

**RAZORBACK NATURE RESERVE**  
**PLAN OF MANAGEMENT**

**NSW National Parks and Wildlife Service**

**Part of the Department of Environment, Climate Change and Water**

**February 2010**

**This plan of management was adopted by the Minister for Climate Change and the Environment on 5<sup>th</sup> February 2010.**

### **Acknowledgments**

The NPWS acknowledges that this reserve is in the traditional country of the Wiradjuri people.

This plan of management was prepared by the staff of the South West Slopes Region of the NSW National Parks and Wildlife Service (NPWS), part of the Department of Environment, Climate Change and Water.

Cover photograph by Ian Radosavljevic, NPWS.

For additional information or any enquires about this reserve or this plan of management, contact the NPWS Queanbeyan Area Office at 11 Farrer Place, Queanbeyan NSW 2620 or by telephone on (02) 6229 7000.

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## FOREWORD

Razorback Nature Reserve is located in the Central Tablelands of NSW, approximately 12 kilometres east of Bigga and 45 kilometres north of Crookwell. The reserve has an area of 2,647 hectares and is considered significant because of the natural link it provides between the botanical divisions of Central Tablelands, Southern Tablelands and Central Western Slopes. The reserve is also a geographical link between coastal and inland flora and fauna communities; and is an important habitat for migratory and threatened species.

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 Razorback Nature Reserve was placed on public exhibition from 17<sup>th</sup> October 2008 until 16<sup>th</sup> February 2009. 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 implementing measures in recovery plans and priority action statements for threatened species and the control of introduced plant and animal species such as through fox control programs.

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

**Frank Sartor MP**  
**Minister for Climate Change and the Environment**

## **1. RAZORBACK NATURE RESERVE**

### **1.1 LOCATION, GAZETTAL AND REGIONAL SETTING**

Razorback Nature Reserve (hereafter called “the reserve”) is located in the Central Tablelands of NSW, approximately 12 kilometres east of Bigga and 45 kilometres north of Crookwell.

The reserve was gazetted in March 1988 and has an area of 2,647 hectares. Much of the surrounding country is cleared and used primarily for sheep and cattle production. Parts of the reserve are flanked by state forest, including Keverstone East State Forest to the south. There are further large areas of naturally vegetated ridge systems, mainly to the east and north, including along both sides of the Abercrombie River approximately 5 kilometres to the north-east.

The reserve’s gazettal was based upon its significance as a natural link between the botanical divisions of Central Tablelands, Southern Tablelands and Central Western Slopes; a geographical link between coastal and inland flora and fauna communities; and as an important habitat for migratory and threatened species.

The reserve is within the geographical area of the Pejar Local Aboriginal Land Council, Lachlan Catchment Management Authority, Tablelands Livestock health and pest Control Authority, Southern Tablelands Rural Fire Service Zone and Upper Lachlan Shire Council.

### **1.2 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.

Razorback Nature Reserve is one of several conservation areas that were created to protect the Central Tablelands dry sclerophyll forest and its associated animal and plant communities. Razorback Nature Reserve preserves a representative sample of vegetation and habitats found on tableland Ordovician metasediments. The reserve also contains a small section of granite that supports a heath with many species not found elsewhere in the reserve.

The geology, landform, climate and plant and animal communities of the area, plus its location, have determined how it has been used by humans. For reasons of clarity and document usefulness, natural and cultural heritage, non-human threats and on-going use are dealt with individually, but their interrelationships are recognised.

## 2. MANAGEMENT CONTEXT

### 2.1 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 the plan, no operations may be undertaken within Burrinjuck Nature Reserve except in accordance with the plan. The plan will also apply to any future additions to Razorback Nature Reserve. Where management strategies or works are proposed for Razorback Nature Reserve or any additions that are not consistent with the plan, an amendment to the plan will be required.

### 2.2 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 (section 30J), 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.

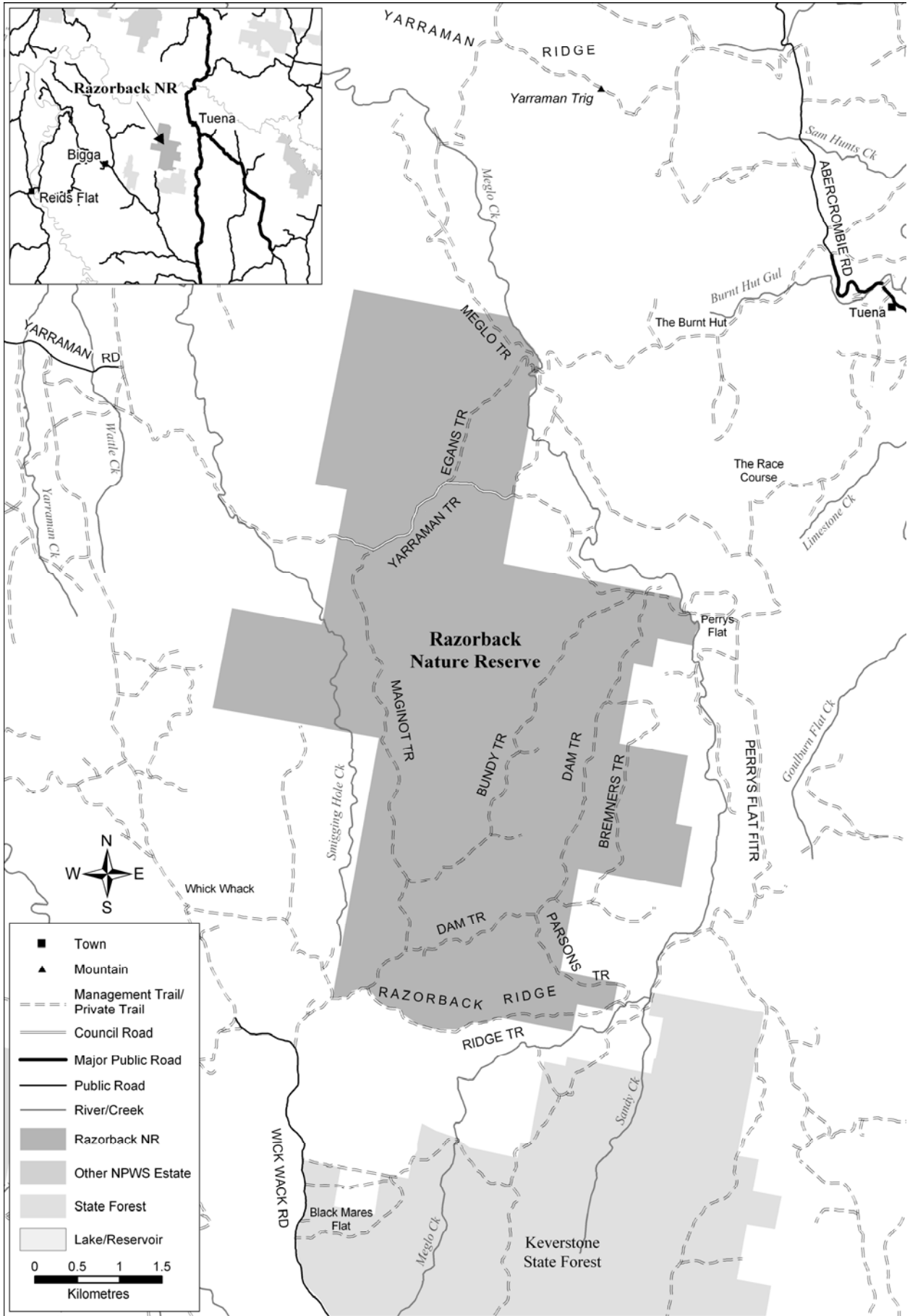
### 2.3 MANAGEMENT DIRECTIONS

Razorback Nature Reserve will be managed to protect the plant and animal communities which it samples and to provide opportunities for research and educational use. Major efforts will be directed towards:

- the protection and encouragement of habitat diversity, including maintenance of a range of age classes since fire;
- control of introduced plant and animal species;

- liaison with neighbours for cooperative implementation of pest control and broader management programs to promote reserve values; and
- appropriate visitor use.

### MAP: RESERVE MAP



### 3. VALUES OF THE RESERVE

The location, landforms and plant and animal communities of an area have determined how it has been used and valued. Both Aboriginal and non-Aboriginal people place values on natural areas, including aesthetic, social, spiritual and recreational values. These 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.

#### 3.1 LANDFORM, GEOLOGY AND SOILS

A narrow north-south oriented ridge dominates the western edge of the reserve, while in the east a series of north easterly oriented ridges and steep gullies drop sharply into Meglo Creek. Razorback Ridge forms the southern boundary of the reserve. Elevations within the reserve range from 450 metres above sea level in the north to 820 metres in the south. The majority of ridge tops within the reserve lie between 720 and 820 metres.

The reserve is almost entirely based on Ordovician metasediments with some Silurian granite in the northwest corner. These metasediments lead to a predominance of loamy soils with red clayey subsoils.

The reserve forms the divide between the Smigging Hole Creek and Meglo Creek catchments. There are no permanent watercourses within the reserve, however some small ephemeral streams exist, and are characterised by rocky/boulder streambeds on lower slopes.

#### 3.2 NATIVE PLANTS

The vegetation in the reserve is dominated by a dry sclerophyll open forest of red stringybark *Eucalyptus macrorhyncha* and scribbly gum *E. rossi*, with long-leaved bundy *E. goniocalyx*, candlebark *E. rubida*, applebox *E. bridgesiana*, white box *E. albens*, peppermint gum *E. dives*, brittle gum *E. mannifera* and red box *E. polyanthemos*. The deeper soils on the edges of the reserve support ribbon gum *Eucalyptus viminalis*, yellow box *E. melliodora* and Blakely's red gum *E. blakelyi*. The mid-storey consists of box-leaf wattle *Acacia buxifolia*, silver wattle *A. dealbata* and prickly tea tree *Leptospermum juniperinum* with an understorey of silvertop wallaby grass *Joycea pallidal*, hoary guinea flower *Hibbertia obtusifolia*, *Hovea linearis*, many-flowered mat-rush *Lomandra multiflora*, *Pultenaea procumbens* and pink five-corners *Styphelia triflora*.

The small area of granite soils supports many species not found elsewhere in the reserve. These include black cypress pine *Callitris endlecheri*, common fringe-myrtle *Calytrix tetragonal*, *Dillwynia sericea*, tiger orchid *Diuris sulphurea* and pale wedge pea *Gompholobium huegelii*.

In the south west of the reserve an area of ridge and upper gully contains peppermint gum *Eucalyptus dives* and brittle gum *E. mannifera*. These species are usually associated with deeper and more fertile soils.



No rare or threatened flora species have been recorded within the reserve, although some listed species form part of the white box/yellow box/Blakely's red gum endangered ecological community.

### 3.3 NATIVE ANIMALS

The reserve supports a large variety of native fauna including sixteen mammal species, thirteen reptiles, six amphibians and over forty species of bird (Daly, Pennay *et al* 1999). A full fauna species list has been included as Appendix 1.

Native mammals recorded in the reserve include the eastern grey kangaroo *Macropus giganteus*, wallaroo *M. robustus*, red-necked wallaby, *M. rufogriseus*, swamp wallaby, *Wallabia bicolor*, common wombat *Vombatus ursinus*, sugar glider *Petaurus breviceps*, greater glider *Petauroides volans*, ringtail possum *Pseudocheirus peregrinus*, brush-tail possum *Trichosurus vulpecula*, bush rat *Rattus fuscipes*, and short-beaked echidna *Tachyglossus aculeatus*. Five species of bat have also been recorded in the reserve including the white-striped mastiff bat *Tararida australis*, Gould's long-eared bat *Nyctophilus gouldi*, lesser long-eared bat *Nyctophilus geoffroyi*, Gould's wattled bat *Nyctophilus gouldi* and little forest vespardelus *Vespardelus vulturinus*.

At least nineteen species of reptiles and amphibians have been recorded within the reserve including the marbled gecko *Christinus marmoratus*, stone gecko *Diplodactylus vittatus*, grass skink *Lampropholis delicata*, Bouganville's skink *Lerista bouganvillii*, eastern sign-bearing frog *Crinia parinsignifera* and smooth toadlet *Uperoleia leavigata*.

The reserve has an extensive bird life with over forty species being recorded to date. Of these, the ecological requirements of ground nesting birds such as nightjars, lyrebirds, quails and quail thrush may require consideration in relation to any proposed fire management strategies. The glossy black cockatoo *Calyptorhynchus lathami* has been recorded within the reserve. This species is listed as vulnerable under the *Threatened Species Conservation Act, 1995*.

It is possible that other threatened species may occur intermittently in the reserve as a result of food and nesting requirements. A koala *Phascolarctos cinereus* was recorded in the area in 1949, and spotted tailed quolls *Dasyurus maculata* have been noted by a neighbour.

Under the *Threatened Species Conservation Act 1995*, a Priorities Action Statement (PAS) has been prepared that identifies strategies and actions to promote the recovery of threatened species, populations and ecological communities and manage key threatening processes. In addition, recovery plans have been prepared for some threatened species.

Due to the small and isolated nature of the reserve, fauna are particularly vulnerable to increased risk of extinction through disastrous events such as large bushfires, disease, predation or changing environmental conditions. The normal processes of re-colonisation, that may take generations for slower-moving fauna such as amphibians and invertebrates, may be prevented by cleared land between the reserve and other bushland. Adjoining areas of vegetation are significant for achieving protection of important habitat outside the nature reserve. Methods for achieving this protection include encouraging landholders to undertake conservation agreements and promotion

of total catchment management and Landcare principles in association with local organisations and other land management agencies.

While surveys conducted to date provide a good basis for management, further research will expand the knowledge base and enable improved management decisions to be made.

### **3.4 ABORIGINAL HERITAGE**

Aboriginal communities have an association and connection to the land. The land and water 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, kinship systems and strengthening social bonds. Aboriginal heritage and connection to nature are inseparable from each other and need to be managed in an integrated manner across the landscape.

Razorback Nature Reserve lies within the tribal borders of the Wiradjuri people, but is in close proximity to the borders of the Gundungurra and Ngunawal people. The reserve is within the area of the Pejar Local Aboriginal Land Council.

Little evidence of occupation has been located within or surrounding the reserve, with only one isolated stone artefact being located on a trail within the reserve boundary. This may be related to the limited extent of ground surveys undertaken in the area. Sites recorded within the Crookwell Shire include scarred trees, a shelter with art/deposits and open campsites.

### **3.5 HISTORIC HERITAGE**

Prior to gazettal the area of the reserve comprised Crown, leasehold and freehold lands. Several permissive occupancies were held over the Crown land areas.

No historic sites have been recorded within the reserve, however the greater Tuena - Bigga area contains many relics of past gold mining operations dating from the nineteenth century.

### **3.6 EDUCATION AND RESEARCH VALUES**

The primary purpose of nature reserves is to protect and conserve areas containing outstanding, unique or representative ecosystems, species, communities or natural phenomena. Under the NPW Act nature reserves are also managed to provide for appropriate research and monitoring. The reserve currently receives low levels of use for activities such as nature study, walking, bird watching and occasional educational groups. These uses will continue to be permitted on a controlled basis with the agreement of the relevant adjoining landholders.

Research into the natural and cultural features of the reserve and their maintenance requirements is important as it provides an effective framework for making informed management decisions. Research to date includes flora and fauna surveys, assessment

of some fire attributes of flora species, and assessments of fuel loadings in the reserve. Fuel monitoring plots and vegetation plots have been established which provide opportunity for the study of fuel accumulation.

## 4. THREATS TO RESERVE VALUES

### 4.1 INTRODUCED PLANTS

An introduced plant species is defined in this plan as any plant species not endemic to the reserve. Introduced species within the 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. 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 also has a priority to control environmental weeds (not necessarily declared noxious) which threaten natural habitats.

The NPWS South West Slopes Region Pest Management Strategy identifies priority pest species and programs for action through set criteria. By following this same process the prioritisation of reserve pest species programs may be established and directly linked into the regional strategies (refer to the South West Slopes Region Pest Management Strategy). This strategic approach will consider such issues as (yet not limited by) the control of weeds in endangered ecological communities, significant remnant vegetation associations, threatened/endangered species habitat and areas of community/neighbour concern.

Programs have been undertaken in the reserve since gazettal to control serrated tussock *Nassella trichotoma*, Paterson's curse *Echium plantagineum*, St. John's wort *Hypericum perforatum*, sweet briar *Rosa rubiginosa* and blackberry *Rubus fruticosus*, all of which exist in medium to high numbers in the reserve. Other introduced species such as scotch thistle *Onopordum acanthium*, saffron thistle *Carthamus lanatus*, spear thistle *Cirsium vulgare*, perennial thistle *cirsium arvense*, hawthorn *Crataegus monogyna* and viper's bugloss *Echium vulgare* exist in the reserve in low numbers. Control programs for these species are implemented as needed in line with the South West Slopes Regional Pest Management Strategy. Infestations are associated with disturbed areas such as fire trails, turning/passing bays and in gullies and creeks.

### 4.2 INTRODUCED ANIMALS

An introduced animal species is defined in this plan as any animal species not native to the reserve. Introduced animals may impact upon native fauna populations through predation or competition for food or shelter. Feral fauna species recorded in the reserve include foxes, cats, rabbits and goats. More recently, signs of pigs are evident in the south of the reserve. These species are managed in accordance with the actions listed in the regional pest management strategy.

Foxes are common in the reserve, as well as on adjoining lands, and their presence is likely to impact on a range of fauna including small lizards, frogs and small mammals.

Cooperative baiting programs are undertaken by the NPWS, Livestock Health and Pest Control Authority and landholders.

A cooperative goat cull organised by the Livestock Health and Pest Control Authority was undertaken in 2006 covering a large area including the reserve. This resulted in the removal of 119 goats and 2 pigs from the total area.

Rabbits occur on the flats in the reserve, which adjoin cleared land. There are few warrens or burrows. The number of cats in the reserve and their impacts on wildlife are unknown.

The control of these species is difficult as they have the capacity to readily recolonise the reserve from surrounding lands. The success of pest species management operations is thus dependent upon a coordinated approach by all land managers in the area.

### **4.3 FIRE MANAGEMENT**

Fire is a natural feature of many environments and is essential for the survival of some plant communities. However, inappropriate fire regimes can lead to loss of particular plant and animal species and communities, and high frequency fires have been listed as a key threatening process under the TSC Act.

The primary fire management objectives of the NPWS are to protect life and property and community assets from the adverse impacts of fire, whilst managing fire regimes to maintain and protect biodiversity and cultural heritage (NPWS, 2005). The NPWS uses a zoning system for bushfire management which is compatible with the zoning used by the Southern Tablelands Bush Fire Management Committee (BFMC) in its bushfire risk management plan.

In regard to Razorback Nature Reserve, a map-based (type 2) fire management strategy has been prepared. Annual hazard reduction programs, which may include mechanical fuel reduction techniques, prescribed burning and fire trail works, are submitted to the BFMC.

Little is known of the fire regime in the reserve prior to European settlement of the area.

Fire records for the Razorback area show that the fire incidence for the reserve and surrounding area is very low. Historically, ignition sources include escaped hazard reduction burns, suspected arson, lightning and accidental causes. Of these sources the greatest threats are from arson, escaped hazard reduction burning and accidental ignitions on nearby properties or public roads.

NPWS maintains cooperative arrangements with surrounding landowners and RFS brigades and is an active participant in the Southern Tablelands Bush Fire Management Committee. Cooperative arrangements include approaches to trail maintenance, asset protection, fuel management, support for neighbour fire management efforts and information sharing.

#### **4.4 ISOLATION AND FRAGMENTATION**

The area surrounding Razorback Nature Reserve has been extensively cleared, which has resulted in a high loss of biodiversity and fragmentation of habitat in the region. Long term conservation of biodiversity depends upon the protection, enhancement and connection of remaining habitat across the landscape, incorporating vegetation remnants on both public and private lands. Nearby vegetated areas contribute to the habitat values of the reserve and provide ecological corridors to other forested areas. Maintaining the integrity of the remaining habitat within the reserve and, where possible, linking this to adjacent areas of bushland to facilitate wildlife corridors is important in ensuring long term viability of the reserve's biological values.

Razorback Nature Reserve is one area within a broader land system and cannot be managed in isolation. Land management operations are only as effective as the commitment of all land managers in an identified area. The successes of operations such as pest species management and fire preparation and suppression activities are dependent upon this coordinated approach.

#### **4.5 CLIMATE CHANGE**

Climate change has been listed as a key threatening process under the *Threatened Species Conservation Act 1995*. Projections of future changes in climate for NSW include higher temperatures, increasing sea levels and water temperatures, elevated CO<sub>2</sub>, more intense but possibly reduced annual average rainfall, increased temperature extremes and higher evaporative demand. These changes are likely to lead to greater intensity and frequency of fires, more severe droughts, reduced river runoff and water availability, regional flooding, increased erosion and ocean acidification.

Climate change may significantly affect biodiversity by changing population size and distribution of species, modifying species composition, and altering the geographical extent of habitats and ecosystems. The potential impact of climate change is difficult to assess since it depends on the compounding effects of other pressures, particularly barriers to migration and pressure from feral animals. Species most at risk are those unable to migrate or adapt, particularly those with small population sizes or with slow growth rates.

Adjusting our management through programs to reduce the pressures arising from other threats such as habitat fragmentation, invasive species, bushfires, pollution and urban expansion will help reduce the severity of the effects of climate change.

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## 6. MANAGEMENT STRATEGIES AND ACTIONS

Current Situation	Desired Outcomes	Management Strategies / Actions	Priority
<p><b>Soil and water conservation – see 3.1</b></p> <p>There are no major soil erosion or water quality issues within the reserve.</p> <p>The reserve has no permanent water sources, and only a few ephemeral streams.</p>	<p>Human induced soil erosion is prevented or arrested and natural erosion is minimised where appropriate.</p> <p>Water quality is maintained.</p>	<p>Undertake all road works in a manner that minimises erosion and water pollution.</p> <p>Areas subject to accelerated soil erosion will be rehabilitated where necessary.</p> <p>Trails constructed during wildfire suppression will be closed and rehabilitated as soon as possible.</p>	<p>High</p> <p>High</p> <p>High</p>
<p><b>Native plant and animal conservation – see 3.2, 3.3</b></p> <p>The reserve is dominated by a dry sclerophyll forest community, with a heath community on the granite areas.</p> <p>The reserve protects an area of remnant box woodland that has been extensively cleared in surrounding land.</p> <p>The reserve supports a diverse range of native fauna including the vulnerable glossy black cockatoo.</p> <p>Domestic stock entering the reserve is an ongoing management issue.</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 past disturbance.</p>	<p>Work with neighbours to erect, repair and, if necessary, replace boundary fences to exclude domestic stock from the reserve.</p> <p>Encourage further survey work for threatened plant and animal species.</p> <p>Implement measures included in recovery plans and priorities action statement for threatened species as they are identified in the reserve.</p> <p>Work with neighbours and catchment management authorities to encourage conservation of remnant native vegetation in the vicinity of the reserve.</p>	<p>Medium</p> <p>Medium</p> <p>High</p> <p>Low</p>

Current Situation	Desired Outcomes	Management Strategies / Actions	Priority
<p><b>Cultural heritage – see 3.4, 3.5</b></p> <p>Little evidence of Aboriginal occupation has been located within or surrounding the reserve, however only limited surveys have been undertaken for Aboriginal artefacts.</p> <p>One Aboriginal stone artefact site has been located within the reserve but there is potential for others, given the range of sites that have been located in a broader regional context.</p> <p>No historic sites are located within the reserve.</p>	<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 Pejar 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>Encourage survey work to be undertaken to identify potential Aboriginal and historic sites within the reserve.</p>	<p>High</p> <p>High</p> <p>Medium</p> <p>Medium</p>



Current Situation	Desired Outcomes	Management Strategies / Actions	Priority
<p><b>Introduced plants and animals – see 4.1, 4.2</b></p> <p>Weeds present in the reserve include blackberry, sweet briar, St John’s wort, Paterson’s curse, serrated tussock, hawthorn, viper’s bugloss and several thistle species. These all occur in areas associated with disturbance such as fire trails, and in gullies and creeks.</p> <p>Weed control programs have been undertaken since the reserve was gazetted in 1988.</p> <p>Pest animals include foxes, cats, rabbits, goats, and more recently pigs in the south of the reserve.</p> <p>Foxes are common and their presence is likely to impact on a range of fauna including small lizards, frogs and small mammals. Cooperative baiting programs are undertaken on an annual basis</p> <p>A Regional Pest Management Strategy has been prepared for the South West Slopes Region. This strategy lists priorities for pest control in Razorback Nature Reserve.</p>	<p>The impact of introduced species on native species and neighbouring lands is minimised.</p>	<p>Introduced plant species will be controlled where they threaten the integrity of native communities, have the potential to spread rapidly or have been declared noxious.</p> <p>Known occurrences of noxious weeds will be treated on a priority basis consistent with the Regional Pest Management Strategy.</p> <p>Where available and effective, non-residual herbicides will be used for weed control.</p> <p>Seek the cooperation of other authorities, including Tablelands Livestock Heath and Pest Control Authority and neighbours, in implementing weed and pest animal control programs.</p> <p>The Pest Management Strategy will be implemented in the Reserve identifying and mapping known occurrences of introduced animals.</p> <p>On-going fox control programs will be undertaken in accordance with the Regional Pest Management Strategy.</p>	<p>Medium</p> <p>High</p> <p>Medium</p> <p>Medium</p> <p>High</p> <p>Medium</p>

Current Situation	Desired Outcomes	Management Strategies / Actions	Priority
<p><b>Fire management – see 4.3</b></p> <p>Fire is a natural occurrence in the Australian environment. However, too frequent fire can cause the loss of particular plant and animal species and communities.</p> <p>NPWS is represented on the Southern Tablelands Zone Bush Fire Management Committee.</p> <p>Two fires have been recorded in the last 20 years. The first in 1989 burnt several hectares in the north, the second (an escaped hazard reduction on reserve) in 1997 burnt the southern end of the reserve and surrounds.</p> <p>There is no immediate threat to assets, apart from fences adjacent to the reserve boundary, however assets exist within 2km of the boundary.</p>	<p>Life and property as well as natural and cultural values 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 Southern Tablelands Zone Bush Fire Management Committee. Maintain coordination and cooperation with Rural Fire Service officers, brigades and neighbours with regard to fuel management and fire suppression.</p> <p>A type 2 map-based fire management strategy and fire operations map has been prepared for the reserve.</p> <p>The existing trail network and associated signage will be maintained at an appropriate standard.</p> <p>Use of heavy machinery will be minimised for fire suppression in areas of significant natural or cultural heritage.</p> <p>Research will be encouraged into improving understanding of the influence of fires on the diversity of tableland dry sclerophyll forest.</p>	<p>High</p> <p>High</p> <p>High</p> <p>High</p> <p>Low</p>

Current Situation	Desired Outcomes	Management Strategies / Actions	Priority
<p><b>Visitor Use</b></p> <p>The reserve is currently used by educational groups and bird watchers. Some bushwalking may also occur within the reserve.</p> <p>Visitor facilities are not provided in the reserve.</p> <p>Currently a public road crosses the reserve. This road, Yarraman Rd, is only accessed via private property and at present usage is infrequent and limited to neighbouring landholders and management operations.</p> <p>All access points to the reserve are gated and signposted to inform visitors of appropriate uses of the nature reserve.</p>	<p>Visitor use is appropriate and ecologically sustainable.</p> <p>Visitor use encourages appreciation of the reserve's values.</p> <p>The local community is aware of the significance of the area and of management programs.</p>	<p>Use of the reserve for the purposes of nature observation and educational purposes will be permitted, subject to limits on numbers and other conditions if necessary to minimise impacts.</p> <p>Public vehicle access will not be permitted on management trails.</p> <p>Visitor information signs will be maintained at access points to the reserve to inform of appropriate activities.</p> <p>Self-reliant day bushwalking and related low-impact activities such as picnics will be permitted in the reserve. No facilities for visitors will be provided.</p> <p>Vehicle-based camping will not be permitted in the reserve.</p> <p>Monitor levels and impacts of use</p>	<p>Medium</p> <p>High</p> <p>High</p> <p>Medium</p> <p>Medium</p> <p>Medium</p>

Current Situation	Desired Outcomes	Management Strategies / Actions	Priority
<p><b>Isolation and Fragmentation – see 4.4</b></p> <p>The area surrounding Razorback Nature Reserve has been extensively cleared, which has resulted in a high loss of biodiversity and fragmentation of habitat in the region.</p> <p>Maintaining the integrity of the remaining habitat within the reserve and, where possible, linking this to adjacent areas of bushland to facilitate wildlife corridors is important in ensuring long term viability of the reserve's biological values.</p> <p>The NPWS recognises that the Razorback Nature Reserve is an integral part of the whole Central Tablelands land system and that its ecological value depends upon protection of other important habitat areas within the system.</p>	<p>The nature reserve is managed as part of the broader environment.</p>	<p>The NPWS will work with neighbours, catchment management authorities and Landcare groups to encourage conservation and appropriate management of key habitat and corridors in the vicinity of the reserve.</p>	<p>Low</p>

Current Situation	Desired Outcomes	Management Strategies / Actions	Priority
<p><b>Research</b></p> <p>Research to date includes flora and fauna surveys, assessment of some fire attributes of flora species, and assessments of fuel loadings in the reserve.</p> <p>Fuel monitoring plots and vegetation plots have been established which provide opportunity particularly for the study of fuel accumulation.</p> <p>Ongoing monitoring by NPWS of the existing research plots, and research by others, can provide valuable information for management.</p>	<p>Research enhances the management information base and has minimal environmental impacts.</p>	<p>Razorback Nature Reserve will be available for appropriate research. Researchers may only use vehicles on formed tracks and will be encouraged to design programs to provide information that is of direct benefit to management.</p> <p>Close liaison will be maintained with researchers to obtain as much mutual information and assistance as possible. The results of research will be required to be provided to the reserve managers.</p> <p>Fuel and vegetation monitoring of the existing plots will be continued</p> <p>Additional research building on this base will enable refinement of management principles and practices in the future</p> <p>Research projects to investigate the habitat requirement status and distribution of native animals will be encouraged.</p>	<p>Low</p> <p>Low</p> <p>Medium</p> <p>Low</p> <p>Low</p>

Current Situation	Desired Outcomes	Management Strategies / Actions	Priority
<p><b>Management Operations</b></p> <p>Yarraman Road passes through the reserve and has previously provided access to private land to the east and west.</p> <p>There are several management trails within the reserve. An assessment of the management value of the trails has been undertaken and all open trails have been determined to be necessary for fire suppression operations, pest control and other management operations. In addition to use by NPWS, the trails are also used by the Livestock Health and Pest Authority, Police and Rural Fire Service.</p> <p>During pest control programs it is sometimes necessary to use vehicles off the trails. Any such use will be minimal and must not result in permanent track creation.</p>	<p>Management facilities and operations adequately serve management needs and have minimal impact.</p>	<p>Liaise with Council regards maintenance of Yarraman Road</p> <p>Except for Yarraman Road, the management trails within the reserve may only be used by NPWS and other authorities for authorised management purposes.</p> <p>Management vehicles may be used off the track system provided this is essential and undertaken in a manner that avoids creation of new tracks. Areas subject to such use will be rehabilitated if necessary.</p>	<p>Medium</p> <p>High</p> <p>High</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.