

EVANS CROWN NATURE RESERVE

PLAN OF MANAGEMENT

NSW National Parks and Wildlife Service

Part of the Department of Environment and Climate Change

January 2009

This plan of management was adopted by the Minister for Climate Change and the Environment on 30th January 2009.

Acknowledgments

This plan of management is based on a draft plan prepared by staff of the Blue Mountains Region, Parks and Wildlife Group of the NSW Department of Environment and Climate Change.

Valuable information and comments were provided by:

- Blue Mountains Regional Advisory Committee;
- members of the Wiradjuri community;
- members of the local community and neighbours of the reserve;
- Central West Bushwalkers;
- Sydney Rockclimbing Club;
- Upper Macquarie County Council; and
- staff of the NSW Department of Primary Industries.

Inquiries about Evans Crown Nature Reserve should be directed to the Reserve Ranger at the NPWS Kanangra Area Office, PO Box 330 Oberon 2787 or by telephone on 6336 1972.

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FOREWORD

Evans Crown Nature Reserve covers an area of 425 hectares on the Central Tablelands of NSW, approximately 40 kilometres southeast of Bathurst.

Evans Crown Nature Reserve protects an island of remnant vegetation as well as spectacular granite formations. Evans Crown provides extensive views over the surrounding landscape and is visible from a great distance. These factors, plus the granite cliffs, have influenced use of the area. There is strong evidence to suggest that Evans Crown was an important place for the Wiradjuri Aboriginal people as well as the neighbouring Gundungurra and Darug people. More recently it has become popular for recreational activities such as bushwalking, rock climbing and abseiling. A key objective for management of Evans Crown Nature Reserve is to ensure that recreational activities in the reserve do not compromise the reserve's natural and cultural heritage values.

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 Evans Crown Nature Reserve was placed on public exhibition from 20th October 2006 until 22nd January 2007. 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 closing raptor roosts and nesting sites to climbing and abseiling, encouraging conservation of remnant native vegetation on lands outside the reserve, and the continuation of weed control and revegetation programs in the reserve's riparian zone.

This plan of management establishes the scheme of operations for Evans Crown 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 are a compilation of policies arising 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 the plan, no operations may be undertaken within Evans Crown Nature Reserve except in accordance with the plan. The plan will also apply to any future additions to Evans Crown Nature Reserve. Where management strategies, works or any additions that are not consistent with the plan are proposed for the nature reserve, 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 in accordance with the following principles:

- The conservation of biodiversity, the maintenance of ecosystem functions, the protection of geological and geomorphological features and natural phenomena;
- The conservation of places, objects, features and landscapes of cultural value;
- The promotion of public appreciation, enjoyment and understanding of the reserve's natural and cultural values; and
- provision for appropriate research and monitoring.

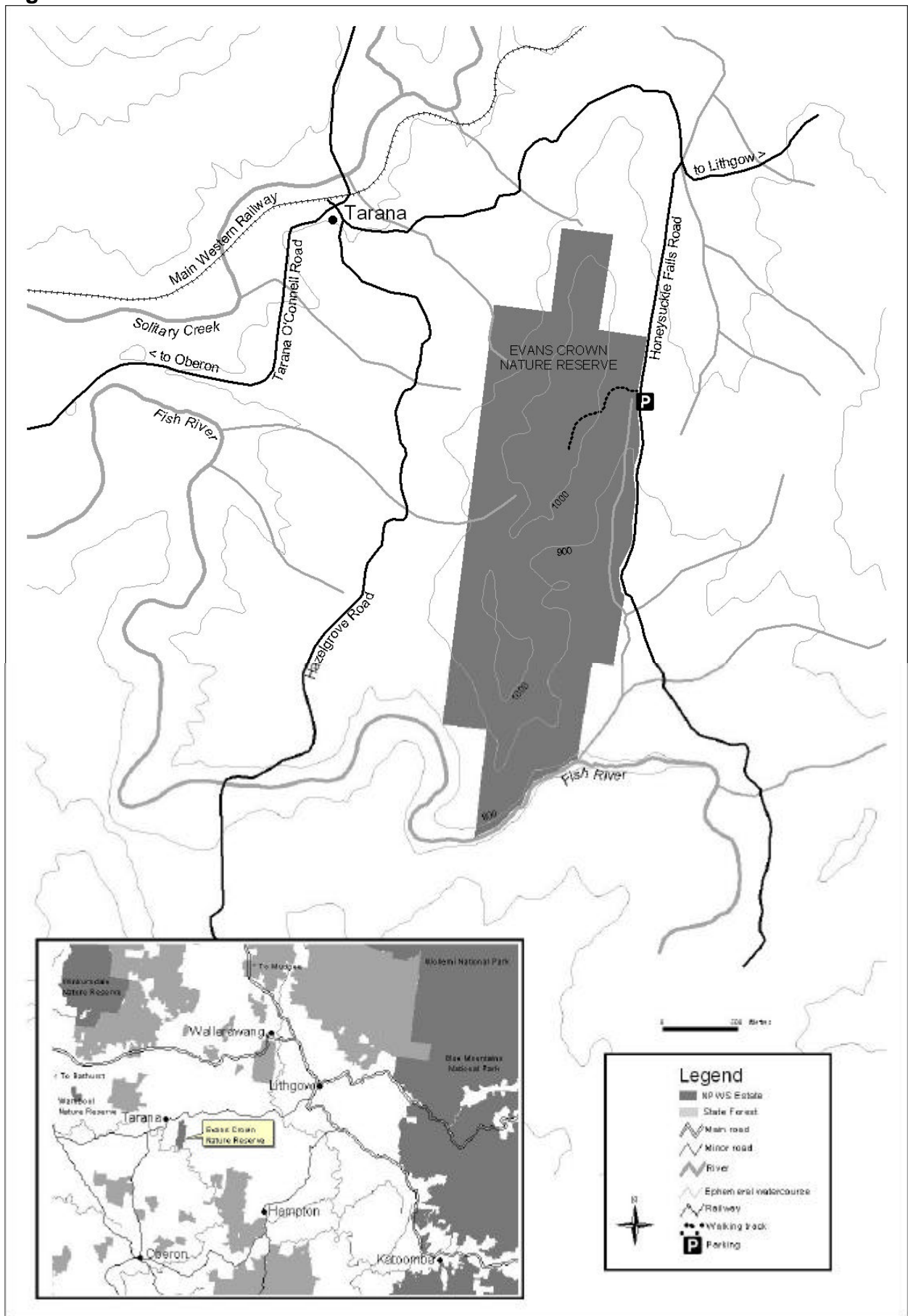
Nature reserves are valuable refuge areas, where natural processes, phenomena and wildlife can be studied. They differ from national parks in that the purpose for reserving lands as nature reserves does not include the provision of opportunities for sustainable visitor use and enjoyment. Management of nature reserves aims to minimise disturbance to natural and cultural heritage.

1.3 MANAGEMENT OBJECTIVES

The following objectives apply to the management of Evans Crown Nature Reserve.

- Management of the reserve as part of a regionally important system of protected areas.
- Conservation of box-woodland communities.
- Protection and conservation of landform, geology, soils and water.
- Conservation of Aboriginal cultural values.
- Protection of habitat for significant plant and animals species, particularly species and populations that are:
 - listed under the TSC Act or the *Environment Protection and Biodiversity Conservation Act 1999*;
 - endemic or regionally significant;
 - otherwise rare or threatened.
- To work with interest groups and the broader community to ensure that recreational activities in the reserve do not compromise the reserve's natural and cultural heritage values.

Figure 1 - RESERVE MAP



2. EVANS CROWN NATURE RESERVE

2.1 LOCATION, GAZETTAL AND REGIONAL SETTING

Evans Crown Nature Reserve ('the reserve') is located on the Central Tablelands approximately 40 kilometres south east of Bathurst. The location of the reserve and nearby conservation areas and towns are shown on Figure 1.

The reserve covers an area of 425 hectares and was gazetted in 1975.

Assistant Surveyor George William Evans named Evans Crown in late 1813 during an expedition which followed and then extended beyond the route previously taken by Blaxland, Wentworth and Lawson.

The reserve is located close to the township of Tarana in the Shire of Lithgow and is zoned 'National Parks and Nature Reserves' under the Greater Lithgow Local Environmental Plan 1994. Access to the reserve is via Honeysuckle Falls Road. The reserve lies within the area of the Wiradjuri Regional Aboriginal Land Council.

Much of the surrounding land has been extensively cleared and is used for grazing, softwood plantation and other rural activities.

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.

Evans Crown Nature Reserve protects an island of remnant vegetation as well as spectacular granite tor formations.

The geology, landform, climate and plant and animal communities of the area, plus its location, have determined how it has been used by humans.

At its summit Evans Crown provides extensive views over the surrounding landscape. The striking tor formations are visible from a great distance and are somewhat of a landmark. These factors may have influenced past use of the area by Aboriginal people. There is strong evidence to suggest that Evans Crown was an important place for the Wiradjuri people as well as the neighbouring Gundungurra and Darug people.

Following European settlement in the Tarana area, the land now occupied by the reserve was leased for grazing between 1880 and 1972 by neighbouring landholders.

Recreational activities in the reserve such as bushwalking, rock climbing and abseiling have become popular since the mid-1980s. There are in excess of 120 bolted climbs in the

reserve. A walking track runs from the car park on Honeysuckle Falls Road to the top of the ridge. From here a network of informal, unmarked and unmaintained footpads leads off in various directions.

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

The reserve is situated in the South-eastern Highlands Bioregion and ranges in altitude from 790 to 1100 metres above sea level.

It lies within the Macquarie River catchment, which is a sub-catchment of the Murray-Darling Basin. Several un-named ephemeral watercourses exist within the reserve. Those in the north drain to Solitary Creek, while those in the south drain to the Fish River. The Fish River is a perennial watercourse which forms the reserve's southern boundary. Solitary Creek merges into the Fish River to the west of the reserve, and the Fish and Campbell Rivers form the Macquarie River at their confluence near Bathurst. The Fish River is located within the area managed by the Central West Catchment Authority.

The reserve is characterised by steep and rugged topography with prominent surface outcrops of granite. The high ridge of granite has been exposed by extensive differential erosion, and spheroidal weathering of the granite has formed massive, well developed tors.

The reserve lies on the Evans Crown Granite and Tarana Granite units of the middle to late Carboniferous Bathurst Batholith Group. The Evans Crown Granite unit is the youngest of the Bathurst Batholith Group and has been dated at 312 million years old. Evans Crown Granite underlies all but the north-western corner and a 200m wide strip along the eastern boundary of the reserve and comprises pink, medium to coarse grained, equigranular leucogranite, owing its colouration to a high proportion of K-feldspar. Quartz, minor biotite and traces of plagioclase are also visible. The Evans Crown Granite intrudes the older Tarana Granite which underlies the remainder of the reserve and comprises pink and grey coarse-grained biotite hornblende granite (Pogson and Watkins, 1998).

Soils are essentially derived from the underlying geology and are sandy, granitic and well drained. Disturbed and frequently used areas such as walking tracks are susceptible to erosion.

2.3.2 Native Plants

The reserve supports a diversity of native plant species representative of the Central Tablelands, with a higher proportion of grass species than nearby conservation reserves.

Woodland and open forest communities dominated by: apple box (*Eucalyptus bridgesiana*); ribbon gum (*E. viminalis*); candlebark (*E. rubida*); and yellow box (*E. melliodora*) cover the majority of the reserve. Blackthorn (*Bursaria spinosa*) dominates the shrub layer and native ground layer species include: snow grass (*Poa sieberiana*); kangaroo grass (*Themeda australis*); and bracken fern (*Pteridium esculentum*).

The reserve may also contain a plant of conservation significance, Australian anchor plant (*Discaria pubescens*). This plant, which is nationally listed as a Rare or Threatened Australian Plant (ROTAP), has been recorded on the banks of the Fish River upstream from the reserve (Lembit, 1996). There are no formal records of any flora species listed under the TSC Act occurring on the reserve.

2.3.3 Native Animals

As an island of remnant vegetation the reserve provides an important refuge for a variety of native species. Surveys have identified 77 species of native bird and 12 native mammals. Reptiles and amphibians have not been systematically surveyed.

The isolated nature of the reserve and its distance from other bushland areas impede the movement of species to and from the reserve. These factors also reduce the ability of species to recolonise the reserve following a major event such as wildfire and could thus result in a decrease in the diversity of species over time.

Common mammals include the eastern grey kangaroo (*Macropus giganteus*), swamp wallaby (*Wallabia bicolor*) and the common brushtail possum (*Trichosurus vulpecula*). Platypus and water rats are known to occur along the Fish River.

While there are no formal records of any species listed under the TSC Act occurring in the reserve, spotted-tailed quolls (*Dasyurus maculatus*) and brush-tailed rock wallabies (*Petrogale penicillata*) were apparently extant until the late 1960s and a female koala (*Phascolarctos cinereus*) with a back young was observed on the ridge-top by rock climbers in the mid 1990s. Three bird species recorded in the reserve: the crested shrike-tit (*Falcunculus frontatus*); rufous whistler (*Pachycephala rufiventris*); and dusky woodswallow (*Artamus cyanopterus*), have been identified as declining woodland bird species (Traill, 2000). There is also evidence to suggest that the reserve contains nesting sites for the peregrine falcon (*Falco peregrinus*).

2.3.4 Aboriginal Heritage

Aboriginal communities have an association with and connection to the land. The land and water biodiversity values within a landscape are central to Aboriginal spirituality and contribute to Aboriginal identity. Aboriginal communities associate natural resources with

the use and enjoyment of foods and medicines, caring for the land, passing on cultural knowledge and strengthening social bonds. Aboriginal heritage and nature are inseparable from each other and need to be managed in an integrated manner across the landscape.

The reserve is in the area traditionally occupied by the Wiradjuri Aboriginal people and lies within the area of the Wiradjuri Regional Aboriginal Land Council.

The reserve has high traditional and contemporary significance for Aboriginal people. There are members of the Wiradjuri community who maintain a strong connection with the reserve and surrounding areas. Some areas of the reserve have special significance for men while other areas are women's sites (Allen, pers. comm 2003).

Physical and anecdotal evidence suggests that the area was an important meeting place for Wiradjuri and other tribal groups, as well as an initiation and ceremonial site.

There is a significant bora ground on privately owned land adjacent to the reserve. The reserve contains a number of open campsites, scarred trees and other sites which may or may not be associated with the bora ground.

2.3.5 Non-Aboriginal Heritage

Extensive land clearing occurred in the Tarana area with European settlement in the 1860s. The steep and rocky terrain surrounding Evans Crown excluded most agricultural activity, however the area was leased for grazing sheep from 1880 until about 1972. Grazing of Angora goats was trialed on the leases in the early 1920s but heavy fox predation on young goats made this venture non-viable.

A bridle track across one of the saddles provided early settlers with a short cut between Honeysuckle Falls and Mutton Falls (Goodwin, 1997).

Evidence of a blacksmith's shop and house dating from the 1860s can be found near the south-western corner of the reserve, close to the Fish River (Goodwin, 1997).

A small granite quarry operated in the early 1940s on what is now the eastern side of the reserve. This quarry supplied some of the stone for the Commonwealth Bank Building in Sydney's Martin Place.

2.4 VISITOR USE AND RECREATION

In accordance with the purpose of a nature reserve, the NPWS has not actively promoted Evans Crown. Despite this management regime, recreational demand is quite high and visitation is steadily increasing. Recreational use of the reserve has been largely unregulated.

A formed walking track runs from the car park to the top of the ridge. From here a network of informal, unmarked and unmaintained footpads leads off in various directions. Park visitors generally follow the walking track to the top and then disperse along the ridge.

Other than the walking track and an interpretive sign, there are no facilities in the reserve.

Recreational activities such as bushwalking, rock climbing and abseiling have become popular since the mid-1980s. There are in excess of 120 bolted climbs in the reserve. The scarcity of alternative granite sites close to Sydney, and more favourable weather patterns than the Blue Mountains contribute to the reserve's popularity with climbers. NPWS's Policy on Adventure Activities (2002) states that adventure activities will not be permitted where there is conflict with the protection of natural and cultural values. Rock climbing and abseiling are listed as adventure activities under this policy and may be carried out in some NPWS-managed parks and reserves with permission.

Horse riding has occurred in the reserve from time to time. The NPWS Recreational Horse Riding Policy (2006) does not generally permit horse riding in nature reserves. Cycling also occurs in the reserve from time to time. The Fish River is popular with recreational fisherman but is only occasionally accessed via the reserve. Recreational users frequently take dogs with them into the reserve. Section 56 (1) (e) of the NPW Act prohibits people being accompanied by dogs in nature reserves.

Camping is not permitted in the reserve but occurs quite regularly. NPWS's Camping and Caravanning Policy (2002) states that camping areas will not be permitted in environmentally sensitive areas, including most nature reserves.

There are no research, education or interpretive programs currently in place on the reserve.

2.5 THREATS TO RESERVE VALUES

2.5.1 Recreational Activities

Recreational activities impact on the natural and cultural values of the reserve through: trampling of vegetation; formation of new trails; erosion; disposal of human waste and rubbish; formation of campsites and stone fire rings; increased risk of wildfire from escaped campfires; dislodgment of rock; cleaning of rock faces; placement of rock bolts/anchors; damage to sites of cultural significance; and disturbance to native fauna.

2.5.2 Introduced Species

There are a number of introduced plant and animal species in the reserve. Introduced plants and animals can seriously impact upon the biodiversity of both protected areas and private lands by modifying species richness and abundance, and ecosystem function. They can also have significant impacts on the economic and social values of neighbouring areas.

Plants declared noxious under the *Noxious Weeds Act 1993* in the Upper Macquarie County Council Area and occurring in the reserve are:

St John's wort - <i>Hypericum perforatum</i>	Blackberry - <i>Rubus fruticosus</i>
Serrated tussock - <i>Nasella trichotoma</i>	Crack willow - <i>Salix fragilis</i>
Sweet briar - <i>Rosa rubiginosa</i>	Tree of Heaven - <i>Ailanthus altissima</i>

Noxious plants are those which have a detrimental effect or cause serious economic loss to agriculture or the environment.

Control programs are in place for:

Crack willow:	Willows along the Fish River have been controlled by stem injection in an ongoing riparian regeneration program, which commenced in 2000.
Blackberry:	Blackberry has been controlled by chemical methods.
Serrated tussock:	Serrated tussock is sprayed annually.
St John's wort:	St John's wort has been controlled by chemical methods.

Crack willow is a highly invasive species and occurs in the riparian zone along the majority of the Fish River. Willows can significantly alter stream banks, hydrological cycles and habitats. They can also cause stream bank erosion, increase and decrease flooding cycles and create a marshland environment through their prolific and shallow rooting systems. They are conspicuous trees in native ecosystems. Winter leaf fall is known to significantly increase nutrient loads and decrease oxygen levels in fresh water ecosystems.

Most of the blackberry in the reserve also occurs in the riparian zone along the Fish River. Chemical spraying over many years has been extremely successful and areas that were previously heavily infested now have little or no blackberry present. However the riparian zones on some areas of freehold land adjacent to the reserve are so densely infested with blackberry that native plant species have been almost entirely excluded. These infestations provide harbour for pest animals such as rabbits and foxes, and produce seeds that could potentially germinate on the reserve.

St John's wort, a toxic perennial herb, and serrated tussock are noxious plants that threaten both native biodiversity and agricultural interests. They occur throughout the reserve and have the potential, if not controlled, to widely colonise the reserve and adjoining freehold lands.

Sweet briar, tree of heaven and English ivy occur sporadically throughout the reserve but do not pose a threat at present.

Introduced animals within the reserve such as the European red fox (*Vulpes vulpes*), feral cat (*Felis catus*) and wild rabbit (*Oryctolagus cuniculus*) can have a significant impact on native species through predation and competition. Feral or straying grazing animals such as sheep, goats and cattle impair the regeneration of native vegetation, change species composition, accelerate soil erosion, create environments favourable for colonisation by introduced plants and aid in their spread. There is evidence that sheep are able to access the reserve from some neighbouring properties.

There are no feral animal control programs in place for the reserve, however some reserve neighbours have expressed interest in commencing a cooperative fox control program.

The European red fox (*Vulpes vulpes*) is a highly efficient predator and is listed as a Key Threatening Process under the TSC Act. The NSW Threat Abatement Plan for Predation by the Red Fox was prepared as a requirement under the act and proposes actions to reduce the impacts of fox predation on threatened species and to help conserve biodiversity more generally.

Currently the NPWS's priorities for fox control in the Blue Mountains Region lie in those areas where foxes may be preying on species listed under the TSC Act, or on livestock.

The 'island' nature of the reserve means that common native species such as possums, gliders and other small mammals are vulnerable to local extinction as a result of fox predation, as there are limited opportunities for recruitment from other areas.

2.5.3 Fire

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, recreation and management facilities and can threaten visitors and neighbouring land.

There have been six recorded wildfires within the reserve since 1944. The largest of these occurred in 1944 when a steam train ignited 22 fires between Bathurst and Lithgow as a result of a faulty spark arrester. The entire area now comprising the reserve was burnt during this fire. Lightning strikes in 1967, 2002 and 2005 ignited fires on the ridgetop, all of which burnt less than 1 hectare, and 15 hectares were burnt in a fire in 1980. Arson in 1994 resulted in a fire of 60 hectares.

A number of rural properties border the reserve and the township of Tarana lies about 1.5 kilometres to the west.

The NPWS uses a zoning system for bushfire management in NPWS reserves. NPWS zones are compatible with the system adopted by the Bush Fire Coordinating Committee for use in Bush Fire Management Committee (BFMC) bushfire risk management plans.

NPWS has assessed the reserve for fire management planning purposes and has zoned the reserve as a Land Management Zone (LMZ). The primary fire management objectives within this zone are to prevent the extinction of all species that are known to occur naturally within the reserve, and to protect culturally significant Aboriginal and non-Aboriginal sites. The reserve has been designated as a LMZ because it is not adjacent to built assets which would be exposed to a high level of bushfire risk, and does not have a history of bushfire ignitions or known areas of high bushfire behaviour potential. The LMZ does not require intensive management and focuses on those actions appropriate to conserve biodiversity and cultural heritage including exclusion of fire from the reserve.

NPWS maintains cooperative arrangements with surrounding landowners and RFS brigades and is involved in the Lithgow Bush Fire Management Committee. Cooperative arrangements include approaches to fuel management, support for neighbours' fire management efforts and information sharing.

3. MANAGEMENT ISSUES AND STRATEGIES

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.

Ongoing priority actions are those actions that have either already commenced or, once implemented, will require continued management or participation by the NPWS over a long period of time.

Current Situation	Desired Outcomes	Strategies	Priority
<p>Landform, Geology, Soils and Water</p> <p>Soil erosion occurs along the walking track which in some areas, has become a drainage line. Further erosion problems in high visitor use areas may need to be addressed in the future.</p> <p>The main threat to water quality on the reserve is human waste.</p> <p>The reserve is a prominent feature in the landscape and this is likely to be one of the main contributing factors to its significance for Aboriginal people. The reserve offers spectacular panoramic views from its summit. The scenic values of the reserve have been compromised by the erection of high-voltage powerlines to its east.</p>	<p>Soil erosion is minimised.</p> <p>Water quality and health of reserve streams is improved.</p> <p>Views of and from the reserve are not further compromised by the erection of additional utilities or large man-made structures.</p>	<p>Undertake drainage and repair works on the walking trail to prevent further erosion.</p> <p>Undertake all works in a manner that minimises erosion and water pollution.</p> <p>Promote minimal impact bushwalking through on-site interpretation.</p> <p>Scenic values will be considered in the assessment of any large-scale development proposals that fall within the view catchment of the reserve Such structures may include: pipelines; transmission lines; motorways; mines; windmills and dams.</p>	<p>Medium</p> <p>Ongoing</p> <p>Medium</p> <p>Ongoing</p>

Current Situation	Desired Outcomes	Strategies	Priority
<p>Native Plant and Animal Conservation</p> <p>Knowledge of fauna species occurring in the reserve is limited.</p> <p>Nesting raptors may be disturbed by activities such as rock climbing and abseiling.</p> <p>The reserve is an island of remnant vegetation and there is therefore limited opportunity for native animal movement to and from the reserve.</p> <p>The Fish River riparian zone in the reserve and on neighbouring properties has been degraded by clearing, grazing and weed invasion.</p>	<p>Knowledge of native fauna is improved and any significant species recorded in the reserve are conserved</p> <p>Ecological processes continue with minimal human interference.</p> <p>Regeneration of the riparian zone on and off park.</p>	<p>Undertake a comprehensive fauna survey.</p> <p>Implement actions identified in the Priorities Action Statement (PAS) and recovery actions identified in Recovery Plans (if applicable) for any threatened species recorded on the reserve.</p> <p>Identify raptor roosts and nesting sites and close these areas to climbing and abseiling. Consider closing the entire reserve at certain times of the year.</p> <p>Work with neighbours, vegetation management committees and relevant government bodies to encourage conservation of remnant native vegetation on lands outside the reserve and the provision of wildlife corridors in the vicinity of the reserve.</p> <p>Continue weed control and revegetation programs in the reserve's riparian zone and assist neighbours with similar works where possible. Exclude stock from the reserve and encourage neighbours to exclude stock from riparian zones on neighbouring lands.</p>	<p>Medium</p> <p>Medium</p> <p>Medium</p> <p>Ongoing</p> <p>Ongoing</p>

Current Situation	Desired Outcomes	Strategies	Priority
<p>Introduced Species</p> <p>Major weeds of concern in the reserve are crack willow, blackberry, serrated tussock and St John's wort.</p> <p>Current annual control programs include blackberry and serrated tussock spraying and bush regeneration along the Fish River, focusing on willow control.</p> <p>Pest animals of concern are foxes, cats, sheep, goats and rabbits.</p>	<p>The impact of introduced species on native species, the reserve and neighbouring lands is minimised.</p>	<p>Undertake on-going control programs for blackberry, serrated tussock and willows.</p> <p>Map occurrence of St John's wort and of weeds that are not currently being controlled and carry out control programs as required.</p> <p>Seek the cooperation of neighbours in implementing weed and pest animal control programs on private lands near or adjacent to the reserve.</p> <p>Prepare and implement a pest species control plan for the reserve.</p> <p>Coordinate an information field day, in conjunction with the Rural Lands Protection Board, for reserve neighbours and other local landholders in order to gauge interest in and promote the commencement of a cooperative fox control program.</p> <p>Ensure the reserve is included in the NPWS Blue Mountains Region Pest Management Plan.</p>	<p>High</p> <p>Medium</p> <p>Ongoing</p> <p>Low</p> <p>Medium</p> <p>Medium</p>

Current Situation	Desired Outcomes	Strategies	Priority
<p>Fire Management</p> <p>Fire is a natural feature of the environment of the reserve and is essential to the survival of some plant communities. Frequent or regular fire, however, can cause loss of particular plant and animal species and communities. Fire could also damage cultural features and fences and threaten neighbouring land.</p>	<p>Life, property and natural and cultural values are protected from bushfire.</p>	<p>Continue to participate in the Lithgow Bush Fire Management Committee. Maintain coordination and cooperation with Rural Fire Service brigades, Council fire control officers and neighbours with regard to fuel management and fire suppression.</p>	<p>Ongoing</p>
	<p>Cultural features are protected from damage by fire.</p>	<p>Suppress all unplanned fires in the reserve as soon as possible.</p>	<p>High</p>
	<p>Fire regimes are appropriate for conservation of plant and animal communities.</p>	<p>Use prescribed fire to maintain or enhance the reserve's biological diversity and to assist those flora species reliant on heat induced seed germination.</p>	<p>Medium</p>
		<p>Encourage further research into the ecological effects of fire in the reserve.</p>	<p>Low</p>
		<p>Prepare a fire management strategy for the reserve that details life, property and natural and cultural resource protection strategies.</p>	<p>Medium</p>

Current Situation	Desired Outcomes	Strategies	Priority
<p>Cultural Heritage</p> <p>There are significant Aboriginal sites on and adjacent to the reserve, however these are poorly documented.</p> <p>There is a lack of understanding in the broader community of the significance of the area to the Aboriginal community.</p> <p>There is evidence of a building near the Fish River and an old granite quarry.</p>	<p>Aboriginal sites are surveyed and appropriately recorded so that they can be conserved and managed in accordance with their significance.</p> <p>The community's understanding of the cultural significance of the reserve is improved.</p> <p>Historic sites are left as evidence of past use.</p>	<p>Coordinate a comprehensive survey of Aboriginal sites in consultation with the Wiradjuri Local Aboriginal Land Council and other Aboriginal organisations and people. Identify areas where recreational activities are directly impacting on significant Aboriginal sites, places or values and implement site protection measures if necessary.</p> <p>Prepare and implement a Conservation Management Plan (CMP) for the reserve.</p> <p>Precede all new ground disturbance work in the reserve by an assessment for cultural features.</p> <p>Consult and involve the Wiradjuri Local Aboriginal Land Council and other Aboriginal organisations and people in relation to the management of Aboriginal sites, places and values.</p> <p>Interpret the cultural significance of the reserve in consultation with the Wiradjuri Local Aboriginal Land Council and other Aboriginal organisations and people and in line with the recommendations of the CMP.</p> <p>The building and quarry will be left as they are.</p>	<p>High</p> <p>High</p> <p>Ongoing</p> <p>Ongoing</p> <p>Medium</p> <p>Ongoing</p>

Current Situation	Desired Outcomes	Strategies	Priority
<p>Visitor Use and Recreation</p> <p>Use of the reserve must be carefully managed since it is a relatively small and significant area of remnant vegetation. There are no vehicular trails within the reserve, however a car park is provided on Honeysuckle Falls Road.</p> <p>Bushwalking is a popular recreational activity in the reserve. A constructed walking track leads from the carpark on Honeysuckle Falls Road to the top of the ridge, after which it branches into a number of unconstructed footpads. This can be confusing for walkers, who tend to expect that the constructed track will end at a lookout or particular feature of interest.</p> <p>Adventure recreation activities such as rock climbing, abseiling and bouldering are popular in the reserve. These activities may be damaging or impacting upon natural values and Aboriginal sites, places and values.</p> <p>Rock bolts/anchors have been placed in some areas that have been identified as having high significance to Aboriginal people or are environmentally sensitive.</p>	<p>Visitor use is ecologically sustainable.</p> <p>Appreciation of the reserve's natural and cultural values is promoted.</p> <p>Aboriginal sites, places and values are protected and conserved.</p> <p>The impact of recreational activities on natural and cultural values is minimised.</p>	<p>Prohibit the construction of any roads or vehicle trails in the reserve.</p> <p>Permit recreational bushwalking in the reserve. Manage the constructed track in accordance with the NPWS Blue Mountains Region 'Walking Track Management Strategy'. Extend the track so that it ends at a lookout point. Install directional and interpretive signs along the track.</p> <p>Limit group size for bushwalking to 10 people. Prior approval is to be obtained from the NPWS Regional Manager for larger parties.</p> <p>Manage all recreation activities in accordance with the recommendations of the Conservation Management Plan (CMP) (see Actions: Cultural Heritage).</p> <p>If the CMP recommends that rock climbing, abseiling and bouldering not be permitted within the reserve, commence the process of removing climbing/abseiling routes following liaison with the climbing community.</p> <p>Conduct an assessment of the environmental impacts of adventure recreation activities in the reserve. Remove rock bolts/anchors from those areas where environmental impact is deemed to be high and/or close some areas temporarily to allow regeneration.</p>	<p>Ongoing</p> <p>Medium</p> <p>Ongoing</p> <p>Ongoing</p> <p>Medium</p> <p>Medium</p>

Current Situation	Desired Outcomes	Strategies	Priority
<p>Recreational horse riding and mountain biking / cycling create environmental impacts inconsistent with protection of the reserve's values.</p> <p>No camping areas are provided and bush camping is impacting on water quality and other values. The provision of a camping area is not seen as necessary or desirable.</p> <p>The reserve is not promoted in NPWS publications or brochures. Interpretive signs are located at the walking track-head.</p>	<p>The reserve is not promoted for recreation.</p>	<p>Monitor the environmental impact of the above-mentioned recreational activities on an annual basis, notwithstanding the recommendations of the CHMP.</p> <p>Implement additional controls or prohibit all such activities if environmental impacts are unacceptable.</p> <p>Map / GPS all climbing routes.</p> <p>Remove all new climbing fixtures as soon as they are identified. Remove any climbing route where the rock face has been cleared of flora to facilitate access.</p> <p>Remove rock fixtures from areas where they are identified as directly impacting on Aboriginal sites, places or values. Provide interpretive and regulatory signs as necessary.</p> <p>Prohibit recreational horse riding in the reserve.</p> <p>Prohibit mountain biking / cycling in the reserve.</p> <p>Prohibit camping in the reserve unless for essential management purposes with the prior approval of the NPWS Regional Manager.</p> <p>Ensure the reserve is not promoted in NPWS brochures or publications. Additional interpretive signs may be placed along the walking track and at culturally and / or environmentally sensitive areas.</p>	<p>Medium</p> <p>Ongoing</p> <p>Ongoing</p> <p>High</p> <p>High</p> <p>Ongoing</p> <p>Ongoing</p> <p>Ongoing</p> <p>Ongoing</p>

Current Situation	Desired Outcomes	Strategies	Priority
<p>Promotion of community understanding and appreciation of the conservation values and the legislative and policy framework guiding the management of the reserve, is important for minimising damaging activities and maximising visitor enjoyment.</p> <p>Use of the reserve by educational institutions and commercial operators for adventure recreation activities, such as abseiling and rock climbing, has the potential to significantly impact the natural and cultural values of the reserve.</p>	<p>The local community is aware of the significance of the area and of management programs.</p> <p>Appreciation of the reserve's natural and cultural values is promoted.</p>	<p>Organise media releases, educational material and maintain contact with neighbours and community organisations.</p> <p>Permit educational institutions to conduct activities that foster an appreciation for the natural and / or cultural values of the reserve.</p> <p>Prohibit educational institutions and commercial tour operators from conducting adventure recreation activities in the reserve.</p> <p>In general, prohibit commercial activities, including filming, in the reserve. Consider approval, by the NPWS Regional Manager, of commercial activities that are consistent with the objectives of nature reserve management.</p> <p>Require that approval be obtained from the NPWS Regional Manager for all school and educational group activities, with consideration given to the size and nature of the group, purpose of the activity and possible environmental impacts. Require that the trip coordinator demonstrate that the activity will enhance the participants' knowledge of natural and / or cultural values.</p>	<p>Ongoing</p> <p>Ongoing</p> <p>Ongoing</p> <p>Ongoing</p> <p>Ongoing</p>

Current Situation	Desired Outcomes	Strategies	Priority
<p>Research</p> <p>Little research has been undertaken in the reserve. 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>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>Prepare a schedule to encourage and guide research by educational organisations and others.</p>	<p>Low</p> <p>Low</p>
<p>Management Operations</p> <p>There is limited vehicle access in the Reserve.</p> <p>The reserve boundary is not fenced to a stock-proof standard.</p>	<p>Vehicle access for management purposes is maintained.</p> <p>Domestic stock do not enter the reserve.</p>	<p>Permit vehicle access to the northern area of the reserve for essential management purposes such as weed spraying with the prior approval of the NPWS Regional Manager and consent from the neighbouring property owner. Contact park neighbours prior to any NPWS vehicle gaining access to the reserve through private property.</p> <p>In conjunction with neighbours, upgrade and maintain boundary fences and determine strategies to exclude stock where boundary fencing is difficult.</p> <p>Request neighbours to inform the NPWS if they become aware that stock have strayed onto the reserve so that retrieval can be arranged as soon as possible.</p>	<p>Ongoing</p> <p>Medium</p> <p>Ongoing</p>

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