



# **Kirramingly Nature Reserve**



## **Plan of Management**

**KIRRAMINGLY NATURE RESERVE**  
**PLAN OF MANAGEMENT**

**NSW National Parks and Wildlife Service**

**November 2003**

**This plan of management was adopted by the Minister for the Environment on 17 November 2003.**

For further information on Kirramingly Nature Reserve, contact the NPWS Narrabri Area Office, 1/100 Maitland Street, Narrabri (phone 02 6792 7300)

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## FOREWORD

Kirramingly Nature Reserve is located 40km south of Moree in the north west plains of New South Wales, and lies within the Brigalow Belt South Bioregion.

Kirramingly Nature Reserve is of very high conservation value as it contains the only reserved representative example of the once widespread Mitchell grass / Queensland Bluegrass community that occurred across the north west plains of NSW. The reserve contains populations of *Desmodium campylocaulon* and *Swainsona murrayana* which are listed as Endangered and Vulnerable, respectively, under the *Threatened Species Conservation Act, 1995*. Queensland Bluegrass dominant grasslands within the Brigalow Belt Bioregions (North and South) are listed as an Endangered Ecological Community under the Commonwealth *Environmental Protection and Biodiversity Conservation Act 1999*. Kirramingly Nature Reserve also contains a cluster of scarred trees which are of significance to the Kamileroi Aboriginal nation.

The *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 the area will be managed in the years ahead. Once a plan has been adopted, no operations may be undertaken within the Nature Reserve except in accordance with the plan.

A draft Plan of Management for Kirramingly Nature Reserve was placed on public exhibition for over three months from 27<sup>th</sup> September 2002 until 13<sup>th</sup> January 2003. The plan has been amended to reflect the comments received from the public submissions on the draft Plan of Management.

This Plan of Management establishes the scheme of operations for Kirramingly Nature Reserve. In accordance with Section 76 of the *National Parks and Wildlife Act 1974* this plan is hereby adopted.

**BOB DEBUS**

**Minister for the Environment**

# 1. NATURE RESERVES IN NEW SOUTH WALES

## 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*, the National Parks and Wildlife Regulation, the *Threatened Species Conservation Act 1995* and the policies of the National Parks and Wildlife Service (NPWS). Section 72AA of the National Parks and Wildlife 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.

## 1.2 MANAGEMENT OBJECTIVES

Nature reserves are reserved under the National Parks and Wildlife 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.

## 2. KIRRAMINGLY NATURE RESERVE

### 2.1 LOCATION, GAZETTAL AND REGIONAL SETTING

Kirramingly Nature Reserve (1306 hectares) is located 10 kilometres west of the township of Gurley, south of Moree. The reserve is in the Moree Plains Shire and is dissected by Shire Road 132 (Glendello Lane). The reserve was gazetted on the 21 March 2003.

Kirramingly Nature Reserve is within the Brigalow Belt South Bioregion and is surrounded by agricultural enterprises including grazing and cropping. Travelling Stock Routes (TSRs) border the nature reserve on its western and southern boundaries, these routes being managed by the Moree Rural Lands Protection Board (RLPB) and the Narrabri RLPB respectively.

### 2.2 NATURAL AND CULTURAL HERITAGE

#### Landform and Soils

Kirramingly Nature Reserve is located on a floodplain at an altitude of 200m. The area has an almost imperceptible slope to the west with a fall of 1.3metres over 1 kilometre. Localised ponding occurs after heavy rain in shallow depressions within the reserve. The reserve is within the Gwydir catchment and, while there are no creeks within the reserve, Little Bumble Creek runs through the adjacent TSR.

The reserve is located on fine-grained grey cracking clays. These soils are dynamic in response to moisture, when wet they swell and infiltration of rainfall is impeded, yet when they dry out they shrink and deep cracks appear.

The reserve has scenic values as an example of the original extensive grassland plains of the region.

#### Native Plants

The vegetation of Kirramingly Nature Reserve can broadly be described as *Astrebla* - *Dichanthium* tussock grassland (or Hoop Mitchell Grass – Queensland Bluegrass tussock grassland) (Clarke *et al.* 1998). Locally, this vegetation type is also referred to as “Gurley Grasslands”. These grasslands support populations of two types of Mitchell grass, *Astrebla elymoides* (Hoop Mitchell Grass) and *A. lappacea* (Curly Mitchell grass), in association with *Dichanthium sericeum* (Queensland Bluegrass) and a wide variety of other grassland species. Small areas of open *Casuarina cristata* (Belah) *Acacia pendula* (Myall), and *Eucalyptus microtheca* (Coolibah) woodland are also present.

The grasslands of Kirramingly are of very high conservation value as they are the only reserved representative example of the once widespread Mitchell grass/ Queensland Bluegrass community that occurred across the north-

western plains of NSW. In addition the vast majority of Mitchell grass has been eliminated from the Moree Plains biophysical region (Morgan and Terrey, 1992). Other areas of remaining Mitchell grassland within the region that have not been cleared or cultivated have experienced major structural and floristic changes due to various impacts including grazing. These changes have included the partial or complete loss of the Mitchell grasses themselves.

These changes have led to the classification of *Astrebla* spp. grasslands as endangered and inadequately reserved in New South Wales (Benson 1989). In addition Curly Mitchell grass (*Astrebla lappacea*) is near the south-east limit of its natural distribution at Kirramingly.

The reserve protects populations of *Desmodium campylocaulon* (Creeping Tick-trefoil), a twining herb and *Sida rohlenae*, which are both listed as endangered under the *Threatened Species Conservation Act* (1995). *Sida rohlenae* requires further investigation to unequivocally confirm the record. *Swainsona murrayana* (Slender Darling Pea), which is a semi-erect sparsely downy forb, is also present in the reserve and listed as Vulnerable under the *Threatened Species Conservation Act* (1995). Queensland Bluegrass (*Dichanthium* spp.) dominant grassland is also present within the reserve. Queensland Bluegrass dominant grasslands within the Brigalow Belt Bioregions (North and South), are listed as an endangered ecological community under the Commonwealth *Environmental Protection and Biodiversity Conservation Act* (1999).

### **Native Animals**

The open grasslands of the reserve provides habitat for a diversity of reptiles, frogs and small ground dwelling mammals and birds including abundant numbers of quails, songlarks and wrens. Raptors, including owls, kites, harriers, falcons, eagles and kestrels, favour hunting in these grasslands and the woodland areas on the reserve provide additional habitat for a variety of species including honeyeaters and parrots.

The reserve provides possible habitat for five species of threatened fauna including the Grey Falcon (*Falco hypoleucos*), the Australian Bustard (*Ardeotis australis*), the Eastern Grass Owl (*Tyto longimembris*), the Five clawed Worm-skink (*Anomalopus mackayi*) and the Stripe-faced Dunnart (*Sminthopsis macroura*).

### **Aboriginal Heritage**

Kirramingly Nature Reserve is within the area occupied by the Kamilaroi Aboriginal nation and within the area administered by the Moree Local Aboriginal Lands Council. There is evidence of traditional use of the local area in the form of recorded open campsites, carved trees and burials within 25 kilometres of the reserve.

There is a cluster of scarred trees recorded on the nature reserve and, in addition, the area contains a diverse range of traditional bush foods including grasses (seeds), *Marsilea drummondii* (Nardoo, tubers), *Capparis lasiatha* (Nepine, fruits) and a variety of macropods (meat).

### **Non-Aboriginal Heritage**

Kirramingly Nature Reserve has a long history of pastoral use. The block has been managed largely for grazing with some paddocks on the north-eastern section cultivated for fodder crops and wheat.

The name of the reserve is that of the original pastoral property, Kirramingly. The name Kirramingly is an adaptation by the previous owners of the name of the Cobb and Co. coach stop and police station near the Glenroy Bore, "Keramingley" (Anne Wall, pers.comm. June 2002).

The original homestead block is not part of the nature reserve and historic features on the reserve are limited to fences, and stock watering systems including dams, windmills, tanks, troughs and drains.

### **References**

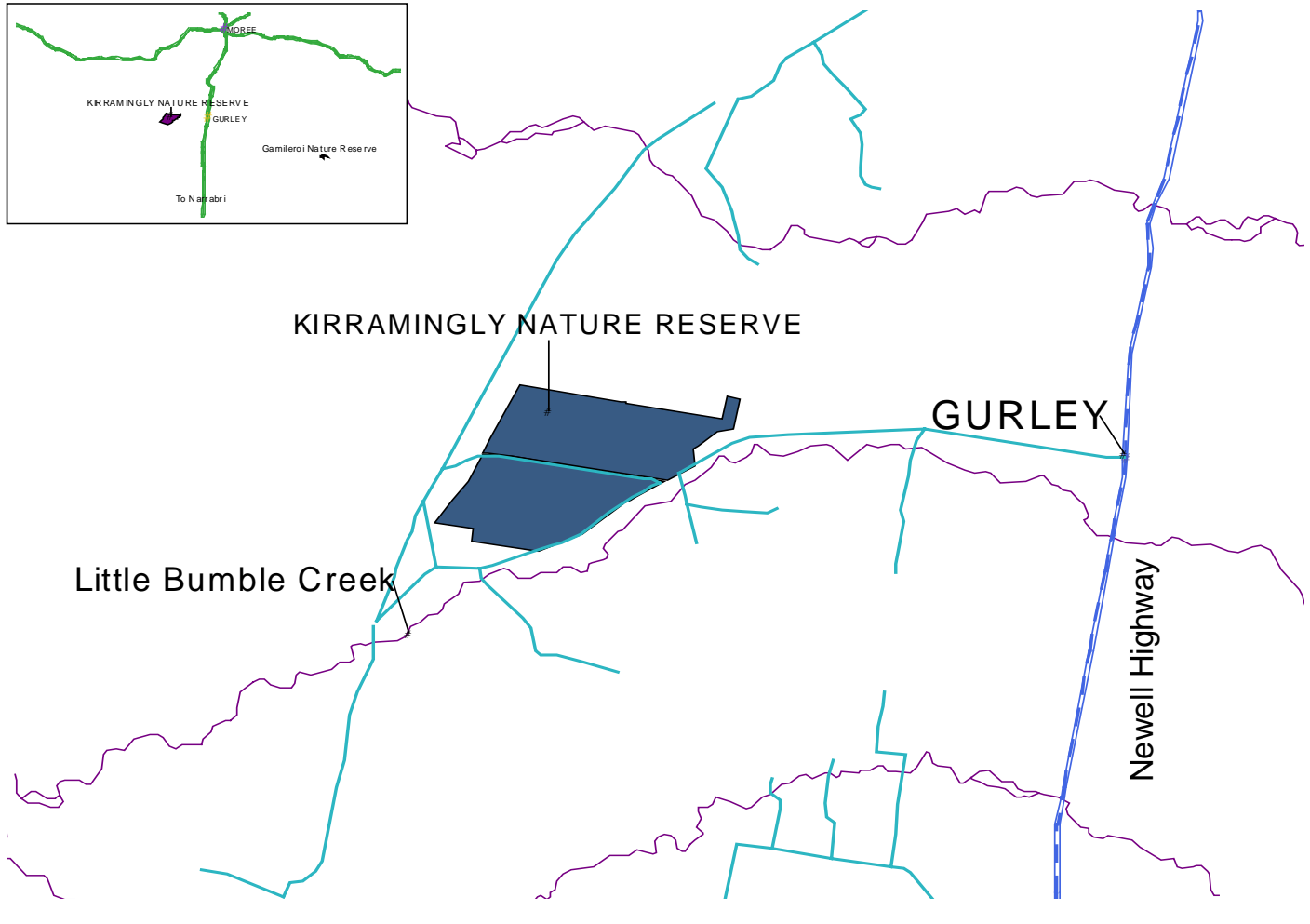
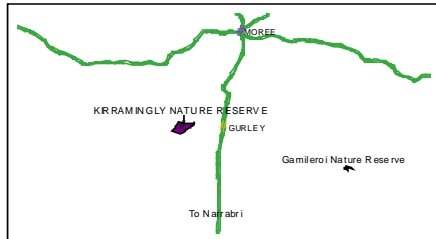
Benson, J., 1989, Establishing priorities for the conservation of rare or threatened plants and plant associations in New South Wales, In Hicks, M. and Eiser P. (eds), *The conservation of threatened species and their habitats*, pp.17-82, Australian committee of IUCN, Canberra.

Clarke, P.J., Gardener, M.R., Nano, C.E. and Whalley, R.D.B., 1998, *The vegetation and plant species of Kirramingly*, NSW National Parks and Wildlife Service and the University of New England.

Morgan, G and Terry, J, 1992, *Nature Conservation in Western NSW*, NPA (NSW).

Wall, A., 2002, Personal Communication.





## Kirramingly Nature Reserve

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- Minor roads
- # Towns
- Major roads
- Major Rivers
- Kirramingly Nature Reserve

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 Narrabri Area  
 28 May 2003

### 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.

| Current Situation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Desired Outcomes                                                                              | Strategies                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Priority                                  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|
| <p><b>Native plant and animal conservation</b></p> <p>Little is known of the conservation management requirements of Mitchell grass/ Queensland Bluegrass communities</p> <p>Grazing is recognised as a threat to the Mitchell grass community (Benson 1989)</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <p>All native plant and animal species and communities are conserved</p>                      | <p>Monitor vegetation response to management through regular floristic surveys</p> <p>Encourage continued research into the ecology and management of the Mitchell grass/ Queensland Bluegrass community.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <p>High</p> <p>High</p>                   |
| <p><b>Research</b></p> <p>Scientific study is needed to improve the understanding of the reserve's natural and cultural heritage, the processes that affect them and the requirements for management of particular species</p> <p>Existing research use includes assessment of the vegetation dynamics under current management and studies on the influence of fire and grazing on the vegetation</p> <p>Priority topics for further and continued research include:</p> <ul style="list-style-type: none"> <li>• the effects of fire frequency, the effects of native herbivores, and the effects of <i>Acacia farnesiana</i> on the long-term viability of the grassland and</li> <li>• the population dynamics and management requirements of the threatened <i>Desmodium campylocaulon</i>.</li> </ul> | <p>Research enhances the management information base and has minimal environmental impact</p> | <p>Undertake and encourage research to improve knowledge and conservation management. Priority topics are those which will assist in undertaking adaptive vegetation management and include:</p> <ol style="list-style-type: none"> <li>1. the effects of fire frequency,</li> <li>2. the effects of native herbivores,</li> <li>3. the effects of <i>Acacia farnesiana</i> on the long-term viability of the grassland, and</li> <li>4. the population dynamics and management requirements of the threatened <i>Desmodium campylocaulon</i>.</li> </ol> <p>Undertake targeted surveys for threatened species including the Five-clawed Worm-skink <i>Anomalous mackayi</i> and the Stripe-faced Dunnart <i>Sminthopsis macroura</i>.</p> <p>Promote research findings widely available to increase awareness of the conservation management requirements of grasslands in the region.</p> | <p>Medium</p> <p>Medium</p> <p>Medium</p> |

| Current Situation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Desired Outcomes                                                                           | Strategies                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Priority                                                        |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|
| <p><b>Cultural heritage</b></p> <p>A cluster of scarred trees is recorded on the nature reserve. The nature of these scars (some long and narrow) indicate that the bark may have been used to create gunyahs on the site and in addition the rushes on the site (<i>Carex</i> spp.) would have provided soft groundcover to sleep on. Threats to these scarred trees include fire. There are abundant bush food sources on the reserve including grasses and Nepine (<i>Capparis lasiantha</i>).</p> <p>Previous pastoral use of the area is evident in the form of windmills, troughs and fences.</p> | <p>Cultural features are conserved and managed in accordance with their significance</p>   | <p>Consult and involve the Moree Local Aboriginal Land Council in all aspects of management of the reserve's Aboriginal sites, places and values.</p> <p>Precede all ground disturbance work by a check for cultural features</p> <p>Protect recorded sites from fire and disturbance.</p> <p>Record but do not maintain the internal fences.</p> <p>Undertake a heritage assessment of the windmills and troughs and remove if not significant.</p>                                                                                                                                                                                                                                                                                                                                      | <p>High</p> <p>High</p> <p>High</p> <p>Low</p> <p>Low</p>       |
| <p><b>Management operations</b></p> <p>The use of vehicles throughout the reserve may spread weeds and damage plant species</p> <p>Management tracks need to be delineated to minimise the impact of vehicular traffic</p> <p>Boundary fencing condition is variable, sections require maintenance and replacement.</p>                                                                                                                                                                                                                                                                                 | <p>Management facilities adequately serve management needs and have acceptable impact.</p> | <p>Selected access routes along internal fences will be mapped and maintained clear of shrubby vegetation</p> <p>Temporary internal tracks may be slashed in the reserve, subject to a review of environmental factors, to provide access for management operations including containment of prescribed burns.</p> <p>Persons entering the reserve are to only drive along the designated routes. All other access is to be by foot (except during fire operations or use of the quad bike when necessary for management operations).</p> <p>Persons entering the reserve are to ensure their vehicle and any other equipment is free of plant debris which may contain weed propagules.</p> <p>Appropriate boundary fencing will be erected and maintained in line with NPWS policy.</p> | <p>High</p> <p>High</p> <p>Medium</p> <p>High</p> <p>Medium</p> |

| Current Situation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Desired Outcomes                                                                                                                                                                                           | Strategies                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Priority                                |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|
| <p><b>Appropriate use and understanding</b></p> <p>The reserve provides opportunities for education regarding nature conservation and cultural heritage.</p> <p>Promotion of community understanding and appreciation of the conservation values of the reserve will be important for minimising damaging activities and maximising conservation outcomes.</p> <p>As the reserve contains both a federally listed Endangered Ecological Community and potentially a number of threatened species, any use of the reserve will be carefully managed and monitored to avoid impacts.</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>                                                            | <ul style="list-style-type: none"> <li>• Maintain contact with neighbours and the community regarding management activities within the reserves.</li> <li>• Promote an awareness of the conservation value of the nature reserves through liaison with the local community and provision of appropriate information.</li> <li>• Permit educational and special interest visits subject to prior consent from NPWS (with limits on numbers and frequency of visits and other conditions to minimise impacts).</li> <li>• Monitor levels and impacts of use.</li> <li>• No visitor facilities will be constructed. Visitor access to be on foot only. No camping or fires will be permitted.</li> </ul> | <p>High</p> <p>Medium</p> <p>Low</p>    |
| <p><b>Fire management</b></p> <p>Fire is a natural feature of the environment of the reserve. Inappropriate fire regimes may pose a threat to Mitchell grass and the vegetation assemblage present. Fire could also damage cultural features and fences and threaten neighbouring land.</p> <p>Operational fire management matters need to be determined including water sources made available in close proximity to the reserve and preferred control lines to be delineated.</p>                                                                                                    | <p>Persons and property are protected from bushfire.</p> <p>Fire regimes are appropriate for conservation of plant and animal communities.</p> <p>Cultural features are protected from damage by fire.</p> | <p>Participate in district Bush Fire Management Committees. 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>Prepare fire management guidelines for the reserve that detail life, property and natural and cultural resource protection strategies.</p> <p>Use research findings as per previous section to develop a variety of fire regimes in appropriate vegetation types and maintain habitat suitable for species with specific requirements.</p>                                                                                                               | <p>High</p> <p>Medium</p> <p>Medium</p> |

| Current Situation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Desired Outcomes                                                                               | Strategies                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Priority                                           |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|
| <p><b>Introduced species</b></p> <p>Feral animals identified in the nature reserve include pigs, goats and foxes. NPWS currently undertakes feral animal control programs for these species.</p> <p>Weeds present in the reserves include African boxthorn (<i>Lycium ferocissimum</i>), Devils claw (<i>Proboscidea louisancia</i>), Galvanised burr (<i>Sclerolaena birchii</i>), Prickly pear (<i>Opuntia stricta</i>), Bathurst burr (<i>Xanthium spinosum</i>), Thornapples (<i>Datura stramonium</i>), and Mexican poppy (<i>Argemone ochroleuca</i>). Chemical control is currently undertaken for these species.</p> <p>Two artificial watering points are present on the reserve. These provide improved habitat for pigs and kangaroos. In addition the higher levels of disturbance and activity around these dams has resulted in an increased diversity and abundance of weed species</p> | <p>The impact of introduced species on native species and neighbouring lands is minimised.</p> | <p>Continue and expand programmes to control, and where possible eradicate, introduced plant and animal species as per the Narrabri Area Pest Species Management Strategy in cooperation with neighbours, where appropriate.</p> <p>Undertake research, and/or utilise existing information sources, to determine the pest species that pose greatest threats to the conservation values of the reserves and use this information in establishing priorities.</p> <p><i>Acacia farnesiana</i> may be controlled if research finds that it is having an adverse impact on the grassland communities of the reserve.</p> <p>Close watering points on the reserve to reduce pig habitat and disturbance thereby also reducing weed habitat. Undertake weed control and facilitate vegetation rehabilitation on the dams.</p> | <p>High</p> <p>Medium</p> <p>Low</p> <p>Medium</p> |

Once a plan has been adopted by the Minister it must be implemented, and no operations may be undertaken except in accordance with the plan. If after adequate investigation, operations not included in the plan are found to be justified, the plan may be amended in accordance with section 73B of the National Parks and Wildlife Act. This plan applies both to the land currently reserved and to any future additions. Where management strategies or works are proposed for additions that are not consistent with the plan, an amendment to the plan will be required.