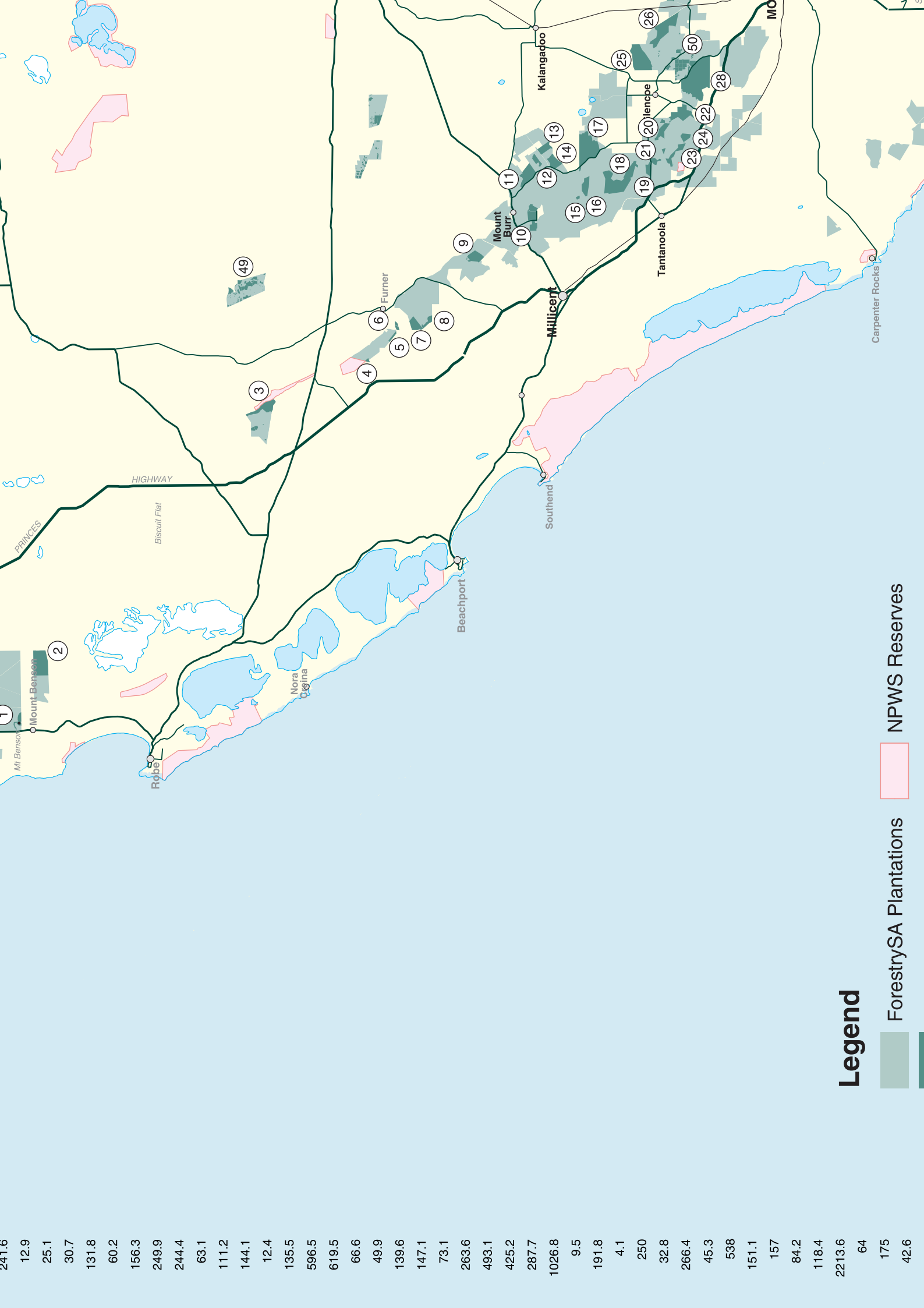
Access to and within the Kangaroo Flat Native Forest Reserve is by public roads, forest tracks and firebreaks. Access may be restricted in parts due to seasonal wet soil conditions.

Vehicular access by the public within the Reserves may be restricted by provision of the Regulations under the Forestry Act, 1950.

1.1.4 Administration

The Native Forest Reserves are managed by ForestrySA, Mt. Gambier Office, Jubilee Highway East, Mount Gambier 5290.

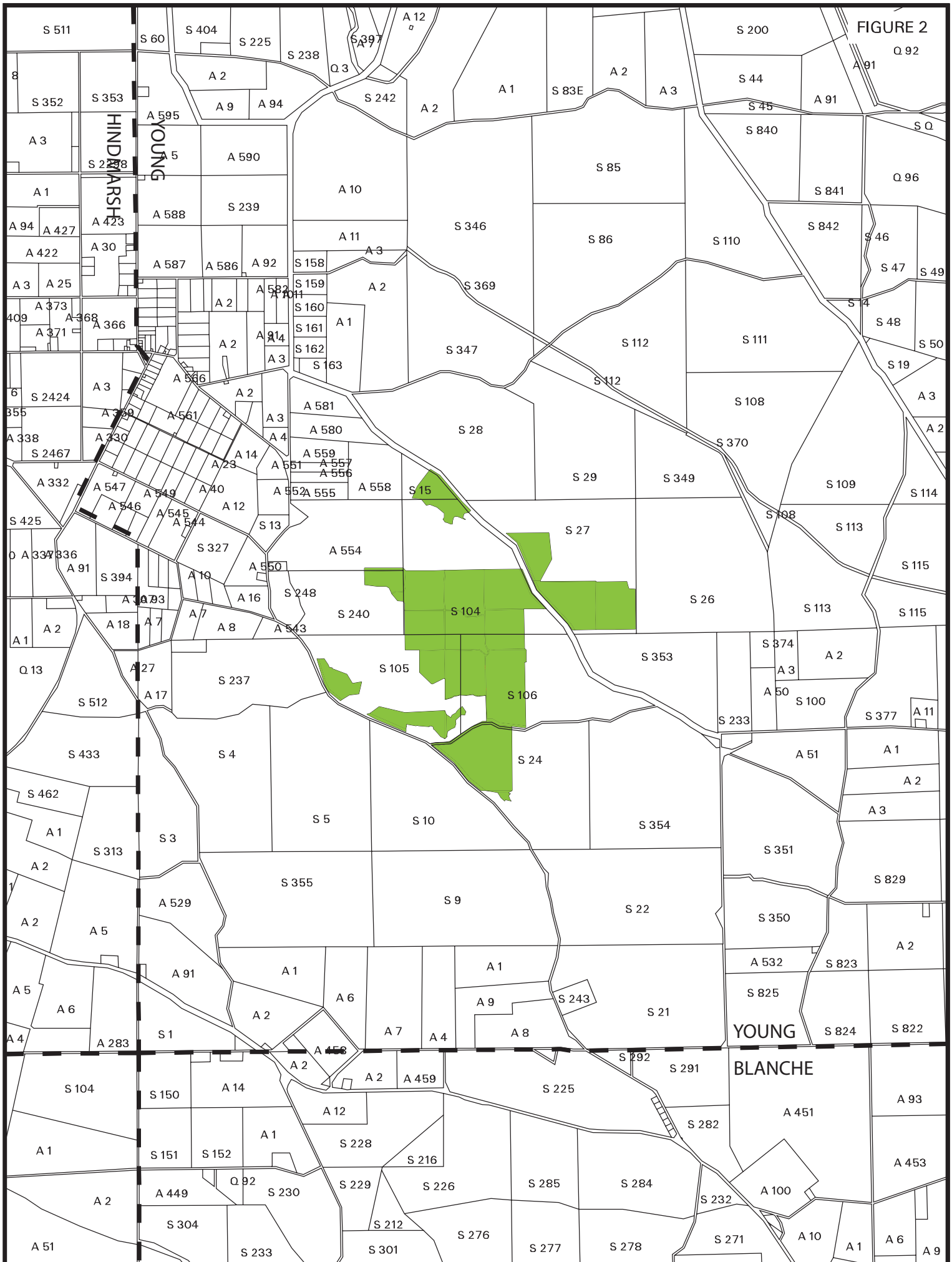
All permits for access and approved activities are issued from this office.



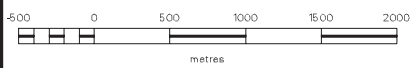
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- 12.4
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- 619.5
- 66.6
- 49.9
- 139.6
- 147.1
- 73.1
- 263.6
- 493.1
- 425.2
- 287.7
- 1026.8
- 9.5
- 191.8
- 4.1
- 250
- 32.8
- 266.4
- 45.3
- 538
- 151.1
- 157
- 84.2
- 118.4
- 2213.6
- 64
- 175
- 42.6

Legend

- ForestrySA Plantations
- NPWS Reserves



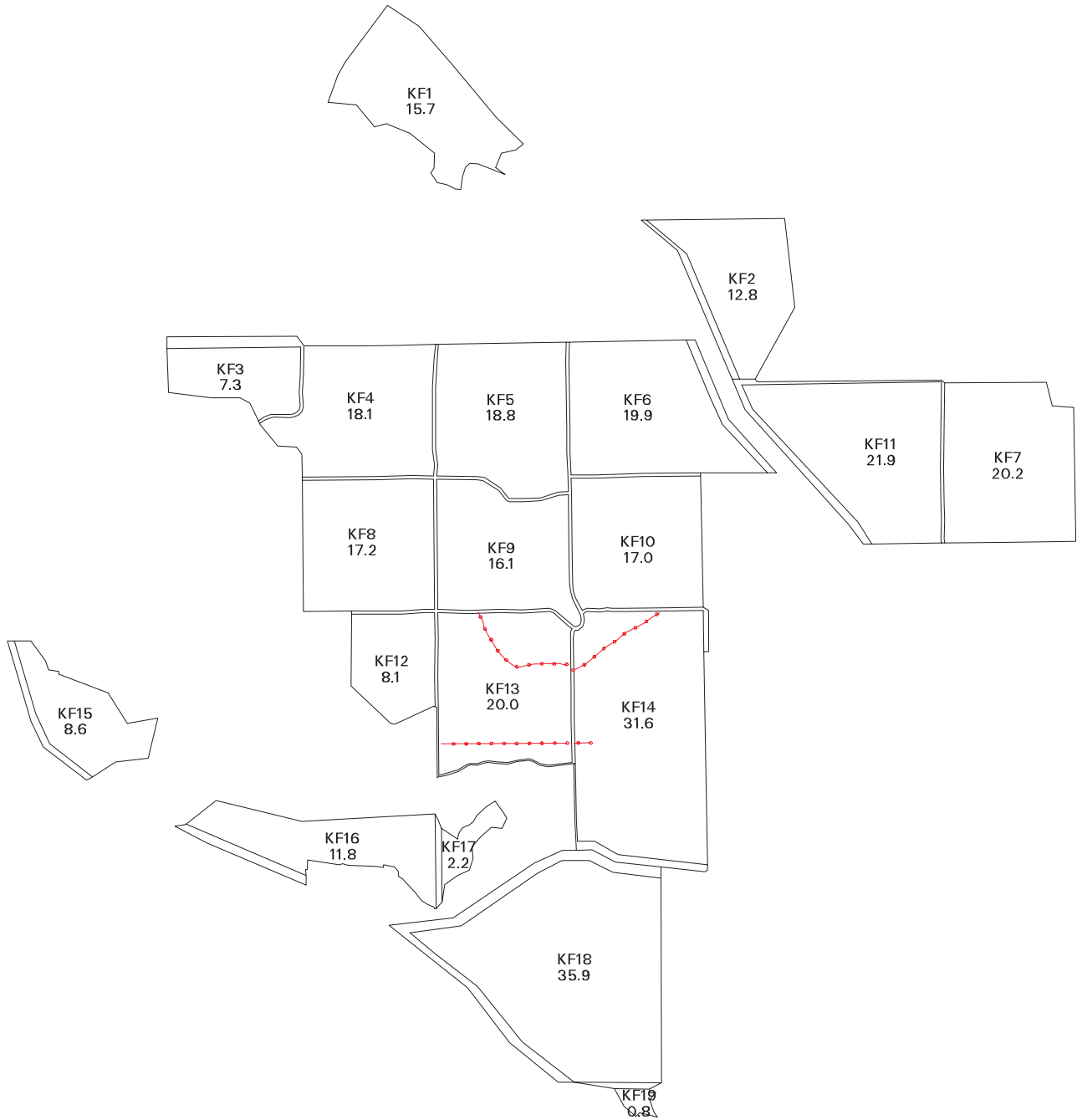
Gross Area = 325.2 ha



**KANGAROO FLAT NATIVE FOREST RESERVE
CADASTRAL BOUNDARIES**

(KANGAROO FLAT NATIVE FOREST RESERVE MANAGEMENT PLAN)



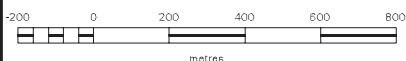


Gross Area = 325.2 ha

KANGAROO FLAT NATIVE FOREST RESERVE

COMPARTMENT CODES

(KANGAROO FLAT NATIVE FOREST RESERVE MANAGEMENT PLAN)



1.2 Land Tenure

The Kangaroo Flat Native Forest Reserve is gazetted as a Native Forest Reserve under the Forestry Act 1950. ForestrySA¹, is responsible for the management of 126,000 hectares of gazetted Forest Reserves in South Australia.

Approximately 24,200 hectares of this land is native forest, woodland or enclosed wetland, located in the Southern Flinders Ranges (4,200 hectares), the Mount Lofty Ranges (6,500 hectares) and the Lower South East of South Australia (13,500 hectares).

1.3 Planning

Land managed by ForestrySA is zoned to define areas that are to be managed for commercial forestry or for conservation.

Specific Native Forest Management Plans are prepared for each of the larger areas designated for conservation due to their ecological importance. The Kangaroo Flat NFR is one of 48 Native Forest Reserves in the South East of SA for which management plans have been or are being prepared.

Community use of Forest Reserves is not restricted to specific areas but determined according to compatibility and impact on other land uses. Planning for community use covers both commercial plantation forest and native forest areas. Community use considerations specific to individual areas of native forest are included in the respective Native Forest Management Plans.

Fire prevention considerations for areas of native forest are outlined in the Local Government 'District Bush Fire Prevention Plan', a requirement of the Country Fires Act 1989. Further detail on wild fire prevention/suppression is provided in Section 5.3.1 Five Year Management Program.

1.4 Native Forest Management, Policy and Philosophy

ForestrySA manages some of the few remnant areas of native forest and woodland located mainly in the higher rainfall areas of South Australia, together with their associated fauna. These areas contribute significantly to the natural assets of the State and have been managed as Native Forest Reserves under the Forestry Act since purchase by ForestrySA, formerly the Woods and Forests Department, which was established in 1882.

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

The native vegetation managed by ForestrySA occurs mainly as isolated fragments. Prior to the early 1950s most areas were disturbed by timber cutting, grazing, fire and invasion by introduced plants. Since then, most of these areas have remained relatively undisturbed.

¹ ForestrySA formerly known as Primary Industries Forestry and the Woods and Forests Department

Compared with other areas of native vegetation in South Australia, those managed by ForestrySA are often the least disturbed due to their long history of consistent land tenure.

Areas of native vegetation may require specific management prescriptions to achieve conservation objectives depending upon their disturbances histories. These may include:-

- total protection of areas and/or parts of areas from any further disturbances eg. weed invasions, grazing, pest animals;
- protection from bushfires;
- restricting public access;
- rehabilitation of the over-storey or the understorey vegetation;
- re-introduction of selected species of flora and fauna;
- ecosystem management by the use of prescribed fire;
- management for specifically threatened species.

1.5 Legislative Protection of Native Forest Reserves

1.5.1 Forestry Act 1950

The Forestry Act provides for the declaration of Native Forest Reserves for the purpose of conserving native flora and fauna.

Regulations under this Act enable enforcement of measures to protect Native Forest Reserves.

The Act states in respect to Forest Reserves and Native Forest Reserves that :-

3. (1) The Governor may by proclamation

- (b) for the purposes relating to the conservation, development and management of land supporting native flora and fauna, declare a forest reserve, or part of a forest reserve, to be a native forest reserve;
- (c) assign a name to a forest reserve, or a native forest reserve.

3. (2) A proclamation declaring a forest reserve or part of a forest reserve to be native forest reserve shall contain a statement of the purposes for which the native forest reserve is established.

- 9.A** Notwithstanding any other provision of this Act, the Corporation must manage a native forest reserve having regard to the purposes for which it was established and must endeavour to ensure that no operations are undertaken on the reserve that are inconsistent with those purposes.

1.5.2 National Parks and Wildlife Act 1972

The object of this Act is to provide legislative framework for the management and protection of native plants and animals throughout South Australia.

For any activity that involves the removal or capture of native plants or animals, permits must be obtained from both the Department for Environment and Heritage, and ForestrySA.

1.5.3 Native Vegetation Act 1991

The object of this Act is to control clearance and to facilitate and assist management of native vegetation in South Australia.

Under the Act, in most circumstances, a range of activities defined as clearing may not occur without the prior consent of the Native Vegetation Council (Sections 27 to 29). This includes the prescribed use of fire or selective cutting of trees for habitat creation. Both of these activities may be approved as part of a management plan and compliance with this is mandatory.

1.5.4 Aboriginal Heritage Act 1988

The Aboriginal Heritage Act provides for the protection and preservation of sites and items of sacred, ceremonial, mythological or historical significance to Aboriginal people.

ForestrySA manages Aboriginal heritage in accordance with its Aboriginal Heritage Policy, which reflects the requirements of the Aboriginal Heritage Act.

1.5.5 Environment Protection and Biodiversity Conservation Act 1999

This Commonwealth Act provides for the protection of the Australian environment and for the conservation and protection of nationally threatened species and ecological communities.

2. NATURAL RESOURCES

2.1 Climate

The Reserve has a typical Mediterranean climate with warm dry summers and cool wet winters.

Detailed climatological information has been collected at the Mount Gambier Airport 11 km to the south-east since 1941. The following mean temperature and rainfall records (59 years of record to 2001) were extracted from the National Climate Centre computer data bank.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Yr
Mean Max (°C)	25.1	25.1	23.0	19.3	16.0	13.8	13.1	14.0	15.7	17.8	20.1	22.7	18.8
Mean Min (°C)	11.0	11.6	10.4	8.6	7.3	5.7	5.1	5.4	6.2	7.1	8.2	9.9	8.0
Mean Rain (mm)	26	25	35	56	73	82	100	92	73	63	46	37	708
Mean Rain Days	9	8	11	14	18	19	21	21	19	17	14	12	183

Average annual rainfall for these Reserves based on the above record and the regional rainfall isohyet map is estimated to be 750 mm.

2.2 Physical Environment

2.2.1 Regional Geology and Soil Parent Material

The geological evolution of the South East Region of SA is closely related to the separation of the Australian and Antarctic Continents, formerly parts of the super-continent Gondwana, beginning about 150 million years ago. Sequences of terrestrial, riverine-deltaic and marine sediments, characteristic of fluctuating sea levels, were laid down in the resultant depression now known as the Otway Basin. The western most portion that underlies the region in SA is known as the Gambier Embayment.

Flooding of the Gambier Embayment, associated with a warm temperate climate during the Miocene period, provided conditions for the deposition of bryozoal limestone now referred to as Gambier Limestone. Since that time, due to the slow tectonic uplift of the Gambier Embayment, the low coastal plain gradient, and glaciation sequences, sea level oscillation has produced variable erosion of the Gambier Limestone and a series of stranded coastal dunes.

Aeolian sands spread and resorted by wind deflation, and volcanic fissure eruptions in more recent times have produced additional topographic relief and soil parent material in a relatively flat relict coastal plain.

A more detailed explanation of the geology and soil parent materials of the region can be found in the Natural History of the South East, (Tyler et al. 1983).

2.2.2 Local Geology

The Reserve is located on a peneplain area to the north and south of Diagonal Road, which links Wandilo with Glencoe East, and north of the former Princes Highway, which linked Glencoe East with Compton. Honan NFR lies to the south of Kangaroo Flat NFR on the same wave-cut shore platform, linked to the 68 m shore. This is the shore line associated with the shell beach on Mt. Graham. Altitudinal range is generally 60 m to 80 m, about ten metres higher than Honan NFR. This area is of relative low relief, as its name suggests, one that has been subjected to marine erosion in an area of shoals in which the relicts of a dune field deposited between 470 ky and 572 ky BP, were abraded. This dune field is correlated with the times when the Mingbool and Suttontown Dunes were formed (to the east) on more definite shorelines. Terra rossa soils are more prominent in the area surrounding this NFR (but not in the NFR) and they are associated with low calcarenite dunes or eroded relicts of the ancient dune field. This peneplain was exposed when sea level fell around 400 ky BP. It has then remained as a sub-aerial coastal plain above a shoreline at around 41m, linked to the Glenburnie Range and with the Woolumbool Range to the north of Penola Bay.

The basement of this dune field appears to be an elevated part of the Mt Gambier Limestone situated near the axis of the anticlinal Gambier Upwarp, and on the upthrow side of the Gambier Lineament (formerly known as the Tartwaup Fault),

which intersects the anticline. The Gambier Limestone is covered by Whalers Bluff Fm sediments over most of the area and these impose local drainage in swamps. Karst features are few and markedly localized. They consist of funnel dolines and caves in calcarenite (which, like the caves in the original Mingbool and Dismal-Ardno Dunes may be of considerable antiquity). The superficial aeolian siliceous sands have been strongly-leached for the most part and their origin is probably quite ancient. (Boardman, R. 2001)

2.2.3 Soils

Soil surveys carried out within the Reserve in 1990, and prior to re-establishing adjoining pine plantations have identified the following soil types as described by Stephens (1941) .

Young Sand - an humus podsol subjected to extreme leaching with an humus enriched B horizon, can be subjected to impeded drainage and seasonally high water tables. An aeolian sand of the ranges, it is the dominant soil type on the lower slopes and flats.

Mount Burr Sand – a normal podsol with varying depth to clay developed under well drained sand dune conditions. An aeolian sand of the ranges, limited to the sand rises.

Wandilo Sand – an humus podsol with clay at a relatively shallow depth occurring on the flats and lower dune slopes, may be subject to seasonal water logging or inundation.

Swamp Soil – formed in shallow enclosed depressions varying from moderately organic sands to peat overlying greyish or bluish clays subject to water logging or inundation for much of the year.

Terra rossa Soil – shallow sandy loams derived from the base Mount Gambier Limestone or calcarenite dunes is present as a relatively minor occurrence.

2.2.4 Hydrology

Average rainfall for these Reserves is estimated to be 750 mm per annum (see Section 2.1 Climate)

The flat low topography, soil type and shallow water table supports some permanent and seasonal swamps. There are no streams or drains, winter surface water moves between swamps at different levels in sheets aided in some instances by culverts installed under tracks. Overflow from the swamp in Compartment KF7 runs into a 'Runaway Hole' to the south, noted in the original survey in 1883.

High water levels in the swamps and overflow causing inundation of large areas in winter and spring make access through this Reserve very difficult for some months duration. Rainfall is absorbed through the soil and swamp floors to the water table estimated for the past five years to fluctuate between 2.5 and 4.5 metres below ground level depending on topography.

2.3 Petroleum and Mining Resources

The south-east of South Australia and Western Victoria is a proven petroleum exploration/production province referred to as the Otway Basin. There are numerous small natural gas and carbon dioxide fields in production or in development, both onshore and offshore. There are also several oil shows/discoveries in exploration wells, some of which may be commercially viable and be developed at some time in the future.

Petroleum Exploration Licence (PEL) 57 exists over much of Kangaroo Flat Native Forest Reserve. This tenement provides rights to explore for petroleum beneath the Reserve and adjacent lands. The PEL also permits the licensee to apply for Petroleum Production Licences in the case of resource discovery. Appendix II shows the Petroleum Exploration Licence status as at July 2001, no Mineral Exploration Licences existed at that time. (M. Bayly, pers.comm.)

This plan recognises the potential for mineral resources to be present and recoverable beneath this Native Forest Reserve.

2.3.1 Petroleum Act 2000 and Mining Act 1971.

These Acts regulate all activities relating to exploration and production. In regard to flora and fauna, there are requirements to avoid, or where not reasonably practicable, minimise environmental impacts. In this regard, impacts to native vegetation are permitted without requirement of consent under the Native Vegetation Act 1991.

2.4 Biological Environment

2.4.1 Vegetation

This Reserve is located on a low lying plain with very little topographical relief. The soils are generally of aeolian sand derivation, have poor fertility and are subject to extreme seasonal moisture variation. All areas now reserved were cleared to establish plantations between 1932 and 1934. The structure of the regenerated native vegetation, in particular the over-storey which is a maximum of up to 60 years old, is significantly different to what it would have been without that disturbance, however the composition may not have been altered to any large extent.

The following vegetation associations have been identified (Grigg 2001) and their more common constituent species listed.

***Eucalyptus baxteri* (Brown stringybark) Association**

Eucalyptus baxteri is the dominant tree species on those deeper dune sands not subject to water logging in winter and spring. *Acacia mearnsii* may be present over shrub and ground flora containing *Exocarpus cupressiformis*, *Ozothamnus ferrugineus*, *Banksia marginata*, *Leptospermum myrsinoides*, *Xanthorrhoea australis*, *Monotoca scoparia*, *A.myrtifolia*, *Dillwynia glaberrima*, *Pteridium esculentum*, *Leucopogon virgatus* and *Acrotriche serrulata*.

***Eucalyptus viminalis* ssp. *cygnetensis* (Manna gum) Association**

Eucalyptus viminalis ssp. *cygnetensis* is restricted to minor occurrences on better drained soils or on Terra rossa soil. *Acacia melanoxydon* may be present over shrub and ground flora comprising *Banksia marginata*, *X.australis*, *Melaleuca squarrosa*, *Leptospermum continentale*, *L.myrsinoides*, *Lomandra longifolia*, *Lepidosperma* spp., *P.esculentum* and *Hibbertia prostrata*.

***Eucalyptus willisii* ssp. *falciformis* (Willis' peppermint) Association**

Relatively large areas are dominated by *Eucalyptus willisii* ssp. *falciformis* occurring on the lower slopes and flats subject to a seasonal shallow water table and water logging. *Acacia melanoxydon* may be present over shrub and ground flora comprising *M. squarrosa*, *L. continentale*, *L. myrsinoides*, *X.australis*, *M.scoparia*, *Acacia oxycedrus*, *H.prostrata*, *Amperea xiphoclada*, *Patersonia fragilis*, *Hypolaena fastigiata* and *Boronia pilosa*.

***Eucalyptus ovata* (Swamp gum) Association**

Eucalyptus ovata occurs on swamp perimeters and wet flats subject to seasonal inundation. *Acacia melanoxydon* may be present over shrub and ground flora comprising *Pomaderris paniculosa*, *L. continentale*, *Melaleuca squamea*, *Gahnia clarkei*, *Allocasuarina paludosa*, *X.australis*, *Gahnia radula*, *Lepido sperma* spp. *Leptocarpus tenax* and *P.fragilis*.

Swamp vegetation

Swamps in this Reserve may contain some water through out the year to support the following more common species within the swamp or on its margin. *Carex appressa*, *Eleocharis sphacelata*, *Gahnia clarkei*, *Gahnia trifida*, *Juncus* spp., *Myriophyllum simulans*, *Phragmites australis*, *Potamogeton* spp., *Triglochin procerum*, *Typha domingensis* and *Villarsia reniformis*.

A total of 224 native plant species have been recorded for Kangaroo Flat NFR of which 73 have a conservation status of uncommon or higher rating for the South East of South Australia (Table 1, Natural Resource Data).

2.4.2 Fauna

The only formal reported surveys of fauna in this Reserve are a current and ongoing bird survey by J.F. Berggy and a mammal and reptile survey by an Ecological Survey Group employed by ForestrySA in 1984/85.

Species recorded in these surveys and those reported incidental observations of mammals, reptiles and amphibians are included in the Natural Resources Data (Tables 2-4).

ForestrySA acknowledges the presence of the Southern Brown Bandicoot (*Isodon obesulus*) and the Red-tailed Black Cockatoo (*Calyptorhynchus banksii graptogyne*) both listed as Endangered under the EPBC Act and is committed to ensure that no actions likely to have a significant deleterious impact on these species will be taken.

Birds

Bird species can be grouped according to their preferred habitat. The presence of species from many different groups reflects the diversity of habitat and the potential to support many species. However recent surveys have recorded relatively few species compared with other similar sites in the Region. It has been suggested that this may be attributed to habitat disturbance caused by major commercial and non-commercial pine felling throughout the Reserve.

Included in the thirty-three species recorded so far are the Red-tailed and the Yellow-tailed Black-Cockatoo rated as Endangered and Vulnerable in South Australia. (Table 2, Natural Resources Data.)

The Chestnut-rumped Heathwren rated as Vulnerable and the Southern Emu-wren rated as Rare were identified by call in July 2001 by JF Berggy but have not been included in the list until verified by sighting.

Mammals

Six native mammal species have been recorded in these Reserves (See Table 3, Natural Resource Data).

Of these, three species have a conservation status rating of Rare or Vulnerable viz.,

Red-necked Wallaby	R
Eastern Grey Kangaroo	R
Southern Brown Bandicoot	V

The Swamp Wallaby, Common Ringtail Possum and Yellow-footed Marsupial Mouse have not been recorded, however it is reasonable to assume that they are present in this Reserve which is adjacent to Honan NFR where they are known to occur. Bats have not been surveyed but several species are likely to forage in this Reserve.

Reptiles and Amphibians

Two reptile and six amphibian species have been recorded in this Reserve. (See Table 4 Natural Resource Data). The habitat diversity including some permanent wetlands suggests that more of these species common to the Lower South East are likely to be present. There has been an unconfirmed observation of a Red-bellied Black Snake in this Reserve (2001), this is consistent with a report from Honan NFR in 1993.

3. LAND USE

3.1 History

According to Tindale (1974), these Reserves are located within the territory previously occupied by Aboriginal people of the Bunganditj tribe now known and referred to as the Boandik. Flint flakes and cores discarded from tool making are exposed on sand tracks on a few drier rises indicating that the Reserve had been occupied by Aboriginals prior to European settlement.

3.1.1 Acquisition and Name

All sections now reserved, previously held under Certificate of Title, Right to Purchase Lease or Perpetual Lease were purchased for forestry purposes by the then Woods and Forests Department as shown in the following table. Sections 106 and 240 were purchased for about \$5 per ha.

Hundred of Young	Surrender or Repurchase date	Previous Owner/ Lessee	Gazetted as Forest Reserve
Section 15	8.12.32	Henry Blackmore	24.8.33
24	5.6.30	Johan Heinrich Schmidt Edward William Tollner	26.6.30
27	19.11.26	Ann Hayes Egan Henry William Ure John Daniel Curtin	26.6.30
104, 105	10.10.25	Herbert Opie Williams	26.6.30
106	5.7.27	Michael John O'Donnell	26.6.30
240	1926	Michael Cornelius Kennedy	26.6.30

Kangaroo Flat Native Forest Reserve takes its name from the road known locally by that name which adjoins the Reserve in parts on its western boundary.

3.2 Historical Impacts

3.2.1 Grazing

The area now reserved was purchased in parts between 1925 and 1932. Grazing prior to that on what is believed to have been largely undisturbed native vegetation would have been of low intensity and restricted to the swamps and small grassy flats. Apart from that consistent with the presence of native and introduced herbivores (rabbits), there is no record of grazing on this area since purchase by ForestrySA, any damage or modification to the native vegetation due to intensive grazing cannot now be assessed.

3.2.2 Timber Production

The nature of the site and the relatively stunted growth of the tree species it supported suggest that fencing material and firewood only may have been cut from this area prior to purchase by ForestrySA. There is no record of cutting any native wood products since that time.

3.2.3 Wildfire

There is no record of wildfire affecting the area now reserved for over 40 years. It is possible that the major wildfires reported on the 'Glencoe run' in 1867 and 1875, and one which burnt east through Honan NFR in 1934 impacted on parts of this Reserve.

3.2.4 Prescribed Burning

There is no record of prescribed burning in Kangaroo Flat NFR.

The Native Vegetation Council has agreed to the use of fire in Transition Zones (in which category Kangaroo Flat NFR is currently designated) to assist in rehabilitating these zones to Conservation Zone status, however monitoring requirements will need to be agreed prior to implementation. (refer to 3.3.1 Conservation for further detail)

3.2.5 Site Modification

The major impact to the natural environment at Kangaroo Flat NFR was manual clearing of the native vegetation prior to establishing pine plantations from 1932 to 1934. The greater part of these plantations failed due to a combination of factors including flooding, inadequate control of competing vegetation and possibly fire damage in parts.

Pine re-establishment operations including dozing, heaping, burning and ploughing were in progress in compartments now identified as KF4,5,6 and 9 in 1967. (B. Praetz pers.comm.) These operations were terminated, but added an extra significant level of disturbance to those compartments resulting in younger age native over-storey regeneration.

Felling of the surviving original pine crop or associated wild pine regeneration either for recovery of saleable timber, or to waste, as part of the program to rehabilitate this area to native forest has occurred over the last two or three years. These operations, approved by the Native Vegetation Council, have caused severe short term disturbance and damage to the native vegetation in parts but were a necessary component to improve and maintain the Reserve's bio-diversity.

The original clearing has produced native tree growth of relative immaturity which has limited the formation of hollows and breeding opportunities for hollow dependant birds and mammals.

3.2.6 Pest plants and animals

Rabbits, foxes and feral cats have been recorded in this Reserve and may have modified the biological community during their long period of occupation. The probability is that some animal and plant species have been lost from this Reserve due to predation and competition by introduced pest plant and animal species. The risk of local extinctions remains with the continued presence of pest species, for example the bandicoot population is at risk from foxes.

Pine tree invasion of the Reserve from surrounding plantations will continue to be controlled by routine and ongoing regional removal operations when considered necessary. Blackberry bushes are and will be a major problem to control as they continue to spread, being particularly dense in parts on swamp margins where they thrive at the expense of native species.

3.3 Current Uses

3.3.1 Conservation

From 1970 it was the stated intent of ForestrySA to maintain remaining native forests 'in their natural condition' for the conservation of native flora and fauna. (Woods and Forests Department, Annual Report 1970/71).

In June 1998, pursuant to the Native Vegetation Act 1991 which regulates clearance and assists management of native vegetation in South Australia, the Native Vegetation Council endorsed ForestrySA's proposed Forest Management Zoning Plan for the Mount Gambier Forest Reserve. This followed site inspections and negotiations with the Department for Environment and Heritage. It was agreed that those failed pine sites now reserved had regenerated to such extent and diversity that they merited retention and protection as native vegetation, and were to be designated as Transition Zone during the period required to rehabilitate them to Conservation Zone status. Rehabilitation operations may include cutting and/or removal of existing pine trees and killing any subsequent pine regeneration by cutting or burning. Some damage to native vegetation during these operations is acceptable for the long term benefit to bio-diversity. The Conservation Zone is managed in accordance with the Native Vegetation Act for the protection of biodiversity.

3.3.2 Community Use

Kangaroo Flat Native Forest Reserve offers opportunities for recreation such as bush walking and bird watching. Field naturalists and researchers are infrequent visitors to the Reserve.

3.4 Adjacent Land Use

Apart from the northern boundary of Compartment KF3 which is adjoined by private farm land, Kangaroo Flat NFR is surrounded by pine plantations and Honan NFR managed by ForestrySA.

4. MANAGEMENT OBJECTIVES

4.1 Native Forest Management Philosophies

In managing native forests ForestrySA recognises the following factors:

- Native Forest Reserves contribute to conserving valuable remnant habitats for many species and provide in part a representation of land cover before clearance and other changes following European settlement.
- The size and relative isolation of many Native Forest Reserves increases the risk of species loss caused by fire, drought or disease, where isolation is a barrier to re-colonisation.
- Ecosystems are dynamic and will continue to change with time.
- In most instances biological data for decision making represents a single point in time.
- Decisions will generally be for management of ecosystems, communities and processes, as complete information on individual species or for all species will never be available.
- Due to the long-term changes in ecosystems, the availability of data showing changes over time is uncommon.
- The least disturbed sites will be protected and used as benchmark areas to monitor changes due to natural succession without fire, and may be used as reference sites for restoration of adjacent disturbed areas.
- The scale of post European settlement disturbance may influence the subsequent rates of change in the ecosystem. The larger and more perceptible the scale of disturbance eg. logging or bushfires, the easier it is to document impacts and to develop restoration programs.
- To maximise diversity, all areas will not be treated the same way at the same time.
- Maximising the conservation value of an area may involve consultation and co-operation with neighbouring landowners (private individuals, Local Government and other Government Agencies).

4.2 Long-term Management Objectives For Native Forest Reserves

ForestrySA is committed to the following broad management objectives for the native forests under its control for the benefit of the people of South Australia.

4.2.1 Conservation Management

- Manage for the long-term conservation of native plant and animal communities.
- Promote integrated planning and management where native forest areas adjoin but are under different ownership.
- Evaluate the options and desirability for species reintroduction programs.

4.2.2 Community Use

- Manage community use consistent with the primary conservation purpose of the Reserve.
- Promote understanding and awareness of the conservation values of the Reserve.

4.2.3 Protection

- Protect the Reserves to minimise impacts from human induced or natural events.
- Control pest plants and animals.

4.2.4 Rehabilitation

- Rehabilitate sites that have been severely degraded by human activity since European settlement.

KANGAROO FLAT NATIVE FOREST RESERVE

FIVE YEAR MANAGEMENT PROGRAM

5. FIVE YEAR MANAGEMENT PROGRAM

The Management actions proposed will be carried out in accordance with guidelines contained in the relevant procedural policies listed in Appendix 1.

5.1 Conservation Management

Goal - Manage the Kangaroo Flat NFR for the long term conservation of native plant and animal communities.

5.1.1 Specific Objectives – Habitat Management

- Maintain diverse vegetation structure and composition.

Action

- Burn specified compartments or part compartments as required to remove felled pine debris and pine regeneration subject to approval from the Native Vegetation Council.

Priority
High

Timing
Ongoing

5.1.2 Specific Objective – Conservation Research

- Coordinate and facilitate projects to improve knowledge and understanding of the natural features and biological community.

Medium

Ongoing

5.1.3 Specific Objective – Cooperative Management

- Consult with adjoining land owners

- Advise neighbours of management operations which may affect them, eg. prescribed burning, pest plant and animal control, community use.

Medium

Ongoing

5.2 Community Use

Goals – Manage community use of the Reserves consistent with its primary conservation purpose

- Promote understanding and awareness of their conservation values.

5.2.1 Specific Objective – Reserve Identity

- Identify ownership of the Reserves, their names, status, area, purpose and permitted activities.

High Ongoing

5.2.2 Specific Objective – Access

- Prohibit unauthorised access to minimise damage to natural features.

High Ongoing

2003

5.2.3 Specific Objectives – Community Use

- Manage recreation activities to minimise impacts on the physical environment and the biological communities it supports.
- Identify activities that have the potential for deleterious impacts and implement appropriate monitoring programs.

Medium Ongoing

Medium Ongoing

5.3 Protection

Goal – Protect the Reserves to minimise impacts from human induced or natural events.

5.3.1 Specific Objective – Wild-fire Protection

- Minimise the area burnt in wild-fires using a range of wildfire prevention measures including prescribed burning.

- Regulate public access and use of the Reserve in the fire danger period. High Ongoing

- In the event of a wildfire, when necessary, take special measures (eg. fire break construction, and back burning) to minimise the area burnt. High Ongoing

- Maintain effective perimeter fire breaks and internal access tracks to facilitate wild fire control. High Ongoing

- Redefine the land use boundary between the commercial and conservation zones by constructing a new all seasons track on the western edge of 1973 Plantation, Compartments 112 and 113. Med 2003

5.3.2 Specific Objective – Introduced Species

- Minimise impacts from introduced plants and animals

- Monitor feral animal populations and implement control operations as required. Medium Ongoing

- Eradicate Blackberry and other weed species with the potential to impact on bio-diversity. High Ongoing

5.3.3 Specific Objective – Commercial Activity

- Regulate and monitor commercial activities in the Reserve and adjacent plantation areas to minimise damage to the biological community

- Ensure precautions are taken to prevent damage to the Reserve by commercial forestry activities such as herbicide spraying, fertiliser application, and logging operations. High Ongoing

- | | | |
|---|-------------|---------------|
| <ul style="list-style-type: none"> • Prohibit firewood removal unless as approved management operation. | High | Ongoing |
| <ul style="list-style-type: none"> • Prohibit Bee Husbandry on ForestrySA land to reduce any harmful impacts from this source on the native flora in this Reserve. | High | Ongoing |
| <ul style="list-style-type: none"> • Regulate native species seed harvesting in accordance with ForestrySA policy. | As required | Ongoing |
| <ul style="list-style-type: none"> • Negotiate with petroleum and mineral exploration licence holders to minimise impacts in this Reserve in accordance with the Petroleum Act 2000, and Mining Act 1971, and regulations. | As required | When required |

KANGAROO FLAT NATIVE FOREST RESERVE

6. NATURAL RESOURCE DATA

TABLE 1**PLANT SPECIES RECORDED FOR KANGAROO FLAT NATIVE FOREST RESERVE**

BOTANICAL NAME	COMMON NAME	CONSERVATION SIGNIFICANCE	SOURCE
<i>Acacia longifolia</i> var <i>longifolia</i>	Sallow wattle		1
<i>Acacia mearnsii</i>	Black wattle		1
<i>Acacia melanoxylon</i>	Blackwood		1
<i>Acacia mitchellii</i>	Mitchells wattle	R/R	4
<i>Acacia myrtifolia</i> var. <i>myrtifolia</i>	Bitter leaved wattle		1
<i>Acacia oxycedrus</i>	Spike wattle	U/U	1
<i>Acacia pycnantha</i>	Golden wattle		1
<i>Acacia stricta</i>	Hop wattle	R/R	1
<i>Acacia verticillata</i>	Prickly Moses		1
<i>Acaena novae-zealandiae</i>	Bidgee-widgee		1
* <i>Acetosella vulgaris</i>	Sorrel		1
<i>Acrotriche serrulata</i>	Honeypots		1
<i>Agrostis avenacea</i> var. <i>avenacea</i>	Blown grass		1
* <i>Aira caryophyllea</i> var. <i>caryophyllea</i>	Silvery hair-grass		1
<i>Ajuga australis</i> (form B)	Austral bugle		1
<i>Allocasuarina paludosa</i>	Scrub sheoak		1
<i>Amperea xiphoclada</i> var. <i>xiphoclada</i>	Broom spurge	U/U	1
<i>Amphibromus nervosus</i>	Swamp wallaby-grass	U/U	1
<i>Amphibromus recurvatus</i>	Dark swamp wallaby-grass		1
<i>Amphibromus sinuatus</i>	Wallaby-grass		1
<i>Amyema pendulum</i> ssp. <i>pendulum</i>	Drooping mistletoe		1
* <i>Anagallis arvensis</i>	Pimpernel		1
* <i>Anthoxanthum odoratum</i>	Sweet vernal grass		1
<i>Apalochlamys spectabilis</i>	Fireweed	U/U	1
<i>Aphanes australiana</i>	Australian piert		1
<i>Argentipallium blandowskianum</i>	Woolly everlasting		3
<i>Arthropodium strictum</i>	Common vanilla-lily		1
<i>Asperula conferta</i>	Common woodruff		3
<i>Astroloma humifusum</i>	Native cranberry		2
* <i>Avena barbata</i>	Bearded oat		1
<i>Banksia marginata</i>	Silver banksia		1
<i>Baumea acuta</i>	Pale twig-rush	R/R	1
<i>Baumea arthropophylla</i>	Common twig-rush		1
<i>Baumea articulata</i>	Jointed twig-rush	U/U	3
<i>Baumea juncea</i>	Bare twig-rush		1
<i>Billardiera scandens</i> var <i>scandens</i>	Apple-berry	R/R	1
<i>Boronia nana</i>	Dwarf boronia	U/U	1
<i>Boronia parviflora</i>	Swamp boronia	R/R	2
<i>Boronia pilosa</i>	Hairy boronia	R/R	1
<i>Bossiaea cinerea</i>	Showy bossiaea	U/U	2
<i>Brachyloma ciliatum</i>	Fringed brachyloma		1

* <i>Briza maxima</i>	Large quaking-grass		1
* <i>Bromus diandrus</i>	Great brome		1
* <i>Buglossoides arvensis</i>	Sheepweed		1
<i>Burchardia umbellata</i>	Milkmaids		1
<i>Bursaria spinosa</i>	Sweet bursaria		2
<i>Caladenia carnea</i> var. <i>carnea</i>	Finger orchid		1
<i>Calytrix tetragona</i>	Common fringe-myrtle		2
<i>Cardamine tenuifolia</i>	Slender bitter cress	R/R	1
<i>Carex appressa</i>	Tall sedge		1
<i>Carex fascicularis</i>	Tassel sedge	U/R	1
<i>Carex tereticaulis</i>	Sedge		2
<i>Cassytha glabella</i> forma <i>dispar</i>	Slender dodder-laurel		1
<i>Cassytha pubescens</i>	Downy dodder-laurel		1
<i>Caustis pentandra</i>	Thick twist-rush		1
* <i>Centaureum erythraea</i>	Common centaury		1
<i>Centella cordifolia</i> s. <i>str</i>	Centella	U/U	1
<i>Centipeda cunninghamii</i>	Common sneeze-weed		1
<i>Centrolepis strigosa</i>	Hairy centrolepis		1
* <i>Cerastium</i> sp.			1
<i>Chamaescilla corymbosa</i> var. <i>corymbosa</i>	Blue squill		1
* <i>Cirsium vulgare</i>	Spear thistle		1
<i>Clematis microphylla</i>	Old mans beard		1
<i>Comesperma calymega</i>	Blue spike milkwort		4
<i>Comesperma volubile</i>	Love creeper		1
* <i>Conyza albida</i>	Tall fleabane		1
<i>Correa reflexa</i> var. <i>reflexa</i>	Common correa		1
<i>Corybas</i> sp.	Helmet-orchid		1
<i>Crassula helmsii</i>	Swamp crassula		1
<i>Cynoglossum australe</i>	Australian hounds tongue		2
* <i>Cynosurus echinatus</i>	Rough dogs tail grass		1
<i>Cyperus gunnii</i> ssp. <i>gunnii</i>	Flecked flat-sedge	U/R	1
<i>Cyperus tenellus</i>	Tiny flat-sedge		1
<i>Danthonia geniculata</i>	Knead wallaby-grass		1
<i>Danthonia linkii</i> var. <i>fulva</i>	Leafy wallaby-grass	R/R	1
<i>Deyeuxia quadrisetata</i>	Reed bent-grass		1
<i>Dianella brevicaulis</i>	Short-stem flax-lily		2
<i>Dianella revoluta</i> var. <i>revoluta</i>	Black anther flax-lily		1
<i>Dichelachne crinita</i>	Long-hair plume-grass	N/U	4
<i>Dichondra repens</i>	Kidney weed		1
<i>Dillwynia glaberrima</i>	Smooth parrot-pea		1
<i>Drosera auriculata</i>	Tall sundew		1
<i>Drosera peltata</i>	Pale sundew		1
<i>Drosera pygmaea</i>	Tiny sundew		3
<i>Eleocharis acuta</i>	Common spike-rush		1
<i>Eleocharis sphacelata</i>	Tall spike-rush	R/R	1

<i>Epacris impressa</i>	Common heath		1
<i>Epilobium billardieranum</i>	Willow herb		1
<i>Epilobium billardieranum</i> ssp. <i>cinereum</i>	Variable willow-herb		1
<i>Epilobium hirtigerum</i>	Hairy willow-herb	N/R	1
<i>Eragrostis benthamii</i>	Common lovegrass		3
<i>Eryngium vesiculosum</i>	Prostrate blue devil	R/R	1
<i>Eucalyptus baxteri</i>	Brown stringy-bark		1
<i>Eucalyptus ovata</i>	Swamp gum		1
<i>Eucalyptus viminalis</i> ssp. <i>cygnetensis</i>	Rough-barked manna gum		1
<i>Eucalyptus willisii</i> ssp. <i>falciformis</i>	Willis' peppermint	U/U	1
<i>Euchiton gymnocephalus</i>	Creeping cudweed		1
<i>Euchiton involucratus</i>	Star cudweed		1
<i>Exocarpus cupressiformis</i>	Native Cherry		1
<i>Gahnia clarkei</i>	Tall saw-sedge	R/R	1
<i>Gahnia radula</i>	Thatch saw-edge	R/R	1
<i>Gahnia trifida</i>	Cutting grass		1
<i>Geranium molle</i> var. <i>molle</i>	Soft cranes-bill		3
<i>Geranium potentilloides</i> var. <i>potentilloides</i>	Downy geranium		1
<i>Geranium solanderi</i> var. <i>solanderi</i>	Austral geranium		1
<i>Gleichenia microphylla</i>	Coral fern	R/V	2
<i>Glyceria australis</i>	Australian sweet grass		1
<i>Gonocarpus humilis</i>	Raspwort	R/R	1
<i>Gonocarpus micranthus</i> ssp. <i>micranthus</i>	Creeping raspwort	R/R	1
<i>Gonocarpus tetragynus</i>	Common raspwort		1
<i>Goodenia geniculata</i>	Bent goodenia		1
<i>Goodenia humilis</i>	Swamp goodenia	U/U	1
<i>Gratiola peruviana</i>	Austral brooklime	N/R	1
<i>Gratiola pubescens</i>	Brooklime	R/R	1
<i>Haloragis brownii</i>	Swamp raspwort	R/R	1
<i>Helichrysum leucopsideum</i>	Satin everlasting		4
<i>Helichrysum scorpioides</i>	Button everlasting		1
<i>Hemarthria uncinata</i> var. <i>uncinata</i>	Mat grass		2
<i>Hibbertia prostrata</i>	Bundled guinea-flower		1
<i>Hibbertia sericea</i> var. <i>sericea</i>	Silky guinea-flower		3
<i>Hibbertia stricta</i> var. <i>stricta</i>	Stalked guinea-flower		1
* <i>Holcus lanatus</i>	Yorkshire fog		1
<i>Hydrocotyle hirta</i>	Hairy penny-wort	U/R	1
<i>Hydrocotyle laxiflora</i>	Stinking pennywort		1
<i>Hydrocotyle muscosa</i>	Mossy pennywort		1
<i>Hydrocotyle tripartita</i>	Pennywort		1
<i>Hypericum japonicum</i>	Matted St. John's wort	K/T	1
* <i>Hypochaeris glabra</i>	Smooth catsear		1
* <i>Hypochaeris radicata</i>	Rough catsear		1
<i>Hypolaena fastigiata</i>	Tassel rope-rush		1

<i>Hypoxis vaginata</i> var. <i>vaginata</i>	Yellow star	N/U	2
<i>Imperata cylindrica</i>	Kunai grass		3
<i>Isolepis fluitans</i>	Floating club-rush	U/U	1
<i>Isolepis inundata</i>	Swamp club-rush	N/U	1
<i>Isolepis marginata</i>	Little club-rush		1
<i>Isolepis nodosa</i>	Knobby club-rush		1
<i>Isolepis producta</i>	Nutty club-rush	R/T	1
<i>Isolepis stellata</i>	Star club-rush	R/R	1
<i>Isopogon ceratophyllus</i>	Cone bush		1
<i>Juncus bufonius</i>	Toad rush		1
<i>Juncus holoschoenus</i>	Joint-leaved rush		1
<i>Juncus pallidus</i>	Pale rush		1
<i>Juncus planifolius</i>	Broad-leaved rush	N/U	1
<i>Kennedia prostrata</i>	Running postman		1
<i>Lagenifera huegelii</i>	Coarse bottle-daisy	N/R	1
<i>Lagenifera stipitata</i> var. <i>stipitata</i>	Spreading bottle-daisy		1
<i>Laxmannia orientalis</i>	Dwarf wire-lily		2
* <i>Leontodon taraxacoides</i> ssp. <i>taraxacoides</i>	Lesser hawkbit		1
<i>Lepidosperma canescens</i>	Hoary rapier-sedge	N/U	1
<i>Lepidosperma concavum</i>	Spreading sword-sedge		1
<i>Lepidosperma congestum</i>	Clustered sword-sedge		1
<i>Lepidosperma laterale</i> s. str.	Tall sword-sedge	U/R	1
<i>Lepidosperma longitudinale</i>	Pithy sword-sedge		1
<i>Leptocarpus tenax</i>	Slender twine-rush		1
<i>Leptospermum continentale</i>	Prickly tea-tree		1
<i>Leptospermum lanigerum</i>	Silky tea-tree		1
<i>Leptospermum myrsinoides</i>	Heath tea-tree		1
<i>Lepyrodia muelleri</i>	Common scale-rush		1
<i>Leucopogon ericoides</i>	Pink bearded-heath		1
<i>Leucopogon virgatus</i>	Common bearded-heath		1
<i>Limosella australis</i>	Australian mudwort	N/U	1
<i>Lindsaea linearis</i>	Screw fern	U/R	1
<i>Lobelia alata</i>	Angled lobelia		1
<i>Lobelia pratioides</i>	Poison lobelia	R/R	3
<i>Lomandra filiformis</i> ssp. <i>coriacea</i>	Mat-rush	R/R	2
<i>Lomandra longifolia</i>	Spiny-headed mat-rush		3
<i>Lomandra micrantha</i> ssp. <i>micrantha</i>	Small flower mat-rush		3
<i>Lomandra nana</i>	Small mat-rush		1
<i>Lythrum hyssopifolia</i>	Lesser loosestrife		1
<i>Mazus pumilio</i>	Swamp mazus	V/V	1
<i>Melaleuca gibbosa</i>	Slender honey-myrtle		3
* <i>Melaleuca armillaris</i>	Bracelet honey-myrtle		2
<i>Melaleuca squamea</i>	Swamp honey-myrtle	R/K	1
<i>Melaleuca squarrosa</i>	Bottlebrush tea-tree	R/U	1
<i>Mentha diemenica</i>	Slender mint	R/R	1

* <i>Mentha pulegium</i>	Penny-royal		3
<i>Microlaena stipoides</i> var. <i>stipoides</i>	Weeping rice-grass		1
<i>Microtis</i> sp.	Onion orchid		1
<i>Microtis unifolia</i>	Common onion-orchid		1
<i>Monotoca scoparia</i>	Prickly broom-heath	U/U	1
<i>Montia australasica</i>	White purslane	R/R	1
<i>Myosotis australis</i>	Austral forget-me-not		1
<i>Myosotis discolor</i> ssp. <i>discolor</i>	Forget-me-not		1
<i>Myriophyllum simulans</i>	Water-milfoil	Q/Q	1
<i>Olearia ramulosa</i>	Twiggy daisy-bush		1
<i>Opercularia ovata</i>	Broad-leaved stinkweed	U/R	3
<i>Opercularia varia</i>	Variable stinkweed		1
<i>Oxalis perennans</i>	Native sorrel		1
<i>Ozothamnus ferrugineus</i>	Tree everlasting	N/U	1
* <i>Parentucellia viscosa</i> .	Yellow bartsia		1
* <i>Paspalum dilatatum</i>	Paspalum		3
<i>Patersonia fragilis</i>	Short purple flag	U/U	1
<i>Patersonia occidentalis</i>	Long purple flag	U/R	1
<i>Pelargonium australe</i>	Australian pelargonium		1
<i>Persicaria prostrata</i>	Trailing knot-weed	U/U	1
* <i>Phalaris aquatica</i>	Phalaris		3
* <i>Phalaris arundinacea</i>	Reed canary-grass		3
<i>Phragmites australis</i>	Common reed		2
<i>Pimelia humilis</i>	Low riceflower		2
* <i>Pinus pinaster</i>	Maritime pine		1
* <i>Pinus radiata</i>	Radiata pine		1
* <i>Plantago lanceolata</i> var. <i>lanceolata</i>	Ribwort		1
<i>Platysace heterophylla</i> var. <i>heterophylla</i>	Slender platysace		1
<i>Poa labillardiera</i> var. <i>labillardiera</i>	Common tussock-grass		1
<i>Poa morrisii</i>	Soft tussock-grass	R/R	1
<i>Poa sieberiana</i> var. <i>hirtella</i>	Grey tussock-grass	Q/Q	1
<i>Poa tenera</i>	Slender tussock-grass	Q/U	1
<i>Pomaderris paniculosa</i> ssp. <i>paralia</i>	Coast pomaderris		1
<i>Pomaderris</i> aff. <i>racemosa</i>	Cluster pomaderris		3
<i>Poranthera microphylla</i>	Small poranthera		1
<i>Potamogeton</i> sp.	Pondweed		1
<i>Pratia pendunculata</i>	Matted pratia	U/U	1
<i>Pseudognaphthium luteo-album</i>	Jersey cudweed		1
<i>Pteridium esculentum</i>	Bracken		1
<i>Pterostylis longifolia</i>	Tall green-hood		2
<i>Pultenea hispidula</i>	Rusty bush-pea	U/U	1
<i>Pultenea stricta</i>	Erect bush-pea	U/U	1
<i>Ranunculus amphitrichus</i>	Small river-buttercup	U/U	1
<i>Ranunculus inundatus</i>	River-buttercup	R/R	1
<i>Ranunculus sessiliflorus</i> var. <i>sessiliflorus</i>	Annual buttercup		1

* <i>Romulea longifolia</i>	Onion Grass		2
* <i>Rubus discolor</i>	Blackberry		1
<i>Schoenus lepidosperma</i> ssp. <i>lepidosperma</i>	Slender bog-rush	R/R	2
<i>Schoenus maschalinus</i>	Leafy bog-rush	U/R	1
<i>Schoenus tesquorum</i>	Grassy bog-rush	R/R	3
<i>Selliera radicans</i>	Shiny swamp-mat		1
<i>Senecio glomeratus</i>	Swamp groundsel		1
<i>Senecio lautus</i>	Variable groundsel		1
<i>Senecio minimus</i> var. <i>minimus</i>	Fine-tooth groundsel	U/U	1
* <i>Senecio pterophorus</i> var. <i>pterophorus</i>	African daisy		1
<i>Senecio squarrosus</i>	Squarrose fireweed		1
<i>Senecio quadridentatus</i>	Cotton fireweed		1
<i>Solanum lacinatedum</i>	Cut-leaf kangaroo apple		1
* <i>Solanum nigrum</i>	Black nightshade		1
<i>Sonchus hydrophilus</i>	Native sow-thistle		1
* <i>Sonchus oleraceus</i>	Common sow-thistle		1
<i>Sphagnum molliculum</i>	Sphagnum moss		1
* <i>Sporobolus indicus</i> var. <i>capensis</i>	Rats-tail grass		3
<i>Stipa flavescens</i>	Coast spear-grass		1
<i>Stipa hemipogon</i>	Half-beard spear-grass		4
<i>Stipa mollis</i>	Soft spear-grass		1
<i>Stipa pubinodis</i>	Long-shaft spear-grass	U/R	1
<i>Stylidium graminifolium</i>	Grass trigger-plant		1
* <i>Taraxacum officinale</i>	Dandelion		4
<i>Themeda triandra</i>	Kangaroo grass		3
<i>Thysanotus patersonii</i>	Twining fringe-lily		1
<i>Triglochin procerum</i>	Water ribbons		1
<i>Typha domingensis</i>	Narrow-leaf bulrush		1
* <i>Ulex europaeus</i>	Gorse		1
* <i>Vellereophyton dealbatum</i>	White cudweed		3
<i>Villarsia reniformis</i>	Running marsh-flower		1
<i>Viminaria juncea</i>	Native broom	R/V	1
<i>Viola hederacea</i>	Ivy-leaved violet		1
<i>Viola sieberiana</i>	Tiny violet		1
* <i>Vulpia bromoides</i> .	Squirrel-tail fescue		4
<i>Wahlenbergia stricta</i> ssp. <i>stricta</i>	Tall bluebell		1
<i>Wurmbea dioica</i> ssp. <i>dioica</i>	Early star-lily		2
<i>Xanthorrhoea australis</i>	Austral grass-tree		1
<i>Xanthorrhoea caespitosa</i>	Sand-heath yacca		3
<i>Xanthosia dissecta</i> var. <i>floribunda</i>	Cut-leaved xanthosia		1

Interim conservation significance codes are shown where warranted as a state and region rating in the format SA/SE as indicated in the 2000 update of *Conservation Status Codes* report by Lang, P.J. and Kraehenbuehl, D.N. – Department for Environment and Heritage.

Code E = Endangered
V = Vulnerable
T = Threatened, i.e. Vulnerable or Endangered
K = Uncertain, but likely to be Rare or Threatened
R = Rare
Q = Not yet assessed but flagged as being of possible significance
U = Uncommon
N = Common

* = Introduced

1 = G. Ashman and P. Lang, Department for Environment and Heritage, 22.11.94.

2 = B. R. Grigg, ForestrySA, August 2001

3 = G. Carpenter, DEH, 5.3.96.

4 = ForestrySA Ecological Survey 1984/85.

More of the orchid species that have been recorded in the adjacent Honan Native Forest Reserve may be expected in this Reserve if surveyed in the appropriate growing season.

TABLE 2

**BIRD SPECIES RECORDED FOR
KANGAROO FLAT NATIVE FOREST RESERVE**

	<u>Scientific Name</u>	<u>Common Name</u>	<u>Conservation Status</u>
1	<i>Acanthiza lineata</i>	Striated Thornbill	
1	<i>Acanthiza pusilla</i>	Brown Thornbill	
1	<i>Acanthorhynchus tenuirostris</i>	Eastern Spinebill	
1	<i>Anas superciliosa</i>	Pacific Black Duck	
1	<i>Anthochaera carunculata</i>	Red Wattlebird	
1	<i>Anthus novaeseelandiae</i>	Richard's Pipit	
1	<i>Cacomantis flabelliformis</i>	Fan-tailed Cuckoo	
2	<i>Calyptorhynchus banksii</i>	Red-tailed Black-Cockatoo	E
	<i>graptogyne</i>		
1	<i>Calyptorhynchus funereus</i>	Yellow-tailed Black-Cockatoo	V
1	<i>Circus approximans</i>	Swamp Harrier	
1	<i>Colluricincla harmonica</i>	Grey Shrike-thrush	
1	<i>Corvus coronoides</i>	Australian Raven	
1	<i>Corvus tasmanicus</i>	Forest Raven	
1	<i>Cygnus atratus</i>	Black Swan	
2	<i>Dacelo novaeguineae</i>	Laughing Kookaburra	
1	<i>Eopsaltria australis</i>	Eastern Yellow Robin	
1	<i>Gymnorhina tibicen</i>	Australian Magpie	
1	<i>Hieraaetus morphnoides</i>	Little Eagle	
1	<i>Hirundo neoxena</i>	Welcome Swallow	
1	<i>Lichenostomus leucotis</i>	White-eared Honeyeater	
1	<i>Malurus cyaneus</i>	Superb Fairy-Wren	
1	<i>Megalurus gramineus</i>	Little Grassbird	
1	<i>Neochmia temporalis</i>	Red-browed Finch	
1	<i>Pachycephala pectoralis</i>	Golden Whistler	
1	<i>Pardalotus punctatus</i>	Spotted Pardalote	
1	<i>Petroica multicolor</i>	Scarlet Robin	
1	<i>Phylidonyris novaehollandiae</i>	New Holland Honeyeater	
1	<i>Platycercus elegans</i>	Crimson Rosella	

1	Rhipidura fuliginosa	Grey Fantail
1	Sericornis frontalis	White-browed Scrubwren
1	Strepera versicolour	Grey Currawong
1	Tadorna tadornoides	Australian Shelduck
1	Zosterops lateralis	Silvereye

Status of species in South Australia under the *National parks and Wildlife Act 1972 – Schedules 7, 8 and 9* are shown as :

E = Endangered In danger of extinction if the causal factors continue to operate.

V = Vulnerable Likely to move into the 'Endangered' category in the near future if the causal factors continue to operate.

Surveys by: 1. John Berggy 2001.
 2. Barrie Grigg 2001.

TABLE 3

**MAMMAL SPECIES RECORDED FOR
KANGAROO FLAT NATIVE FOREST RESERVE**

<u>Scientific Name</u>	<u>Common Name</u>	<u>Conservation Significance</u>
Isoodon obesulus	Southern Brown Bandicoot	E
Macropus giganteus	Eastern Grey Kangaroo	R
Macropus rufogriseus	Red-necked Wallaby	R
*Mus musculus	House Mouse	-
*Oryctolagus cuniculus	Rabbit	-
Rattus fuscipes	Bush Rat	
Rattus lutreolus	Swamp Rat	
Tachyglossus aculeatus	Short-beaked Echidna	
*Vulpes vulpes	Fox	-

* = Introduction

Status of species in South Australia under the National Parks and Wildlife Act 1972 – Schedules 7, 8 and 9 are shown as:

E = Endangered

R = Rare

TABLE 4**AMPHIBIAN AND REPTILE SPECIES RECORDED FOR
KANGAROO FLAT NATIVE FOREST RESERVE**

<u>Scientific Name</u>	<u>Common Name</u>	<u>Conservation Status</u>
Crinia signifera	Common Froglet	
Limnodynastes dumerili	Eastern Banjo Frog	
Limnodynastes peroni	Brown Striped Marsh Frog	
Limnodynastes tasmaniensis	Spotted Grass Frog	
Litoria ewingi	Brown Tree Frog	
Litoria raniformis	Southern Bell Frog	V
Chelodina longicollis	Common Long-necked Tortoise	
Pseudemoia entrecasteauxii	Southern Grass Skink	

7. APPENDICES

APPENDIX I

FORESTRYSA – Corporate & Community Forestry – Legislation and Policy

The management actions proposed in Section 5 of this plan are supported by Regulations under the Acts, and guidelines from the Policies in the following list.

Forestry Act 1950
 Mining Act 1971
 National Parks and Wildlife Act 1972
 Aboriginal Heritage Act 1988
 Country Fires Act 1989
 Native Vegetation Act 1991
 Petroleum Act 2000

ForestrySA Number	Policy Name	Policy
Corporate	Community Use	PCP0031
	Law enforcement	PCP0034
	Information Signs	PCP0035
	Prescribed burning of Native Forests	PCP0040
	Management of Aboriginal Cultural Heritage	PCP0046
Community Forestry	Day Visitors	PCF0002
	Camping	PCF0004
	Orienteering & Rogaining	PCF0006
	Pets in the Forest	PCF0007
	Horse riding in SE Forests	PCF0009
	Bicycling	PCF0010
	Public Vehicle Access	PCF0011
	Motor Sports	PCF0012
	Cave Exploration	PCF0014
	Military Exercises	PCF0015
	Public Events	PCF0016
	Native Forest management	Pending
	Seed collection	Pending

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