

BURRA CREEK NATURE RESERVE

PLAN OF MANAGEMENT

NSW National Parks and Wildlife Service

Part of the Department of Environment and Climate Change

March 2009

This plan of management was adopted by the Minister for Climate Change and the Environment on 28th March 2009.

Acknowledgments

This plan of management is based on a draft plan prepared by staff of South West Slopes Region of the National Parks and Wildlife Service (NPWS).

Valuable information and comments were provided by NPWS specialists, other government agencies and members of the public. The NPWS would like to thank all those who submitted information and comments regarding the reserve. All comments and concerns were considered in the preparation of this draft plan of management.

Cover photograph by Maggie Sutcliffe, NPWS.

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

Inquiries about this reserve or this plan of management should be directed to the Ranger at the NPWS Queanbeyan Area Office, 11 Farrer Place (PO Box 733), Queanbeyan or by telephone on 6229 7000.

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FOREWORD

Burra Creek Nature Reserve is located 25 kilometres south of Queanbeyan in the locality of Burra. The reserve, which was established in 2001, is 270 hectares in size and consists of two separate areas.

Burra Creek Nature Reserve comprises a small part of a timbered ridge. Dry shrub and tussock grass forests dominate the vegetation communities found in the reserve. These communities are a remnant of the forest communities previously found in the Burra and Urila areas, where significant areas of land have been cleared for agricultural development.

Burra Creek Nature Reserve is connected to Googong Foreshores (managed by the ACT Government) and Cuumbeun Nature Reserve, thus forming part of a larger conservation area. The reserve forms part of the Queanbeyan River catchment upstream of Googong Dam, which supplies domestic water to Canberra and Queanbeyan.

The New South Wales *National Parks and Wildlife Act 1974* requires that a plan of management be prepared for each nature reserve. A plan of management is a legal document that outlines how an area will be managed in the years ahead.

A draft plan of management for Burra Creek Nature Reserve was placed on public exhibition from 28th April until 31st July 2006. The submissions received were carefully considered before adopting this plan.

This plan contains a number of actions to achieve “Better environmental outcomes for native vegetation, biodiversity, land, rivers, and coastal waterways” (Priority E4 in the State Plan) including surveys for threatened species, control of weeds and pest animals, and establishment and maintenance of boundary fences to restrict stock incursions. It also contributes towards “A secure and sustainable water supply for all users” (Priority E1) through protection of part of the catchment of Googong Dam which supplies domestic water to Canberra and Queanbeyan.

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



Carmel Tebbutt MP
Deputy Premier
Minister for Climate Change and 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 Burra Creek Nature Reserve except in accordance with the plan. The plan will also apply to any future additions to Burra Creek Nature Reserve. Where management strategies or works are proposed for the 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

1.2.1 Nature Reserves

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.

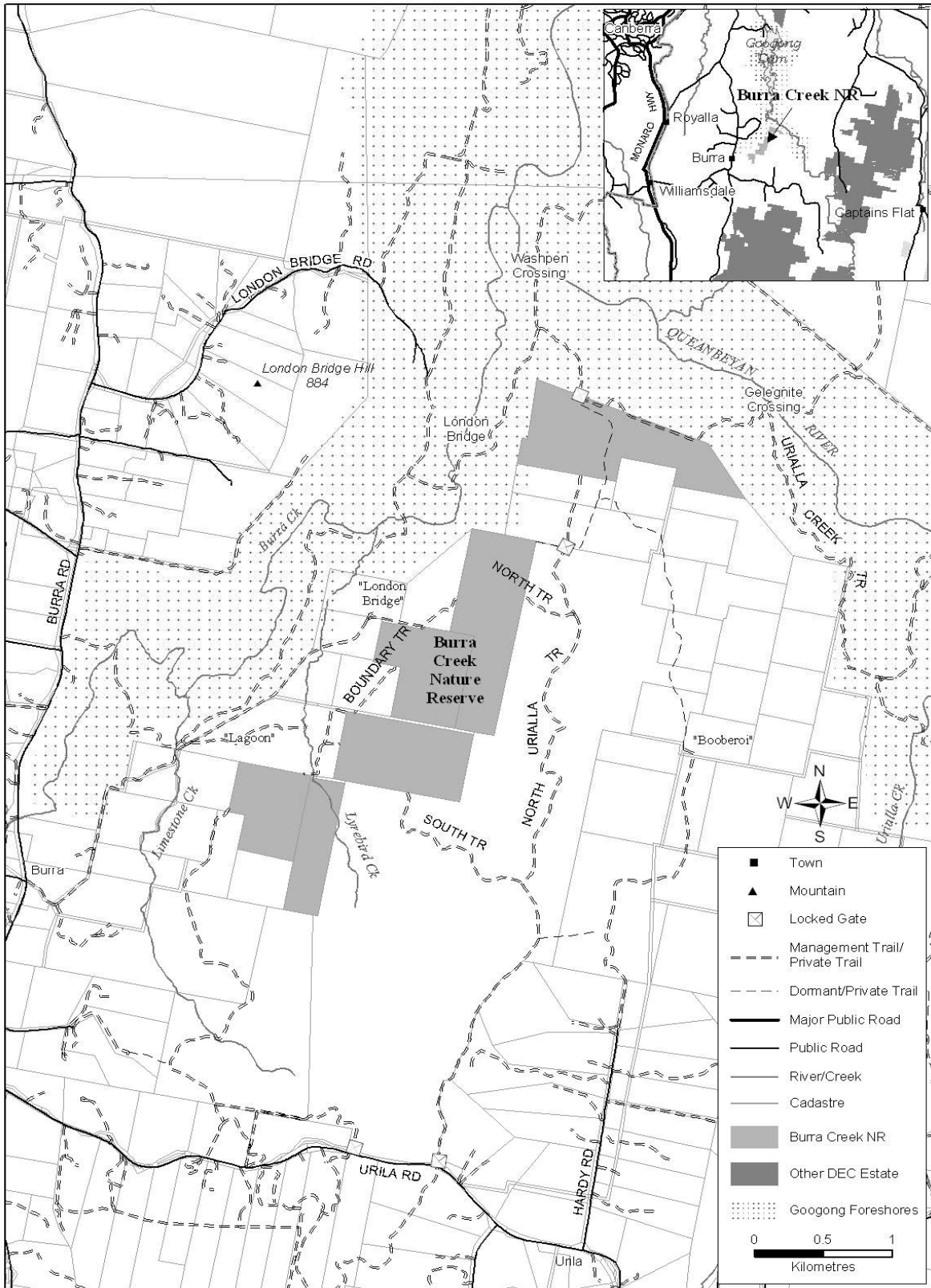
Nature reserves differ from national parks in that they do not have as a management principle to provide for visitor use.

1.2.2 Regional Forest Agreements

Regional Forest Agreements (RFA) 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 RFA covers the planning area. The process leading up to the RFA provided for major additions to the reserve system, including the establishment of Burra Creek Nature Reserve.

BURRA CREEK NATURE RESERVE MAP



2. BURRA CREEK NATURE RESERVE

2.1 LOCATION, GAZETTAL AND REGIONAL SETTING

Burra Creek Nature Reserve is located 25 kilometres south of Queanbeyan in the locality of Burra. The reserve is 270 hectares in size and separated into two main parts. The southern portion is also divided into three by two undeveloped road reserves that are not managed by NPWS. It faces the Burra Creek valley, from which it gets its name. The reserve was transferred to the NPWS on 1 January 2001 as a result of the Southern Regional Forest Agreement (2000). Prior to gazettal, the reserve was Crown land administered by the then Department of Land and Water Conservation.

The reserve comprises a small part of a timbered ridge. It maintains some connectivity with Googong Foreshores (managed by the ACT Government) and Cuumbeun Nature Reserve. The NPWS has an established cross-border working relationship with Googong Foreshores on shared management issues. Other reserves within the vicinity include Tinderry Nature Reserve and Yanununbeyan State Conservation Area and National Park. Agriculture and rural residential lifestyles dominate land uses in the surrounding area.

The reserve is within the geographical area of the Palerang Shire Council, the Upper Murrumbidgee Catchment Management Authority, Braidwood Rural Lands Protection Board and the Mogo Local Aboriginal Land Council (LALC).

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.

Burra Creek Nature Reserve comprises a small part of a moderately steep and timbered ridge. The landscape in the region is undulating to mountainous, with timber coverage giving way to extensively cleared grazing lands and rural residential properties. Burra Creek is located about one kilometre west of the reserve. The creek in this area is meandering; forming deep holes in places and meets the Queanbeyan River about one kilometre north of the reserve.

The geology, landform, climate and plant and animal communities of the area, plus its location, have determined how humans have used it. The reserve represents only a small part of what was a much larger landscape utilised by traditional Aboriginal society for uses such as hunting and gathering. Historically it constituted a part of a timbered 'back ridge' to pastoral and farming enterprises.

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 AND CULTURAL HERITAGE

2.3.1 Landform, Geology and Soils

Burra Creek Nature Reserve is comprised of moderately steep slopes and ridges. A number of non-perennial creeks flow westward through the reserve forming deep gullies in places.

The reserve's geology is dominated by Ordovician metasediments of the Foxlow Beds, including greywacke, shale, slates and minor chert. Minor deviations include small areas of granite, exposed in some creek beds.

Dominant topsoil materials are made up of brown gravelly loams, with over 50 per cent rock fragments of various sizes, and dark brown massive loams and silty loams. Soil characteristics in the reserve can be described as stony, shallow, highly erodible, strongly acidic and with a low fertility (Jenkins, 1993).

2.3.2 Native Plants

Dry shrub and tussock grass forests dominate the vegetation communities found in Burra Creek Nature Reserve. The reserve is a remnant of forest communities found in the Burra and Urila areas, where significant areas of land have been cleared for agricultural development.

The forests typically comprise varying alliances of Broad-leaved Peppermint *Eucalyptus dives*, Scribbly Gum *E. rossii* and Brittle Gum *E. mannifera*. The lower slopes (bordering alluvial flats) and creek gullies also contain Apple Box *E. bridgesiana* and Black Wattle *Acacia mearnsii*. The forest floor is open and comprises sparsely distributed small trees and shrubs such as Red-stemmed Wattle *A. rubida*, Kangaroo Thorn *A. paradoxa* and Narrow-leaf Bitter-pea *Daviesia mimosoides*. The tussock grass Red-anther Wallaby Grass *Joycea pallida* dominates the ground layer, interspersed with small plants such as Purple Flax-lily *Dianella revoluta* and Long-leaved Lomandra *Lomandra longifolia*.

Past land uses have affected vegetation in the reserve in a relatively insignificant way. The main uses were limited to sheep and cattle grazing, as well as timber cutting for firewood and fencing.

2.3.3 Native Animals

There has been no formal survey in the reserve. However, a variety of native animals are likely to occur in the reserve based on opportunistic sightings and a survey carried out on the neighbouring Googong Foreshores (Barrer, 2002). Common species include the Eastern Grey Kangaroo *Macropus giganteus*, Swamp Wallaby *Wallabia bicolor*, Sugar Glider *Petaurus breviceps*, Brushtail Possum *Trichosurus vulpecula*, Short-beaked Echidna *Tachyglossus aculeatus* and Common Wombat *Vombatus ursinus*. Around 120 landbirds have been recorded in Googong Foreshores (ACTPCS, 2003).

Rosenberg's Monitor *Varanus rosenbergi*, which is listed as vulnerable under the *Threatened Species Conservation Act 1995* (TSC Act), may potentially occur in the reserve. This reptile has been recorded in Googong Foreshores and an unconfirmed record exists for the reserve. Termite mounds found throughout the forest floor of the reserve are a critical component for the habitat of the Rosenberg's Monitor as the monitor lays its eggs in termite mounds. Birds listed as vulnerable under the TSC Act that have been recorded in close proximity to the reserve include the Brown Treecreeper *Climacteris picumnus*, Hooded Robin *Melanodryas cucullata*, Speckled Warbler *Pyrrholaemus saggitata* and Diamond Firetail *Stagonopleura guttata*.

The threats to these animals in the reserve include predation by introduced animals, gross changes in forest structure from impacts such as high intensity or too frequent fire, and fragmentation of habitat outside of the reserve.

Due to the small size of the reserve, the protection of native animals in the area is reliant on the adequate protection of habitat over a much larger scale. The reserve's habitat value is best appreciated when viewed as a component of a greater range of habitats surrounding the reserve, including forest, woodland, grassland and riparian environments.

2.4 Aboriginal Heritage

Burra Creek Nature Reserve is located in an area that was historically occupied by the Ngarigo people. Neighbouring people included the Walgalu, Ngunawal and Walbanga (Tindale, 1974). The reserve today is in Ngunnawal Country.

Traditional use, such as hunting, gathering and ceremony would have taken place over the entire landscape, of which the reserve is only a small part. Aboriginal communities have an association and connection to the land. The land and water values within the reserve landscape are a part of Aboriginal spirituality and contribute to Aboriginal identity.

There are no recorded Aboriginal sites in the reserve although no formal surveys have been undertaken.

While the NPWS presently has legal responsibility for the protection of Aboriginal sites and places, it acknowledges the right of Aboriginal people to make decisions about their own heritage. It is therefore policy that Aboriginal communities be

consulted and involved in the management of Aboriginal sites, places and related issues and the promotion and presentation of Aboriginal culture and history. The reserve is within Ngunnawal Country and the area of the Mogo LALC. The Buru Ngunawal Aboriginal Corporation is a recognised elders group in the area. The Mogo LALC holds an area of freehold land adjacent to the south and east of the reserve.

2.5 Non-Aboriginal Heritage

The first known Europeans to visit the Burra area was an exploration party led by Captain Currie in 1823. Settlement of explored areas was quick to follow, with squatters entrenched in the area by 1830 (Dearling, 2003).

In 1857 John McNamara purchased land along Burra Creek near London Bridge. Only a short distance from the reserve is the old London Bridge Homestead (situated in Googong Foreshores) which he began to build in 1860. The earliest buildings of this property date to 1860 making it one of the earliest settlements in the Burra Creek valley.

The reserve area was Crown land from 1904 to its gazettal as a nature reserve in 2001.

Past land use of the area was largely for grazing purposes. The vegetative cover of the reserve allowed only marginal use for grazing and therefore the reserve remains largely unmodified.

There are no items of European heritage significance identified in the reserve; however, old survey markers (trees, metal posts or rockspits) might still exist on the reserve's boundary.

2.6 PUBLIC USE

The primary purposes of nature reserves are conservation of wildlife and natural environments and to provide opportunities for education and scientific research into these resources.

There is no legal public access to the southern part of Burra Creek Nature Reserve. Any public access is via private freehold land with permission required from the landholders (which can be refused). The Department of Lands has approved the area of Crown land to the south and east for conversion to freehold.

Public access to the northern part of the reserve is possible via Googong Foreshores. Access in this area of Googong Foreshores is limited to walking and cycling.

For the above reasons, and because recreation facilities are provided on the adjoining Googong Foreshores, recreational facilities in the reserve will not be provided and the reserve will not be promoted for recreational use. Notwithstanding, it is recognised that the reserve can provide a resource for people

to enjoy, appreciate and understand the natural environment. Appropriate recreation activities, consistent with the purposes of gazettal and management objectives, include day-use bushwalking, nature study and educational and research activity.

2.7 THREATS TO RESERVE VALUES

2.7.1 Soil Erosion

Soils in Burra Creek Nature Reserve are highly erodible. Much of the reserve's terrain is steep and likely to erode if disturbed. Care must be taken to avoid activities likely to lead to erosion. This is particularly important considering the reserve's proximity to Googong Foreshores, which provides domestic water for Queanbeyan and Canberra.

2.7.2 Introduced Plants and Pest Animals

An introduced species is defined in this plan as any plant or animal species not native to Australia. Introduced species within Burra Creek Nature Reserve and on adjoining land are of concern because they have the potential to have detrimental effects on ecological values and can spread to and from neighbouring land. In addition, the *Noxious Weeds Act 1993* places an obligation upon public authorities to control noxious weeds on land that they occupy to the extent necessary to prevent such weeds spreading to adjoining lands.

The NPWS aims to manage populations of introduced plants and animals to minimise adverse impacts by employing best practice methods. There is a clear recognition that the total eradication of introduced species is generally not feasible. Pest management will be undertaken in accordance with strategies and recommendations outlined in the NPWS South West Slopes Region Pest Management Strategy (2003) and relevant Threat Abatement Plans.

The most serious weed in the reserve is Blackberry *Rubus fruticosus*, which occurs in small infestations on lower gullies.

There is the possibility of the spread of other serious weeds from surrounding lands into the reserve (which are not yet identified in the reserve), including St Johns Wort *Hypericum perforatum*, Viper's Bugloss *Echium vulgare*, Serrated Tussock *Nassella trichotoma* and African Lovegrass *Eragrostis curvula*.

The fox *Vulpes vulpes* is a pest animal of a serious nature identified in the reserve. The pig *Sus scrofa*, rabbit *Oryctolagus cuniculus*, wild dog *Canis sp.*, feral cat *Felis cattus*, feral goat *Capra hirtus*, feral deer *Dama dama/cervus* and straying stock are other pest animals of a less serious nature possibly occurring in the reserve.

2.7.3 Fire

The management of fire in Burra Creek Nature Reserve aims to achieve both long-term conservation of natural communities and ongoing protection of life and property within and adjacent to the reserve.

Fire is a natural feature of many environments and is essential to the survival of some plant communities. Inappropriate fire regimes, however, can lead to loss of particular plant and animal species and communities. High frequency fire is listed as a key threatening process under the TSC Act and will be avoided in the reserve.

A Fire Operations Map will be prepared separately to this plan which will detail key fire advantages and operational guidelines for use in emergency fire fighting situations.

2.8 REFERENCES

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- NSW NPWS. 2003. *South West Slopes Region Pest Management Strategy*.
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4. MANAGEMENT ISSUES AND STRATEGIES

Current Situation	Desired Outcomes	Strategies	Priority
<p>Soil and water conservation</p> <p>Soils in the reserve are highly erodible when disturbed.</p> <p>The reserve forms part of the Queanbeyan River catchment upstream of Googong Dam, which supplies domestic water to Canberra and Queanbeyan.</p>	<p>Soil erosion is minimised.</p> <p>Water quality and health of reserve streams is maintained.</p>	<p>No new trails or tracks will be constructed in the reserve.</p> <p>Any development of new boundary breaks will leave ground layer grasses and shrubs in situ.</p> <p>Any earthworks carried out during a bushfire will be rehabilitated as soon as possible after the event.</p>	<p>High</p> <p>Medium</p> <p>Medium</p>
<p>Native plant and animal conservation</p> <p>No formal fauna surveys have been undertaken in the reserve.</p> <p>The reserve provides suitable habitat for a number of threatened species. Threats to these species include fragmented habitat, gross changes in forest structure as a result of frequent and high intensity fire, and predation by introduced animals.</p> <p>The protection of native animals in the area is reliant on the adequate protection of habitat over a much larger scale.</p>	<p>All native plant and animal species and communities are conserved.</p> <p>Structural diversity and habitat values are maintained and restored.</p>	<p>A survey targeting threatened species will be undertaken.</p> <p>Any applicable measures included in recovery plans for threatened species will be implemented.</p> <p>Regular liaison will be undertaken with Googong Foreshores to share knowledge and conservation methods.</p> <p>Work with neighbours and vegetation management committees to encourage conservation of remnant native vegetation in the vicinity of the reserve.</p>	<p>Low</p> <p>Medium</p> <p>Low</p> <p>Low</p>

Current Situation	Desired Outcomes	Strategies	Priority
<p>Introduced species</p> <p>The most serious weed in the reserve is Blackberry. There is the possibility of the spread of other serious weeds from surrounding lands into the reserve (which are not yet identified in the reserve).</p> <p>The fox is a pest animal of a serious nature identified in the reserve. The pig, rabbit, wild dog, cat, goat, deer and straying stock are other pest animals of a less serious nature possibly occurring in the reserve.</p> <p>Pest animals have a negative impact on habitat and native animals. Due to the small size of the reserve, any control programs would be futile unless carried out over a larger area with the co-operation of all neighbouring landholders.</p> <p>At least half of the boundary of the reserve is not fenced – approximately 6km.</p>	<p>The impact of introduced species on native species and neighbouring lands is minimised.</p>	<p>Develop and implement control programs for weed infestations as per the Regional Pest Management Strategy. Priority will be given to Blackberry.</p> <p>Monitor the reserve for significant noxious and environmental weeds. Treat any new outbreaks.</p> <p>Implement pest animal control programs for priority species in accordance with the Regional Pest Management Strategy, in co-operation with, or when co-ordinated by, all adjacent landholders and/or the Braidwood Rural Lands Protection Board. Programs must meet the objectives of the reserve and broader community and are demonstrated to have low impacts on native wildlife.</p> <p>Ensure the establishment of new boundary fences where required and that all boundary fences are stock-proof (where required). Manage all boundary fencing issues in accordance with the NPWS Boundary Fence policy and in co-operation with adjacent landholders.</p>	<p>Medium</p> <p>Medium</p> <p>Medium</p> <p>Low</p>

Current Situation	Desired Outcomes	Strategies	Priority
<p>Fire management</p> <p>Fire is a natural feature of many environments and is essential to the survival of some plant communities. Inappropriate fire regimes, however, can lead to loss of particular plant and animal species and communities. Fire can also damage cultural heritage and can threaten visitors and neighbouring land.</p> <p>A 14km network of fire trails occurs on the North Urala Ridge, of which only a small portion (3km) is actually in the reserve.</p>	<p>Life, property and natural and cultural values are protected from bushfire.</p> <p>Fire regimes are appropriate for conservation of plant and animal communities.</p>	<p>Participate in the Lake George Zone Bush Fire Management Committee. Maintain co-ordination and co-operation with the Rural Fire Service (including the Burra Rural Fire Brigade), Googong Foreshores, and adjacent landholders with regard to fire management strategies.</p> <p>Suppress unplanned fires in the reserve during high bushfire danger periods.</p> <p>Develop a Fire Operations Map for the reserve by the end of 2006.</p> <p>Maintain fire trails in the reserve where they will assist in fire fighting efforts.</p>	<p>Medium</p> <p>High</p> <p>High</p> <p>Medium</p>

Current Situation	Desired Outcomes	Strategies	Priority
<p>Cultural heritage</p> <p>No formal surveys for Aboriginal sites have been carried out in the reserve.</p> <p>There are no items of European heritage significance identified in the reserve. Old survey markers might still be in place on the reserve's boundaries.</p> <p>Potential threats to Aboriginal and European sites include activities such as earthworks and fire.</p> <p>The reserve is within Ngunnawal Country and the area of the Mogo LALC. The Buru Ngunawal Aboriginal Corporation is a recognised elders group in the area.</p> <p>The Mogo LALC holds an area of freehold adjacent to the south and east of the reserve.</p>	<p>Aboriginal features and values are identified and protected.</p> <p>Aboriginal people are involved in management of the Aboriginal cultural values in the reserve.</p> <p>Cultural features are conserved and managed in accordance with their significance.</p>	<p>Precede all new works/activities likely to lead to ground disturbance by an assessment for cultural features.</p> <p>Consult and involve the Mogo LALC, the Buru Ngunawal Aboriginal Corporation and other relevant Aboriginal community organisations and individuals in the management of Aboriginal sites, places and values, including interpretation of places or values.</p> <p>Encourage further research into the Aboriginal heritage values of the reserve.</p> <p>Undertake a search for old survey markers, and if found map and protect any markers.</p>	<p>High</p> <p>High</p> <p>Medium</p> <p>Low</p>

Current Situation	Desired Outcomes	Strategies	Priority
<p>Visitor use</p> <p>There is no legal public access to the southern part of the reserve.</p> <p>There is legal public access to the northern part of the reserve, via Googong Foreshores, which is limited to walking and cycling.</p> <p>There are no visitor facilities in the reserve.</p> <p>Illegal activities currently occurring in the reserves include pig hunting and firewood collection.</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>Recreational facilities will not be provided in the reserve and the reserve will not be promoted for recreational use.</p> <p>Inform any people wishing to access the southern part of the reserve of the need to seek permission from neighbours to cross their land.</p> <p>In accordance with the objectives of nature reserves and NPWS policy, permit day-use bushwalking, nature study, and educational and research activity, but not commercial activities, orienteering, horse riding, recreational four-wheel driving, trailbike riding and overnight camping.</p> <p>Undertake law enforcement patrols as required, in conjunction with NSW Police. This action requires assistance and information from adjacent landholders.</p>	<p>Medium</p> <p>High</p> <p>Medium</p> <p>Low</p>

Current Situation	Desired Outcomes	Strategies	Priority
<p>Research</p> <p>Further research will improve understanding of the reserve's natural and cultural heritage, the processes that affect them and the requirements for management of particular species.</p> <p>Priority fields for research in the reserve are threatened plants and animals.</p>	<p>Research enhances the management information base and has minimal environmental impact.</p>	<p>Undertake and encourage research to improve knowledge and management of natural and cultural heritage.</p>	<p>Medium</p>

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.

