

**MURRAMARANG NATIONAL PARK,
BRUSH ISLAND NATURE RESERVE,
BELOWLA ISLAND NATURE RESERVE AND
TOLLGATE ISLANDS NATURE RESERVE**

PLAN OF MANAGEMENT

NSW National Parks and Wildlife Service

April 2002

This plan of management was adopted by Pam Allan, Minister for the Environment, on 7th November 1997, and amended by Bob Debus, Minister for the Environment, on 24th April 2002.

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FOREWORD

Murramarang National Park and Brush Island, Belowla Island and Tollgate Islands Nature Reserves are located on the central part of the south coast of NSW between Ulladulla and Batemans Bay.

The park is outstandingly attractive, has important geological and vegetation features and very high value for coastal recreation, bushwalking and education. The islands are important nesting sites for sea birds and provide an opportunity for archaeological comparison of Aboriginal sites with those on the mainland.

Murramarang National Park has had a high level of recreation use over a long period and this has resulted in vegetation damage and erosion and a lowering of the recreational value of a number of areas. The plan of management places emphasis on measures to redress this damage in order to fulfil the Service's legal requirements for proper management of the park and protect the attractions which are so popular with visitors. Pest, erosion and access control and revegetation and protection works will be undertaken.

Some of the islands have suffered from vegetation denudation by rabbits and trampling of nest areas by visitors. The high conservation values of the islands will be protected by permitting authorised visitation only.

Provision of appropriate recreation opportunities is an important objective of management of the park. The plan provides for some upgrading of a number of recreation facilities at Oaky Beach, Pretty Beach, Pebbly Beach, Depot Beach and Durras Lake North.

Some recreation facilities in the park are over-developed and do not provide a national park-like experience or encourage appreciation of the natural environment. As opportunities arise, these will be re-designed and landscaped to create a more natural setting.

Opportunities for recreational activities remote from development will be improved by rationalisation of the vehicular and pedestrian access system.

This plan of management establishes the scheme of operations for Murramarang 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 and nature reserve. A plan of management is a legal document which outlines how an area will be managed. It can be revised and rewritten if necessary to accommodate changes in management practices.

The procedures for the 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 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 for the Minister's consideration.
- * The Minister may adopt the plan without alterations or with such alterations as the Minister thinks fit, or may refer the plan back to the Director-General and Council for further consideration.

A draft plan of management for Murramarang National Park, Brush Island Nature Reserve, Belowla Island Nature Reserve and Tollgate Islands Nature Reserves was placed on public exhibition for four months from January to May 1994. One hundred and seven representations were received during the period of public exhibition which raised twenty seven issues.

All comments received were referred to the National Parks and Wildlife Advisory Council for its consideration and advice. The comments and suggestions of the Advisory Council were, in turn, considered by the Minister before adopting this plan.

Once a plan has been adopted by the Minister no operations may be undertaken within the park and reserves except in accordance with the plan.

The planning process leading to the development of this plan has involved the collection and use of information, which for reasons of document size, has not been included in the plan. For additional information or enquiries on any aspect of the plan, contact the Service's Nowra District Office at 55 Graham St, Nowra or by phone on (02) 4423 2170.

2. MANAGEMENT CONTEXT

2.1 NATIONAL PARKS AND NATURE RESERVES IN NEW SOUTH WALES

2.1.1 National Parks

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

For the purposes of preparing plans of management, the 1978 International Union for the Conservation of Nature and Natural Resources (IUCN) definition of a national park has been adopted in New South Wales.

"A national park is a relatively large area; (1) where one or several ecosystems are not materially altered by human exploitation and occupation, where plant and animal species, geomorphological sites and habitats are of special scientific, educative and recreative interest or which contains a natural landscape of great beauty; and (2) where the highest competent authority of the country has taken steps to prevent or to eliminate as soon as possible exploitation or occupation in the whole area and to enforce effectively the respect of ecological, geomorphological and aesthetic features which have led to its establishment; and (3) where visitors are allowed to enter, under special conditions, for inspirational, educative, cultural and recreative purposes".

National parks are a part of the regional pattern of land use. The management of a national park aims to minimise 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 any region.

2.1.2 Nature Reserves

Nature Reserves reserved under the National Parks and Wildlife Act, 1974 are areas of special scientific interest containing wildlife or natural environments or natural phenomena. Nature reserves are dedicated under Section 49(3) for the purpose of:

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

They differ from national parks which include as an objective the provision of appropriate opportunities for recreation in a natural setting.

2.2 MURRAMARANG NATIONAL PARK, BRUSH ISLAND, BELOWLA ISLAND AND TOLLGATE ISLANDS NATURE RESERVES

2.2.1 Location and Regional Context

Murramarang National Park spans 44 km of coastline between the Bawley Point-Kioloa area and Batemans Bay on the south coast of NSW. The central part of the south coast is very attractive and retains much of its natural forest cover under State Forest. The area is very

popular with tourists and contains the large holiday centres of Milton-Ulladulla and Batemans Bay. It is within a few hours drive of Sydney, Wollongong and Canberra.

Murramarang National Park was reserved in 1973 and has an area of approximately 1,970 ha, divided into two sections north and south of Durras Lake. It includes four offshore islands. A number of areas of private land, including the coastal villages of Depot Beach and Durras North, are largely contained within the external boundaries of the park.

Brush Island Nature Reserve (47 ha) and Belowla Island Nature Reserve (4 ha) are located approximately 600 m offshore between the villages of Bawley Point and Kioloa north of the park. Tollgate Islands Nature Reserve is approximately 4 km east of Denhams Beach, in the mouth of Batemans Bay. It consists of two adjacent islands with a total area of 12 ha.

The location and setting of the park and nature reserves are shown on Maps 1 and 2.

2.2.2 Importance of the Park and Reserves

Murramarang National Park, including its offshore islands, and the three island nature reserves are part of an interrelated area of naturally vegetated state forest, crown and private lands and tidal and marine areas stretching from Kioloa to Batemans Bay. The value of the park and the reserves lies partly in their protection of a sample of this larger ecosystem and partly in specific features within the areas. The most significant features are described below.

Geology

The park encompasses two major geological provinces - the Permian Sydney Basin and much older Ordovician beds of the Lachlan Fold Belt. The geological features of the park are of considerable scientific importance.

The coastline between Myrtle Beach and Snapper Head at the northern end of the park presents a relatively complete, although discontinuous, series of exposures through the oldest Permian deposits of the southern Sydney Basin. The base of the Sydney Basin is exposed as a spectacular angular unconformity in cliffs at the northern end of Myrtle Beach and at beach level at Dark Beach.

Outcrops near Wasp Head and Pebbly Beach are the type sections of the Wasp Head and Pebbly Beach Formations respectively; the basal units of the Sydney Basin (Percival, 1985).

Other significant geological features include:-

- sedimentary breccia (Wasp Head Formation) between Myrtle Beach and Wasp head containing blocks of granitic origin which appear to have been dropped by melting ice floes;
- fossil logs in the Wasp Head Formation and at Pebbly Beach;
- ironstone boxwork at Wasp Head;
- numerous areas of shell fossils including unique "nursery beds" at Snapper Point and the type locality for the bivalve *Australomya hillae* at Wasp Head; and
- fine examples of differential erosion in a varied assemblage of geological structures at Point Upright.

Plants and Animals

The park contains the largest sample of spotted gum reserved under the National Parks and Wildlife Act and extensive areas of rainforest. It is unusual to find spotted gum and temperate rainforest so close to the sea. Durras Mountain has some of the most diverse and well developed stands of rainforest south of the Shoalhaven River (Mills, 1988).

Several rainforest species reach their southern limits in the park (Mills, 1988). These are *Diospyros pentamera*, *Polyosma cunninghamii* and *Endiandra sieberi* at Pebbly Beach, *Archontophoenix cunninghamiana* and *Stenocarpus salignus* at Depot Beach and *Clerodendrum tomentosum* at Oaky Beach.

Because of the variety of habitats, the large area of relatively undisturbed vegetation in the park and the extent of naturally vegetated land to the west, the fauna is diverse and the park is important for protection of faunal populations in the central part of the south coast.

Large areas of the park have not been affected by fire for long periods, allowing the development of mature vegetation communities which are valuable as habitats and for scientific comparison with more frequently burnt areas in adjacent state forests and on private land.

Species listed in Schedule 12 of the National Parks and Wildlife Act as threatened which have been recorded in the park and reserves are the glossy black cockatoo *Calyptorhynchus lathami*, sooty oystercatcher *Haematopus fuliginous*, pied oystercatcher *Haematopys longirostris*, yellow-bellied glider *Petaurus australis* and green turtle *Chelonia mydas*. The long-nosed potoroo *Potorous tridactylus* has been reported but not confirmed.

The offshore islands of the park and reserves support large breeding populations of little penguin *Eudyptula minor*, wedge-tailed shearwater *Puffinus pacifus*, short-tailed shearwater *Puffinus tenuirostris* and white-faced storm-petrel *Pelagodroma marina* and small populations of sooty oystercatcher, sooty shearwater *Puffinus griseus* and eastern reef egret *Egretta sacra*.

Scenery

The park and adjacent coast are outstandingly attractive, with steep forested slopes falling to the sea and a variety of rugged coastal landform features including cliffs, sandy and shingle beaches, islands and stacks.

Panoramic views of the coastline and west to the Budawang Range are available from Durras Mountain.

Aboriginal sites

The park and reserves contain a large number of Aboriginal sites for a small area. Several have been investigated in detail. The sites located on the islands are particularly important as they are generally undisturbed and provide an opportunity for archaeological comparison with sites on the mainland. Island Aboriginal sites are rare in NSW.

Recreation

The high scenic beauty, easily accessible coastline and opportunities to view kangaroos attract large numbers of tourists to Murramarang as well as families and small groups undertaking recreation activities. Opportunities range from bushwalking and bush camping in relatively undisturbed coastal and hinterland areas to car based picnicking, camping and cabin accommodation at several developed sites on the coast. The natural setting of sites in the park complements the more developed recreation facilities available in nearby areas.

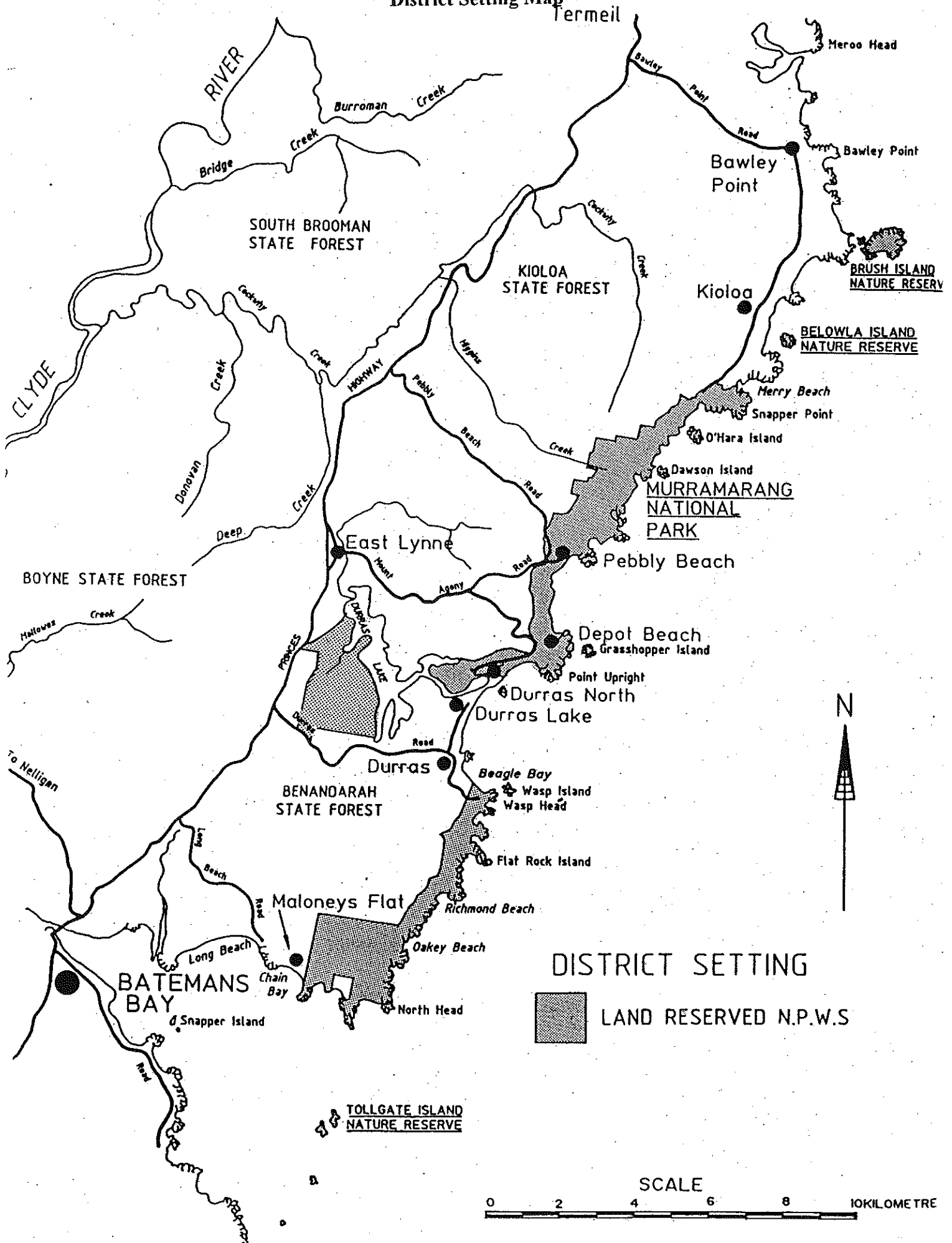
Tame eastern grey kangaroos are an attraction at Pebbly Beach and several other developed coastal sites.

Education

The park is a valuable area for student study of geology, coastal processes, vegetation succession and rainforest. The southern outcropping of the base of the Sydney Basin and the many fossil beds are of particular interest.

(Diagram 1.)

District Setting Map



3. OBJECTIVES OF MANAGEMENT

3.1 GENERAL OBJECTIVES FOR NATIONAL PARKS AND NATURE RESERVES

The following general objectives relate to the management of national parks and nature reserves 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 possible;
- * the preservation of Aboriginal sites and historic features;
- * the provision of appropriate recreation opportunities; and
- * the encouragement of scientific and educational enquiry into environmental features and processes, prehistoric and historic features and use patterns.

3.2 SPECIFIC OBJECTIVES FOR MURRAMARANG NATIONAL PARK AND THE NATURE RESERVES

Murramarang National Park has been degraded in many areas through over-use for recreation. The primary objective of management of the park is therefore:

- * protection, and where necessary rehabilitation, of the park's natural character and significant features.

Other specific objectives for management of Murramarang National Park, Brush Island, Belowla Island and Tollgate Islands Nature Reserves are as follows:

- * protection of the value of the offshore islands as sea-bird nesting areas;
- * maintenance as far as possible of the status of the park as a relatively fire-free area;
- * protection of Aboriginal sites from erosion by recreation use and natural processes;
- * promotion of appreciation and understanding by visitors of the natural and cultural values of the park and reserves;
- * provision of recreation opportunities in a natural setting which provide a different experience to that available in other coastal locations outside the park;
- * enhancement of opportunities for walking and low key camping; and
- * provision of opportunities for low key tourism which encourage understanding of the natural environment and support for conservation.

3.3 OVERALL STRATEGY

The habitat values of the islands will be protected by prohibition of unauthorised landing and education of the boating public about their values.

The park will continue to be managed for both maintenance of its habitat values and significant features and provision of appropriate tourism and recreation opportunities. High priority will be given to rehabilitation of degraded areas. The environmental impact of visitor use will be reduced by access control, reduction in the intensity of use of some areas and promotion of public awareness of the special values of the park and of minimum impact bushwalking practices.

Tourism will be managed through appropriate promotion, liaison with tourism operators and design of facilities to ensure low key character and a natural setting.

4. POLICIES AND FRAMEWORK FOR MANAGEMENT

This section contains the policies and framework for management of Murramarang National Park and the three nature reserves together with relevant background information. Policies are summarised under the following headings:-

- 4.1 NATURAL HERITAGE
- 4.2 CULTURAL HERITAGE
- 4.3 USE OF THE AREA

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

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

Where not specifically provided for in this plan, management will also be in accordance with the National Parks and Wildlife Act and with general Service policies.

4.1 NATURAL HERITAGE

Natural heritage comprises all aspects of the natural environment including physical features such as geology and soils, plants and animals and the relationship between these. For convenience, management of landscape values and of fire are also considered in this section.

4.1.1 Geology and Landform

Most of the park and the islands north of Myrtle Beach consist of horizontally bedded Permian sedimentary rocks of finely interbedded siltstone, fine sandstone and conglomerate. These do not weather into the massive structures of the Triassic and Permian sandstone exhibited in most other parks in the Sydney Basin. The coastline in this area features regular cliffs and headlands, smooth intertidal platforms, caves, tombolos, islands, sandy beaches and an interesting occurrence of shingle beaches near Pebbly Beach.

Fossil beds and ironstone boxwork in the Permian formations are fragile and very vulnerable to damage by visitors.

The Permian beds lie unconformably over tightly folded phyllites and cherts of the early Ordovician Wagonga Beds outcropping south of Myrtle Beach and in the Tollgate Islands. The Wagonga Beds have resulted in irregular headlands, jagged intertidal platforms, shingle beaches and stacks. In more western areas of the park, conglomerate, sandstone and siltstones of the Shoalhaven Series are exposed.

The dominant landform feature is Durras Mountain which rises to about 300 m above sea level. The summit of Durras Mountain is capped by Tertiary basalt with small limestone outcrops. An Essexite intrusion occurs at the base of the mountain near the Dawson Islands and there are several small dykes nearby.

The islands consist of small plateaus surrounded by extensive rock platforms. The Tollgate Islands are the highest, rising to 50m ASL.

Policies

- * Significant geological features in the park and reserves (see also 2.2.2) will be protected.

- * The exact location of fossil beds will not be publicised.
- * Disturbance or collection of specimens of rock and fossils will not be permitted except for purposes of authorised scientific research.
- * If visitation is found to be causing damage to important geological features, protective action will be taken where feasible.
- * Facilities will be located and designed so as to not detract from the high scenic value of the park.

Action

- * The assistance of educational institutions and geological societies will be sought to establish monitoring programs aimed at assessing the impact of recreational and educational use on significant geological features.
- * Signposts will be erected at track entrances at Merry Beach, Pretty Beach, Pebbly Beach, Wasp Head and elsewhere as necessary advising visitors of the value of the natural features of the park and the prohibition of collection.

4.1.2 Native Plants and Animals

Steep slopes close to the sea combined with the moderately fertile soil have allowed the development of extensive areas of tall moist forest and rainforest in the park.

The most common vegetation association in the park is open forest/tall open forest dominated by spotted gum *Eucalyptus maculata*, with an understorey of burrawang *Macrozamia communis* and various shrubs. Other common tree species include *E. paniculata*, *E. pilularis*, *E. longifolia*, *E. agglomerata*, *E. botryoides*, *E. globoidea*, *Angophora floribunda*, *Allocasuarina verticillata* and *Allocasuarina littoralis*. In sheltered locations a rainforest understorey occurs. Adjacent to the coast the spotted gum forms a low forest.

A forest of hybrid *E. botryoides/E. saligna* with a rainforest understorey occurs on the higher slopes of Durras Mountain and on lower areas close to Durras Lake.

Small areas of *E. botryoides* woodland occur along the coastline in the northern part of the park while south of Durras Lake the bangalay is replaced by *Casuarina glauca*, *E. paniculata*, *E. agglomerata* and *E. globoidea*. The woodland is closely interlinked with areas of scrub and heath.

Closed scrub communities occur in many hind beach areas and on some headlands where fire has been less prevalent. Species include *Allocasuarina verticillata*, *Leptospermum polygalifolium*, *Banksia serrata*, *Banksia integrifolia*, *Banksia ericifolia*, *Westringia fruticosa* and *Lomandra longifolia*. Pure heath communities are small and confined to the southern side of a few headlands near Pretty Beach and the northern side of Dark Beach.

Fringing *Casuarina glauca* swamp communities occur on the edge of Durras Lake with *Juncus sp.*, *Phragmites australis*, *Melaleuca ericifolia* and *Leptospermum attenuatum*.

Patches of warm temperate/subtropical rainforest occur in gullies on the steep slopes between Pretty Beach and Depot Beach and on the western side of Durras Mountain. These are dominated by *Acmena smithii*, *Livistona australis* and *Ceratopetalum apetalum*. Rainforest occurs in littoral locations at Depot Beach, Pebbly Beach and some of the bays to the north, Richmond Beach and Oaky Beach. Species are similar to the rainforest on the slopes.

Most of the rainforest on the western slope of Durras Mountain and at Oaky Beach is adjacent to or in state forest. Protection of the rainforest therefore requires co-operation between the Service and the Forestry Commission. Its small size makes the Oaky Beach rainforest particularly vulnerable to damage from fire and exposure to wind. It has also been subject to severe degradation by inappropriate recreational use (see 4.1.3).

The southern Tollgate Island and Brush Island support herbs, low shrubs and some stunted trees, including *Carpobrotus glaucescens*, *Lomandra longifolia*, *Einadia hastata*, *Enchylaena tomentosa*, *Myoporum insulare*, *Westringia fruticosa*, *Acacia longifolia*, *Banksia integrifolia* and *Casuarina glauca*. The other islands have covers of low heath and tussock grass.

The northern Tollgate Island has been largely denuded of vegetation by rabbits but is now recovering following elimination of the rabbits.

A large area on the summit of Durras Mountain was cleared for agriculture before the establishment of the park. Remnant species such as bangalow palms *Archontophoenix cunninghamiana*, black pencil cedar *Polyscias murrayi* and giant maidenhair *Adiantum formosum* indicate that parts formerly supported rainforest. Regeneration of this area with native vegetation will increase the amount of rainforest in the park.

There is only limited information available about the native animals occurring in the park and reserves. More than 90 bird species have been recorded including waterbirds, raptors, honeyeaters and a large variety of birds dependent upon the moist forests such as wonga pigeon *Leucosarcia melanoleuca*, brush bronzewing *Phaps elegans*, yellow-tailed black cockatoo *Calyptorhynchus funerus*, superb lyrebird *Menura novaehollandiae* and brown gerygone *Gerygone mouki*.

Mammals recorded include the eastern grey kangaroo *Macropus giganteus*, swamp wallaby *Wallabia bicolor*, bush rat *Rattus fuscipes*, brown antechinus *Antechinus stuartii*, greater glider *Petaurus volans* and sugar glider *Petaurus breviceps*.

Reptiles include the diamond python *Morelia spilotes*, red-bellied black snake *Pseudechis porphyriacus*, blue tongue lizard *Tiliqua scincoides* and jacky lizard *Amphibolurus muricatus*.

The viability of animal habitats in the park is to a large extent dependent on the continued existence and sympathetic management of the adjacent state forests. Many species, for example the threatened yellow bellied glider, may need a larger area to sustain viable populations than is available in the park.

Protection of the habitat values of the islands requires complete protection from disturbance. Breeding sea birds are extremely vulnerable to human trampling of their burrows because of the thin sandy soils in which they are located. Disturbance also greatly increases the risk of vegetation dieback and erosion in the exposed island environments.

Policies

- * The complete range of vegetation communities naturally occurring in the park and nature reserves will be maintained.
- * Areas of rainforest, coastal heath and habitats of threatened plant and animal species will be protected from disturbance.
- * Tollgate, Brush, Belowla, Wasp and Grasshopper Islands are important islands for sea bird breeding. Access to these islands will be prohibited except for management and authorised research purposes.

- * The Service will encourage measures to protect estuarine and marine habitats adjacent to the park and reserves and food resources for seabirds through discussion with NSW Fisheries and other relevant authorities.
- * Inventory and research into habitat requirements, status and distribution of native animals in the parks will be encouraged, particularly of threatened species.

Actions

- * Records of threatened species occurring in the park and reserves will be incorporated into a data base and used to enhance management actions aimed at protecting those species.
- * In cooperation with appropriate authorities, information will be displayed at tourist information centres and other appropriate locations to inform visitors of the prohibition on landing on the islands and of their ecological values.
- * Preparation of a cooperative boundary management strategy with NSW State Forests will be sought in order to minimise the impact of logging, burning and track construction in adjacent state forest on the park, particularly the rainforest communities on the western side of Durras Mountain and at Oaky Beach.

4.1.3 Introduced Species, Degraded Areas and Landscape Protection

Introduced plants occurring in the park include blackberry *Rubus vulgaris*, apple of sodom *Solanum sodomaeum*, cassia *Cassia floribunda* and various fruit and ornamental trees, mainly around the villages and developed sites within the park.

Land previously cleared for agriculture on Durras Mountain has a number of exotic species remaining from garden plantings, some of which have the potential to spread into bushland.

Feral animals known to be present in the park include pigs, cats, rabbits, foxes and feral dogs. Available evidence suggests that domestic dogs and cats kill small animals in adjacent parts of the park. There are ongoing rabbit and pig control programs in the park.

Apiary sites close to the park constitute a threat to ecological processes within the park as scientific investigations have found that European honeybees can be in serious competition with native animals, particularly native bees, honeyeaters and small mammals and have significant effects on native flora including increasing hybridisation between species.

Heavy and inappropriate recreation use on the fragile coastal fringe of the park has caused considerable vegetation destruction and erosion. Almost every beach and headland requires rehabilitation and this will be a major long term management commitment. The main problem areas are:-

- severe degradation of the littoral rainforest at Oaky Beach by previous unauthorised vehicle access and camping;
- vegetation dieback from exposure at Myrtle Beach and Richmond Beach and dieback of trees in facility areas, particularly Merry Beach. Vehicle access to Myrtle Beach is now closed;
- vegetation clearing and erosion associated with informal carparking and beach access at the eastern end of the beach at Durras North;
- dune destabilisation and sand drift at Pretty Beach, Pebbly Beach, Durras North and Durras;

- proliferation of tracks and vegetation destruction at Snapper Head, Shelley Beach, Wasp Head and Acheron Ledge;
- track erosion, particularly at Durras Mountain, Depot Beach and Shelley Beach.

Essential works to rehabilitate these areas are set out below and in section 4.3.2. Other works such as revegetation may be undertaken if resources become available.

Activities and development in the villages adjacent to the park have a number of detrimental effects including weed infestations, rubbish dumping, fire escapes, pollution, alteration of the natural character of views, pressure for recreation facility upgrading and predation by cats and dogs on fauna. The provision of services to the villages and works undertaken in an effort to provide enhanced fire protection can also have detrimental impacts. Conversely, it is recognised that park visitors may affect village amenity and increase demand on Council services. Facility provision and management should be designed to minimise these impacts (see section 4.3.2).

Dune sewage effluent disposal from the caravan parks within and adjacent to the park appears to be inadequate and to be causing pollution problems. There is also concern about the environmental effects of pumping of groundwater from the dunes for use in the caravan parks.

Protection of the high landscape values of the park is important for its recreational and aesthetic appeal. Appropriate location and design of facilities in the park and of development outside are needed. For example, facilities should be set back from beach and dune areas, should not be located on headlands and should be of materials which blend with the setting.

Policies

- * Introduced plant species will be controlled where:
 - they pose a threat to native plant communities;
 - they have been declared noxious; or
 - there is a significant risk of invasion into uninfested areas.
- * Public authorities and individuals undertaking authorised work in the park will be made aware of the need to minimise the introduction and distribution of exotic species.
- * Introduced animals will be controlled where practicable. Priority will be given to control of pigs and rabbits.
- * Control programs will be designed and implemented in such a manner as to minimise the impact on non-target species.
- * Where appropriate, pest control will be undertaken in co-operation with adjoining land owners and other authorities.
- * Areas of degraded vegetation, dune instability or erosion will be protected from further damage and will be rehabilitated where necessary.
- * No structures or other development will be located on foredunes, other than structures associated with access control and rehabilitation.
- * Pedestrian access to beaches from adjacent facilities will be controlled.

- * Park facilities will be located and designed to minimise water pollution, wastewater generation and water use.
- * The Service will seek to ensure that the waters of park streams, underground water and ocean and estuarine waters adjacent to the park are maintained in as natural and unpolluted a state as possible.
- * Discharge of sewage effluent by lessees or neighbours into the park will be required to meet Environmental Protection Authority standards and be subject to licences which ensure satisfactory disposal methods and standards.
- * Licences will be required for extraction of ground water from the park and any extraction will be limited to amounts which will not cause significant environmental impact.
- * The Service will liaise where appropriate with landuse authorities to seek to:
 - provide for the protection of lands in the vicinity of the park which have high landscape and wildlife conservation value, and in particular land within the catchment of Durras Lake;
 - encourage the development of appropriate recreation facilities on lands close to the park where this will not have significant adverse impact on park resources; and
 - provide for the protection of lands within the park from any detrimental impacts of activities within adjacent villages and other adjoining lands.
- * Service officers will maintain liaison with park neighbours and community organisations in order to promote understanding of the park's values and management requirements, reduce the impact on the park of activities on adjacent land, and seek to accommodate community needs within the constraints of satisfactory park management.

Actions

- * The need for dune rehabilitation at Durras North will be investigated and work undertaken if found to be warranted.
- * Information will be provided to adjacent land owners on the impact of exotic species on the park with the object of minimising their introduction.
- * NSW State Forests and other landowners will be advised of the impacts of honeybees on natural ecosystems and their co-operation will be sought to reduce or eliminate apiary sites within foraging distance of honeybees from the park.
- * An introduced species control program will be developed, covering survey, control and monitoring.
- * Pigs and rabbits will continue to be controlled.
- * Waste discharged from the Pretty Beach and North Durras caravan parks into Murramarang National Park will be monitored. If waste discharges exceed standards established by the Environmental Protection Authority and/or affect park resources or place at risk the health of park visitors, the caravan park operators will be required to implement more acceptable waste disposal systems.

4.1.4 Fire

Because of the extensive moist forests of Murramarang and its coastal location, the park has not been subjected to frequent fire. Much of the park has not been burnt for more than 20 years and some areas have not been burnt for considerably longer. Most fires have originated to the west of the park and spread under the influence of north westerly winds.

Little is known of the fire history of the islands but they are likely to have burnt infrequently. Lightning strikes, spot overs from the mainland during extreme conditions and escaped camp fires from unauthorised landings are possible causes of fire on the islands.

The moist forests of the park are fire sensitive and should be burnt as little as possible to retain their high floristic and habitat values. The coastal heath and scrub communities of the park and reserves have developed in a littoral environment and do not require fire to regenerate. These communities should not be burnt where possible because of the potential for vegetation damage from exposure to salt laden winds and storms.

The extensive network of roads and tracks in and near the park, although contributing to the incidence of fire, provide ready access for fire suppression operations. They reduce the need for emergency fire control line establishment by heavy machinery during fire operations.

Broad area hazard reduction has no application in Murramarang National Park because of the occurrence of extensive areas of moist forests. Limited burning or other strategies such as slashing may be carried out adjacent to villages and recreation facilities and west of sensitive vegetation in order to maintain a low fuel buffer.

The Service participates in local cooperative arrangements including district fire management committees which aim to coordinate and monitor fire management and fire control between different fire authorities.

Policies

- * Fire will be managed in the park and reserves to protect:-
 - human life and property;
 - threatened species, plant communities of special significance and fire sensitive species and communities;
 - Aboriginal sites, historic places and landscape values; and
 - management and recreation facilities.
- * As far as possible fire will be excluded from the following fire sensitive areas:-
 - the eastern fall of Durras Mountain between Pebbly Beach and Pretty Beach;
 - regenerating formerly cleared areas on the summit of Durras Mountain;
 - the coastline between Richmond and Oaky Beaches;
 - rainforest communities;
 - all islands and headlands; and
 - littoral plant communities.

- * All wildfires occurring in the park or reserves will be suppressed as quickly as possible with the aim of keeping fires to as small an area as possible.
- * Fire fighting techniques should focus on direct attack using handtools, water and limited backburning to pre-existing fire control lines.
- * Fire retardants may be used in accordance with Service policy.
- * As far as possible mechanised earthmoving equipment will not be used for fire fighting in environmentally sensitive areas, particularly headlands, beaches and Aboriginal and historic sites.
- * Fire suppression methods on the islands will, as far as possible, avoid disturbance to seabird nesting colonies and habitat.
- * Limited hazard reduction by burning or mechanical means will be undertaken where necessary to protect villages and recreation facilities and fire sensitive areas.
- * Areas disturbed by fire suppression operations will be rehabilitated as soon as practical after the fire.
- * Close co-operation will be maintained with other fire management authorities through District Fire Management Committees set up under the Bush Fires Act, 1979.
- * Liaison will be maintained with fire control and land management authorities in order to encourage compatible landuses adjacent to park boundaries, to ensure that developments adjacent to the park are designed so that fire risk is minimised and to encourage fire protection work on neighbouring land.
- * As far as possible fire protection will be carried out in co-operation with neighbours and communication will be maintained with the local community about fire management issues.
- * Records will be maintained of the extent of fires which occur within the park or reserves.

Action

- * A fire management plan will be prepared for the park and reserves detailing fire management strategies and programs, fire trail requirements, co-operative arrangements and resource and neighbouring lands protection considerations.

4.2 CULTURAL HERITAGE

Cultural heritage comprises important components of the environment that may have aesthetic, historic, scientific and social significance to present and future generations. Cultural heritage includes both indigenous and non-indigenous history.

4.2.1 Aboriginal Sites

More than thirty separate Aboriginal sites have been recorded within the park and reserves. Most are shell middens, of which the majority are located on beach systems. Other sites include open campsites, consisting of hearthstone and extensive scatters of worked stone, and manufacturing sites where stone artefacts were flaked. Most of the stone appears to have been obtained locally but silcrete was brought from outside the park.

An occupation deposit excavated in the park contains a large number of bone points and fish hooks, illustrating a specialised bone industry and fishing economy. It was dated at about 500 years before present and was occupied into the period of European settlement (Lampert, 1966).

Most of the Aboriginal sites are in good condition but some have been damaged by erosion, wave action or human activity.

Archaeological sites are important to Aboriginal communities as they are a testament to their culture's great antiquity. It is important to conserve as much as possible of the remaining evidence of previous occupation, particularly in national parks where the complementary natural environments are also preserved and sites can be seen in situations close to their original settings.

Policies

- * Aboriginal sites within the park and reserves will be protected from disturbance.
- * Sites threatened by natural causes will be protected if possible or identified as priority sites for detailed recording and research.
- * The Batemans Bay Local Aboriginal Land Council will be consulted about all aspects of management of Aboriginal sites and active involvement of Aboriginal people will be encouraged.
- * All work involving ground disturbance will be preceded by a survey for Aboriginal sites.
- * The exact location of Aboriginal sites will not be publicised except where provision of information about a site will assist in its protection or is necessary for interpretation of the cultural resources of the park.
- * Non-destructive research into the Aboriginal sites of the park and reserves will be encouraged.

Action

- * An Aboriginal site protection program will be prepared and implemented identifying those sites which are being damaged by human activity or natural erosion processes and protective measures required for each site.

4.2.2 Historic Features

Grazing was carried out in the area of the park from the 1820's and timber extraction was undertaken from the 1880's. In more recent times the coastline of the park has been a popular holiday area.

Places and structures remaining from these activities include the foundations of three houses and associated out-houses, tanks, stone fences and gardens on Durras Mountain, posts from a sawmill and shipping operation at Pebbly Beach, a boiler and timber remnants of a sawmill at Wasp Head and the sites and some remains of a number of huts and associated works.

The Tollgate Islands were visited by ornithologist A.F. Basset Hull in 1911 and the islands have since received many visits from ornithologists and bird banders. The 1932 wreck of the Northern Firth is located on the shore of Brush Island.

None of the historic features are thought to be historically significant but they are of interest to park visitors and valuable for interpretation of local history.

Policies

- * The historic places in the park and reserves will be conserved in accordance with the Burra Charter of Australia ICOMOS.
- * Where deterioration of historic places is being accelerated by human disturbance steps will be taken to protect the site and prevent further damage.
- * All work involving ground disturbance will be preceded by a check for historic places.
- * Historic places close to recreation facilities will be interpreted so as to promote public appreciation of their significance and assist in their protection.

Action

- * Historic places in the park will be progressively recorded and their significance assessed.

4.3 USE OF THE AREA

Certain public and private uses may be appropriate in Service areas provided that they do not conflict with the primary purpose of conservation of natural and cultural heritage and are consistent with the objectives and strategy of the plan of management. The major categories of use that can be appropriate in Service areas are:

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

The extent to which these categories of use will be provided for in Murramarang National Park and Brush Island, Belowla Island and Tollgate Islands Nature Reserves is indicated below.

4.3.1 Promotion and Interpretation

As discussed in section 4.1.3, parts of the park have been degraded by heavy and inappropriate recreation use. Promotion of further use would exacerbate these problems and lead to pressure for upgrading of facilities. Instead, information programs will concentrate on provision of information about the natural and cultural resources of the park and reserves and about management policies. Programs will be designed to enhance the enjoyment of visitors, minimise damage to resources by encouragement of appropriate visitor behaviour and foster environmental awareness in the community.

Information about the park is available at Service offices, at tourist information centres in Ulladulla and Batemans Bay and on interpretive shelters located within the park.

Policies

- * Appreciation and understanding by visitors of the natural and cultural values of the park and reserves will be promoted.
- * The park and reserves will be interpreted as valuable and vulnerable areas requiring sensitive recreational use. Information and education material will be designed in such a way that it assists management to protect the natural and cultural resources. Emphasis will be placed on the following themes:
 - the unique geology and the importance of avoiding damage to geological features;
 - the value of the islands for breeding seabirds and the need to avoid all disturbance;
 - the occurrence of spotted gum and rainforest and their scientific and habitat values;
 - Aboriginal use of the coastline and the function and value of historic features; and
 - the special scenic and recreational values of the park and their sensitivity to inappropriate use.
- * The cooperation of concessionaires will be sought in designing signs and promotional material in a manner which highlights the facility's location within a national park and the need for appropriate recreation use.
- * Information on access, recreation facilities, walking tracks and management requirements will be provided by such means as signs, leaflets and displays.
- * Visitors to Murramarang will be made aware of its status as a national park.
- * Interpretation programs will include information and activities for disabled and non-English speaking groups where practicable.
- * Holiday programs such as guided walks and children's activities will continue to be provided at popular locations within the park.
- * Liaison will be maintained with tourism organisations and operators to ensure appreciation of the special value and role of Murramarang as a national park and understanding of the types of tourist use which are appropriate.
- * Commercial tourism guides operating in the park will be required to undertake appropriate interpretation as part of their programs.

Actions

- * Signs will be erected at park entrances and other appropriate locations to inform visitors that they are in a national park.
- * Signs will be erected where necessary to discourage visitors from feeding bread to kangaroos.
- * An information signposting and interpretation program will be prepared and implemented providing for place and direction signposting where necessary at carparks and walking track entrances and interpretive signs at camping and major day use areas.

4.3.2 Recreation Opportunities

The emphasis on conservation in the management of national parks means that they can offer a distinctive type of recreation opportunity. They generally provide low key camping and day use facilities which complement the more developed opportunities available in other types of tourist and recreation areas, and thereby facilitate enjoyment of the natural environment.

Urban or artificial recreation facilities and large or sophisticated structures are not appropriate in national parks. Recreation facilities and services provided should be consistent with maintaining the natural character of the park and provide opportunities for people to enjoy and appreciate the park itself rather than the facility for its own sake.

Tourism trends in NSW show increasing demand for the type of recreation experience provided in national parks. Surveys in a number of national parks and state recreation areas along the NSW coastline have shown that visitors are primarily attracted to national parks for their quiet, restful atmosphere and scenic and natural qualities. They seek retention of these qualities and generally oppose increased sophistication of facilities.

Murramarang is located within a popular holiday district. There are a large number of recreation and tourism attractions in areas close to the park including developed day use and accommodation facilities in nearby towns and villages. There are, however, few less-developed facilities in essentially natural environments. Murramarang National Park therefore has an important role in the district in providing recreation opportunities at the relatively primitive end of the spectrum. This ensures that recreation opportunities in the park complement rather than duplicate those available in nearby areas.

The scenic coastline and opportunities for water based recreation are the main attractions for visitors to the park, especially during the summer period. Visitor numbers are high on the coastal fringe, particularly in the developed accommodation areas, but are much lower away from the coast.

The park provides opportunities for small group ecotourism but access and facilities are generally unsuitable for large groups and bus tours. Most forms of adventure tourism are also inappropriate in the park because of the lack of rugged, remote or little used areas and the high environmental impact of many such activities.

Access to the park is via the Princes Highway then by several spur roads leading to the various villages enclosed by or adjacent to the park (see Summary Map). Facilities range from walking tracks and track-head parking areas to developed picnic areas and accommodation facilities including caravan sites and cabins.

Three types of recreation setting classes are recognised in the park:

- **relatively remote areas** with few or no facilities which provide opportunities for solitude and self-reliant recreation;
- **areas with vehicle access and basic facilities;** these enable enjoyment of the natural features of the park by the majority of visitors; and
- **day use and camping/cabin areas** which provide for enjoyment of the park by those visitors who desire facilities and services such as showers, septic toilets and on-site management presence.

As stated in section 4.1.2 recreation use of the islands is not appropriate and is not permitted.

Natural Coastal and Mountain Areas

The area between Merry Beach-Pretty Beach and Pebbly Beach is one of the widest parts of the park. It currently has vehicular access to the periphery at Pebbly and Pretty Beaches and to the summit of Durras Mountain. In order to protect Durras Mountain's high biological, scenic and historical values and improve opportunities for walking and remote area recreational use in the park, the vehicle tracks to the summit will be closed to public vehicle use.

The southern coastline between Wasp Head and Acheron Ledge is valuable as an area where visitors can quickly and easily obtain an impression of the natural beauty of the Murramarang coast. This will be protected by provision of public vehicle access to car-parking facilities in locations which are not visible from the coast and where unauthorised off-road access can be controlled, with short walking tracks to headlands and beaches.

The existing vehicle tracks to Acheron Ledge and Quierga Beach will be closed to public use because of the unacceptable environmental impacts of their use (section 4.1.3) and to improve opportunities for walking in a natural environment. The area is within easy walking distance of Maloney's Flat.

As well as the marked walking tracks there are many informal tracks and routes along beaches and rock platforms. A coastal walking route will be created along the length of the park coastline utilising the marked walking tracks and informal tracks and incorporating beaches and rock platforms as appropriate. Environmental and safety works will be undertaken on relevant existing tracks.

To maintain the quality of the walker experience some regulation of use may be required, depending on its future popularity. Pack camping is an appropriate use of the park but some restrictions on location are necessary to ensure protection of fragile coastal features and minimise conflicts with recreation use in facility areas.

Encouragement of minimum impact bushwalking practices in the park would reduce damage to the natural environment and help ensure that opportunities for pack camping continue to be available.

A small amount of horseriding occurs in the park. While it is recognised that horseriders seek quiet bushland tracks, horses can cause significant erosion, weed introduction and disturbance and danger to walkers and beach users. The park is a small narrow area of protected habitats. The moist forests are particularly susceptible to weed invasion and many of the tracks are steep and highly erodible. There are extensive opportunities for riding on little-used tracks in adjacent state forests. Horseriding will therefore be restricted to public vehicle roads.

Areas with Limited Facilities

Basic day use facilities are provided at Depot Beach, Durras North, Wasp Head, Richmond Beach and North Head Beach and parking areas for beach access are provided at several other locations. Some upgrading and landscaping of a number of these facilities would be desirable but resources are available for only a limited number of works.

A low key camping area at North Head Beach provides for limited car based camping in a forested setting. Six sites are presently nominated but considerably more campers use the area during holiday periods. This has caused vegetation damage and loss of the natural character of the area. A small increase in the number of designated sites combined with enforcement of the limit and information on alternative camping opportunities is needed to cater for a reasonable number of visitors and arrest further degradation.

Provision of barriers and signs is necessary at the Gutter boat launching area at Depot Beach to prevent vehicles from using the beach further north.

Additions to the park at Oaky Beach include informal car based camping with 2WD dry weather access. Degradation of the surrounding forest has occurred through unauthorised vehicle access and uncontrolled camping. A limited number of camping sites will be provided and the remaining area, protected and rehabilitated, including the adjacent littoral rainforest.

Developed Recreation Facilities

Camping and day use areas with relatively developed facilities are provided at Merry Beach, Pretty Beach, Pebbly Beach, Depot Beach village and Durras. The natural landscape of the park has been considerably modified in these areas.

As discussed above, relatively developed facilities are appropriate in a national park where they promote enjoyment of the park's natural and cultural features by visitors, rather than being merely an attraction in themselves, and where they are designed in such a way as to minimise their impact on the park's heritage and landscape values. All the developed areas require varying degrees of alteration or improvement to achieve this and to ensure long term protection of the park's resources.

Merry Beach

Merry Beach is located at the northern boundary of the park and is the starting point for walks across Snapper Point and southwards through the park. It thus plays an important 'park entrance' role. At present most of the area is occupied by holiday vans from a previously unauthorised encroachment from the adjacent caravan park on crown lease. The presence of a high number of permanent holiday vans dominating the setting is not an appropriate style of facility in a national park. In accordance with undertakings made previously to existing van owners they will be permitted to retain their vans on-site. As sites are vacated they will be revegetated to return the area to a natural setting.

Pretty Beach

The Pretty Beach caravan park and cabin area is operated by a concessionaire. Most sites in the caravan park are currently permanently occupied by privately owned holiday vans plus a small number of cabins and on-site vans. The area available for day use is restricted and facilities consist of a car parking area and walking access to the beach.

Given the high demand for casual camping opportunities, and the need to cater adequately for day use, the appropriate long term use for the Pretty Beach caravan park site is for casual camping, some tourist caravanning and cabin-stay opportunities, and expanded day use.

A redevelopment plan will be prepared for Pretty Beach which will outline access and facilities proposals, the disposal of waste and provision of water and other services.

Pebbly Beach

Pebbly Beach is an outstanding visitor destination. It is a significant location for tourism and will continue to be managed for this important role.

The picnicking and camping area at Pebbly Beach has been redeveloped to provide for a maximum of approximately 30 camp sites and improved picnicking, beach access and toilet and shower facilities.

An area north of the existing camping/day use area is occupied by tourist cabins operated under a lease. In order to continue to provide for those visitors who can not camp, the existing cabins will be retained.

Caravans and large buses will continue to be prohibited at Pebbly Beach because of the restricted area available, steep slopes, narrow unsealed access road and in order to retain the attractive, natural setting.

Depot Beach village

A small cabin and camping area is operated under lease adjacent to the Depot Beach village. This area has an attractive natural setting but requires some redesign and landscaping to improve its appearance and the standard of some of the cabins.

South Durras Tourist Caravan Park Complex

A highly developed long-term lease area containing a large number of tourist Unregisterable Moveable Dwellings and sophisticated facilities is located on the edge of the park at South Durras (Murramarang Resort). This type of development is not in character with the style of recreation opportunities that this plan of management aims to provide in Murramarang National Park in the future. It will be treated as a unique situation and existing rights under the lease will not be affected, although future development will continue to be the subject of proper environmental impact assessment.

A launching ramp has been constructed adjacent to the northern boundary of the South Durras camping area by Eurobodalla Shire Council, located partly on the park. Use of the facility is in accordance with a management agreement between the Service and the Council. An across-the-beach boat launching area is located at the eastern end of the South Durras camping area and is available to the public.

Policies

- * That part of the park between Pretty Beach and Pebbly Beach, the coastline between Pebbly Beach and Depot Beach and the area between Wasp Head and Acheron Ledge will be maintained in a natural condition to provide a relatively remote recreational experience.
- * Facilities provided within the natural areas will be limited to walking tracks, visitor information and, if necessary, basic toilet facilities.
- * Walking tracks may be upgraded or relocated where necessary. A coastal walking route will be formalised within the park which will involve upgrading selected informal walking tracks, creating short sections of new walking track and installing associated infrastructure such as signs and lookouts. Other informal tracks will be closed for rehabilitation.
- * Walk-in camping will be permitted in Murramarang National Park:
 - at designated camping areas (subject to availability);
 - more than 100 metres from the coastline, any walking track or road;
 - more than 500 metres from picnic areas, camping areas and villages.
- * If impacts of walk-in camping prove unacceptable, affected areas may be closed to camping or numbers of campers may be controlled by a permit system.
- * Basic day use facilities will be provided as follows:
 - Depot Beach - parking area, toilets and picnicking facilities;

- Durras North, Wasp Head, Richmond Beach and North Head Beach - parking areas and basic picnicking facilities;
 - Dark Beach, Oaky Beach and Honeysuckle Beach - parking areas set back from beach; and
 - Emily Miller Beach and Myrtle Beach - parking areas adjacent to the Coast Road.
- * The North Head Beach camping area will be maintained as a small tent camping area in a natural setting with basic facilities, a maximum of ten sites and with vehicles not permitted on camp sites.
 - * The Oaky Beach camping area will provide for car-based camping with tent sites close to parking bays and a small amount of walk-in camping. Facilities will be basic. A maximum of ten car-based sites and five walk-in sites will be provided. The public access road to the campground will be maintained to the existing 2WD dry weather standard.
 - * All recreation facilities will be designed and landscaped to provide a natural setting and to encourage interaction with the natural environment.
 - * The level of sophistication of existing recreation facilities will not be increased, except where specifically provided for in this plan of management or under existing lease conditions. This, however, will not preclude the upgrading or replacement of visitor amenities and facilities to standards acceptable to the Service and which are in keeping with a national park environment.
 - * Trees will not be removed or other works undertaken which reduce the natural setting of recreation facilities except where essential for public safety.
 - * Merry Beach will be managed as the northern entrance to the park and track head for walking across Snapper Point and further south. A high emphasis will be placed on interpretation of the park's features and provision of information about walking opportunities. Persons registered as having equity in a holiday van at Merry Beach as at December 1988 will be permitted to retain that interest. No such interest may be transferred or passed on to any other person. No new permanent holiday vans will be permitted. Casual caravanning and camping opportunities will continue to be provided concurrently with the occupation of the park by holiday vans. Basic facilities and services will be provided which are in keeping with a national park setting.
 - * Upon termination of the lease for the Pretty Beach caravan park the area will be redesigned to provide for day use, casual camping and some of the existing cabin accommodation, in a natural setting. Holiday vans will be phased out over a five year period.
 - * The existing camping and day use area at Pebbly Beach will be managed for day use and low key camping with a maximum of 30 camp sites, and toilets and cold showers.
 - * Upon expiry of the lease for the cabin area, the Pebbly Beach area will be managed as a single unit to provide for day use, a maximum of 30 camp sites and the existing cabins.
 - * Buses licensed to carry up to a maximum number of sixteen persons will be permitted entry to Pebbly Beach. Larger buses and caravans will not be permitted due to the condition of the road.

- * The Depot Beach camping area will be managed for casual camping and a small number of cabins and possibly on-site vans. Upon expiry of the lease the area will be re-designed and landscaped.
- * The South Durras caravan park (Murramarang Resort) will continue to be managed under lease for on-site tourist vans and casual caravanning and camping.
- * Concessionaire staff may be accommodated within the park only where this is essential for the efficient management of the facility and where consistent with lease conditions.
- * Any new leases or licences entered into for facility areas of the park will be required to include a land-use and landscape plan detailing facilities, layout, landscaping and environmental protection measures, including water supply and waste disposal systems.
- * The design of facilities in heavily used picnicking and camping areas will provide for use by aged and disabled visitors.
- * Where the collection of firewood is leading to unacceptable levels of environmental impact, alternative facilities such as gas barbecues will be provided or required.
- * Public vehicle use will not be permitted other than on designated public access roads. Public access roads will be maintained to 2WD standard, apart from the road to the Oaky Beach camping area which will be maintained to the existing 2WD dry weather standard.
- * Horseriding will be permitted only on public vehicle access roads.
- * Small group tours and ecotourism activities will be encouraged. The type, size, numbers and activities of commercial and community tour operations will be regulated to minimise environmental impact and conflict with other park visitors. Generally, adventure tours, very large group activities and walk-in camping by organised groups will not be permitted.
- * Recreation facilities will be designed and managed to as far as possible minimise detrimental impacts on adjacent villages and Council services.

Actions

- * Signs will be erected at appropriate locations encouraging minimum impact bushwalking and advising of restrictions on the location of pack camping.
- * Walking tracks on Snapper Point will be signposted and inappropriate tracks will be closed and revegetated. Where possible, the track system will be designed to minimise visitation to sensitive geological features.
- * A plan will be prepared and publicly exhibited for redevelopment of Pretty Beach following expiry of the existing lease, including dune fencing and walkway requirements.
- * Upgrading of the Pebbly Beach area will be completed including dune fencing/pedestrian crossings.
- * A redesign plan will be prepared and publicly exhibited for the Depot Beach camping and cabin area prior to expiry of the lease. The plan will consider the historic value of the old cabins, options for their removal or improvement, the layout of the area and landscaping needs.

- * Walking track signposting and upgrading to prevent erosion and improve access will be undertaken at Depot Beach and Shelley Beach. Unnecessary tracks will be closed.
- * Work will be undertaken to clearly delineate the boundary of the North Head Beach camping area and individual camp sites. A booking system will be established if the capacity of the camping area continues to be exceeded. Information will be provided on alternative camping areas for periods when the North Head Beach area is full.
- * The boundary of the Oaky Beach camping area will be formalised, parking bays delineated and basic facilities constructed. Up to five sites will be provided for walk-in camping at least 50 metres from the car-based area. Degraded areas will be protected and rehabilitated, including the adjacent littoral rainforest. Any booking system that may be established for North Head Beach camping area will also include Oaky Beach camping area.
- * A coastal walking route will be created along the length of the park between North Head and Merry Beach. The route will largely utilise existing tracks and incorporate beaches and rock platforms where appropriate. Short sections of new track will be constructed between North Durras and Depot Beach behind Point Upright and immediately north of the Honeysuckle Beach carpark. Existing tracks will be upgraded where necessary and associated environmental protection and safety works will be undertaken. The existing vehicle track to Honeysuckle Beach will be closed to vehicles and incorporated into the walking route.
- * The walking track from Pebbly Beach to Clear Point will be re-routed in order to bypass the Pebbly Beach cabins.
- * A former vehicle track from the Durras Mountain carpark to the summit will be cleared a short distance to provide a walking track of easy grade to the Durras Mountain track.
- * The vehicle tracks to Durras Mountain will be closed to public vehicular use approximately 1 kilometre from the summit. A parking area will be established at the termination of the north-western track (Mountain Road). A former vehicle track from the carpark to the summit will be cleared to provide a walking track of easy grade, joining to the Durras Mountain track.
- * The vehicle tracks to Acheron Ledge will be closed to public use and tracks not required for management purposes or walking access will be rehabilitated.
- * Informal parking areas and tracks at the eastern end of Durras North beach will be closed and rehabilitated.
- * Toilets will be constructed at Durras North beach picnic area.
- * A walking track will be constructed between Maloneys Flat and Quierga Beach.

4.3.3 Professional Fishing

North Durras Beach, Pretty Beach and the two beaches immediately south of Pretty Beach have been traditionally used by professional fisherpersons and it is accepted that they have a right to continued vehicle access to gain access to fishing grounds.

Vehicle access to beaches threatens the integrity of coastal vegetation and dunes and disturbs and can endanger other beach users. Vehicle access is particularly inappropriate in remote

coastal areas such as from Pretty Beach to Pebbly Beach and from Wasp Head to Acheron Ledge.

Despite the adverse impact of vehicles on the natural environment and recreational opportunities it is proposed to permit continued vehicle access for bona-fide professional fisherpersons to the above beaches under strict conditions.

Gated access tracks have been provided for authorised professional fisherpersons to North Durras Beach and to Pretty Beach and the two beaches further south.

Policies

- * Persons holding a professional fishing licence who are customary users of one or more of the above beaches may be licensed by the Director to make use of defined vehicle access routes to gain access to those beaches.
- * Customary use is defined as the use of a beach over a considerable period of time, for the purposes of obtaining a significant proportion of one's livelihood from fishing.
- * Any such licence will define the route or routes which may be used and the proportion of the cost of any necessary vegetation or dune protection measures which is to be met by the licensee. As a general principle the full cost of all such measures at a particular beach will be shared between those fishermen requiring vehicle access to that beach.
- * Licences shall not be transferable.
- * Licences may be cancelled if vehicle access results in unacceptable environmental impact.

4.3.4 Research and Management Operations

Research into the resources of the park and reserves, their maintenance requirements and the impacts of users is essential to the development of appropriate management practices. Important research topics have been included in other relevant sections of this plan.

In addition to the public roads throughout the park there are a number of vehicle tracks required for Service management purposes, maintenance of a number of power lines by the Illawarra County Council, maintenance and survey work at the geodetic station on Durras Mountain and at North Head, fire spotting by the Service and NSW State Forests and access to private property.

Rubbish collected from within the park is disposed of at Council-operated rubbish tips outside the park.

Policies

- * Murramarang National Park, Brush Island Nature Reserve, Belowla Island Nature Reserve and Tollgate Islands Nature Reserve will be available for appropriate research.
- * Preference will be given to research which assists management of the park and reserves.
- * Only research which causes minimal disturbance to the values of the park and reserves will be permitted unless alternative opportunities are not available outside and the results of the research can be demonstrated to offer significant benefits for

improvement of management programs or knowledge of natural and cultural resources.

- * Liaison will be maintained with researchers and observers to obtain as much mutual information and assistance as possible. The results of research will be required to be provided to Service staff.
- * Management tracks shown on the park map will be maintained.
- * Use of management tracks by authorities and individuals other than the Service may be permitted for authorised purposes.

Actions

- * Existing powerline routes will be formalised under license arrangements which will provide for appropriate maintenance procedures.
- * A prospectus will be prepared as a guide to preferred research projects in the park with emphasis on those of direct relevance to park management.

5. PLAN IMPLEMENTATION

As a guide to the orderly application of the provisions of this plan, the major works and their priority are summarised in the table below.

This plan of management is part of the system of management developed by the Service. The system includes the Corporate Plan, the National Parks and Wildlife Act, Management Policies and established conservation philosophy. It also includes District programming.

The implementation of this plan of management will be based on the Service's annual district programs. These summarise the resources to be managed and assign priorities to the tasks identified as necessary throughout each District. The priority of works will be determined during the preparation of these programs and will be subject to funding, staffing and any special requirements of the Minister and/or Director-General.

District programs will be reviewed annually and performance for the year compared with objectives laid down in this plan. The environmental impact of all development proposals will continue to be assessed at all stages from planning to implementation, and any necessary investigations will be undertaken in accordance with established environmental assessment procedures.

Under Section 81 of the National Parks and Wildlife Act this plan shall be carried out and given effect to and no operations shall be undertaken in relation to Murramarang National Park, Brush Island Nature Reserve, Belowla Island Nature Reserve and Tollgate Islands Nature Reserve unless the operations are in accordance with this plan. However, if after adequate investigations, operations not included in the plan are found to be justified, this plan may be amended in accordance with Section 75 of the Act.

High Priority

* Provide information about prohibition of landing on islands	4.1.2
* Seek cooperative boundary management with NSW State Forests	4.1.2, 4.1.3
* Prepare introduced species control plan	4.1.3
* Control rabbits and pigs	4.1.3
* Prepare fire management plan	4.1.4
* Close Acheron Ledge vehicle tracks, construct walking track from Maloney's Flat	4.3.2
* Complete Pebbly Beach upgrading and dune rehabilitation	4.3.2
* Rationalise Snapper Point tracks	4.3.2
* Improve and signpost Depot Beach and Shelley Beach tracks	4.3.2

Medium Priority

* Maintain threatened species data base	4.1.2
* Provide information to neighbours about impacts of bees and exotic species	4.1.3
* Monitor water pollution from caravan parks	4.1.3

- * Undertake Aboriginal site protection program 4.2.1
- * Record and assess historic places 4.2.2
- * Provide information about food for kangaroos 4.3.1
- * Erect National Park entry signs, information/interpretive signs and minimum impact bushwalking signs 4.3.1
- * Delineate North Head Beach camping area 4.3.2
- * Construct Oaky Beach camping area and rehabilitate surrounding degraded areas 4.3.2
- * Establish coastal walking route from North Head to Merry Beach 4.3.2
- * Re-route Clear Point walking track away from the cabins at Pebbly Beach 4.3.2
- * Close Durras Mountain tracks to public use, provide car park 4.3.2
- * Clear former vehicle track to join the Durras Mountain carpark to the Durras Mountain track 4.3.2
- * Close informal car parks and access at eastern end of Durras North beach 4.3.2
- * Prepare and exhibit Pretty Beach redevelopment plan, including dune protection 4.3.2
- * Prepare research prospectus 4.3.4

Low Priority

- * Seek assistance for monitoring of geological features 4.1.1
- * Investigate need for dune rehabilitation at Durras North 4.1.3
- * Prepare Depot Beach camping area re-design plan 4.3.2
- * Construct toilets at Durras North beach picnic area 4.3.2
- * Formalise power line easements 4.3.4

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