

STONY CREEK NATURE RESERVE

PLAN OF MANAGEMENT

NSW National Parks and Wildlife Service

Part of the Department of Environment and Conservation (NSW)

May 2006

This plan of management was adopted by the Minister for the Environment on 31st May 2006.

Acknowledgments

This plan of management is based on a draft plan prepared by staff of the South West Slopes Region of the National Parks and Wildlife Service (now part of the Department of Environment and Conservation NSW).

Cover photograph by David Leigh, NPWS.

The NPWS acknowledges that this nature reserve exists within Ngunnawal Country and the Ngunnawal Local Aboriginal Land Council boundary.

Inquiries about this draft plan of management should be directed to the NPWS Queanbeyan Area Office, 6 Rutledge Street Queanbeyan, NSW 2620 or by telephone on 6299 2929.

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FOREWORD

Stony Creek Nature Reserve is located in the southern tablelands of NSW, approximately five kilometres east of Queanbeyan. The reserve, comprising 80 hectares, was gazetted as part of the Southern Regional Forest Agreement in early 2001. It is located on the eastern fall of the Queanbeyan escarpment above Stony Creek, which feeds into the Molonglo River.

Stony Creek Nature Reserve contains a representative sample of grassy box woodland, which is listed as an endangered ecological community under the *Threatened Species Conservation Act, 1995*. The reserve has abundant bird life, including woodland species listed as vulnerable under the Threatened Species Conservation Act.

Management of Stony Creek Nature Reserve will focus on maintaining and enhancing the diversity of the grassy understorey and the integrity of the grassy woodland community.

The *National Parks and Wildlife Act, 1974* requires a plan of management to be prepared for each park and reserve. A plan of management is a legal document that outlines how a reserve will be managed in the years ahead.

A draft plan of management for Stony Creek Nature Reserve was placed on public exhibition from 25th February until 30th May 2005. The exhibition of the draft plan attracted 4 submissions that raised 2 issues. All submissions received were carefully considered before adopting this plan.

This plan of management establishes the scheme of operations for Stony Creek Nature Reserve. In accordance with Section 73B of the *National Parks and Wildlife Act 1974*, this plan of management is hereby adopted.

Bob Debus
Minister for the Environment

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1. MANAGEMENT CONTEXT

1.1 LEGISLATIVE AND POLICY FRAMEWORK

The management of nature reserves in NSW is in the context of a legislative and policy framework, primarily the *National Parks and Wildlife Act 1974* (NPW Act), the NPW Regulation, the *Threatened Species Conservation Act 1995* (TSC Act) and the policies of the National Parks and Wildlife Service (NPWS). Section 72AA of the NPW Act lists the matters to be considered in the preparation of a plan of management. The policies arise from the legislative background and internationally accepted principles of park management. They relate to nature conservation, Aboriginal and historic heritage conservation, recreation, commercial use, research and communication.

Other legislation, international agreements and charters may also apply to management of the area. In particular, the *Environmental Planning and Assessment Act 1979* (EPA Act) requires the assessment and mitigation of the environmental impacts of any works proposed in this plan.

A plan of management is a statutory document under the NPW Act. Once the Minister has adopted a plan, no operations may be undertaken within except in accordance with the plan. The plan will also apply to any future additions to Stony Creek Nature Reserve. Where management strategies or works are proposed for Stony Creek Nature Reserve or any additions that are not consistent with the plan, an amendment to the plan will be required.

1.2 MANAGEMENT PURPOSES AND PRINCIPLES

Nature reserves are reserved under the NPW Act to protect and conserve areas containing outstanding, unique or representative ecosystems, species, communities or natural phenomena.

Under the Act, nature reserves are managed to:

- conserve biodiversity, maintain ecosystem functions, and protect geological and geomorphological features and natural phenomena;
- conserve places, objects, features and landscapes of cultural value;
- promote public appreciation, enjoyment and understanding of the reserve's natural and cultural values; and
- provide for appropriate research and monitoring.

Nature reserves differ from national parks in that they do not have as a management principle to provide for visitor use.

1.3 REGIONAL FOREST AGREEMENTS

Regional Forest Agreements (RFAs) are one of the principle means of implementing the National Forest Policy Statement of 1992. Under this Statement Commonwealth, State and Territory governments agree to work towards a shared vision for Australia's forests. This aims to maintain native forest estate, manage it in an ecologically sustainable manner and develop sustainable forest-based industries.

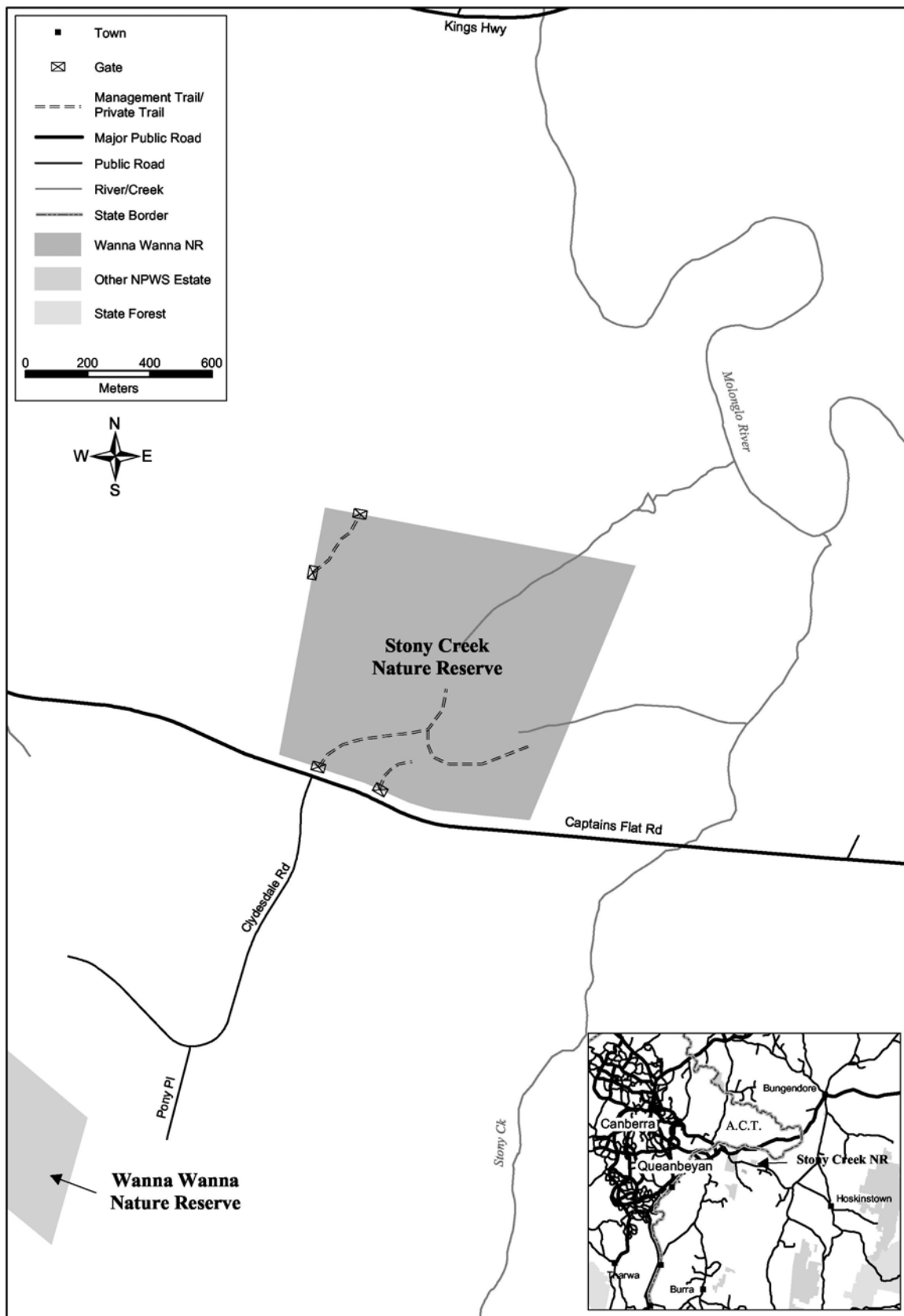
The Statement provided for joint comprehensive assessments of the natural, cultural, economic and social values of forests. These assessments formed the basis for negotiation of Regional Forest Agreements that provide, amongst other things, for Ecologically Sustainable Forest Management.

The Southern Region Regional Forest Agreement of 2000 covers the planning area. The process leading up to the RFA provided for major additions to the reserve system, including the establishment of Stony Creek Nature Reserve.

1.4 MANAGEMENT DIRECTIONS

Management of Stony Creek Nature Reserve will focus on maintaining and enhancing the diversity of the grassy understorey and the integrity of the grassy woodland community.

RESERVE MAP



2. STONY CREEK NATURE RESERVE

2.1 LOCATION, GAZETTAL AND REGIONAL SETTING

Stony Creek Nature Reserve is located in the southern tablelands of NSW, approximately five kilometres east of Queanbeyan. Cuumbeun Nature Reserve and Wanna Wanna Nature Reserve are also located nearby on the range east of Queanbeyan.

The reserve, comprising 80 hectares, was gazetted as part of the Southern Regional Forest Agreement in early 2001, and contains a representative sample of grassy box woodland. The reserve was named for its proximity to Stony Creek and its location on the hill historically known as Stony Creek Hill.

The reserve is located within a largely rural-residential area, administered by Queanbeyan City Council. The Ngunnawal Local Aboriginal Land Council area includes the reserve.

2.2 LANDSCAPE

Natural and cultural heritage and on-going use are strongly inter-related and together form the landscape of an area. Much of the Australian environment has been influenced by past Aboriginal and non-Aboriginal land use practices, and the activities of modern day Australians continue to influence bushland through recreational use, cultural practices, the presence of introduced plants and animals and in some cases air and water pollution.

The geology, landform, climate and plant and animal communities of the area, plus its location, have determined how it has been used by humans. The broader landscape would have been utilised by Aboriginal people for its food resources such as possums and kangaroos, as well as the abundant murnong (yam daisies) found in this vegetation. The location of the reserve, close to Stony Creek and the Molonglo River, and its grassy understorey, contributed to the gazettal of this and adjoining land as a Water and Camping Reserve in 1878. This reservation protected the reserve's woodland vegetation, although some logging for firewood was undertaken.

Both Aboriginal and non-Aboriginal people place cultural values on natural areas, including aesthetic, social, spiritual, recreational and other values. Cultural values may be attached to the landscape as a whole or to individual components, for example to plant and animal species used by Aboriginal people. This plan of management aims to conserve both natural and cultural values. For reasons of clarity and document usefulness natural and cultural heritage, non-human threats and on-going use are dealt with individually, but their inter-relationships are recognised.

2.3 NATURAL HERITAGE

2.3.1 Landform, Geology and Soils

The reserve is located on the eastern fall of the Queanbeyan escarpment above Stony Creek, which feeds into the Molonglo River. Soils on the ridge top are orange brown podzols on shale, while the valley floors and slopes within the reserve consist of deeper gradational clay loams. The reserve ranges in altitude from 730 to 800 metres.

2.3.2 Native Plants

The vegetation consists predominantly of grassy woodland, with canopy species including apple box *Eucalyptus bridgesiana*, yellow box *E. melliodora*, candlebark *E. rubida* and red stringybark *E. macrorhyncha*. The understorey consists of grasses such as snow grass *Poa sieberiana* and kangaroo grass *Themeda australis*, interspersed with herbs and scattered shrubs. Tall shrubs include silver wattle *Acacia dealbata* and *Pomaderris eriocephala* and low shrubs include urn heath *Melichrus urceolaris*, broom bitter-pea *Daviesia genistifolia* and creeping bossiaea *Bossiaea prostrata*. Herbs occurring in the reserve and adjoining roadside include a plantain *Plantago hispida* and common woodruff *Asperula conferta*. Regionally declining forbs include hoary sunray *Leucochrysum albicans* subsp. *albicans* var. *tricolor*, tufted burr-daisy *Calotis scapigera*, blue devil *Eryngium rostratum*, bulbine lily *Bulbine bulbosa*, fringe lily *Thysanotus tuberosus* and murnong *Microseris lanceolata*.

This community is part of the broader white box - yellow box - Blakely's red gum woodland, listed as an endangered ecological community under the *Threatened Species Conservation Act, 1995*. Hoary sunray *Leucochrysum albicans* subsp. *albicans* var. *tricolor* is listed as threatened under the Commonwealth's *Environment Protection and Biodiversity Conservation Act, 1999*.

A small area of ridge in the north-west corner of the reserve supports dry sclerophyll forest of scribbly gum *E. rossii*, long-leaved bundy *E. nortonii*, brittle gum *E. mannifera* and red box *E. polyanthemos*. The understorey consists of red-anther wallaby grass *Joycea pallida* with the inter-tussock spaces utilised by numerous forbs. A sparse shrub layer includes austral indigo *Indigofera australis*, five corners *Styphelia triflora*, and a bush-pea *Pultenaea procumbens*.

The reserve contains a mixture of over-mature and mature trees mixed with younger, multi-aged regrowth timber. Compared with management of forested areas, management of the grassy woodland may have a higher emphasis on control of understorey biomass and control of weeds and exotic pasture plants to maintain understorey integrity.

2.3.3 Native Animals

Native mammals recorded in the reserve include the eastern grey kangaroo *Macropus giganteus*, sugar glider *Petaurus breviceps*, ringtail possum *Pseudocheirus peregrinus*, brushtail possum *Trichosurus vulpecula* and four species of bat.

The reserve has abundant birdlife, including declining woodland species such as the hooded robin *Melanodryas cucullata*, diamond firetail *Stagonopleura guttata* and speckled warbler *Sericornis sagittatus*, which are listed as vulnerable under the

Threatened Species Conservation Act, 1995. Reptiles recorded include grass skink *Lamphropholis delicata*, Boulenger's skink *Morethia boulengeri* and Jacky dragon *Amphibolurus muricatus*.

2.4 CULTURAL HERITAGE

2.4.1 Aboriginal Heritage

The reserve is located in an area thought to be on the fringe of lands occupied by the Ngunawal, Ngarigo and Wolgal people (Tindale, 1974). Today the reserve lies within the area of the Ngunnawal Local Aboriginal Land Council.

An archaeological survey conducted by Dearling in 2002 found one scarred tree, a quartz manuport and a quartz artefact.

From surveys in this and nearby reserves, Dearling identified the following criteria for predicting the distribution of Aboriginal sites in the local landscape:

- open campsites will be located near streams, especially on elevated level ground and low gradient basal slopes;
- large open campsites will occur more frequently within 100-150m of major drainage lines, with a preference for areas at the confluence of major streams;
- open artefact scatters that occur away from creeks will tend to be small and sparse;
- scarred trees may occur wherever old growth trees of sufficient age are present.

2.4.2 Non-Aboriginal Heritage

The reserve was gazetted as a Water and Camping Reserve in 1878. From 1938 to its gazettal as nature reserve, the land was held by an adjoining landowner, firstly as a special lease, and more recently under an annual grazing licence or permissive occupancy. Some ongoing removal of timber has occurred, probably for fence posts and firewood. No relics from previous occupation have been recorded.

2.5 REFERENCES

- Dearling, C. and Grinbergs, A. (2002). *Preliminary Aboriginal Cultural Heritage Study – Selected National Parks and Nature Reserves, South West Slopes Region, NSW*. Unpublished report to the NSW NPWS.
- Gellie, N. (2002). *Mapping of Vegetation Ecosystems of New and Existing Conservation Reserves, South West Slopes Region*. Unpublished report to the NSW NPWS.
- Smith, L.M. (2003). *Preliminary (Desktop) European Cultural Heritage Study of Identified NPWS Parks and Reserves, NSW South West Slopes Region*. Unpublished report to the NSW NPWS.
- Tindale, N.B. (1974). *Aboriginal tribes of Australia*. ANU Press, Canberra.

3. MANAGEMENT ISSUES AND STRATEGIES

Current Situation	Desired Outcomes	Strategies	Priority
<p>Native plant and animal conservation</p> <p>Extensive vegetation survey and mapping has been undertaken in the reserve. Most of the reserve consists of high diversity box woodland. However, understorey diversity (compared with that of the adjoining roadside) has been reduced by past grazing activities, and sections of the reserve are recovering from past thinning.</p> <p>The threatened plant hoary sunray <i>Leucochrysum albicans</i> subsp. <i>albicans</i> var. <i>tricolor</i> occurs in areas with sparse groundcover.</p> <p>Hooded robin, diamond firetail and speckled warbler have been recorded in the locality. These birds are threatened due to habitat fragmentation, and even within the reserve may be vulnerable due to its small size, and past modification of ground habitat. Speckled warblers are particularly vulnerable to predation by cats and foxes.</p>	<p>All native plant and animal species and communities are conserved.</p> <p>Structural diversity and habitat values are restored in areas subject to timber removal and grazing.</p> <p>Understorey diversity increases</p> <p>Habitat quality for threatened species is maintained.</p>	<p>Continue to control existing weed species and monitor for invasion by other species.</p> <p>Monitor the abundance and distribution of regionally declining understorey species.</p> <p>Monitor the abundance and distribution of hoary sunray.</p> <p>Control access to the reserve to prevent firewood collection.</p> <p>Work with neighbours and catchment management authorities to encourage conservation of remnant native vegetation in the vicinity of the reserve.</p> <p>Undertake cooperative cat and fox control programmes to reduce predation of the ground nesting speckled warbler, as necessary.</p> <p>Liaise with the local community and councils regarding protection of habitat for threatened bird species and guidelines for management of domestic pets to protect these species.</p>	<p>Medium</p> <p>Low</p> <p>Low</p> <p>High</p> <p>Medium</p> <p>Medium</p> <p>Medium</p>

Current Situation	Desired Outcomes	Strategies	Priority
<p>Soil and water conservation</p> <p>Soils in the reserve are dispersible, and tend to erode when ground cover is disturbed.</p> <p>Drainage lines in the reserve feed into Stony Creek and then the Molonglo River. One of these has had soil conservation works undertaken in the past.</p>	<p>Soil erosion is minimised.</p>	<p>Undertake all works in a manner that minimises erosion and water pollution.</p> <p>Monitor old erosion scarring on the drainage line and closed tracks. Take remedial action if necessary.</p>	<p>High</p> <p>Low</p>
<p>Introduced species</p> <p>Weeds present in the reserve include St Johns wort, serrated tussock, blackberry and sweet briar. Other weeds of concern, recorded in adjoining lands, include Chilean needle grass, African love grass, phalaris and cocksfoot. While these plants are not regarded as noxious weeds, they have a high potential to invade grassy ecosystems and reduce abundance of native grass and herb species.</p> <p>Weed control programmes have been implemented for the past two years since the reserve was gazetted.</p> <p>Pest animals include rabbits, cats and foxes, as well as domestic pets.</p>	<p>The impact of introduced species on native species and neighbouring lands is minimised.</p>	<p>Control introduced plant and animal species. Priority will be given to the control of St John's wort and serrated tussock.</p> <p>Monitor noxious and significant environmental weeds such as Chilean needle grass and African love grass. Treat any outbreaks.</p> <p>Seek the cooperation of other authorities and neighbours in implementing weed and pest animal control programs.</p> <p>Participate in cooperative fox control programmes outside the reserve where these meet the objectives of the broader community and are demonstrated to have low impacts on native fauna.</p>	<p>Medium</p> <p>High</p> <p>Medium</p> <p>Medium</p>

Current Situation	Desired Outcomes	Strategies	Priority
<p>Fire management</p> <p>The reserve does not appear to have burnt for at least 50 years. A few dwellings occur within a kilometre of the reserve boundary.</p> <p>Fire is a natural occurrence in the Australian environment. However, inappropriate fire frequencies can cause the loss of particular plant and animal species and communities.</p>	<p>Persons and property are protected from bushfire.</p> <p>Fire regimes are appropriate for conservation of plant and animal communities.</p> <p>Cultural features are protected from damage by fire.</p>	<p>Continue to participate in the Lake George Zone Bushfire Management Committee. Maintain coordination and cooperation with Rural Fire Service fire control officers, brigades and neighbours with regard to fuel management and fire suppression.</p> <p>Prepare a map-based fire management strategy and fire operations map for the reserve by the end of 2006.</p> <p>Fire management guidelines for maintaining biodiversity and cultural values within the reserve will include:</p> <ul style="list-style-type: none"> • Contain fires to as small an area as possible, to preserve a diversity of fire age classes in the reserve • If fires cannot be contained, attempt to reduce the intensity of fires using various techniques • Maintain as much of the reserve as possible in as old a fire age class as possible • Protect the recorded scarred tree from fire if practicable. • Monitor impacts of fire regimes and modify if significant loss of understorey diversity is observed. 	<p>Medium</p> <p>Medium</p> <p>High</p>

Current Situation	Desired Outcomes	Strategies	Priority
<p>Cultural heritage</p> <p>A preliminary study of the cultural resources of the reserve was undertaken in early 2002. The study identified that no additional broad-scale survey for Aboriginal sites was required for management purposes, but flagged the necessity for ongoing site-specific survey for any works conducted within the reserve.</p> <p>This study identified the major threats to Aboriginal archaeological material as:</p> <ul style="list-style-type: none"> activities that impact on trails (including maintenance, vehicle movement, trail bike and 4WD use); and erosion (particularly at creek crossings). 	<p>Cultural features are conserved and managed in accordance with their significance.</p>	<p>Precede all ground disturbance work by a check for cultural features.</p> <p>Any works undertaken will incorporate appropriate conservation measures to mitigate impacts on cultural heritage.</p> <p>Consult and involve the Ngunnawal Local Aboriginal Land Council and other Aboriginal stakeholders in all aspects of management of Aboriginal sites, places and values, including the interpretation of Aboriginal sites and values.</p> <p>Continue to build on existing relationships with the local Aboriginal community to enhance exchange of information about park values.</p>	<p>Medium</p> <p>Medium</p> <p>Medium</p> <p>Medium</p>
<p>Visitor use</p> <p>The reserve has had little previous public use, except for some firewood collection.</p> <p>The reserve provides an important resource for the people of Canberra-Queanbeyan and adjoining rural residential areas to enjoy, appreciate and understand the natural environment, and in particular the values of grassy woodland.</p>	<p>The local community is aware of the significance of the area and of management programs.</p> <p>Visitor use is ecologically sustainable.</p>	<p>Provide information on the values of the grassy box woodland within the reserve.</p> <p>Permit day walks, informal picnics (no facilities will be provided and no fires permitted) and educational visits, subject to limits on numbers and other conditions if necessary to minimise impacts.</p> <p>Exclude vehicular access except for essential management requirements of the reserve.</p> <p>Prohibit camping, trail bike riding and horse riding.</p> <p>Monitor levels and impacts of use.</p>	<p>Medium</p> <p>Medium</p> <p>High</p> <p>High</p> <p>Medium</p>

Current Situation	Desired Outcomes	Strategies	Priority
Research Recent research into the flora and fauna and Aboriginal and European heritage of the reserve provides a firm basis for informed management.	Research enhances the management information base and has minimal environmental impact.	Encourage research into the effects of fire on grassy box woodland and the appropriate regime to maintain the abundance and diversity of understorey species. Monitor the abundance and diversity of significant understorey species.	High Low
Management operations The reserve is accessed by two unformed management tracks. These will be retained in their current state. Since gazettal, the section of boundary fence between the reserve and adjoining crown land has been erected, and repairs undertaken along the Captains Flat Road frontage. Other sections of fence are in poor condition.	Management facilities adequately serve management needs and have acceptable impact.	Where practicable, management activities will be undertaken on foot or by ATV, to reduce impacts on understorey vegetation. Fencing will be upgraded progressively as funds permit, using fencing agreements where boundary fences are shared with reserve neighbours	Medium Medium

High priority activities are those imperative to achievement of the objectives and desired outcomes. They must be undertaken in the near future to avoid significant deterioration in natural, cultural or management resources.

Medium priority activities are those that are necessary to achieve the objectives and desired outcomes but are not urgent.

Low priority activities are desirable to achieve management objectives and desired outcomes but can wait until resources become available.

