

MIDKIN NATURE RESERVE

PLAN OF MANAGEMENT

NSW National Parks and Wildlife Service

Part of the Department of Environment and Conservation (NSW)

May 2005

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FOREWORD

Midkin Nature Reserve is located 16km north-west of Moree, in the Moree Plains shire, and is approximately 360 hectares in size.

Midkin Nature Reserve is situated in the Darling Riverine Plains Bioregion. It consists mostly of woodlands dominated by Bimble Box, White Cypress-pine, Silver-leaved Ironbark and Coolabah. Midkin Nature Reserve is one of the only areas of Bimble Box dominated woodland reserved for nature conservation in New South Wales. The grassland community within the Reserve has the potential to contain endangered grass species such as Hoop Mitchell Grass, Curly Mitchell and Queensland Bluegrass.

Midkin Nature Reserve provides important habitat for a wide variety of fauna. Recorded species include the Grey-crowned Babbler and Brolga which are listed as vulnerable under the *Threatened Species Conservation Act, 1995*. In addition, Koalas, Squirrel Gliders, Striped-face Dunnarts and 6 bird species listed as threatened may also use the Reserve.

Within the Reserve are a number of scarred trees of cultural significance to the local Kamilaroi Aboriginal community.

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 Midkin Nature Reserve was placed on public exhibition for three months from 19 September until 19 December 2003. The exhibition of the plan of management attracted 5 submissions that raised 11 issues. All submissions received were carefully considered before adopting this plan of management.

This plan of management establishes the scheme of operations for Midkin Nature Reserve. In accordance with section 73B 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 a legislative and policy framework, primarily the *National Parks and Wildlife Act 1974*, the National Parks and Wildlife Land Management Regulation, the *Threatened Species Conservation Act 1995* and the policies of the National Parks and Wildlife Service. 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* 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 National Parks and Wildlife Act. No operations may be undertaken within Midkin Nature Reserve except in accordance with this plan. This plan will also apply to any future additions to Midkin Nature Reserve. Where management strategies or works are proposed for the nature reserve or any additions 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 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. MIDKIN NATURE RESERVE

2.1 LOCATION, GAZETTAL AND REGIONAL SETTING

Midkin Nature Reserve (hereafter known as “the Reserve”) is located 16km north-west of Moree, in the Moree Plains shire, and is approximately 360 hectares in size. Prior to being gazetted on the 3rd of March 1976, the land formed part of a State Forest timber reserve, which was gazetted on the 17th June 1921. Cypress (*Callitris glaucophylla*) was the main timber product sourced from the Reserve. There is also evidence of previous livestock and cropping enterprises as evidenced by the historic Midkin pastoral complex.

The area surrounding the Reserve is dominated by dryland and irrigated cotton farming. Other agricultural activities, such as stock grazing, are also carried out.

2.2 NATURAL AND CULTURAL HERITAGE

Landform, Geology and Soils

Midkin Nature Reserve is situated in the Darling Riverine Plains Bioregion and lies 200m ASL. The area is characterised by black, deep riverine deposits of Quaternary age associated with clays, silts, sands and gravel deposits. Black self-mulching soils occur throughout the Reserve with isolated deposits of red quartzite gravels and alluvial sands.

Native Plants

The vegetation communities of the Reserve are mostly woodlands, dominated by Bimble Box (*Eucalyptus populnea*), White Cypress-pine (*Callitris glaucophylla*), Silver-leaved Ironbark (*E. melanophloia*) and Coolabah (*E. coolibah*) (Hunt, 1993). Supplejack (*Ventilago viminalis*), Wilga (*Geijera parviflora*) and Budda (*Eremophila mitchellii*) are common understorey shrubs. The Reserve also contains some grassland areas, which consist of Mitchell Grass (*Astrebla* sp.), along with some ephemeral swamp areas.

Midkin Nature Reserve is one of the only areas of Bimble Box dominated woodland reserved for nature conservation in New South Wales (White, 2002). The presence of historic cultivation equipment adjacent to the grassland area may indicate the area was cleared and cultivated in historic times. No threatened plant species or communities have been recorded on the Reserve.

The Reserve is primarily surrounded by cleared land, utilised for agricultural production. This may result in the influence of edge effects such as spray drift and weed infestations lowering native recruitment potential. To date, neighbours have been actively liaising with NPWS with respect to Spray Drift Management Plans and fulfilling their notification obligations. The Reserve is regularly monitored for the presence of weed species.

Wandering stock are generally not considered a problem as surrounding land-use is predominantly cropping and cotton. However, a nearby stock route is a probable source of infrequent incursions.

The grassland community within the Reserve has the potential to contain endangered grass species such as Hoop Mitchell Grass (*Astrebla elymoides*), Curly Mitchell Grass (*A. lappacea*) and Queensland Bluegrass (*Dichanthium sericeum*). The Mitchell Grass/Bluegrass community was once widespread across the western plains of New South Wales, but has almost been eliminated from the

Moree Plains area due to land clearing and cultivation or has undergone major structural and floristic changes as a result of impacts such as grazing.

Native Animals

Midkin Nature Reserve provides important habitat for a wide variety of fauna. The Reserve supports the Eastern Grey Kangaroo (*Macropus giganteus*), as well as small numbers of Emu (*Dromaius novaehollandiae*). Red Kangaroos (*Macropus rufus*) can occupy the area as part of their nomadic grazing pattern. The Red-necked Wallaby (*Macropus rufogriseus*) and Swamp Wallaby (*Wallabia bicolor*) also frequent the Reserve on a regular basis. Bimble Box can provide food and shelter for transient populations of Koalas (*Phascolarctos cinereus*) which are known to exist in the area. The Silver-leaved Ironbark and Bimble Box have the potential to provide habitat for the Squirrel Glider (*Petaurus norfolcensis*) (Ayers *et al*, 1996). The Reserve also offers habitat for the Striped-face Dunnart (*Sminthopsis macroura*) (Bioclimatic predictions, 2003). The Koala, Squirrel Glider and Striped-face Dunnart are all listed as Vulnerable under the *Threatened Species Conservation Act, 1995*.

Midkin Nature Reserve also provides habitat for a number of reptiles and amphibians such as the Brown-striped Frog (*Limnodynastes peronii*), Salmon-striped Frog (*Limnodynastes salmini*), Crucifix Toad (*Notaden bennettii*), Tree Skink (*Egernia striolata*), Bearded Dragon (*Pogona barbata*), Lace Monitor (*Varanus varius*), and the Red-bellied Black Snake (*Pseudechis porphyriacus*) (Ingram, 1995).

The Reserve is an important habitat for migratory bird species, including the Brolga (*Grus rubicundus*), which seasonally visits the Reserve. Midkin is almost entirely surrounded by cleared land therefore many bird species rely on the Reserve both as a feeding ground and resting area (Hunt, 1993). Twenty-five species of bird have been recorded living in the Reserve. Raptors including eagles, falcons, kites and owls hunt in the grasslands of the Reserve. The woodlands are home to many other species of birds including, honeyeaters, fairy-wrens, parrots and rosellas.

The Reserve provides habitat for the Grey-crowned Babbler (*Pomatostomus temporalis temporalis*) and Brolga (*Grus rubicundus*) which are both listed as Vulnerable species under the *Threatened Species Conservation Act, 1995*. Other Vulnerable species predicted to occur in the Reserve include the Australasian Bittern (*Botaurus poiciloptilus*), Black-necked Stork (*Xenorhynchus asiaticus*), Freckled Duck (*Stictonetta naevosa*), Square-tailed Kite (*Lophoictinia isura*), Bush Thick-knee (Curlew) (*Burhinus magnirostris*) and the Turquoise Parrot (*Neophema pulchella*) (Bioclimatic predictions, 2003).

More surveys in the Reserve are scheduled as part of the Narrabri District Reserve Biodiversity Assessment and Monitoring Strategy (Bullers, 1998).

Aboriginal Heritage

The Reserve is within the area inhabited by the Kamilaroi Aboriginal nation and is within the area administered by the Moree Local Aboriginal Land Council. Within the Reserve are a number of scarred tree sites of cultural significance to the local Aboriginal community.

Some Aboriginal tools have been found on properties adjoining the Reserve. Landholders have collected axes, grinding dishes, and flakes over many years during ploughing operations in nearby paddocks. No tools have been recorded as being found on Midkin Nature Reserve, however no detailed surveys have been undertaken.

Non-Aboriginal Heritage

A number of historical features exist in Midkin Nature Reserve. These include a cement dipping race, corrugated iron tanks, post and rail stock yards, discarded machinery and wooden water troughs. These items are evidence of previous cropping and livestock activities carried out in the Reserve before it became a State Forest in 1921.

References

Ayers, D., Nash, S., Baggett, K. (1996) *Threatened Species of New South Wales*, NSW National Parks and Wildlife Service, Hurstville.

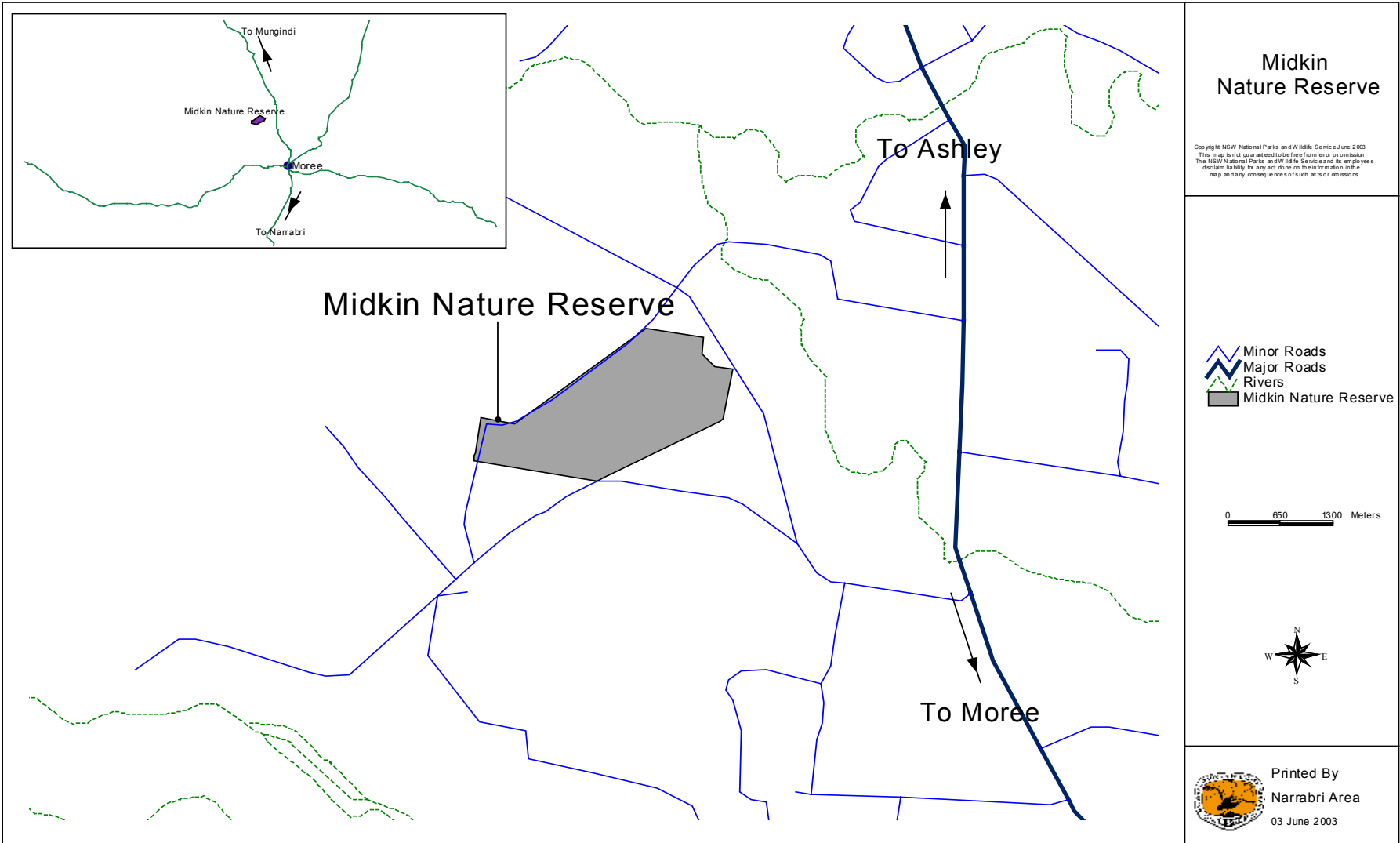
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Ingram, M. (1995) *Midkin Nature Reserve Biodiversity Study*, New South Wales National Parks and Wildlife Service.

White, M. (2002) *The Reconstructed Distribution and Extent of Indigenous Vegetation in the Moree Plains Shire*.



3. MANAGEMENT ISSUES AND STRATEGIES

Priority assigned to proposed activities: **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>Native plant and animal conservation</p> <p>The Reserve provides habitat for the vulnerable Grey-crowned Babbler (<i>Pomatostomus temporalis temporalis</i>).</p> <p>The Reserve has been logged for cypress in the past. Since logging, there has been no management of White Cypress (<i>Callitris glaucophylla</i>) regeneration. Photo monitoring indicates increasing density of regrowth Cypress pine. Cypress regrowth can become an issue as it can dominant the flora of an area at the expense of other native species.</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 logging.</p>	<ul style="list-style-type: none"> • Monitor cypress regrowth in the Reserve through the use of photomonitoring and plot data. • Investigate management options for cypress pine regrowth such as mosaic burning. Implement strategies, if necessary, to protect vulnerable species, such as the Grey-crowned Babbler. • Enhance value of the Reserve through promotion of the concept of wildlife corridors and the value of remnant native vegetation through liaison with neighbours, the community, local council and appropriate government organisations. 	<p>High</p> <p>Medium</p> <p>Medium</p>

<p>Introduced species</p> <p>Feral animals identified in the Reserve include pigs (<i>Sus scrofa</i>), foxes (<i>Vulpes vulpes</i>), rabbits (<i>Oryctolagus cuniculus</i>) and cats (<i>Felis catus</i>).</p> <p>Noxious weeds present in the Reserve include Bathurst Burr (<i>Xanthium spinosum</i>), Noogoora Burr (<i>X. occidentale</i>), Prickly Pear (<i>Opuntia stricta</i>), Tiger Pear (<i>O. aurantiaca</i>), African Boxthorn (<i>Lycium ferocissimum</i>) and Galvanised Burr (<i>Sclerolaena birchii</i>). None are considered to pose a significant threat to the Reserve at present.</p>	<p>The impact of introduced species on native species and neighbouring lands is minimised.</p>	<ul style="list-style-type: none"> • Continue and expand programs to control, and where possible eradicate, introduced plant and animal species as per the Northern Plains Region Pest Management Strategy, and in cooperation with neighbours where appropriate. • Pigs and foxes are listed as a high priority under the Northern Plains Region Pest Management Strategy. • Cats and rabbits are listed as a medium priority under the Northern Plains Region Pest Management Strategy. • African Boxthorn, Bathurst Burr, Noogoora Burr, Prickly Pear and Tiger Pear are listed as a high priority under the Northern Plains Region Pest Management Strategy. • Survey and map the location of weed species both on the Reserve and adjacent to the Reserve, to maximise efficiency of control measures. • Monitor for new weed infestations, especially noxious weeds, and other identified weed threats. Treat any outbreaks based on established priorities. 	<p>High</p> <p>High</p> <p>Medium</p> <p>High</p> <p>High</p> <p>Medium</p>
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<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>Priority will be given to research into the management requirements of the vulnerable Grey-crowned Babbler.</p>	<p>Research enhances the management information base and has minimal environmental impact.</p>	<ul style="list-style-type: none"> • Undertake and encourage research to improve knowledge and management of natural and cultural heritage. • Prepare a prospectus to encourage and guide research by educational organisations and others into areas where further information will inform management of the reserve. 	<p>High</p> <p>Low</p>
<p>Fire management</p> <p>There are no known records of wildfire or prescribed burns in the Reserve.</p> <p>There is currently no Fire Management Plan.</p> <p>The response of the vegetation communities to fire is unknown. Research indicates that Cypress Pine can become extinct with the frequent occurrence of fires.</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>	<ul style="list-style-type: none"> • Prepare a fire management plan for the Reserve that detail life, property, and natural and cultural resource protection strategies. • Boundary breaks will be created, where necessary, along fence lines. • Participate in Moree Plains Bush Fire Management Committee. Maintain coordination and cooperation with Rural Fire Service brigades, Fire Control Officers and neighbours with regard to fuel management and fire suppression. • Encourage further research into the ecological effects of fire in these vegetation communities. If so determined implement prescribed fire regimes for the perpetuation of native fauna and flora. • Research will also determine whether fire is an effective management tool for Cypress-pine regrowth. 	<p>High</p> <p>Medium</p> <p>High</p> <p>Medium</p> <p>Medium</p>

<p>Cultural heritage</p> <p>A number of Aboriginal scarred trees have been identified in the Reserve. Threats to these trees include dry rot and wildfire.</p> <p>A cement dipping race, discarded machinery and wooden water troughs exist in the north-east section of the reserve. Corrugated iron tanks and a post and rail stock yard are also present, however are in poor condition. These are of local significance as they are an example of early farming practices. Threats to these items include rotting and wildfire.</p>	<p>Cultural features are conserved and managed in accordance with their significance.</p>	<ul style="list-style-type: none"> • Record all cultural heritage artefacts. • Determine cultural significance of the scarred trees in liaison with the Moree LALC. • Consult and involve the Moree Local Aboriginal Land Council in all aspects of management of Aboriginal sites, places and values. • The Midkin Pastoral Complex will not be conserved in its entirety. An assessment of the condition and significance will determine which items are conserved. A site management plan will be prepared for items to be conserved. Items not to be conserved will be recorded. 	<p>High</p> <p>High</p> <p>High</p> <p>Medium</p>
<p>Management operations</p> <p>A limited network of tracks and trails exist to facilitate access for management activities. These trails will be retained.</p> <p>The reserve boundary is fenced to a stock-proof standard.</p>	<p>Management facilities adequately serve management needs and have acceptable impact.</p>	<ul style="list-style-type: none"> • Maintain trails utilised for management purposes (see Reserve Map). • Maintain appropriate boundary fencing in association with neighbours and ensuring compliance with National Parks and Wildlife Service policy. 	<p>Medium</p> <p>High</p>

<p>Visitor use</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 is relatively small and contains a number of threatened species, any use of the Reserve will be carefully managed and monitored to avoid impacts.</p> <p>No public roads access the Reserve. Visitation will be limited to NPWS staff and other research personnel.</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"> • Promote an awareness of the conservation value of the Reserve through liaison with the local community and through provision of appropriate information. • Maintain contact with neighbours and the community regarding management activities and visitation within the Reserve. • 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). Monitor levels and impacts of use. • No visitor facilities will be constructed as the Reserve is of such limited size and further fragmentation is to be avoided. No camping or fires will be permitted. 	<p>Medium</p> <p>High</p> <p>Medium</p> <p>Low</p>
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