



# **Nattai Reserves**

**Nattai National Park, Bargo State Recreation Area, Burraborang State Recreation Area, Nattai State Recreation Area and Yerranderie State Recreation Area.**

# **Plan of Management**

**NSW  
NATIONAL  
PARKS AND  
WILDLIFE  
SERVICE**

## **THE NATTAI RESERVES PLAN OF MANAGEMENT**

**(COMPRISING NATTAI NATIONAL PARK, BARGO STATE RECREATION AREA,  
BURRAGORANG STATE RECREATION AREA, NATTAI STATE RECREATION  
AREA AND YERRANDERIE STATE RECREATION AREA)**

**NSW National Parks and Wildlife Service**

**April 2001**

This plan of management was adopted by the Minister for the Environment on 17<sup>th</sup> April 2001.

**Acknowledgments:** This plan of management has been prepared by staff of the Sydney South Region of the National Parks and Wildlife Service with assistance from staff of the Blue Mountains Region, Central Directorate and other Directorate staff of the Service.

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## FOREWORD

The Nattai Reserves System includes Nattai National Park and Bargo, Burragorang, Nattai and Yerranderie State Recreation Areas and comprises an area of approximately 86 000 hectares.

These reserves include the catchments of the Nattai and Tonalli Rivers and Werriberri Creek, all of which are important tributaries of Lake Burragorang (Warragamba Dam) which is Sydney's primary water supply. Emphasis is placed in this plan of management on the protection of the area as part of the catchment of the Warragamba Dam in a manner consistent with the requirements of the *Sydney Water Catchment Management Act 1998* and the Special Areas Strategic Plan of Management (2001).

The Nattai Reserves System is a large natural area which contains spectacular scenery. The combination of a deeply incised topography, climatic variations and several soil types has resulted in a diverse flora in the Nattai Reserves. Several significant plants, including a number of threatened species, have been identified in the reserves. The area is also important refuge for native animal communities and nine species of threatened fauna have been recorded in the reserves.

The area has cultural significance as the traditional lands of the D'harawal and Gundangarra Aboriginal people and it contains a number of Aboriginal sites. The plan provides for the protection of Aboriginal sites in the Nattai Reserves System in co-operation with the D'harawal Aboriginal Land Council.

Apart from a few sites such as Burragorang Lookout, the relative isolation of the Nattai Reserves and the need to protect the Warragamba Dam catchment has meant that recreation has been limited to relatively dispersed bushwalking. Approximately 30 000 hectares of the reserve system has been declared wilderness. The Nattai Wilderness area was the first such area declared under the *Wilderness Act 1987*.

Nattai National Park is also an important part of the Greater Blue Mountains World Heritage Area. This plan has been prepared in accordance with the Convention for the Protection of the World Cultural and Natural Heritage. In accordance with the Convention, this park will be managed to identify, protect, conserve, present and transmit to future generations, the World Heritage values of the property.

This plan of management establishes the scheme of operations for the Nattai Reserves System. In accordance with the provisions of Sections 75 and 75A of the National Parks and Wildlife Act 1974, this plan of management is hereby adopted.

**BOB DEBUS**  
Minister for the Environment

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## 1. INTRODUCTION

The *National Parks and Wildlife Act 1974* requires that a plan of management shall be prepared for each national park and may be prepared for each state recreation area. A plan of management is a legal document which outlines how the area will be managed. It can be revised and rewritten as necessary to accommodate changes in management practices.

This document is a plan of management for Nattai National Park (including the Nattai Wilderness), Bargo State Recreation Area, Burragorang State Recreation Area, Nattai State Recreation Area and Yerranderie State Recreation Area. The national park and the four state recreation areas are considered as a single management unit known as the Nattai Reserves System and generally share identical or related objectives of management and management policies.

The procedure for the adoption of a plan of management for a national park and state recreation area is specified in the Act and involves five stages, namely:

- \* The Director-General gives notice that a plan of management has been prepared.
- \* The plan is placed on public exhibition for at least one month and any person may make representations about the plan.
- \* The plan and copies of all representations are referred to the National Parks and Wildlife Advisory Council for consideration.
- \* The Director-General submits the plan of management together with any comments and suggestions of the Council to the Minister for the Environment.
- \* The Minister may adopt the plan with or without amendment after considering the comments of the Advisory Council or may refer the plan back to the Director-General and Council for further consideration.

A draft plan of management for the Nattai Reserves System was placed on public exhibition for four months from November 1995 to late February 1996. The plan of management attracted twelve representations covering twenty issues.

The Nattai Reserves are an important component of the Warragamba catchment, which supplies most of Sydney's water. The Sydney Catchment Authority is responsible for management of the catchment, and the Authority's interest in protection of the catchment is ensured under Section 185 of the *National Parks and Wildlife Act 1974* which states that nothing in that Act affects the Authority's operations in so far as those operations relate to catchment areas or special areas.

The Sydney Catchment Authority manages much of the area within the Nattai Reserves System according to the requirements of *the Sydney Water Catchment Management*

Act 1998 as a Special Area. Within the Special Area the catchment is divided into Schedule One and Schedule Two areas (centre page). The Schedule One area is the area of land draining to the storage which is within three kilometres of the full storage level of Lake Burragorang. A significant area of the Nattai Reserves System (approximately 65 500 ha or 75%) is within the Schedule One area. Public access to the Schedule One area is restricted to protect water quality.

The Sydney Catchment Authority is responsible for the management of catchment values within the Nattai Reserves System and carries out active management in both the Schedule One and Schedule Two areas. Outside these areas the Authority still has an interest in protecting the catchment, but does not generally have an active management role. Approximately 20 000 hectares of Nattai National Park and Bargo State Recreation Area lie outside the Schedule One and Schedule Two areas.

A Strategic Plan for the Sydney Catchment Authority's Special Area, which includes much of the Nattai Reserves System and the lands surrounding them, has been prepared jointly by the Sydney Catchment Authority and the NSW National Parks and Wildlife Service. The need to ensure the continued safekeeping of Sydney's major water supply and to integrate this responsibility with the Service's obligations to protect the natural and cultural heritage of the Nattai Reserves has been a major consideration in the preparation of both this plan of management and that prepared for the Special Area.

The Greater Blue Mountains World Heritage Area was formally inscribed on the World Heritage List in November 2000. The Area covers over one million hectares included the whole of Yengo, Wollemi, Blue Mountains, Gardens of Stone, Kanangra-Boyd, Nattai and Thirlmere Lakes National Parks and the Jenolan Caves Karst Conservation Reserve. This plan has been prepared in accordance with the Convention for the Protection of the World Cultural and Natural Heritage. Nattai National Park will be managed in accordance with any strategic plan covering the management of the whole of the World Heritage Area, which is jointly developed and adopted by the Commonwealth and New South Wales Governments.

Additional lands may be added to the Nattai Reserve System in the future. Any additions to the system will be managed in accordance with the objectives and policies contained in this plan of management.

For additional information or enquiries on any aspect of the management of the Nattai Reserves System, please contact:

The Manager  
Illawarra/Nattai Area  
National Parks and Wildlife Service  
Princes Highway  
**BULLI NSW 2516**

(PO Box 300 Thirroul NSW 2516)

Telephone enquiries about the management of the Nattai Reserves System can be made during office hours by contacting the Area Office on (02) 4268 4089.



## **2. MANAGEMENT CONTEXT**

### **2.1 NATIONAL PARKS AND STATE RECREATION AREAS IN NEW SOUTH WALES**

The national park concept was introduced into Australia through the establishment of Royal National Park in 1879.

The International Union for the Conservation of Nature and Natural Resources (IUCN) in 1994 defined a national park as:

“A natural area of land and/or sea, designated to (a) protect the ecological integrity of one or more ecosystems for present and future generations, (b) exclude exploitation or occupation inimical to the purposes of designation of the area, and (c) provide a foundation for spiritual, educational, recreational and visitor opportunities, all of which must be environmentally and culturally compatible.”

National parks are a part of the regional pattern of land use. The management of a national park aims at minimising disturbance to natural and cultural resources. Other land uses (e.g. agriculture, forestry and mining) are distinguished by an acceptance or encouragement of environmental modification. National parks therefore, represent only one of a range of land uses in any region.

State recreation areas are areas which have important natural or cultural qualities and may accommodate environmentally sensitive recreational use where this does not conflict with other values. Unlike national parks, where prospecting or mining for minerals requires authorisation by an act of Parliament, mining interests in state recreation areas may be granted by the Minister for the Environment.

### **2.2 THE NATTAI RESERVES SYSTEM**

#### **2.2.1 Location and Regional Setting**

All the areas within the Nattai Reserves System were reserved on 13 December 1991. The Nattai area has long been identified as an area of outstanding natural and cultural importance and the leading early conservationist Myles Dunphy included the area in his 1932 Greater Blue Mountains National Park proposal. Submissions for a park in the area had also been prepared by the National Trust, the National Parks Association of New South Wales and the Colong Foundation for Wilderness. Following the passing of the Wilderness Act in 1987 the Nattai wilderness was one of the first areas nominated for declaration as wilderness under that Act.

The Nattai Reserves System covers an area of about 86 000 hectares. The largest of the group is Nattai National Park of 47 504 hectares and includes a 29 822 hectare wilderness core. The other reserves in the group are Bargo State Recreation Area (5 660 hectares), Burragorang State Recreation Area (17 312 hectares), Nattai State Recreation Area (3 383 hectares) and Yerranderie State Recreation Area (12 192

hectares). All five areas are part of a group of protected areas based on sandstone geology, which includes Kanangra-Boyd and Blue Mountains National Parks to the north-west and other important parks surrounding metropolitan Sydney (Map 1) including Dharawal State Recreation Area, Dharawal Nature Reserve and Wollemi, Yengo, Dharug, Royal, Heathcote, Thirlmere Lakes, Murrumbidgee and Ku-ring-gai Chase national parks.

The Nattai Reserves System is located generally west of a line between Mittagong and the wall of Warragamba Dam. The system of parks includes the catchments of the Nattai, Wollondilly and Tonalli Rivers and Werriberri Creek, all of which are important tributaries of Lake Burragorang. The protection of water quality is therefore an important factor in management. The need to protect Sydney's water supply has resulted in the Sydney Catchment Authority taking particular care to protect the area from potentially damaging use and developments. Hence these reserves, located close to Sydney, Australia's largest city, were established in a relatively unmodified condition with large areas of wilderness and other natural lands.

### 2.2.2 World Heritage

The International Convention for the Protection of the World Cultural and Natural Heritage was adopted by the United Nations Educational, Scientific and Cultural Organisation (UNESCO) in 1972, and ratified by Australia in 1974. The Convention provides a framework for international cooperation and the collective protection of cultural and natural heritage of outstanding universal value.

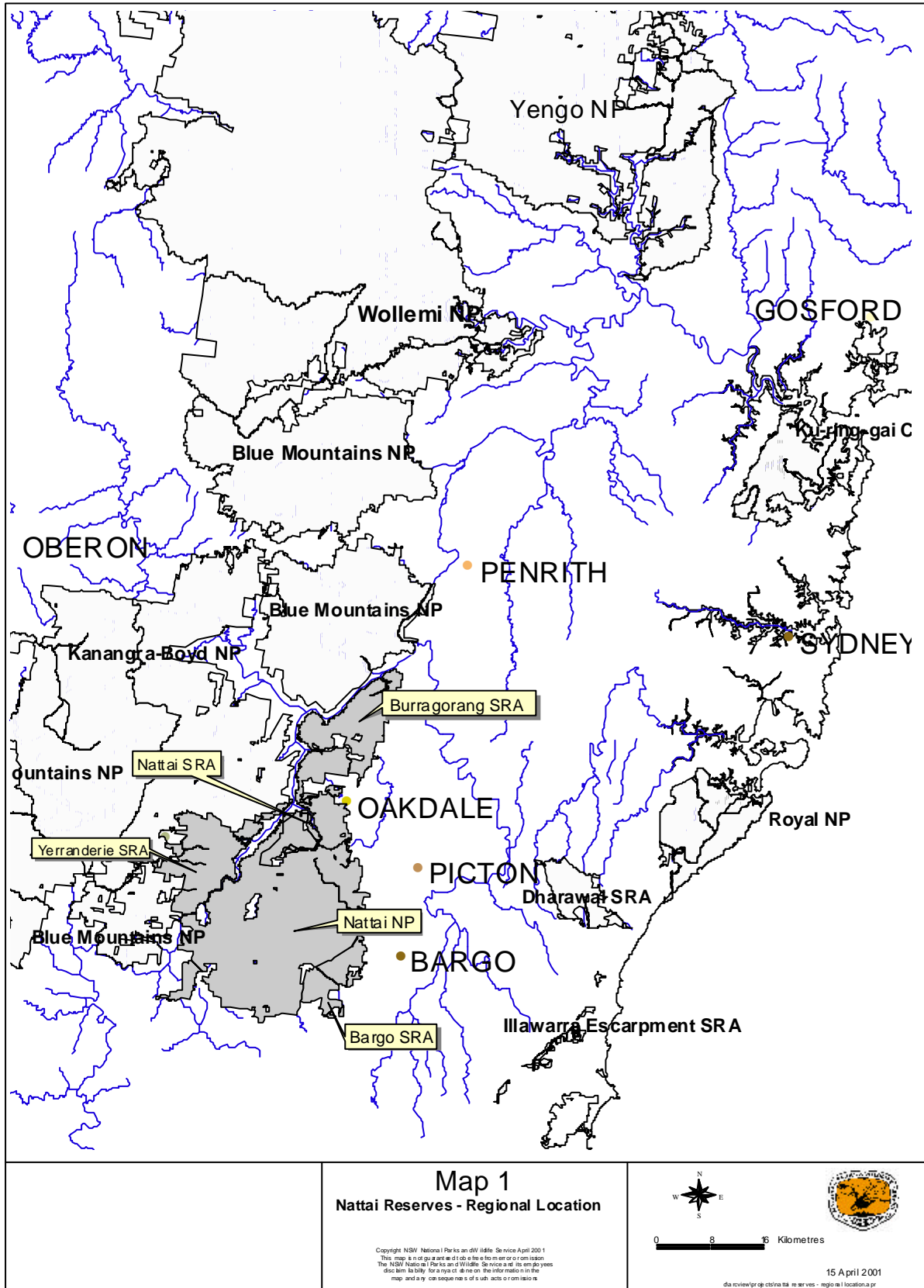
The Greater Blue Mountains Area was formally nominated by the Australian Government for inscription on the World Heritage List in June 1998, on the grounds of both natural and cultural criteria (NPWS and Environment Australia, 1998). In November 2000 the nominated area of over one million hectares, which includes the whole of Kanangra-Boyd, Blue Mountains, Gardens of Stone, Wollemi, Nattai, Yengo and Thirlmere Lakes National Parks and the Jenolan Caves Karst Conservation Reserve, was inscribed on the World Heritage List.

The Greater Blue Mountains World Heritage Area was inscribed on the World Heritage List because it satisfies the following criteria for natural values of outstanding universal significance. It contains:

- \* outstanding examples of significant ongoing ecological and biological processes in the evolution and development of ecosystems and communities of plants and animals (*criterion II*), particularly eucalypt-dominated ecosystems; and
- \* important and significant natural habitats for in-situ conservation of biological diversity (*criterion IV*), including the eucalypts and eucalypt-dominated communities, primitive species with Gondwanan affinities such as the Wollemi Pine, and a diversity of rare or threatened plants and animals of conservation significance.

This plan has been prepared in accordance with the Convention for the Protection of the World Cultural and Natural Heritage. In accordance with the Convention, this park will

be managed to identify, protect, conserve, present and transmit to future generations, the World Heritage Values of the property.



### 2.2.3 Importance of the Nattai Reserves System

The Nattai Reserves are situated on the edge of the Sydney Basin and encompass a variety of geological features that demonstrate the tectonic development of south-eastern Australia. The oldest outcrops in the area are found in Yerranderie State Recreation Area and consist of Devonian (390 million years old) sedimentary and igneous rocks. At this time Australia was part of the "supercontinent" Gondwana and south-east Australia was located on the edge of a tectonic plate and was subject to intense volcanic activity. A series of ocean troughs and shallower rises developed and in the deeper troughs Devonian sediments which now form the bedrock of much of Yerranderie State Recreation Area were deposited.

During the following 300 million years continuing tectonic instability in the area resulted in periods of mountain building, volcanic activity and sedimentation culminating in a thick sequence of sediments being deposited in the Sydney Basin during the Permian and Triassic periods (180-270 million years ago). The particularly hard sandstones of one unit laid down at this time, the Hawkesbury Sandstone, now form the high cliffs found in the Nattai Reserves and other parks of the Blue Mountains region.

More recent tectonic events associated with the opening of the Tasman and Coral Seas resulted in the uplift of eastern Australia creating the steep escarpment of the Blue Mountains. Volcanic intrusions during the Tertiary period also created peaks such as Mount Jellore and Mount Flora.

Aspects of the evolution of vegetation in eastern Australian are demonstrated in the Nattai Reserves System. Contemporary understanding of this long term history suggests that these communities are the product of climatic changes and evolutionary isolation. This occurred as the Australian continent separated from the Gondwana super-continent and drifted north towards its current location.

Following the separation of Australia from Antarctica, some 45 million years ago, perhaps the earliest change in the Australian flora was the differentiation of warm/cool and moist/dry forms of rainforest. Also becoming widely spread during this period were the sclerophyllous communities which were adapting to the increasing incidence of fire, seasonality of climate and low fertility soils.

Today the south-eastern Australian natural landscape is dominated by dry sclerophyll eucalyptus forests and woodlands. These inhabit a wide variety of regions from the dry interior to the sub-alpine and tropics. Rainforests now only occur in fire and drought resistant refuges and are often, in central and southern NSW, associated with the rugged terrain of the eastern escarpment such as in Nattai National Park.

The combination of a deeply incised topography, climatic variations and several soil types has resulted in a diverse flora in the Nattai Reserves. Several significant plants have been identified in the area of the reserves including *Acacia clunies-rossiae*, a plant identified as vulnerable under the *Threatened Species Conservation Act 1995* and *Bossiaea oligosperma*. Nepean river gum or Camden white gum *Eucalyptus*

*benthamii* and Rudder's box *E. rudderi*, have also been recorded from the district and may be protected within the park and state recreation areas.

At least fifteen threatened or otherwise significant plants have been recorded from the Nattai Reserves System.

The Australian fauna mirrors the events surrounding the palaeobotany of the continent. However, unlike our knowledge of ancestral Australian botany, evidence of terrestrial faunal evolution does not extend beyond the early Cainozoic period about 60 million years ago.

Evidence from the Miocene period (20 to 40 million years ago) indicates a terrestrial vertebrate fauna adapted to mesic (i.e. moist) environments long after Australia had separated from Gondwana during the late Eocene (45-55 million years ago). Already inhabiting these ancestral forests were the monotremes and marsupials. This old Australian fauna was supplemented by bats, rodents and reptiles from the north following collision of Australia with the Asian plate about 15 million years ago.

Fauna surveys of the Nattai Reserves System are limited. On the basis of surveys undertaken in other large sandstone conservation areas, however, it is expected that the greatest diversity of native animals will occur in pockets of habitat supported by remnant basalt caps, fertile alluvial gullies, rainforests and wet sclerophyll forests. The Nattai Reserves System is a large natural area and is co-extensive with other large conservation reserves to the north-west; on this basis it is an important refuge for native animal communities.

Nine species of threatened fauna have been recorded from the Nattai Reserves System, including the green-and-golden bell frog *Litoria aurea*, powerful owl *Ninox strenua*, glossy black cockatoo *Calyptorhynchus lathami*, brush-tailed rock wallaby *Petrogale penicillata*, tiger quoll *Dasyurus maculatus*, long-nosed potoroo *Potorous tridactylus*, yellow-bellied glider *Petaurus australis*, squirrel glider *Petaurus nofolcensis* and koala *Phascolarctos cinereus*.

The naturalness, size, rugged topography, expanses of native vegetation cover, important biodiversity and spectacular scenery within the Nattai Reserves System have retained the ability to be self sustaining and have particular value as wilderness. The area offers many opportunities for solitude and self-reliant recreation.

The area of greatest naturalness in Nattai National Park, approximately 30 000 ha, has been declared as a wilderness area under the *Wilderness Act 1987* (Map 2). This is one of the closest and most accessible areas of wilderness to the Sydney metropolitan area.

The Nattai Reserves area was the traditional home of the D'harawal and Gundangarra Aboriginal people and the Wollondilly and Burragorang valleys made up the boundary or transition zone between the two nations. The northern part of the Burragorang was also the home of the Dharug people. This transition zone provided a corridor for peoples travelling northward from as far afield as Victoria to the major gathering and ceremonial

grounds in D'harawal lands in the Cowpastures or Camden area adjacent to the Nepean River.

The Nattai area was the scene of considerable exploration activity during the early history of European settlement as the colonists attempted to cross the Blue Mountains. Some areas of the Burratorang Valley were held under tickets of occupation for grazing as early as 1824. 'Joorilands' homestead, within Yerranderie State Recreation Area, is a prominent reminder of the agricultural heritage of the Nattai Reserves System.

The discovery of galena near Yerranderie opened a relatively brief phase of development activity. Yerranderie village is not included in the Nattai Reserves System, although some of the mine workings are within Yerranderie State Recreation Area.

The filling of Lake Burratorang saw much of the early settlement areas inundated and public access to Yerranderie from the east cease.

The relative inaccessibility of the Nattai reserves and the need to protect the Warragamba Dam catchment have meant that recreational use of the area has been low, with bushwalking being the main activity. However, use of four-wheel drive vehicles and trail bikes has increased in recent years, often on trails which were not created for that purpose and in contravention of the Sydney Catchment Authority's policy to protect the catchment area and the importance of the Nattai Reserves System for wilderness and nature conservation.

The significance of the Nattai Reserves is summarised below:

**International Significance:** The reserves are part of a suite of reserved lands that constitute one of the largest conservation areas in Australia. Together they protect Sydney Basin landforms and geological features that provide some of the most spectacular scenery in Australia and encompass a wide diversity of habitats.

Nattai National Park is part of the Greater Blue Mountains World Heritage Area (Section 2.2.2 above).

**National Significance:** The reserves:

- protect pockets of warm temperate rainforest;
- provide habitat for eleven known species of rare plants; and
- provide habitat for nine known species of endangered native animals.

**Regional Significance:** The reserves:

- are an important part of the catchment of Warragamba Dam, which supplies most of Sydney's water;

- conserve an access corridor used by Aboriginal people who travelled to the major regional meeting ground in the vicinity of Camden;
- were the site of some of the earliest attempts by European colonists to cross the Blue Mountains and thus expand European settlement throughout New South Wales; and
- contain evidence of late 19th and early 20th century lead and silver mining activity which is closely associated with the township of Yerranderie.

Nattai National Park contains land which is recognised as having wilderness value.

**Local Significance:** The reserves:

- are a major component of the traditional lands of the D'harawal and Gundangarra Aboriginal people. They contain abundant and important evidence of their occupation of the area;
- contain examples of early European settlement and activity in the Burraborang Valley much of which was lost when the valley was flooded beneath Lake Burraborang;
- subject to the protection of water quality and ecological integrity within the Warragamba Catchment provide opportunities for self reliant and low impact recreation in natural and wilderness settings; and
- provide outstanding recreation opportunities, including vistas of Lake Burraborang and the Burraborang Valley.



### 3. OBJECTIVES OF MANAGEMENT

The general objectives for the management of national parks in New South Wales are as follows:

- \* The protection and preservation of scenic and natural features;
- \* The conservation of wildlife and natural biodiversity;
- \* The maintenance of natural processes as far as possible;
- \* The preservation of Aboriginal sites;
- \* The preservation of historic features;
- \* The provision of appropriate recreation opportunities;
- \* The encouragement of appropriate scientific and educational use; and
- \* The preservation of the park as a catchment area.

The following general objectives relate to the management of state recreation areas in New South Wales:

- \* The protection of natural and cultural resources;
- \* The maintenance of scenic values; and
- \* The provision of a range of recreation opportunities consistent with the protection of the natural and cultural environment.

In addition to these general objectives of management, the following specific objectives apply in the management of the Nattai Reserves System.

- \* To manage the Nattai Reserves System as a part of the system of protected lands of the Sydney Basin, with emphasis on maintenance of the ecological relationships between these reserves and adjacent protected areas;
- \* To protect the Warragamba Catchment. The protection of water quality will take precedence over the provision of recreational opportunities in the reserves;
- \* To protect the rainforest communities;
- \* To protect, and where necessary restore wilderness areas;
- \* To protect all Aboriginal sites and places in the Nattai Reserves System in partnership with the local Aboriginal community;

- \* To promote the appreciation, protection and appropriate use of wilderness amongst visitors to the reserve system;
- \* Subject to the protection of catchment values, to maintain existing recreation opportunities for visitors to experience the outstanding scenic, natural and wilderness qualities of the park;
- \* To promote public awareness of the Nattai Reserves System with emphasis on natural qualities of continental and regional significance; and
- \* Promotion within the local community, particularly neighbours of the reserves of the importance and purpose of management programs necessary for the protection of natural features and the control of fire and pest species.

These specific objectives will be implemented as part of a co-ordinated management strategy with the adjoining Kanangra-Boyd, Blue Mountains and Thirlmere Lakes National Parks.

The emphasis of management for the lifetime of this plan will be on the protection of the area and on programs necessary for the maintenance of natural features and processes.

## 4. POLICIES AND FRAMEWORK FOR MANAGEMENT

This chapter contains the policies and framework for the management of the Nattai Reserves System together with relevant background information. Policies are summarised under the following section headings:

- \* Nature conservation;
- \* Cultural heritage; and
- \* Use of the reserves.

The policies in this plan of management provide the framework for management consistent with anticipated resources available to the Service and with anticipated community trends, for the next five to ten years.

The actions identified are those to which priority will be given in the foreseeable future. Other management actions may be undertaken over the life span of this plan consistent with the policies set out in the plan.

### 4.1 NATURE CONSERVATION

#### 4.1.1 Geology, Landforms and Scenery

The oldest rocks in the Nattai Reserves System are found in the south-western quarter in Yerranderie State Recreation Area where most outcrops consists of Devonian (390 million years old) sediments, granites and volcanic rocks. Also at about this time volcanic activity occurred at the site of Yerranderie, resulting in the emplacement of the silver-lead sulphide ores.

The Devonian rocks were deformed about 350 million years ago, following which there was a period for which there is no geological record until the late Permian and Triassic periods (180-270 million years ago) when the Sydney Basin sediments were laid down. Sydney Basin deposits dominate the eastern part of the reserves. These sediments were deposited in near-shore, lacustrine and fluvial environments within a foreland basin fronting a volcanic arc. The most prominent rocks are resistant sandstones of the Hawkesbury Sandstone which form the spectacular scarps and cliffs found in the reserves. Underlying the Hawkesbury Sandstone are the shales and fine-grained sandstones of the Narrabeen Group and beneath them the Illawarra Coal Measures.

Overlying the Hawkesbury Sandstone, the Wianamatta Shale is the youngest rock unit of the Sydney Basin. This formation is found in a few locations on the tops of high ridges, such as the Wanganderry Tableland.

The prominent trachyte peak of Mt Jellore is the remnant of a Tertiary igneous intrusion. Other intrusions of the same age include Mt Flora and the southern parts of the Wanganderry Tableland.

Tectonic activity associated with the opening of the Tasman Sea during the Tertiary resulted in the uplift of the Blue Mountains. As the land surface rose, rivers cut into the terrain, creating the deep gorges characteristic of the Blue Mountains and Nattai Reserves.

The park includes the catchments of the Nattai River and its major tributaries and part of the catchment of the Wollondilly River. The Nattai River provides an important source of clean water to Lake Burragorang, Sydney's major water storage system. The park surrounds Lake Burragorang and during flood times parts of the park and reserves may be flooded by water held back by the dam.

The *Catchment Management Act 1989* introduced total catchment management as an umbrella framework for achieving cleaner water, less soil erosion, improved vegetation cover, the maintenance of ecological processes and a balanced and healthier environment. It also provides a focus to balance conservation needs and development pressures and encourages a more aware and involved community. An important means of achieving these aims is the formation and support of catchment management boards at a local level.

## **Policies**

- \* The outstanding scenery and natural features will be protected.
- \* No new development or activity will be permitted which impairs scenic viewscales and the natural skyline within the reserves.
- \* The Service will work with consent and determining authorities to mitigate the impacts of developments which may affect the scenic and aesthetic qualities of the park.
- \* Features and sites of geological, geomorphic and/or pedological significance will be protected.
- \* Soil erosion and sediment controls shall be implemented to the standards set by the Department of Land and Water Conservation.
- \* All disturbed sites, including current roads and tracks, not required for public or management use or to be protected for their historic value will be progressively rehabilitated.
- \* No earthworks will be undertaken in areas identified as high erosion hazards.
- \* The Service will encourage the co-operative management of reserve catchments through its involvement with appropriate catchment management boards and particularly the Sydney Catchment Authority in the implementation and review of the Special Areas Strategic Plan of Management.

- \* The water quality of catchments will be maintained and all practical steps taken to limit the entry of pollutants into catchments.

#### 4.1.2 Native and Introduced Plants

The Nattai Reserves System provides a range of environments from exposed plateau tops to sheltered gorges which arise from its:

- deeply incised topography;
- variety of soil types;
- variations in temperature from relatively warm valleys to frost prone tablelands; and
- rainfall variation from about 900mm/yr on the eastern margin to less than 600mm/yr in the west.

The reserves are dominated by dry sclerophyll associations which are characterised a large number of eucalypt species and eucalypt-dominated associations. Surveys have found that:

- The less sheltered slopes and ridges commonly support forest/woodland communities on sandstone dominated by trees such as red bloodwood *Corymbia gummifera*, Sydney blackbutt *E. pilularis*, red ironbark *E. fibrosa*, scribbly gum *E. sclerophylla*, Sydney peppermint *E. piperita* and smooth-barked apple *Angophora costata*;
- The major river valleys support a number of forest communities dominated by river she-oak *Casuarina cunninghamia*, mountain blue gum *E. deanei* and river peppermint *E. elata*;
- Moist gullies in the eastern parts of the reserves contain small areas of warm temperate rainforest, comprising species such as sassafras *Doryphora sassafras* and coachwood *Ceratopelatum apelatum*.
- Mixed moist forests containing mountain blue gum *E. deanei* and turpentine *Syncarpia glomulifera* with rainforest species in the understorey are common in these gullies.
- The Douglas Scarp in Nattai National Park supports a woodland of narrow-leaved red ironbark *E. crebra*, black cypress pine *Callitris endlicheri* and coast myall *Acacia binervia* which is found on the exposed escarpment edges of the Shoalhaven Group sediments. This community is not protected in any other conservation area.

- The valleys and ridges of the dissected Bindook Porphyry complex within Yerranderie State Recreation Area supports a woodland of forest red gum *E. tereticornis*, yellow box *E. melliodora*, coastal grey box *E. moluccana* and white box *E. albens*. This community is also not protected in any other conservation area.

A number of threatened and geographically significant plant species have been identified in the reserves. These include *Acacia clunies-rossiae* which is listed as vulnerable under the *Threatened Species Conservation Act 1995* and which is found in the Yerranderie area and has a restricted distribution in the southern Blue Mountains. *Bossiaea oligosperma* also a vulnerable species, is also found near Yerranderie. Populations of a rare but as yet undescribed species of *Hakea* sp. exist close to the Tonalli River.

Camden white gum *E. benthamii* a vulnerable species has been reported to exist in the Little River area. The significant species Rudder's box *E. rudderi* was recorded in the Warragamba catchment prior to the flooding of Lake Burragorang, but has not been recently recorded in the area.

Other significant species known to occur within the reserves are narrow-leaved mallee ash *E. apiculata*, yellow-top mallee ash *E. luehmanniana*, Camden woollybutt *E. macarthurii*, *Rupicola sprengeloides*, *Gonocarpus longifolius* and *Lissanthe sapida*.

Under the *Threatened Species Conservation Act 1995* a recovery plan and/or threat abatement plan must be prepared for endangered and vulnerable plants. The purpose of a recovery plan is to promote the recovery of a threatened species, population or ecological community with the aim of returning the species, population or ecological community to a position of viability in nature. A threat abatement plan outlines the management of key threatening processes with a view to their abatement, amelioration or elimination.

Introduced plants usually occur where there has been past disturbance or along creek lines draining an altered catchment. Such sites include many areas along the Wollondilly River, Joorilands homestead and along many of the fire trails in the reserves. There have also been deliberate introductions of exotic plants in the form of small experimental forestry plantations, such as *Pinus radiata*, *Populus* spp. and non-endemic grey mallee *E. globulus* in a number of plots adjacent to the Nattai River, Higgins Bay and Tonalli River. Other plants of concern include prickly pear *Opuntia* spp, serrated tussock *Nassella trichotoma* and tree of heaven *Ailanthus altissima*.

Under the *Noxious Weeds Act 1993*, the Service and the Sydney Catchment Authority have a responsibility to prevent noxious weeds spreading to adjoining land.

There is currently one beekeeper operating within the reserve system. Recent scientific studies have established that European honeybees may compete with native animals, particularly native bees, honeyeaters and small mammals and have significant effects on native flora.

## Policies

- \* The management of plant communities will aim to:
  - maintain natural biodiversity; and
  - protect threatened native plant species and communities.
- \* Scientific enquiry into the distribution and habitat requirements of plant species which are endangered, vulnerable, endemic or other species of concern will be encouraged.
- \* Introduced species of conservation concern will be controlled and where practicable eradicated. Priority will be given to the control and eradication of new infestations of weeds.
- \* Priority for the control of introduced species will be in compliance with the *Noxious Weeds Act 1993*.
- \* Priority for control of introduced species will also be determined by assessment of their existing or potential:
  - impact upon catchment values and water quality in Lake Burragorang;
  - threat to biodiversity;
  - damage to cultural heritage;
  - effect on neighbouring lands;
  - capacity for dispersal; and
  - new occurrences.
- \* Weed control programs may be undertaken through cooperative programs with neighbours and the Sydney Catchment Authority.
- \* No new bee hive sites will be licensed in the reserves.

## Actions

- \* The distribution of plant communities will be documented and processes which threaten their maintenance assessed and where practicable controlled.
- \* The distribution of rare or endangered species will be mapped and monitored.
- \* Management guidelines will be developed and implemented where necessary for the conservation of endangered plant species and communities.
- \* The occurrence, distribution and density of introduced plant species causing significant environmental damage will be mapped.

- \* A control program for introduced plants causing significant environmental damage will be developed and implemented.
- \* The experimental plantings of poplars, mallee and pine will be removed from the reserves in accordance with a rehabilitation program.
- \* Apiary sites existing in the reserves at the time of reservation may be licensed in accordance with current Service policy.

#### 4.1.3 Native and Introduced Animals

There have been few surveys for native animals in the area of the Nattai Reserves System and it is possible that many more as yet locally unrecorded species exist. Four types of macropod are known to occur, the grey kangaroo *Macropus giganteus*, wallaroo *Macropus robustus*, brush-tailed rock wallaby *Petrogale penicillata* and long nosed potoroo *Potorous tridactylus*. The Burragorang Valley takes its name from the abundance of grey kangaroos found there, 'burra' being the Aboriginal word for kangaroo. Platypus *Ornithorhynchus anatinus* are common in the creeks and rivers.

At least one hundred and sixty species of bird and nine species of frog and nineteen species of reptile are known from the Nattai Reserves System.

To date, nine species of vulnerable fauna listed under Schedule 2 of the *Threatened Species Conservation Act 1995*, have been recorded in the Nattai Reserves System. These include the brush-tailed rock wallaby *Petrogale penicillata* which is known from the Warragamba Dam area and may also exist elsewhere in the reserves and two species of endangered gliding possums; the yellow-bellied glider *Petaurus australis* and squirrel glider *Petaurus norfolcensis*.

The koala *Phascolarctos cinereus*, also considered vulnerable, has been recently sighted in Burragorang State Recreation Area and Nattai National Park.

Other mammals listed as vulnerable known to occur in the Nattai Reserves include the tiger quoll *Dasyurus maculatus* and long-nosed potoroo *Potorous tridactylus*.

Of particular conservation concern are the powerful owl *Ninox strenua* and the glossy black cockatoo *Calyptorhynchus lathami* both listed as vulnerable.

The green-and-golden bell frog *Litoria aurea* is also listed as vulnerable and occurs in the Nattai Reserves System.

Under the *Threatened Species Conservation Act 1995* a recovery plan and/or threat abatement plan must be prepared for endangered and vulnerable animals. The purpose of a recovery plan is to promote the recovery of a threatened species, a population or ecological community with the aim of returning the species, population or ecological community to a position of viability in nature. A threat abatement plan outlines the management of key threatening processes with a view to their abatement, amelioration or elimination.



The Act provides that a recovery plan or threat abatement plan for an animal listed on Schedule 1 must be prepared within five years of listing. The Act provides that a recovery plan or threat abatement plan for an animal listed on Schedule 2 must be prepared within ten years of listing.

Foxes, pigs, cats, goats and wild dogs have been recorded in the Nattai Reserves System. Populations of introduced animals are, however, relatively low and some may be relics of past agriculture in the Burrangang Valley, such as horses and goats.

All records of native plants and animals throughout NSW are collected and stored in the Atlas of NSW Wildlife; a database established by the NSW National Parks and Wildlife Service. Information about the locality, habitat and breeding records of species are used to increase the knowledge of, and assist in the management of native wildlife. Species lists are available on 1:100 000 maps or by reserves.

## **Policies**

- \* The habitat of native animals will be protected to conserve species diversity, distribution and viability.
- \* Specific conservation programs may be developed for native animal species which are vulnerable or endemic to the Nattai Reserves System.
- \* Non-native animal species of concern will be controlled or eradicated where practical. Priority will be given to programs:
  - in areas of conservation importance; and
  - adjacent to neighbouring lands.
- \* Preference in the control of non-native animals will be given to techniques which have minimal environmental impact.
- \* Control of non-native animals will be undertaken in conjunction with the Sydney Catchment Authority and neighbours where appropriate.
- \* Priority for control of introduced species will be determined by assessment of their potential:
  - impact on catchment values;
  - threat to significant natural values;
  - damage to cultural resources;
  - effect on neighbouring lands;
  - threat of disease;
  - capacity for dispersal; and
  - new occurrences.

- \* Where significant economic loss results from wild dog activity originating from the park, control programs along the perimeter of the park may be undertaken consistent with current Service policy and in consultation with affected landholders and the Sydney Catchment Authority.
  
- \* Domestic stock are prohibited in the park and any stock will be removed.

## Actions

- \* The distribution of rare and endangered fauna species will be recorded and monitored.
- \* The occurrence, distribution and density of introduced animals causing significant environmental damage will be recorded.
- \* A program for the control of feral animals causing significant environmental damage will be developed and implemented in consultation with the Sydney Catchment Authority.

### 4.1.4 Fire Management

Aborigines are known to have occupied eastern NSW for at least the last 20 000 years. Traditional fire practices of Aborigines in Sydney sandstone environments have not been well researched and are therefore poorly understood. However, Aborigines are likely to have had burning regimes which encouraged grazing plants in areas in which they were resident and kept corridors open in lands they travelled through.

There is evidence that the vegetation of south-eastern Australia has changed since the arrival of Europeans because of their fire practices, although the exact effect on plants and animals is not well documented. This is an expanding area of research interest.

Wildfires are most severe during late spring and summer, when they may be driven by dry north-west and westerly winds. The major sources of fires in the reserves are lightning strikes or wildfires burning from the lands to the west of the reserve system. Multiple fires may occur in spring and summer, and the resources of more than one fire authority may be required to control these.

Fire in the Nattai Reserves System has great capacity to directly affect the conservation of species, habitats and the maintenance of biodiversity. Appropriate management of fire is necessary to conserve habitats for native animals. Conversely, inappropriate fire regimes can destroy habitats, and cause the local depletion or extinction of species. It is therefore necessary to investigate how best to use fire for conservation purposes.

In addition, the Nattai Reserves System form part of the Warragamba Dam catchment. Wildfires can have a detrimental effect on the catchment by accelerating erosion, sedimentation and eutrophication processes.

Under the *Rural Fires Act 1997*, the Service is a fire fighting authority and is responsible for preventing and controlling fires on the reserves and to ensure they do not cause damage to other land or property. This responsibility includes the implementation of fuel management programs. The Service may also assist with the control and suppression of fires adjacent to the reserves.

Prior to the reservation of the Nattai Reserves System in 1991, fire management in those parts of the Warragamba catchment designated under Schedule One and Two

was carried out by the Sydney Water Corporation and local bushfire brigades. Outside these areas, fire management was performed by the local brigades.

The Service regards co-operative fire management as essential for both the protection of property and of the natural resources of the Nattai Reserves System. An important part of the Service's fire management is participation as a member of District Bush Fire Management Committees in the preparation of a plan of operations and a bush fire risk management plan under Section 52 of the *Rural Fires Act 1997*.

The principal threat to property from a fire in the Nattai Reserves is to the string of villages on the eastern flank of the reserves, including Colo Vale, Hilltop, Buxton, Balmoral, Oakdale, Lakesland, Rockbarton, Werombi/Orangeville and Nattai.

Fire management in the Nattai Reserves will have three strategies:

- remote area firefighting within the reserves;
- the protection of life and property along the eastern flank of the reserves system and within inholdings; and
- the protection of the Nattai Reserves System from fire originating from inholdings.

Fire control in the vicinity of the villages has relied on the system of ridgetop trails, such as the West Road Fire Trail. The north-south trending 330kV power transmission line easement within the eastern boundary of Nattai National Park and Bargo State Recreation Area also provides a significant fire control line. Prescription burning adjacent to the villages and properties surrounding the reserves also provides protection to those settlements. More remote fire trails, such as Long Nose Ridge, are less likely to be effective fire control lines. Wherever possible fuel reduction zones along the boundaries of the Nattai Reserves System will be located on neighbouring lands.

Bushfire suppression operations may require the construction of temporary trails, helipads and fire lines. These will be closed and rehabilitated as part of post fire operations.

In accordance with the Service's State-wide priorities, a fire management plan is scheduled for preparation and public exhibition. The fire management plan will be prepared in close consultation with the Sydney Catchment Authority.

## **Policies**

- \* Fire in the Nattai Reserves System will be managed in accordance with a Fire Management Plan prepared by the NSW National Parks.
- \* All wildfires will be managed and controlled as far as possible within the reserves.

- \* Preference will be given to effective fire suppression methods which have least adverse environmental impact.
- \* Liaison will be maintained and co-operative strategies developed with bush fire brigades, local government and neighbours to ensure co-ordination in fire management in the reserves and on adjoining lands.
- \* The Service will participate as a member of the District Bush Fire Management Committee in the preparation of a plan of operations and a bush fire risk management plan under Section 52 of the Rural Fires Act.
- \* Priority in all fire management will be given to areas of the reserves adjoining property where there is potentially a high fire risk to life and property.
- \* Research will be encouraged into fire behaviour in the local area, the effects of fire on plant and animal communities and into traditional Aboriginal burning practices.
- \* As research findings relevant to fire effects on vegetation communities, animal habitats and traditional Aboriginal burning practices become available, they will be incorporated in fire management plans.
- \* Until research findings become available concerning the effects of fire, prescribed fire will be excluded from the following areas:
  - wet sclerophyll forests;
  - rainforest communities;
  - habitats of endangered plant and animal species known to be fire sensitive.
- \* Where there is a sound, researched ecological basis, fire will be applied to park areas to produce a diversity of fire regimes for identified management objectives. These objectives may include plant and animal habitat enhancement or the establishment of a diversity of fire age classes and fire intensities.
- \* Information on fuel characteristics and individual plant and animal responses to fire will be collated and researched.
- \* Information concerning the management of fire in the reserves will be included where appropriate in park information and interpretation material.
- \* Prescription burning will be permitted in the Nattai Wilderness where required for essential management purposes.
- \* No new permanent trails will be constructed for fire management. Temporary tracks and fire breaks will be rehabilitated after use.

- \* Existing trails will be reviewed as part of the Section 52 district fire management planning process. Unnecessary trails will be closed and rehabilitated.

### **Actions**

- \* A fire management plan for the Nattai Reserves will be prepared by March 2002.
- \* Records of fire events will be kept and used in fire management planning.

### **4.1.5 Wilderness**

The rugged and inaccessible nature of much of the Nattai Reserves generally precluded their use for European agriculture and settlement other than in the broad river valleys. Some relatively minor logging and mining activities have taken place; however, these have generally been restricted to the fringes of the reserves and have had little impact on the integrity of the ecosystem. Inclusion of most of the area within the Warragamba Catchment further restricted development. Hence a substantial part of Nattai National Park met the criteria for identification as wilderness specified by the *Wilderness Act 1987*, that is:

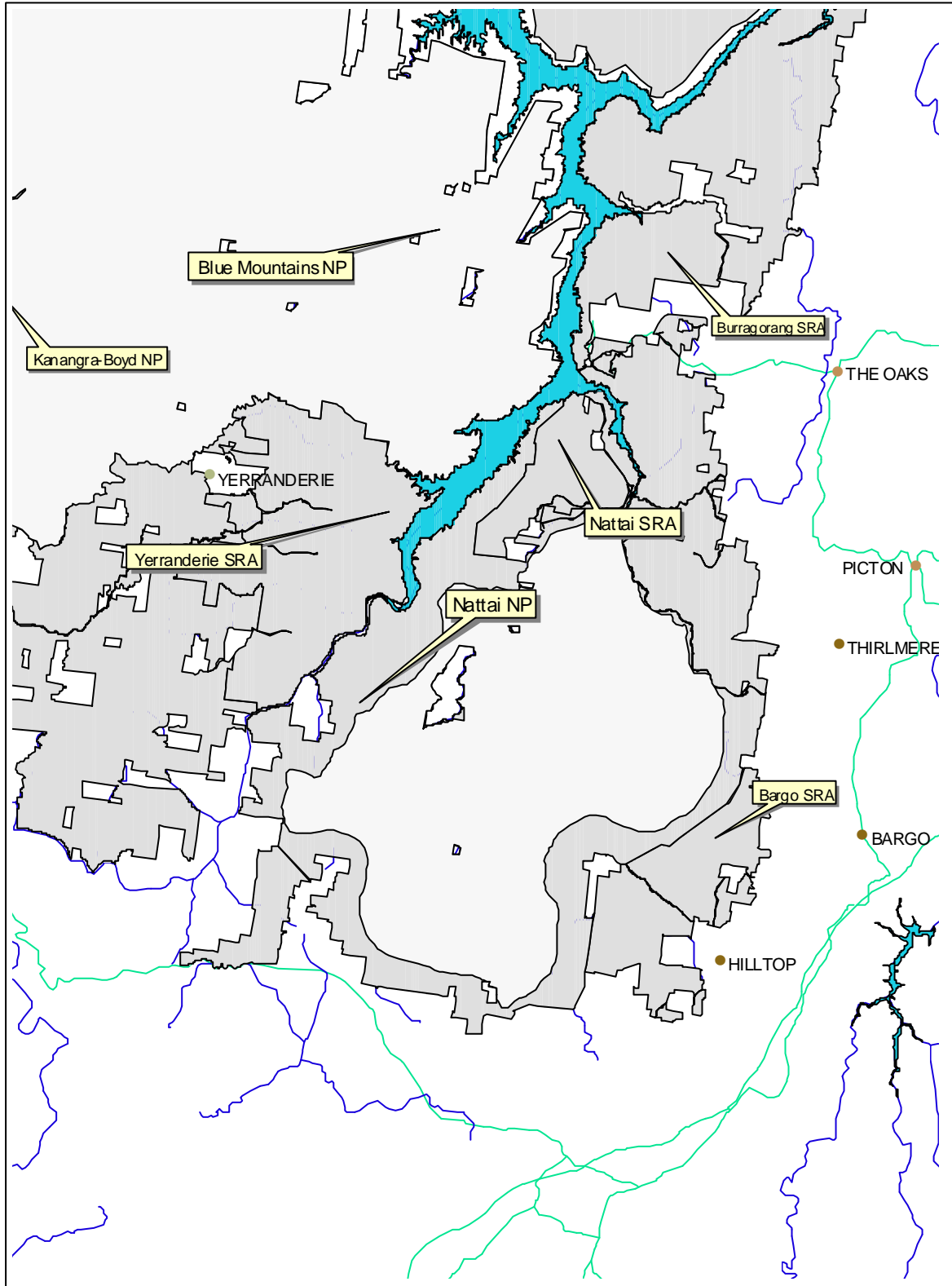
- the area is, together with its plant and animal communities in a state that has not been substantially modified by humans and their works or is capable of being restored to such a state;
- the area is of sufficient size to make its maintenance in such a state feasible; and
- the area is capable of providing opportunities for self-reliant recreation.

Consequently 29 822 hectares were declared the Nattai Wilderness on 13 December 1991. This was the first wilderness to be declared under the provisions of the *Wilderness Act 1987*.

Part of the Tonalli River catchment section of Yerranderie State Recreation Area lies within the Kanangra-Boyd Wilderness.

### **Policies**

- \* In accordance with the *Wilderness Act 1987*, the wilderness areas within Nattai National Park shall be managed:
  - to restore (if applicable) and to protect the unmodified state of the area and its plant and animal communities;
  - to preserve the capacity of the area to evolve in the absence of significant human interference;



- Declaredwild.shp  
KANANGRA-BOYD  
NATTAI  
Dams\_sca.shp  
Mainrivers\_250k.shp  
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### Map 2

Nattai Reserves - Declared Wilderness

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- to permit opportunities for solitude and appropriate self-reliant recreation.
- \* Public awareness and appropriate use of wilderness will be encouraged.
- \* Motorised vehicles will only be permitted within the wilderness for essential management or rescue operations.
- \* Control programs for introduced plants and animals will be implemented in the wilderness.
- \* Inholdings within the Nattai Reserves System, especially those within the Wilderness area, will be considered for acquisition when they are offered for sale.

## **4.2 CULTURAL HERITAGE**

### **4.2.1 Aboriginal Heritage**

The Nattai (name given to the river because it had 'sweet water') Reserves System was the traditional home of the D'harawal and Gundangarra Aboriginal people. The Wollondilly (an unusual combination of words; more likely to have originally been Warren-dilly meaning 'reed baskets made by women' or Wollon-dirri meaning 'death of spirit canoe') and Burragorang ('home or place of the giant kangaroo') valleys made up the boundary or transition zone between the two nations. Some of these Aboriginal names may stem from other Aboriginal languages not endemic to the Nattai area. The northern part of the Burragorang was also the traditional home of the Dharug people.

The transition zone between the two groups of Aboriginal people provided a corridor for peoples travelling northward from as far afield as Victoria to the major gathering and ceremonial grounds in D'harawal lands in the Cowpastures or Camden area adjacent to the Nepean River. The area east of the transition zone between the east coast, south of the Cowpastures and extending onto the northern part of the southern tablelands including Bargo State Recreation Area and the Nattai River valley was known as Gwaigl to the D'harawal people and was considered a very special and significant area. Entry was strictly controlled by the presence of guardians or feather women at the various passes and points of entry into Gwaigl (G. Andrews pers. comm.).

The D'harawal and Gundangarra were among the first Aboriginal people to feel the impact of European invasion, firstly through the spread of disease (smallpox, measles, influenza etc) and secondly through dispossession. It was in the Nattai valley during 1802, that Barralier recorded the call 'coo-ee' (a high pitched locational call used in heavily wooded country), although the 'coo-ee' is now known to have also been recorded elsewhere by Southwell in 1790 and Hunter in 1793. Following the massacres of the D'harawal people of Gwaigl near Appin in 1816 and with the elimination of the Burragorang people through disease, the eastern Gundangarra



moved into the Wollondilly and Burragorang valleys and Cowpastures areas. In 1828 Major Mitchell wrote " ... in the numerous ravines surrounding Jellore, the little river Nattai has its source, and this wild region is the haunt and secure retreat of the Nattai tribe, whose chief, Moyengully, was one of my earliest Aboriginal friends" (actually Mullyengulli, meaning 'eagle man').

The Nattai Reserves System falls within the area of the D'harawal Land Council.

The reserves contain numerous Aboriginal sites, including axe grinding grooves, engravings, cave art, shelter caves, open camps and surface artefact scatter sites. There is a major art site in the vicinity of Jellore. It is likely that many more sites have yet to be recorded.

### **Policies**

- \* The D'harawal Land Council will be consulted and involved in all aspects of the management of Aboriginal sites in the reserves.
- \* All Aboriginal sites will be recorded, researched and conserved in consultation with the D'harawal Land Council.
- \* Non-destructive research into the Aboriginal heritage of the reserves through joint programs with the Aboriginal community will be promoted.
- \* Conservation plans will be prepared for Aboriginal sites as the basis for the management of sites, structures or places and/or assessing the impact of development works or other management programs.
- \* Following consultation with the D'harawal Land Council the cultural heritage of the areas may be promoted by provision of information about the Aboriginal history of the area of the reserves.

### **Action**

- \* A register of Aboriginal sites will be established containing all known Aboriginal sites. This register will be maintained as required by the inclusion of new records.

#### **4.2.2 Historic Heritage**

The Nattai area was the scene of considerable exploration activity during the early history of European settlement as the colonists attempted to cross the Blue Mountains. George Bass, John Wilson and William Knight were probably the first Europeans to see the Burragorang Valley. John Wilson returned to the area in 1798, sent by Governor Hunter to prove to Irish convicts that there was no escape route to India over the mountains. In 1802 Ensign Francis Louis Barralier entered the Nattai Valley via Sheehys Creek. Barralier established a depot in the valley from which he conducted explorations of the area and attempted to penetrate further west. Caley re-traced

Barralier's route into the valley in 1806. Caley also failed to cross the Blue Mountains; however, he did find coal in the valley and discovered Thirlmere Lakes.

In 1815 Governor Macquarie visited the Burragorang Valley, but it was not until 1824 that an access route down Mt Burragorang was surveyed by Hoddle. Some areas of the valley were held under tickets of occupation for grazing as early as 1824. However, real settlement did not occur until after Robert Dixon's survey of the valley in 1827.

Farming activity was restricted to the river flats of the major valleys. 'Joorilands' homestead, within Yerranderie State Recreation Area, is a prominent reminder of the agricultural heritage of the reserves. The cessation of grazing on 'Joorilands' in 1993 and the consequent vacating of the residence requires particular consideration be given to the future of this property.

The discovery of galena near Yerranderie by Billy Russell, also known as Werriberri (later chief man of the Gundangarra) and Billy George opened another relatively brief phase of development activity. Exploitation of the lead/silver deposit was slow to get underway. It was only when John Vigar Bartlett began to produce payable ore in 1898 that real expansion of the silver field occurred. The lodes, though rich, were small, although transportation of the ore was a problem in the mountainous terrain. A rail link along the Couridjah Corridor (Blue Gum Creek to Little River) was proposed, but never built. By the early 1920s the mines had run into serious financial difficulties and industrial disputes developed. In 1928 the miners were locked out due to an industrial dispute. This dispute was not resolved before closure of the mines for economic reasons, so technically this strike/lock out situation still exists today.

Yerranderie village is not included in the Nattai Reserves System, although some of the mine workings are within Yerranderie State Recreation Area. The village is flanked on the east by Yerranderie State Recreation Area and on the west by Blue Mountains National Park. The village is a popular tourist destination and is reached from the west via Oberon.

Other major activities in the area have included coal mining and timber-getting. The Burragorang Valley was also very popular with tourists, there being a number of guesthouses operating in the early decades of the twentieth century. These activities had little impact on the more rugged terrain of the reserves, though jinkers' tracks are still scattered through parts of the reserves. A large number of other sites within the Nattai System of Reserves are also known to the Sydney Catchment Authority and the National Parks and Wildlife Service.

The filling of Lake Burragorang saw much of the early settlement areas inundated and public access to Yerranderie to the east cease.

## **Policies**

- \* The provisions of the Burra Charter (ICOMOS) for the conservation of places of cultural significance will guide management decisions regarding the park's heritage.

- \* Historic places will be recorded, researched and conserved.
- \* Non-destructive research into the historic heritage of the reserves will be encouraged.
- \* Conservation plans will be prepared for historic places as the basis for the management of sites, structures or places and/or assessing the impact of any development works or other management programs.
- \* The cultural heritage of the areas will be promoted by providing information about the non-Aboriginal history of the reserves.

### **Actions**

- \* A register of historic places in the Nattai Reserves System will be established and maintained by the addition of new records.
- \* A conservation plan for 'Joorilands' homestead will be prepared in accordance with the Special Areas Strategic Plan of Management.

### **4.3 USE OF THE AREA**

It is an important aspect of the management of this area to ensure that its use - whether by the general public, special interest groups, Service managers or other authorities - is appropriate, that is, in conformity with *the National Parks and Wildlife Act 1974* and the management objectives and management strategy of this plan.

It is also important to ensure that use conforms with the requirements of the Sydney Catchment Authority to protect the Warragamba Dam catchment.

The major categories of use that can be appropriate, to varying degrees, on Service areas are:

- education and promotion of the area, the Service and the conservation of natural and cultural resources;
- certain types of outdoor recreation in a natural setting;
- research; and
- management operations, by the Service itself and other authorities with statutory responsibilities in the area.

The extent to which these categories of use are appropriate to the Nattai Reserves System is indicated in the following sections.

### 4.3.1 Promotion of the Nattai Reserves System

The national park and four state recreation areas in the Nattai Reserves System are not well known to the general public.

Several visitor facilities and programs are undertaken within the Nattai Reserves System by the Sydney Catchment Authority. There are therefore many opportunities for co-ordinating Service and Catchment Authority interpretation and environmental education programs, including standardisation of signs. In particular, Burragorang Lookout provides opportunities for joint promotion of the Nattai Reserves System with emphasis on promoting the importance of wilderness.

The principal users of the Nattai Reserves System are expected to be residents of the expanding cities of south-west Sydney, Camden and Cambelltown, the villages on the eastern flank of the reserve system and the towns of Mittagong, Bowral and Moss Vale. These will be the target areas towards which promotion will be largely directed.

An aspect of management which has priority is to promote within the local community, particularly neighbours of the park, the importance and purpose of management programs relating to the protection of the natural and cultural heritage of the Nattai Reserves System and the control of weeds, feral animals and fire.

The major themes appropriate for the promotion of the Nattai Reserves are:

- the area as an important part of the system of conservation areas in the Sydney Basin;
- the area as a part of Sydney's major water catchment;
- appreciation of wilderness values and opportunities in the wilderness for self-reliant recreation;
- the importance and purpose of management programs in natural and cultural heritage conservation;
- fire management; and
- the cultural heritage of the Nattai Reserves System, particularly that relating to minerals prospecting and mining.

#### Policies

- \* The Nattai Reserves System will be promoted within the context of other conservation areas which offer complementary recreation and environmental education opportunities.

- \* Interpretation programs will promote an awareness of the importance and appropriate use of:
  - wilderness areas; and
  - catchment areas
 within the Nattai Reserves System.
- \* Promotion of the areas will be directed towards encouraging appropriate, passive recreational use which are consistent with the protection of the water catchment, nature conservation and cultural heritage values identified in sub-section 2.2.3 above.
- \* The importance and purpose of management programs relating to the protection of the natural and cultural heritage of the Nattai Reserves System and the control of fire, weeds and feral animals will be promoted within the local community, particularly neighbours of the reserves system.
- \* Burratorang State Recreation Area and Yerranderie State Recreation Area will be promoted with an emphasis on their heritage features and water catchment significance.
- \* Nattai National Park will be promoted with an emphasis on its wilderness significance.
- \* Bargo State Recreation Area will be promoted as an area which includes provision for limited vehicle-based facilities in addition to foot, bicycle and horse access. The area will also be promoted as providing alternative and complementary recreation opportunities to those provided in nearby Thirlmere Lakes National Park.

## **Actions**

- \* Promotion and interpretation for the Nattai Reserves System will be reviewed to ensure that community relations strategies and management programs reflect park values. A community relations and discovery strategy will be developed.
- \* Brochures will be distributed from tourist information outlets, user groups, Councils and Service offices and shops within the nearby towns and in south-west Sydney.

### **4.3.2 Recreation Opportunities**

The Nattai Reserves System is part of a regional pattern of outdoor recreation adjacent to the major growth areas of Camden and Campbelltown south-west of Sydney. Other important recreation areas and facilities in the sub-region include those managed by the Sydney Catchment Authority at the Warragamba, Avon, Cataract and Nepean Dams; Nortons Basin and Glenbrook in Blue Mountains National Park; Thirlmere Lakes

National Park; Bents Basin State Recreation Area; Mount Annan Botanic Gardens and various Council reserves.

The remote and rugged nature of the Nattai Reserves and the need to protect the integrity of the Warragamba Dam catchment have generally precluded recreational use of the reserves other than for low impact bushwalking and bush camping. In particular, two water quality protection zones declared under *the Sydney Water Catchment Management Act 1998* overlap much of the Nattai Reserves System and place important constraints on their use for recreation:

**Schedule One Water Quality Protection Zone:** An area approximately three kilometres wide surrounding Lake Burragorang. Except in defined areas, such as Burragorang Lookout, W4 trail and Beloon Pass, all access, either on foot or by vehicle, is prohibited.

**Schedule Two Water Quality Protection Zone:** An area surrounding Lake Burragorang in which the Sydney Catchment Authority has a major management interest and into which vehicular access is restricted but walkers are generally permitted.

These two zones are shown on the map, centre pages.

The Sydney Catchment Authority and the National Parks and Wildlife Service have undertaken a review of the basis of recreation management within the Warragamba Special Area and hence those parts of the Nattai Reserves System which fall within the Special Area. The management of recreation will continue to give priority to the protection of both water catchment values and to ecological integrity in accordance with the Special Areas Strategic Plan of Management which has been developed by the two organisations.

Bargo State Recreation Area, which lies outside the Schedule Two zone managed by the Sydney Catchment Authority, is extensively used by recreational four wheel drive vehicles and trail bikes.

Information about visitor numbers to the Nattai Reserves System is limited. In 1992, however, approximately 55 000 people visited Burragorang Lookout in Burragorang State Recreation Area. There are no figures for the use of other areas in the Nattai System of Reserves.

The management of recreation within the Nattai Reserves will be based on two recreation settings:

**Nattai Wilderness:** which comprises a large, substantially unmodified area that represents an ecologically viable system containing many of the significant park features and processes. The area also provides many outstanding opportunities for solitude and self-reliant recreation.

**Natural areas:** Bargo State Recreation Area, Burragorang State Recreation Area, Nattai State Recreation Area, Yerranderie State Recreation Area and that part of Nattai National Park that is not within the wilderness is included in a natural areas setting. These lands remain in an essentially unaltered natural condition except for some areas flanking the Wollondilly River, which were previously cleared for grazing.

These two settings are also shown on the map, centre pages.

There are two main public roads which give two wheel drive access to the Nattai Reserves System:

- **Wattle Ridge Road:** west of Hilltop, provides access to Starlights Trail; and
- **Burragorang Road:** west of Oakdale, leads to Burragorang Lookout.

The need to protect the catchment of Warragamba Dam has resulted in the Sydney Catchment Authority restricting vehicular access to much of the Nattai area by gating the trails. Two wheel drive access to the Nattai Reserves System is therefore limited to sites on the boundaries of the reserves and has, until recently, been relatively unsophisticated and of low impact.

The growing popularity of recreational four wheel drive vehicles and trail motorcycles, however, has led to increased accessibility into remote areas, often in disregard of access restrictions established to protect Sydney's water supply. There are also many trails in the national park and state recreation areas without legal status which are currently used by recreational vehicles. Many of these trails were previously established for purposes such as extraction of timber, wildflowers or bushrock; activities which are not now permitted. These trails detract from the natural values and are often sites for illegal activities such as car or rubbish dumping and arson. A number of other trails were constructed for fire management purposes and likewise may provide unauthorised access for recreational four wheel drive users or illegal activities.

The use of recreational off road vehicles is particularly high in Bargo State Recreation Area, an area where there were few access controls in place at the time of reservation of the area. The Little River south of Buxton is a popular destination accessible by vehicle and many trails in the area are badly eroded.

The 330kV power line also provides unauthorised access for off road vehicles through the state recreation area into the Nattai Wilderness. Rubbish dumping and bushrock theft are common problems in this area.

Prior to the construction of the Warragamba Dam the most direct route to Yerranderie from the east was through Burragorang Valley. With the flooding of Lake Burragorang in 1960 this access was closed to unregulated vehicle traffic to protect Sydney's water supply. Access to Yerranderie is via Oberon from the west or from Wombeyan Caves and the Range fire road from the south.

The need to protect Sydney's water supply and to control access to the network of trails including the W4 preclude uncontrolled vehicular access in this area. However, during the early 1990s the Sydney Catchment Authority permitted eight escorted four wheel drive return trips to Yerranderie from Oakdale via the W4 fire trail for ex-residents of Yerranderie and tourists. A maximum of twenty vehicles were permitted on each trip in 1993.

All use of the vehicle access system will be consistent with the objectives of management for the area and with the interpretation programs to be prepared for the Nattai Reserves System.

There are a number of recognised walking routes in the Nattai Reserves:

- **Starlights Trail:** leads into the Nattai valley from Nattai Road, west of Hilltop.
- **the Couridjah Corridor:** along Blue Gum Creek from Thirlmere Lakes National Park to the Little River
- **The trek from Katoomba to Mittagong:** is becoming increasingly popular. The route crosses Beloon Pass in Nattai National Park via a designated public access corridor through three kilometres of the Schedule One Water Quality Protection Zone, thence along the Nattai River valley to Mittagong.
- **Day walks:** such as to Bonnum Pic and to the top of Mount Jellore.

In general, walking routes in the reserves are unformed and unmarked. The Nattai Wilderness can generally be reached only by experienced and well-equipped bushwalkers. A number of walking access routes cross private property, State forest or Crown land before entering the park.

Bush camping is permitted in the Nattai Reserves System outside the Schedule One Water Quality Protection Zone.

No facilities are available in the reserves for car-based camping. Caravan parks or camping grounds providing such facilities are available in nearby centres such as Bargo, Mittagong, Oakdale and Camden.

Spectacular views of Nattai National Park and Yerranderie State Recreation Area are gained from two lookouts on the edges of the Nattai Reserves System:

- **Burraborang Lookout** west of Oakdale which offers basic facilities for picnickers and sight-seers, including toilets, barbecues and a kiosk; and
- **from Wombeyan Caves Road** at a lookout which is also called Burraborang Lookout, (hereafter in this plan called Wollondilly Lookout to avoid confusion with the better known Burraborang Lookout near Oakdale). This lookout itself is unattractive, being nothing more than rough clearing beside the road. Growth of trees and saplings is gradually obscuring the view.



The Little River south of Buxton is a popular location with day visitors and is generally accessed by four wheel drive vehicles. Roads into the area are badly eroded and attempts by the Sydney Catchment Authority to exclude vehicles from the area have not been entirely successful. The main attraction is swimming in a large rock pool and enjoyment of the natural environment. No facilities are currently provided. It is proposed to formalise this activity by upgrading the road and providing basic day use facilities at the Little River site.

Day-use recreation facilities for picnicking and swimming are also provided in nearby Thirlmere Lakes National Park. These facilities complement those provided in the Nattai Reserves System.

The Sydney Catchment Authority does not permit recreational horse riding within the Schedule One and Schedule Two areas under its management. Horse riding is also not permitted in wilderness areas. The riding of horses in natural areas can increase the potential for erosion and weed introduction. Horse riding will therefore be restricted to public roads and designated management trails east of Little River and north of Wattle Ridge Road within Bargo State Recreation Area.

Bicycles are becoming an increasingly popular means of recreation in national parks. Bicycles are not appropriate in the Nattai Wilderness. The currently available opportunities for the use of bicycles in the Nattai Reserves is therefore on management trails in Bargo State Recreation Area and public access roads in the Nattai Reserves.

The management of all forms of visitor use within the Nattai Reserves System will continue to give priority to the protection of both water catchment values and to ecological integrity in accordance with the Special Areas Strategic Plan of Management which has been developed by the two organisations.

A rifle range is located in Bargo State Recreation Area. The rifle range was moved to its present site prior to reservation of the state recreation area after its previous site at Welby was resumed for the Mittagong by-pass. The rifle range itself is an extensively modified environment but the Southern Highlands Rifle Club was granted a licence in 1993 to occupy the site for ten years with an option for an additional five years.

## **Policies**

- \* Recreation management in the Nattai Wilderness Area will be consistent with the management principles set down in Section 9 of the Wilderness Act 1987 and with the Service's Wilderness Conservation Policy.
- \* Recreation management in the Schedule One and Schedule Two Water Quality Protection Areas will be consistent with Sydney Catchment Authority policy.
- \* Visitors will be required to follow minimal impact bushwalking and camping techniques throughout the Nattai Reserves System.
- \* No new walking tracks will be constructed in the Nattai Wilderness Area.

- \* Route markers or signs may be used throughout the Nattai Reserves System except within the Nattai Wilderness Area.
- \* Bushwalkers may cross, but not camp within, the three kilometre zone via the Beloon Pass-Sheepwalk Track corridor.
- \* Where necessary the Service will negotiate with neighbouring landholders to maintain access to established walking routes in the reserves.
- \* Car-based camping facilities will not be provided within the Nattai Reserves System.
- \* All four wheel drive access to and from Yerranderie through the Nattai Reserves System will be supervised by the Service and will be monitored in relation to impacts on water quality and ecological integrity.
- \* Public vehicle access will not be permitted within the Nattai Wilderness Area.
- \* Access will be regulated and closures enforced on all but public roads.
- \* The views at Burragorang Lookout and Wollondilly Lookout will be maintained.
- \* The Sydney Catchment Authority may continue to maintain and operate the Gunya day-use area for educational purposes. If use of the area is no longer required by the Authority or the Service, it will be closed and rehabilitated.
- \* In the event that the Sydney Catchment Authority permits increased bushwalking and bush camping within the Schedule 1 Area, the Service will permit such activities in accordance with the requirements of the Sydney Catchment Authority and also subject to:
  - protection of sensitive geological sites, plant and animal communities and the protection of Aboriginal sites;
  - observance of minimum impact bushwalking and bush camping practices;
  - a limit of eight persons per party;
  - a limit of two nights occupation for any one campsite; and
  - restriction of parties to specified walking routes.
- \* Recreational horse riding will only be permitted on public roads and designated management trails east of Little River and north of Wattle Ridge Road within Bargo State Recreation Area.

- \* Bicycles may be used only on public roads and designated management trails in accordance with the Service's code of practice for bicycle riding in national parks and any requirements of the Sydney Catchment Authority.
- \* The relocation of the proposed Dharawal Rifle Range to Hilltop within Bargo State Recreation Area will be considered subject to the provisions of the Environmental Planning and Assessment Act 1979 and this Plan.

## **Actions**

- \* Day-use facilities accessible by vehicle will be provided at:
  - Burragorang Lookout;
  - Wollondilly Lookout; and
  - the Little River south of Buxton.
- \* Wollondilly and Burragorang Lookouts will be upgraded and interpretation provided.
- \* Trackhead facilities for bushwalkers will be provided:
  - at the beginning of Starlights Trail; and
  - at the eastern end of the Couridjah Corridor.
- \* The Service will negotiate to control public access to the 330kV transmission line easement in Bargo State Recreation Area and Nattai National Park.
- \* Vehicular access to the Little River south of Buxton will be upgraded and day use facilities provided.
- \* Management trails suitable for horse and bicycle use will be identified.

### **4.3.3 Scientific Research**

Prior to reservation of the Nattai Reserves System, the Sydney Water Corporation had undertaken research in the area largely connected with protection of the Warragamba Dam Catchment. This work has included water quality monitoring throughout the area, broad-scale vegetation mapping and some detailed investigation of fauna and flora in the vicinity of the dam.

Because Nattai National Park and the four state recreation areas are of recent origin, research aimed at improving understanding and management of natural and cultural heritage throughout the reserves has been limited. Information must be gathered in such a way that it is helpful in understanding the broad ecology of the reserves, as well

as the requirements of particular species and can be of use in the day to day management of the park.

A number of research topics have been identified elsewhere in this plan.

## **Policies**

- \* Research will be encouraged in the Nattai Reserves System with priority given to topics which are of direct application to management such as:
  - the effects of fire on endangered native plants and fauna;
  - plant indicator species and plant life cycles important to understanding fire management regimes;
  - the conservation of threatened species;
  - the provision of a detailed vegetation map of the Nattai Reserves System and the ecology of the vegetation communities of the national park and four state recreation areas;
  - comparative studies of the reserves with contiguous conservation areas in the Kanangra-Boyd/Blue Mountains region;
  - appropriate techniques for the management of introduced plants and animals;
  - recording Aboriginal sites within the reserves; and
  - building a profile of visitor use and impacts.
- \* Research activities in the Nattai Wilderness will be restricted to those which are non-destructive and cannot be carried out at alternative locations.

## **Actions**

- \* A prospectus will be prepared as a guide to priority research projects.

### **4.3.4 Management Operations**

Management of the Nattai Reserves System is currently the responsibility of two National Parks and Wildlife Service regions. Nattai National Park and Bargo, Burratorang and Nattai State Recreation Areas are managed by Sydney South Region while Yerranderie State Recreation Area is managed by Blue Mountains Region.

The Sydney Catchment Authority also jointly manages parts of the five reserves to protect the catchment of Warragamba Dam. The Corporation has several facilities in the reserves, including water level gauging stations, work camps and seismic

monitoring stations. The Sydney Catchment Authority also requires that the level of Lake Burragorang be increased or decreased from time to time. Management of those parts of the Nattai Reserves System which are also Special Areas under the Sydney Water Catchment Management Act 1998, will be subject to the jointly sponsored Special Areas Strategic Plan of Management between the Service and the Sydney Catchment Authority. This Plan includes a joint management agreement which defines the relationship and responsibilities of the Service and the Authority in the reserves.

A number of current or potential coal mines occur adjacent to, or beneath, the state recreation areas within the Nattai Reserves System. In particular these include the coal mines in the Oakdale area. A number of mothballed coal mine pitheads and haul and access roads exist within the state recreation areas. The four state recreation areas were reserved as such in lieu of national parks, so as not to compromise these existing and potential mining and exploration titles and activities and developments under such titles.

To give effect to the intent of the government's decision to protect mining and exploration interests in the four state recreation areas, the National Parks and Wildlife Service, the Sydney Catchment Authority and the Department of Mineral Resources in consultation with the affected mining company are preparing a statement which will outline joint management arrangements with respect to mining and exploration. The statement will specify the procedures to be followed with respect to:

- The ongoing and planned program of mine development, including regular exploration drilling (from the surface) required in advance of mining operations and the development of surface facilities, access and infrastructure; and
- Unplanned drilling operations requiring rapid approvals in defined emergency situations, for serious safety or mining circumstances as specified in the statement on joint management arrangements.

Activities undertaken by several organisations also affect the reserves due to their occupation of park land or because of their proximity to the reserves. Energy Australia and Integral Energy are responsible for power lines which cross the reserves.

The public road system provides management access to the parks for such purposes as fire and pest control and access to Sydney Catchment Authority facilities. In addition, a number of inholdings require access although such access roads are generally of limited value for management operations. The trails required by the Service for management operations are outlined on the map, centre pages. Other trails not shown on the map may be required by the Sydney Catchment Authority or by mining companies for their management operations.

## **Policies**

- \* Facilities and activities, including management of the water level in Lake Burragorang, which are required or undertaken by the Sydney Catchment Authority will be managed in accordance with the Special Areas Strategic Plan

of Management and the joint management agreement between the Service and the Sydney Catchment Authority.

- \* Facilities and activities operated or undertaken by the Sydney Catchment Authority will be kept under review by the Sydney Catchment Authority and the Service in accordance with the joint management agreement and where no longer required by the Sydney Catchment Authority the facility will be relocated, closed or terminated and the site rehabilitated or the activity discontinued.
- \* Activities permitted under existing titles granted under the Mining Act 1992 will be managed in accordance with the statement of joint management arrangements agreed to by the Service, the Sydney Catchment Authority, Department of Mineral Resources and the affected mining company.
- \* Activities under existing leases, licences and other occupancies, except those under the Mining Act 1992, in the Nattai Reserves System will be kept under regular review and where appropriate and feasible the facility or occupancy, including associated roads, will be relocated, closed or terminated and the site rehabilitated.
- \* New developments which either require the granting of a new title under the Mining Act 1992 or extension of an existing title, will also be subject to any provisions of the statement of joint management arrangements.
- \* Landholders whose property is surrounded by reserved land and who had legal access prior to establishment of the reserves will be permitted continued access to their land by that route subject to licences under the National Parks and Wildlife Act 1974.
- \* Permanent depots and installations required by the Service or other authorities will be located off-park wherever possible.
- \* All works, facilities and operations by other authorities will be subject to a lease, licence, easement or agreement under the National Parks and Wildlife Act 1974.
- \* Trails shown on the map and which are required by the Service for management purposes will be maintained.
- \* Trails designated for management purposes only, will be available for vehicle use when that use is associated with the management and protection of the reserves.
- \* Trails not required for public use or management purposes will be closed and rehabilitated.

**Actions**

- \* The joint management arrangement between the Service, the Catchment Authority and Department of Mineral Resources will be finalised in consultation with the affected mining company.
  
- \* The joint management agreement for the operation of the Nattai Reserves between the Sydney Catchment Authority and the Service will be reviewed every five years.

## 5. PLAN IMPLEMENTATION

This plan of management is part of a system of management developed by the National Parks and Wildlife Service. The system includes the National Parks and Wildlife Act, the Service's Corporate Plan, management policies and established recreation and conservation philosophy. It also includes regional operational plans.

The orderly implementation of this plan will be undertaken within the annual programs of the Service and will be subject to the availability of necessary staff and funds and to any special requirements of the Director-General or Minister. These programs are subject to ongoing review, within which, works and other activities carried out on the reserves are evaluated in relation to the objectives laid out in this plan.

The environmental impact of all activities will continue to be assessed at all stages and any necessary investigations will be undertaken in accordance with the requirements of the Environmental Planning and Assessment Act. This requirement also applies to activities and works undertaken by the Sydney Catchment Authority and the coal mining companies operating within the Nattai Reserves System.

Section 81 of the Act requires that this plan shall be carried out and given effect to, and that no operations shall be undertaken in relation to the reserves unless they are in accordance with the plan. However, if after adequate investigation, operations not included in the plan are found to be justified, this plan may be amended in accordance with section 75 of the Act.

As a guide to the orderly implementation of this plan, relative priorities for identified activities are summarised below:

<b>PROGRAM</b>	<b>PLAN REFERENCE</b>
<b>High Priority</b>	
Map plant communities	4.1.2
Map rare and endangered species	4.1.2 & 4.1.3
Develop management plans for rare and endangered species	4.1.2 & 4.1.3
Develop control programs for introduced plants and animals	4.1.2 & 4.1.3
Control of feral pigs	4.1.3
Control of wild dogs in perimeter areas of the park	4.1.3
Participate in Section 52 fire management planning	4.1.4



Prepare fire management plan	4.1.4
Maintain fire records	4.1.4
Maintain fire trails	4.1.4
Finalise joint management arrangements between the Service, Sydney Catchment Authority, Department of Mineral Resources and affected mining company.	4.3.4
Prepare a conservation plan for Joorilands homestead	4.2.2
Upgrade Wollondilly and Burraborang Lookouts	4.3.2
Prepare and distribute brochures	4.3.1
<b>Medium Priority</b>	
Remove domestic cattle	4.1.3
Prepare a prospectus on priority research projects	4.3.3
Establish and maintain cultural sites register.	4.2.2
Provide trackhead facilities at Starlights Trail	4.3.2
Upgrade road and provide day use facilities at Little River south of Buxton	4.3.2
Prepare licence agreements for alien tenures	4.3.4
Negotiate with Pacific Power to prevent public access to the 330kV transmission line easement in Bargo SRA	4.3.2
<b>Low Priority</b>	
Prepare access licence agreements for private property owners	4.3.4
Removal of wild horses	4.1.3
Provide trackhead facilities at Blue Gum Creek	4.3.2

## 6. SELECTED BIBLIOGRAPHY

- Barnett. J., (1990) **Shack Country and the Old Burratorang**. Guntawang Catholic Youth Centres.
- Benson D.H., (1981) **Explanatory Notes for the Penrith 1:100,000 Vegetation Map Sheet**. Royal Botanic Gardens, Sydney.
- Benson D.H., (1984) **Explanatory Notes for the Burratorang (South) 1:100,000 Vegetation Map Sheet**. Royal Botanic Gardens, Sydney.
- Brayshaw. H., (1989) **Warragamba Dam - Archaeological Study. Sample Investigation of Areas Upstream to be Affected by Increased Water Retention**. Unpub. report to the Water Board through Mitchell McCotter & Associates Pty Ltd.
- Colong Foundation for Wilderness Inc. and Total Environment Centre Inc. (1987) **The Nattai National Park Proposal**. (unpub.)
- Dyson J.R., (1969) **Report of the Detailed Erosion Survey of Warragamba Catchment Area**. Soil Conservation Service (unpub.)
- Fisher, M., Ryan, K. and Lembit, R. **The Natural Vegetation of the Burratorang 1:100 000 Map Sheet**. *Cunninghamia* Vol 4(2), pp 143-215
- Fowler L.R., Knox F.B. & Hertog S. den., (1991) **History of the Forbidden Land. Part One**. Wollondilly Shire Council.
- Hertog S. den, (1988) **The Yerranderie Silver Field**. Camden Printing Service
- Hertog S. den, (1990) **The History of the Burratorang Valley from the Records**. Camden Printing Service.
- Huggett. A., (1991) **Werriberri Creek Catchment Investigation and Water Quality Action Plan**. Unpub. Water Board report.
- Marquis-Kyle, P. and Walker, M., (1992) **The Illustrated Burra Charter: Making Good Decisions About the Care of Important Places**. Australia ICOMOS
- Meredith. J., (1989) **The Last Kooradgie: Moyengully, Chief Man of the Gundungurra People**. Kangaroo Press.
- Mount King Ecological Surveys, (1989) **Reconnaissance Vegetation Survey of Lake Burratorang Area**. Unpub. Water Board report.
- Mount King Ecological Surveys, (1989) **Reconnaissance Fauna Survey of the Lake Burratorang Area**. Unpub. Water Board report.

National Parks Association (NSW), (1974) **Nattai National Park**. (unpub.)

National Parks & Wildlife Service and Environment Australia (1998) **The Greater Blue Mountains Area World Heritage Nomination**. Unpub. NPWS report.

Russell. W.R. ("Werriberrie"), (1914) **My Recollections**. Wild & Wolley P.L., Glebe.

Veevers J.J. (ed). (1984) **Phanerozoic Earth History of Australia** Clarendon Press, Oxford.