

GOONAWARRA NATURE RESERVE

PLAN OF MANAGEMENT

NSW National Parks and Wildlife Service

Part of the Department of Environment and Climate Change

July 2008

This plan of management was adopted by the Minister for Climate Change and the Environment on 21st July 2008.

For additional information or enquiries on Goonawarra Nature Reserve or this plan, contact the Department of Environment and Climate Change – Parks and Wildlife Group, Western Rivers Region, Griffith Area office at 200 Yambil Street Griffith, or by phone on (02) 6966 8100.

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FOREWORD

Goonawarra Nature Reserve covers an area of 437 hectares and is located approximately 19 kilometres south of Booligal and 56 kilometres north of Hay in western New South Wales.

The reserve is situated on the floodplain of the Lachlan River and contains river red gum woodlands, black box woodlands and open saltbush plains. Riverine habitats, and in particular river red gum communities, are poorly conserved within the NSW reserve system. The Lachlan River habitat is a refuge during periods of drought and a timbered corridor for wildlife movement. The old-growth red gum and black box contain valuable habitat for hollow-dependent species such as parrots, owls and brush-tailed possums. After flooding, the channels provide feeding and nesting areas for waterbirds.

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 Goonawarra Nature Reserve was placed on public exhibition from 2nd June until 4th September 2006. The submissions received were carefully considered before adopting this plan.

This plan contains a number of actions to achieve “Better environmental outcomes for native vegetation, biodiversity, land, rivers, and coastal waterways” (Priority E4 in the State Plan) including surveys for plant and animal species, control of pests and weeds, fencing to restrict stock incursions, and fire management strategies aimed at protecting the fire-sensitive riverine vegetation.

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

Verity Firth
Minister for Climate Change and the Environment

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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 Act, the *Threatened Species Conservation Act 1995* and the policies of the Department of Environment and Conservation. 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* 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 Act. Once the Minister has adopted a plan, no operations may be undertaken within the nature reserve except in accordance with the plan. The plan will also apply to any future additions to Goonawarra Nature Reserve. Where management strategies or works are proposed for the reserve or any additions that are not consistent with this plan, an amendment to the plan will be required.

1.2 MANAGEMENT OBJECTIVES

Nature reserves are reserved under the 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 the provision of opportunities for visitor use.

2. GOONAWARRA NATURE RESERVE

2.1 LOCATION, GAZETTAL AND REGIONAL SETTING

Goonawarra Nature Reserve (hereafter referred to as “the Reserve”) is located nineteen kilometres south of Booligal and fifty-six kilometres north of Hay in western NSW (see reserve map). The Reserve is 437 hectares in size and is bordered by the Lachlan River to the west and enclosed by the property “Quandongs” on the northern, eastern and southern boundaries.

Formerly Simpson State Forest, the Reserve was gazetted on the 3rd May 1967 under section 9(1) of the Fauna Protection Act, 1948. The Fauna Protection Act was later replaced by the National Parks and Wildlife Act and Goonawarra Faunal Reserve renamed Goonawarra Nature Reserve.

The Reserve is located within the Riverina Bioregion. Only 1.96% of the Bioregion is within NSW conservation reserves, one of the lowest figures in the state.

2.2 NATURAL AND CULTURAL HERITAGE

Landform, Geology and Soils

The Reserve is on the Riverine Plain, which lies in the south-eastern part of the Murray Basin. The landform is predominantly a low-lying alluvial plain formed over millions of years by stream deposition from ancestral and contemporary rivers (such as the Murray, Murrumbidgee and Lachlan Rivers) (Butler *et al.* 1973).

The Reserve is situated on the floodplain of the Lachlan River, upstream from the confluence with Mirrool Creek. Much of the terrain is composed of alluvial flood plain deposits and incised by flood channels. The soil is predominantly heavy grey cracking clays, but grading to sandy, texture-contrast soils on the eastern boundary of the reserve.

Native Plants

The vegetation within the Reserve is representative of that found along the lower Lachlan River.

River red gum *Eucalyptus camaldulensis* woodland with an understorey of river cooba *Acacia stenophylla* and lignum *Muehlenbeckia florulenta* is the dominant community along the river and floodways intersecting the Reserve. Slightly higher areas contain woodlands of black box *Eucalyptus largiflorens* with an understorey of nitre goosefoot *Chenopodium nitrariaceum*. On the eastern edge of the Reserve the riverine communities grade into open saltbush plains. These open plains are dominated by annual species such as poverty bush *Sclerolaena tricuspsis*, slender-fruited saltbush *Atriplex leptocarpa* and barley grass *Hordeum leporinum*. These species indicate the area has been heavily grazed in the past, modifying what was probably bladder saltbush *Atriplex vesicaria* low shrubland prior to European settlement (Beadle 1948).

Riverine habitats are poorly conserved within the NSW reserve system and many river red gum communities are subject to private logging operations and firewood collection.

Changing flow regimes on the Lachlan River, as a result of water storages, diversions and agricultural development, has affected the timing and volume of flood events which in turn can impact on the health and recruitment of floodplain vegetation (Eardley 1999).

Native Animals

The Reserve has not been studied in detail, and the fauna of the area is poorly known. Native animals known from the reserve include two species of reptiles, forty-nine species of birds and two species of mammal (NSW Wildlife Atlas 2005). The most commonly recorded species include the galah *Eolophus roseicapillus*, yellow rosella *Platycercus elegans flaveolus*, grey shrike-thrush *Colluricincla harmonica* and the magpie-lark *Grallina cyanoleuca*.

There are few records of threatened species in the area, with one sighting each of a magpie goose *Anseranas semipalmata* and a red-tailed black-cockatoo *Calyptorhynchus banksii* near the reserve. Both species are considered vagrants, although the magpie goose was once a breeding resident on the lower Murrumbidgee River. Other threatened species that may occur on the reserve include the brolga *Grus rubicundus*, the barking owl *Ninox connivens* and, during wet seasons, the freckled duck *Stictonetta naevosa*.

The Lachlan River habitat is a refuge during periods of drought and a timbered corridor for wildlife movement. The old-growth red gum and black box contain valuable habitat for hollow-dependent species such as parrots, owls and brush-tailed possums. After flooding, the channels would provide feeding and nesting areas for waterbirds.

Aboriginal Heritage

The Reserve is near the junction of the areas occupied by the Yita Yita and Wiradjuri language groups. It is ten kilometres north-east of Lake Waljeers, which is probably the country of the Walgerre (Pardoe & Martin 2001). The Walgerre may have been either primarily Yita Yita or Wiradjuri speakers; but it is likely that they were conversant both languages (ibid.). Today descendants of Yita Yita and Waradjuri are found across inland NSW, including Griffith, Hay, Balranald and Ivanhoe.

Country is at the centre of Aboriginal spirituality and identity. Currently little is known about the Aboriginal significance and use of the Reserve (and surrounding lands) and further study is required. No sites have been registered but open sites and scarred trees could occur.

The Reserve lies within the area of the Griffith Local Aboriginal Land Council (LALC), but adjoins the boundaries of both Balranald and Hay LALCs.

Historic Heritage

The first Europeans to visit the area were with the explorer John Oxley during May 1817. Oxley's party would have passed through or close to the Reserve before encountering the extensive lignum swamps at the confluence of the Mirrool Creek and Lachlan River. Overflowing with heavy winter rains, his party was forced to retreat and travel back upstream along the river (Oxley, 1820).

European occupation of the area occurred during the 1840s, with the surrounding area being taken up by John Higgins and the selection of "Ulonga". Cattle and sheep grazing has been the predominant land use since settlement.

Prior to gazettal, the area was a state forest and subject to grazing and limited timber harvesting activities. There are no known historic structures or objects present on the Reserve.

Use of the Area

Goonawarra Nature Reserve is a small area with no visitor facilities. It is only accessible on a dry weather trail via a locked gate through private property, and receives no public visitation. Some illegal timber removal and camping has occurred in the past.

2.3 REFERENCES

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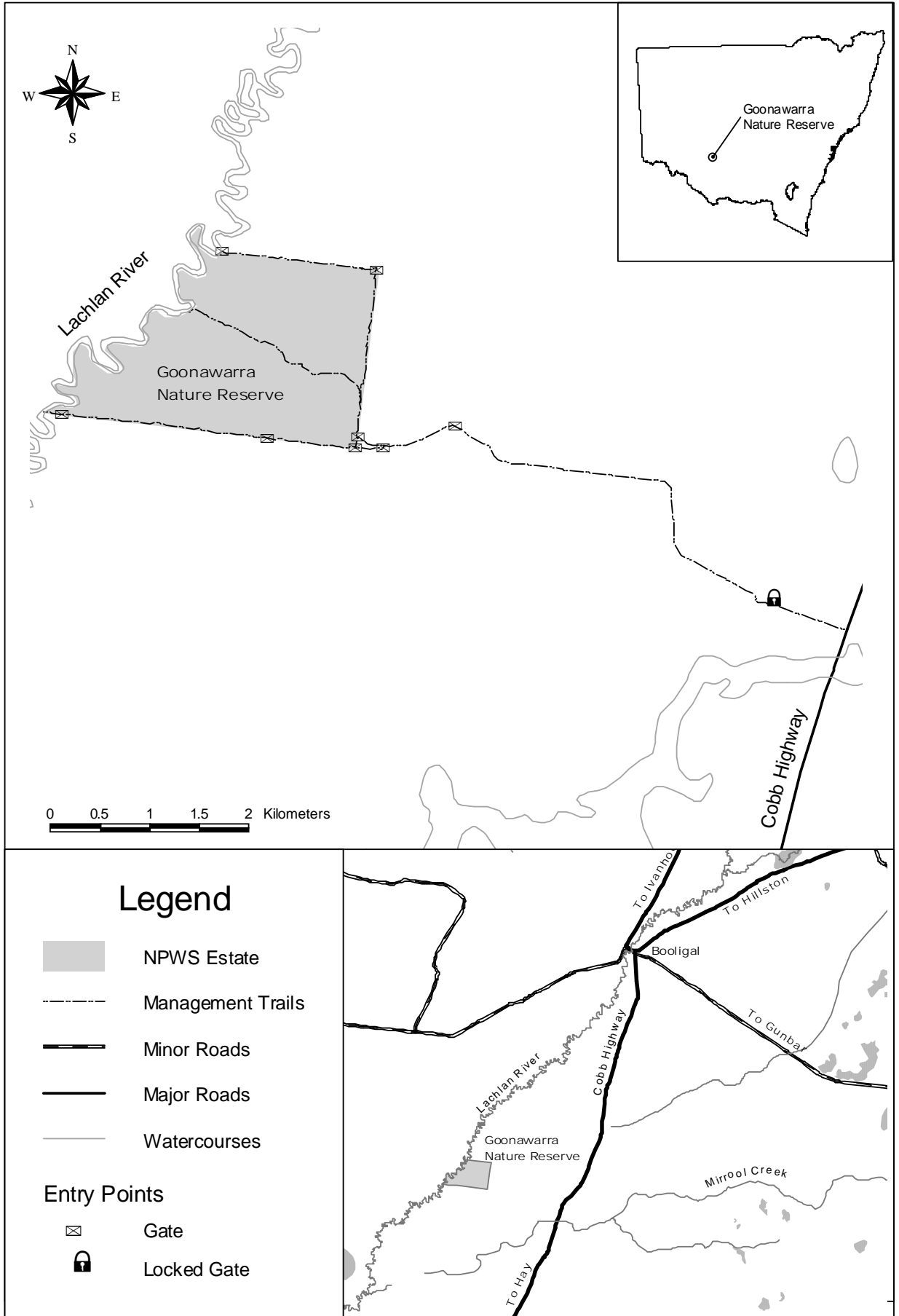
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RESERVE MAP



3. MANAGEMENT ISSUES AND STRATEGIES

Current Situation	Desired Outcomes	Strategies	Priority
<p>Soil and water conservation</p> <p>The Reserve adjoins the Lachlan River.</p> <p>There is potential for erosion and deposition during flood events.</p>	<p>Soil erosion resulting from human activity is minimised.</p>	<p>Undertake all works in a manner that minimises erosion and water pollution.</p>	<p>High</p>
<p>Native plant and animal conservation</p> <p>The Reserve protects a section of the Lachlan River and associated riverine habitat. As well as providing habitat for native animals, the riverine habitat also acts as a corridor of movement for woodland-dependent species and as a drought refuge.</p> <p>The only threatened species recorded in the vicinity are the magpie goose and red-tailed black cockatoo. Both species are regarded as vagrants to south-western NSW. Other threatened species may use the Reserve.</p> <p>Recovery plans and statements are progressively being prepared for threatened species throughout NSW.</p>	<p>All native plant and animal species and communities are conserved.</p> <p>Structural diversity and habitat values are maintained.</p>	<p>Undertake surveys for plant and animal species.</p> <p>Implement measures included in recovery plans for threatened species found on the Reserve.</p> <p>Work with neighbours and catchment management authorities to encourage further conservation of floodplain habitats of the western Riverina.</p>	<p>Medium</p> <p>High</p> <p>Medium</p>

Current Situation	Desired Outcomes	Strategies	Priority
<p>Introduced species</p> <p>Bathurst burr <i>Xanthium spinosum</i> and noogoora burr <i>X. occidentale</i> can be common after heavy rain, and seed is easily transported into the reserve after flooding.</p> <p>Horehound <i>Marrubium vulgare</i> is found in patches and African boxthorn <i>Lycium ferocissimum</i> also occurs as scattered shrubs.</p> <p>Introduced animals such as foxes <i>Vulpes vulpes</i>, pigs <i>Sus scrofa</i>, rabbits <i>Oryctolagus cuniculus</i> and cats <i>Felis catus</i> occur, usually in low numbers.</p> <p>The Riverina Region's Pest Control Strategy (NPWS 2002) outlines criteria for prioritising pests in the Reserve.</p> <p>Domestic stock such as sheep and cattle occasionally enter the reserve, usually when the Lachlan River is at low flow levels and ceases to be a barrier to movement from adjacent private land.</p>	<p>The impact of introduced species on native species on the Reserve and on neighbouring lands is minimised.</p>	<p>Undertake pest species control in accordance with the Riverina Region's Pest Control Strategy (NPWS 2002).</p> <p>Monitor occurrence noxious and significant environmental weeds, especially after flooding or heavy rains. Treat any outbreaks when detected.</p> <p>Seek the cooperation of other authorities and neighbours in implementing weed and pest animal control programs. Where necessary undertake control programs.</p> <p>In cooperation with neighbours, maintain fencing between the reserve and adjoining properties to minimise intrusions by wandering livestock. Investigate options to restrict stock access during periods of low river height, such as fencing down the riverbank.</p>	<p>High</p> <p>Medium</p> <p>High</p> <p>High</p>

Current Situation	Desired Outcomes	Strategies	Priority
<p>Fire Management</p> <p>Fire is an uncommon but natural feature of the local environment. There has been one known fire in the last fifty years. During November 1979 a fire burnt across neighbouring properties on both sides of the Lachlan River and through the Reserve.</p> <p>In most years the fire risk is low. Fire threat is greatest after periods of heavy winter and spring rainfall, promoting growth of annual grasses. During these years grass fuel loads are usually high across the landscape, and pose a high fire danger when curing occurs over summer.</p> <p>Lightning strikes associated with summer storms are the main causes of ignition. If associated with blustery cold fronts, fires may spread rapidly through the landscape (usually south-easterly before switching northerly as the front passes through) and burn many hectares before being controlled.</p> <p>Riverine communities are regarded as fire sensitive. There is no demonstrated requirement for burning within the reserve during the life of this plan.</p> <p>A shearing shed and quarters approximately one kilometre from the reserve boundary is the closest known infrastructure. For fire to reach these buildings it would have to cross a treeless saltbush plain that would carry fire only under extreme conditions.</p>	<p>Persons and property are protected from bushfire.</p> <p>The occurrence and extent of fires are minimised.</p>	<p>Maintain a fire access trail / break between the reserve and adjacent properties. Maintain the trail within the Reserve for access to bush fires.</p> <p>Manage the Reserve as a Heritage Area Management Zone. Priority will be placed on protection of the natural values of the Reserve.</p> <p>Participate in Hay Zone Bush Fire Management Committee. Maintain coordination and cooperation with Rural Fire Service brigades with regard to fire trail maintenance and fire suppression.</p> <p>Prepare fire control guidelines annually as part of the Regional Incident Procedures, outlining measures to control fire spread and minimise the impact of control operations.</p>	<p>High</p> <p>Ongoing</p> <p>High</p> <p>Ongoing</p>

Current Situation	Desired Outcomes	Strategies	Priority
<p>Cultural heritage</p> <p>There are no known sites of cultural heritage on the reserve.</p> <p>More research is required to gain knowledge about the cultural values of the reserve.</p>	<p>Cultural features are conserved and managed in accordance with their significance.</p>	<p>Precede all work by a survey for cultural features.</p> <p>Consult and involve the Griffith Local Aboriginal Land Council in all aspects of management of Aboriginal sites, places and values.</p>	<p>High</p> <p>High</p>
<p>Visitor use</p> <p>There is no legal public vehicle access into the Reserve.</p> <p>There are no visitor facilities in the Reserve.</p> <p>There is no current visitor use.</p>	<p>The local community is aware of the significance of the area and of management programs.</p> <p>Visitor use is ecologically sustainable.</p>	<p>Recreational facilities will not be provided and the Reserve will not be promoted for recreational use.</p> <p>Visits to the Reserve by researchers and nature-study groups may be allowed subject to prior permission by NPWS and limits on numbers and other conditions as necessary to minimise impacts.</p> <p>Commercial activities, community events, orienteering, horse riding, recreational four-wheeling driving, trailbike riding, cycling and overnight camping will not be permitted.</p>	<p>High</p> <p>Low</p> <p>High</p>
<p>Research</p> <p>Scientific study is needed to improve understanding of the Reserve's natural and cultural heritage, the processes that affect them and the requirements for management of particular species.</p>	<p>Research enhances the management information base and has minimal environmental impact.</p>	<p>Undertake and encourage research to improve knowledge and management of natural and cultural heritage. Ensure a report is provided if research work is conducted on the reserve.</p>	<p>Low</p>

Current Situation	Desired Outcomes	Strategies	Priority
<p>Management operations</p> <p>Management trails exist within the Reserve and along the boundaries for purposes such as fire and weed control.</p> <p>The Reserve boundary is fenced to a stock-proof standard, although stock can enter the reserve during periods of low river height.</p>	<p>Management facilities adequately serve management needs and have acceptable impact.</p>	<p>Maintain existing trails for management purposes (see Reserve Map). No additional trails will be created.</p> <p>Adhere to NPWS Policy in regards to boundary fencing.</p>	<p>High</p> <p>High</p>

Key to priorities

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.