

# **PEE DEE 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 25<sup>th</sup> November 2003.**

For additional information or enquiries on Pee Dee Nature Reserve or this plan of management, contact the Service's Mid North Coast Regional Office at 152 Horton Street, Port Macquarie or by phone on (02) 6586-8300.

**NSW National Parks and Wildlife Service**

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**ISBN 0 7313 6561 5**

## FOREWORD

Pee Dee Nature Reserve is located 50 km north west of the town of Kempsey on the northern side of the Macleay River. The reserve comprises two separate sections located on a major spur from Mount Woorong Woorong.

Although there have been no flora or fauna surveys undertaken in Pee Dee Nature Reserve, five significant plant species and 14 animal species of significance are predicted to occur in the reserve.

Access to the reserve is difficult and, as a result, the reserve does not have a history of recreational use and no facilities are provided.

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 a reserve will be managed in the years ahead.

A draft plan of management for Pee Dee Nature Reserve was placed on public exhibition for three months 26<sup>th</sup> July until 28<sup>th</sup> October 2002. The exhibition of the plan of management attracted 5 submissions which raised 5 issues. All submissions received were carefully considered before adopting this plan of management.

This plan of management aims conserve the biodiversity and maintain ecosystem functions within Pee Dee Nature Reserve. Any places, objects, features or landscapes found to be of cultural value will be conserved.

This plan of management establishes the scheme of operations for Pee Dee Nature Reserve. In accordance with section 76 of the National Parks and Wildlife Act 1974, this plan of management 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 the legislative and policy framework, primarily the *National Parks and Wildlife Act 1974* (NPW Act), the *Threatened Species Conservation Act 1995* (TSC Act), and the policies of the NSW National Parks and Wildlife Service (NPWS). The policies arise from the legislative background, the NPWS corporate goals 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* requires the assessment and mitigation of environmental impacts of any works proposed in this plan.

This plan applies both to the land currently reserved as Pee Dee Nature Reserve and to any future additions to the reserve. 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 management strategies or works are proposed for Pee Dee Nature Reserve or any additions to the reserve that are not consistent with this plan, an amendment to the plan will be required.

## 1.2 MANAGEMENT PURPOSES AND PRINCIPLES

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

Under the Act, nature reserves are managed to:

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

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

## **2 PEE DEE NATURE RESERVE**

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

Pee Dee Nature Reserve (referred to hereafter as “the reserve”) is located 50km north west of the town of Kempsey on the northern side of the Macleay River. The reserve comprises two separate sections located on a major spur from Mount Woorong Woorong called Pee Dee Range. The northern section of the reserve is on the western slopes of Shingley Mountain. The southern section is immediately to the north of the Armidale Road at O’Sullivan’s Gap (see map).

The reserve was gazetted on 5 March 1999. Later additions were made on 17 December 1999 and the reserve now totals 441ha.

The reserve is named after Pee Dee Range, which is derived from Pee Dee cattle station. This station is said to be named for Pearl Dufty, who was abducted by Aborigines in the 1850’s. As she travelled with the Aborigines she scratched her initials on trees, which allowed her to be located by her rescuers.

The reserve is within the Kempsey Local Government Area, the Mid North Coast Catchment Management Board area, and the Kempsey Rural Lands Protection Board (RLPB) area.

Surrounding land uses include extensive grazing and limited timber getting.

### **2.2 LANDSCAPE CONTEXT**

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 the environment through recreational use, cultural practices, the presence of introduced plants and animals and in some cases air and water pollution.

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 VALUES

### Landform, Geology and Soils

Elevations in the reserve range from 100m to 700m above sea level. The reserve lies on a forested ridge that runs from the Macleay River to Point Lookout via the Comara Range. Across the Macleay River lies Scotchies Range which is part of a forested corridor that runs to the Carrai plateau and Oxley Wild Rivers Wilderness. The reserve is thus part of a major vegetation and wildlife corridor in the upper Macleay Valley.

The parent rocks of the reserve are Permian slaty siltstones and sandstones. Soils are typically shallow, stony, infertile and easily eroded by water.

### Catchment values

Both sections of the reserve form part of the watershed between Five Day and Pee Dee Creeks which drain to the Macleay River. Shingley Creek and Monday Creek drain the western fall of the range to Five day Creek whilst McAteers and Cow Bail Creeks drain the eastern fall of the range to Pee Dee Creek. The Macleay River provides the domestic water supply for the towns of Bellbrook and Kempsey.

### Native Plants

The vegetation is dry open eucalypt forest of grey gum (*E. punctata*), white mahogany (*E. acmenioides*) and grey ironbark (*E. siderophloia*), with minor occurrences of brush box (*Lophostemon confertus*) and Sydney blue gum (*E. saligna*) with rainforest understorey in protected gullies. There has been no flora survey carried out within the reserve, however models developed as part of the comprehensive regional assessment (CRA) process have predicted a number of significant plant species in the reserve (refer table 1).

Table 1. Significant plants predicted to occur within the reserve.

Common name	Scientific name	Significance
Black silkpod	<i>Parsonsia dorrigoensis</i>	Vulnerable
Boronia	<i>Boronia chartacea</i>	Regionally significant
Acomis	<i>Acomis acoma</i>	Regionally significant
Vine	<i>Cynanchum elegans</i>	Endangered ^
Ravine orchid	<i>Sarcochilus fitzgeraldii</i>	Southern limit

^ also listed as endangered under the *Environment Protection and Biodiversity Conservation Act 1999*

### Native Animals

There has been no fauna survey carried out within the reserve, however, suitable habitat exists for a number of regionally significant or threatened species that are predicted to occur in the reserve (refer table 2).

Table 2. Significant animals predicted to occur within the reserve.

Common name	Scientific name	Significance
<b>Mammals</b>		
Koala	<i>Phascolarctos cinereus</i>	Vulnerable <sup>r</sup>
Rufous bettong	<i>Aepyprymnus rufescens</i>	Vulnerable <sup>r</sup>
Eastern horseshoe-bat	<i>Rhinolophus megaphyllus</i>	Regionally significant
Eastern forest bat	<i>Vespadelus pumilus</i>	Regionally significant
Eastern free-tail bat	<i>Mormopterus norfolkensis</i>	Vulnerable <sup>r</sup>
Brush-tailed phascogale	<i>Phascogale tapoatafa</i>	Vulnerable <sup>r</sup>
<b>Birds</b>		
Sooty owl	<i>Tyto tenebricosa</i>	Vulnerable <sup>r</sup>
Bush stone-curlew	<i>Burhinus grallarius</i>	Endangered <sup>r</sup>
Pale-yellow robin	<i>Tregellasia capito</i>	Regionally significant
Glossy black-cockatoo	<i>Calyptorhynchus lathami</i>	Vulnerable
<b>Reptiles</b>		
Burrowing skink	<i>Ophioscincus truncatus</i>	Regionally significant
<b>Amphibians</b>		
Green-thighed frog	<i>Litoria brevipalmata</i>	Vulnerable
Frog	<i>Litoria revelata</i>	Regionally significant
Giant barred frog	<i>Mixophyes iteratus</i>	Endangered <sup>^</sup>

<sup>r</sup> recovery plan in preparation

<sup>^</sup> also listed as endangered under the *Environment Protection and Biodiversity Conservation Act 1999*

## Aboriginal Heritage

The reserve is within the Dunghutti-Kempsey and Thunghutti-Bellbrook tribal area and the Kempsey Local Aboriginal Land Council area. No Aboriginal sites have been recorded in the reserve although no systematic studies for cultural heritage sites have been undertaken. The tablelands area provided resources for year-round occupation by the Dunghutti and Thunghutti people, including a rich variety of foods, medicines, shelter and utensils.

## Non-Aboriginal Heritage

There are no recorded historic places or other European historic sites known within the reserve.

## Public use

The Armidale Road runs along the southern boundary of the reserve, however the road cutting and extremely steep nature of the reserve along this section prevents vehicle access and restricts walking access. There is no other vehicle access into the reserve. Although there are road reservations leading to the reserve, construction of public roads along these alignments is impracticable due to the extremely steep slopes. As a result the reserve does not have a history of recreational use and no recreation facilities are provided.

## 2.4 THREATS TO THE RESERVE'S VALUES

### Introduced plants

Weed species are currently a minor problem within the reserve. There has been no comprehensive study of weeds undertaken in the reserve, however casual observation indicates that lantana (*Lantana camara*) is common throughout the reserve, particularly in moist and semi moist areas but it does not appear to be greatly effecting the diversity of native plant species.

### Introduced Animals

Wild dogs (*Canis familiaris*) and foxes (*Vulpes vulpes*) were reported in a survey of landholders in the vicinity of the reserve in 1998 (RLPB/NPWS 1998).

Other pest animals likely to occur in the reserve are the rabbit (*Oryctolagus cuniculus*), cattle (*Bos sp.*) and black rat (*Rattus rattus*).

A 1080 aerial baiting program for wild dogs was carried out in 1999 cooperatively with the Kempsey RLPB. Ground baiting is now the preferred method of pest animal control and this will require cooperation with neighbours and the Kempsey RLPB. Due to difficulty of access to the reserve ground baiting is desirable on surrounding private lands.

### Fire

The fire history of reserve is poorly known. There are no known significant areas of fire sensitive vegetation other than limited areas of rainforest understoreys in gullies. Because of the steep nature of the reserve it is impracticable to construct fire advantages or conduct contained hazard reduction.

The NPWS uses a zoning system for bushfire management in its reserves. NPWS zones are compatible with the zones adopted by the Bushfire Coordinating Committee for use in District Bushfire Management Committee bushfire risk management plans.

NPWS has assessed the reserve for fire management planning purposes and has zoned the reserve as a Heritage Management Zone (HAMZ). 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 HAMZ because it is not adjacent to built assets which are exposed to a high level of bushfire risk and does not require strategic hazard reduction.

The NPWS is an active member of the Kempsey District Bushfire Management Committee.



## **Modification of surrounding lands**

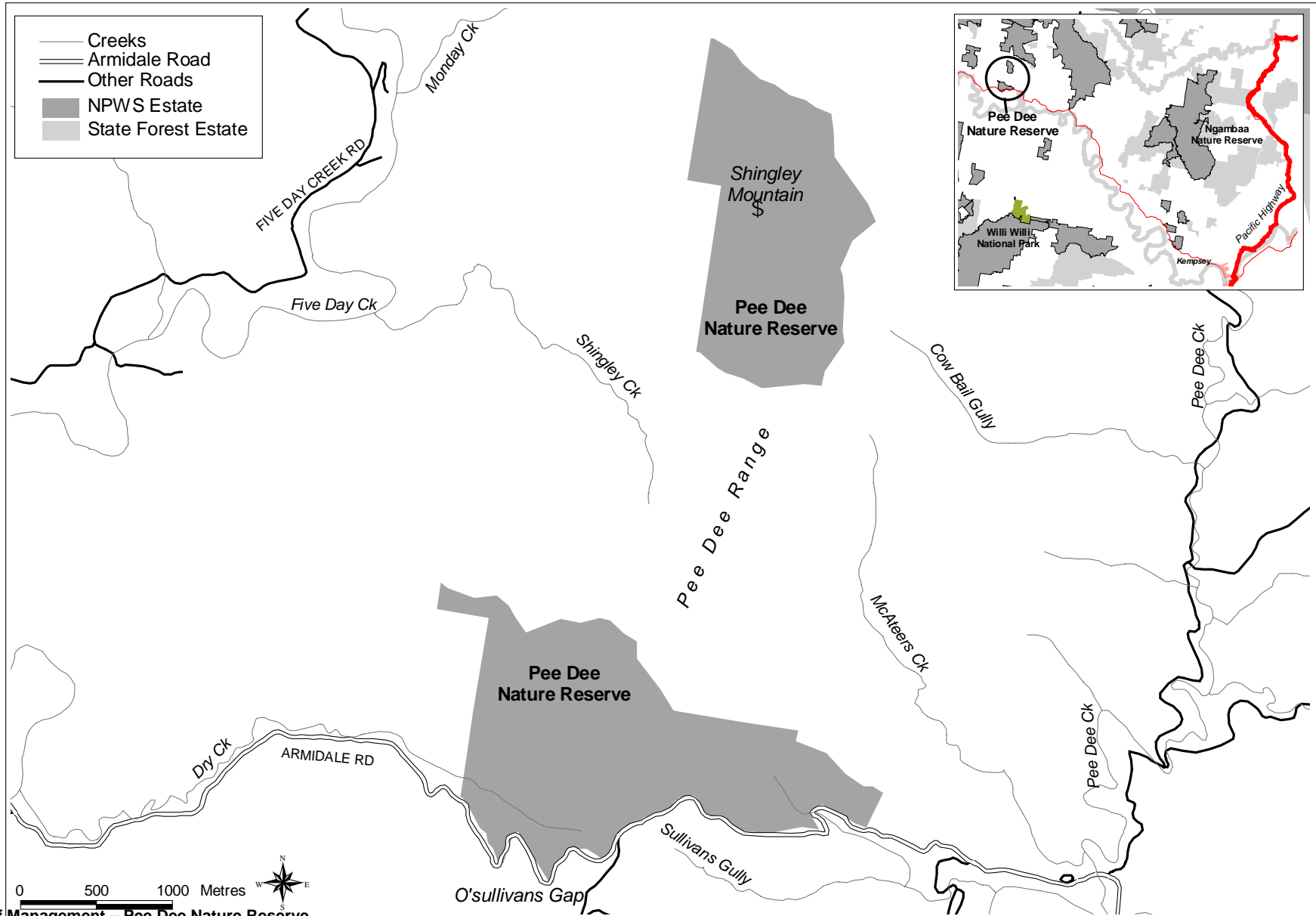
Most of the surrounding land is forested leasehold and freehold land used for harvesting sawlogs, poles and fencing timbers. Some areas have been partially cleared for grazing.

The long term conservation of biodiversity of the reserve will be enhanced by the protection, enhancement and connection of remaining habitat across the landscape involving public and private land remnants.

## **2.5 MANAGEMENT OPERATIONS**

Access to the reserve is required for control of introduced pest species and other management activities. Existing road reservations to the reserve are impracticable for road construction due to steep slopes, and construction of trails within the reserve would cause very significant environmental damage. Vehicle access to the reserve is entirely through private property and is currently subject to verbal access agreements between adjacent landholders and NPWS.

### 3 RESERVE MAP



#### 4 MANAGEMENT ISSUES AND STRATEGIES

Current Situation	Desired Outcomes	Strategies and Actions	Priority
<p><b>Soil and water conservation</b></p> <p>There are currently no major problems with erosion or water quality, although the soils are highly erodable if exposed.</p>	<ul style="list-style-type: none"> <li>The reserve's catchment values and the water quality and health of park streams are maintained.</li> </ul>	<ul style="list-style-type: none"> <li>Undertake all works in a manner that minimises erosion and water pollution.</li> </ul>	High
<p><b>Native plant and animal conservation</b></p> <p>Flora and fauna have not been surveyed but modeling has predicted the occurrence of a number of significant species.</p>	<ul style="list-style-type: none"> <li>All native animal and plant species and communities are conserved.</li> <li>Increased knowledge of native plant and animals in the reserve and their ecological requirements.</li> </ul>	<ul style="list-style-type: none"> <li>Undertake flora and fauna surveys, in particular to determine occurrence of significant species.</li> <li>Encourage research into the ecological requirements of significant species in the reserve.</li> <li>Work with relevant neighbours, Landcare groups and others to encourage retention of remnant vegetation in the vicinity of the reserve.</li> </ul>	<p>Medium</p> <p>Medium</p> <p>Medium</p>

Current Situation	Desired Outcomes	Strategies and Actions	Priority
<p><b>Cultural heritage</b></p> <p>No cultural heritage surveys have been undertaken.</p> <p>The reserve is within the Dunghutti and Thunghutti tribal area and the Kempsey Local Aboriginal Land Council area.</p>	<ul style="list-style-type: none"> <li>Cultural features and values are identified, recorded and appropriately conserved and managed.</li> </ul>	<ul style="list-style-type: none"> <li>Undertake an archaeological survey and cultural assessment prior to all works with the potential to impact on Aboriginal or non-Aboriginal sites and values.</li> <li>Continue to consult with the Dunghutti and Thunghutti elders and the Kempsey Local Aboriginal Land Council and provide copies of any research findings on Aboriginal cultural heritage to the Land Council.</li> </ul>	<p>Low</p> <p>High</p>
<p><b>Introduced species</b></p> <p>Lantana is the main weed species in the reserve. Other than lantana introduced species are not currently a problem on the reserve.</p> <p>Wild dogs have been seen on grazing lands about the reserve. Aerial wild dog baiting has been undertaken in the past.</p>	<ul style="list-style-type: none"> <li>The impact of introduced species on the reserve and neighbouring lands is minimised.</li> </ul>	<ul style="list-style-type: none"> <li>Seek the cooperation of Kempsey RLPB and other relevant authorities and neighbours in implementing weed and pest animal control programs.</li> <li>Prepare and implement pest management programs in the reserve as part of the Regional Pest Management Strategy. Control of wild dogs will be a priority.</li> <li>Assist the Kempsey RLPB in ground baiting for wild dogs in the vicinity of the reserve.</li> <li>Ground baiting in the reserve will be by foot or horse only because of limitations on vehicle access.</li> </ul>	<p>High</p> <p>High</p> <p>High</p> <p>High</p>

Current Situation	Desired Outcomes	Strategies and Actions	Priority
<p><b>Fire management</b></p> <p>The fire history is unknown. There are no fire trails in or around the reserve apart from the Armidale Road, which is a significant fire break.</p> <p>The steep nature of the reserve limits fire management activities.</p>	<ul style="list-style-type: none"> <li>• Persons and property are protected from bushfire.</li> <li>• Unplanned fires do not enter into or exit from the reserve.</li> </ul>	<ul style="list-style-type: none"> <li>• Cooperate with neighbours who wish to conduct hazard reduction in the vicinity of the reserve.</li> <li>• Participate in district Bush Fire Management Committees and maintain coordination and cooperation with local Rural Bush Fire Service brigades and neighbours with regard to fuel management and fire suppression.</li> <li>• Manage the reserve as a Heritage Management Zone.</li> <li>• No trails will be established in the reserve.</li> <li>• Prescribed burning will not be undertaken on the reserve unless research indicates that fire is necessary to protect biodiversity values.</li> </ul>	<p>High</p> <p>High</p> <p>High</p> <p>High</p> <p>High</p>
<p><b>Visitor use</b></p> <p>There is no vehicle access or visitor facilities in the reserve. There is no known current recreational use of the reserve.</p>	<ul style="list-style-type: none"> <li>• Visitor use of the reserve is nature based and ecologically sustainable and is maintained at a low level.</li> </ul>	<ul style="list-style-type: none"> <li>• Maintain the reserve for a low level of use with no visitor facilities and no camping, horse riding or vehicular use.</li> <li>• Visitors must obtain permission from NPWS before entering the northern section of the reserve. Access will also be subject to visitors obtaining permission from private land holders to traverse private property.</li> </ul>	<p>High</p> <p>High</p>

Current Situation	Desired Outcomes	Strategies and Actions	Priority
<p><b>Research</b></p> <p>Further information is needed to improve understanding of the reserve's natural and cultural values and the processes that affect them.</p>	<ul style="list-style-type: none"> <li>• Research enhances the information base and assists management of the reserve.</li> </ul>	<ul style="list-style-type: none"> <li>• Encourage research that improves knowledge and management of natural and cultural values.</li> <li>• Liaise with neighbours about allowing access through private property for research in the reserve.</li> </ul>	<p>Low</p> <p>Low</p>
<p><b>Management operations</b></p> <p>Vehicle access to the reserve boundaries is required by NPWS for control of pest species and other management purposes. Access to the reserve is currently via private property with the agreement of a landholder. There are no management trails within the reserve.</p>	<ul style="list-style-type: none"> <li>• Suitable vehicle access to the reserve is available for NPWS management purposes.</li> <li>• No management trails or other management facilities are constructed in the reserve.</li> </ul>	<ul style="list-style-type: none"> <li>• Liaise with neighbours to seek a formal agreement for NPWS vehicle access through private property to the reserve.</li> </ul>	<p>High</p>

**High** priority activities are those imperatives 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.

## REFERENCES

NPWS (2001) Regional pest management strategy. Unpublished report prepared by NPWS Mid North Coast Region, Port Macquarie.

RLPB/NPWS Joint Survey (1998) Livestock, Feral Animal and Wildlife Management Unpublished report

## GLOSSARY

### ACRONYMS

NPW Act	NSW <i>National Parks and Wildlife Act</i> (1974)
NPWS	NSW National Parks and Wildlife Service
TSC Act	NSW <i>Threatened Species Conservation Act</i> (1995)
RLPB	Rural Lands Protection Board

### SELECTED DEFINITIONS

**Biodiversity** Biological diversity, namely the variety of life forms: the different plants, animals and microorganisms, the genes they contain, and the ecosystems they form. It is usually considered at three levels: genetic diversity, species diversity and ecosystem

**Cultural heritage** Encompasses past and present cultural associations of all people in Australia, including tradition, knowledge and customs. It can be tangible (i.e. have physical manifestations in the form of art, buildings etc.) or intangible (i.e. spiritual or social associations, songs, stories and cultural practices). Cultural significance includes values that are social, spiritual, aesthetic, historic and scientific.

**Fauna** Any mammal, bird, reptile or amphibian. NPWS has responsibility for the conservation of fauna. Note this definition excludes fish or invertebrates.

**Fire Management** Includes all activity associated with the use and control of fire in bushland designed to achieve stated objectives for the protection of life and property, and the maintenance of wildlife communities.

**Historic places** Landscapes, sites buildings or other works together with pertinent contents and surroundings and include structures, ruins, archaeological sites and areas

**Introduced species** A species occurring in an area outside its historically known natural range as a result of intentional or accidental dispersal by human activities. Also known as exotic or alien species.

**Policy** A statement of attitude and courses of action, directed toward the attainment of NPWS corporate goals and/or objectives.

**Recovery plan** A document, prepared under the *TSC Act*, that identifies the actions to be taken to promote the recovery of a threatened species, or endangered population or ecological community.