

**BORONGA NATURE RESERVE,  
BOOMI NATURE RESERVE  
AND  
BOOMI WEST NATURE RESERVE  
  
PLAN OF MANAGEMENT**

**NSW National Parks and Wildlife Service  
February 2003**

This plan of management was adopted by the Minister for the Environment on 5<sup>th</sup> February 2003.

**Cover photo** by Paul McInnes. The Black Orchid *Cymbidium canaliculatum* occurs in the Endangered Carbeen Open Forest Community of Boronga, Boomi and Boomi West Nature Reserves.

**NSW National Parks and Wildlife Service**

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# **BORONGA, BOOMI AND BOOMI WEST NATURE RESERVES**

## **PLAN OF MANAGEMENT**

### **FOREWORD**

Borong, Boomi and Boomi West Nature Reserves are situated in the far north of the north-west slopes and plains region of New South Wales, some 17 kilometres south of the Queensland Border along the Goondiwindi-Mungindi road in the vicinity of the town of Boomi.

Borong, Boomi and Boomi West Nature Reserves are the only reserves in NSW which protect Carbeen Open Forest Community, which is listed as an Endangered Ecological Community under the *Threatened Species Conservation Act 1995*. Much of the original Carbeen Open Forest Community has been cleared for grazing and cropping, and remaining stands of the community are typically fragmented. The reserves also contain at least one threatened plant species and four threatened animal species.

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. A plan of management may be prepared for a single reserve or, as in this case, a combined plan may be prepared for a number of reserves. Once a plan has been adopted, no operations may be undertaken within the nature reserves except in accordance with the plan.

A draft plan of management for Borong, Boomi and Boomi West Nature Reserves was placed on public exhibition for three months, from November 2001 until February 2002. 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 Borong Nature Reserve, Boomi Nature Reserve and Boomi West 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 PURPOSES

Under the National Parks and Wildlife Act, nature reserves are areas of special scientific interest containing wildlife or natural environments or natural phenomena.

The purposes of nature reserves are defined in the Act as:

- "(a) the care, propagation, preservation and conservation of wildlife;
- (b) the care, preservation and conservation of natural environments and natural phenomena;
- (c) the study of wildlife, natural environments and natural phenomena; and
- (d) the promotion of the appreciation and enjoyment of wildlife, natural environments and natural phenomena."

## 1.2 MANAGEMENT OBJECTIVES

In accordance with the Act, the following objectives apply to the management of nature reserves in New South Wales:

- protection and preservation of natural landform values;
- maintenance of natural processes;
- preservation of catchment values and protection of water quality;
- conservation of wildlife, including maintenance of biodiversity, populations of threatened species and critical habitat;
- preservation of Aboriginal sites and places;
- preservation of historic features;
- protection of scenic values;
- regulation of appropriate use; and
- encouragement of scientific research and educational inquiry.

## 2. BORONGA NATURE RESERVE, BOOMI NATURE RESERVE AND BOOMI WEST NATURE RESERVE

### 2.1 LOCATION, GAZETTAL AND REGIONAL SETTING

The three nature reserves are situated in the far north of the northwest slopes and plains region of New South Wales some 17 kilometres south of the MacIntyre River and the Queensland Border. They lie within the Moree Plains Shire along the Goondiwindi-Mungindi road in the vicinity of the town of Boomi.

Borong Nature Reserve (195 hectares) lies 13.5 kilometres to the east of the town of Boomi and was gazetted on the 15th December 1976. Boomi Nature Reserve (156 hectares) is located two kilometres east of the township of Boomi and was gazetted on the 19th November 1976. Boomi West Nature Reserve (149 hectares) is located 6.5 kilometres west of Boomi and was gazetted on the 24th June 1977. The reserves are linked to varying degrees by corridors of native vegetation along adjacent roadsides and Travelling Stock Reserves.

Prior to dedication, Boronga, Boomi and Boomi West Nature Reserves (hereafter referred to as the reserves) were State Forests where selective logging of Cypress Pine (*Callitris glaucophylla*) and stock grazing occurred. Surrounding landuses include grazing and cropping for wheat, sorghum and irrigated cotton.

### 2.2 NATURAL AND CULTURAL HERITAGE

#### Landform, Geology and Soils

The reserves are situated in the northeast of the Darling Riverine Plains Bioregion at an altitude of approximately 180m ASL. The area is characterised by low sand ridges and broad meandering flood watercourses with local relief not exceeding more than a few metres. Soils include deep alluvial deposits of Quaternary sands and clays. There is little clay in the topsoil of the sand ridges but major clay content in the lower watercourses.

#### Native Plants

The vegetation on the reserves is predominantly woodland associations that display a high degree of diversity in response to variations in topography, drainage and soils. Woodlands dominated by Coolibah (*Eucalyptus microtheca*), River Red Gum (*Eucalyptus camaldulensis*), and Belah (*Casuarina cristata*) occur along watercourses. Poplar Box (*Eucalyptus populnea*) woodlands and grassland areas occur across each of the reserves. Common shrubs throughout the reserves include Wattles (*Acacia* spp.), Wilga (*Geijera parviflora*), Budda (*Eremophila mitchellii*), Hopbushes (*Dodonaea* spp.) and some fine examples of less common species including Needlewood (*Hakea leucoptera*). Carbeen Open Forest community occurs on the well-drained sandy soils of the ridges.

Carbeen Open Forest Community of the Darling Riverine Plains and Brigalow Belt South Bioregions is an Endangered Ecological Community, listed under the *Threatened Species Conservation Act 1995*. An endangered ecological community is an assemblage of organisms in a particular area that is likely to become extinct if threats continue.

Component species of an endangered ecological community may be common and widespread, however the particular combination of species that makes up the ecological community is threatened with extinction. Characteristic tree species of Carbeen Open Forest Community are Carbeen (*Corymbia tessellaris*) and White Cypress Pine (*Callitris glaucophylla*) with other associated trees including Long fruited Bloodwood (*Corymbia dollicarpa*), Bimble Box (*Eucalyptus populnea*), River Red Gum (*Eucalyptus camaldulensis*), Belah (*Casuarina cristata*) and Bulloak (*Allocasuarina leuhmannii*) (Dickman 1999). There are an additional 19 species that are listed as characteristic of the community as determined by the Scientific Committee and the total species list is even larger. Much of the original Carbeen Open Forest Community has been cleared for grazing and cropping and the remainder is continuing to be threatened by clearing for agriculture, grazing, fire management practices and land-forming for irrigation (Dickman 1999). Remaining stands of the community are typically fragmented, often isolated and commonly degraded as a result of grazing, weed invasion and the clearing of understorey species for grazing and cropping. The representation of the community in conservation reserves is limited to Boomi, Boomi West and Boronga Nature Reserves.

The threatened plant species *Sida rohlenae* (Shrub sida) is recorded on Boronga Nature Reserve and is likely to occur on the other two reserves. It is anticipated a number of other rare or threatened species may be present particularly in the ephemeral wetland areas.

### **Native Animals**

The nature reserves provide important habitat for a wide variety of fauna. The surrounding areas have been substantially modified for agricultural purposes increasing the value of these remnants for habitat and breeding of native fauna. Despite limited surveys, 11 frog species, 17 species of reptile, 3 macropod species, 5 bat species and over 50 species of birds have been recorded on Boomi West alone. The older trees within the reserves provide habitat for a number of hollow-dwelling species including a number of the birds and mammals and the ephemeral wetland areas of the reserves also provide habitat for a variety of waterbirds. Small mammals recorded on the reserves include Yellow-footed Antechinus (*Antechinus flavipes*), Sugar Gliders (*Petaurus breviceps*) and possums. Threatened species recorded on the reserves include the Glossy Black Cockatoo (*Calyptorhynchus lathami*), Red-tailed Black-Cockatoo (*Calyptorhynchus magnificus*), Barking Owl (*Ninox connivens*) and the Little Pied Bat (*Chalinobolus picatus*). The Brown Treecreeper (eastern subspecies) (*Climacteris picumnus victoriae*) and the Grey-crowned Babbler (eastern subspecies) (*Pomatostomus temporalis temporalis*) are two threatened woodland birds recorded on the reserves.

### **Cultural Heritage**

The reserves are in the area occupied by the Kamilaroi Aboriginal people and the Local Aboriginal Lands Councils are Toomelah and Mungindi. Scarred trees are recorded on Boomi West Nature Reserve and significant Aboriginal sites recorded in the local area include scarred trees, a burial ground and Bora ceremonial grounds. Evidence of past logging history is present in the form of stumps however there are no known historic sites within the reserves.



Boomi River

Boomi

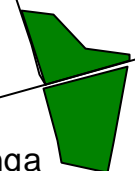
To Mungindi



Boomi West Nature Reserve



Boomi Nature Reserve



Boronga Nature Reserve

To Goondiwindi

To Moree



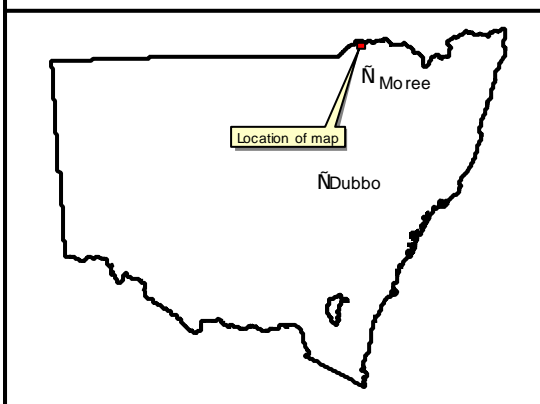
# Boomi, Boomi West and Boronga Nature Reserves

- Roads
- Nature Reserves

0 1 2 3 Kilometers

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### 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><b>Native plant and animal conservation</b></p> <p>The endangered Carbeen Open Forest Community of the Darling Riverine Plains and Brigalow Belt South occurs on the sandy rises in the reserves. There are a number of threatened plant and animal species (section 2.2).</p> <p>The reserves have been grazed and logged for cypress. Since logging there has been no management of White Cypress (<i>Callitris glaucophylla</i>) regeneration. Dense stands of this species now occur in the reserves. These dense stands tend to inhibit the growth of other eucalypt or understorey species. Areas of Boomi West Nature Reserve have experienced cultivation. Natural regeneration of these areas is occurring.</p> <p>As the reserves are small and isolated the linking of these remnants by vegetation along roadsides and TSRs is important for the conservation of natural heritage values.</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 and clearing.</p>	<ul style="list-style-type: none"> <li>• Compile vegetation maps for each of the reserves showing communities and rare plants.</li> <li>• Implement measures included in recovery plans for threatened species.</li> <li>• Enhance value of the reserves 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.</li> <li>• Monitor cypress regrowth in reserves through the use of photomonitoring and plot data.</li> <li>• Investigate management options for cypress pine regrowth. Implement strategies if necessary to protect threatened species and the endangered ecological community.</li> </ul>	<p>High</p> <p>High</p> <p>High</p> <p>Medium</p> <p>Medium</p>

Current Situation	Desired Outcomes	Strategies	Priority
<p><b>Fire management</b></p> <p>Fire is a natural feature of the environment and is essential to the survival of some plant communities. Frequent or regular fire, however, may cause loss of particular plant and animal species and communities. Fire and associated suppression strategies could also damage cultural features and boundary fences and threaten neighbouring land.</p> <p>There is a low incidence of fire in the reserves and their small size and high conservation value needs to be considered in planning fire management strategies.</p> <p>Glossy Black-Cockatoos are threatened by fire through the reduction of feed trees and hollows (Ayers 1995). Carbeen Open Forest Community is threatened by fire management practices (Dickman 1999).</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 or fire suppression activities.</p>	<ul style="list-style-type: none"> <li>• Prepare fire management guidelines for the reserves that detail life, property and natural and cultural resource protection strategies.</li> <li>• Participate in district Bush Fire Management Committees. Maintain coordination and cooperation with Rural Fire Service brigades, Fire Control Officers and neighbours with regard to fuel management and fire suppression.</li> <li>• Encourage further research into the ecological effects of fire in these vegetation communities. If so determined implement prescribed fire regimes to promote appropriate vegetation types and maintain habitat suitable for species with specific requirements.</li> </ul>	<p>High</p> <p>High</p> <p>Medium</p>
<p><b>Cultural heritage</b></p> <p>There is little documentation regarding the cultural values of the reserves.</p> <p>The cultural significance of the recorded scarred trees needs to be determined and any management actions identified and undertaken. Threats to these trees include dry rot and wildfire.</p>	<p>Cultural features are conserved and managed in accordance with their significance.</p>	<ul style="list-style-type: none"> <li>• Precede all work by a check for cultural features.</li> <li>• Consult and involve the Toomelah and Mungindi Local Aboriginal Land Councils in all aspects of management of the reserve's Aboriginal sites, places and values.</li> <li>• Instigate site surveys of the reserves in conjunction with Local Aboriginal Lands Councils</li> <li>• Assess the cultural heritage value of scarred trees and prepare management strategies.</li> </ul>	<p>High</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 reserves include pigs, foxes, cats and rabbits. Currently NPWS undertake cooperative program with the Boomi Pig Control Group. Predation by cats is an identified threat to the Little Pied Bat (<i>Chalinobolus picatus</i>) (Ayers 1995).</p> <p>Weeds present in the reserves include Bathurst Burr (<i>Xanthium spinosum</i>), Noogoora Burr (<i>Xanthium occidentale</i>), Prickly Pear (<i>Opuntia stricta</i>), Velvet Tree Pear (<i>Opuntia tomentosa</i>) and Castor Oil Plant (<i>Ricinus communis</i>). Chemical control is currently undertaken for these species.</p> <p>In addition Buffel Grass (<i>Cenchrus ciliaris</i>) and Spiny Burr Grass (<i>Cenchrus incertus</i>) are present in the reserves and these species are identified threats to Carbeen Open Forest community (Dickman 1999). Other species identified as threats to the Carbeen Open Forest Community include <i>Hyparrhenia hirta</i> (Coolatai Grass) and <i>Eragrostis curvula</i> (African Lovegrass).</p>	<p>The impact of introduced species on native species and neighbouring lands is minimised.</p>	<ul style="list-style-type: none"> <li>• 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.</li> <li>• Survey for and map the location of weed species both on reserves and adjacent to reserves to maximise efficiency of control measures.</li> <li>• Monitor for new weed infestations especially noxious weeds, identified weed threats and environmental weeds. Treat any outbreaks based on established priorities.</li> <li>• 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.</li> </ul>	<p>High</p> <p>High</p> <p>High</p> <p>Medium</p>

Current Situation	Desired Outcomes	Strategies	Priority
<p><b>Research</b></p> <p>Scientific study is needed to improve understanding of the natural and cultural heritage of the reserves, the processes that affect them and the requirements for management of particular species.</p> <p>Priority topics:</p> <ul style="list-style-type: none"> <li>• Ecology and management of Carbeen Open Forest Community including regeneration mechanisms of the plants in the community; the likely impacts of fire on the various species in the community; and the impacts of cypress pine regrowth on the community.</li> <li>• The ecology and management requirements of Threatened species recorded in the reserves for input into both recovery planning and management for the reserves.</li> </ul>	<p>Research enhances the management information base and has minimal environmental impact.</p>	<ul style="list-style-type: none"> <li>• Undertake and encourage research to improve knowledge and management of natural and cultural heritage.</li> <li>• Prepare a prospectus to encourage and guide research by educational organisations into areas where further information will inform management of the reserves.</li> </ul>	<p>Medium</p> <p>Low</p>
<p><b>Management operations</b></p> <p>Access for weed control and other management is limited as no trails exist. Currently management operations undertaken on quad bikes or on foot. Access is also available from outside some boundaries of the reserves.</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>	<ul style="list-style-type: none"> <li>• Determine management access requirements having regard to pest species management, fire control and the protection of threatened species and the endangered ecological community.</li> <li>• Establish and maintain management routes where necessary based on the above assessment.</li> <li>• Erect and maintain appropriate boundary fencing in line with NPWS policy.</li> </ul>	<p>High</p> <p>High</p> <p>High</p>

Current Situation	Desired Outcomes	Strategies	Priority
<p><b>Appropriate use and understanding</b></p> <p>The reserves provide 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 reserves are relatively small and contain both an Endangered Ecological Community and 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>• Promote an awareness of the conservation value of the nature reserves through liaison with the local community and provision of appropriate information.</li> <li>• Maintain contact with neighbours and the community regarding management activities within the reserves.</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 as the reserves are of such limited size and further fragmentation is to be avoided. Visitor access to be on foot only. No camping or fires will be permitted.</li> </ul>	<p>Medium</p> <p>High</p> <p>Medium</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 76(6) 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.

## References

Dickman, C. 1999, Final Determination of the NSW Scientific Committee (Carbeen Open Forest Community), National Parks and Wildlife Service, Hurstville.

Ayers, D. 1995, Endangered Fauna of Western New South Wales, National Parks and Wildlife Service, Hurstville.

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