

WYRRABALONG NATIONAL PARK
PLAN OF MANAGEMENT

National Parks and Wildlife Service

Sydney, 1995.

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FOREWORD

Wyrabalong National Park is located on the Central Coast of New South Wales. The park is in several parts: North Wyrabalong on the North Entrance Peninsula, generally between The Entrance and Norah Head; South Wyrabalong on the Bateau Bay coast from Shelly Beach south to Forresters Beach; and Terilbah and Pelican Islands within Tuggerah Lake.

The park protects a number of significant vegetation communities, including littoral rainforest wetlands, mangroves and a red gum forest. Its varied vegetation provides habitat for a range of birds and mammals which are rare or locally restricted on the Central Coast. An important Aboriginal midden is also located on the park. This plan will ensure that these important places will be protected. Weed control, revegetation and feral animal control programs will continue in the park.

The beaches and walking tracks of Wyrabalong National Park are an important recreational resource for both locals and tourists to the Central Coast, and its range of features makes it valuable for environmental education. Under this plan of management the walking track system in both North and South Wyrabalong will be upgraded and expanded, and small picnic areas will be constructed at key locations, such as lookouts. The Pelican Beach Road will also be upgraded to improve access to Tuggerah Beach.

This plan of management establishes the scheme of operations for Wyrabalong National Park. In accordance with the provisions of Section 75 of the National Parks and Wildlife Act 1974, this plan of management is hereby adopted.

PAM ALLAN

**Minister for the
Environment**

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1. INTRODUCTION

The National Parks and Wildlife Act 1974 requires that a plan of management be prepared for each national park. A plan of management is a legal document that outlines how the area will be managed in the years ahead.

The procedures for exhibition and adoption of a plan of management are specified in the Act and involve five stages:

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 comment on it;

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, together with the recommendations of the Advisory Council, to the Minister;

The Minister may adopt the plan after considering the recommendations of the Advisory Council or may refer the plan back to the Director-General and Council for further consideration before adoption.

Once a plan has been adopted by the Minister, no operations may be undertaken within Wyrabalong National Park except in accordance with the plan.

Wyrabalong National Park plan of management was placed on public exhibition for a period of three months from 23rd September to 19th December 1994. The plan of management attracted 26 submissions which raised 15 issues. These were referred to the Advisory Council with the plan for its consideration and advice to the Minister. The comments and suggestions of the Advisory Council were, in turn, considered by the Minister in adopting this plan.

For simplicity, much detailed background information has been omitted from the plan. Additional information or enquiries on any aspect of the plan can be obtained from the Service's Central Coast District Office 207 Albany St, Gosford or by telephone on (043) 24 4911.

Copies of all representations received will be available for public inspection in the library of the Service's Head Office at 43 Bridge Street, HURSTVILLE 2220 (telephone: 02 585 6444) for a period of three months following the adoption of this plan.

2. MANAGEMENT CONTEXT

2.1 NATIONAL PARKS IN NEW SOUTH WALES

The national park concept was introduced into Australia through the establishment of Royal National Park in 1879, only seven years after the world's first national park was created at Yellowstone in the United States of America.

The International Union for the Conservation of Nature and Natural Resources (IUCN) defines 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" (IUCN, 1994).

National parks are 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 provide for only a limited part of the range of land uses in a region'.

2.2 WYRRABALONG NATIONAL PARK

2.2.1 Location and Regional Context

Wyrrabalong National Park was gazetted in May 1991 and currently covers an area of 597 hectares on the Central Coast of New South Wales. The park is in several parts: North Wyrrabalong consists of approximately 480 hectares and covers a substantial area of the North Entrance Peninsula, generally between The Entrance and Norah Head; South Wyrrabalong, which consists of about 120 hectares of the Bateau Bay coast from Shelly Beach south to Forresters Beach; and Terilbah and Pelican Islands within Tuggerah Lake.

The land along the coast between Wamberal Lagoon and Toowoan Bay was reserved from sale in the late 19th century. Although there have been a number of excisions from this original reserve, the 1876 reservation forms the basis of the southern section of the park. The northern section was protected from development by its poor sandy soils and lack of a bridge across Tuggerah Lake at The Entrance.

The conservation value of North Wyrrabalong was recognised by the Fauna Protection Panel in 1958 and it was proposed as a national park by the National Parks Association (NSW) in 1959. During the beach mining disputes between 1968 and 1976, the North Entrance Peninsula Preservation Society continued to push for the area to be declared a national park.

South Wyrabalong was first proposed for conservation by The Caloola Club in the 1940s. The National Parks Association took up the cause after its formation in 1957. In 1959 the Fauna Protection Panel in consultation with the National Parks Association submitted a proposal for a Wyrabalong Park". In 1984 a group of Central Coast conservationists established a Wyrabalong Committee to further push the proposal.

Prior to gazettal, most of the park consisted of Crown Reserves managed by Wyong Shire and Gosford City Councils, with a small (3 hectare) section managed by the Bateau Bay Flora Reserve Trust. In addition, land purchased by the Department of Planning for public open space was included within the park.

Wyrabalong National Park is part of the coastal reserve system on the Central Coast of NSW which also includes Bouddi National Park, Wamberal Lagoon Nature Reserve and Munmorah State Recreation Area. Although connected to other natural areas by narrow corridors of vegetation, the park in essence consists of 2 large "islands" of natural vegetation surrounded by water and urban development.

2.2.2 Importance of Wyrabalong National Park

Wyrabalong National Park protects a wide range of landform features and vegetation communities representative of those found along the Central Coast of New South Wales.

The North Entrance section of the park consists mainly of sand dunes, which reach a height of 50m close to the lake. It is a particularly fine example of a depositional coast and barrier dune system. The eastern part of the peninsula was mined for mineral sands in the 1960s and 1970s; however the western part of the peninsula retains its natural formation. Much of the North Entrance Peninsula was classified as "environmental protection" by the Department of Lands because of its unstable dune sands and pockets of significant vegetation.

The park contains the only area of littoral rainforest of sufficient size within the Central Coast District to be protected under State Environmental Planning Policy (SEPP) No. 26 (Area 171A). A number of rainforest species reach their southern limit of distribution in the park. The park also contains wetlands protected under SEPP 14. An area of *Angophora costata* (commonly called the red gum forest) in the North Entrance section of the park is of regional significance as it consists of a large stand of red gums growing on sand and was the cause of a major conservation battle. Public pressure was successful in protecting the forest from sand mining operations.

South Wyrabalong consists of high cliffs with extensive rock platforms between Shelly Beach and Forresters Beach. The mangrove colony on the tidal mud flats of the rock platform at the southern end of Bateau Bay Beach is significant because it is uncommon for mangroves to occur in such a coastal location.

Wyrabalong National Park contains significant areas of faunal habitat. Over 140 birds have been recorded in the park, including rare and endangered species. Many birds listed on the schedules of the Japan-Australia Migratory Bird Treaty (JAMBA) and the China-Australia Migratory Bird Treaty (CAMBA) spend the northern winter in the park. Twenty-one mammal species, 16 reptile species and 5 amphibians have also been recorded in the park.

Aboriginal middens, camp and burial sites have been recorded within the park. The midden at Pelican Point is of importance to the local Aboriginal community as well as being of archaeological value.

The beaches, headlands and walking tracks within Wyrabalong National Park are an important recreational resource. The park provides recreational opportunities for large numbers of local residents and for tourists visiting the Central Coast of NSW. The red gum forest at North Wyrabalong is a well-known tourist attraction on the Central Coast, particularly for those undertaking scenic drives around the Tuggerah Lakes system or interested in the history of conservation in New South Wales.

The wide range of landforms, vegetation communities, wildlife and cultural sites within Wyrabalong National Park provides valuable opportunities for environmental education. A booklet on the Bateau Bay area was published by the Association for Environmental Education while the North Entrance Peninsula was included in a booklet on Tuggerah Lake. The park is frequently used by a number of local schools for field studies.

The importance of the park can be summarised as:

Landforms

The park contains a range of coastal landforms, from coastal barrier dunes to cliffs with rock platforms, which are representative of the landforms of the Central Coast of NSW.

Vegetation

The park contains 2 wetlands identified under SEPP No. 14, and the only area of littoral rainforest on the Central Coast identified under State Environmental Planning Policy No. 26.

The littoral rainforest contains the vulnerable magenta lilly pilly *Syzygium paniculatum*, and a number of rainforest species reach their southern limit of distribution in the park.

The red gum forest on the North Wyrabalong sand dunes is of regional importance.

The mangrove colony in South Wyrabalong is one of the best occurrences on the NSW coast of mangroves on a coastal rock platform.

Wildlife

A number of rare, endangered and locally restricted birds have been recorded in the park.

The park provides food and nursery sites for many mammals, including the endangered squirrel glider *Petaurus norfolcensis* and the regionally rare New Holland mouse *Pseudomys novaehollandiae*.

Cultural Heritage

The park contains sites of importance to local Aboriginal communities.

The midden on Pelican Point is important because it is one of few relatively intact middens on the Central Coast.

The red gum forest on North Wyrabalong is of historic value for the part it played in the NSW conservation movement.

Recreation

The park is an important coastal recreational area for both locals and tourists to the Central Coast of NSW.

The walking tracks of North and South Wyrabalong are an important local recreational resource.

The forests of North Wyrabalong are a regional tourist attraction.

Environmental Education

The park's proximity to the Wyong-Gosford area and its range of features makes it a valuable environmental education resource.

3. OBJECTIVES OF MANAGEMENT

3.1 GENERAL OBJECTIVES FOR NATIONAL PARKS

The following general objectives relate to the management of national parks in New South Wales:

- the protection and preservation of scenic and natural features;
- the conservation of wildlife; the maintenance of natural processes as far as is possible;
- the preservation of Aboriginal sites and historic features;
- the provision of appropriate recreation opportunities; and
- the encouragement of scientific and educational inquiry into environmental features and processes, prehistoric and historic features and park use patterns.

3.2 SPECIFIC OBJECTIVES FOR WYRRABALONG NATIONAL PARK

In addition to the above objectives, the following specific objectives will apply to Wyrabalong National Park:

- the protection of areas of significant vegetation and wildlife habitat;
- the protection of the SEPP 14 wetlands and rehabilitation of the littoral rainforest;
- the revegetation of areas previously degraded by sand extraction and rutile mining;
- the provision of access for day use recreation associated with the coastline and forests of the park; and
- the provision of opportunities and information relating to the park's local educational role.

3.3 OVERALL STRATEGY

Emphasis in the management of Wyrabalong National Park will be on the restoration of the landscape and natural values of the park. Visitor use will be managed to minimise impact and directed towards those sites which can withstand high levels of use.

4. POLICIES AND FRAMEWORK FOR MANAGEMENT

4.1 NATURAL HERITAGE

4.1.1 Geomorphology and Soils

The park consists of 2. major landform types: an erosion coast of cliffs, and a depositional coast of sand with rocky headlands.

North Wyrrabalong is located on the North Entrance Peninsula which is a Quaternary sand barrier separating Tuggerah Lake from the sea. The dunes reach a height of 50m close to the lake. The eastern side of North Wyrrabalong was mined for mineral sands such as rutile and zircon between 1969 and 1976. At Pelican Point a rock platform protrudes from the sand. The rock is part of the Narrabeen Beds formed during the Triassic Period and consists of sandstones, shales and conglomerate.

Underlying the sands, of North Wyrrabalong is an aquifer which was at one stage investigated for local water supply purposes. The water quality of the aquifer was affected by neighbouring developments such as the sewerage treatment settling ponds north of the park. In the event that a spring which is a surface outlet of this aquifer and from which people draw water, is shown to be polluted, the Service will seek that the health authorities take the necessary action to advise the public against the drinking of water from the spring.

South Wyrrabalong consists of high coastal cliffs or bluffs with extensive rock platforms between the beaches at either end, backed by more gentle slopes to the west. Most of the cliffs consist of thin, friable bands of sandstone and shale which comprise the Clifton Beds of the Narrabeen Series. The uneven weathering of the sandstone and shale beds has produced the distinctive stepped profile of the cliffs. The sandstone rock platforms at the base of the cliffs reach their greatest width just south of Bateau Bay.

Wyrrabalong Lookout, 130 metres above sea level, is the highest point on the coastline between Sydney and Newcastle. South of Wyrrabalong Lookout are the Gosford Formations of the Narrabeen Series. In places, large amounts of wind deposited sand have formed "perched dunes" which overlay the bedrock. Towards Bateau Bay it would appear that the sand has been hardened with peats to provide layers of podsolised "coffee rock". Aquifers provide permanent spring water on Bateau Bay Beach.

As a result of poor restoration work following the completion of sand extraction activity in the vicinity of Whalans Road in South Wyrrabalong, deep erosion gullies have formed. Rehabilitation works are currently being undertaken in this area in association with the Soil Conservation Service. At Evans Road (North Wyrrabalong) and Yakaloo Crescent (South Wyrrabalong) stormwater and excess surface water is causing erosion, siltation and flooding problems both within and adjacent to the park.

Upgrading of the Evans Road drain is the responsibility of council, while Yakaloo Crescent is the responsibility of the Service.

Terilbah Island is a relatively recent (19th century) natural sand island, Pelican Island was formed from dredging spoil, which resulted from works to deepen the channel in Tuggerah Lake near The Entrance in the 1920s.

The leached podzols and unconsolidated sands of the park are low in nutrients and prone to erosion in areas devoid of vegetation. Aeolian sand movement is constant and because of their unconsolidated nature, the sand dunes as a system are considered fragile. Disturbed areas are slow and difficult to revegetate.

Policies

Exposed sand dunes and other unstable areas will be stabilised.

The Service will seek to have undesirable pollutants affecting the park controlled through the environmental planning process.

Actions

Ongoing erosion control works will be continued at Whalans Road, Bateau Bay.

Erosion control and drainage works will be undertaken on the park at the end of Yakaloo Crescent.

The Cromarty Hill access road and other roads adjoining the park which are or may cause erosion on the park will be monitored, and liaison maintained with Wyong Shire and Gosford City Councils.

The effects of neighbouring developments on ground water quality will be investigated.

4.1.2 Vegetation

North Wyrabalong consists of a coastal dune complex ranging from a fringing forest of swamp oak *Allocasuarina glauca* on Tuggerah Lake to exposed coastal heath and scrubs near the ocean.

A large open forest of Sydney red gum *Angophora costata* is located in this section of the park on the Quaternary dune system. It is the largest tract of this type of vegetation on the Central Coast. Most of the forest is dominated by red gums, however there are also substantial stands of bangalay *Eucalyptus botryoides*, minor stands of swamp mahogany *E. robusta* and bloodwood *E. gummifera*, and an extensive understorey of old man banksia *Banksia serrata*, lance-leaved geebung

Persoonia lanceolata, swamp oaks *Casuarina glauca*, Sydney wattle *Acacia longifolia* and burrawang *Macrozamia communis*.

A substantial area of littoral rainforest occurs in the northern section of the park adjacent to Tuggerah Lake. This is the only littoral rainforest site in the Gosford-Wyong region with the exception of 1-2 hectares in Wamberal Lagoon Nature Reserve and the only area on the Central Coast identified under State Environmental Planning Policy No. 26. The littoral rainforest on the peninsula does not occur as a continuous unit but it mixed with tall open scrubland. It contains a wide variety of species including cabbage tree palms *Livistona australis*, hard corkwood *Endiandra sieberi*, tuckeroo *Cupaniopsis anacardioides*, bangalay *Eucalyptus botryoides*, and the largest concentration of the vulnerable magenta lilly pilly *Syzygium paniculatum* in New South Wales. Sandpaper fig *Ficus fraseri*, hard quondong *Elaeocarpus obovatus*, native guava *Rhodomyrtus psidioides*, and *Acronychia wilcoxiana* near their southern distribution limit within the park, and it contains the largest population of the regionally-rare ribbonwood *Euroschinus falcata* on the Central Coast. The rainforest belongs to the *Cupaniopsis anacardioides*-*Acmena* spp. alliance, identified by Floyd (1987) as being inadequately reserved within the state.

Small swamps in swales between the dunes contain vegetation ranging from paper barks *Melaleuca quinquinervia* to reeds and sedges.

Along the edge of 1 Tuggerah Lake are wetlands identified under SEPP 14. They are dominated by swamp oaks, paper barks and cabbage tree palms.

Much of the eastern side of North Wyrribalong was mined for mineral sands, resulting in destruction of the native vegetation. An open forest of bangalay and red gum with a shrub understorey of old man banksia and small areas of coastal tea tree *Leptospermum laevigatum* survived sand mining on the north of the peninsula. Parts of the mined area are regenerating with coastal tea tree, old man banksia, coast banksia *Banksia integrifolia* and Sydney wattle.

South Wyrribalong is characterised by woodland on the plateau tops, with heathlands and mixed grasslands on the windswept slopes.

An open forest of spotted gum *Eucalyptus maculata* dominates the plateau tops west of Crackneck Lookout. A woodland dominated by blackbutt *Eucalyptus pilularis* with occasional red gum *Angophora costata* is found on the clay soils formed from the podsolised coffee rock north of the lookout, and on the perched dunes to the north-west is a red bloodwood and blackbutt woodland which was protected by the old Flora Reserve. Grasslands, shrublands dominated by coastal banksia *Banksia integrifolia* and a closed heathland dominated by coastal she oak forests *Allocasuarina distyla* are found on the eastern facing slopes from the lookout south to Cromarty Hill, whilst on the western facing slopes of the ridge the sand extraction area has been planted with coastal tea tree and lance-leaved geebung.

The tidal mud flats of the rock platform at the southern end of Bateau Bay Beach supports a small colony of mangroves, a rare species to find growing on an exposed coastal rock platform. It is dominated by the grey mangrove *Avicennia marina var australasica* and is a valuable educational resource as the zonation is readily observable. It is also very fragile. The mangrove pneumatophores and cable roots have been damaged by people walking amongst the mangroves, and the walking track behind the colony is cutting into the salt marsh vegetation. The salt marsh is infested with penny wort *Hydrocotyle bonariensis*.

Terilbah Island supports some littoral rainforest species, such as tuckeroo, and saltmarsh communities. Although swamp oaks, coastal banksia and Sydney wattle are growing on Pelican Island it is dominated by bitou bush *Chrysanthemoides monilifera* introduced onto the island in dredging spoil.

A number of trees within the park, particularly in the Bateau Bay area, are considered dangerous to public safety and require lopping or removal.

Following the sand mining on the Central Coast, the mining companies stabilised the mined areas with species not native to the area. Over 58 weed species have been recorded on the North Entrance Peninsula. Bitou bush *Chrysanthemoides monilifera ssp. rotundata* is the most significant threat to the native vegetation due to its tendency to form a monoculture. The bitou tip moth *Comostolopsis germana* has recently been released in the park in an attempt to control the spread of bitou bush.

Other introduced species of concern in the area are the castor oil plant *Ricinus communis*, Rhodes grass *Chlorid gayana*, coral trees *Erythrina sykesii*, pampas grass *Cortaderia* spp. and lantana *Lantana camara*. Although lantana is widespread throughout the area, and a problem within the rainforest, it is not considered at present to be as large a threat as bitou bush. Bitou bush and lantana are the key plant species being targeted for bush regeneration. Weed control in Wyrrabalong National Park is in accordance with priorities established for Service areas in the whole of Central Coast District. These are currently being formalised by the preparation of a Weed Control Plan for the district.

In 1985 Wyong Shire Council instigated the preparation of a bush management plan for the North Entrance Peninsula. The plan was prepared by the National Trust, and volunteers are still undertaking weed control and revegetation in the North Wyrrabalong forest area. Regeneration work is also undertaken in both North and South Wyrrabalong by other groups, and seed is being collected in the park for revegetation works.

Policies

The magenta lilly pilly will as far as possible be protected.

Restoration and regeneration of previously mined areas will be supported.

Only plant species naturally occurring in the park will be used in landscaping and revegetation. As far as possible plant material will be propagated from communities within the area to be treated.

Introduced plants will be controlled and where possible eliminated.

Weed control programs by community groups will continue to be encouraged and supported.

Actions

Weed control and revegetation in Wyrabalong National Park will be in accordance with an overall District Weed Control Plan for Service areas, the plan to be completed by June 1996.

High priority will be given to the removal of weeds from within the littoral rainforest, red gum and coastal heath.

Coral trees and castor oil plants found on the park will be removed.

The Service will liaise with local councils regarding the lopping and removal of trees within the park where they are a hazard to public safety.

4.1.3 Fire

Fire has a great capacity to directly affect the conservation of species, habitats and the maintenance of biodiversity. Appropriate fire regimes are necessary to conserve habitats and populations of species.' Inappropriate use of fire can destroy habitats and cause local depletion or extinction, of species. Key attributes of a fire regime are: how hot the fire is (intensity); the season of burn; the pattern of the burn; and the years since the last burn (frequency).

The Service regards fire as a natural phenomenon, one of the established physical factors of the Australian environment. Much of the vegetation within Wyrabalong National Park, with the exception 'of the littoral rainforest, is highly flammable in medium to high fire danger conditions.

North Wyrabalong has been frequently targeted by arsonists. The increase in fire frequency has resulted in increased infestation by weeds and a decrease in species diversity, particularly within the red gum forest and the littoral rainforest. Fire has also kept the structure of these communities more open than would occur in a natural system.

A number of rainforest species coppice after fire, including the magenta lilly pillly. Many lilly pillys on the park have multiple or coppiced stems, and the main (burnt) trunk has been attacked by, insects, possibly as an outcome of stress from fires.

The heath and sclerophyllous vegetation on the park can also regenerate after fire but too frequent burning can result in a loss of species diversity.

South Wyrabalong has not burnt as frequently as North Wyrabalong. The last major fire in this section of the park was in October 1991.

A network of strategic fire management tracks has been developed on the western side of North Wyrabalong to control the spread of fire and protect the rainforest. The public road system forms a fire break around the South Wyrabalong section of the park.

Unscheduled fires will be controlled using a range of methods depending on the vegetation, location, and other environmental considerations. Fire retardants may be used in limited areas of the park to achieve specific objectives concerning:

- the protection of property;
- the protection of areas of high conservation value; and/or
- the initial control of wildfire.

Central Coast District has a fire management plan which includes the following provisions for Wyrabalong National Park:

- Wildfires and fire suppression activities (wherever possible) and hazard reduction operations will be excluded from:
 - all wetland communities, and in particular areas identified under SEPP 14 on coastal wetlands;
 - all littoral rainforest communities, and in particular areas identified under SEPP 26 6n littoral rainforest;
 - all areas containing the vulnerable magenta lilly pilly;
 - stands of cabbage tree palms;
 - all coastal dune systems containing tea tree and she oak; and
 - Terilbah and Pelican Islands.
- Wildfire, fire suppression activities and hazard reduction will be minimised as far as possible in:
 - the red gum forest;
 - all coastal heathland communities; and
 - all coastal headland communities so as to maintain species diversity and a range of age classes.

- Fire management within Wyrribalong National Park will aim as far as possible to ensure that the minimum interval between fire events for all vegetation communities will be at least 10 years.

The Service will co-operate with the Wyong District Fire Protection Committee and liaise with adjoining land owners and the local community to prevent and suppress fire within and adjacent to Wyrribalong National Park. In this regard the Service will review the Central Coast District Fire Management Plan in accordance with the policies outlined below.

Policies

The management of fire within Wyrribalong National Park will be in accordance with the Central Coast District Fire Plan.

Fire management in Wyrribalong National Park will aim to:

- protect human life and property;
- maintain species and habitat diversity;
- protect closed forest and wetlands from fire;
- protect rare species and specific habitats;
- protect cultural heritage and recreation facilities;
- control public use of fire;
- attain the co-operation of council, other land use authorities, neighbouring landholders and the park user; and
- encourage research into fire particularly with respect to the impact of fire on rare plant and native animal communities.

No fireplaces will be provided and wood fires will not be permitted in the park.

Actions

Co-operative fire management arrangements will be developed in association with local councils, neighbours and other land use authorities.

Information on fire within the park and the effects of too frequent burning will be included on public information boards within the park.

4.1.4 Animals

Wyrribalong National Park provides important wildlife habitat within the rapidly expanding urban areas of the Central Coast.

One hundred and forty bird species have been recorded in the park to date, but it is expected that more will be recorded as more time is spent by ornithologists in the park.

The rock platforms off the headlands, which become islands at high tide, provide important refuges for gulls, terns, migratory waders and herons. Twenty-two species have been recorded within the park which are listed on the schedules of the Japan-Australia Migratory Bird Treaty (JAMBA) and the China-Australia Migratory Bird Treaty (CAMBA). The protected lake foreshore provides refuge and feeding grounds for migratory herons, waders and terns, including the rare little tern *Sterna albifrons*.

Other rare and endangered bird species recorded in the park include the sooty oystercatcher *Haematopus fuliginosus*, which is mainly found on the coastal rock platforms, and the pied oystercatcher *Haematopus longirostris*, which is found on the sand shoals around Terilbah Island.

Some other species not listed as rare or endangered are also of conservation concern. Examples found in the park which are locally-restricted include the white-bellied sea eagle *Haliaeetus leucogaster*, which nests annually in the littoral rainforest, the brush bronzewing *Phaps elegans* which lives in the coastal dunes, the migratory waders that feed in the intertidal zone around Pelican and Terilbah Islands and the reef heron *Egretta sacra* which is present in small numbers on the coastal rock platform.

The red gum forests and tall heaths on the peninsula are important feeding areas for honeyeaters, which spend winter on the Central Coast. The rainforests on North Entrance Peninsula provide important food resources for the uncommon migratory rainforest and fruit-eating pigeons. The fruit of the hard corkwood *Endiandra sieberi* is particularly important as a food source for the topknot pigeon *Lopholaimus antarcticus* during late autumn and winter.

Twenty-five species of mammals have been recorded in the park. The most common mammal is the brown antechinus *Antechinus stuartii*. The endangered squirrel glider *Petaurus norfolcensis* is known to occur in both the littoral rainforest and eucalypt woodland on the western side of the peninsula, while the ringtail possum *Pseudocheirus peregrinus* and sugar glider *Petaurus breviceps* are common throughout the park. The tiger quoll *Dasyurus maculatus* has been observed in the area in the last decade but not recently. The littoral rainforest provides nursery sites for flying foxes, with the swamp mahogany providing a major winter food source for the grey-headed flying fox *Pteropus poliocephalus*. The park has a good diversity of small mammals, including a large population of the New Holland mouse *Pseudomys novaehollandiae*, the northern brown bandicoot *Isodon macrourus*, the swamp rat *Rattus lutreolus* and the eastern water rat *Hydromys chrysogaster*. The New Holland mouse population found in the red gum forest area of North Wyrabalong is of regional significance as it appears to be reasonably large and there have been few recorded sightings on the Central Coast.

A survey of bats during 1993 and 1994 found 8 species; Goulds long-eared bat *Nyctophilus gouldi*, chocolate wattled bat *Chalinolobus morio*, pale eptesicus *Eptesicus vulturinus*, large-footed myotis *Myotis adversus*, eastern broad-nosed bat *Scotorepens orion*, large bent-winged bat *Miniopterus schreibersii*, greater broad-

nosed bat *Scoteanax ruepellii* and Goulds wattled bat *Chalinolobus gouldii*. All species were more common in the littoral rainforest than elsewhere. The large-footed myotis, greater broad-nosed bat and the large bent-winged bat are listed on Schedule 12 of the National Parks and Wildlife Act as endangered fauna.

To date only 16 reptiles and 8 amphibians have been recorded in the park. These include the diamond python *Morefia spilota* which is commonly found throughout the park, the common brown snake *Pseudonaja textilis* which is uncommon on the Central Coast, and the sand swimming lizard *Anomalopus swansoni* which is restricted to the Central Coast and Hunter but well represented on the sand dunes of North Wyrabalong.

The narrow shape of the park and widening of Wildfred Barrett Drive are constraints on effective management of native animal populations. The Service will work co-operatively with local councils to improve wildlife habitat in the area and establish wildlife corridors.

Introduced animals present in the park include rabbits, foxes and cats. There is concern that feral cats are affecting the squirrel gliders in North Wyrabalong as well as other species. Foxes are of concern in North Wyrabalong, as well as in the vicinity of Crackneck Lookout. Domestic cats and dogs are also a problem as they attack wildlife and disturb native habitats. There are no licensed apiary sites within the park.

Policies

Native animals will be conserved by maintaining natural processes and a diversity of habitats.

Fauna lists for the park will be regularly updated.

Introduced animals will be controlled and where possible eliminated. Priority will be given to the control of rabbits, cats and foxes, and any new occurrences of introduced animals.

Domestic animals will not be permitted in the park.

No European bee hives will be permitted in the park.

Local councils will be encouraged to retain and replace native vegetation to provide wildlife corridors between the park and other areas of native vegetation.

Action

A feral animal control program will be prepared and implemented.

4.2 CULTURAL HERITAGE

4.2.1 Aboriginal Heritage

Wyrrabalong National Park was originally occupied by two different Aboriginal tribes. North Wyrrabalong was occupied by the Awabakal people while South Wyrrabalong was within the area occupied by the Darkinjung people.

A number of Aboriginal sites have been recorded within the park and it is likely that a systematic survey would reveal further sites. Middens and campsites have been recorded along the coast and Aboriginal burial sites have been found in the area.

A large midden at Pelican Point was damaged by bulldozers and by people walking across the dune to the beach. The dune has recently been reshaped and revegetated. Fencing has been erected around the midden to protect the revegetation work and the archaeological site. The local Aboriginal community was consulted about the work at Pelican Point, and will continue to be consulted regarding the management of this and other Aboriginal sites within the park.

The name "Wyrrabalong" was adopted from the Aboriginal people by Assistant Surveyor Felton Mathew, who commented on the beauty of the area when he called the most prominent hill between Sydney and Newcastle by this name in 1831. The hill that Mathew named Wyrrabalong is located in the southern section of the park.

Policies

The Pelican Point midden will continue to be protected.

Aboriginal sites found on the park will be recorded and the local Aboriginal communities consulted on their future management.

4.2.2 Historic Heritage

The land along the coast between Wamberal Lagoon and Toowoona Bay remained vacant Crown land until 1876 when a quarter mile (400m) wide strip was reserved from sale "on account of coal". In 1884 the reservation was expanded to cover "defence and public purposes". Although there were a number of excisions from the original reserve, including the site of a lodge at Bateau Bay which was removed in the early 1980s, the 1876 quarter mile reservation forms the basis of the South Wyrrabalong section of the park.

The sands which comprise North Wyrrabalong were of little value for agriculture and consequently not developed, although limited cattle grazing did occur. Early in the 1900s people began to holiday in The Entrance area, and built guest houses and weekenders in the surrounding area but the lack of a road between Norah Head and The Entrance until 1965 largely protected the North Entrance Peninsula from urban development.

In 1969 mining for minerals sands such as rutile, zircon and monazite began on the coastal side of The North Entrance Peninsula, despite a plan to preserve the area having been proposed as early as the 1950s and subsequent proposals for the area to become a national park. A campaign to "save the red gums" from mining was led by the North Entrance Peninsula Preservation Society. In 1972 public pressure resulted in the Supreme Court forbidding mining on North Entrance Peninsula "without prior consent" of Wyong Shire Council, who invoked a Tree Preservation Order which prevented destruction of the trees west of Wilfred Barrett Drive. Although contested, the Privy Council endorsed the Supreme Court decision in 1974 and a substantial portion of the red gum forest became a reserve under Council management. Sand mining on the peninsula ended in 1976, and some restoration work was undertaken in accordance with conditions set out by the Local Government Appeals Tribunal. However in 1988 the North Entrance Peninsula Preservation Society reformed to oppose development on the peninsula and to strive for a national park.

Policies

The Bateau Bay Lodge site will be allowed to revegetate.

The history of the red gum forest will be interpreted.

Action

Information on the history of the park will be included in the interpretive shelters.

4.3 USE OF THE AREA

It is an important aspect of the management of Wyrabalong National Park 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 Act and the management objectives and policies of this plan of management.

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

- low impact recreation; environmental education;
- promotion of the area, the Service and the conservation of its natural and cultural heritage; 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 Wyrabalong National Park is indicated in the following sections.

4.3.1 Recreation

Wyrrabalong National Park is located in a popular holiday area which is also becoming a popular residential and retirement area. It is predicted that the population of the area will continue to expand at a rate of 4.4% p.a. It is also expected that tourist visitation to the area from the Sydney area will continue at current rates.

A number of caravan parks, motels, guest houses and mobile home villages adjoin the park. The residents and guests of these establishments use the park on a regular basis. A major holiday resort and golf course are proposed for the land immediately south of North Wyrrabalong, and there are proposed additional housing developments immediately to the north of the park. Because of the range of accommodation in the surrounding area and the small size of the park, camping is not permitted within Wyrrabalong National Park.

The red gum forest on the western side of Wilfred Barrett Drive at North Wyrrabalong has an established system of walking tracks which has recently been upgraded and extended to form the Lilly Pilly Loop Trail. As well as providing walks through the forest, these tracks provide access to the shore of Tuggerah Lake and views across the lake. The carparks at the start of the Burrawang Track and at the southern end of the Lilly Pilly Loop Trail are located within the road reserve along Wilfred Barrett Drive. Following Wyong Shire Council endorsement, they will be expanded to cater for approximately 25 and 10 car parking spaces respectively. When Wilfred Barrett Drive is widened it may be necessary to relocate the carparks so that they are all or part within the park. It is also proposed to extend the walking track along Canton Beach to link up, with the Red Gum Trail, and rehabilitate unauthorised tracks south of this area.

Along the eastern side of North Wyrrabalong the beaches are used for picnicking, swimming, surfing and fishing. Two roads lead from Wilfred Barrett Drive to Tuggerah Beach, which is unpatrolled. Small carparks have been formed with fenced walkways to the beach. Horses used to be exercised on the beach in the past, but this no longer occurs. Driving along the beach is prohibited.

It is proposed to upgrade the northern access road to Tuggerah Beach (see map). The road will improve access to the beach and reduce the risk of traffic accidents along this narrow road and at the intersection with Wilfred Barrett Drive. The road will be widened to meet safety standards and bitumen sealed. The carpark will be relocated and sealed, and formed access paths will be constructed to the beach. Closure of the road at night and security patrols will be considered to reduce vandalism. Toilet facilities may be constructed in the longer term. The southern access road, which has limited use, will be closed and become a service road only. Too much environmental damage will occur to the rainforest vegetation adjacent to the southern beach access road if it is widened and upgraded to meet safety standards.

Facilities within South Wyrribalong include the Crackneck Lookout and carpark with its surrounding turfed picnic area and carparks; and amenities, play equipment, carparks and picnic areas at Bateau Bay. Bateau Bay Beach is a popular destination for families with young children due to the extensive reefs which shelter the beach to north and south. The reefs, beaches and headlands are also popular fishing and surfing locations. The track along the rock platform is cutting into the salt marsh behind the mangrove community and a boardwalk may be necessary in the long term.

A coastal walking track has been developed in South Wyrribalong which links Wyrribalong Lookout with Bateau Bay. A number of steep areas along the track are eroding and will require the construction of steps. In addition the section of the track immediately south of Bateau Bay requires upgrading to make it easier to follow. A picnic area is also proposed in the vicinity of Wyrribalong Lookout.

Hang gliding occurs at Wyrribalong and Crackneck Lookouts, and model aeroplanes are flown at Crackneck, under consent agreements issued to the relevant clubs. All organised group activities within the park require a licence or consent from the Service.

Policies

The walking track system through the red gum forest and along the coast in South Wyrribalong will be maintained and upgraded as necessary.

Picnic facilities will be provided at key visitor areas.

Improved access will be provided to Tuggerah Beach through upgrading of the northern access road.

Bicycles will not be permitted on walking tracks within the park or on management tracks within North Wyrribalong due to the sandy nature of the tracks.

Camping, horseriding, off-road driving, orienteering and other off-track activities will not be permitted within Wyrribalong National Park.

People wishing to fly hang-gliders or model planes within the park will be advised to join those clubs licensed to operate within the park.

Actions

A walking track will be constructed to link Canton Beach to the Red Gum Trail. Unauthorised tracks in this area will be closed and rehabilitated.

A small picnic area will be constructed at the start of the Burrawang Track.

The carpark at the start of the Burrawang Track and at the southern end of the Lilly Pilly Loop Trail will be expanded and, when the widening of Wilfred Barrett Drive has taken place, may be relocated within the road reserve or on to the park.

The coastal walking track between Crackneck Lookout and Wyrabalong Lookout will be upgraded where necessary and the track between Crackneck Lookout and Bateau Bay will be formalised and marked.

Interpretive and directional signs will be placed at strategic locations along walking tracks.

The northern access road to Tuggerah Beach will be upgraded to a two-way road and bitumen sealed, a new carpark established and access tracks constructed from the carpark to the beach.

The southern access road to Tuggerah Beach will be closed to non-service vehicles. It will be closed to all vehicles and rehabilitated when appropriate fire protection zones are established as part of any development on the Aboriginal land to the south of the park.

A small picnic area will be constructed at Wyrabalong Lookout.

The playground equipment at Bateau Bay will be retained during its useful life but will not be replaced

The sealing of the Cromarty Hill carpark will be investigated.

4.3.2 Education and Promotion

The residents of the Central Coast are the predominant users of Wyrabalong National Park. The park has the potential to demonstrate the wider principles of nature conservation and recreation in a natural setting to a large number of Central Coast people. The development of the walking track system within the park will be a key factor in this program.

School groups currently use the park for a range of field studies and information boards have been located at North Entrance and Bateau Bay.

The rock platforms in South Wyrabalong and the sand dunes of North Wyrabalong are particularly important educational resources. However the mangrove colony is fragile and already suffering from the impact of visitors. Information will be developed to assist visitors to understand and appreciate the values of the park.

Policy

The use and understanding of the park will be promoted among the local community for both formal and informal education purposes.

Action

An interpretation program will be developed for the park which will include:

- information sheets on the natural heritage of the park;
- displays on the western side of North Wyrabalong, and at Bateau Bay, Wyrabalong and Crackneck Lookouts in South Wyrabalong;
- guided tours; and
- interpretive signs at key natural and scenic locations along the walking tracks.

4.3.3 Scientific Research

The purpose of scientific study in the park is to improve the understanding of its natural and cultural heritage and the processes which affect them. Research will also establish the requirements for the management of particular species. Data and findings from research studies and surveys will be utilised in park management.

The Service does not presently have the resources to undertake any long term research in the park. There are many research opportunities in the park, such as into fire, native animals, feral animals and weed control.

Policies

Encouragement will be given to scientific and educational inquiry into the habitat requirements of rare and threatened species, feral animal and weed control, and other issues which will improve park management.

All research will be subject to Service policies and procedures for the granting of permits, conduct of research and the production of results.

4.3.4 Management Operations

Wyrabalong National Park is part of the Service's Central Coast District and is administered from the Munmorah office. A workshop is located at Elizabeth Bay in Munmorah State Recreation Area.

A road reserve bisects the North Wyrabalong from north to south. It is approximately 100 metres wide to permit planned road widening and a major road realignment of Wilfred Barrett Drive. The Service has been involved in the planning for the road widening and realignment of the road which will occur totally within the road reserve.

A number of naturally-vegetated unformed road reserves adjoin South Wyrabalong. These road reserves are thought to be part of the park by most people and it is proposed that they be formally added to the park. The proposed additions are shown on the map.

Professional fishermen are licensed to operate off Tuggerah Beach and limited vehicle access is provided for such purposes along a number of Council beach access roads. Barriers and fencing will be erected to prevent further damage to the park by illegal vehicle access from Norah Head and Soldiers Beach onto Tuggerah Beach. Sections of the fencing around other boundaries of the park also need to be replaced to protect the park from damage by vehicles.

A number of storm water drains cross the park. Easements will be negotiated with local councils and park neighbours to cover these drains and any other services crossing the park.

Policies

All activities undertaken on the park by other authorities will be licensed or covered by easement agreements.

Vehicle access onto Tuggerah Beach will be limited to licensed professional fishing operators and for emergency and management purposes.

The park boundary fencing along Reserve Drive Bateau Bay will be progressively replaced with bollards.

Actions

Easements will be negotiated to cover the storm water drains which cross the park.

Barriers will be constructed to prevent unauthorised access onto Tuggerah Beach.

6. 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, management policies, established conservation and recreation philosophies, and strategic planning at corporate, Regional and District levels.

The orderly implementation of this plan will be undertaken within the annual programmes of the Service's Central Coast District. Priorities, determined in the context of district and regional strategic planning, will be subject to the availability of necessary staff and funds and to any special requirements of the Director or Minister.

District programmes are subject to ongoing review, within which, works and other activities carried out at Wyrabalong National Park are evaluated in relation to the objectives laid out in this plan.

The environmental impact of all development proposals will continue to be assessed at all stages of the development and any necessary investigations undertaken in accordance with established environmental assessment procedures.

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 Wyrabalong National Park 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 76(6) of the Act.

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

Activity	reference (in plan)
HIGH PRIORITY	
Continue erosion works at Whalans Road	4.1.1
Undertake erosion control and drainage works at Yakaloo Crescent	4.1.1
Prepare weed control and regeneration plan	4.1.2
Prepare feral animal control plan	4.1.4
Upgrade northern Tuggerah Beach road	4.3.1
Upgrade coastal walk	4.3.1
Develop interpretive program	4.3.2

MEDIUM PRIORITY

Remove coral, trees and castor oil plants	4.1.2
Liaise with local councils re tree removal	4.1.2
Develop co-operative fire management arrangements with Wyong and Gosford District Bush Fire Management Committees	4.1.3
Monitor Pelican Point midden works	4.2.1
Promote the revegetation of the Bateau Bay lodge site	4.2.2
Extend Canton Beach track to Red Gum Trail and rehabilitate informal tracks	4.3.1
Erect interpretive signs on coast walk	4.3.1
Construct picnic area at Wyrabalong Lookout	4.3.1
Close southern Tuggerah Beach road	4.3.1
Construct barriers at Tuggerah Beach	4.3.4

LOW PRIORITY

Construct picnic area at start of Burrawang Track	4.3.1
Seal Cromarty Hill carpark	4.3.1
Negotiate easements to cover storm water drains	4.3.4

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