



# BOODEREE NATIONAL PARK MANAGEMENT PLAN



Booderee National Park Board of Management  
Director of National Parks

March 2002



COMMONWEALTH OF AUSTRALIA

*Environment Protection and Biodiversity Conservation Act 1999*

# BOODEREE NATIONAL PARK MANAGEMENT PLAN

Consisting of a description of Booderee National Park  
and a management plan



Booderee National Park Board of Management

Director of National Parks

March 2002

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Stingray painting on cover by Vida Brown (Nardaparli)  
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Booderee National Park Board of Management and the  
Director of National Parks

Booderee National Park Management Plan, Jervis Bay

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# BOODEREE NATIONAL PARK

Booderee National Park is a Koori owned place, Booderee being a Dhurga word meaning 'bay of plenty' or 'plentiful fish'.

## Vision

*To excel in the natural and cultural heritage management of Booderee by acknowledging and utilising traditional and scientific expertise.*

## Key Objectives

- To conserve the biodiversity and cultural heritage of the Park;
- To provide for the appreciation and quiet enjoyment of the Park; and
- To benefit future generations of members of the Wreck Bay Aboriginal Community.

# FOREWORD

We believe visitors and all those connected with Booderee National Park recognise it as a very important and special part of Australia's heritage which needs careful management and cooperation between all interested parties. It is home to the Wreck Bay Aboriginal Community, it is a National Park with considerable cultural and biological significance, and it is a valued destination for numerous visitors.

This management plan, which is the first for the Park, sets out how the Park will be managed over the next seven years.

This management plan has been completed following extensive public input. Public comment was taken into account in developing the draft management plan, following invitations in 1997, when some 49 submissions were received. The Draft Management Plan was published in June 2001 and public comment was again invited, resulting in 66 submissions representing a wide range of interests. These spanned a diversity of levels: political; Commonwealth, State and local government; industry and user groups; and individuals. The Director and the Board of Management have carefully considered the public comments in completing preparation of this management plan, and wish to record their appreciation of the contribution made by those who submitted comments.

With a sense of excitement, responsibility and pride, we present this first management plan for Booderee National Park. We look forward to the benefits which will flow from implementation of the plan, especially the sustainable management of a precious resource for the benefit of the present and future generations of Australians.

Annette Brown  
Chair  
Booderee National Park  
Board of Management

Peter Cochrane  
Director of National Parks

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# BOODEREE



# NATIONAL PARK

# WRECK BAY ABORIGINAL COMMUNITY COUNCIL VISION STATEMENT

Wreck Bay Aboriginal Community Council seeks to be a respected equal and valued part of a culturally diverse Australian society. By controlling and managing its own lands and waters, the Community aims to become self sufficient and able to freely determine its future and lifestyle. The Community desires to do this by protecting its interests and values while preserving for future generations, its unique identity, heritage and culture.

To achieve this vision Wreck Bay Aboriginal Community Council's Goals are:

- Sole ownership of all lands and waters within the Jervis Bay Territory.
- Sole management of its freehold land and waters, allowing for Community responsibility, empowerment and self determination.
- Sole representation of the Community's united and democratically agreed interests, at all levels of Government and in all external dealings so as to protect Community and members rights.
- Environmentally sustainable development, to allow a productive economic base for the Community. By managing Booderee as an ongoing park, the Community seeks to protect the land and waters while earning income, creating jobs and achieving financial security.
- Social and cultural development, linked with appropriate cultural training and education, to improve Community empowerment and management, security and wellbeing, while preserving Community value.
- Improved health, housing and living standards, to levels at least comparable with good practice in other Australian communities.
- Recognition and support from the wider Australian community and Government, to achieve these worthwhile and positive goals.



The background of the page is a complex, monochromatic Aboriginal art pattern. It features a variety of traditional motifs, including concentric circles, wavy lines, and geometric shapes, all rendered in shades of grey. The pattern is dense and covers the entire page, with a central white rectangular area containing the text.

# DESCRIPTION OF BOODEREE NATIONAL PARK

Booderee – A Unique Place

Booderee – A Centre of Management Excellence

Key Issues for the Wreck Bay Community

# BOODEREE – A UNIQUE PLACE

Booderee National Park is owned by the Wreck Bay Aboriginal Community. Inalienable freehold title to the lands and waters of the Park (and Botanic Gardens) was handed back to the WBACC in 1995. A memorandum of lease between the Director of National Parks and Wildlife and the WBACC – to jointly manage the Park was signed in December 1995.

Booderee has always been a significant place for Koori peoples. It has provided sustenance and shelter for Koori people for many hundreds of generations. It is also part of a network of sites, places and landscapes (both on land and in the water) that have helped provide these generations with the knowledge and understanding of how to properly manage and live with these lands and waters.

The knowledge of the land and sea, the important places within and the plants, animals, foods and medicines is still being passed through the new generations of people at Wreck Bay.

The management and learning is continuing.

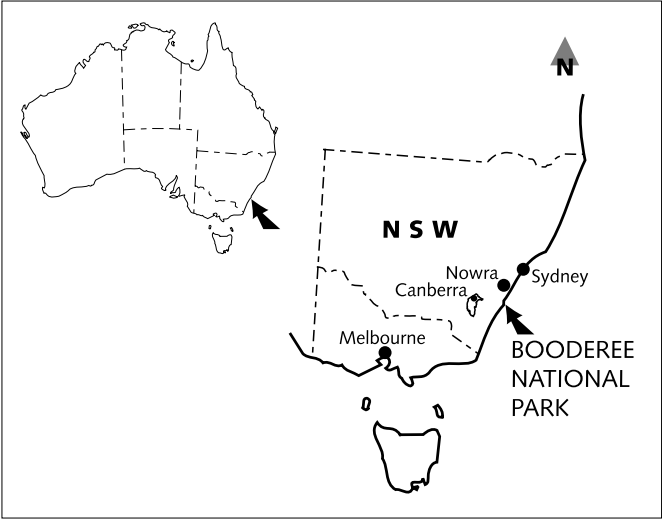
Booderee National Park is located on the south-east coast of Australia, within the Jervis Bay Territory (Fig 1.1). It comprises most of the Bherwerre Peninsula (*Bherwerre* means a large area of water, and also short cut), on the southern side of Jervis Bay and St Georges Basin, and includes part of the waters of Jervis Bay (Fig 1.2).

## Natural Features

Booderee is a Koori owned place. It is home to the people of Wreck Bay Community. It holds the evidence of the traditional owners' ancestry, and with the wind, the water and all life reflected in the past, it is the home and spirit of the Wreck Bay people. Koori people are born of the land and have lived off the land forever.

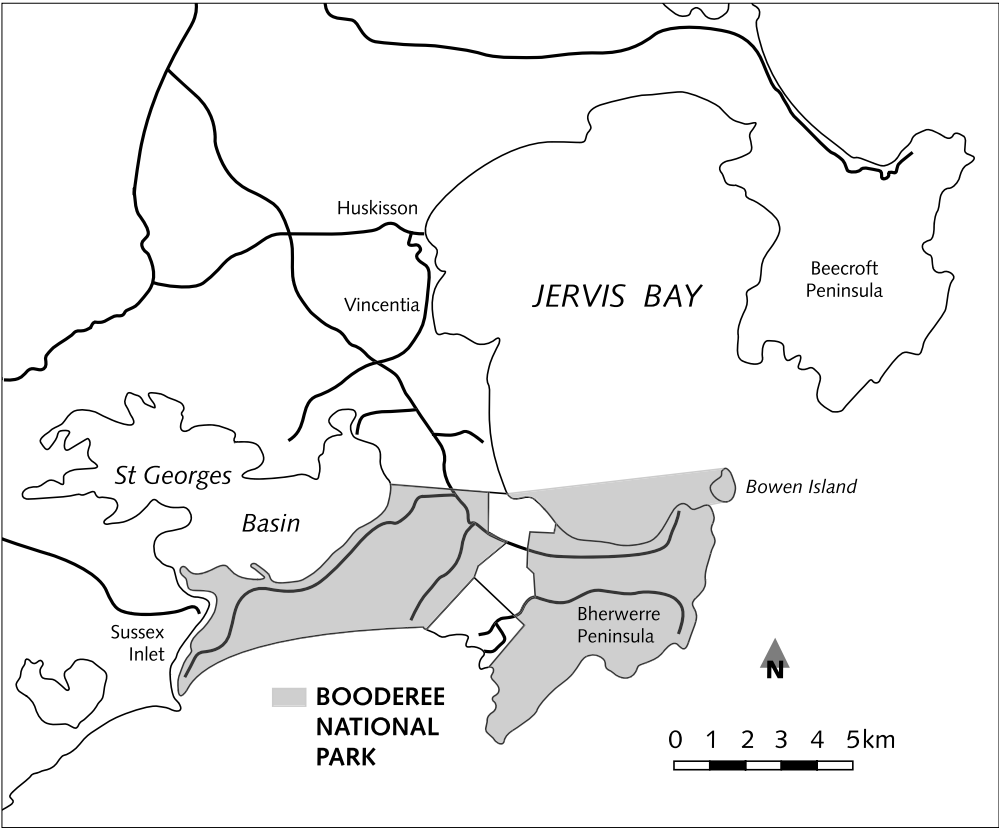
## Geological

The underlying rock of the Bherwerre Peninsula is Permian sandstone of the southern Sydney Basin, about 260 million years old. Near Vincentia and in a few small areas on the Peninsula there is evidence of an ancient landscape, Tertiary or older (more than 2 million years old), which overlaid the Permian rocks. About 130,000 years ago the sea was close to its present level but the Bherwerre Peninsula was probably quite different in shape from now. During the last ice age, 20–15,000 years ago, the sea level was about 120 metres lower than it is now, and the coastline was about 20 kilometres further east, near the edge of the continental shelf. Jervis Bay was an open, vegetated valley more than 90 metres above sea level, with Currumbene Creek flowing between what are now Bowen Island and Beecroft Peninsula. The landscape as we know it, with



**Figure 1.1:** Location of Booderee National Park

**Figure 1.2:** Location of Booderee National Park



its present coastline, dates from the stabilisation of the sea level about 6,000 years ago, after the ice age. Most of the surface of the Peninsula and Bowen Island is Quaternary sediments – sand dunes, swamp deposits and alluvium – younger than 10,000 years, overlying the Permian sandstone. The present shape of the Peninsula is due partly to the Permian rock and partly to the post-glacial deposits.

## **Climatic**

Being coastal, temperature extremes are rare at Jervis Bay. Maximum temperatures range from an average of 24°C in February to 16°C in July, while average minimum temperatures range from 18°C to 9.5°C respectively. Annual rainfall is approximately 1200 mm, which is relatively evenly distributed throughout the year, although there is usually more rain in June and July and less in spring.

The prevailing winds in summer are north-easterly, while the main winter winds are from the south-west, but a clear diurnal cycle in wind patterns is superimposed on the seasonal changes.

## **Biological**

The Park contains a diverse range of well preserved coastal plant communities including remnant rainforest, heath communities, woodland and coastal littoral communities. More than 600 species of naturally occurring terrestrial plants have been recorded. But Jervis Bay also has some of the largest and most pristine seagrass meadows on the NSW coast. Seagrass meadows affect physical and chemical processes and play major roles in the biology of coastal ecosystems.

Some 26 native terrestrial mammal species have been recorded in Booderee, though more are expected to occur there, and 13 marine mammal species. There is a diverse bird fauna with some 200 species recorded. In addition to 17 species of terrestrial reptiles, two species of marine turtle and one sea snake species have been recorded. There are also 15 amphibian species. At least 308 fish and marine macroinvertebrate taxa were recorded during shallow water surveys in Jervis Bay. The macrobenthic infauna of the Bay encompasses more than 500 species, including more than 150 polychaete species, 190 molluscs and 180 crustaceans.

## **History**

Aboriginal people lived in this region long before the sea rose to its current level and the present Bherwerre Peninsula was created. The oldest archaeological evidence of Aboriginal occupation in the region includes a site at Burrill Lake, about 30 kilometres south of Jervis Bay, dating to more than 20,000 years ago. At that time, the coastline would have been about 20 kilometres east of the present coast, and evidence of coastal Aboriginal communities would have been submerged as sea levels rose to the present level.

More than 100 prehistoric Aboriginal sites have been recorded on the Bherwerre Peninsula, some probably dating back to the stabilisation of the sea level about 6000 years ago. The majority are shell middens, but there are also rock shelters, burial sites, ceremonial grounds, stone-flaking sites and axe-sharpening grooves. The distribution of these recorded sites emphasises the importance of the eastern end of Wreck Bay. The high density of midden sites here mirrors the preferred fishing zones of the present Community. Ceremonial *bunan* or *bora* grounds are known only from

the immediate hinterland of this section of Wreck Bay, and nearly all known axe grinding groove sites are in the catchments of Mary and Summercloud Bays.

Early historical records describe meetings between explorers and Kooris in the area. In the 1830s the impact of settlement led to a significant reduction in the Koori population as groups were marginalised and their lands expropriated. Aboriginal reserves were established during the late 1800s and, with time, the sizes of the reservations were reduced or the reserves revoked as the demand for coastal lands grew.

Despite the continuing pressure of settlement in the area, the Wreck Bay settlement was established by Koori initiatives in the early 1900s (Table 1). They favoured the area because of strong traditional and cultural ties, its closeness to both the bush and the sea for collection of food and other resources, and its distance from non-Aboriginal settlements. Because of this initiative, Koori cultural practices of the Wreck Bay people have been able to survive.

*Koori people of Wreck Bay have always strongly pursued and been committed to the recognition of ownership of their traditional home in the Jervis Bay area. This commitment and pursuit for recognition has not wavered and has persevered through a number of changes to Government administration and management of the area.*

In 1791 Lieutenant Bowen named Jervis Bay after Sir James Jervis, his former naval commander. European settlement of the district began about 1827. Construction of the Cape St George lighthouse began in 1854, and the elegant structure was completed in 1856. Unfortunately the lighthouse was built in the wrong spot, and it came to be regarded as a navigational hazard, resulting in its partial demolition in the early 1900s. Harriet Parker, the daughter of an assistant lighthouse keeper, was accidentally shot dead by a friend when they were looking for a horse near Green Patch in 1887. Her grave is in the Green Patch camping area.

In the early 1880s, Jacob Ellmoos established what appears to have been the first European settlement, other than the lighthouse, in the Jervis Bay Territory. He selected 120 acres (48 ha) on the eastern shore of Sussex Inlet, where he and his family set up a fishing enterprise and farm. In 1890 the Ellmoos family opened a guesthouse there, named *Christian's Minde* in memory of Jacob's brother Christian who had died in 1888.

By about 1900 Octavius Beale owned a farm, *Bherwerre*, on the shore of Lake McKenzie, now within the Booderee Botanic Gardens. Almost all of the Park area became subject to grazing, although only small areas were cleared. Management for grazing included frequent burning to increase green growth.

The Australian Federal Parliament selected the site of Captain's Point, Jervis Bay, for the Royal Australian Naval College (RANC) on 7 November 1911. The Parliament made the decision to build a Naval College to form part of the nation's identity and specifically in order to create an Australian spirit and Australian traditions in the newly formed Australian Navy.

The Jervis Bay Territory was surrendered by New South Wales to the Commonwealth in 1915 under the *Jervis Bay Territory Acceptance Act 1915*, in order that the national seat of government would have access to the sea. In 1951, the Jervis Bay Botanic Gardens were declared as a frost-free annex of the Australian National Botanic Gardens (ANBG). From 1954, forestry activities removed about 500 ha of the best blackbutt (*Eucalyptus pilularis*) forest, some of which was replanted with pines. Most of the pines in the eastern area were destroyed by fire in 1972. Most of the remaining pines have since been removed to allow regeneration of native vegetation. In



**TABLE 1: WRECK BAY ABORIGINAL COMMUNITY TIMELINE**

<b>Always</b>	Since time, Koori people have always used Bherwerre because of its rich diversity. It has always been a place of great significance to our people because of its unique location and its abundance of foods and medicines. It has provided us with an area where we can continue to pass on our traditional knowledge.
<b>1800s early</b>	Europeans given estates on the South Coast of New South Wales which started the dispossession of land from the local Aboriginal people.
<b>1830–1840</b>	Local Aboriginal people listed in the record for distribution of blankets and rations.
<b>1880s</b>	Aboriginal reserves established on the South Coast due to the dispossession of traditional lands.
<b>1912</b>	Naval College established at Jervis Bay.
<b>1915</b>	Commonwealth acquires the Bherwerre Peninsula, which becomes a part of the Australian Capital Territory. Efforts were made at that stage to relocate the Aboriginal Community at Wreck Bay.
<b>1924</b>	First school built at Wreck Bay.
<b>1925</b>	Aboriginal Protection Board of New South Wales accepts the Commonwealth offer to administer the Wreck Bay ‘reserve’ under the provision of the New South Wales <i>Aboriginal Protection Act 1909</i> . First manager appointed.
<b>1929–1949</b>	Fish Protection Ordinance 1929–1949 has a provision that excludes Aboriginal residents of the Territory from paying fishing license fees. Aboriginal initiative to establish a fishing industry in the region.
<b>1930s</b>	First houses built on the reserve
<b>1940</b>	<i>Aboriginal Protection Act 1940</i> reflects shift from protectionism to assimilation policies in New South Wales. Aboriginal people issued with ‘dog tags’. Cultural expression continued to be outlawed to fit in with the assimilation policy of the day.
<b>1952</b>	The boundary of the Wreck Bay Reserve marked out by Bob Brown, Archie Moore and Reg McLeod.
<b>1954</b>	Wreck Bay Reserve is gazetted under the provisions of the Aborigines Welfare Ordinance Australian Capital Territory. Provision of the Aborigines Protection Act of New South Wales no longer applies.
<b>1965</b>	Aborigines Welfare Ordinance Australian Capital Territory is repealed, thus effecting the transfer of the ‘reserve’; from the Aborigines Welfare Board to the Commonwealth Department of Interior. At the same time, the reserve was abolished and declared an ‘open village’. Assimilation policy of the day brought about attempts to house non-Aboriginals at Wreck Bay, which the Community opposed. Efforts were made to relocate the Community once again. Wreck Bay School was moved to Jervis Bay.
<b>1965–1966</b>	Wreck Bay Progress association formed to counter the open village status and to secure land tenure, thus securing the community’s future.
<b>1971</b>	Proclamation under the Public Park Ordinance (Australian Capital Territory) of the Jervis Bay Nature Reserve over the majority of the Territory including the non residential land of the reserve.

<b>1973–1974</b>	The Wreck Bay Housing Company and the Wreck Bay Women's Committee formed. Land Rights issues were the main issues for discussion between the Community and the Government.
<b>1979</b>	Blockade of the Summercloud Bay Road, which prevents the general public of access to the Summercloud Bay day visitor area. This action was taken as a result of the land ownership issue.
<b>1985</b>	Announcement by the Prime Minister of plans to transfer the Fleet Base and Armaments depot to Jervis Bay. The Wreck Bay people opposed this decision because of the impact to the Cultural and Natural environment of the region. The land rights movement accelerates.
<b>1986</b>	<i>The Aboriginal Land Grant (Jervis Bay Territory) Act 1986</i> enacted.
<b>1987</b>	The Wreck Bay Community secure land tenure of 403 hectares of land via the <i>Aboriginal Land Grant (Jervis Bay Territory) Act 1986</i> and the Wreck Bay Aboriginal Community Council is established.
<b>1991</b>	Public announcement of the Jervis Bay National Park is made.
<b>1992</b>	The Jervis Bay National Park is declared replacing the Jervis Bay Nature Reserve. The Wreck Bay Community is offered 2 positions on a Board of Management of the newly declared Park. The offer is rejected.
<b>1993</b>	Commonwealth announces that the armaments depot will be built in Victoria. The <i>Native Title Act 1993</i> is enacted.
<b>1994</b>	The Commonwealth Ministers for Aboriginal & Torres Strait Islander Affairs and the Environment announce intentions of a land grant of the Jervis Bay National Park to the Wreck Bay Aboriginal Community. Amendments to the <i>Aboriginal Land Grant (Jervis Bay Territory) Act 1986</i> and the <i>Australian National Parks &amp; Wildlife Service Act 1975</i> amended to facilitate land grant.
<b>1995</b>	Amendments passed in both houses of Parliament and the Wreck Bay Aboriginal Community Council is granted freehold title to Jervis Bay National Park. Park leased back to the Director of National Parks.
<b>1996</b>	The Jervis Bay National Park Board of Management is established which has a majority of Wreck Bay Community representatives on the Board. For the first time the Wreck Bay people have a real say on how traditional lands are managed.
<b>1997</b>	The Wreck Bay Aboriginal Community Council lodges a land claim for the remaining areas in the Jervis Bay Territory, which is not Aboriginal Land.
<b>1998</b>	To reflect Aboriginal ownership the Jervis Bay National Park is changed to Booderee National Park.
<b>1999</b>	Wreck Bay Enterprises Limited is established.
<b>2000</b>	Interdepartmental Committee is established to look at a number of issues in Jervis Bay Territory including the Wreck Bay land claim.

1970–71 an area near Murrays Beach, now the carpark, was excavated and a sealed road built in preparation for planned construction of a nuclear reactor by the Australian Atomic Energy Commission.

Funding cuts driven by the Great Depression forced the closure of RANC in 1930, which then relocated to HMAS Cerberus in Victoria. The College buildings were leased as hotels and guesthouses, although Navy retained use of the waterfront and some married quarters. From 1944 to 1946 the RAAF 2nd Military Rehabilitation Unit was housed in some of the college buildings.

In 1956, the Federal Government decided to return the College to Jervis Bay, which was achieved on 20 January 1958. On this occasion the establishment was commissioned as HMAS Creswell, being named after Vice Admiral Sir William Creswell, KCMG, KBE, First Naval Member of the Naval Board from 1911 to 1919.

In 1971, the Jervis Bay Nature Reserve was declared. The Reserve constituted two thirds of the Territory (4470 ha) and was declared a public park under the *ACT Public Parks Ordinance 1928*. The ACT Parks and Conservation Service managed the Reserve.

In 1975, the House of Representatives Standing Committee on Environment and Conservation recommended that the Jervis Bay Nature Reserve be extended to include all areas of the Jervis Bay Territory not then reserved for use by the Department of Defence.

With the establishment of the Nature Reserve in 1971, conflict over land rights increased. The Reserve incorporated areas historically used by the Community. This conflict and the Wreck Bay people's commitment to pursuing ownership of their land, came to a head in 1979 with a demonstration on Australia Day at the popular public use area at Summercloud Bay, adjacent to the Wreck Bay village.

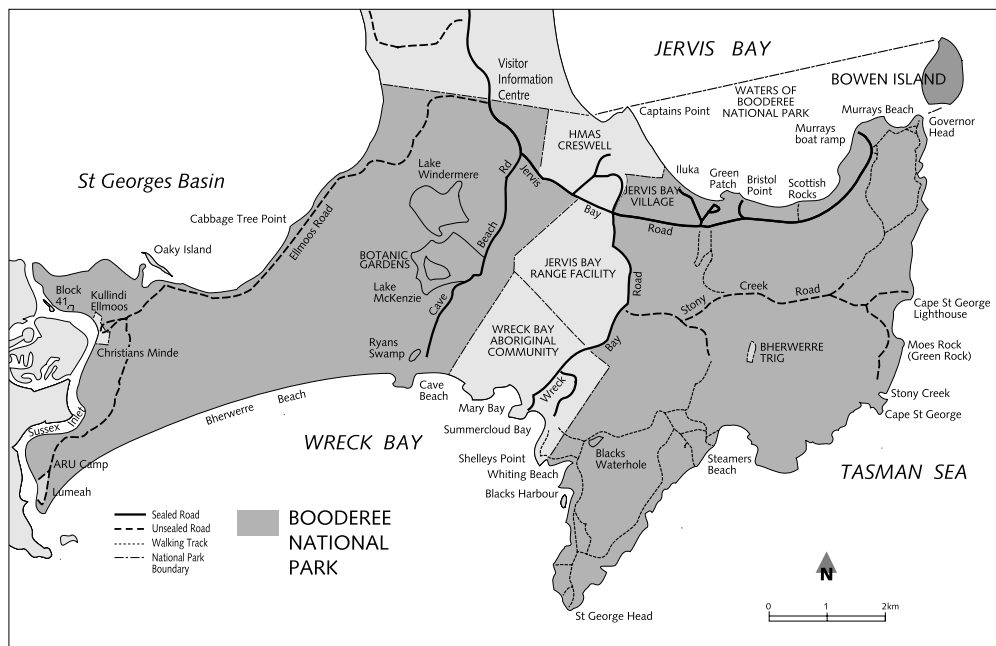
Further extensions of the reserve system occurred in the 1980s. In 1985, Bowen Island was declared a nature reserve under the *ACT Nature Conservation Ordinance 1980*. Also in 1985, the area of land around the Bay foreshore, which had been Defence land managed by the ACT Parks and Conservation Service, was declared as a nature reserve under the *Public Parks Act 1928*. Both these areas were included in the Jervis Bay Nature Reserve.

In March 1987, the Wreck Bay Aboriginal Community Council was granted inalienable freehold title to 403 hectares of land under the *Aboriginal Land Grant (Jervis Bay Territory) Act 1986* (Land Grant Act). The Council was established as a body corporate under the Land Grant Act to hold title to land granted in accordance with the Land Grant Act.

In 1990, responsibility for management of the ANBG, including the Jervis Bay annex, was transferred from the Commonwealth Department responsible for Territories to the Director of National Parks and Wildlife (now the Director of National Parks). In 1991, the ANBG (including the annex) was proclaimed under the Commonwealth *National Parks and Wildlife Conservation Act 1975* (Parks Act) and title vested in the Director. The Botanic Gardens extended 1000 metres below the surface of the land.

On 4 March 1992 the Jervis Bay Nature Reserve, additional Commonwealth lands and the waters of Jervis Bay Territory, were proclaimed as the Jervis Bay National Park under the Parks Act (see Fig. 1.3). The Park extended 1000 metres below the surface of the land and 1000 metres below the sea bed. The title to the land vested in the Director of National Parks and Wildlife and the Director took over management responsibility from the ACT Parks and Conservation Service shortly after.

**Figure 1.3: Booderee National Park**



In 1993 and 1994, the Wreck Bay Aboriginal Community Council pursued further land grants in the Territory – the area of the Park and the Gardens. However, as the areas were vested in the Director, they were not considered ‘vacant Crown land’ and could not be granted without amendments to the Land Grant Act and the Parks Act. The process also required the area to be recognised as ‘significant’ to the Wreck Bay people and that the grant was ‘appropriate’.

The ‘significance’ of the area and the ‘appropriateness’ of the grant were determined and negotiations were undertaken between the Wreck Bay Aboriginal Community Council and the Commonwealth for the Park and the Gardens to be leased back to the Director of National Parks and Wildlife.

Amendments to the Land Grant Act and the Parks Act were passed by Federal Parliament in 1995. Subsequently, title to the Jervis Bay National Park and the Jervis Bay Botanic Gardens was conferred on the Wreck Bay Aboriginal Community Council, provided these areas were leased back to the Director of National Parks and Wildlife as a national park and botanic gardens. A memorandum of lease between the Director of National Parks and Wildlife and the Wreck Bay Aboriginal Community Council was signed in December 1995. The lease agreement provides for the Park and Gardens to be jointly managed between the Director and the Council, in accordance with the Parks Act and a management plan and consistent with decisions of a Board of Management (the Park Board). The Park Board was established in 1996 under the Parks Act.

In 1997, in line with provisions of the lease, the Council chose Booderee National Park and Booderee Botanic Gardens as the new name for the Park and Gardens.

With land ownership passing to the Wreck Bay Aboriginal Community Council, the Booderee Botanic Gardens' relationship with the ANBG altered significantly. In recognition of these changes, in May 2000 amendments to the original proclamations of the ANBG and the Booderee National Park had the effect that the Booderee Botanic Gardens ceased to be a part of the ANBG and were added to the area of the Booderee National Park. For practical management reasons, since 1995 the Booderee Botanic Gardens have been managed as part of the administration responsible for Booderee National Park. The amended proclamations have not altered that arrangement although the Gardens will be treated as a separate zone within the Park with special management prescriptions where required.

The Parks Act was replaced by the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) on 16 July 2000. This change has not altered the status of the Park, the lease or the management arrangements.

The Park covers an area of 6312 hectares, which includes 875 hectares of marine environment. The Botanic Gardens zone is 80 hectares in area (Figures 1.3 and 5.1).

## Significance

The significance of Booderee is attributable to its rich natural and cultural heritage, the inclusion of both land and seascapes within a single protected area, and its location.

## Cultural

Booderee is home to the people of Wreck Bay. Koori people have always lived in the area and have strong cultural ties. These cultural ties are evidenced today in both oral cultural history, the knowledge and practice of the use of natural resources for food and the making of utensils and crafts, and in the respect for the country. Koori people of Wreck Bay are proud of their association with the area and through strong family ties, have passed on the ancestral stories and creation stories. Parents recite such stories today to their children.

A range of sites of archaeological significance, including middens and axe groove sites, have been identified. More significantly, the area is one of the few places in south-eastern Australia where recent and contemporary Koori lifestyles have continued within the setting of a substantially natural environment. The opportunities to educate visitors about Koori culture of the region are among Booderee's most important assets. The Wreck Bay Community has extensive experience in cultural interpretation and prides itself on providing a quality and informative experience.

## Natural

Jervis Bay is one of the major biogeographic nodes in Australia which contains a variety of relatively undisturbed marine and terrestrial habitats.

The Park protects a significantly large area of species-rich heath, a diversity of wetlands and extensive saltmarshes. The Park also protects one of the largest *Posidonia* seagrass meadows along the NSW coast. The large breeding colony of Little Penguins on Bowen Island is one the most significant in Australia. The Jervis Bay area, particularly the area of the Park, is an outstanding scenic location.

A number of plant and animal species which occur in Booderee have significant conservation status and warrant special protection because they are at the edge of their range, have limited distribution or are considered rare or threatened. A substantial number of fauna species are listed on NSW and Commonwealth threatened and endangered species schedules or are subject to international treaties (see Appendix 1). *Syzygium paniculatum* is the only known naturally occurring plant species which is classified under the EPBC Act as vulnerable. Although not listed as threatened, the striking *Grevillea macleayana* is a naturally occurring endemic species, restricted to the Jervis Bay region. Four other plant species are considered rare nationally and another is too poorly known to classify. Management prescriptions in this plan reflect the conservation requirements of these species.

The area supports a population of bottlenose dolphins and the Bay is registered as a type locality for many marine invertebrates and algal habitats. The Park protects coastal dune systems and their associated habitats that are otherwise disturbed or potentially threatened in the region. The area is scientifically valuable, as it has not undergone the degradation that similar coastal sites (such as those surrounding Sydney) have suffered. The preservation as a southern representative of the sandstone ecosystems of coastal New South Wales is highly important.

The Booderee Botanic Gardens have special significance as the only Aboriginal-owned botanic garden in Australia, a feature which needs to be promoted and enhanced.

The living collection of the Booderee Botanic Gardens contains open ground plantings of some 1600 taxa, which are cultivated and displayed to facilitate the study, conservation, promotion and enjoyment of Australia's plant heritage. Since the 1980s, the Gardens has been increasingly involved in *ex-situ* conservation of threatened species. More recent is the promotion of the Gardens as a centre for interpreting the cultural use of plants, with cultural interpretation activities occurring on a regular basis.

The Botanic Gardens also contain some species listed as endangered or vulnerable under the EPBC Act. One species (*Syzygium paniculatum*) occurs naturally on the site while others have been introduced into the living collection for display or conservation purposes.

## **Register of the National Estate listings**

Specific listings on the Register of the National Estate under the *Australian Heritage Commission Act 1975* in the area of Booderee include: Bowen Island for well preserved prehistory sites and penguin and shearwater rookeries; Cape St George Lighthouse Complex ruins for historical importance to maritime navigation history; Jervis Bay Nature Reserve (in 1987) for the diverse range of well preserved coastal plant communities; and Booderee Botanic Gardens as an important example of mid-twentieth century botanic gardens established to display native plants.

While not in the Park the six leases of the Christian's Minde settlement are also listed on the National Estate register (registered September 1982 – Historic class).

Many of the buildings of the Royal Australian Naval College are Heritage-listed. The pattern overall reflects the 'garden city' concept used to design Canberra. A main ridge forms the 'Quarterdeck', around which the buildings of the College are grouped. Apart from the removal of a couple of buildings, the original buildings remain today, with some additions to the design of timber and stone, unfluted Roman Doric columns and tiled roofs.

The wider area of Jervis Bay was entered on the Register in 1993 in recognition of its outstanding landscape features, its diversity of flora, fauna and archaeological sites and its value to past and present communities for recreational activities (Australian Heritage Commission, 1993). While listing on the Register does not dictate specific management requirements in relation to Booderee, section 30 of the *Australian Heritage Commission Act 1975* requires Commonwealth Ministers and authorities not to take action that will have an adverse effect on registered places, as part of the National Estate, unless there is no feasible and prudent alternative.

## **Visitors**

The area of Booderee has long been a popular destination for visitors. Christians Minde Guesthouse on Sussex Inlet provided the first tourist accommodation in the area in 1896. Since then, the area has become a major tourist destination. People from Sydney and the large urban centres of Canberra and Wollongong use Booderee for recreation. They undertake many activities, with fishing, camping, bushwalking and visiting with relatives and friends being some of the most popular activities. Booderee offers recreational opportunities that are complementary to those offered in the other parks, gardens, reserves and attractions in the region and south coast.

# BOODEREE – A CENTRE OF MANAGEMENT EXCELLENCE

## Joint Management

*The Wreck Bay people are the long term custodians of the area and it is in their interests, and the interests of their future generations, that they are actively involved in the management of the Park. The Wreck Bay Community also feels that it is important for their values, customs and beliefs to be maintained, promoted and enhanced at Booderee.*

The Wreck Bay Aboriginal Community's interests in Booderee are legally reflected in the lease agreement, the EPBC Act and the Land Grant Act.

The Acts provide for traditional use of the land in the Park for hunting, food gathering and ceremonial religious purposes. The *Environment Protection and Biodiversity Conservation Regulations 2000* (EPBC Regulations) permit the Director of National Parks to make areas of the Park available for use by the traditional Aboriginal owners. Wreck Bay Aboriginal Community members are committed to promoting their traditional skills and knowledge in the work place, and to park visitors.

The lease agreement (Appendix 2) places obligations on the Director of National Parks to manage the Park and to promote the interests of the traditional owners. The lease sets out the terms and conditions governing joint management and provides for payment to the Council of an annual rental and a proportion of income generated by the Park, in recognition of the use of the areas for conservation purposes. The lease covers a period of 99 years and the lease requires the Director to discuss possible variations with the Wreck Bay Aboriginal Community Council every five years.

The Director of National Parks is a Commonwealth statutory authority under the EPBC Act. The Director's main function is to administer, manage and control Commonwealth reserves, including Booderee. The Director is responsible for controlling activities in Commonwealth reserves, for example by issuing permits and making determinations under the EPBC Regulations.

The ten-member Booderee Board of Management (the Park Board), with a majority of representatives of the traditional Aboriginal owners, makes decisions relating to the management of the Park and, in conjunction with the Director of National Parks, prepares the management plan. As well as representatives of the Traditional Owners, membership on the Park Board includes the Director of National Parks; the First Assistant Secretary, Territories and Regional Support Division of the Department of Transport and Regional Services; a scientist familiar with the conservation values of the Jervis Bay region; and a tourism representative familiar with the Jervis Bay region.

The Wreck Bay Aboriginal Community Council concerns are wider than park management and extend into community development, housing and other social issues. Although these are not



directly the responsibility of the Director of National Parks, these issues and how the Community deal with them have an impact on the joint management arrangements and the success of joint management. Often the Community's focus on many Park issues relates to the outcomes that enhance the continued economic development of the Wreck Bay Aboriginal Community.

The implementation of joint management at Booderee continues to evolve. The joint management structure is set out in the EPBC Act. The Act sets out the establishment of the Park Board (the key decision making body for the Park) and the basic philosophy of the working relationship between the Government and the Wreck Bay Aboriginal Community Council. The success of the arrangements depends on a number of things, including: implementation of this (the first) management plan for Booderee which reflects the objectives and provisions of the lease agreement and the aspirations of the Wreck Bay people; further development of a shared decision making relationship; and the increasing involvement of the Wreck Bay people in the management of the Park.

Important functions of the following management plan are to clarify the roles of the new management arrangements, to provide for increased involvement in the management of the areas by the Wreck Bay Aboriginal Community and to manage the areas for conservation of biodiversity. Specific to the Gardens is the need to also clarify its role in light of the changed relationship with the Australian National Botanic Gardens.

# KEY ISSUES FOR THE WRECK BAY COMMUNITY

## Sole management

The Community seeks sole management of Booderee National Park in the longer term. The requirements of the lease agreement support progress towards this goal. The Director is providing training and employment opportunities for Community members, which is enhancing the Community's ability to eventually manage the Park.

## Contracts and employment

The lease agreement requires the Director, subject to the management plan, to:

- take all reasonably practicable steps to promote the provision of services by the Council for the administration, management and control of the Park;
- to promote the use of the service of members of the Community in the administration, management and control of the Park;
- to contract the Council's services and engage as many Community members as is practicable to provide services in and in relation to the Park; and
- to encourage appropriate business and commercial initiatives and enterprises by the Council and Community members within the Park.

More than half the Park staff are members of the Community and, in addition, Community members are employed in the Park through contracts for management of the Entry Station, road maintenance, horticultural maintenance and cleaning.

The Community is keen to gain further contracts, which the Director supports. In line with the Park lease agreement, the Director will engage businesses owned by traditional owners and/or their associations to provide contract services in the Park as much as possible, consistent with relevant Commonwealth purchasing procedures.

## Depot/land ownership

The land on which the Park depot is located is not part of the Park. It is Commonwealth land managed by the Department of Transport and Regional Services, while the Park buildings are owned by the Director of National Parks. The Department of Transport and Regional Services is investigating options to give the Director secure tenure of the land.

## Cultural/visitor centre

As a part of the negotiations between the Commonwealth and the Wreck Bay Aboriginal Community Council prior to the hand-back of the area of the Park, a commitment was given to construct a Cultural Centre. As the only national park in the region which is owned by an Aboriginal community, Booderee has a special opportunity and responsibility to provide visitors with an integrated combination of culture and nature. The Cultural Centre's interpretations and displays will constitute an essential vehicle for conveying messages, particularly about Aboriginal cultural and associated Park values, and the concept of joint management. This information is crucial to visitors' understanding of the Park's cultural and natural values, and will enhance visitors' experience in the Park. The Cultural Centre is also expected to provide commercial opportunities as a focus of interpretive tours and appropriate retail sales. Excellent location and design are important for maximum effectiveness of the Cultural Centre. Careful planning, in close consultation with the Wreck Bay Aboriginal Community Council, will be necessary. Useful lessons may be gained from experience with the highly successful cultural centres in Kakadu and Uluru–Kata Tjuta National Parks. The design, construction and cost of the centre are subject to further negotiation (Section 9.3).

Initial steps towards identifying the location and design of the Cultural Centre will occur during the first twelve months of operation of this plan. Subject to the availability of adequate funding, construction of the Cultural Centre, incorporating visitor services for the Park, will be completed during the life of this Plan (Prescription 9.3.10).

## Budget

The Community is keen to increase revenue from the Park. Taking account of the requirements of the EPBC Act and the lease, the Director, in conjunction with the Park Board, will consider and pursue new activities for the Park that have potential to supplement the Park's annual budget. The Director, in conjunction with the Park Board, will develop a marketing plan for the Park, to provide for increased revenue raising opportunities to the extent consistent with the Park's management principles (Prescription 9.9.4).

## Commercial

The Community has established a commercial company, Wreck Bay Enterprises Limited, which will be responsible for undertaking contracts awarded to the Council. It sees the company as a means of developing new Community business opportunities and securing further contracts, in and outside the Park, creating more employment opportunities for Community members. Existing contracts include operating the Entry Station, cleaning and road maintenance.

See also Contracts and employment above.

## Training

The lease agreement requires the Director to establish and implement a program for training reasonable numbers of the Community in skills relevant to the administration, management and control of the Park. An Aboriginal training officer is employed in the Park, and the Director will continue to initiate training opportunities for members of the Community (Section 9.7).

## Lease

The lease provides for review of its conditions each five years. An existing management plan cannot be amended other than by a new plan. Therefore, if changes arising from review of the lease require any change to the management plan, a new management plan incorporating the changes will be required. Synchronisation of lease review and development of the new management plan would enable any necessary changes to be dealt with promptly.

## Resources/water

The Community is concerned that shortage of water could become a problem due to the large numbers of visitors in the Park during the summer.

Water conservation principles will be applied to all water use in the Park. As opportunities arise, facilities which use less water will replace existing facilities, particularly where water use is greatest. Water use efficiency will be considered when planning new buildings and horticultural infrastructure (Prescription 9.2.4).





# MANAGEMENT PLAN FOR BOODEREE NATIONAL PARK

Part 1 – Introductory Provisions

Part 2 – How the Park will be Managed

Part 3 – Miscellaneous

# INTRODUCTORY PROVISIONS

## 1.1 Short title

This Management Plan may be cited as the Booderee National Park Management Plan.

## 1.2 Commencement and Termination

This management plan has been prepared for approval under section 370 of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). The Plan will cease to have effect seven years after commencement, unless it has already been revoked or replaced with a new Plan.

## 1.3 Interpretation

In this Management Plan:

**Aboriginal** means a person who is a member of the Aboriginal race of Australia;

**Aboriginal tradition** means the body of traditions, observances, customs and beliefs of Aboriginals generally or of a particular group of Aboriginals and includes those traditions, observances, customs and beliefs as applied in relation to particular persons, sites, areas of Booderee National Park, things and relationships;

**ANBG** means the Australian National Botanic Gardens at Canberra declared as a botanic gardens under the Parks Act and continued as a Commonwealth reserve under the EPBC Act by the *Environmental Reform (Consequential Provisions) Act 1999*;

**Board of Management** means the Board of Management for Booderee National Park established under the Parks Act and continued under the EPBC Act by the *Environmental Reform (Consequential Provisions) Act 1999*;

**Booderee** has the same meaning as Booderee National Park;

**Booderee Botanic Gardens** means that part of Booderee National Park formerly part of the ANBG and included in Booderee National Park by proclamation on 25 May 2000;

**Botanic Gardens** has the same meaning as 'Booderee Botanic Gardens';

**Booderee National Park** means the area declared as a park by that name under the Parks Act and continued as a Commonwealth reserve under the EPBC Act by the *Environmental Reform (Consequential Provisions) Act 1999*;

**Commonwealth reserve** means a reserve declared under Division 4 of Part 15 of the EPBC Act;

**Community** means the community known as the Wreck Bay Aboriginal Community;

**Council** means the Wreck Bay Aboriginal Community Council established and constituted by the Land Grant Act;

**Defence** is defined as all elements of the Australian Defence Organisation: including Navy, Army, Royal Australian Air Force, the Department of Defence and the Defence Scientific and Technical Organisation. In the context of this Plan of Management, Defence can also refer to agents of the Commonwealth acting on behalf of Defence or providing services to Defence.

**Director** means the Director of National Parks under section 514A of the EPBC Act;

**DOTARS** means the Commonwealth Department of Transport and Regional Services;

**EPBC Act** means the *Environment Protection and Biodiversity Conservation Act 1999*, including Regulations under the Act, and includes reference to any Act amending, repealing or replacing the EPBC Act;

**EPBC Regulations** means the Environment Protection and Biodiversity Conservation Regulations 2000 and includes reference to any Regulations amending, repealing or replacing the EPBC Regulations;

**Environment Australia** means the Commonwealth Department of Environment and Heritage;

**Gardens** has the same meaning as ‘Booderee Botanic Gardens’;

**IUCN** means IUCN – The World Conservation Union;

**Jet ski** means a type of personal watercraft;

**Koori** means Aboriginal people of south-eastern Australia;

**Land Grant Act** means the *Aboriginal Land Grant (Jervis Bay Territory) Act 1986*;

**Lease agreement** means the Memorandum of Lease between the Director and the Council, unless otherwise stated;

**Management principles** means the Australian IUCN reserve management principles set out in Schedule 8 of the EPBC Regulations (see Appendix 3);

**Mining operations** means mining operations as defined by the EPBC Act;

**Park** means the same as Booderee National Park. A reference to the Park means the Park including the Botanic Gardens unless the context requires otherwise;

**Park Board** has the same meaning as ‘Board of Management’;

**Parks Act** means the *National Parks and Wildlife Conservation Act 1975* and the Regulations under that Act;

**Parks Australia** means that part of Environment Australia that assists the Director in performing the Director’s functions under the EPBC Act;

**Personal watercraft** means a power-driven vessel that:

- (a) has a fully enclosed hull; and
- (b) does not retain water taken on if it capsizes; and
- (c) is designed to be operated by a person standing, sitting astride or kneeling on the vessel but not seated within the vessel and includes a jet ski;

**Traditional Aboriginal owners** means those members of the Wreck Bay Aboriginal Community Council whose names are recorded on the Council Register as being members of the Council.



## Acronyms

ACT	Australian Capital Territory
ANBG	Australian National Botanic Gardens
CLEB	Commonwealth Law Enforcement Board
DOTARS	Department of Transport and Regional Services
EA	Environment Australia
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
GIS	Geographical Information System
IBIS	Integrated Botanical Information system
IUCN	IUCN – The World Conservation Union
NPWC Act	National Parks and Wildlife Conservation Act 1975
NPWS	National Parks and Wildlife Service
NSW	New South Wales
SCUBA	Self-contained underwater breathing apparatus
TAFE	Technical and Further Education College

## 1.4 Legislative Context

Booderee National Park is owned by the Wreck Bay Aboriginal Community Council under the Land Grant Act, leased to the Director of National Parks, and is a Commonwealth reserve under the EPBC Act. A Board of Management has been established for the Park. The EPBC Act (s.376) prescribes the functions of the Board to be:

- to make decisions relating to the management of the Park that are consistent with the management plan in operation for the Park; and in conjunction with the Director, to:
- prepare management plans for the Park; and
- monitor the management of the Park; and
- advise the Minister on all aspects of the future development of the Park.

Schedule 4, Part 2, Item 3 of the *Environmental Reform (Consequential Provisions) Act 1999* assigned to Booderee National Park the following purposes:

- (a) the preservation of the area in its natural condition; and
- (b) the encouragement and regulation of the appropriate use, appreciation and enjoyment of the area by the public.

Administration and management of the Park are the function of the Director of National Parks under the EPBC Act (s.514B).

The EPBC Act requires the Board in conjunction with the Director to prepare management plans for the Park. When prepared, a plan is given to the Minister for the Environment and Heritage for approval. A management plan is a 'disallowable instrument', and when approved must be tabled in each House of the Commonwealth Parliament. Either House of the Parliament may disallow a plan. A management plan for a Commonwealth reserve has effect for seven years, subject to being revoked or amended earlier by another management plan for the reserve.

The Director of National Parks must exercise the Director's powers and perform the Director's functions to give effect to a management plan; and the Commonwealth and Commonwealth agencies must not perform functions or exercise powers inconsistently with a management plan (s.362).

Under the EPBC Act (s.367) a management plan for a Commonwealth reserve must provide for the protection and conservation of the reserve and must assign the reserve to one of the following IUCN (World Conservation Union) protected area categories:

- strict nature reserve;
- wilderness area;
- national park;
- natural monument;
- habitat/species management area;
- protected landscape/seascape; or
- managed resource protected area.

In preparing a management plan the EPBC Act (s.368) also requires account to be taken of various matters. In respect to the Booderee National Park these matters include:

- the regulation of the use of the Park for the purpose for which it was declared; and
- the interests of:
  - the traditional owners of the Park; and
  - any other indigenous persons interested in the Park; and
  - any person who has a usage right relating to land, sea or seabed in the Park that existed (or is derived from a usage right that existed) immediately before the Park was declared; and
- the protection of the special features of the Park, including objects and sites of biological, historical, palaeontological, archaeological, geological and geographical interest; and
- the protection, conservation and management of biodiversity and heritage within the Park; and
- the protection of the Park against damage; and
- Australia's obligations under agreements between Australia and one or more other countries relevant to the protection and conservation of biodiversity and heritage.

The EPBC Act (s.354) prohibits certain actions being taken in Commonwealth reserves except in accordance with a management plan. These actions are:

- kill, injure, take, trade, keep or move a member of a native species; or
- damage heritage; or
- carry on an excavation; or

- erect a building or other structure; or
- carry out works; or
- take an action for commercial purposes.

These controls and restrictions do not affect certain traditional activities by Indigenous people (s.359A). It is also noted that provisions of the EPBC Act do not affect the operation of s.211 of the *Native Title Act 1993* which provides that holders of native title rights covering certain activities do not need authorisation required by other laws to engage in those activities (s.8 EPBC Act).

Mining operations are also prohibited in Commonwealth reserves unless the Governor-General has approved them and they are carried out in accordance with a management plan (s.355).

The EPBC Regulations regulate a range of activities in Commonwealth reserves, such as camping, use of vehicles and vessels, littering, commercial activities, commercial fishing, recreational fishing and research. The Regulations are applied by the Director of National Parks, subject to and in accordance with the EPBC Act and management plans. The Regulations do not apply to the Director of National Parks or to wardens or rangers appointed under the EPBC Act. Activities that are prohibited or restricted by the EPBC Act may be carried on if they are authorised by a permit issued by the Director and/or they are carried on in accordance with a management plan.

As noted earlier, the Park was declared under the Parks Act, which was replaced by the EPBC Act on 16 July 2000. The EPBC Act has also replaced four other Commonwealth Acts. They were the *Environment Protection (Impact of Proposals) Act 1974*, *Endangered Species Protection Act 1992*, *Whale Protection Act 1980* and *World Heritage Properties Conservation Act 1983*. These other parts of the EPBC Act may also be relevant to the management of the Park and the taking of actions in and in relation to the Park.

In particular, actions that would or are likely to have a significant impact on a specified matter of 'national environmental significance', or environmentally significant actions involving Commonwealth land, will be subject to the assessment and approval provisions of the EPBC Act (Chapters 2 to 4).

The matters of national environmental significance identified in the Act as triggers for the EPBC Act assessment and approval regime are:

- World Heritage properties;
- wetlands of international importance (Ramsar wetlands);
- listed threatened species and communities;
- listed migratory species;
- nuclear actions;
- the marine environment; and
- such further actions as are prescribed by the EPBC Regulations under the Act.

Actions taken on Commonwealth land that have a significant impact on the environment, or actions taken outside Commonwealth land that significantly affect the environment on Commonwealth land, will also be triggers for the assessment and approval regime.

The land component of Booderee is Commonwealth land for the purposes of the EPBC Act and the marine component is a 'Commonwealth marine area'. The taking of an action in the Park that will or is likely to have a significant impact on the environment, or the taking of an action outside the Park that will or is likely to have a significant impact on the environment in the Park, will be subject to the assessment and approvals provisions of the EPBC Act. Responsibility for compliance with the assessment and approvals provisions of the EPBC Act lies with persons taking relevant 'controlled' actions. A person proposing to take an action that the person thinks may be or is a controlled action should refer the proposal to the Minister for the Environment and Heritage for the Minister's decision whether or not the action is a controlled action. The Director of National Parks may also refer proposed actions to the Minister.

The EPBC Act also contains provisions (Part 13) that prohibit and regulate actions in relation to listed threatened species and ecological communities, listed migratory species, cetaceans (whales and dolphins) and listed marine species. Appendix 1 to this plan lists species of significance to the Park, including species that are listed under the EPBC Act.

Civil and criminal penalties may be imposed for breaches of the EPBC Act.

## 1.5 Purpose and Content of a Management Plan

The purpose of this management plan is to describe the philosophy and direction of management for Booderee National Park for the next seven years in accordance with the EPBC Act. The plan enables management to proceed in an orderly way, it helps reconcile competing interest and identifies priorities for the allocation of available resources.

The legal instruments relevant to the plan include:

- *Jervis Bay Territory Acceptance Act 1915*;
- *Australian Heritage Commission Act 1975*;
- *Aboriginal Land Grant (Jervis Bay Territory) Act 1986*;
- *Environmental Reform (Consequential Provisions) Act 1999*;
- *Environment Protection and Biodiversity Conservation Act 1999*;
- *Control of Naval Waters Act 1918*; and
- The 1995 Memorandum of lease between the Wreck Bay Aboriginal Community Council and the Director of National Parks and Wildlife

Under s.367(1) of the EPBC Act, a management plan for a Commonwealth reserve must provide for the protection and conservation of the reserve. In particular, the plan must:

- (a) assign the reserve to an IUCN category (whether or not a Proclamation has assigned the reserve or a zone of the reserve to that IUCN category); and
- (b) state how the reserve, or each zone of the reserve, is to be managed; and
- (c) state how the natural features of the reserve, or of each zone of the reserve, are to be protected and conserved; and
- (d) if the Director holds land or seabed included in the reserve under lease – be consistent with the Director's obligations under the lease; and

- (e) specify any limitation or prohibition on the exercise of a power, or performance of a function, under the EPBC Act in or in relation to the reserve; and
- (f) specify any mining operation, major excavation or other works that maybe carried on in the reserve, and the conditions under which it may be carried on; and
- (g) specify an operation or activity that may be carried on in the reserve; and
- (h) indicate generally the activities that are to be prohibited or regulated in the reserve, and the means of prohibiting or regulating them; and
- (i) indicate how the plan takes account of Australia's obligations under each agreement with one or more other countries that is relevant to the reserve (including the World Heritage Convention and the Ramsar Convention, if appropriate).

A management plan may divide a Commonwealth reserve into zones and assign each zone to an IUCN category. The category to which a zone is assigned may differ from the category to which the reserve is assigned (s.367(2)).

The provisions of a management plan must not be inconsistent with the Management principles for the IUCN category to which the reserve or a zone of the reserve is assigned (s.367(3)).

In line with the aspirations of the Wreck Bay Aboriginal Community for sole management of their Park, this Plan aims to develop and enhance the Community's ability to eventually manage the Park.

## 1.6 IUCN World Conservation Union Category

As outlined in sections 1.4 and 1.5, under the EPBC Act, a Commonwealth reserve or a zone within a Commonwealth reserve must be assigned to an IUCN protected area management category. Commonwealth reserves managed as national parks are normally assigned to IUCN Category II 'national park'. This plan assigns Booderee to IUCN category II. The plan divides the park in to a number of zones and assigns those zones to IUCN Category II, with the exception of the Botanic Gardens zone which is assigned to IUCN category IV 'habitat/species management'.

The EPBC Act (s.347) prescribes characteristics for the IUCN categories. So far as relevant to this plan they are:

- 'national park' – the reserve or zone consists of an area of land, sea or both in natural condition; and
- 'habitat/species management area' – the reserve or zone contains habitat for one or more species.

Section 348 of the EPBC Act requires the EPBC Regulations to prescribe principles for each IUCN category (Australian IUCN reserve management principles).

Appendix 2 sets out the Management Principles for IUCN protected area management categories II and IV, as prescribed in Schedule 8 to the EPBC Regulations. These principles identify the purposes for which the Commonwealth reserve, or zone, assigned to the category are primarily to be managed.

# HOW THE PARK WILL BE MANAGED

## 2. DECISION MAKING

### 2.1 Consulting and Making Decisions

**Aim:** to ensure that management decisions are consistent with the legal framework, are clear and accountable, are based on the best available information and are in accordance with the management plan.

#### Background

Managing the Park involves making decisions on a range of issues and at a range of levels.

The Wreck Bay Aboriginal Community Council, as established under the Land Grant Act, holds inalienable title to the area of Booderee and exercises, for the benefit of the members of the Community, the Council's powers as owner of the area.

The lease agreement is a legally binding agreement between the Wreck Bay Aboriginal Community Council and the lessee, the Director of National Parks. The lease agreement protects the rights of the traditional owners to access and use of the Park and sets out some requirements for the Director of National Parks to manage the Park.

The position of the Director is established under the EPBC Act and includes the powers to give effect to the management plan and to issue permits as set out in the Regulations.

As noted in section 1.4 the Park Board is also established under the EPBC Act. Its functions are to make decisions relating to the management of the Park that are consistent with the management plan in operation for the Park and, in conjunction with the Director of National Parks, to prepare management plans, make decisions on management of the Park consistent with the Plan, monitor management of the Park and advise the Minister on all aspects of future development of the Park. In preparing management plans the Park Board has to make decisions that take into account the interests and aspirations of the traditional owners, the need to protect and conserve the Park, and the interest of the wider community. In making decisions under a management plan the Board and/or the Director of National Parks may be required to balance these interests as well. This is done on advice from the Wreck Bay Aboriginal Community Council and the Director. The Park Board and the Director are also required to operate in accordance with the requirements of the EPBC Act and the provisions of the lease agreement for the Park. The Park Board has to ensure that all of its decisions are based on adequate information. This includes knowing the views of the traditional owners whose interests will

be affected by the decision. This is done on the advice of the Wreck Bay Aboriginal Community Council. The Park Board also has to ensure that it considers the effect of a decision on other interest groups and on the management principles for the Park.

The management plan must be prepared in a process which provides for public input through published invitations for comment before the plan is prepared and when a draft plan has been prepared. Prior to preparing the draft management plan, in July 1997 the Park Board called for the general public, and south coast residents in particular, to submit their suggestions on the management of Booderee National Park. Nearly fifty submissions were received and were taken into account in developing the draft management plan. The Draft Management Plan was published in June 2000 and public comment was again invited, resulting in 66 submissions representing a wide range of interests. These spanned a diversity of levels:

- political;
- Commonwealth, State and local government;
- industry and user groups; and
- individuals.

The latter submissions prompted a wide range of amendments to the plan and thus contributed substantially to the final plan.

The management plan process sets policies and management directions for the Park and involves public consultation and approval by the Park Board, and final approval by the Minister and Parliament.

Park management decisions will be consistent with the prescriptions in this management plan, the lease agreement, the EPBC Act and Regulations, decisions made by the Park Board and take into account the relevant advice of the Council. Park staff make day-to-day decisions about Park operations on behalf of the Director of National Parks.

In accordance with a commitment by the Commonwealth Government in 1995, the Director has funded a Community Liaison Officer position. The officer was established to be the first point of contact for day-to-day consultation with the Community and also for issues that are not specifically identified under the lease or this Plan, to be put to the Council or the Park Board.

## **Prescriptions**

- 2.1.1 Whilst the Director is responsible for the day-to-day management of the Park, through the Park Manager, the Director will be guided by the Board and will consult with, and have regard to the views of, the Chairperson of the Wreck Bay Aboriginal Community Council.
- 2.1.2 The Director will continue to support the Park Board as the authority that makes management decisions and will ensure that the Park Board is able to operate in such a way that it can express its views independently from the Director.
- 2.1.3 In accordance with the lease, Park staff will consult with individual Community members who are not members of the Park Board only with the Council's prior consent.
- 2.1.4 The General Manager of the Wreck Bay Aboriginal Community or his delegate will be the first point of contact for the Park Manager for advice on appropriate consultation procedures with the Community on day-to-day issues that are not specifically identified under the lease or this Plan, to be put to the Council or the Park Board.

- 2.1.5 While recognising the original arrangements with the Council, the method of delivering the Community Liaison Office function will be reviewed during the term of this plan.

## 2.2 IUCN Categorisation and Zoning

**Aim:** to have a categorisation and zoning scheme for Booderee that provides for appropriate use of the Park, while protecting the natural and cultural features.

### Background

The categorisation and zoning scheme takes into account the requirements of the EPBC Act and Regulations including relevant Management principles, regional conservation strategies aimed at conservation of biodiversity through such things as the maintenance of habitat corridors and water quality, protection of endangered species and habitat, and conservation of the marine environment.

As noted in sections 1.4, 1.5 and 1.6 of this plan, the EPBC Act requires a Commonwealth reserve to be assigned to an IUCN category; and allows a management plan to divide a reserve into zones and to assign the zones to an IUCN category, which may differ from the overall category of the reserve. The EPBC Regulations prescribe the Management principles for each IUCN category. The Management principles that are relevant to Booderee are set out in Appendix 2 of the plan (page 133).

Zoning shows how different parts of the Park will be managed to meet overall park management principles. Its aim is to protect core Park values, reduce *ad hoc* decision-making and minimise conflict between different activities that can take place in the Park. It provides a framework for future planning and development.

### Prescriptions

- 2.2.1 The Park is assigned to IUCN category II (national park).
- 2.2.2 The Park is divided into the following zones (refer to Table 2.1 and Figure 2.1):
1. Sanctuary Zone (Zone 1)
  2. Habitat Protection Zones (Zones 2A, 2B and 2C)
  3. General Protection (Use) Zone (Zone 3)
  4. Special Purpose Zones (Zones 4A, 4B, 4C and 4D).
- 2.2.3 All zones other than zone 4C (Botanic Gardens) are assigned to IUCN category II (national park). Zone 4C is assigned to IUCN category IV (habitat/species management area).
- 2.2.4 Activity types not consistent with the Management principles for a zone must not be carried on in that zone (see Table 2.2 – Types of activities appropriate to zones). Where necessary the Director will refuse to issue permits for an activity and will make determinations and impose prohibitions and restrictions under the EPBC Regulations.
- 2.2.5 The zones will also be managed in accordance with the following prescriptions.



## **Sanctuary Zone (Zone 1) – Bowen Island marine area**

The waters to the west of Bowen Island, extending from the Special Purpose Zone boundary 30 metres from the island out to 100 metres seaward from the mean high tide mark will be managed as a Sanctuary Zone. Private boats may enter the zone but boat entry to the zone by commercial operators, other than by permit, will not be allowed. Anchoring will not be allowed. Swimming, snorkelling and SCUBA diving will be allowed in this zone, but not in the adjoining Special Purpose Zone within 30 metres of the island. The Sanctuary Zone will be a no-take zone – fishing and collecting marine organisms will not be allowed except with a permit which will normally be issued only for scientific research requiring specimens from this area.

## **Habitat Protection Zones (Zone 2)**

Habitat protection zones in the Park protect habitat which is rare or endangered, or exposed to particular threats which could impact on its viability. Areas are only placed in this zone if they are discrete and require special management consideration.

### *Habitat Protection zone 2A – Marine*

This area protects marine life in marine and littoral areas of the Park including seagrass beds as indicated in Figure 2.1. It includes all the marine part of the Park apart from the Bowen Island special purpose zone and sanctuary zone, and the special purpose zone at HMAS Creswell.

The greatest risk to seagrasses is increased shading (by increased turbidity), nutrient enrichment causing phytoplankton and epiphytic algal blooms, pollution, and mechanical damage (eg. anchor damage, prop wash, explosive devices). Once disturbed or degraded, seagrass recovery is extremely slow and unreliable. Circular areas cleared of seagrass resulting from seismic tests conducted in the Posidonia meadows off Hole in the Wall in the 1960s remain clearly visible today, with evidence of very slow recovery (about 100 years) (Meehan & West 2000). Best practice principles applied in other conservation areas (eg. the world heritage Great Barrier Reef Marine Park) advocate measures to avoid mechanical damage by limiting anchoring in seagrass beds.

Visitor access is acceptable. Recreational line fishing is allowed subject to restrictions as indicated in section 7.6. Taking of shellfish or disturbing marine vegetation is prohibited. Permits may be issued by the Director of National Parks under the EPBC Regulations for collection of marine organisms for research activities. Commercial activities will be strictly controlled, and will not exceed current levels.

The Director will make a determination under r.12.56 to prohibit anchoring in part of the zone except in the event of an emergency. The no-anchoring part of the zone is generally bordered by the mean high tide mark and the 10 metre depth contour at low tide (which closely follows the edge of the seagrass meadows and some important algal communities), and also includes that part of the zone between 100m and 200m west of Bowen Island. (Anchoring is also not allowed within 100m west of Bowen Island under zones 1 and 4E.) Subject to favourable impact assessment and advice from the Board, installation of moorings for use by commercial operators and visitors may be considered during the life of this plan.

### *Habitat Protection zone 2B – Freshwater Environments*

This zone protects freshwater aquatic life, particularly the habitat of rare and endangered species. It includes Murray's wetland, Steamers Waterholes, Blacks Waterhole, and Ryans Swamp.

No plants or animals can be taken from these areas, except in accordance with a permit issued by the Director to allow for scientific research, or for management purposes. In managing this zone, special consideration will be given to maintaining water quality.

#### *Habitat Protection zone 2C – St Georges Basin Littoral Rainforest*

The littoral rainforest along Ellmoos Road consists of a thin band (50–100m) of vegetation between the road and St Georges Basin, which contains special assemblages of rainforest species which are sensitive to disturbance. Many plants have been removed from this area by collectors, particularly epiphytic orchids and ferns, and a range of highly invasive weeds have been inadvertently introduced which risk the biological integrity of this area. Research activities, including research that involves the taking of native species, which assist or promote conservation may be allowed under a permit issued by the Director. Development will be restricted to infrastructure associated with management activities. Carparks, picnic areas, tracks and possibly toilets will be provided at a number of sites along this area, and these sites may be rotated to minimise their impact. These recreation sites will be excluded from this zone (they will be Zone 4B). The road is also outside this zone, and will be in the General Protection Zone (zone 3).

Public access will not be allowed, other than in the designated areas where facilities are provided, which will be excluded from this zone. Fire will be managed in accordance with the Booderee Fire Management Plan.

### **General Protection (Use) Zone (Zone 3)**

This zone includes extensive terrestrial areas of the Park, where the first priority is management for nature conservation and quiet use and enjoyment. This zone provides for moderate levels of low impact recreational use and infrastructure development consistent with the Management principles for IUCN category II. Park management is restricted to activities such as erosion control, fencing of sensitive or damaged areas, maintenance to existing assets, approved research, control of feral animals or weeds and limited signposting and visitor infrastructure. Low impact tourism activities may be considered, and if considered appropriate may be carried on in accordance with a permit issued by the Director. Consideration may be given to building a Cultural Centre in either this Zone or Zones 4B or 4C. There will be no other new developments in this zone during the life of this Plan. The focus of visitor management will be on maintenance of existing facilities and infrastructure. Some areas identified within this zone may have special protection measures, such as restrictions on management activities like prescribed burning. Where possible, fire will be excluded from particular areas within the zone as indicated in section 2.3.

### **Special purpose Zones (Zone 4)**

Special purpose zones allow for specific activities relating to the particular zone, as listed below.

#### *Special purpose zone 4A – HMAS Creswell and access to Bherwerre Ridge Facility*

This zone includes the HMAS Creswell waterfront areas between the mean high water mark and the Park marine boundary, and the access road to Bherwerre Ridge Facility missile facility. Within this zone is a range of infrastructure including boat ramps, wharves, and moorings. Access by the public will be restricted and will be subject to Defence security arrangements.

#### *Special purpose zone 4B – Park infrastructure*

This zone provides for recreation and infrastructure development including: camping areas with associated facilities; day use areas; roads; boat ramps; the sewerage system; buildings including Defence infrastructure. Infrastructure development and management aims to provide for use within acceptable levels. Some or all of the area required for development of the proposed Cultural Centre may be within this zone. Cycle paths may be considered along existing road reserves in this zone. Management of this area will focus on maintenance of existing facilities and infrastructure. Other than the Cultural Centre, a number of new toilet facilities, and rain shelters, the only new developments in this zone will be for protection and promotion of Park values and visitor safety.

#### *Special purpose zone 4C – Botanic Gardens*

This zone contains the area known as the Booderee Botanic Gardens. Management of the Gardens is covered in chapter 6 of this plan of management. The Gardens contain a diversity of environments and facilities within a compact area. Some of these are specific to the Gardens and might be considered inappropriate elsewhere in the National Park. Accordingly this zone is category IV.

#### *Special purpose zone 4D – Lake Windermere*

Lake Windermere is the potable water storage for Jervis Bay Territory and is therefore unsuitable for public recreation use. There will be no public access to Lake Windermere and its fenced catchment area. The zone contains some infrastructure associated with pumping, testing, and storing water. Activities including contracted services, other than those associated with supply of water to Jervis Bay Territory, will not be allowed in this area. Research that has no impact on water quality may be allowed under a permit issued by the Director.

#### *Special purpose zone 4E – Bowen Island*

The Bowen Island Special Purpose Zone, which includes the whole island and the waters on the western side of the island out to 30 metres from the mean high tide mark, aims to protect nesting seabirds and their habitat from disturbance. This includes the burrow nesting Little Penguin and three species of shearwater, and the Sooty Oyster Catcher which nests on the surface along the high tide mark. The Sooty Oyster Catcher (vulnerable under the NSW Threatened Species Conservation Act) is particularly prone to nest desertion following disturbance, including close approaches by boats. The island also has numerous significant substantially undisturbed midden sites.

This zone is set aside because of the presence of significant species or habitat, and the area's particular significance to traditional owners. Tourism or recreational use (including swimming, snorkelling and SCUBA diving), and commercial activities, are not generally allowed. Research and management visits may be allowed, provided they do not impact on the natural and cultural values of the zone. Access for research and education activities which assist or promote conservation may be allowed in accordance with decisions of the Board and with a permit issued by the Director. Extensive modification will not be allowed. Development will be restricted to infrastructure associated with management activities. Fire will be managed in accordance with the Booderee Fire Management Plan.

- 2.2.6 This zoning scheme does not prevent the future closure of areas under the EPBC Regulations. Regulation 12.23 enables the Director to prohibit or restrict entry to all or part of the Park by persons generally or by a class of persons for any period or times. Possible reasons for such closure include:
- public safety;
  - protection and conservation of the park’s values or facilities;
  - privacy of a cultural event by the traditional owners;
  - interference with the continuing cultural use of the park; and
  - interference with the privacy of other persons.
- 2.2.7 The effectiveness of zoning will be monitored during the period of this Plan. Where essential adjustments are needed for the optimum protection of the Park, such adjustments may be made at the request of the Park Board and in accordance with the requirements of the Act.
- 2.2.8 Development work in any zone will only be approved and permitted in line with the decision making and assessment procedures outlined in sections 2.1 and 2.3 of this

TABLE 2.1: DESCRIPTION OF ZONES				
	Sanctuary zone 1	Habitat protection zone 2	General protection zone 3	Special purpose zones 4
<b>Attributes</b>	Areas of highly significant conservation value and/or cultural value, or otherwise needing special protection.	Areas containing habitat requiring protection.	Extensive areas with pristine and degraded components, with some management access tracks, signs, seats etc. Limited development.	Vary considerably between the five sub-zones.
<b>Management priority</b>	Conservation of natural and cultural heritage values.	Protection of habitat.	Conservation of natural and cultural heritage attributes.	Varies considerably between the five sub-zones.
<b>Visitor experience</b>	Visitors may obtain a sense of the ecological importance of the zone without impacting on its values.	Visitors may obtain a sense of the ecological importance of the zone without impacting on its values.	Appreciation of the area's natural and cultural attributes. Quiet experiences shared with small numbers of visitors.	Varies considerably between the five sub-zones. Visitors not allowed in zones 4D (Lake Windemere) and 4E (Bowen Island).
<b>Development</b>	No new construction works other than for Park management purposes if required to ensure safety or in support of conservation work.	No new construction works other than for Park management purposes if required to ensure safety or in support of conservation work. Also work on the breakwater, sound range cables and navigation markers.	Apart from the possible cultural centre, minor infrastructure developments only. Maintenance of established 4WD tracks, limited sign posting.	Major park infrastructure development, major recreation facilities, major roads, major Park management infrastructure, Naval infrastructure, camping areas, visitor centre, cultural centre. Development inappropriate in zone 4E, except for essential management purposes.

TABLE 2.2: TYPES OF ACTIVITIES APPROPRIATE TO ZONES				
	Sanctuary zone 1	Habitat protection zone 2	General protection (use) zone 3	Special purpose zones 4
Use of Vehicles	Not applicable.	Not appropriate	Only appropriate on roads and tracks available for public use, unless for approved research or management purposes.	Appropriate on existing roads and tracks available for public use except in zone 4A, 4D and 4E.
Walking	Not applicable.	Not appropriate	Appropriate on existing tracks.	Appropriate on existing tracks, except in zones 4A, 4D and 4E.
Camping	Not applicable.	Not appropriate	Not appropriate	Appropriate (tent, caravan), in developed areas with ablution facilities.
Picnicking	Not applicable	Not appropriate	Appropriate with no facilities.	Generally appropriate with facilities in close proximity to vehicles in popular areas. Not allowed in zones 4A, 4D and 4E
Cycling	Not applicable	Not appropriate	Appropriate on existing tracks.	Appropriate on existing roads, except in zones 4A, 4D and 4E.
Swimming, snorkelling and SCUBA diving	Appropriate	Appropriate for marine areas, but not in freshwater except under permit issued by the Director	Not applicable.	Appropriate in zone 4B only. Not allowed in zones 4A (except for Defence purposes), 4C, 4D and 4E.
Boating	Appropriate, but anchoring not allowed.	Appropriate for marine areas, but not appropriate in freshwater except under permit issued by the Director. Anchoring in identified marine areas not allowed. Moorings may be considered. Defence activities include anchoring boats and marker buoys in this zone. These activities are governed by a Defence Environmental Certificate of Compliance (ECC).	Not applicable.	Appropriate in zone 4A for Defence activities associated with HMAS Creswell. Not applicable in zone 4B. Not allowed in zones 4C, 4D and 4E.
Recreational Fishing	Not allowed	Appropriate subject to restrictions.	Not applicable.	Appropriate in marine areas only, other than in zones 4A and 4E, subject to restrictions.

TABLE 2.2: TYPES OF ACTIVITIES APPROPRIATE TO ZONES <i>continued</i>				
	Sanctuary zone 1	Habitat protection zone 2	General protection (use) zone 3	Special purpose zones 4
Commercial Activities	Appropriate if activity is sustainable and has clear conservation benefit, subject to permit conditions. Recreational divers who are customers of commercial dive tours will be allowed.	Appropriate if activity is sustainable and has clear conservation benefit, subject to permit conditions	Appropriate subject to permit conditions	Generally appropriate subject to permit conditions. Not allowed in zones 4A and 4E.
Research	Appropriate under permit	Appropriate under permit	Appropriate under permit	Appropriate under permit

Note: Activities that are generally appropriate to a certain zone are not necessarily appropriate to all areas within that zone.

## 2.3 Evaluation of Proposals

**Aim:** to ensure that park management activities meet legal requirements, conform to the highest practicable environmental standards and maintain the natural and cultural integrity of the Park.

### **Background**

The Director is responsible for managing the Park under the EPBC Act. The Act and Regulations prescribe the way matters that have the potential to impact on the physical and cultural environment, are progressed. In addition, under the lease agreement, the Director is obliged to promote and protect the interests of the Wreck Bay Aboriginal Community, and protect sacred sites, areas and things of significance to the Community, as well as protecting the National Estate values of the area.

As noted in section 1.4 of the plan, actions that could have a significant environmental impact on the Park may 'trigger' the assessment and approval provisions of the EPBC Act and may be 'controlled actions'.

Where the Director considers that a proposed action may be a controlled action in relation to the Park the Director may refer the proposal to the Minister for the Environment and Heritage under section 71 of the EPBC Act for a decision whether or not the action is a controlled action.

Proposed actions in the Park that are not controlled actions under the EPBC Act may still be subject to environmental assessment by the Director and Park staff in accordance with the following guidelines and prescriptions.

### **Guidelines for environmental assessment requirements**

The following guidelines define the evaluation and assessment requirements for park management activities and proposals in the Park:

#### *Category 1*

Category 1 includes those activities that produce little or no impact on the natural and cultural heritage of the Park, and/or have no impact on the interests of the Community. These include routine maintenance; repair and replacement of existing structures in their present form; improvements to mitigate environmental damage; installation of signs; and similar activities. Activities in this category are unlikely to require a formal environmental assessment to be carried out.

#### *Category 2*

Category 2 includes those activities that have an impact on the natural and cultural heritage of the Park at a local level, and/or that may have an impact on the interests of the Community. These include the establishment of new facilities; walking tracks and car parks; the upgrading of facilities; the realignment of existing roads; minor upgrading of roads; maintenance that requires the importing of organic material; prescription burns (refer to section 5.3); any activity in endangered species habitat; some commercial activities; and activities which may result in changes to local water flow and environmental systems. Activities in this category require a formal environmental assessment to be carried out and may require the approval of the Park Board. Generally, such assessments will be carried out by Park staff.



### *Category 3*

Category 3 includes those activities that would be likely to produce a major impact on the natural and cultural heritage of the Park, and/or significantly alter visitor use, and/or are a major departure from the existing facilities or services in the Park, and/or have an impact on the interests of the Community. Included in this category are: major realignment of existing roads or tracks; establishment of major infrastructure; construction of new roads and services; and establishment of new types of commercial activities (see also chapter 8 of this plan for discussion of commercial activities). Detailed environmental assessment is required for all activities in this category. Activities in this category will require the approval of the Park Board and take into account the views of the Council.

### **Defence activities**

Defence conducts a wide range of activities in the Park, mainly in the marine component which is also declared Controlled Naval Waters. Some activities undertaken by Defence in the Park (examples below) may or will need approval, generally of the Park Manager. Activities which fall within the scope of s.354 of the EPBC Act (see page 23) may be undertaken only in accordance with a management plan.

*Defence activities which need approval of the Park Board (generally to be treated as Category 3 for environmental assessment) include, but are not confined to:*

- additions and alterations to any parts of the HMAS Creswell wharf and breakwater, moorings and anchorages, slipway and other existing infrastructure which are in the Park
- refuelling ships at anchor

*Defence activities which need approval of the Director or his delegate (generally to be treated as Category 1 for environmental assessment) include, but are not confined to:*

- water parachute courses with boat recovery
- amphibious landings and loading exercises using small boats
- the temporary deployment of portable equipment
- research within the Park, including the marine component of BNP
- overnight camping at BNP campgrounds
- use of flares over land in accordance with an agreed environmental management plan
- use of underwater explosive signalling devices
- installation of new temporary mooring buoys
- submarine bottoming out, at precise locations to be advised in advance
- asset protection training

## **Prescriptions**

- 2.3.1 As part of the planning process, major proposals and major park management activities will be assessed prior to consideration for approval.
- 2.3.2 Proposals that trigger environmental assessment under the EPBC Act will be referred to the Minister in accordance with procedures under the Act.
- 2.3.3 All other proposals will be dealt with under the following prescriptions.
- 2.3.4 The Park Manager will refer to the Community Council for consideration and advice any proposals that may have a potential impact on the interests of the Community.
- 2.3.5 The Park Manager will refer to the Department of Defence and the Jervis Bay Marine Park for consideration and advice any proposals relating to the marine component of the Park.
- 2.3.6 Environmental assessment of a proposed development or activity not falling under Part 3 of the EPBC Act will be in accordance with the policy and procedures manual for the Park, which will reflect best practice. The Park Manager will refer Category 3 matters to the Park Board.
- 2.3.7 The Park Manager will subject all new major works in the Park to an environmental assessment process that includes an assessment of likely impacts on the recreational use of the Park, the visual attributes of the region and cultural heritage of the site.
- 2.3.8 Park management activities that potentially disturb catchment drainage systems will be subject to an assessment process.
- 2.3.9 Any development or activities, including prescribed burning, which can potentially cause significant disturbance to native vegetation and wildlife or habitat, will be subject to an environmental assessment process.
- 2.3.10 The Director may require that an independent third party carry out the assessment.
- 2.3.11 All development and routine maintenance operations (including construction and rationalisation of facilities, access, structures and services) will conform to the highest practicable standards and be undertaken and developed in a manner appropriate to a national park of international standard.
- 2.3.12 All development proposals and capital works projects will be consistent with the Management principles and the aims set down in this Plan.
- 2.3.13 The Director will develop within one year, and issue, environmental guidelines with which all contractors working in the Park must comply.
- 2.3.14 The Director will provide environmental assessment guidelines to other parties responsible for land management and development in the Jervis Bay Territory.

### 3. TELLING PEOPLE ABOUT THE PARK

#### **Aims:**

- to accurately promote and interpret Booderee as an Aboriginal-owned, jointly-managed national park;
- to increase public understanding and respect for Aboriginal culture, both traditional and modern, and promote a positive attitude towards the needs of Aboriginal people especially those who live at Wreck Bay;
- to increase public awareness of the non-Aboriginal history and development within Booderee and its effect on the environment and Koori people;
- to promote public understanding of the need for nature conservation and for conservation areas;
- to promote a positive attitude toward nature conservation in Booderee;
- to orientate visitors to Booderee and its facilities and safe use; and
- to promote an understanding of the Park's management policies and practices.

#### **Background**

Under the lease agreement the Director is required to promote a knowledge and understanding of, and respect for, the traditions and culture of the Aboriginal owners and to consult with the Wreck Bay Aboriginal Community Council in respect of the formulation of any educational and interpretive policy.

The Wreck Bay Aboriginal Community Council and Community members have a strong interest in cultural interpretation. Community members have long been involved in interpreting the environment of Booderee, both personally from generation to generation, as well as professionally in the Park and in the Shoalhaven region. With the Community's interest and experience in interpretation, Booderee is well placed to become a show-case for cultural interpretation. The proposed Cultural Centre (page 101) will be important in developing this role.

The Park's heritage is extremely diverse and provides for a variety of opportunities for education and interpretation. A range of brochures dealing with orientation, recreational opportunities and the natural heritage of the Park is available from the Booderee Visitor Centre. Static display boards are located throughout the Park. These boards present general environmental, safety and orientation information. They require updating and maintenance.

Ranger guided walks and talks are very popular. They are conducted as formal scheduled programs during the school holidays and are available on written request for schools and community groups at other times. A range of themes and activities are presented during school holiday programs.

A set of Communication Guidelines which outline the main themes and messages to be communicated in the Park was developed in December 1998 in consultation with the Wreck Bay Aboriginal Community Council. It defines what communication is, sets out the general goals of communication at Booderee, identifies the audience and describes the main messages and themes to be communicated. Table 3.1 summarises the audience groups and message themes, and indicates generally the themes to be communicated to each group.

**TABLE 3.1: INTERPRETATION & INFORMATION MATRIX**

Themes	Audiences								
	Visitors in general	Campers	Boat users	SCUBA divers and snorkellers	Swimmers	Fishers	Tour Operators	Territory Residents/ regional population	Students
Koori-owned Park	✓	✓	✓	✓	✓	✓	✓	✓	✓
Joint management	✓	✓					✓	✓	✓
Cultural heritage, values, traditional use	✓						✓	✓	✓
Landforms and geology	✓						✓		✓
Natural values (including feeding wildlife)	✓	✓					✓	✓	✓
Marine ecosystems	✓		✓	✓	✓	✓	✓		✓
Freshwater ecosystems	✓						✓		✓
Fire and fire management	✓						✓	✓	✓
Pests, weeds	✓						✓	✓	✓
Safety	✓	✓	✓	✓	✓	✓	✓	✓	✓
Minimising/distributing impacts	✓	✓	✓	✓		✓	✓	✓	✓
Waste management, recycling	✓	✓	✓			✓	✓	✓	✓
Legislation, rules, Regulations	✓	✓	✓	✓	✓	✓	✓	✓	✓

The Communication Guidelines also outline a strategy for developing and establishing new communication media over the next few years (from December 1998).

The main mechanisms for developing and delivering interpretation, education and information are:

- Steering Committee with WBACC
- Devolve to WBACC
- Maintain sign manual
- Induct and accredit tour operators
- Encourage suitable services by tour operators
- Marketing plan/advertising
- Maintain Communication Guidelines
- Visitor and Cultural Centres
- Self-guided tracks
- Signs
- Brochures
- Guided walks, talks, programs
- Evaluate effectiveness (by visitor surveys)
- Regular review

## Prescriptions

- 3.1 Interpretation, education and information services and facilities will be developed and delivered in accordance the aims expressed above and in accordance with the Booderee Communication Guidelines.
- 3.2 A steering group comprised of Park staff and nominated Community members will oversee these activities.
- 3.3 A Park image reflecting an Aboriginal-owned coastal Park will be maintained across all interpretive and educational material. Together with the Wreck Bay Aboriginal Community Council and the Park Board, the Director will prepare appropriate images and messages to promote the Park as a Koori owned coastal national park and to explain the joint management philosophy.
- 3.4 All new education and interpretation material and interpretation programs will be developed in consultation with the Community and Community members will be encouraged to participate in implementation of the programs.
- 3.5 Some tracks and trails will be upgraded to self-guided interpretation trails, providing educational aspects of cultural and natural heritage management. This will be achieved through the development of track brochures as well as through the use of signs, and possibly construction of boardwalks.
- 3.6 Additional interpretive facilities, mainly signs, may be installed in the Park Infrastructure Special Purpose Zone generally, and at Iluka, Governors Head, Stoney Creek and Moes Rock in particular.
- 3.7 Research and presentation of information on traditional plant use will be continued in the Botanic Gardens, in consultation with the Wreck Bay Community.
- 3.8 Where appropriate, people from the Wreck Bay Aboriginal Community with special expertise will be engaged under contract, or commercial services will be encouraged, to deliver interpretive services in the Park, for example to present school holiday and other programs.
- 3.9 Harriet Parker's grave at Green Patch will be maintained with fencing and interpretive signs.
- 3.10 The landforms and geology of Booderee will be interpreted to park visitors, including the evidence of tsunami events.
- 3.11 Education and interpretation programs will be conducted for Park visitors with an emphasis on the unique aspects of Booderee in relation to plant and animal species and the dangers of feeding wildlife, and encouraging non-exploitative recreational pursuits.
- 3.12 A high priority will be placed upon interpretation of marine and freshwater ecosystems and their dependence upon effective catchment management and water quality.
- 3.13 To protect the Park environment and the safety of visitors, Park staff will undertake an educational campaign aimed at increasing boat users' awareness of the conservation status of the area and the regulations that apply in the Park, including regulations in relation to littering and discharge of sewage and bilge water. This will be done in cooperation with Jervis Bay Marine Park.
- 3.14 The importance of fire and fire management will be interpreted to park visitors.

- 3.15 Interpretive and educational material will be developed to raise community awareness of the problems associated with introduced pests and weeds.
- 3.16 Safety signs may be erected as directed by the Board.
- 3.17 Ongoing public education regarding swimming safety will be through contact with Park staff and written material in Park pamphlets and interpretive signs.
- 3.18 Information will be provided to divers and snorkellers outlining appropriate activities and conduct in Park waters. This will also be through contact with Park staff and written material in pamphlets and interpretive signs.
- 3.19 Information on the Gardens will be provided at the Visitor Centre and at other heavily-used Park sites such as Greenpatch and Cave Beach, to promote visitor use of the Gardens.
- 3.20 Visitors will be provided with more information on the value of correct use of waste recycling facilities.
- 3.21 Information on relevant legislation will be provided to visitors in leaflets and/or on signs as appropriate and in accordance with the legislation.
- 3.22 Park staff will prepare and install signs for use in the Park in accordance with the sign manual and national standards, and legislation.
- 3.23 The effectiveness of the Park communication and interpretation services and facilities will be monitored using visitor surveys. A database will be maintained to store statistics and provide a monitoring tool to determine the effectiveness of ranger guided walks. The database will include numbers of visitors participating in activities, the types of activities visitors are most interested in and visitor feedback on activities.
- 3.24 Place names will be reviewed during the life of the plan. Where practicable, place names will have the original indigenous name next to the current common name.

For further prescriptions regarding commercial tours see section 8.2.

## 4. CULTURAL HERITAGE MANAGEMENT

**Aim:** to protect, conserve and promote the cultural heritage of Booderee.

### Background

The cultural heritage of Booderee includes Koori cultural heritage and the shared cultural heritage of Kooris and non-Aboriginal people.

Kooris played an active and significant role in shaping the heritage of Booderee. Wreck Bay Aboriginal Community members have strong associations with the area of Booderee. This association is evident today in knowledge of sites and significant places, oral history and story-telling, and strong family connections and associations to specific areas of the Park. It is important to Community members that this association is maintained for future generations.

Koori cultural heritage at Booderee includes both tangible cultural heritage such as shell middens and camp hearths, and non-tangible heritage such as oral history and cultural associations with the landscape.

There have been numerous studies on the tangible Koori heritage conducted in the area of the Park (Sullivan 1977, Navin and Officer 1993, Sachs 1997). The majority of these studies focused on recording sites. Other studies have recorded the cultural association and importance of the area to the Koori people of Wreck Bay (Egloff 1981, Egloff, Navin and Officer 1995).

The historic use and occupancy of the area of Booderee includes fishing, whaling, navigation, grazing, tourism, Koori occupation, Defence activities, logging and plantation forestry. Significant shared cultural heritage of the Booderee area includes the historic Cape St George lighthouse; Christians Minde settlement (which is not within the Park); the Christians Minde cemetery (which is within the Park); Harriet Parker's grave at Green Patch; archaeological evidence of a camp used by survivors of the wreck of the convict ship 'Hive'; gun emplacements and associated infrastructure on Bowen Island; an abandoned excavation for a nuclear reactor site near Murrays Beach; and a quarry and railway easement used to cart rocks for the breakwall built in 1915.

Wreck Bay Aboriginal Community members and other Kooris were actively involved in the development of this shared heritage. Community members are proud to have been involved in this shared cultural heritage and it has special significance to them. Kooris not only worked alongside non-Aboriginals in the construction and development of many projects during the early settlement of the area but also developed strong associations and friendships with the early settlers. Kooris assisted with the construction of the lighthouse and were friends with the lighthouse staff. They assisted with the construction of Christians Minde and have family associations with the owners. They assisted with the rescue of people from the 'Hive'.

The historic Cape St George lighthouse was listed on the Register of the National Estate in 1981 and Christians Minde settlement was listed in 1982. The Christians Minde cemetery has been managed in accordance with the wishes of the relevant family. Other significant historical sites have had only limited management, such as fencing for site protection. The gun emplacement

and associated structures on Bowen Island are inaccessible to the public and some of these structures are overgrown with vegetation.

A conservation strategy for the historic lighthouse was prepared in 1993. Significant conservation works have been carried out in accordance with the strategy and a site plan developed for continued work. Work has included stabilisation, fencing, site hardening and upgrading interpretation media.

A timecapsule was installed at Green Patch in July 1998 at the ceremony for the renaming of the Park. The time capsule is to be re-opened when the Park lease expires in 2094.

Interpretation material is available on the shared cultural heritage of the Park.

In 1999, the Council developed a Cultural Education Program aimed at educating young Community people about Koori culture. Parks Australia has supported the development and implementation of the program. The program is a joint project involving the Jervis Bay Primary School, the Wreck Bay people and Booderee National Park. The objectives of the program are in keeping with the joint management philosophy of the Park and the provisions and obligations of the lease agreement.

The Council has a cultural sites management plan.

## **Prescriptions**

- 4.1 The Director will give high priority to developing a cultural heritage management program during the first year of this management plan. The program will be developed jointly with the Wreck Bay Aboriginal Community.
- 4.2 Cultural heritage will be managed in accordance with national and international conventions, including the relevant principles and guidelines of the Burra Charter (the Charter for Places of National Significance of the Australian National Committee of the International Council on Monuments and Sites).
- 4.3 In accordance with the lease, the maintenance of the Koori tradition of the Community will be encouraged.
- 4.4 In accordance with the lease, sacred sites, areas and things of significance to the Community will be protected.
- 4.5 The Director will support a whole of peninsula approach to the management of Koori cultural heritage, in which the Community has an active role in all aspects of management.
- 4.6 To this end, the Director and the Community will negotiate a cost-sharing arrangement for employment of a cultural sites officer.
- 4.7 The Director will work with the Community to develop the skills to manage the Koori cultural heritage of Booderee. This includes the identification, recording and conservation of heritage of Koori cultural significance, including cultural sites, cultural material and oral history.
- 4.8 In consultation with the Community, the Director will establish a register of significant sites, linked to the Park's Geographic Information System (GIS). This register will assist management in identification of sites during planning.



- 4.9 Archaeological sites will be managed to preserve them from disturbance and only essential protection activities will be allowed.
- 4.10 The historic lighthouse and surrounds will be managed in accordance with the Park's conservation strategy and site plan.
- 4.11 To the extent that the Christians Minde cemetery impinges on the Park, the Park will consult with the Ellmoos family and the lessee concerning its management.
- 4.12 A conservation program will be prepared and implemented for the gun emplacements on Bowen Island.
- 4.13 During the life of this Plan, the Director will undertake an oral history project aimed at developing a comprehensive account of the previous land use and management practices in the area now known as Booderee. Such information will assist in park management decision making and also be used for interpretation programs. In keeping with the Community's Cultural Education Program, Wreck Bay people will be actively involved in this project. Where appropriate, the Director will support the Cultural Education Program.
- 4.14 An appreciation of Booderee's cultural heritage will be promoted to visitors and the general public through a range of interpretive measures including but not limited to – guided walks and talks, signage, information boards, brochures and displays in the Visitor and/or Cultural Centre.
- 4.15 Sites will not be actively interpreted without the consultation and approval of the Community and only if the protection of the site can reasonably be guaranteed.
- 4.16 All new major works in the Park will be subject to an assessment process that includes an assessment of impacts on the cultural heritage of the site.

See also Chapter 3 – Telling People About the Park.

## 5.1 Landscape and Geology

**Aim:** to protect the visual attributes of the Park landscape, assist in the restoration of degraded landforms and minimise soil loss and erosion.

### Background

#### *Visual attributes*

The scenic qualities of Booderee are widely recognised and are important to the regional tourism industry and local communities. The landscape encompasses a peninsula of native vegetation, scenic beaches and bays, and magnificent sandstone cliffs.

Comprising of much of Bherwerre Peninsula, all of Bowen Island and the water and seabed at the southern end of Jervis Bay, Booderee offers visitors an opportunity to experience a variety of coastal settings. There are also a number of cultural and historical features such as the historic lighthouse which add to the Park's visual attributes.

Without careful planning, the visual attributes of the Park can be disturbed. In 1969, an area near Murrays Beach was cleared and excavated for a proposed atomic power station. This activity has caused a large scar on the landscape, which is clearly visible. There are also a number of long-established Department of Defence facilities adjacent to the Park which impact on the visual attributes of the region.

#### *Geology, landforms and soils*

Booderee covers approximately 85 per cent of the Bherwerre Peninsula that is underlain with Permian sandstones, siltstone and conglomerates of marine origin. Jervis Bay forms part of the sedimentary rock formation on the southern edge of the extensive Sydney Basin system.

Bedrock is exposed in cliffs, marine platforms and minor exposures in creeks and dune areas. Lake Windermere and Lake McKenzie evolved when streams were blocked by sand. Bowen Island is composed of the same sandstone type as the peninsula and slopes sharply from cliffs on the eastern oceanic side down to sea level rock platforms on the western (Jervis Bay) side. The sandstone on the Island is covered by windblown sand, which supports a range of vegetation communities.

The upper and eastern sections of the Botanic Gardens lie on Permian sandstone covered to various depths by sandy soils. Jervis Bay sandstone rock outcropping is common on the upper sections of the eastern margin of Lake McKenzie.

Other features of geological interest in the Park include fossil sites and exposed stone walls of a substantial quarry used to supply stone for the construction of the HMAS Creswell breakwall in 1915. These are also of historical interest. The role of the landform and geology of Booderee in the evolution of ecological processes and landscape features is also of particular scientific and educational interest.

The New South Wales coast shows dramatic evidence of mega-tsunamis, the best of which occurs along a small stretch of coastline at Jervis Bay. The most compelling evidence of tsunami impact is manifested in the various boulder deposits. The boulders, many of which exceed two metres in diameter, are deposited in an overlapping fashion along clifftops on Beecroft Peninsula, on the deeply fluted rock platform surface at Stoney Creek, within the sheltered confines of the bay at Greenfields Beach, and mixed within sandy deposits dumped on clifftops along the southern shoreline. There is also substantial evidence of older sands washed onto barriers within the bay and sea caves formed at heights above storm wave attack.

The sandy soils of Bherwerre Peninsula and Bowen Island are unconsolidated and depend upon the presence of vegetation cover for stability. When vegetation is removed, the soils and sand dunes are readily eroded by wind, water and physical disturbance. In the low lying western area of the Park the soil is occasionally saturated. In this condition the soils can be easily damaged or eroded by disturbance.

In the marine environment, the shallower sandy section of Jervis Bay is covered by seagrass meadows. Anchoring, mooring and dredging can impact on the seabed and the seagrass meadows.

Erosion in heavy traffic areas has been minimised by the sealing of main roads, construction of bridges and fords over natural watercourses, construction of graded walking tracks and maintenance of unsealed roads through construction of drainage ditches and addition of material in very sandy areas.

In 1992, the Australian Geological Survey Organisation completed a geological survey of the Jervis Bay region.

As noted in section 1.4 of this plan, mining operations are prohibited in the Park except in accordance with a management plan. Mining operations include any operations or activities connected with, or incidental to, the mining or recovery of minerals or the production of material from minerals, including prospecting and exploration for minerals (subsection 355(2) EPBC Act).

Under regulation 12.16 of the EPBC Regulations a person must not introduce soil, stone or other earth materials into the Park or fossick (as defined in the Dictionary to the EPBC Regulations) unless it is provided for by, and carried out in accordance with, a management plan in force for the Park; or is authorised by a permit, or under certain other conditions (regulation 12.06).

## **Prescriptions**

- 5.1.1 Subject to 5.1.2 and 5.1.3 mining operations will not be allowed in the Park.
- 5.1.2 Prospecting, fossicking or exploration for minerals may be carried on for scientific research purposes only and under conditions provided for in Chapter 10 of this Plan.
- 5.1.3 Extraction of gravel and sand from existing pits for Park management purposes may continue. Stockpiled materials (such as sand and sawdust) can be used within the Park.
- 5.1.4 The Director will plan any new developments or park management programs to maintain the high-quality visual landscape attributes of the Park.
- 5.1.5 Resource management activities in the Park will particularly take account of the general

low soil fertility, the drainage characteristics and the inherent instability of certain areas, especially sand dunes and aeolian sands near dune crests.

- 5.1.6 Park staff will rehabilitate eroded and disturbed areas on Park land, including near Sussex Inlet.
- 5.1.7 Fencing and other protective works may be undertaken at the tsunami dune at Steamers Beach.
- 5.1.8 Road fill, sand, mulch and rocks, grass seeds, fertiliser, soil and instant turf may be brought into the Park if authorised by the Director.

See also Chapter 3 – Telling People About the Park.

## 5.2 Marine and Freshwater Management

**Aim:** to protect the clarity and quality of the Park marine waters and freshwater ecosystems.

### Background

Jervis Bay is known for its high water clarity. This is due to the following factors:

- no major rivers flow into the Bay so very little sediment or other river-borne material is deposited;
- the entrance is flanked by rocky coast with no beaches of significant size and the cliffs plunge straight into deep water;
- no heavy industry is present in the surrounding region; and
- a moderate degree of urban development means there is limited sewerage discharge.

Increasing urbanisation in the catchment area and discharge of effluent and stormwater runoff into the Bay could significantly diminish water clarity. Water from Bherwerre Peninsula flows in varying directions – into Jervis Bay, St Georges Basin, Sussex Inlet, Wreck Bay and the Tasman Sea. Park records indicate that Booderee has an average annual rainfall of approximately 1200 mm which is evenly distributed throughout the year. The annual rainfall varies considerably over a long period. Consequently the ground water levels and depth of permanent waterbodies range from very low, after a series of dry years, to very high, after successive wet seasons. In some years, the water table extends to the surface in much of the low-lying western parts of the Park.

Maintaining the high water quality and clarity of Jervis Bay is dependent on land managers around the Bay ensuring that freshwater runoff does not contain pollutants, excessive nutrients or suspended matter. The clear waters of the Bay enable the growth of extensive seagrass beds and support a rich diversity of marine life.

The waters of Jervis Bay are declared naval waters under the *Control of Naval Waters Act 1918* (Cth) and subject to regulations under that Act. The majority of the Bay is also part of New South Wales and is incorporated in the Jervis Bay Marine Park. The Bay is surrounded by the Park, land owned or managed by the Commonwealth for defence purposes and NSW lands. Close cooperation with the NSW Marine Park Authority and NSW land management agencies, Shoalhaven City Council and the Department of Defence is essential for effective, long-term

conservation of the marine waters of the Park. In 1999, a Memorandum of Understanding was signed between the Director and the NSW Marine Parks Authority promoting collaborative management of marine protected areas, including Jervis Bay, which come under both NSW and Commonwealth jurisdiction.

The freshwater systems of the Park range from ephemeral sheet and stream surface flows to permanent and semi-permanent streams, swamps and waterholes. There are several perched lakes. Lake Windermere and Lake McKenzie are closed freshwater dune lakes and the largest permanent waterbodies in Booderee. Both are characterised by considerable cyclical water level fluctuations in response to climatic variations over a period of several years. Alteration to catchment drainage patterns in swamp and wet heath areas can change the structure and composition of the vegetation.

Lake Windermere is the water supply for the Jervis Bay Territory. The lake catchment is located almost entirely within the Park. The implications of water extraction from Lake Windermere as part of the National Park are unclear. As the water supply for the Territory, Lake Windermere is well protected from disturbance, but the impact of water removal on the lake ecosystem is unknown. Water is pumped from Lake McKenzie for watering the Booderee Botanic Gardens and excess water returns by surface and ground water flow.

Regulation 12.14 of the EPBC Regulations prohibits discharging or leaving minerals, mineral waste and any other solid waste, or any noxious, offensive or polluting substance in a Commonwealth reserve other than in an area approved or provided for the purpose by the Director. The regulation also prohibits the release of any liquid or gaseous material in a Commonwealth reserve if the release is likely to: pollute the air, soil, water or a watercourse; or be harmful to native species; or be harmful or offensive to another person.

Regulation 12.15 prohibits using or introducing a pesticide, herbicide or other poisonous substance in a Commonwealth reserve.

## **Prescriptions**

- 5.2.1 The Director will maintain liaison with relevant public health, pollution control and water supply authorities, such as the NSW Environment Protection Authority and will cooperate with the Department of Transport and Regional Services, the Department of Defence, the Wreck Bay Aboriginal Community Council and other Territory land holders to minimise pollution of water bodies through seepage from sewerage systems or runoff from developed areas.
- 5.2.2 As part of this regional cooperation, the Director will participate, where appropriate, in the Shoalhaven catchment management monitoring project and monitor nominated sites within the Park.
- 5.2.3 Pursuant to the Memorandum of Understanding on the management of marine parks to which both Commonwealth and NSW legislation applies, the Director will negotiate with the NSW Marine Park Authority a schedule setting out specific collaborative arrangements covering management of Jervis Bay.
- 5.2.4 No residual chemicals will be used without the Park Board's approval. Chemical use in the Park will conform with relevant Australian standards.

- 5.2.5 Construction of facilities and park management activities will be planned to minimise, and where possible avoid, impact, upon water courses and water quality. This includes maintenance of roads and tracks and grassed areas
- 5.2.6 The Director will review the rates of application and types of fertilisers and grasses that are used in day use and camping areas – particularly those near creeks and water bodies such as Ryans Swamp, Telegraph Creek and Green Patch lagoon with the aim of minimising impacts on water quality and the health of native species of vegetation..
- 5.2.7 Works that have the potential for accelerating sediment flow into Lake Windermere will have mitigation measures incorporated. Burning prescriptions will also be modified where necessary.
- 5.2.8 Park management activities that potentially disturb catchment drainage systems will be subject to assessment as outlined in section 2.3.
- 5.2.9 No artificial surface water interception structures such as dams or weirs will be constructed in the Park except for park management purposes.
- 5.2.10 Appropriate research and monitoring of freshwater quality and ecosystems will continue to be undertaken or permitted in order to develop a more comprehensive body of information on the freshwater resources of the Park and their particular management requirements (and see Chapter 10).
- 5.2.11 The Director will give a high priority to the cooperative development, with other regional management agencies, of a marine monitoring program and a GIS to assist in conservation management of Jervis Bay waters.
- 5.2.12 Lake Windermere will be closed to public access in order to safeguard the potable water supply.
- 5.2.13 The implications of water supply on Lake Windermere as an important part of the Park will be investigated.
- 5.2.14 Alternative sources of water supply, within and outside the Jervis Bay Territory, will be investigated.
- 5.2.15 Swimming will be discouraged within perched swamps, freshwater creeks and waterholes in the Park, and fishing or harvesting of organisms in freshwater bodies is prohibited unless it is part of an approved/permitted research program (see Chapter 10).
- 5.2.16 Water conservation principles will be applied to all water use in the Park (see section 9.2).
- 5.2.17 Water supply upgrades will generally be restricted to existing alignments. However, where it is considered appropriate, for example in order to improve the provision of an adequate water supply to the Territory, deviation from existing alignments may be allowed following assessment under the processes outlined in section 2.3 of this Plan and the approval of the Park Board.

See also Chapter 3 – Telling People About the Park.

## 5.3 Fire

**Aim:** to manage fire within the Park to protect life and property and to maintain, conserve and enhance the biological diversity of species and habitats.

### Background

Fire is a natural feature of the environment of Booderee. Although little is known of the pre-settlement fire regimes of coastal New South Wales, traditional Koori fire management was dynamic and very important in shaping the ecology of the area.

Photographs were taken within the area of the Park in the late 1800s and early 1900s and these suggest that fire was used by settlers as a means of improving pasture potential and gaining access through otherwise impenetrable coastal heath. Considerable environmental problems occurred as a result of this frequent fire regime and the overgrazing by cattle at Bherwerre Beach and Bowen Island, the primary examples being dune destabilisation and changes in vegetation community composition.

In 1972, approximately 80 per cent of the Park was burnt in a wildfire. In response, the then Department of Territories set up permanent vegetation monitoring sites within a range of different vegetation types. In 1976, extensive vegetation surveys for the then Jervis Bay Nature Reserve were completed (Ingwersen 1976) and, in the following year, a vegetation and fire management strategy for the Reserve was commenced. Under this strategy, the Reserve was broken into fire management compartments which were subject to a predetermined but flexible fire regime. Fire interval was the primary variant and was applied in a manner designed to maintain the vegetation in a similar condition to that which was observed prior to 1972. Fire protection requirements for life and property were also major considerations.

At that time, the overall responsibility for fire in the Jervis Bay Nature Reserve and Jervis Bay Territory (including both bushfires and structural fires) rested with the ACT Bushfire Council under the ACT *Bushfire Act 1936*.

In 1992, when Jervis Bay Nature Reserve was included in the area declared a National Park, Parks Australia (then the Australian Nature Conservation Agency) assumed management control including all aspects of fire management.

Currently, Parks Australia takes responsibility for planning and undertaking environmental and prescription burning within Booderee as the responsible land management agency. However, cross border assistance is now formalised allowing the Shoalhaven Fire Control Officer to assume control of a fire where necessary and call in NSW and Territory Brigades to assist. Conversely, Jervis Bay Territory and Booderee brigades may be called upon to respond to fires outside of the Territory.

Prior to 1997, fire management and control within Jervis Bay Territory generally was subject to the ACT *Bushfire Act 1936* and the ACT Bushfire Council. In September 1997, a new Fire Management Ordinance, cited as *Fire Management Ordinance 1997*, replaced the Bushfire Act and applied NSW law by way of applying the NSW Bush Fire Act 1949. In September 2001 the *Fire Management Ordinance 1997* was repealed and replaced by the *Jervis Bay Territory Rural Fires Ordinance 2001*.

The Rural Fires Ordinance 2001 and applied NSW legislation apply to Booderee to the extent that they are not inconsistent with the EPBC Act and EPBC Regulations.

Regulation 12.30 of the EPBC Regulations in particular regulates the lighting of fires in Commonwealth reserves. Under regulation 12.30 a person must not:

- light, maintain or use a fire in a Commonwealth reserve while a total fire ban declared by the Director is in force
- light, maintain or use a fire at any other time except in a portable barbecue or stove, a fireplace provided by the Director, a fireplace of a kind approved by the Director or, a place approved by the Director;
- leave a fire unattended;
- use any fuel for a fire that is prohibited under the management plan for the reserve.

In line with the Shoalhaven City Fire Control Plan, the prescribed bush fire period in the Jervis Bay Territory is from September through to March. Each year a Fire Action Plan is developed which outlines the organisational structure and responsibility of local brigades, as well as establishing procedures and guidelines for responding to fires.

Booderee is well resourced for fire fighting with tankers, light units, a fire shed and incident control room. Volunteer units also operate in the Territory at Wreck Bay, Jervis Bay Village and the Sussex Inlet north leases, where all the lessees participate. NSW Volunteer Bush Fire Brigades, through the Shoalhaven Fire Control Officer, are able to provide additional support if required.

The Director continues to support research into the effects of fire on both plant and animal communities. In 1997, the Park commissioned a consultant to update previous vegetation surveys, re-visit all vegetation monitoring sites established in 1973 and make recommendations on the management of fire for vegetation communities and significant plant species (Taws 1997, 1998). The resultant reports form an important part of the fire planning process for Booderee and recognise that the ongoing use of fire is essential to the survival of some plant communities. The reports make recommendations on fire regimes, fire intensities and fire frequency thresholds for all broad vegetation communities in the Territory.

Exclusion of wildfires has been the prevailing policy in fire management of the Booderee Botanic Gardens. To this end, a fire break is maintained around the perimeter fence and fire hydrants have been installed in some vulnerable areas. While essential to protect the developed Gardens, it may not be ideal for the naturally occurring vegetation, particularly the heath community. Some prescriptive burning to encourage community diversity has been undertaken, with good results. A larger program of fuel reduction in the Gardens, including burning or other methods, is also needed.

A detailed five-year fire management program for the Park was prepared in 1999. The fire management program details fire management strategies and approaches, fire trail requirements, cooperative fire management arrangements and resource and neighbouring land protection considerations. The Community has a complementary fire management plan for their land.



## Prescriptions

- 5.3.1 Fire will be managed in the Park in accordance with the following principles:
- protection of human life and property within Booderee, Jervis Bay Territory and adjacent lands;
  - protection of Koori sites and historic places;
  - protection of threatened species, plant communities of special significance and fire sensitive species; and
  - maintenance of a natural diversity of habitats for native fauna and flora (for example, small patch or mosaic burning).
- 5.3.2 All unplanned fires occurring in Booderee will be suppressed as quickly as possible although a decision may be made to allow an area block to burn out where this can be done safely and without compromising the Park's fire management program or the recommendations from the Vegetation and Fire Management Report (Taws 1998).
- 5.3.3 The fire management program will be reviewed every five years or more frequently as required.
- 5.3.4 Fire will be managed in accordance with the Booderee fire management program, which is prepared within the framework of the management actions outlined in this Plan.
- 5.3.5 In consultation with the Wreck Bay Aboriginal Community Council, the Shoalhaven Rural Fire Service, the Sussex Inlet North lessees, Defence and the Department of Transport and Regional Services, a Fire Action Plan will be produced each year and completed before the start of each fire season. The plan will outline the organisational structure and responsibility of the Jervis Bay Territory and Booderee Fire Brigades, their officers and members and outline the standard operating procedures and guidelines for response to bushfires in Booderee and the Territory, including the Wreck Bay Aboriginal Community.
- 5.3.6 Annual hazard reduction and prescribed ecological burning programs will be prepared detailing all proposed burns and trail maintenance requirements.
- 5.3.7 Copies of the fire management program, Operational Plans and Hazard Reduction Proposals will be submitted to the Wreck Bay Aboriginal Community Council, the Sussex Inlet North lessees, Defence and the Shoalhaven District Bush Fire Management Committee for their comment before adoption.
- 5.3.8 Fire operations will be in accordance with the fire action plan and relevant legislation.
- 5.3.9 A Review of Environmental Factors will be prepared for each proposed burn using standard procedures of the Rural Fire Service as a minimum. The review will assess areas for, amongst other things, critical habitat and rare, endangered or threatened species.
- 5.3.10 Prescribed burning in accordance with the fire management program and consultation with Shoalhaven Fire Control may be carried out in areas of identified high fire risk to protect adjacent properties, cultural resources, recreation facilities, camping areas, fire sensitive vegetation and species diversity.
- 5.3.11 Liaison will be maintained with the Department of Transport and Regional Services, the Shoalhaven Rural Fire Service, neighbouring bushfire brigades, the NSW National Parks

- and Wildlife Service, the Department of Defence and other fire management authorities to ensure coordination for fire management, including suppression of wildfires.
- 5.3.12 The Director will continue representation on the Shoalhaven District Bush Fire Management Committee as established under the NSW *Rural Fires Act 1997*.
- 5.3.13 In consultation with relevant parties, including the lessees, the Park Manager will develop an evacuation plan for the Peninsula.
- 5.3.14 Where appropriate, the Director will seek to involve neighbours in cooperative hazard reduction works for mutual protection.
- 5.3.15 Pre-burn planning will take into account the recommendations from the Vegetation and Fire Management Report (Taws 1998) and include the establishment and assessment of a vegetation monitoring plot or an assessment of any existing vegetation monitoring plots within the proposed burn area.
- 5.3.16 Hazard reduction programs will, wherever possible, aim to maintain a viable proportion of each vegetation type in as old an age class as possible.
- 5.3.17 As far as possible, fire will be excluded from the following fire sensitive areas, in accordance with the recommendations from Taws (1998):
- rainforest communities (priority protection);
  - mangrove and saltmarsh communities (priority protection);
  - swamp sclerophyll forest (contains fire sensitive, rainforest and significant species);
  - wet sclerophyll forest (fire exclusion to allow development of the understorey); and
  - coastal fore-dune grasslands.
- This exclusion policy will be reviewed every five years in accordance with recommendations from Taws (1998).
- 5.3.18 To prevent species decline in dry sclerophyll forest, woodland, heathland, sedgeland and coastal shrubland communities, pre-burn planning will take into account the ecological guidelines set by Taws (1998) regarding minimum and maximum fire period thresholds and fire intensities.
- 5.3.19 Proposed burn sites will be assessed for the reproductive status of the indicator species recommended in Taws (1998).
- 5.3.20 As far as possible, fire will be excluded from all of Bowen Island to allow for the ongoing development and monitoring of rare old-aged heathland and shrubland communities. However, this situation will be reviewed every five years.
- 5.3.21 Weed populations will be deliberately burnt only if fire is known to reduce the target weed populations and a proper post-fire response is planned.
- 5.3.22 Recently burnt areas close to known weed infestations will be monitored for the appearance of weeds in the burnt areas and prompt action will be taken to remove weeds at an early stage.
- 5.3.23 Areas disturbed by fire suppression operations will be rehabilitated as soon as practicable after the fire.

- 5.3.24 The Director will continue to undertake or support research into plant responses to fire and the time individual species need to set viable seed stores (especially for significant plant species).
- 5.3.25 Research will be encouraged into the ecological relationships of fire within the broad vegetation communities in the Park.
- 5.3.26 Unless they are assessed and burnt earlier, a full re-assessment of the 1973–76 vegetation plots will be undertaken in 2002 to continue important research into long-term vegetation changes resulting from an infrequent fire regime.
- 5.3.27 A regular monitoring program of the 1973–76 and 1997 (Taws 1998) vegetation plots will be undertaken.
- 5.3.28 Strategically critical fire trails will be maintained to a high standard of access, safety and stability. Trails of lesser importance will be maintained in a stable and trafficable condition as far as resources permit and in accordance with assigned priorities. Unnecessary trails will be identified, closed and allowed to revegetate.
- 5.3.29 The use of heavy machinery for fire suppression will be avoided in the vicinity of known or suspected Koori sites and historic places, threatened species habitat and areas of significant or sensitive communities vulnerable to disturbance.
- 5.3.30 A policy on use of retardants and fire control chemicals will be prepared and applied during fire operations.
- 5.3.31 A fire report for all fires will be completed and will include maps, a summary of events, description of fire behaviour, weather conditions and other relevant information.
- 5.3.32 Fire reports will be standardised and take into account formats used by other regional agencies such as the NSW National Parks and Wildlife Service.
- 5.3.33 Reports on each fire will be added to the fire history database and mapped onto the Park Geographic Information System (GIS).
- 5.3.34 Records of fires on Wreck Bay Aboriginal Community land will be incorporated into the GIS and the GIS will be made available to the Community for management purposes.
- 5.3.35 Park staff will be trained in fire fighting, fire management planning and incident control as required.
- 5.3.36 In cooperation with the Shoalhaven City Council's Fire Control Officer, the Director will assist the Wreck Bay Aboriginal Community to develop knowledge and skills in fire fighting, fire management and planning and incident control.
- 5.3.37 The wise use of fire will be promoted in visitor use areas to limit the occurrences of unplanned fires.

See also Chapter 3 – Telling People About the Park.

## 5.4 Native Plants and Animals

**Aim:** to protect, maintain and enhance viable populations of native plant and animal species and to maintain the vegetation communities in Booderee National Park.

### Background

Because of its secure protection and rich diversity of species, the Park is considered a population reservoir for the wider region. Other reservoirs in the area include Beecroft Peninsula to the north and Morton National Park to the west. It is important that these reservoirs are linked by a system of habitat corridors to ensure maintenance of species diversity and genetic viability. This is particularly important in the context of Booderee, which is on a peninsula, linked to other areas by a narrow tract of land. The vegetation on the narrow neck of the Bherwerre Peninsula is fragmented by the settlements of Hyams Beach and Erowal Bay/Wrights Beach. The retention of vegetation in the remaining parts of the 'neck' as habitat corridor is important for the long-term protection of the Park. Regional planning exercises for the protection of habitat corridors have involved liaison with the NSW National Parks and Wildlife Service, the NSW Department of Urban Affairs and Planning and the Shoalhaven City Council. The Director, Parks Australia, the Wreck Bay Aboriginal Community and the Park Board have expressed concerns about the possible fragmentation of this corridor and the subsequent impact it may have on the biodiversity of the Park.

Under s 354 of the EPBC Act a person must not kill, injure, take, trade, keep or move a member of a native species in the Park except in accordance with a management plan in operation for the Park.

As noted in section 1.4 of this plan, Part 13 of the EPBC Act prohibits and regulates actions in relation to listed threatened species and ecological communities, listed migratory species, cetaceans (whales and dolphins) and listed marine species.

Appendix 1 to the plan lists species of significance to the Park, including species that are listed under the EPBC Act.

The EPBC Regulations contain provisions that regulate the introduction of animals and plants in to Commonwealth reserves and the cultivation of plants in reserves (regulations 12.19, 12.20 and 12.21). Access to biological resources in the Park may also be affected by regulations under section 301 of the EPBC Act.

### *Flora*

Jervis Bay is at both the southern extremity of the temperate coastal (Sydney) flora and the northern extremity of the cool temperate coastal flora ranges. Therefore, the floristic diversity of Booderee is high with more than 625 native plants being recorded (Taws 1998).

The vegetation communities found in Booderee include relict rainforest, littoral rainforest, forest, woodland, wet and dry heath, coastal scrub and grassland communities. Marine seagrass beds and mangroves are also present.

One plant species – Magenta Cherry (*Syzygium paniculatum*) – listed under Part 13 of the EPBC Act occurs in the Park. A number of other plant species which occur in Booderee have significant

conservation status and warrant special protection because they are at the edge of their range (Taws 1998), have limited distribution or are considered rare (Briggs & Leigh 1996) (see Appendix 1). Management prescriptions should reflect the conservation requirements of these species.

### *Fauna*

Results of past wildlife surveys indicate that the terrestrial and marine native fauna of Booderee is diverse and abundant. More than 30 species of mammals, some 200 species of birds, 37 species of reptiles, 17 species of amphibians and at least 180 species of fish have been recorded in the area of the Park.

A substantial number of animal species listed as threatened or migratory species under Part 13 of the EPBC Act occurs in the Park (see Appendix 1) and in addition several listed marine species, including birds, turtles, and seahorses and pipefish (all species of the family *Syngnathidae*) are either known or expected to occur here. Further species are listed on NSW threatened species schedules (see Appendix 1). Management should reflect the conservation requirements of these species. The Fire Management Program, for instance, provides specific fire management guidelines for each threatened faunal species.

The Park is a stronghold of the endangered Eastern Bristlebird (*Dasyornis brachypterus*), with probably the largest sub-population (approximately one-third of the individuals of the species) occurring on the Bherwerre Peninsula. The Recovery Outline for the Eastern Bristlebird contained in The Action Plan for Australian Birds 2000, and also the NSW NPWS Draft Recovery Plan for the Eastern Bristlebird, propose translocation of some birds to the Beecroft Peninsula.

The Botanic Gardens' boundary fence limits the immigration of large terrestrial mammals from outside the Gardens, although kangaroos and wallabies do occur and thrive in the modified landscape, where they can damage some young plants.

A number of entrenched visitor activities affecting wildlife are inconsistent with the conservation management principles of the Park. These include feeding wildlife, commercial fishing, prawning, collection of bait and shell fish from the rock platforms, collection of specimens for private collections and, in the past, spotlighting the Bowen Island penguin colony. Such activities are currently managed through visitor education and compliance activities.

The management of fauna is closely linked to the management of vegetation communities. Previous fauna management has involved ecological studies on wildlife and populations; feral animal and weed control programs; fire management; and the adoption of a vegetation management program. Marine fauna management has focused on patrol and law enforcement, particularly in relation to commercial or exploitative operations.

### **Prescriptions**

- 5.4.1 Species of plants and animals that are significant to the Park (Appendix 1) will be protected from disturbance.
- 5.4.2 Bioprospecting, the commercial taking of native species of flora and fauna, may be permitted only in consultation with, and with the agreement of, the Council, and in accordance with relevant legislation.
- 5.4.3 The Board and the Director will investigate ways of giving greater protection to cetaceans.

- 5.4.4 The Director will seek to ensure that an appropriate number of Park staff are authorised at all times to act under relevant legislation to protect flora and fauna, including authorisation under the EPBC Act.
- 5.4.5 The Director will seek cross authorisation under relevant NSW legislation as appropriate to allow for cooperation with adjacent management agencies in the protection of flora and fauna.
- 5.4.6 Injured native animals may be removed from the Park by staff for rehabilitation provided an incident report is prepared and forwarded to the Director detailing the nature of injuries, the place of lodgement and the name of the carer and provided the carer and incident report is followed up to determine the results of rehabilitation. In the case of species protected under Part 13 of the Act, they can only be removed subject to compliance with Part 13.
- 5.4.7 Release of native animals in the Park will require the approval of the Director. Animals which originally came from the Park will be given priority, however, subject to an evaluation of suitable genetic, territorial and habitat factors, consideration will be given to the release of other animals. This consideration acknowledges the dangers imposed by the isolation of genetic stocks by the possible fragmentation of adjacent habitat corridors. Only animals which came from the Park will be released in the Park except in special circumstances.
- 5.4.8 If the NSW NPWS Recovery Plan for the Eastern Bristlebird, when completed, proposes translocation of birds from Booderee to the Beecroft Peninsula, the Board will consider the proposal. If approved by the Board, the agreed number of Eastern Bristlebirds may be removed from the Park for that purpose, subject to any conditions set by the Board and the Director.
- 5.4.9 The Director will implement feral animal control programs, weed control programs, prescription burn programs and regular law enforcement patrols in both the marine and terrestrial components of the Park to ensure the protection of the native flora and fauna.
- 5.4.10 Park staff will use fire as a management tool to promote healthy diverse vegetation communities and to maintain a mosaic of different aged habitat for wildlife.
- 5.4.11 Any development or activities, including prescribed burning, which can potentially cause disturbance to native vegetation and wildlife or habitat, will be subject to an environmental assessment process.
- 5.4.12 Vegetation communities considered significant (Taws 1997), including areas of rainforest, heath, foredune and marine communities, will be protected from disturbance.
- 5.4.13 Relict or littoral rainforest will be protected from development. Consideration will be given to closing tracks through these areas if necessary for their protection. Rainforest in the Booderee Botanic Gardens is excluded from this prescription.
- 5.4.14 All sites that have been disturbed and are no longer required for infrastructure will be landscaped and rehabilitated with local genetic stock.

- 5.4.15 The Director and the Park Board will actively promote the maintenance of a regional habitat corridor system. Park staff will liaise with NSW National Parks and Wildlife Service, the NSW Department of Urban Affairs and Planning and the Shoalhaven City Council on this issue.
- 5.4.16 Park staff will continue to liaise with neighbours to encourage the maintenance of native vegetation, to discourage the introduction of non-endemic animal and plant species and to support cooperative approaches to wildlife management across legal boundaries.
- 5.4.17 The Director will work closely with Wreck Bay Aboriginal Community Council and, where appropriate, the Department of Defence and the Department of Transport and Regional Services, to adopt a peninsula-wide approach to conservation management of habitat corridors, significant habitat types and species.
- 5.4.18 Park staff will maintain a GIS which will include information on flora and fauna. The GIS will be used to facilitate efficient data retrieval, mapping and modelling for park management programs. The GIS will incorporate information regarding Wreck Bay Aboriginal Community land and will be available to the Community for management purposes.
- 5.4.19 The body of knowledge on the ecology and biology of species used to facilitate management decisions will continue to be enhanced through conducting and/or supporting appropriate research and monitoring. In consultation with the Council, this includes the use of indigenous knowledge on the natural environment.
- 5.4.20 Projects will be directed at filling knowledge gaps, identifying species that may require specific management programs and identifying the factors influencing the status of rare or endangered species in order to facilitate their protection.
- 5.4.21 Park staff will prepare and implement monitoring and conservation programs for the Green and Golden Bell Frog, the Eastern Bristlebird and other listed species as appropriate, in accordance with the EPBC Act and recovery plans under the Act. Research and monitoring programs will also be prepared and implemented for other species listed under the NSW *Threatened Species Conservation Act 1995*, taking into account the requirements of that Act and any relevant recovery plans under it. In most cases cooperation with the NSW NPWS in conducting research/conservation programs will be necessary, particularly in regard to the seal population at Steamers Head.
- 5.4.22 Injured or otherwise distressed animals may be euthanased by Park staff if necessary.
- 5.4.23 Nuisance animals will be relocated if possible and euthanased if necessary.
- 5.4.24 The Director may take actions concerning a member of a native species that are otherwise prohibited by the Act if necessary for preserving or protecting the Park; or protecting or conserving biodiversity or heritage in the Park; or controlling authorised scientific research; or protecting persons or property in the Park.
- 5.4.25 During the life of this plan, subject to approval by the Board and the Director, a feasibility study will be developed canvassing the issues relating to the re-introduction of locally extinct species.

See also Chapter 3 – Telling people about the park.

## 5.5 Introduced Species

**Aim:** to control pest species, to limit the adverse effects of pests in the Park and to prevent future invasion of new pest species.

### Background

#### *Introduced fauna*

There are 13 known introduced terrestrial vertebrate pest species in the Park – rabbits, foxes, cats, dogs, mice, black rats and seven bird species. With the exception of foxes and black rats around the camping areas, the numbers of these animals in the Park are relatively low.

The ecological impact of introduced species at Booderee has not been quantified. A number of ecological studies and control programs have been carried out in the Park and the Jervis Bay Territory. Black rats were eradicated from Bowen Island in 1993, and in 1979 rabbits were eradicated from Bowen Island when the myxoma virus was released. The home range and use of habitat by foxes, dogs and cats have been measured and, in 1996, a Vertebrate Pest Management Plan was prepared. A study on fox scats identified foxes as an agent in the spread of bitou seed. Rabbit calicivirus was released at HMAS Creswell in 1997 and 1999. In 1999, Park staff commenced a comprehensive fox control program, which is ongoing.

See also Pest and Pathogen Management in Chapter 6 – Booderee Botanic Gardens.

#### *Introduced flora*

A total of 129 species of introduced flora have been identified in the Park (Taws 1998). Some of these are native Australian species that are not indigenous to the area.

Bitou bush (*Chrysanthemoides monilifera*) is the most significant weed in Booderee. Bitou bush has been declared a key threatening process listed on Schedule 3 of the NSW Threatened Species Conservation Act, and under the NSW *Noxious Weeds Act 1993*, Bitou bush has been declared a W2 weed in NSW coastal areas. This means that 'The weed must be prevented from spreading and its numbers and distribution reduced.' Bitou bush, as well as Lantana (*Lantana camara*) and Blackberry (*Rubus fruticosus* agg.), which also occur in the Park, are listed as weeds of national significance by the National Weeds Strategy Executive Committee.

Bitou bush dominates the dune system and occurs in forest, woodland and coastal vegetation communities in Booderee. The continuing spread of Bitou bush into otherwise undisturbed native vegetation is a significant threat, one of the most serious facing the ecological integrity of the Park. Effective control measures for Bitou bush are expensive and labour intensive. An integrated approach involving several methods of control is used in the Park. This approach includes physical (fire, hand pulling), chemical (aerial and on-ground) and biological methods. Control measures have not, to date, proven effective in the control of the weed, which continues to spread through vegetation communities in Booderee.

Other major weeds in the Park include Castor oil plant (*Ricinus communis*), Kikuyu grass (*Pennisetum clandestinum*), Dipogon vine (*Dipogon lignosus*), Madeira vine (*Anredera cordifolia*), Pine wildings (*Pinus* spp.) and Moth vine (*Araujia hortorum*).



Some introduced species, such as Ribgrass and Inkweed, are used by members of the Wreck Bay Community for medicinal purposes. Where these species are non-invasive, they do not present control problems for the Park.

A weed management strategy is developed every 5 years for the Park. The strategy includes profiles of the main weeds, prescriptions for their control and locations of infestations. The strategy is implemented by Park staff and the volunteer group, Park Care. Under the strategy a Bitou bush control plan is also prepared.

See also Weed Management in Chapter 6 – Booderee Botanic Gardens.

Introduction of marine plant and animal pests has been a problem elsewhere and, with ships and boats coming into Jervis Bay, is a risk in the Park.

The EPBC Regulations contain provisions that regulate the introduction of animals and plants in to Commonwealth reserves and the cultivation of plants in reserves (regulations 12.19, 12.20 and 12.21).

Under regulation 12.15 a person must not use or introduce a pesticide, herbicide or other poisonous substance in the Park, other than for a domestic purpose, unless it is provided for by, and carried out in accordance with, a management plan in force for the Park; or is authorised by a permit, or under certain other conditions (regulation 12.06).

## **Prescriptions**

- 5.5.1 Weed and feral pest control will be a high priority and will attract ongoing financial commitment with an identified budget.
- 5.5.2 The approach to weed and feral pest control will be holistic and occur within a framework of the Park's weed and pest management strategies.
- 5.5.3 Pest species may be controlled or eradicated using chemicals, but care will be taken to minimise the effects on non-target species. Chemical use in the Park will conform with relevant Australian standards. Pindone and 1080 may be used to control pest animals. Weeds will be controlled by exclusion, physical removal and chemical control (using minimum-residue chemicals wherever practicable). No residual chemicals will be used without the Park Board's approval. If they become available, suitable safer products will be introduced in place of current chemicals.
- 5.5.4 The weed management strategy will be revised during the first year of this Plan and updated regularly during the life of this Plan. The strategy will detail weed sites, control prescriptions, monitoring actions and resources required. The strategy will be assessed in accordance with the guidelines for assessment procedures.
- 5.5.5 Removal of bitou bush and introduced conifers may require opening of access tracks. Such tracks will be rehabilitated when no longer needed. In this context, 'introduced conifers' includes species which are 'native species' under the EPBC Act but have been introduced to the Park.
- 5.5.6 If feasible, removal of introduced conifers may be undertaken commercially, subject to conditions which will minimise damage to Park resources.

- 5.5.7 The Director will seek to establish a weed management committee for the Territory to encourage a peninsula-wide approach to weed control, particularly on the leases.
- 5.5.8 Weeds identified as noxious under the NSW *Noxious Weeds Act 1993*, in particular those included on the noxious weed list for Shoalhaven City Council, will be given priority for control and/or eradication.
- 5.5.9 The Park will consult with the Community in relation to control of potential medicinal species before control programs are undertaken.
- 5.5.10 The current pest control strategy will be reviewed and expanded to provide a five year plan. The strategy will detail pest control needs and priorities, control prescriptions and monitoring actions.
- 5.5.11 Control measures will be implemented to limit the adverse effects of introduced pests in order to protect the native flora and fauna communities of the Park.
- 5.5.12 If a marine pest is found in the Park, the Director may take action to remove or control it. This will require cooperation with other authorities involved in the Bay.
- 5.5.13 Effective monitoring and recording systems, including appropriate GIS, will be developed for pest and weed information. This will be updated regularly.
- 5.5.14 The Director will undertake or support appropriate further research into the impact and control of introduced species relevant to Booderee.
- 5.5.15 Park staff will liaise with, and provide technical assistance on weed and pest management matters to, the Wreck Bay Aboriginal Community Council, the Department of Transport and Regional Services, the Jervis Bay Territory lessees and the Department of Defence.

See also Chapter 3 – Telling People About the Park.

## 6.

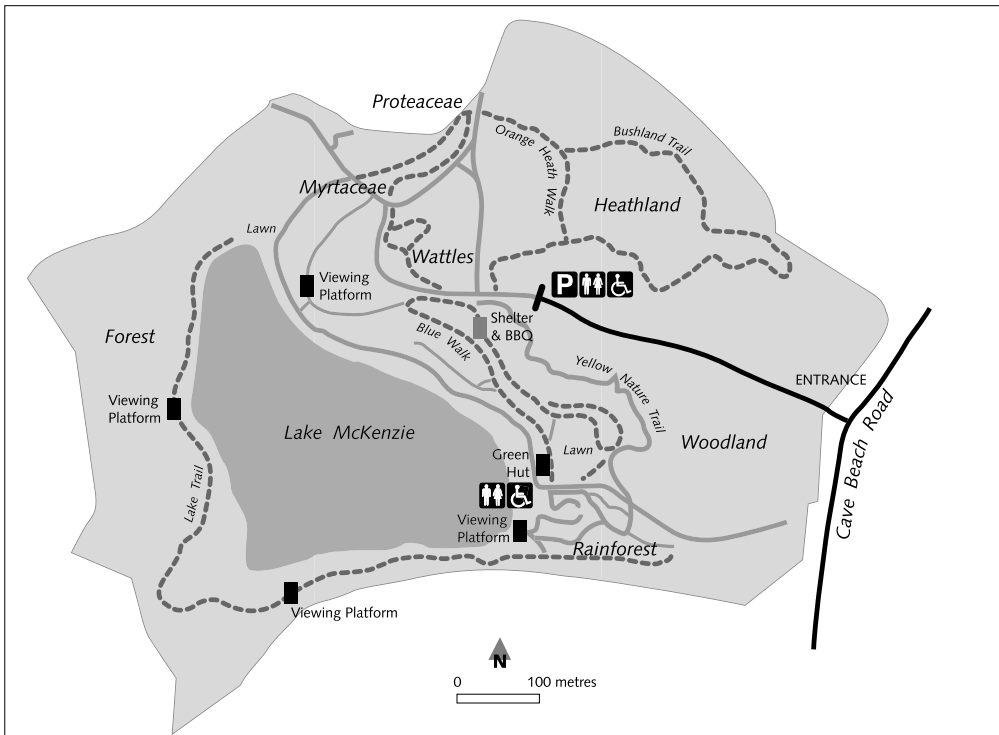
## THE BOODEREE BOTANIC GARDENS

The Booderee Botanic Gardens are unique in being owned by an Aboriginal community and being within a national park. This combination provides exceptional opportunities for development of distinctive themes for the Gardens.

From the mid-1950s, the Booderee Botanic Gardens were developed on the south west-facing slopes around Lake McKenzie, roughly in the centre of the present Gardens site. Expansion was limited by the irrigation reticulation system and available resources. Consequently, large patches of naturally occurring vegetation remain between much of the planted area of the Botanic Gardens and the surrounding area.

From the 1980s, development was on the basis of in-fill rather than expansion further into the bushland. There was also increasing recognition that the bushland area was an important component of the Gardens collection, as it represents the regional flora, contributes to the landscape setting of the developed areas, and provides a transition from the developed areas to the naturally occurring vegetation of the Park. The bushland area also acts as an important buffer between the planted areas and the rest of the National Park, inhibiting the spread of non-local species.

**Figure 6.1:** Booderee Botanic Gardens



Involvement of Wreck Bay Community members in the development of the Botanic Gardens increased with a general raising of the level of activity at the gardens in the late 60s. In 1969, the staff consisted of the Manager, at that time called the Gardener-in-Charge, a leading hand Jack Hampton, and gardeners Jimmy McLeod, Reg McLeod, Arthur McLeod, Dennis Green, Ian McLeod and Max McLeod. Phillip McLeod was also a staff member but at that time he was on National Service serving in Vietnam. All are Wreck Bay people.

Most households from Wreck Bay have had members who worked in the gardens between the late 60s and the present. Community members have made a major contribution to the development of the Gardens through an era where most things were achieved, not with high cost machinery, but with individual and team based effort. Bernie McLeod, a recent appointment, represents the third generation of his family to work at the Gardens.

Partly as a consequence of the history of the development of the Botanic Gardens, and partly in recognition of the value of the retained bushland areas, there are two management areas within the Gardens: the developed area and the natural area. The natural area is the unplanted area and requires lower levels of management, having fewer paths and facilities than the developed area.

Objectives for the Booderee Botanic Gardens are to:

- assemble, display and interpret a representative collection of Australian plants focussing on south-east coastal flora;
- provide opportunity for demonstration of and education about Aboriginal use of plants;
- provide visitor, educational and scientific services; and
- support the use of appropriate local native plants in Booderee and the surrounding region in restoration/rehabilitation.

## 6.1 Living Collection and Natural Vegetation Management

### Aims:

- to manage in particular a living collection that aids the understanding and appreciation of Aboriginal plant use in south-eastern Australia;
- to continue the development of a living collection representative of the flora of the coastal regions of south eastern Australia;
- to continue to develop the Botanic Gardens as an example of good landscaping and horticultural practice;
- to support, where appropriate, recovery programs for threatened flora of the region;
- to retain plant communities within the Botanic Gardens site for conservation, education and wildlife habitat;
- to retain as much as is possible of the natural vegetation of the site, consistent with the development needs of the collection; and
- to retain and manage naturally occurring vegetation to provide a buffer between the planted areas of the Botanic Gardens and the rest of the National Park.

## Background

The Booderee Botanic Gardens have two main components – the planted living collection and the surrounding areas of natural vegetation. The combination of these provides a special landscape quality, and both have value for education and interpretation which is enhanced by their concurrence.

### *The living collection*

The original role of the Gardens as a frost-free annex of the Australian National Botanic Gardens has shifted with the changing legal and administrative arrangements for the Booderee Gardens. Over the last few years there has been an increasing emphasis on more fully representing the regional flora; with the ‘region’ being defined as south east coastal Australia east of the Great Dividing Range.

The living collection of the Booderee Botanic Gardens contains open-ground plantings of some 1600 taxa, which are cultivated and displayed to facilitate the study, conservation, promotion and enjoyment of Australia's plant heritage.

Under s.354 of the EPBC Act a person must not kill, injure, take, trade, keep or move a member of a native species in the Park except in accordance with a management plan in operation for the Park. “Native species” includes any plant species native to Australia, so movement of plants in the Botanic Gardens must be in accordance with a management plan. So, too, must action to destroy native plants which are considered weeds or potential weeds.

Under regulation 12.20 of the EPBC Regulations a person must not cause or allow a plant to be taken into the Park unless it is provided for by, and carried out in accordance with, a management plan in force for the Park; or is authorised by a permit, or under certain other conditions (regulation 12.06).

In the past, planting has focused on three broad themes: taxonomic, horticultural, and ecological and geographic, as described below.

- **Taxonomic:** Displays that illustrate the scientific classification of plants are a traditional and effective way to provide opportunities to compare the similarities and differences within taxonomic groups. Taxonomic displays are valuable tools for teaching and research. Groupings representing the Myrtaceae, Rutaceae, Proteaceae and Mimosaceae families have been established in the Gardens.
- **Horticultural:** As horticultural displays are designed to promote an appreciation of the aesthetic values of native flora in landscaping, cultivars are often included. Booderee Botanic Gardens has a number of registered cultivars in the collection, with emphasis on *Callistemon* and *Grevillea* cultivars.
- **Ecological and geographic:** Displays that group plant species from similar environments or from the same geographic areas provide opportunities for visitors to understand natural communities. Grouping species from similar environments also facilitates management of their horticultural needs. The rainforest section is the main ecological theme developed so far. Its development has taken advantage of the natural features and vegetation of the Gardens, incorporating local *Syncarpia*, *Callicoma*, *Todea* species, and is a major attraction of the Gardens.

Since the 1980s, the Gardens has been increasingly involved in ex situ conservation of threatened species. Another expanding interest is the human use of plants, both past and present.

- **Conservation:** The propagation and cultivation of threatened species provides a source of plants for reintroduction into their natural habitats. A secure ex situ population also provides insurance against total extinction of the species in the event of its wild populations becoming extinct. The rainforest area contains some threatened species from the region, including *Syzygium paniculatum*.
- **Ethnobotanical:** Interpretative programs based on human uses of plants are valuable educationally and culturally. As Booderee is the first major Botanic Gardens in Australia to be owned by an indigenous community, there is great potential to demonstrate traditional and current links with the native flora.

### *The natural vegetation*

The core vegetation of the Botanic Gardens provides well preserved examples of coastal plant communities of the Jervis Bay region which have affinities with the Sydney Basin. Small pockets of rainforest and heath communities are representative of coastal regions ranging from eastern Queensland to southern Victoria.

The natural vegetation of the Botanic Gardens can be divided into three main vegetation communities:

- **Heathland**

The heathland community of the Gardens is predominantly shrub vegetation dominated by *Hakea teretifolia*, *Banksia ericifolia* and *Casuarina distyla* with a diversity of other shrub, sedge and ground cover plants. Other species present include *Xanthorrhoea resinifera*, *Banksia serrata*, *Epacris* spp, *Darwinia* spp. and *Actinotus minor*. The heath occurs on shallow infertile soils.

Where drainage lines are present the heath also contains *Gabnia* sp, the coral fern, *Gleichenia* sp., and rushes, *Restio* spp, together with mats of insectivorous sundews, *Drosera* spp.

- **Woodland**

The dominant trees in this vegetation type are bloodwoods (*Eucalyptus gummifera*), white scribbly gums (*E. sclerophylla*) and *Banksia serrata*. The shrub vegetation includes a number of other heath species. This vegetation type occurs on infertile and drier soils of the Botanic Gardens.

- **Open Forest**

The main tree species are blackbutt (*Eucalyptus pilularis*) and Sydney Peppermint *Eucalyptus piperita* with an understorey of *Acacia longifolia* and *A. suaveolens*. A number of smaller shrubs and ground covering ferns are also present. Other species present include turpentine (*Syncarpia glomulifera*), pigeon berry (*Monotoca elliptica*), Christmas bush (*Ceratopetalum gummiferum*) and she-oak (*Allocasuarina littoralis*). This vegetation type occurs in areas where the soil is deeper and slightly more fertile.

Development of the Gardens has been largely confined to the region north and north-east of Lake McKenzie. In many areas native vegetation has been retained. This provides good examples of local plant communities and species, contributes to the landscape setting of the Gardens, and has educational and aesthetic value. It also forms a buffer between the rest of the National Park

and the developed parts of the Gardens, inhibiting the spread of non-local plants, acts as a buffer to invasive species, and provides wildlife habitat.

Fire and weed management are important in this zone. Firebreaks are maintained along the perimeter fenceline, and fire hydrants have been installed within the fenceline adjacent to Cave Beach Road and at the Windermere gate. A weed control program aims to prevent the spread of undesirable plants into the natural vegetation areas and thence into the Park. (Further details on fire and weed management are given in sections 5.3 and 5.5.)

The diversity and accessibility of the wildlife is a major asset of the Gardens. The natural area provides an extension of the wildlife habitat of the National Park. There are also many local trees remaining in the developed part of the Gardens. In this area, old trees with hollows are retained for wildlife, unless they are a safety threat. Dead or dying smaller trees without obvious habitat value are removed if necessary for developments as well as for aesthetic and safety reasons.

## **Prescriptions**

- 6.1.1 A collections policy which reflects the requirements of the Gardens will be developed for approval by the Park Board. Plants or plant material to enhance the collection may be taken into the Park. Similarly, plants or plant material may be taken from the Park with the written agreement of the Director if they are being sent to another botanic garden or herbarium.
- 6.1.2 Extension and development of plant collections will be undertaken in conjunction with the Gardens' interpretation program.
- 6.1.3 The living displays of the Gardens will continue to present taxonomic, horticultural, ecological, geographic, conservation and ethnobotanical themes to meet the interests and needs of the users of the Gardens.
- 6.1.4 The collection will continue to focus on the flora of the south-eastern Australian coastal region.
- 6.1.5 Species of importance to the local Aboriginal community will be included in plantings in appropriate locations.
- 6.1.6 In consultation with wildlife management agencies, threatened plants from the region will be included in the living collection, and propagation undertaken to support recovery programs, where appropriate.
- 6.1.7 The representation of regional rainforest flora will continue to be increased, with an emphasis on littoral rainforest.
- 6.1.8 The palm, cycad, fern and orchid collections will be consolidated and extended, with an emphasis on species from the region.
- 6.1.9 Plants or propagating material from approved sources may be brought into the Park for the purpose of supplementing the living collection of the Botanic Gardens.
- 6.1.10 All living collection accessions will be represented by voucher specimens in the Australian National Herbarium to verify their identity and for incorporation into the Integrated Botanical Information System (IBIS) database at the ANBG.

- 6.1.11 Regular stocktakes of the living collections will be undertaken and labels and records maintained.
- 6.1.12 Pockets of remnant vegetation and mature trees extending into the developed areas will be retained, where this does not conflict with the purposes of the Botanic Gardens, possible construction of the cultural centre or public safety.
- 6.1.13 The naturally occurring plant communities of the site will be retained and managed for their landscape value and to provide a buffer between the surrounding national park and the planted areas of the Gardens.
- 6.1.14 Locally occurring species of horticultural value suited to coastal soils of low fertility will be identified and displays illustrating their value developed.
- 6.1.15 Development work in the Gardens will only be approved in line with the decision-making and environmental assessment procedures outlined in sections 2.2 and 2.3 of this plan.
- 6.1.16 An inventory of naturally occurring plant species on the site will be undertaken and a species checklist produced.
- 6.1.17 Naturally occurring heathland and sclerophyll forest species and communities will be indicated with signs.
- 6.1.18 Species used by early European settlers in the region will be identified where they naturally occur within the Gardens.
- 6.1.19 The Gardens will buy appropriate mulch for use in the Gardens living collection.

## 6.2 Nursery Management

**Aim:** to ensure the nursery fully supports Gardens activities.

The Gardens nursery is an essential component of the management of the living collection, for propagating plants for planting out in the Gardens, but it has a valuable additional function producing plants for use in the Park and elsewhere in the local region for vegetation restoration and rehabilitation.

Under regulation 12.16 of the EPBC Regulations a person must not introduce soil or other earth materials into the Park unless it is provided for by, and carried out in accordance with, a management plan in force for the Park; or is authorised by a permit, or under certain other conditions (regulation 12.06).

### Prescriptions

- 6.2.1 The nursery will be maintained as a major component of the Gardens operation, and will be improved if necessary to perform its functions adequately.
- 6.2.2 Nursery management will give highest priority to propagating plants for use within the Gardens.
- 6.2.3 The nursery will produce plant material for landscaping purposes (for example plantings at Green Patch, administration office and Visitor Centre) in Booderee National Park.



- 6.2.4 The Gardens will buy potting mix ingredients and possibly other soil and rock from outside the Park.
- 6.2.5 Nursery facilities will be made available to Park Care to assist their work in the Park.
- 6.2.6 To the extent consistent with the preceding requirements, the nursery may propagate plants for vegetation restoration and rehabilitation activities elsewhere in the surrounding region.
- 6.2.7 The possible sale of plants to visitors will be investigated. Such an operation could involve a commercial partnership.

## 6.3 Management of Lake McKenzie

**Aim:** to ensure that Lake McKenzie remains a viable freshwater ecosystem.

### **Background**

The eastern side of the lake and the upper heath areas consist of a thin layer of poorly drained soils over sandstone. Surface flow over the more steeply sloping areas is channelled into natural gullies. Disturbance to these overland flow areas can cause drainage diversions in adjacent areas and washouts to occur.

A series of wet gullies direct surface runoff to Lake McKenzie, a freshwater lake formed when south westerly flowing streams were blocked by sand dunes perched on impermeable weathered clays and bedrock. The Lake level fluctuates with a peak of about 30 metres above sea level. Its depth varies to a minimum depth of 10 metres above sea level. The immediate surrounds of the lake have not been developed due to the fluctuating water levels. Lake water is used to irrigate the living collection.

Surface drainage is quite a significant feature of the Botanic Gardens, due mainly to the shallow soils and underlying rock and also due to the high rainfall at Jervis Bay. A number of natural drainage gullies across the Gardens form microclimates suitable for a number of fern and heath species.

Lake McKenzie is variously described as a perched lake or a dune barrage lake. It could be described as a centrepiece of the Gardens. The lake provides the water for the Gardens as well as being a major landscape feature. Several small streams and springs feed the lake but there are no outflows except that an outflow will occur to Lake Windermere when Lake Mackenzie refills to its maximum height as it did in the mid-seventies. Water is lost from Lake McKenzie through evaporation, seepage and pumping for irrigation in the Gardens. Most of the developed area is within the catchment of the lake, which provides habitat for a range of vertebrate and invertebrate fauna, as well as aquatic and shoreline vegetation. It is regularly used by tertiary institutions for ecological and hydrological studies.

## Prescriptions

- 6.3.1 All activities within the lake catchment area will be managed and monitored to ensure that water quality and lake ecology is protected.
- 6.3.2 Use of chemical pesticides and inorganic fertilisers will be minimised.
- 6.3.3 Research activities will require a permit and researchers will be required to provide copies of all reports and data.
- 6.3.4 Soil and water testing will be undertaken to ensure that the Lake is not being polluted by chemicals and fertilisers used in the Gardens. Water quality information provided by researchers and tertiary institutions will be monitored.
- 6.3.5 Recreational boating will not be allowed and swimming will be discouraged.

## 6.4 Weed Management in the Gardens

### Aims:

- to identify, control and remove potential and current weed species within the Gardens;
- to minimise the introduction of weed species into the Gardens;
- to minimise the risk of garden plantings becoming weeds in the Gardens; and
- to prevent weeds spreading from the Gardens to the rest of the Park.

### Background

Several methods of weed control are employed with varying results. Weeds are controlled using mulching, hand removal and chemical treatment where necessary. Throughout the history of the Botanic Gardens the use of chemicals has been kept to a minimum. Due to the shallow soils and high levels of water run-off, inappropriate chemical use could adversely affect the complex ecosystems of Lake McKenzie and, in the north-west corner of the Gardens, of Lake Windermere.

Weed species of the Gardens include Bitou Bush (*Chrysanthemoides monilifera*), Bladey Grass (*Imperata cylindrica*), Wandering Jew (*Tradescantia albiflora*) and Hydrocotyle. Some introduced weeds date from early settlement days. Some non-local native plants such as Kangaroo Paw (*Anigozanthus* sp) and *Cordyline stricta* have become serious environmental weeds, and occur outside the planted area.

Under Regulation 12.15 a person must not use or introduce a pesticide, herbicide or other poisonous substance in the Park, other than for a domestic purpose, unless it is provided for by, and carried out in accordance with, a management plan in force for the Park; or is authorised by a permit, or under certain other conditions.

## Prescriptions

- 6.4.1 A Weeds Management manual for the Botanic Gardens will be developed during the first year of this plan.
- 6.4.2 Control of major weed species will be continued by exclusion, physical removal and chemical control (using minimum-residue chemicals wherever practicable). No residual chemicals will be used without the Park Board's approval. Chemical use in the Park will conform with relevant Australian standards.
- 6.4.3 Opportunities for potential weed species to be introduced into the Botanic Gardens will be minimised.
- 6.4.4 The potential of non-local species to become weeds will be monitored.
- 6.4.5 Identified weed species, including native species, will be assessed and if appropriate eradicated to prevent invasion of the Park.
- 6.4.6 A program to prevent the spread of non-local species from the Gardens into the rest of the National Park will be continued and regularly reviewed.
- 6.4.7 Gardens staff will cooperate with other Park staff on weed control and management (see section 5.5).

## 6.5 Pest and Pathogen Management

**Aim:** to protect the living and herbarium collections.

### Background

'Pest' refers to introduced animals as well as to native animals that can damage the Gardens, largely by virtue of high numbers generated by the conditions in the Gardens. 'Pest' also refers to pests in the reference herbarium collection.

By virtue of their relative isolation, surrounded by natural bushland, Booderee Botanic Gardens do not suffer from the same levels of pest damage found in Gardens located in more modified regions.

Some species of native animals thrive in the modified landscape, and can damage young plants. Grazing and trampling by kangaroos and wallabies can prevent the establishment of some plants, and high numbers of these animals can become a nuisance in the Gardens. Other grazers include some native duck species as well as rabbits, possums and bandicoots.

Non-native rats can be a problem, particularly in the herbarium and nursery areas.

Vertebrate pest management has concentrated on the prevention of damage from grazing animals, in particular kangaroos and rabbits. Rabbit calicivirus was trialled at HMAS Creswell in late 1997 but, as it has not proved effective in coastal habitats, it has not been introduced to the Gardens. Kangaroo damage has diminished since the erection of the perimeter fence and the protection of young susceptible plants with mesh cages.

Fox baiting is undertaken regularly in the Park, including in the Gardens.

Invertebrate pests are not a major concern at the Gardens, possibly as a result of their relative isolation providing a quarantine effect, the high numbers of resident birds and the selective removal of susceptible plants. Insect pests are largely dealt with using non-chemical control measures with occasional insecticide use where necessary.

Attention to watering regimes has been the main method used to minimise the outbreak and movement of soil-based pathogens. A fungal pathogen, *Armillaria luteobubalina*, has been identified in a section of the Gardens and control strategies are being investigated.

## Prescriptions

- 6.5.1 Programs and practises to minimise the impact of problem or pest species will be reviewed annually.
- 6.5.2 The introduction of pests and pathogens in living and non-living materials will be prevented by regularly reviewing and updating practises and procedures.
- 6.5.3 Pest species may be controlled or eradicated using chemicals, but care will be taken to minimise the effects on non-target species.
- 6.5.4 Plants will be protected from undue damage by grazing animals, while respecting the obligation to protect native fauna
- 6.5.5 The impact of pathogens on the plant collection will be monitored, so controls can be implemented.
- 6.5.6 A management program for the *Armillaria*-affected area will be developed and implemented.
- 6.5.7 Gardens staff will cooperate with the ANBG on pest and pathogen management.

## 6.6 Scientific Use

### Aims:

- to encourage scientific use consistent with the purposes and values of botanic gardens;
- to improve management of the Park through improved scientific knowledge; and
- to provide a resource for scientists, particularly with regard to access to the Gardens' facilities and plant resources and provision of information and plant materials.

### Background

The potential for use of the Gardens for scientific research has not been fully exploited in the past. Living material has been provided to researchers on an *ad hoc* basis and support given to research projects in different disciplines (for example, plant taxonomy, water quality, long-necked tortoise ecology, powerful owl surveys and crustacean surveys). There is scope for more scientific research to occur in the Gardens, and the provision of natural history information and scientific data would benefit the Gardens.

Links with other botanic gardens, especially the ANBG and the regional gardens at Wollongong and Eurobodalla, are vital to maintaining the scientific value of the Booderee Botanic Gardens. These links are discussed in sections 6.9 and 6.10.

Research that involves actions affecting native species and or is carried on for commercial purposes is prohibited by s.354(1) of the EPBC Act unless carried on in accordance with a management plan (see section 1.4 of this plan). Research generally is prohibited by r.12.10 of the EPBC Regulations unless carried on in accordance with a management plan or a permit issued by the Director, or if certain other exceptions apply (regulation 12.06). Access to biological resources for research purposes may also be subject to regulations made under s.301 of the Act.

## **Prescriptions**

- 6.6.1 The plant collection will continue to be managed scientifically with regular use and updates of the database.
- 6.6.2 For additions to living collections, herbarium specimens will be lodged with the Australian National Herbarium for identification.
- 6.6.3 Regular stocktakes will be undertaken and the database will be maintained.
- 6.6.4 Scientific investigation will be encouraged in order to support the role of the Gardens in contributing to the knowledge and understanding of Australia's flora, particularly that of the local region.
- 6.6.5 Priorities for research will be in line with the objectives for the Gardens and Booderee National Park.
- 6.6.6 Access to the facilities and resources of the Gardens, including to take native species, will be provided to approved researchers through the research permit system (see Chapter 10).
- 6.6.7 Permit conditions will require that research outcomes and data, including a plain English resumé of information gained from the studies, be provided to the Gardens.
- 6.6.8 Studies into the natural history of the site will be encouraged.
- 6.6.9 The Gardens will continue to cultivate and display rare or threatened plant taxa and support recovery programs where considered appropriate.
- 6.6.10 The Gardens will foster links with appropriate agencies and organisations relevant to threatened plant propagation and conservation.

## **6.7 Herbarium Management**

The herbarium is an essential component of the scientific functioning and use of the Botanic Gardens.

### **Aims:**

- to maintain a reliable reference set of local and regional flora as a subset of that held and documented in the Australian National Herbarium;
- to present the collection in a form suitable for public examination; and
- to protect the collection from fire, pest and pathogen damage.

## Background

Due to the past relationship with the ANBG, plants grown in the living collection of the Booderee Botanic Gardens are represented by vouchers held in the Australian National Herbarium. From these vouchers accurate and up-to-date names are supplied to the Gardens for use on plant labels. Data from these herbarium voucher specimens, together with records of the living collection contribute to the Integrated Botanical Information System (IBIS) database, maintained by the Australian National Botanic Gardens in Canberra.

The Australian National Herbarium has agreed to support a public reference herbarium at Jervis Bay to be known as the Booderee Botanic Gardens Reference Herbarium.

The Booderee Botanic Gardens herbarium is being developed to represent the flora of the region and other groups of plants under study or growing in the Gardens. It is presented as a reference set of selected duplicates of vouchered specimens held at the Australian National Herbarium in Canberra. Access to the herbarium is available for research purposes and to the visiting public. Currently access to the Booderee herbarium collection is by appointment only. The local flora and the stock held within the Gardens are not yet fully represented in the herbarium collection.

The herbarium collection is housed in the Gardens' administration building without any special provision for its storage, security or public access. Some specimens are stored in archival boxes while others are in plastic sleeves within binders that permit comparative study and frequent handling. It is not envisaged that specimen loans and exchanges will be a feature of the herbarium operation.

The IBIS database, maintained at the ANBG, links the reference herbarium to the living collection of both sites, and makes this information available for research and management purposes and for visitors. Selected views of the IBIS database are available to the public through the Internet.

## Prescriptions

- 6.7.1 The Australian National Herbarium in Canberra will continue to provide the scientific underpinning for correct plant names and the maintenance of voucher specimens for the Gardens.
- 6.7.2 The Booderee Botanic Gardens Reference Herbarium will be populated with specimens which are duplicates of those held at the Australian National Herbarium.
- 6.7.3 Specimens will be collected and incorporated taking into account cooperative arrangements between Booderee Botanic Gardens and the Australian National Botanic Gardens for support for the herbarium and plant identification.
- 6.7.4 Specimens will be acquired through collection by staff members and donations from other institutions and individuals.
- 6.7.5 Records of herbarium voucher specimens and living collections will be maintained on the IBIS database.
- 6.7.6 The Booderee Botanic Gardens reference herbarium will contain duplicate vouchers of the regional flora represented in the living collection.

- 6.7.7 The reference collections will reflect contemporary taxonomy and be curated to appropriate standards.
- 6.7.8 The reference collections will be protected from fire, pest and fungal damage.
- 6.7.9 The reference collections will be available for use by visitors and researchers, on request.
- 6.7.10 Public access to the reference collection will be allowed and controlled, and a record of use maintained.
- 6.7.11 Voucher specimens for plants in the living collection will be deposited at the Australian National Herbarium.

## 6.8 Information, Education and Interpretation

### **Aims:**

- to increase public knowledge, appreciation and enjoyment of Australia's plant heritage, particularly that of the south-east coastal region;
- to promote knowledge and understanding of, and respect for, the relationship of the traditional Aboriginal owners with the land; and
- to provide commercial opportunities for Wreck Bay people in delivering information, education and interpretation services.

### **Background**

The features of the Gardens are diverse and provide numerous opportunities for education and interpretation. As with botanic gardens elsewhere, the major focus is the interpretation of Australia's flora, covering plant relationships, adaptations, specialisations, conservation needs, value as habitat as well as use in landscaping and methods of cultivation.

As Booderee Botanic Gardens are owned by the Wreck Bay Aboriginal Community, there is great potential to demonstrate the Community's traditional and current links with the land and to promote an understanding of, and respect for, their traditions and culture. Under the lease agreement, management has undertaken to do this and to involve the Wreck Bay Aboriginal Community Council when developing educational and interpretive policy. The Botanic Gardens could be an appropriate location for the proposed Cultural Centre.

The first point of contact for information about the Booderee National Park, and Botanic Gardens specifically, is the Booderee Visitor Centre adjacent to the Park entry gate on Jervis Bay Road. Interpretive displays, videos, books, brochures and posters relating to natural and cultural features of the Park, including the Gardens, are available.

The Botanic Gardens offers a range of interpretive services, aimed at the general visitor, school or holiday groups and specialist groups such as bird-watching or plant interest groups, or those interested in traditional Aboriginal use of local plants. The methods of information dissemination and interpretation at the Gardens include:

- an introductory board at the carpark;
- a brochure containing general information on the Gardens and a simple map showing the walking trails and main facilities;

- small signs at selected plants along the walking trails, giving particular information on the plant and/or traditional Aboriginal uses of the plant;
- ranger-guided walks, available on request or as part of school and holiday programs, with information on natural and cultural features of the Gardens;
- guided walks with specialist leaders, with prior arrangement; and
- a section under construction on the Environment Australia website, providing information about the Park generally and Gardens specifically, holiday activities, flora and fauna and other items of interest.

## **Prescriptions**

- 6.8.1 The interpretive services of the Gardens will be reviewed annually and an overall interpretation program will be developed early in the life of this plan.
- 6.8.2 Interpretive services will be developed in conjunction with current and proposed planting plans, to ensure that they are compatible.
- 6.8.3 Opportunities for Wreck Bay people to develop commercial activities in the Botanic Gardens, consistent with the aims and objectives for the Gardens, will be investigated and facilitated (including by the issuing of permits by the Director) as agreed by the Park Board.
- 6.8.4 The Gardens will be actively promoted through a variety of media.
- 6.8.5 The Gardens information brochure will be revised.
- 6.8.6 The Green Hut will be maintained for displays and interpretive material.
- 6.8.7 The Gardens will be considered in seeking a site for the cultural centre.

See also Chapter 3 – Telling People About the Park.

## **6.9 Relationship with Australian National Botanic Gardens (ANBG)**

**Aim:** to maintain an active involvement in matters relating to the joint collections of the ANBG and Booderee Botanic Gardens.

### **Background**

The Booderee Botanic Gardens was established as an annex of the ANBG, and management and administrative functions were the responsibility of the ANBG. The relationship between the ANBG and Booderee Botanic Gardens changed significantly with the transfer of ownership to the Wreck Bay Aboriginal Community and the incorporation of the Gardens in the Park. In order to ensure the continuation of effective working relationships, an agreement between the two Gardens was made in 1997, while the Booderee Botanic Gardens were still part of the ANBG.

Close cooperation between Booderee Botanic Gardens and the ANBG is important as the Booderee collections are part of the national collection of the Australian Flora.



## **Prescriptions**

- 6.9.1 The Booderee Botanic Gardens will continue to maintain a close relationship with the ANBG.
- 6.9.2 An MOU will be negotiated with the ANBG to reflect the scientific, technical and administrative cooperative arrangements to support the ongoing scientific management of the collection.

## **6.10 Relationship with Other Botanic Gardens and Other Institutions**

### **Aims:**

- to develop and maintain links with regional, national and international bodies involved in issues relevant to botanic gardens; and
- to cooperate with other regional institutions, where appropriate, especially vegetation reconstruction and rehabilitation.

### **Background**

Gardens staff have participated in a range of fora including the Australasian Regional Association for Zoological Parks and Aquaria, the International Plant Propagators Society, the Australian Network for Plant Conservation, the Royal Australian Institute of Parks and Recreation, the Society for Growing Australian Plants and the Nursery Industry Association of Australia. Interaction with groups such as these develops and maintains networks and keeps staff abreast of developing trends in the horticultural community.

### **Prescriptions**

- 6.10.1 The Director will take action to increase the Gardens' profile as a significant regional botanic gardens.
- 6.10.2 Gardens staff will be encouraged to participate in relevant associations and societies, where resources permit.
- 6.10.3 The exchange of vouchered plant material, information, expertise and experience will be encouraged.
- 6.10.4 Staff exchange between the Booderee Botanic Gardens and other botanic gardens, particularly the ANBG, will be encouraged and facilitated where appropriate.
- 6.10.5 The Gardens will cooperate with other regional botanic gardens, especially Royal Botanic Gardens (Mt Annan), Wollongong and Eurobodalla, to develop complementary collections and other matters, so far as practicable.
- 6.10.6 To the extent consistent with its primary functions, the Gardens will cooperate with other institutions in the region in vegetation reconstruction and rehabilitation.
- 6.10.7 Links to other botanic gardens and relevant associations will be included on the Environment Australia and ANBG websites.

## 7.1 Visitor Use

**Aim:** to provide for visitor use of the Park that allows for a safe, enriching experience while protecting the Park's natural and cultural values.

### Background

The area of Booderee has an historical association with tourism dating back to 1896 when *Christians Minde* guesthouse on Sussex Inlet provided the first tourist accommodation. Until the 1950s, fishing and walking were the main recreational activities undertaken. By the 1970s, the demand for leisure and recreational activities was increasing markedly. Informal camping at Cave Beach and Green Patch was formalised and basic facilities were provided.

Booderee is now a major destination for a range of recreational pursuits. The area provides for recreational opportunities in scenic natural surroundings close to regional centres. Visitor activities undertaken in the Park include walking, swimming and other beach activities, fishing, camping, boating, sailing, picnicking, nature study, photography, and snorkelling and SCUBA diving. Camping is popular for school and other large groups who also undertake educational activities in Booderee. Demand for sites at Green Patch and Bristol Point for summer far exceeds availability.

The Booderee Botanic Gardens provide a more intensively managed landscape and recreational opportunities generally complementary to those in the rest of the Park.

A number of commercial tours operate in the Park (see section 8.2 – Tours), providing some recreational opportunities otherwise unavailable to most visitors. Commercial tours and other commercial activities are prohibited by s.354(1) of the EPBC Act except if carried on in accordance with a management plan. Regulation 12.36 of the EPBC Regulations also prohibits commercial activities, but applies subject to s.354(1) of the Act and this plan.

Many other recreational activities occur within the Park and requests are occasionally received for permission to conduct other activities, for example rock climbing. New equipment and fashions change with time. For example, mountain bike riding is becoming increasingly popular. Some activities may be considered unacceptable in the Park because they conflict with other Park users, may be carried out more appropriately elsewhere in the region or because they may present unacceptable risks to participants and/or Park staff. For example, rock climbing is an inherently risky activity that has potential to put Park staff and emergency personnel in danger in the event that a climber falls or needs to be rescued.

Visiting the Park, like other wild places and national parks everywhere, can have risks. In the interest of public safety regulation 12.26 of the EPBC Regulations prohibits defined adventurous activities including climbing, abseiling on, and jumping from, rock faces. Accidents most likely to cause injury to people in the Park include: falling from cliffs; boating and swimming accidents; slipping on walking tracks and bridges; being struck by falling trees or branches; and adverse interactions with wildlife. Over-exertion can be a health risk for some people, especially the

elderly or unfit. The Director has general power under r.12.23 of the EPBC Regulations to prohibit access to parts of Commonwealth reserves. Access may be prohibited to everyone or to those engaging in a particular activity, and the Director may exercise this power if an activity is one that involves a risk to public safety.

Other provisions of the EPBC Regulations that prohibit or regulate visitor and recreation activities in the Park are:

- r.12.14 – dumping of waste, littering etc;
- r.12.15 – possession and use of firearms, spears and other devices;
- r.12.27 – public nuisance (including use of certain devices, such as generators, and disorderly, offensive and annoying behaviour)
- r.12.28 – camping (see section 7.2 below);
- r.12.30 – lighting and use of fires (and see section 5.3 above);
- r.12.31 – public gatherings in excess of 15 persons (see 7.1.7 and section 8.4);
- r.12.35 – recreational fishing (see section 7.6 below);
- r.12.41 – use of vehicles (see Chapter 9 below);
- r.12.55 – walking on roads and tracks (see section 7.3 below); and
- r.12.56 – boating (see section 7.5 below).

There have been occasional requests for permission to hold special events in the Park, for example triathlons and fishing competitions.

Visitor facilities provided include camping areas, picnic areas, car parks, a boat ramp, roads, walking tracks and ablution blocks.

In the 1993–94 financial year, a visitor survey concluded that summer visitors tended to rate ‘beaches’ as the prime attraction whereas winter respondents focussed more on the natural aspects of the Park. The most popular activity in the Park overall was sightseeing. Visitor survey results also indicate that, while the proportion of first time visitors and the most frequent visits were the same summer and winter, there was a higher proportion of repeat visitors in winter. Overall, winter visitors are more satisfied with their visit than summer visitors.

There are no accurate figures on the number of Park visitors or the number of visitors to particular sites. Previous estimates suggest that there are approximately 700,000 visits to Booderee per year.

Visitor opportunities in Booderee complement those of the region. The Director is represented on the South Coast Regional Tourism Organisation. Park management also enjoys a close working relationship with other agencies managing tourism, including the NSW National Parks and Wildlife Service, the NSW Marine Park Authority, Tourism NSW and the Shoalhaven City Council. A tourism representative familiar with the Jervis Bay region is appointed as a member of the Booderee Board of Management.

## Prescriptions

- 7.1.1 Strategies to improve management of visitor use during peak periods will be developed and implemented.
- 7.1.2 Management of recreational activities will be guided by the following principles:
- protect the natural and cultural heritage of the Park;
  - promote an understanding and appreciation of the natural and cultural heritage of the Park;
  - are in accordance with the zoning system in section 2.2;
  - do not represent an unacceptable risk to park visitors and/or staff; and
  - are allowed under this Management Plan.
- 7.1.3 The Park will continue to be managed to provide recreational opportunities in scenic natural surroundings, including walking, swimming and other beach activities, fishing, camping, boating, sailing, picnicking, nature study, photography, and snorkelling and SCUBA diving.
- 7.1.4 Recreational activities that are not specifically covered by this Plan but are prohibited or restricted under the EPBC Regulations will require a permit issued by the Director .
- 7.1.5 Assessment of proposed recreational activities that require a permit will be determined by their consistency with the Management principles.
- 7.1.7 Although the EPBC Regulations provide that holding public gatherings in the Park involving more than 15 people will require a permit, no permit will be required in Booderee National Park for public gatherings of up to 50 people. Public gatherings of more than 50 people may be permitted only if their purpose and activities are consistent with the Management principles. Such events (public events, concerts, school visits, parties, and so on) may be considered under similar arrangements to weddings (see Prescription 8.4.1).
- 7.1.8 Rock climbing will not be allowed in the Park, but, in recognition of their special requirements which cannot be met outside the Park, Camp Quality will be allowed to continue their existing abseiling activity in the Park.
- 7.1.9 Tracks specifically designated as walking tracks, for example Telegraph Creek, will be open only to walkers.
- 7.1.10 Some tracks that are available for public use or designated for walkers may be closed if necessary to protect the Park or in dangerous conditions such as high winds and total fire bans.
- 7.1.11 The Director will maintain a working relationship with regional tourism organisations and agencies.
- 7.1.12 A comprehensive visitor monitoring program will be implemented during the life of this Plan. The visitor monitoring program will collect quantitative and qualitative information to assess visitor numbers, characteristics and satisfaction levels.
- 7.1.13 Visitor surveys will also be used to provide information on recreational activities.
- See also Chapter 3 –Telling people about the park.

## 7.2 Camping

**Aim:** to provide a range of camping areas to cater for different visitor needs while protecting the Park environment.

### Background

Camping is the only accommodation offered at Booderee. Consistently with the EPBC Regulations, all camping in the Park is in designated camping areas. Camping areas are located at Green Patch, Bristol Point and Cave Beach. All are within bush settings. The campsites are popular, well patronised and are available in a range of sizes to cater for various visitor experiences. Campsites must be booked in advance and bookings are made through the Booderee Visitor Centre. Bookings for all campsites are taken up to four months in advance. The booking system is aimed at providing equitable access to camping opportunities to the general public. The camping areas and campsites within the Park are determined under the Regulations. Camping outside of a designated camping area is not allowed. The traditional owners may use designated camping areas.

Regulation 12.28 prohibits camping outside a camping area or camping site designated by the Director; and gives the Director power to determine conditions applying to camping, such as the number of people who may camp, how long people may camp for and camping equipment that may be used.

Camping area management requires major use of the Park's resources, through the provision of facilities, maintenance and the administration of the booking system. In 1996, significant works were undertaken at the Green Patch camping and day use areas to improve visitor facilities. In 1999, Cave Beach camping area was upgraded. Cleaning of amenities has been contracted to the Wreck Bay Aboriginal Community Council.

### Prescriptions

- 7.2.1 Camping area management will aim to consolidate existing areas, ensuring adequate and appropriate vegetation screens are in place to maintain and, in some instances, improve the aesthetic and natural integrity of the areas, and to improve cost effectiveness of management.
- 7.2.2 Existing camping areas will be maintained at a high standard to assist visitors in obtaining a quality experience.
- 7.2.3 No further camping areas will be established within the Park during the life of this Plan.
- 7.2.4 No new major facilities will be constructed at any of the camping areas during the life of this Plan. Old barbeques will be replaced progressively as part of the ongoing maintenance schedule.
- 7.2.5 Heat beads and other solid fuels may be used only in, or within 5 metres of, fireplaces provided by the Director. Any such fires not in a fireplace must be contained in a portable barbecue or stove.
- 7.2.6 The Director may make determinations concerning use of camping areas.
- 7.2.7 Camping areas or parts of camping areas will be closed to allow for revegetation or for safety and maintenance work to be carried out. Timing of closures will take into account impact on visitors and on revenue. Closures will be advertised appropriately.

- 7.2.8 The use, visitor satisfaction, environmental impact and cost of maintaining camping areas will be monitored during the life of this Plan. Visitor surveys will be used to assess visitor satisfaction levels, photo points to assess environmental impact and accrual accounting to assess the overall cost of camping area management.
- 7.2.9 The current booking system will be reviewed with the aim of implementing a more user-friendly system for both administration and site allocation.
- 7.2.10 Camping outside designated camping areas will not be allowed.
- 7.2.11 As a high priority the management and care of grassed areas in and around camping areas will be reviewed. This will encompass the types of grasses, the rates of application and types of fertilisers and chemicals that may be applied.
- 7.2.12 In consultation with the Board, as a high priority, the provision of power and lighting at the Bristol Point and Cave Beach amenities will be reviewed to ensure that any system that is in place is reliable and low maintenance.

## 7.3 Walking

**Aim:** to provide access for Park visitors to a variety of walking situations, being cognisant of those with disabilities and taking appropriate opportunities to cater for interpretive, educational and general access standards of walking trails.

### Background

Walking is a popular recreational activity in the Park. Walking tracks in the Park total approximately 30 kilometres and are located in a variety of landscape and vegetation types.

Generally, walking in the Park can be divided into three main categories:

1. walking on formed tracks from designated carparks to developed sites or areas of popular recreational activity;
2. walking on formed tracks from carparks and camping areas to popular scenic and recreational locations or general exploration of the Park environs; and
3. walking on unofficial, non-maintained tracks from carparks to remote sites to access fishing and other recreational areas.

Similarly to the management of camping areas, walking track maintenance uses a significant proportion of Park resources. Some walking trails need remedial works.

As part of a regional integrated management project, a 'round the Bay' walking track has been proposed. The walking track as proposed could include a route or routes through Booderee.

Under r.12.55 of the EPBC Regulations Park visitors may only walk on a road or track that is available for public use or a track for walking provided by the Director. Roads and tracks available for public use will be roads other than those designated by signs as 'restricted access', and tracks designated as public access tracks (r.12.41 and r.12.42). A track for walking provided by the Director is a track that has a sign or other marker displayed near it indicating that the track is for walking is displayed near the track, or it is indicated as a walking track under a management plan (r.12.55(2)).

## Prescriptions

- 7.3.1 Walking track management guidelines and standards for the Park will be developed during the life of this Plan.
- 7.3.2 Tracks will continue to provide access to a wide variety of destinations and environments in the Park, while improving access to a wider cross section of the community. Tracks will be classified according to their standard.
- 7.3.3 No new walking tracks will be developed during the life of this Plan, other than with the Park Board's approval. Construction of new public access and walking tracks in the Botanic Gardens is anticipated. This may include building boardwalks or bridges.
- 7.3.4 The existing walking tracks and fire vehicle access tracks marked and used for walking will be categorised and prioritised for remedial works. They will be repaired or modified to current Australian design standards and some tracks may be upgraded to enable access for physically impaired Park visitors.
- 7.3.5 Tracks will be maintained to a standard that takes into consideration issues of visitor safety and the impact on the environment as outlined in section 2.3.
- 7.3.6 Some tracks will be upgraded to self-guided interpretation trails, providing educational aspects of cultural and natural heritage management. This will be achieved through the development of track brochures as well as through the use of signs, and possibly construction of boardwalks.
- 7.3.7 Booderee's incorporation in the proposed integrated regional 'round the Bay' walking track will be considered by the Park Board. If the Board agrees that the 'round the Bay' walking track will extend through the Park, some new linking walking tracks may be needed.
- 7.3.8 Where consistent with the fire management program (section 5.3), unused tracks that are artefacts of previous land use will be closed and rehabilitated.
- 7.3.9 Closure of tracks will be considered, particularly those that are located in dangerous or sensitive areas.

## 7.4 Swimming, Snorkelling and SCUBA Diving

**Aim:** to provide for a variety of appropriate water-based recreational activities consistent with public safety and management principles of the Park.

### Background

Due to the white sandy beaches and clear waters of Jervis Bay, swimming is a major seasonal recreational activity enjoyed by visitors to the Park. To a lesser extent, St Georges Basin and the Sussex Inlet area are also used for this activity. Sites within the Park are not patrolled by lifesavers. Waves, currents and rips occur at open ocean beaches on the southern perimeter of the Park and present a higher level of risk for swimmers than bayside beaches.

Green Patch, being the most popular swimming area in Booderee, has a boat exclusion zone (swimmers only). This is well defined by marker buoys for public safety reasons and is identified under the zoning scheme for the Park in section 2.2 of this Plan. Caves Beach is a popular swimming and surfing beach.

Lake Windermere supplies drinking water to residents and visitors to the Park and the Jervis Bay Territory. Public access to Lake Windermere is prohibited.

The underwater features, diversity of habitats and water quality of Jervis Bay provide the opportunity for high quality SCUBA diving and snorkelling experiences. Jervis Bay is a very popular area for both snorkelling and SCUBA diving. Easy access and very safe water conditions make Murrays Beach and Green Patch highly suited to these activities.

A number of management issues are associated with snorkelling and SCUBA diving activities in the Park. Dive groups can dominate the boat ramp and other water access points during departure and arrival times, inconveniencing other users. Individual SCUBA divers often do not observe accepted safety procedures when working without a boat, for example lack of appropriate flagged floats. Overuse of the rock platforms and adjacent waters by anglers and SCUBA divers may deplete marine organisms and reduce the value of these areas as dive sites.

Killing, injuring, taking, trading, keeping or moving any member of a native species in the Park is prohibited by s.354(1) of the EPBC Act except in accordance with this management plan. This plan provides for the recreational taking of fin fish and squid only (see section 7.6).

Under r.12.23 of the EPBC Regulations the Director may prohibit a class of persons (for example, SCUBA divers) from entering all or part of the Park. Similarly, r.12.56 enables the Director to determine an area of water where the use of vessels or a class of vessels is prohibited (and see section 7.5 of the plan).

## **Prescriptions**

- 7.4.1 Swimming, snorkelling and SCUBA diving in marine waters of the Park is allowed (except in the Bowen Island Special Purpose Zone), but swimming in freshwater bodies will be discouraged, except at Lake Windermere where public access will be prohibited.
- 7.4.2 SCUBA diving will be managed in accordance with the zoning system in section 2.2. In the interests of public safety, swimming, snorkelling and SCUBA diving near Murrays Boat Ramp will be subject to controls which would apply under the NSW Waterways Act in similar situations.
- 7.4.3 Boat exclusion area at Green Patch will be maintained in accordance with the zoning scheme in section 2.2. A determination may be needed.
- 7.4.4 No artificial reefs or artificial underwater trails will be developed.

See also Chapter 3 – Telling People About the Park.



## 7.5 Boating

**Aim:** to provide for a variety of appropriate water-based recreational activities consistent with public safety and management principles.

### Background

Recreational boating is a popular activity in Jervis Bay. The Park is used by boat owners for: launching and retrieval of boats; access to SCUBA diving and fishing sites; sailing; beach based paddling; jet skiing (and the use of other powered watercraft); and sight seeing activities. The Park waters are also used for overnight mooring of travelling boats and as an emergency shelter for anchoring during inclement weather conditions.

Anchoring of boats has the potential to seriously damage seagrass communities. Rehabilitation of seagrass communities is slow and disturbed areas can take decades to recover.

Regulation 12.56 of the EPBC Regulations prohibits use of vessels in a Commonwealth reserve in contravention of a determination made by the Director. Under r.12.56 the Director may make determinations prohibiting the use of all vessels or a particular type of vessels or specifying conditions on the use of vessels, such as:

- that a vessel is not to be used during a specified period;
- the maximum number of vessels that may be used in a specified area at any time;
- the maximum speed at which a vessel may proceed;
- that a vessel may be launched only from a specified launching area;
- that a vessel may be anchored only in a specified anchoring area;
- that a vessel may be moored only in a specified mooring area; and
- that a vessel may be anchored or moored only in a specified manner.

Discharge of litter, effluent and bilge water from boats using Park waters has potential to damage the Park's marine environment and affect the recreational experience of other users. Owners of travelling boats that anchor overnight are often unaware of the regulations relating to activities such as bringing dogs ashore, lighting fires on beaches and the disposal of litter, bilge water and sewage. Regulation 12.19 of the EPBC Regulations prohibits bringing animals and plants into a Commonwealth reserve, r.12.30 regulates the lighting and use of fires (see section 5.3), and r.12.14 prohibits the disposal of waste, littering, etc.

The use of power boats and personal watercraft (jet skis) in the Park has been increasing. These activities constitute a risk to public safety and diminish the quality of recreational experiences of other visitors in the Park. They also pose a potential threat to wildlife. Marker buoys at Green Patch for public safety reasons define a boat exclusion (swimmers only) area.

The boat ramp at Murrays Beach gives entry to the waters of Jervis Bay. A loading/landing area has been installed at Murrays Beach boat ramp to improve visitor safety. The Summercloud Bay beach access ramp, situated on Wreck Bay Aboriginal Community Council land on the southern perimeter of the Park, is suitable only for smaller vessels.

Use of boats in the marine areas of the Park also needs to comply with the *Control of Naval Waters Act 1918*.

## Prescriptions

- 7.5.1 During the life of this Plan the Director will make determinations on the use of vessels in the Park, including boat types and possible introduction of a speed limit, and anchoring and mooring. In general, provisions for boating will reflect those applying in adjacent NSW waters, except for prescription 7.5.5.
- 7.5.2 Murrays Beach boat ramp will be maintained in accordance with the prescriptions outlined in section 9.3.
- 7.5.3 Installation of moorings for use by approved commercial operators, the Navy and visitors may be considered during the life of this plan. Commercial operators may be required, and the Navy will be required, to meet costs associated with installation, maintenance, and liability.
- 7.5.4 A boat exclusion area will be maintained at Green Patch swimming area .
- 7.5.5 The following activities will not be allowed in Park waters:
- use of jet skis and other motorised personal watercraft;
  - towing of persons behind boats;
  - boom riding; and
  - anchoring in seagrass communities.

See also Chapter 3 – Telling People About the Park.

## 7.6 Recreational Fishing and Collecting Activities

**Aim:** to manage recreational fishing and collecting activities to promote biodiversity conservation.

### Background

Fishing is a major recreational activity in the Park. Fishing from rocks, fishing from boats and beach fishing are all popular. Prawning is also a popular seasonal activity in St Georges Basin, where foreshore access is through the Park.

Recreational fishing is defined for the purpose of this management plan to include recreational fishing from chartered or tour boats.

Recreational fishing and prawning activities pose a number of problems for the effective management of the Park. These include: illegal camping and fires; illegal access; waste accumulation of both offal and litter; erosion and vegetation disturbance; formation of unofficial tracks; local depletion of some marine organisms that are used as bait; and public safety. Rock fishing is particularly dangerous. Between 1984 and 2000, 17 people died in the Park as a result of rock fishing activities. Divers occasionally collect crayfish illegally for personal consumption and it is evident that shellfish and squid are collected illegally. Visitors also remove organisms from rock platforms and beach areas for personal use or to use as bait.

In 1973, Wreck Bay Aboriginal Community concerns over large quantities of fish being dumped after a spear fishing competition resulted in the prohibition of spear guns in the then Jervis Bay Nature Reserve. This policy was maintained following declaration of the Park.

As with wildlife feeding, rangers have addressed the impact of exploiting resources during guided activities. Signs have been installed to encourage visitors not to disturb or remove rock platform organisms.

As noted in section 7.4 of this plan killing, injuring, taking, trading, keeping or moving native species in the Park is prohibited by s.354(1) of the EPBC Act except in accordance with this management plan.

Regulation 12.35 of the EPBC Regulations (which operates subject to s.354(1) of the EPBC Act and this management plan) provides for recreational fishing subject to a number of specified restrictions and to determinations made by the Director. Regulation 12.35 says that a person who is fishing must not use underwater breathing apparatus and must not catch fish using equipment other than lines, hooks and lures. It also prohibits use of live bait or native species as bait (other than a species of fish), leaving a fishing line unattended and cleaning or filleting fish within a marine area. Under r.12.35 the Director may make determinations prohibiting fishing or specifying conditions on fishing such as:

- gear that must or cannot be carried or used;
- the kind of fish that a person may take or must not take;
- the maximum number of fish, or maximum number of a species of fish, that a person may take in a day;
- the minimum or maximum size of fish that a person may take;
- the maximum size of fillets of fish that a person may have in the Park;
- that if a person stores any fish in a freezer, the fish must be stored in bags clearly marked with the name of the person who owns the fish; and
- that tethering of fish (whether or not alongside a boat) is prohibited.

As noted above the operation of r.12.35 is subject to this management plan.

Except for prawning scoop nets being taken through the Park to be used lawfully to take prawns in adjacent NSW waters, r.12.18 of the EPBC Regulations prohibits using or possessing any device that can be used, or is designed, for taking an animal, other than a hook and line for catching fish or a hand-held net designed to land a fish caught on a hook and line, in the Park unless it is provided for by, and carried out in accordance with, a management plan in force for the Park; or is authorised by a permit, or under certain other conditions (regulation 12.06).

Commercial fishing is addressed in section 8.3.

## **Prescriptions**

### **7.6.1 Recreational fishing may be undertaken in the Park:**

- in the manner provided for by a permit or licence held by the fisher to fish in the NSW waters adjacent to the Park; or
- under a permit issued by the Director in accordance with the EPBC Regulations, and subject to the following prescriptions and any determinations made by the Director under r.12.35 of the EPBC Regulations.

- 7.6.2 The Director will make determinations under r.12.35(3) to specify: the kinds of fishing gear which may, or may not, be used; the kind of fish which may be taken; the size limits of fish which may be taken; the number of fish which may be taken; and other matters provided for under that subregulation.
- 7.6.3 The determinations under r.12.35(3) may be guided by restrictions which apply in adjacent NSW waters.
- 7.6.4 Areas for recreational fishing will be in accordance with the zoning scheme as outlined in section 2.2.
- 7.6.5 The management of rock fishing will be reviewed during the first year of this Plan. The Director will close access to dangerous sites in the light of current knowledge and subsequent experience. Safety buoys, except at Moes Rock, will be removed to avoid the appearance of approval or encouragement of rock fishing. Moes Rock is readily accessible to the public whereas the other safety buoys are not legally accessible through the Park.
- 7.6.6 No recreational fishing activities or the capture and/or removal of other organisms will be allowed in freshwater bodies of the Park.
- 7.6.7 Permits will not be issued for the use or possession of spearguns and handspears in the Park.
- 7.6.8 The taking of marine organisms from Park waters is prohibited, other than fin fish (except species listed under the EPBC Act) and squid.
- 7.6.9 The only bait which will be allowed for use in recreational fishing is fin fish or squid or parts of fin fish or squid caught with a fishing line or rod and/or commercially supplied bait. Commercially supplied bait may be brought into the Park.
- 7.6.10 Nets will not be allowed for fishing in Park waters. The only allowable equipment for fishing is either handline or rod and line. As provided in r.12.18(6) of the EPBC Regulations prawning nets may be taken through the Park to be used lawfully to take prawns in adjacent NSW waters.
- 7.6.11 Recreational fishing restrictions, including on equipment and bag and size limits will be reviewed during the term of this management plan.
- 7.6.12 Cleaning of fish at areas of high visitor use will not be allowed except where special facilities are provided.
- 7.6.13 Fishing competitions will not be allowed in the Park. Prohibition will extend to fishing in Park waters while a competitor in a competition arranged outside of the Park and all activities associated with a fishing competition, such as weighing in, accepting entry forms and fees, and so on.
- 7.6.14 The Director will continue to monitor research into the recreational fishery of Jervis Bay, with particular reference to Commonwealth waters.

Commercial fishing is addressed in section 8.3.

## 8.1 General

The Park is a significant source of employment for the Wreck Bay Community, and presents a range of opportunities for expanding the economic base for community development. Parks Australia currently employs twenty members of the Wreck Bay Community, and the Wreck Bay Enterprises currently holds four contracts for management of the Entry Station, road maintenance, horticultural maintenance and cleaning.

The Park lease requires the Director, subject to the Plan of Management, to:

- promote and assist in the provision of resources for the involvement of Community members in the operations and management of the Park;
- contract the Council's services and engage as many Community members as is practicable to provide services in and in relation to the Park; and
- take all reasonably practicable steps to promote the provision of services by the Council for the administration, management and control of the Park and to promote the use of the service of members of the Community in the administration, management and control of the Park.

### Prescriptions

- 8.1.1 Commercial activities may be carried on in the Park provided that they:
- promote an understanding and appreciation of the Park's natural and cultural heritage;
  - are consistent with the aims of sections 8.2–8.4 and the zoning system of this Plan;
  - are consistent with the conservation values and Management principles of the Park; and
  - benefit the Wreck Bay Aboriginal Community.
- 8.1.2 The Park Board will monitor and review the type and level of commercial activities within the Park, and the Park Manager will routinely report to the Park Board on this matter.
- 8.1.3 All commercial activities undertaken in the Park are to be carried out in accordance with a permit issued by the Director in accordance with the EPBC Regulations. Permits will be issued where activities are assessed as appropriate. Operations will be monitored for compliance with permit conditions. This prescription does not apply to contractors simply passing through the Park to work in HMAS Creswell, Jervis Bay village, Wreck Bay or the Ellmoos Road leases.
- 8.1.4 Wreck Bay Aboriginal Community enterprises will be encouraged within the constraints established by this plan.
- 8.1.5 During the life of this Plan, commercial activity permit conditions, allocation procedures and fees for commercial permits will be reviewed.

## 8.2 Tours

**Aim:** to ensure that commercial activities in the Park promote the Park's values and enhance the visitor experience without compromising the Park's cultural or natural heritage or management of the Park.

### Background

With its outstanding cultural, natural and scenic values, and its proximity to major population centres, Booderee National Park provides great opportunity for a range of commercial tour operations. Commercial tour operations are a common feature of national parks and, when properly managed, can enhance the visitor experience, helping visitors to appropriately use, appreciate and enjoy the Park. Well-run commercial tours that operate using ecologically sustainable development principles are also important in that they help Parks Australia to manage visitors in the Park in a sustainable manner, thereby helping protect the natural and cultural heritage of the Park.

Since the declaration of the Park, permits have been issued to commercial tour operators to conduct commercial activities. Permitted operations have mainly been those that enhance the visitor experience and promote appreciation and sustainable use of the natural features and cultural heritage of the Park..

Water-based tours in the Park include fishing charters, commercial SCUBA diving and boat tours. Land-based tours include bushwalking, bird watching, plant identification, cycling, bus tours, picnicking, sightseeing and educational tours.

Commercial tours and other commercial activities are prohibited in the Park by s.354(1) of the EPBC Act except in accordance with a management plan. Regulation 12.36 of the EPBC Regulations also prohibits commercial activities, but operates subject to s.354(1) of the Act and this management plan. Commercial tours in the marine areas of the Park must also comply with the *Control of Naval Waters Act 1918*.

### Prescriptions

- 8.2.1 The Park will provide opportunities for appropriate commercial tour operations, in accordance with the following prescriptions.
- 8.2.2 Commercial tours may be carried on in accordance with a permit issued by the Director in accordance with the EPBC Regulations. A permit may be issued only for activities assessed as appropriate. Tour operations will be monitored for compliance with permit conditions and acted on accordingly.
- 8.2.3 During the life of this Plan, commercial tour permit conditions and permit fees will be reviewed.
- 8.2.4 To be eligible for consideration, commercial tours must satisfy the criteria in 8.1.1.
- 8.2.5 During the life of this Plan the Director, with the advice of the Park Board, may set limits on the type and level of commercial tourism activities in the Park after considering their actual or likely impact on the Park environment and visitor enjoyment of the Park.

- 8.2.6 Where limits are set, opportunities for permits will be reserved for the Wreck Bay Aboriginal Community enterprises and other applications for permits for commercial tours will be assessed on an open competitive basis if more than one tour company is interested in the same commercial tourism opportunity.
- 8.2.7 Selection for commercial tourism opportunities will be based on the applicant's approach and commitment to best practice, how accurate and appropriate the information in their promotional material is, how well they interpret the Park on site, and how they propose to use the Park, as well as the fee quoted. Selection will also include assessing Wreck Bay people's involvement and how the Wreck Bay community will benefit.
- 8.2.8 The Park Board will consider proposals for provision of commercial cultural interpretive services by the Wreck Bay Aboriginal Community only.
- 8.2.9 Proposals for new commercial tour activities will be subject to environmental assessment as outlined in section 2.3.
- 8.2.10 Any proposed new type of commercial tour activity will be referred to the Park Board for consideration and advice to the Director for possible approval. Assessment of proposed commercial tour activities will take in to account whether the activity is allowed elsewhere the region.
- 8.2.11 Preference will be given to commercial tour proposals and opportunities by traditional Aboriginal owners, their business enterprises, joint ventures involving traditional Aboriginal owners, or proposals supported by traditional Aboriginal owners and providing Aboriginal employment.
- 8.2.12 Commercial tour permits may be issued for a period not longer than five years and reviewed annually based on the operator performing satisfactorily.
- 8.2.13 In accordance with the lease agreement, during the life of this Plan the Director will develop and implement an induction scheme for tour operators.
- 8.2.14 Tour operators will be encouraged to use accurate information about the Park and will be required to attend an induction program as part of permit conditions.
- 8.2.15 Relevant provisions of Part 8 of the EPBC Regulations (interacting with cetaceans) will be adopted in permit conditions for all water-based commercial tours.
- 8.2.16 Consideration will be given to installing moorings for commercial tour operations (see section 7.5.3)
- 8.2.17 Commercial SCUBA diving tours will be allowed only in accordance with a permit issued by the Director in accordance with the EPBC Regulations and subject to any relevant determinations made by the Director under the Regulations.
- 8.2.18 The Park Board will determine a cap for the numbers of charter fishing operators to operate in the Park, and the number, size or capacity of vessels and permit conditions including operating times. If the interest in permits exceeds the number of permits available, permits will be allocated competitively according to the degree to which applications meet the criteria of 8.1.1.

8.2.19 If a permit has been issued for tourism activities and the company or business is sold or transferred to another owner, the permit will be transferred or cancelled. Where the preconditions in 8.2.4 for that permit being approved are maintained, with no variation proposed, on application the permit may be transferred to the new owner for the term of the original permit. Where the new owner does not satisfy the above criteria, the permit will be cancelled and an open or select competitive application process will be used to allocate the available permit.

8.2.20 The Park will collaborate with both Jervis Bay Marine Park and NSW NPWS in regard to the issuing of commercial permits to ensure, so far as possible, a consistent approach to management of commercial operators taking account of the specific requirements of Booderee National Park.

See also Chapter 3 –Telling people about the park.

## 8.3 Commercial Fishing

### **Aims:**

- to exclude commercial fishing activities within the Park's marine waters to ensure that marine species are not exploited or threatened to the detriment of those populations or the populations of any dependant species;
- to maintain species biodiversity within Park waters; and
- to conserve and manage the Park waters as significant examples of marine and estuarine ecosystems.

### **Background**

As noted earlier in this plan, the taking etc of native species and the taking of actions for commercial purposes are prohibited in the Park by s.354(1) of the EPBC Act except in accordance with a management plan. This will include all commercial activities in the Park which involve the killing, injuring, taking, trading, keeping or moving of a member of a native species, such as baitfishing activities, scallop dredging, aquaculture. It will also include access through the Park for beach hauling. Fishing charters and guided fishing tours for recreational fishing will be allowed as tour operations under section 8.2, and anyone fishing from these boats will be subject to the provisions for recreational fishing (see section 7.6).

Regulation 12.34 provides for commercial fishing to be carried on in a Commonwealth reserve only if a person is authorised by a law of the Commonwealth, a State or self-governing Territory, or a permit issued by the Director, and subject to determinations made by the Director with regard to fishing gear and fishing practices. Regulation 12.34 operates subject to s.354(1) of the Act and a management plan.

In NSW terms, Jervis Bay does not support a large commercial fishing industry. A small number of commercial vessels are based in the local area and other commercial operators visit the area from as far away as Wollongong, as seasonal abundance and migrations of fish dictate. However, the ocean-going tuna fishing fleet, ranging from as far away as South Australia, considers Jervis Bay to be an important source of baitfish for its industry.



As provided in section 2.2 of the plan, the Park, including the marine component, is assigned to IUCN Category II (national park). The Management principles for this category (see Appendix 2) include that its *native species should be perpetuated in as natural state as possible and that management should seek to ensure that exploitation or occupation inconsistent with these principles does not occur.*

With the declaration of the Commonwealth-managed Jervis Bay National Park in 1992, the marine waters of the Park came under the Parks Act. Commercial fishing without a permit has not been allowed since then. The Commonwealth issued permits in 1992 to four professional fishermen in accordance with the Regulations under the Parks Act to undertake commercial fishing operations in the marine waters of the Park. The non-transferable permits, which were constrained by a number of conditions, were issued in recognition of these fishermen's long history of use of the area. The number and extent of operations under these permits has declined progressively. No new permits for commercial fishing have been issued since the EPBC Act came into effect in July 2000. The continuation of commercial fishing in the Park is not consistent with the Management principles for the Park.

Some permits have been issued to give commercial fishers access to the NSW waters off Bherwerre Beach or via Murray's boat ramp. As a part of these permits, the fishers have been able to access these waters via Park roads or trails and take their catch back through the same access points. These fishing operations, although relying on NSW waters, often impinge on the Park.

No permits have been issued for the bait fishery since the Park was declared in 1992. Pending preparation of this Plan, commercial tuna bait fishing operations have been undertaken in Park waters without permits. The wide range of species dependent on bait fish includes marine birds (particularly Little Penguins), marine mammals (seals, dolphins and toothed whales), and predatory fish. The Little Penguin colony of the Park, on Bowen Island, has been rated as one of the two most important in Australia. During the breeding season the penguins have a small foraging range of around 5km from Bowen Island, and a particular dependency on the waters of Jervis Bay. The fish targeted by the commercial bait fishery and the penguins coincide in location, time and size range.

In 1981, the dredging of scallops in Commonwealth waters was prohibited. This fishery was the subject of many studies leading to this prohibition. No permits are issued to commercial scallop harvesters in Commonwealth waters.

## **Prescriptions**

- 8.3.1 Commercial fishing and associated activities such as access through the Park for commercial fishing will be prohibited in the Park. Existing permits will be cancelled by the Director on commencement of this management plan.
- 8.3.2 The Director will continue to monitor fisheries research on the abundance, age and population dynamics of the major baitfish species and the major commercially caught fish and squid species within Jervis Bay.
- 8.3.3 The Director will continue to undertake or support the monitoring of population dynamics of species dependent on baitfish, fish and squid within Jervis Bay.

## 8.4 Other Commercial Activities

**Aim:** to provide for commercial activities in the Park that enhance visitor experience and promote the natural and cultural heritage of the Park.

### Background

As noted earlier in this plan the taking of actions for commercial purposes are prohibited in the Park by s.354(1) of the EPBC Act except in accordance with a management plan; and r.12.36 of the EPBC Regulations also prohibits commercial activities, but operates subject to s.354(1) of the Act and this management plan. Commercial activity includes any activity that is undertaken for a financial consideration, either on consignment for another party or with a view to selling or hiring the product obtained. Commercial activities (other than commercial fishing and tourism) undertaken in the Park are varied and include cine or video filming; still photography; weddings; and ship hull inspections.

### Prescriptions

- 8.4.1 A policy for management of weddings will be developed. This will address issues relating to public gatherings and all commercial aspects (celebrant, photographer, limousines, etc).
- 8.4.2 Other commercial public gatherings (public events, concerts, certain school visits, parties, and so on) may be considered under similar arrangements to those applying to weddings.
- 8.4.3 Permits will be issued for commercial filming and photography (other than for weddings) only if it enhances and promotes Booderee and where a strong environmental and/or cultural message is uppermost, and only with the agreement of the Council.
- 8.4.4 Permits will not be issued for commercial filming and photography that is to be used in advertising unless there is prior approval from the Park Board and they promote the Park values.
- 8.4.5 Television, newspaper and radio reporting and filming will not require a permit, provided that it relates to events of the day. However, news reporters will be expected to undergo a briefing and generally comply with the conditions of film and photography permits.
- 8.4.6 No activities associated with hawking or the sale of goods will be permitted unless they meet the principles outlined above, or unless they are by non-profit organisations or charities with the Director's written agreement.
- 8.4.7 Ship hull inspections and slipping of civilian vessels will not be allowed, except for Defence purposes.
- 8.4.8 Sale of plants will be considered in the Botanic Gardens if demand warrants. This might involve partnership with a commercial nursery.
- 8.4.9 There may be potential for the Park to offer opportunities (facilities) for commercial training.

### 9.1 Operational Management

**Aim:** to manage the Park in an effective and efficient manner and in accordance with the obligations under the management plan and the lease agreement.

#### Background

It is the function of the Director under the EPBC Act (s.514B) to 'administer, manage and control' Commonwealth reserves. The Director is assisted in the performance of the Director's functions by Parks Australia, employees of Environment Australia assigned to assist the Director. The Director has delegated powers under the EPBC Act and the EPBC Regulations to Parks Australia staff.

Park staff undertake many and varied routine operations, outlined in Table 9.1.

Section 376 of the Act sets out the functions of the Board. One of the functions of the Board, in conjunction with the Director, is to monitor the management of the Park. Another of the Board's functions is to make decisions relating to the management of the Park that are consistent with the management plan in operation for the Park.

#### Prescriptions

- 9.1.1 An implementation schedule will be developed in line with this management plan. Based on the implementation schedule, each year annual priorities and work plans will be developed, considered by the Board and implemented. Individual staff work plans will reflect the annual priorities for the Park.
- 9.1.2 The Park Manager will prepare a policy and procedures manual in consultation with staff. The manual will aim for environmental best practice (see section 9.2) to the extent that it is affordable.
- 9.1.3 The routine operations listed in Table 9.1 will continue consistent with the annual priorities.
- 9.1.4 If effective in achieving the management principles outlined in this Plan, and if financially appropriate, routine operations may be carried out by contract under the supervision of the Park Manager. Release of Park staff from routine operations will enable their involvement in more skilled tasks such as environmental management and interpretation.
- 9.1.5 In accordance with the management plan and the lease agreement, the Director will encourage development of appropriate business and commercial initiatives and enterprises by the Council and Community members within the Park and, subject to relevant Commonwealth purchasing requirements, will contract the Council's services and engage as many Community members as is practicable to provide services in and in relation to the Park.
- 9.1.6 Park staff will consult and cooperate with other relevant authorities in order to maintain emergency plans for search and rescue, fire control and containing hazardous material spills.

**TABLE 9.1: ROUTINE OPERATIONS**

Operations	Duties
<b>Maintenance</b>	<p><b>In the Park generally –</b></p> <ul style="list-style-type: none"> <li>• maintain visitor facilities</li> <li>• maintain walking tracks</li> <li>• maintain roads and fire trails</li> <li>• maintain fences and gates</li> <li>• maintain staff facilities</li> <li>• maintain vehicles, plant and equipment</li> <li>• collect rubbish</li> <li>• climbing for tree pruning (includes abseiling)</li> <li>• remove tree stumps or trees</li> <li>• slashing</li> <li>• plantings and rehabilitation work</li> <li>• install and maintain drainage</li> <li>• collect soil</li> <li>• extract sand from Murrays sandpit and the Village sandpit</li> <li>• erect fences and gates</li> <li>• maintain utilities – power, water and phone</li> <li>• bring in material for road maintenance and other infrastructure development/maintenance</li> <li>• maintain grassed areas</li> </ul> <p><b>and in the Botanic Gardens specifically –</b></p> <ul style="list-style-type: none"> <li>• pruning</li> <li>• import ingredients for nursery soil media</li> <li>• propagate and grow plants</li> <li>• plant plants</li> <li>• extend irrigation system</li> <li>• construct and landscape garden beds</li> <li>• import mulch</li> <li>• maintain lawns</li> <li>• fertilising</li> </ul>
<b>Planning and development</b>	<p><b>In the Park generally –</b></p> <ul style="list-style-type: none"> <li>• formulate and assess proposals</li> <li>• environmental assessment of development proposals</li> <li>• liaise with Wreck Bay Aboriginal Community Council representatives</li> <li>• undertake site work</li> <li>• supervise contractors</li> <li>• supervise volunteers</li> <li>• supervise work experience students</li> <li>• supervise community service workers</li> <li>• formulate works program</li> <li>• liaise with regional authorities and researchers</li> <li>• liaise with Park neighbours and the community</li> <li>• install new fencelines, gates, signs, tables and seats</li> <li>• install, inspect and maintain boat moorings and marker buoys</li> <li>• erect signs</li> </ul> <p><b>and in the Botanic Gardens specifically –</b></p> <ul style="list-style-type: none"> <li>• install seats</li> <li>• construct storage bins at Botanic Gardens</li> <li>• construct paths, culverts and bridges</li> </ul>

**TABLE 9.1: ROUTINE OPERATIONS** *continued*

<b>Operations</b>	<b>Duties</b>
<b>Visitor and Recreation Management</b>	<ul style="list-style-type: none"> <li>• maintain campgrounds, carpark, day use areas and amenity blocks</li> <li>• handle campsite bookings</li> <li>• maintain walking trails, bridges, staircases, platforms, boardwalks and lookouts</li> <li>• maintain boat ramp and breakwall, moorings and marker buoys</li> <li>• provide and maintain directional signage on walking trails</li> <li>• maintain counts of Park visitors</li> <li>• provide information about Park regulations and camping</li> <li>• check and manage campers</li> <li>• direct visitors</li> </ul>
<b>Information and Interpretation</b>	<ul style="list-style-type: none"> <li>• develop interpretive and educational materials</li> <li>• conduct guided activities with visitors and school groups</li> <li>• assist visitors</li> <li>• answer enquires</li> <li>• guide official visitors</li> <li>• liaise with tour operators</li> <li>• provide off-site information</li> <li>• liaise with Wreck Bay Aboriginal Community Council representatives</li> <li>• liaise with regional tourism authorities</li> <li>• prepare displays and talks</li> <li>• provide on-site information (for example signs)</li> <li>• monitor visitor activity</li> <li>• supervise and brief commercial film crews</li> <li>• catch &amp; release animals for interpretation activities</li> <li>• collect plants for interpretation activities</li> <li>• host coach visits</li> <li>• induction of tour operators</li> </ul>
<b>Ecological Management</b>	<ul style="list-style-type: none"> <li>• monitor ecological resources, including marine</li> <li>• monitor species of special conservation status</li> <li>• manage fire</li> <li>• control and monitor weeds</li> <li>• control and monitor feral animals</li> <li>• control erosion</li> <li>• conduct biological surveys</li> <li>• rehabilitate sites, including using brush collected within the Park</li> <li>• bury dead animals</li> <li>• take soil samples and core samples</li> <li>• take water samples</li> <li>• take marine samples</li> </ul>
<b>Cultural Heritage Management</b>	<ul style="list-style-type: none"> <li>• survey and record sites</li> <li>• maintain and restore sites</li> <li>• liaise with Wreck Bay Aboriginal Community Council representatives</li> <li>• provide interpretation material for sites</li> </ul>
<b>Law Enforcement</b>	<ul style="list-style-type: none"> <li>• conduct marine and terrestrial surveillance patrols</li> <li>• deal with infringements</li> <li>• take notes on incidents</li> <li>• write incident reports</li> <li>• issue Notices of Charges Payable</li> <li>• maintain databases</li> </ul>

**TABLE 9.1: ROUTINE OPERATIONS** *continued*

Operations	Duties
<b>Health and Safety</b>	<ul style="list-style-type: none"> <li>• take regular OH&amp;S inspections, including safety audits</li> <li>• Maintain first aid kits</li> <li>• Administer first aid as required</li> <li>• develop and implement a program of maintenance checks and assessments to identify potential risks to the health and safety of visitors, staff and Community members, and act to remove any identified risks.</li> <li>• take and send out funnel web spiders for venom collection</li> <li>• remove wasps and wasp nests where necessary</li> </ul>
<b>Miscellaneous Duties</b>	<ul style="list-style-type: none"> <li>• assist with search and rescue operations</li> <li>• assist with emergency services responses</li> <li>• assist with fire suppression activities</li> <li>• operate and maintain radio communications network</li> <li>• perform general administration tasks</li> <li>• in the Botanic Gardens, collect flowers for special events</li> <li>• trap and send out animals for science and education</li> </ul>

## 9.2 Resource Use in Park Operations

**Aim:** to ensure best practice use of resources.

Within Booderee National Park, the Director will apply best practice resource conservation principles wherever practicable. Improving the environmental efficiency of infrastructure will be considered when major maintenance is being undertaken or when new technology becomes available.

Fresh water is a particularly limited commodity in the Park, and accordingly water use will be afforded special attention. The Park will also focus on energy conservation, recycling and waste minimisation.

### Prescriptions

9.2.1 Through a philosophy of ‘rethink, reduce, reuse, repair, recycle’ Park management will:

- minimise or eliminate negative environmental impacts and use of resources;
- work closely with employees, unions, clients, suppliers and other interested parties to continually refine work practices and operations to best practice standards;
- regularly monitor and report on environmental performance;
- incorporate best practice environmental management into management practices;
- as a minimum, comply with internal environmental management plans and all relevant government policy and legislation; and
- actively promote and encourage the adoption of ecological sustainable work practices and operations within the organisation and the general community.

9.2.2 Conservation principles will be applied to all resource use in the Park.

- 9.2.3 The Director will give preference to technologies which demonstrate non-polluting, environmentally-friendly, energy efficiency principles over conventional technologies (for example, solar composting toilets as an alternative to septic/sewerage or pump-out toilets).
- 9.2.4 Water use and energy efficiency will be considered when planning new buildings and horticultural infrastructure, and in reviewing visitor facilities.
- 9.2.5 As opportunities arise, facilities which use less water will replace existing facilities, particularly where water use is greatest.
- 9.2.6 In the Botanic Gardens, water use efficiency will be considered in the development of new plant collections and in horticultural and management practices.
- 9.2.7 The Botanic Gardens Manager will investigate the potential for water recycling and the use of naturally occurring drainage lines in the management of plant collections.
- 9.2.8 Waste recycling will be maintained and, if practicable, further developed.
- 9.2.9 The Director will liaise with other agencies in Jervis Bay Territory to encourage best practice water management.

See also Chapter 3 – Telling People About the Park.

## 9.3 Capital Works and Infrastructure

### **Aims:**

- to provide visitors and staff with safe, functional facilities to the best possible standard with minimal impact on the environment; and
- to ensure an effective and efficient maintenance program that protects Park assets.

### **Background**

Various authorities responsible for land management in the area of Booderee over time have built structures and roads to suit the purpose at the time. For example, the area now known as the 'Depot' in Village Road was initially established as a forestry depot. The depot, which is not within the Park, is Commonwealth infrastructure administered by the Department of Transport and Regional Services (DOTARS). Both DOTARS and the Director use the depot as a base for administration, plant and equipment shelters, incident control, and workshops and store areas. Since 1995, some of the older buildings in this area have been consolidated and/or replaced to reflect the changing work practices in the Park, taking account of maintenance and replacement costs.

Under s.354(1) of the EPBC Act a person must not carry on an excavation, erect a building or other structure or carry out works in the Park except in accordance with a management plan in operation for the Park. In addition, under r.12.11 of the EPBC Regulations a person must not carry on an excavation, erect a building or other structure or carry out works in the Park. Regulation 12.11 operates subject to s.354(1) of the Act and the management plan.

Under Regulation 12.20 a person must not cause or allow a plant to be taken into the Park unless it is provided for by, and carried out in accordance with, a management plan in force for the Park; or is authorised by a permit, or under certain other conditions (regulation 12.06). The definition of 'plant' in the EPBC Act encompasses timber. Under s 354 of the Act a person must not move a member of a native species in the Park except in accordance with a management plan in operation for the Park. Hardwood timber is usually of native species.

Under Regulation 12.15 a person must not introduce a poisonous substance into the Park unless it is provided for by, and carried out in accordance with, a management plan in force for the Park; or is authorised by a permit, or under certain other conditions (regulation 12.06).

Camping facilities are provided at Green Patch, Bristol Point and Cave Beach. Additional facilities are provided for day visitors, such as at Green Patch, Bristol Point, Cave Beach, Iluka and Murrays Beach. Roads, tracks and parking areas provide access to camping and day-use areas and other areas of interest to visitors. A public boat ramp is maintained at Murrays Beach. A major upgrade of the camping and day use facilities at Green Patch was undertaken in 1996.

A Visitor Centre was built in 1975, prior to declaration of the Park and is used as a public information and display facility and point of contact for park visitors. Camping bookings are managed at the Centre and books, postcards, clothing and other items are offered for sale. The Centre also provides office space, a meeting area and storage facilities.

As a part of the negotiations between the Commonwealth and the Wreck Bay Aboriginal Community Council prior to the hand-back of the area of the Park, a commitment was given to construct a Cultural Centre. As the only national park in the region which is owned by an Aboriginal community, Booderee has a special opportunity and responsibility to provide visitors with an integrated combination of culture and nature. The Cultural Centre's interpretations and displays will constitute an essential vehicle for conveying messages, particularly about Aboriginal cultural and associated Park values, and the concept of joint management. This information is crucial to visitors' understanding of the Park's cultural and natural values, and will enhance visitors' experience in the Park. The Cultural Centre is also expected to provide commercial opportunities as a focus of interpretive tours and appropriate retail sales. Interpretive messages, location and design are important for maximum effectiveness of the Cultural Centre. Careful planning, in close consultation with the Wreck Bay Aboriginal Community Council, will be necessary. Useful lessons may be gained from experience with the highly successful cultural centres in Kakadu and Uluru-Kata Tjuta National Parks. The design, construction and cost of the centre are subject to further negotiation.

In 1994, two Park entry and use fee collection booths were built on Jervis Bay Road immediately adjacent to the Visitor Centre. The fee collection function has since been supplemented by automated fee stations at the Visitor Centre car park and Murrays Beach car park.

A small accommodation structure on Bowen Island has been used by Park staff and volunteers undertaking environmental monitoring, weed control and surveys. It is primarily used as a day base but provides the minimum facilities needed for limited overnight stays. This building is on a midden site and the Director is investigating options to remove or relocate it.

Within the Gardens, major infrastructure includes: a network of walking tracks, boardwalks and viewing platforms; an administration building and adjacent plant nursery facilities; barbecues; and a covered picnic shelter.

Park staff undertake some maintenance functions, particularly for urgent repairs and routine walking trail management and service/management tracks maintenance. The majority of new capital and maintenance work is completed under contract or purchasing arrangements, depending on the value of the work.

In line with Commonwealth government policy, accounts are maintained on an accrual accounting basis and decisions regarding capital works and infrastructure are to consider total life cycle costings.



Defence will be performing maintenance, repair and development work on the breakwater, sound range cabling and other Defence infrastructure within the life of the Plan.

## **Prescriptions**

- 9.3.1 The Director will seek sufficient budget to maintain required capital infrastructure to a reasonable and safe standard.
- 9.3.2 The Director will ensure programs are in place, and budget and staff resources are available, to maintain required capital infrastructure to a reasonable standard for the life of the asset, taking account of current and potential use and purpose.
- 9.3.3 An asset management system will be established and implemented during the life of this Plan. The system will be based on the total life-cycle of assets and will be aimed at extending the life of existing assets and improving asset performance through the establishment and implementation of a maintenance schedule and total life cycle costings.
- 9.3.4 Proposals for new capital works and infrastructure will be considered by the Park Board and proceed when it is agreed that the proposal meets the requirements of this Plan and when funds are available.
- 9.3.5 The Director will seek Board approval of any proposal to spend funds on infrastructure which is not on Park land (such as the Depot).
- 9.3.6 Environmental assessment will be undertaken for all proposals for new capital works and infrastructure, and alterations, renovation or significant repairs to existing capital assets and infrastructure, in accordance with the policy outlined in section 2.3.
- 9.3.7 All specific proposals for medium works and an annual program for proposed minor works will be forwarded to the Park Board for consideration on an annual basis.
- 9.3.8 All new capital works and infrastructure, and alterations, renovation or significant repairs to existing capital assets and infrastructure, will aim for good environmental design, including efficient resource use, and will meet Occupational Health and Safety requirements and relevant Building Codes and will take account of access for all members of the public, including the disabled.
- 9.3.9 In accordance with the lease agreement in relation to employment, every effort will be made to encourage employment and training of Wreck Bay Aboriginal Community members in the construction and maintenance of capital works and infrastructure, taking account of relevant procurement policies.
- 9.3.10 Initial steps towards identifying the location and design of the Cultural Centre will occur during the first twelve months of operation of this Plan. A business case will be developed for the Cultural Centre, incorporating visitor services for the Park, and funds will be sought to enable its completion during the life of this Plan.
- 9.3.11 Close consultation will be maintained with the Wreck Bay Aboriginal Community Council in the planning and design of the Cultural Centre.
- 9.3.12 Lay-bys may be constructed at the camping area at Green Patch to provide space for people to park to check the camp list.
- 9.3.13 Shelters may be constructed at Green Patch, Bristol Point and Cave Beach and a shelter/classroom at the Botanic Gardens.

- 9.3.14 New toilets may be constructed at the prawning grounds and the carparks near the lighthouse, Moes Rock, Stoney Creek and Steamers Beach. Toilet facilities at the Botanic Gardens may be upgraded and new toilets may be constructed.
- 9.3.15 The amphitheatre at Green Patch may be upgraded.
- 9.3.16 At the Botanic Gardens storage sheds, carparks and possibly a kiosk may be built and the administration buildings, nursery and public carpark may be extended.
- 9.3.17 Safety fences may be built at cliff top sites where particular risk to visitors is identified.
- 9.3.18 New automated fee stations may be installed at the Visitor Centre car park, Cave Beach carpark and Murrays Beach carpark and the Board may consider changes to toll booth and traffic arrangements in the entry station precinct to facilitate safer traffic flow and efficient entry fee collection procedures.
- 9.3.19 Hardwood and softwood timber may be brought into the Park and used for construction purposes, posts and poles.
- 9.3.20 Preservative-treated pine may be brought into the Park for management purposes. Sites will be monitored for possible effects of leaching. Waste treated pine will be disposed of safely.
- 9.3.21 The Director will consider providing fish-cleaning facilities near Murrays boat ramp and possibly elsewhere if required.
- 9.3.22 The Director will seek to clarify and formalise tenure of the land on which its buildings at the depot are located, and to secure access to Park infrastructure/facilities.
- 9.3.23 A flagpole may be installed at Green Patch
- 9.3.24 A satellite dish and/or line upgrade may be installed at the Botanic Gardens

## 9.4 Access and Roads

**Aim:** to provide access appropriate to a national park.

### Background

Access to and within the Park is by road and water. Since 1993, the Director has been responsible for all roads within the Park. Road access into Booderee is limited to one major sealed road – the Jervis Bay Road. Other sealed roads include the Cave Beach, Wreck Bay, Green Patch/Iluka and Bristol Point roads. Ellmoos Road, extending from Jervis Bay Road near the Park entrance and ending at Sussex Inlet, is unsealed. Other unsealed roads lead to the historic Cape St George lighthouse, Moes Rock, Stoney Creek and Steamers Beach.

Under r.12.41 of the EPBC Regulations vehicles must only be driven, ridden or towed on a road that is not a designated restricted access road, or on a designated public access track, or in a designated camping area or parking area; and subject to any prohibitions or restrictions imposed by the Director. Under r.12.42(3) the Director may prohibit or restrict the use of vehicles, or a class of vehicles, on a track or road in a Commonwealth reserve. Under r.12.44 the Director may impose speed limits and limit traffic to one-way.

Under r.12.55 of the EPBC Regulations Park visitors may only walk or ride on a road or track that is available for public use or a track for walking or riding provided by the Director.

Roads and tracks available for public use will be roads other than those designated by signs as 'restricted access' and tracks designated as public access tracks. A track for walking or riding provided by the Director is a track that has a sign or other marker displayed near it indicating that the track is for walking or riding, or it is indicated as a walking or riding track under a management plan (r.12.55(2)).

As noted in section 7.5 of the plan, r.12.56 of the EPBC Regulations prohibits use of vessels in a Commonwealth reserve in contravention of a determination made by the Director prohibiting the use of all vessels or a particular type of vessels or specifying conditions on the use of vessels (including conditions as to anchoring and mooring).

Under r.12.58 a person must not taxi an aircraft, except in a designated landing area, or land or take-off an aircraft.

A number of four-wheel-drive service roads throughout the Park can be used by vehicles only for management purposes. These roads are accessible to the public as walking tracks and are signposted accordingly.

Sealed public car parks are established at Green Patch, the Booderee Visitor Centre and Iluka. Unsealed car parks are located at Bristol Point, Murray's Beach, Cape St George Lighthouse, Stoney Creek, Moes Rock, the prawning grounds along Ellmoos Road, Steamers Beach and Cave Beach. Improvements to the car parking area at Green Patch in 1996 involved relocation and upgrade of the surface to lessen the impact of traffic flow in the day use area. Established tracks have been rationalised and rehabilitated where no longer required.

Access to the Park and the number of roads and carparks currently in the Park are considered to be adequate. Nevertheless, there may be a need to construct new access and car parking space associated with development of a new cultural/visitor centre.

Murrays boat ramp, located near Murrays Beach in Booderee, is one of the regional boat ramps providing access to the waters of the Bay. For safety reasons, the ramp was upgraded in 1995, to include a landing facility alongside the rock wall, a navigators beacon and a boardwalk running parallel to the ramp. Boat access to the Park from beaches on Jervis Bay, Sussex Inlet or St George's Basin is possible but at most times of the year is not practicable or desirable due to weather and tide conditions. An area in the northern waters of the Park is known as Darling Road. This is a designated anchoring and mooring area for Defence vessels, including submarines, and all vessels undertaking Defence activities. It is a prohibited anchorage area for the general public. The Park waters are often used by itinerant yachts and fishing trawlers for sheltering during inclement weather.

There is no rail or air access, although special purpose landings (rescue and emergencies, firefighting, weed control, research and so on ) by rotary wing aircraft may be made at suitable sites under a permit issued by the Director in accordance with the EPBC Regulations. Defence operates an airfield at the Jervis Bay Range Facility. Landings by fixed or rotary wing civilian craft are prohibited except where approval is given by Defence for special or emergency purposes.

All roads and tracks in the Park are classified under the Fire Management Program (see section 5.3).

## Prescriptions

- 9.4.1 With the exception of work associated with the development of a cultural/visitor centre, or essential access for Park protection or management purposes, no new roads or access routes will be developed during the life of this Plan. Construction of any new roads or car parks, and upgrading of any road, will require the approval of the Park Board and will be subject to the requirements of section 2.3 of this Plan.
- 9.4.2 All proposals for new works and major maintenance relating to access will be forwarded to the Park Board for consideration.
- 9.4.3 Maintenance of existing roads and tracks will be a priority during the life of this Plan.
- 9.4.4 An asset management system will be established and implemented during the life of this Plan. The system will be based on the total life-cycle of assets and will be aimed at extending the life of existing assets and improving asset performance through the establishment and implementation of a maintenance schedule and total life cycle costings. Roads and tracks will be included in this system.
- 9.4.5 The Director will seek to ensure sufficient budget is available to maintain existing public access roads and tracks, management tracks and water access to a reasonable standard that allows for appropriate visitor use and management activities outlined in this Plan.
- 9.4.6 Work on roads and public access tracks will be limited to works considered necessary for the safety of visitors, maintenance and effective management of the Park, or otherwise with the approval of the Park Board.
- 9.4.7 Proposals for maintenance of public access roads and tracks or the boat ramp will be assessed in accordance with the process outlined in section 2.3. Maintenance standards will reflect those specified by the appropriate road authority.
- 9.4.8 All public access roads in the Park will be classified according to the classification scheme used by the appropriate road authority. This classification will be used to determine maintenance standards to be applied to the roads.
- 9.4.9 Where damage to Park roads and tracks occurs through non-Park use, the Director will explore options for cost sharing to repair the damage.
- 9.4.10 Lessees near the western boundary of the Park use Ellmoos Road for access, but their leases limit the Commonwealth's responsibility for road maintenance and the Director will not undertake to exceed the provisions of the leases.
- 9.4.11 The Director will endeavour to ensure resources are available to respond to emergency or non-routine matters related to access, including traffic directions to the public, signs and public notices, in cooperation with other authorities as appropriate.
- 9.4.12 In accordance with the Regulations, visitors' vehicles will be allowed only on roads that are not designated as restricted access roads or on public access tracks. Recognising that some Park roads provide the only land access for residents of Jarvis Bay Territory and the need for such access to be available, the Director may close or restrict access to roads and tracks for management or safety reasons, and, subject to the EPBC Regulations, will make special provision for use of bicycles on identified roads and tracks.
- 9.4.13 The Board may consider management options to slow traffic on Ellmoos Road to protect other users of the road and prevent wildlife road kills. Such options may include the installation of speed humps, further signage and regular policing of speed limits.

- 9.4.14 The Director will provide a short-term boat tie-up facility (to accommodate up to three boats) and access path immediately north of the boat ramp so that boats can be tied while the owner takes the car & trailer away.
- 9.4.15 The Director will investigate the feasibility of constructing a one-way loop road to the boat ramp and a walking track from the carpark to the beach north of the boat ramp. If the Board considers either or both these developments appropriate, and if funds are available, they may be implemented.

## 9.5 Essential Services

**Aim:** to ensure that the management and development of essential infrastructure within the Park conform to the highest standards of environmental best practice.

### Background

#### *Electricity/water/sewerage infrastructure*

Commonwealth-owned water reticulation and sewerage treatment systems service the Jervis Bay Territory. The electrical reticulation system, whilst also a Commonwealth asset, draws power from the NSW State Grid. These utilities are administered by the Jervis Bay Administration, Department of Transport and Regional Services (DOTARS) and are maintained by contractors to DOTARS.

#### *Water distribution/storage infrastructure*

The water distribution/storage infrastructure within the Park comprises of: a pontoon-mounted pumping station and two timber jetties on Lake Windermere; a 4 kilometre 225 mm rising main; various gravity mains of 150–375mm; various reticulation mains of 50–150mm to Green Patch–Bristol Point, Cave Beach and Murrays Beach car park; and three water reservoirs (2 x 0.46 ML and 1 x 2.4 ML) adjacent to the intersection of the Stoney Creek and Wreck Bay roads. Also within the enclosed fence at the reservoir site is the Territory's water treatment plant.

A 50mm pipe runs from Bristol Point along the Jervis Bay Rd to the Murrays Beach car park toilets. Parks Australia does not maintain this supply main.

High voltage 11 kV electrical reticulation traverses Booderee from the Cave Beach/Jervis Bay Road intersection to Lake Windermere and Wreck Bay Village, and from Jervis Bay Village to Jervis Bay Range Facility, Bherwerre Ridge Facility and Wreck Bay Village. Underground high voltage reticulation runs adjacent to Jervis Bay Road from the Park entrance to Flat Rock Creek, Lake Windermere to the Botanic Gardens and from Pole 60 adjacent to Telegraph Creek to Green Patch. There are 16 pad/pole-mounted transformers located throughout the Park. Low voltage reticulation, both aerial and underground, connects these transformers with office buildings, toilet/shower blocks, and other fixtures

The sewerage reticulation infrastructure within the Park comprises 2.5 kilometres of 80mm pressure main from Green Patch to Jervis Bay Village and various 50–150mm reticulation mains. There is a pumping station at lower Green Patch and several small pumps associated with the shower/toilet facilities in the Green Patch camping areas. Whilst the treatment works is located

on HMAS Creswell and discharges to land (the HMAS Creswell golf course) via an effluent reuse dam within HMAS Creswell, emergency overflow discharges to the waters of the Park. The emergency/safety overflow would operate only during times of prolonged wet weather or if there is a machinery failure. Disposal of treated effluent into the waters of Booderee must only be used as a last resort when the effluent is unable to be pumped to the effluent holding dam. The discharge is treated water with specified quality standards and would be unlikely to harm the environment, and the safety overflow is an essential precaution. The DOTARS holds a permit to discharge to the waters of the Park via the emergency overflow. Under the permit monitoring and reporting are required, and the reporting of discharges must include percentage reuse achieved in each year compared with the target percentage. Run-off from the land application of treated effluent onto the HMAS Creswell golf course may seep into the lower reaches of Flat Rock Creek and subsequently the waters of the Park.

Toilets at the Botanic Gardens, visitor centre, Cave Beach camping area, Bristol Point and Murrays Beach car park are either septic systems and/or pump-out systems and are serviced at regular intervals.

Telemetry monitoring devices are located at Lake Windermere and Stoney Creek reservoirs. These devices are part of a computer-controlled monitoring system used to regulate water levels at the various reservoirs.

### *Service corridor management*

Since the declaration of the Park in 1992, Commonwealth agencies in the Territory have recognised the importance of minimising environmental impacts within water, electricity and sewerage infrastructure service corridors. Emphasis has been placed on the alignment of pipelines along road verges and the installation of underground electrical conductors. Generally access is avoided within wetland areas and shrub type vegetation is retained under powerlines.

### *Communications providers*

Communications providers have similarly recognised the need for minimising environmental impacts. The main telecommunications link for the Territory to the Shoalhaven is via a microwave facility adjacent to Chambers Street Reservoir. Where possible, phone lines are run through PVC conduits to minimise environmental impact from maintenance and replacement.

## **Prescriptions**

- 9.5.1 Ongoing liaison will be maintained between the Director, the Park Board and responsible agencies and authorities concerning all aspects of municipal services, particularly where they have the potential to impact upon Park environmental values.
- 9.5.2 For the purposes of access, maintenance and investment in the present and future essential infrastructure, appropriate legal instruments for right of access and security of tenure for supply authorities, will be considered on a case-by-case basis.
- 9.5.3 The Director may issue permits for necessary works to be undertaken in connection with the construction, operation and maintenance of essential services. Emergency repairs can be authorised by the Park Manager pending issue of a permit.
- 9.5.4 In consultation with the responsible agencies and authorities, the Director will seek to clarify and formalise the legal status of and respective management responsibilities for public roads, service corridors and municipal infrastructure and essential services within the Park.

- 9.5.5 All development proposals for future or replacement facilities within the Park should be planned and implemented to optimise use of existing municipal services. Development of municipal services for the residential areas within the Territory should minimise environmental impact on the Park.
- 9.5.6 The Director will ensure that the maintenance, replacement and development of essential municipal services in the Park undergo appropriate environmental assessment procedures. Relocation of services underground will be advanced.
- 9.5.7 The Director may issue permits to responsible agencies and authorities to allow emergency or safety discharge of treated sewage into the Park via the emergency overflow.
- 9.5.8 The sewerage system at Green Patch may be upgraded during the life of this plan.
- 9.5.9 The Director may install toilets at the prawning grounds beside St Georges Basin, and the lighthouse, Steamers Beach, Moes Rock and Stoney Creek car parks. Toilet facilities at the Botanic Gardens may be upgraded or new facilities installed.
- 9.5.10 Industrial rubbish will be disposed of outside the Territory as appropriate.
- 9.5.11 The Park Board may approve upgrading or replacement of existing services to Territory residents, such as electricity, telecommunications, sewerage and water, or provision of new services, including natural gas supply.
- 9.5.12 Services may continue to be provided by contractors. Contractors carrying out works in the Park will continue to work in accordance with the Park's environmental guidelines for contractors.
- 9.5.13 The Director will ensure all contract documentation for the development and maintenance of municipal services contains appropriate environmental safeguards.

## 9.6 Staffing

### **Aims:**

- to engage sufficient staff resources to ensure the requirements of this Plan can be met;
- to maintain professional staff skills relevant to management of the Park;
- to facilitate employment of Wreck Bay Aboriginal Community members in all facets of Park management;
- to encourage cooperative working arrangements between Wreck Bay Aboriginal Community members and Park staff to demonstrate 'joint management' at work; and
- to provide a safe and healthy environment for staff, volunteers and visitors.

### **Background**

Past management programs in the area which is now Booderee provided employment in dune stabilisation and forestry work. Many employees from these programs were subsequently redeployed in maintenance and ranger duties as staff of the ACT Parks and Conservation Service employed in Jervis Bay Nature Reserve. Following declaration of Jervis Bay National Park under

Commonwealth legislation in 1992, all staff elected to transfer to the Commonwealth national park service (now known as Parks Australia).

Staffing structures and numbers have changed significantly over time. These changes reflect changes in the management principles of the Park; changes in industrial relations law; and joint management, particularly in regard to the requirements under the lease for employment opportunities. The result of these changes has been an overall reduction in staff numbers and a commitment to providing employment opportunities to Wreck Bay Aboriginal Community Council members wherever possible as either employees or contractors.

Management of Booderee requires staff trained in protected area management techniques and/or horticultural skills. Trainee programs, generally with funding assistance from broader Commonwealth training programs, have been used to employ trainees with a view to their gaining experience and tertiary qualifications in park and horticultural management. Other training initiatives have employed and encouraged staff to undertake administrative and small business traineeships.

Park staff will have regard to OH&S legislation. There are OH&S representatives in the Park.

## **Prescriptions**

- 9.6.1 In accordance with the lease, the Director will endeavour to maintain sufficient staff with the necessary skills to implement the actions identified in this Plan.
- 9.6.2 Staff resources of the Park will be subject to periodic review during the life of this Plan, taking account of the 7-days per week nature of Park work and seasonal fluctuations in workload.
- 9.6.3 Selection criteria specifying knowledge of Wreck Bay Aboriginal tradition and culture will be incorporated for all appropriate positions.
- 9.6.4 Consistent with the lease agreement, every effort will be made to encourage interest from and to employ Wreck Bay Aboriginal Community Council members wherever possible, whether through contracting, casual staffing arrangements or recruitment, having regard to the requirements of the position.
- 9.6.5 In accordance with the lease, the Director will consult with the Council or its nominee concerning the procedures for selection and appointment of permanent staff and contractors in the Park where duties and functions will involve significant involvement with Park administration, management and control.
- 9.6.6 The Wreck Bay Aboriginal Community Council and the Director will develop, implement and revise as necessary employment procedures to ensure conditions of the lease agreement and relevant employment conditions are met, taking account of the needs of the Wreck Bay Community. Changes in staffing arrangements, including those involving contracting of functions, will be considered in full consultation with the staff affected.
- 9.6.7 Wherever possible, training positions (both internally and externally funded) will be filled by Wreck Bay Aboriginal Community members. Occupants of these positions will develop on-the-job work skills and be encouraged to undertake external study as appropriate. Park staffing levels will take account of the level of support required to assist trainees in their work and study while maintaining operational requirements.



- 9.6.8 Training will be provided to staff and Council members in employment procedures so as to foster joint participation in selection of staff and to assist Council members and staff applying for jobs.
- 9.6.9 Casual and contract staff will continue to be employed for tasks which have a high labour requirement over a short time frame or for projects which require skills or expertise not available among the Booderee staff.

## 9.7 Training

### **Aims:**

- to provide competency-based training relevant to all levels of administration, planning, management and control of the Park for all staff; and
- to assist with the provision of relevant vocational training for members of the Wreck Bay Aboriginal Community Council.

### **Background**

The lease agreement requires the Director to:

- take all reasonable steps to promote the provision of services by the Wreck Bay Aboriginal Community Council for the administration, management and control of the Park and to promote the use of the service of members of the Community in the administration, management and control of the Park;
- implement a program for training reasonable numbers of the Community in skills relevant to the administration, management and control of the Park;
- promote among non-Aboriginal people employed or contracted in the management of the Park a knowledge and understanding of and respect for the traditions, languages, culture, customs and skills of the traditional Aboriginal owners; and
- consult with and have regard to the views of the Council in respect of the formulation of any educational and interpretive policy in relation to the Park.

To fulfil these obligations the Director is required to undertake specific management actions beyond those normally required for staff development purposes. As part of the negotiations on joint management, the then Government agreed to provide additional funding for a full-time Park training officer whose duties would include assisting in the provision of relevant training for members of the Wreck Bay Aboriginal Community.

In relation to the day-to-day running of Booderee, the pressures on the Booderee environment, services and facilities are increasing as visitor aspirations and expectations become more diverse and demanding. An emphasis on public education and information is important. Protecting the heritage of the Park, both marine and terrestrial, from threats such as invasive weeds, feral animals, erosion, wildfire and pollution is increasingly complex and difficult. Training is the key to both the broader skill base across the Park staff, and to the multi-skilled individuals, the Park will need to be able to respond to the changing operating environment. Training is important for management of Occupational Health and Safety.

Parks Australia receives numerous requests from students interested in undertaking work experience or a work placement in the Park. Objectives of work experience and work placement programs at Booderee are to provide work experience to Wreck Bay Aboriginal Community Council members as potential future employees; maintain links with the Shoalhaven community; develop an awareness of the joint management arrangements amongst the wider community; and promote an increased interest in national parks, the principles and practices of land management and conservation in the wider community. The Park may provide work experience opportunities for tertiary students (eg Horticulture students) from outside the Shoalhaven as well

## **Prescriptions**

- 9.7.1 A Training Committee will be established and maintained in the Park. The Wreck Bay Aboriginal Community will be represented on the Committee. The Committee's principal function will be to set priorities and direction of training for Park staff. The training officer will be a member of the Committee.
- 9.7.2 During the first year of this management plan the Training Committee will implement training, taking account of the requirements of the lease agreement and this management plan. Mentoring and other means of providing support for trainees will be considered.
- 9.7.3 The Director will continue to employ a training officer who will coordinate training and career development for Park staff with particular emphasis on Koori staff. Selection criteria specifying knowledge of Wreck Bay tradition and culture will be incorporated into the position profile for the training officer position.
- 9.7.4 In addition to staff training, the training officer will assist the Wreck Bay Aboriginal Community Council to coordinate training activities consistent with the Director's obligations under the lease agreement for Community members.
- 9.7.5 The Director will maintain a number of trainee positions or alternative arrangements such as cadetship or scholarship programs for Community members as agreed by the Park Board.
- 9.7.6 In accordance with the lease, the Director will promote among non-Aboriginal staff a knowledge and understanding of, and respect for, the traditions and culture of the Wreck Bay Community.
- 9.7.7 Work experience, including work placements, will be managed in accordance with the policies and procedures manual.
- 9.7.8 General staff training will be coordinated by the Park's training committee including team leaders, managers and the training officer. Training generally will take the form of on-the-job training; training provided by accredited trainers; training provided by other agencies; accredited and tailored TAFE training; assistance to staff undertaking approved tertiary studies; and attendance at in-house and external workshops and conferences.
- 9.7.9 All permanent staff will have individual learning plans. The Training Committee will develop a strategic program of training activities each year to meet the developmental needs of staff. The budget for these training activities is to be allocated at the commencement of each financial year.

- 9.7.10 In consultation with the Community and staff, the training officer will develop and implement a career enhancement program for Koori staff during the life of this Plan. The goal of the program will be to facilitate the promotion of Aboriginal staff to all levels within the staff structure.
- 9.7.11 As agreed during the negotiations for the 'hand back' of the Park, the Director will assist with the provision of relevant vocational training to members of the Wreck Bay Aboriginal Community in order that they may obtain employment and contractual opportunities within the Park and elsewhere. Community members will be encouraged to participate in training activities undertaken within the Park. As part of this training, the Director will provide selection advisory committee and interviewee skills training for staff and Wreck Bay people as required.

## 9.8 Compliance and Enforcement

**Aim:** to ensure compliance with relevant legislation, protect the Park environment and encourage and promote appropriate use of the Park.

### Background

Enforcement of the EPBC Act and EPBC Regulations is necessary to ensure that the purposes of the Park are maintained and respected.

Staff may be appointed under the EPBC Act to be rangers or wardens and to exercise the powers and functions conferred on them by the Act. Rangers and wardens have, under specified circumstances, power to ask a person to provide the person's name and address or to show the ranger or warden a permit, and to issue infringement notices for offences against specified regulations. Wardens have additional powers, under specified circumstances, to obtain monitoring or search warrants, stop and search aircraft, vessels or vehicles, arrest suspected offenders, and seize evidentiary material. Any member or special member of the Australian Federal Police is a Warden *ex officio*. Since 1999, the Commonwealth has required that appointees be trained to Commonwealth Law Enforcement Board (CLEB) Investigator standards to ensure effective enforcement of the EPBC Act.

The Wreck Bay Aboriginal Community Council is establishing by-laws for the 403 hectares of Community land. NSW environmental legislation applies in areas adjacent to the Park, such as in NSW Jervis Bay National Park and Jervis Bay Marine Park. It is envisaged that staff may be called upon to assist with compliance activities in these adjacent areas.

The Environment Australia Compliance and Enforcement Strategy applies to compliance and enforcement activities in Booderee as it does to other protected areas under the EPBC Act. Its goals are to:

- maximise compliance with legislation administered by EA, recognising the role for EA in encouraging the community to protect the environment and heritage,
- ensure that compliance and enforcement activities are carried out in a manner that maximises protection of the environment and heritage,
- optimise the cost effectiveness of compliance and enforcement for both the Government and the community,

- minimise adverse impacts on the environment and the community as a result of non-compliance, and
- enforce legislation transparently, lawfully, equitably and fairly.

The principles of the Compliance and Enforcement Strategy are to:

- allocate available resources in a manner which minimises the risks associated with non-compliance,
- use a flexible and balanced package of compliance and enforcement measures, emphasising education and cooperation with the community,
- compliance and enforcement will be cost effective,
- ensure that the best use is made of available internal and external expertise,
- respond to breaches reflecting their severity,
- be accountable, innovative, receptive to new ideas and responsive to new circumstances in relation to compliance and enforcement matters,
- act in a manner that is consistent with the EA Corporate Plan and the EA Service Charter,
- manage information obtained through its compliance and enforcement activities with integrity and fairness, and in accordance with legal requirements (including those under the *Freedom of Information Act 1982* and the *Privacy Act 1988*),
- ensure all officers undertake training necessary to carry out compliance and enforcement responsibilities.

## Prescriptions

- 9.8.1 The Board will review compliance and enforcement priorities annually.
- 9.8.2 Compliance and enforcement effort will reflect analysis of the risks, zoning priorities and visitation intensity.
- 9.8.3 In relation to law enforcement, Park staff will: make available information and interpretive services; regulate traffic and visitor movement in the Park including the use of vehicles, vessels and aircraft; provide for the proper use of Park facilities such as camping areas; and minimise illegal activities.
- 9.8.4 Appropriate training will be provided to staff to ensure they understand and can adequately operate in the legal framework under which the Park operates. Basic Commonwealth Law Enforcement Board (CLEB) training will be provided to selected staff. Selected CLEB trained staff will be appointed to a law enforcement role under the Act. Emphasis will be placed on providing appropriate training in relevant legislation and practical law enforcement for field staff. The complexity of prosecution and the increasing requirement for law enforcement requires the services of law enforcement specialists. Specialist staff or other experts will be seconded as necessary for the training of Park staff.
- 9.8.5 The Director will seek cross authorisation under the Wreck Bay by-laws and relevant NSW legislation as appropriate to allow for cooperation with adjacent management agencies in the protection of flora and fauna and the monitoring of recreational fishing catches.
- 9.8.6 Appropriately trained and qualified staff will undertake regular patrols and spot checks of visitors and the Park to ensure that the relevant regulatory requirements are being met.

See also Chapter 3 – Telling People About the Park.

## 9.9 Financial Management

### Aims:

- to seek sufficient funds to implement the management plan; and
- to responsibly manage the allocation of budget, revenue raising activities and expenditure of funds, to ensure the aims of this Plan can be met in a way which maximises the benefit to conservation programs, the Community and visitors to the Park.

### Background

Funds for management of the Park come from the Australian National Parks Fund under the EPBC Act. The principal sources of the moneys of the Fund are prescribed by s.514S of the EPBC Act. They are: money appropriated by the Commonwealth Parliament for the purposes of Environment Australia and allocated by the Secretary for the management of Commonwealth reserves; amounts paid to the Director in respect of leases, licences and permits granted or issued by the Director; and, charges determined and imposed by the Director under s.356A of the EPBC Act for entering or using a Commonwealth reserve or part of a Commonwealth reserve and using services or facilities provided by the Director.

In 1993, Park use fees were introduced for visitors to the Park. Park fees may be reviewed during the life of this Plan. Overall revenue targets are set through the Federal budget process. Revenue made over target can be retained in the Park. Shortfalls may be deducted from the overall budget allocation.

Park staff are responsible for management of the Park's budget, within the Commonwealth government's purchasing and financial guidelines, the requirements of the EPBC Act, and the terms of the lease agreement. In line with Commonwealth government policy, accounts are maintained on an accrual accounting basis and decisions regarding capital works and infrastructure must consider total life cycle costings.

Section 514T of the EPBC Act prescribes how the Director may apply the money of the Australian National Parks Fund. Principally the moneys must be used in payment or discharge of the costs, expenses and other obligations incurred by the Director in the performance of the Director's functions. As an authority for the purposes of the *Commonwealth Authorities and Companies Act 1997* the Director is also subject to the requirements of that Act.

### Prescriptions

- 9.9.1 The Director will seek sufficient funds to effectively implement the management plan.
- 9.9.2 The Park budget will be managed in accordance with Commonwealth statutory requirements, taking account of the financial requirements to implement this Plan and policy decisions of the Park Board.
- 9.9.3 Revenue raising activities will:
- be consistent with the aims of this Plan;
  - be consistent with the conservation values of the Park;
  - not be at the expense of conservation programs in the Park;
  - complement Wreck Bay Aboriginal Community Council revenue raising activities where appropriate; and
  - directly benefit the Wreck Bay Aboriginal Community.

- 9.9.4 Taking account of the points above, the Director, in conjunction with the Park Board, will consider and pursue new activities for the Park that have potential to supplement the Park's annual budget, and the Director, in conjunction with the Park Board, will develop a marketing plan for the Park, to provide for increased revenue raising opportunities to the extent consistent with the Park's management principles.
- 9.9.5 The Director will continue to develop and use purchasing procedures which take account of the Commonwealth guidelines relevant to tendering and contracting, purchase of goods and services, best commercial practice and the relationship between the Director and the Wreck Bay Aboriginal Community Council, in particular in relation to the obligations under the lease agreement.
- 9.9.6 The Park will account for all income and expenditure in accordance with relevant government requirements.
- 9.9.7 Management systems will be implemented and maintained to budget and account for expenditure against activities outlined in this Plan, and to match expenditure against revenue.
- 9.9.8 The Director will report to the Park Board quarterly on revenue and expenditure.
- 9.9.9 Park entry, use and camping fees will be reviewed regularly. In accordance with the EPBC Act, recommended revisions to Park fees will be subject to approval by the Minister.
- 9.9.10 Fees for permits for commercial activities will be reviewed during the life of this Plan.

## 9.10 Wreck Bay Lease and Other Occupancy Issues

**Aim:** to provide for leasehold interests and occupancy rights within the Park for essential infrastructure and specific requests by the Wreck Bay Aboriginal Community Council.

### Background

The lease agreement provides for the members of the Wreck Bay Aboriginal Community Council, as traditional owners of the Park, to have the right to enter upon, use or occupy the Park in accordance with tradition. This is subject to the prior approval of the Council, such reasonable constraints as may be contained in the management plan and the directions or decision of the Park Board with respect to health, safety, privacy or protection of the Park.

The Park is traversed by municipal infrastructure (see section 9.5) that provides potable water, sewerage treatment and electricity supply to Park buildings and amenities, Wreck Bay Village, Jervis Bay Village, HMAS Creswell, Jervis Bay Range Facility and Bherwerre Ridge Facility. There are also several roads open to the public and public access tracks within the Park. These essential service and public access corridors require appropriate management and future planning.

The Department of Defence uses the marine component of the Park west of Captains Point, including a wharf, and relies on access through the Park to its facilities, including Bherwerre Ridge Facility.

Part of the Visitor Centre building is suitable, and could be made available, for use by the Wreck Bay Aboriginal Community Council. It is not currently needed for Park management purposes.

In accordance with the lease agreement, the Director will not transfer, assign, sublet, part with the possession of, or otherwise dispose of the Park or any part thereof without the consent in writing of the Council and then only in accordance with the Management Plan.

On occasions, people seek permission for burials, scattering of ashes and erection of monuments in national parks. In the future similar requests may be made in relation to Booderee. Under r.12.32 of the EPBC Regulations human remains may only be buried in a burial area determined by the Director and in accordance with a permit issued by the Director. Burial is defined to include scattering or other disposal of ashes. Erecting or displaying a commemorative marker or engaging in commemorative activities associated with a commemorative marker is prohibited by r.12.33. A commemorative marker is defined to include a monument, cairn, statue or sculpture, sign, plaque or tablet, wreath or floral arrangement.

See also section 9.5 in relation to leaseholds and other occupancy issues in relation to essential services.

## **Prescriptions**

- 9.10.1 In accordance with the lease agreement, the Council reserves the right to request the Director to sublet any reasonable part of the Park to a Community member where it is in accordance with the EPBC Act and the Management Plan.
- 9.10.2 The Director may transfer, assign, or sublet part of the Park (including possible future additions to the Park) to assist the development of Wreck Bay Aboriginal Community Council commercial activities and to regularise developments for management of essential services in the Park (see also section 9.5). If space is available Park buildings or parts of Park buildings may be subleased to the Wreck Bay Aboriginal Community Council.
- 9.10.3 Consistent with the lease, the Director will work with the Wreck Bay Aboriginal Community Council to develop guidelines for the Park Board's approval for the use and occupancy of the Park by Council members for traditional use, ceremonial and religious and other approved purposes. The guidelines will be consistent with the Management principles and will have regard to the purposes of the Park. In relation to use of the Park by Council members the guidelines will consider, but not be limited to, the frequency of the activity, the timing of the activity, general use of the area by Park visitors and environmental impact of the activity. In relation to occupancy in the Park, the guidelines will consider, but not be limited to, the duration and timing of the occupation, the location, potential fire hazards, privacy from Park visitors, health issues and environmental impact.
- 9.10.4 Commercial opportunities for the Wreck Bay Aboriginal Community, which require use and occupation of the Park or part thereof, will be subject to assessment in accordance with section 2.3 of this plan and will be subject to the approval of the Park Board.
- 9.10.5 Permits may be issued by the Director in accordance with the EPBC Regulations for erection of commemorative markers.
- 9.10.6 Subject to 9.10.7 no burials will be allowed within the Park, except for traditional owners. Permits will be issued to allow the burial of traditional owners under the EPBC Regulations.
- 9.10.7 Permits may be issued by the Director in accordance with the EPBC Act for scattering of ashes. The Wreck Bay Aboriginal Community Council will be consulted before a decision is made whether to issue a permit.

- 9.10.8 The Director will seek to resolve the legal status of the Navy wharf west of Captain's Point and may, if appropriate, grant a sublease or licence to the Commonwealth to formalise the Navy's use and occupation of the wharf and the area west of Captain's Point.
- 9.10.9 Mining operations other than extraction of gravel and sand from existing pits for Park management purposes are prohibited in the Park (see section 5.1).

## 9.11 Neighbour Relations

**Aim:** to maintain cooperative relations with Park neighbours with a specific focus of developing relationships that promote the Park's management principles, regional biodiversity conservation and an awareness of joint management issues.

### Background

Neighbour relations can be divided into two groups. Firstly, the immediate Park neighbours within the Jervis Bay Territory and secondly, those organisations with which Park staff interact with on a regular basis whilst carrying out the day-to-day management of the Park. The Territory neighbours include the Wreck Bay Aboriginal Community, residents of the Jervis Bay Territory, the Department of Transport and Regional Services, the Australian Federal Police, the Royal Australian Navy and the Jervis Bay Territory lessees, including those near the western boundary of the Park which use Ellmoos Road for access. The park maintains a house called 'Pamir' in the Christian's Minde Settlement area which is housed by a Park Ranger. Over the years Park staff have also conducted work within, and adjacent to, the lease areas including mowing of the public reserve and fire breaks, erosion control works, installation of tables and some law enforcement, feral animal and weed control works. The Park supports an integrated management approach for the Jervis Bay region.

Cooperative arrangements with regional agencies also play a essential role in the day-to-day management and strategic planning for the Park. Parks Australia enjoys sound working relationships with the Shoalhaven City Council, the NSW National Parks and Wildlife Service, the NSW Fisheries Service, the NSW Marine Parks Authority, the NSW Department of Planning and Urban Affairs, the Department of Defence and the NSW Rural Fire Service. Park staff also work with volunteer groups such as Booderee Park Care and the Jervis Bay Penguin Study Group.

Of special interest is the declaration of both the NSW Jervis Bay National Park and the Jervis Bay Marine Park. These protected areas, combined with Booderee, now make up a significant part of the Jervis Bay region. This is extremely important for biodiversity conservation and provides an opportunity for cooperative development of interpretive and educational material.

There is an MOU between NPWS and Parks Australia in regard to the cooperative management of conservation reserves and a NPWS/Parks Australia joint management committee which has been in operation for more than five years. There is also a MOU with the Marine Parks Authority for the cooperative management of the Jervis Bay waters.

Defence activities in the region include Navy, Army and Air Force exercises. The proximity of the Naval Air Station HMAS Albatross, HMAS Creswell and the Jervis Bay Range Facility, Bherwerre Ridge Facility and Beecroft Peninsula to the Park, highlights the need for cooperative and mutually beneficial arrangements between the Department of Defence and the Director.



The conduct of Defence activities in the Park, use and occupation of land and waters in the Park for Defence purposes and the application of Defence legislation to activities in the Park are subject to the EPBC Act, this management plan and the EPBC Regulations.

Routine Department of Defence exercises and training activities are occasionally allowed within the terrestrial component of the Park. There are, however, examples of Defence activities which are conducted in a 'civilian context' such as team building, environmental studies, camping and so on which are allowed in the same way as other allowed recreational activities. Other Defence exercises carried out on the periphery of the Park have the potential to impact on the Park, Park visitors and local residents, including the Wreck Bay Aboriginal Community.

The Kalkara Missile Target System deployed from the Jervis Bay Range Facility is an example of a Defence activity that causes concern for the Park and the traditional owners. The Park and the Wreck Bay Village surround the launch area on three sides. The missile therefore traverses the air space above the Park and has the potential to impact upon Park visitors seeking to quietly appreciate the Park's natural values.

As noted above, the *Control of Naval Waters Act 1918* applies in the marine component of the Park, along with the EPBC Act, this plan and the EPBC Regulations, and a range of Defence activities are undertaken within the waters of the Park. In 1994, Environment Australia signed a memorandum of understanding with the Department of Defence that places the onus on the Department of Defence to implement agreed environmental safeguards.

Defence has significant interests in the region and undertakes a range of activities in the Jervis Bay area. A few are considered inappropriate in the national park including, but not confined to:

- amphibious landings and loading exercises using ships including Landing Craft Heavy, or beaching of vehicles
- sub-unit tactical exercises except for passage between HMAS Creswell and the Jervis Bay Range Facility, and
- carriage (except in vehicles) or use of firearms, including with blank ammunition.

Most (listed below) are unlikely to need Park approval but Defence agrees on the need for consultation with the Park Manager.

Defence activities which are unlikely to need Park approval but will be subject to consultation with the Park Manager include, but are not confined to:

- maintenance of infrastructure such as hydrophones and cables associated with the underwater sound range.
- mine hunting, mine sweeping, mine laying (inert ordnance), and clearance diving training activities (diving training may include hull searches but not cleaning)
- underwater and shoreline survey and reconnaissance
- simulated search and rescue operations by helicopters and military aircraft over the marine waters of the Park
- remote controlled boat and Remotely Operated Vehicle (ROV) operations
- flights over the Park by unmanned aerial vehicles (ie Kalkara), helicopter operations, parachute training, launch of sea-skimming targets, plus the infrequent Defence-approved landing and parking of civil aircraft at the Jervis Bay Range Facility for short periods.

- walking by groups (more than 5, less than 50) on tracks, roadways and beaches (there will be no cross-country walking off tracks).
- use of distress signalling devices over the marine part of the Park for training purposes
- in Special Purpose Zone 4a (in which Defence has the power to restrict public access), maintenance of those elements of HMAS Creswell wharf and breakwater, mooring and anchorages, slipway and other existing infrastructure which fall within Booderee Park waters.
- transport of hazardous Defence goods (eg ordnance, chemicals) through the Park to Defence facilities.

**Note:** Defence contractors carrying out activities on behalf of Defence, and in accordance with an agreed Environmental Management Plan, are not regarded as commercial operators and do not require a permit to undertake that activity.

## Prescriptions

- 9.11.1 The Director will maintain representation on advisory committees such as the Jervis Bay Marine Park Advisory Committee, the Regional Bush Fire Management Committee, the Jervis Bay Territory and Regional Emergency Management Committees, Regional Tourism Boards and special interest committees as required.
- 9.11.2 Where appropriate, the Park Board will seek representation on regional committees.
- 9.11.3 The Director will promote and assist with the development and introduction of statutes, regulations and operational procedures which give effect to the seamless management of Booderee as a conservation zone within a larger regional protected area including Beecroft Peninsula.
- 9.11.4 The Director will encourage and promote a whole of peninsula approach to resource management programs such as weed control, fire management and cultural heritage management. To assist with this, projects and/or steering committees on particular issues will be encouraged and undertaken as detailed elsewhere in this Plan.
- 9.11.5 The Director will continue to pursue with appropriate agencies the maintenance of habitat corridors between the Park and the larger Jervis Bay region.
- 9.11.6 The Director will promote an awareness of the natural and cultural heritage of the Park, including the joint management arrangements with the Wreck Bay Aboriginal Community, amongst resident Defence personnel.
- 9.11.7 The Park Board and Defence will, within six months of commencement of this plan, develop a Memorandum of Understanding which will deal with issues including:
  - communication processes between the Park and Defence;
  - consultation on the Defence environmental management plan;
  - development of a fly-neighbourly agreement to cover both the Park and, with the agreement of the Wreck Bay Aboriginal Community Council, the Wreck Bay Aboriginal Community Council land south of the Jervis Bay Range Facility;
  - joint risk assessment in the preparation of the environmental management plan;
  - Park operations which might have an impact on Defence; and
  - emergency response procedures.

- 9.11.8 During the life of this Plan, a memorandum of understanding will be negotiated with the NSW National Parks and Wildlife Service which articulates common interests in regard to environmental management and operational procedures. Pursuant to the existing Memorandum of Understanding on management of marine protected areas in NSW, a schedule setting out specific collaborative arrangements covering management of Jervis Bay will be negotiated with the NSW Marine Park Authority.
- 9.11.9 During the life of this Plan, the Director will develop and disseminate an orientation/information package for Territory residents.
- 9.11.10 Park staff will continue to support a Park volunteer group that will participate in appropriate monitoring, weed control and regeneration programs, Park Care, Penguin Study Group and other groups of volunteers in the Park as agreed from time to time.
- 9.11.11 The Park will continue to maintain the 'Pamir' house in the Christian's Minde settlement area to provide an ongoing presence in the western part of the Park. Park staff will also continue to liaise with the Jervis Bay Territory lessees and the DOTARS on issues including fire management, right of way access, water and waste water use, erosion, weed and feral animal controls.
- 9.11.12 Residents in the Jervis Bay Village, HMAS Creswell, Wreck Bay Village and the lease areas will be allowed to transport pet animals and garden plants through the Park when travelling to and from their homes.
- 9.11.13 In the event of any of the Jervis Bay Territory Leases expiring or otherwise ending, the Director will support the Wreck Bay Aboriginal Community Council in having the land transferred to Aboriginal ownership and included in the Park.
- 9.11.14 The Director will negotiate with Department of Transport and Regional Services regarding leases with particular environmental issues (including access, high fire risk, risk of significant environmental damage – eg. Block 40).
- 9.11.15 The Director will negotiate with DOTARS with regard to any future lease or proposed activities on Jervis Bay Territory Block 13 to ensure they are consistent with national park values.
- 9.11.16 The Director will continue to negotiate with the Ellmoos family in relation to the management and care of the Christian's Minde cemetery.
- 9.11.17 The Director will negotiate with DOTARS and the Lessees to facilitate a process so the public has a right of way access through or between the leases near the mouth of Sussex Inlet. Subject to Board approval and environmental and cultural assessment this may necessitate the construction of a walkway or staircase in dunes linking the Park's Bherwerre beach carpark.
- 9.11.18 Beecroft Peninsula staff will continue to be involved in Environment Australia staff consultation forums such as the Jervis Bay Region Consultative Committee and unit head meetings.

Other references to the Department of Defence and defence establishments and activities are listed in the Index, but note in particular pages 31 and 38.

## 10. RESEARCH AND MONITORING

### **Aims:**

- to conduct, sponsor and support research which will lead to a better understanding of the natural and cultural heritage and use of Booderee, and to provide information that will contribute to effective management of the Park and surrounding region; and
- to identify any changes in the Park environment and in the use of the Park, which will provide an indication of the effectiveness of management and which may be linked to the condition of the environment.

### **Background**

Research and surveys provide base-line information about the resources of the Park, visitor use and impact. Monitoring is an essential management tool for keeping track of changes to the environment and for measuring the success of management actions.

The Park has considerable intrinsic scientific value as it contains overlapping bioregions in both the marine and terrestrial environments. As a consequence, many species are at either the northern or southern limit of their distribution. The Park is used extensively for external research as it offers a relatively undisturbed coastal environment close to several research institutions. For some studies it provides a scientific reference area, or a pristine control for comparative experimentation. Integrated terrestrial/marine research is possible.

A number of monitoring programs are conducted in the Park. These include freshwater quality monitoring as part of a regional cumulative impact study, wildlife monitoring including species of conservation significance such as the Eastern Bristlebird, Green and Golden Bell Frog, Giant Burrowing Frog, Little Penguin and seals. Feral animal abundance and distribution and vegetation changes after fire or over time are also monitored.

A strategic approach to research and monitoring is required in the Park and regional coordination is important for the long-term protection of Jervis Bay. Research conducted between 1992 and 1998 was reviewed in 1998 (Thompson 1998). The research management and priority recommendations made by the consultant are incorporated into this Plan.

Under r.12.10 of the EPBC Regulations research may not be undertaken in the Park unless it is provided for by, and carried out in accordance with, a management plan in force for the Park; or is authorised by a permit, or under certain other conditions (regulation 12.06). Research which involves taking, keeping, moving, etc, native species or is undertaken for commercial purposes will be prohibited by s.354(1) of the Act except in accordance with this plan. Research which affects listed threatened species or ecological communities, listed migratory species, cetaceans or listed marine species, under Part 13 of the Act will have to comply with those provisions as well. Regulations made under s.301 of the Act concerning access to biological resources may also be relevant.

The Director has functions under s 514B of the EPBC Act to protect, conserve and manage biodiversity and heritage in Commonwealth reserves, and to carry out alone or in co-operation

with other institutions and persons, and to arrange for any other institution or person to carry out, research and investigations relevant to the establishment and management of Commonwealth reserves. Research and monitoring programs assist in developing effective management programs for conservation of significant species.

The lease requires the Director to make research reports in relation to the Park available to the Council.

The conduct of scientific research, whether for commercial discovery or other purposes, may be affected by the development of regulations under section 301 of the EPBC Act to control access to biological resources in Commonwealth areas. Such regulations are being considered by Government. Any approaches to undertake research must accordingly take into account any obligations and responsibilities arising from the regulations. These regulations may include empowering the Director, as the holder or manager of biological resources, to enter into benefit sharing agreements with applicants and mechanisms to ensure that the Minister or his delegate is satisfied that research undertaken is done in accordance with the Management Plan and with no significant harm done to the environment.

## **Prescriptions**

- 10.1 A research program consistent with the research priorities identified in the Plan will be developed for the Park. So far as possible the program will take an integrated and collaborative approach with other land management organisations within the Jervis Bay region when developing the research program.
- 10.2 The following research projects are priorities during the life of this Plan:
  - cultural heritage research involving Community members and as highlighted in the Council's land management plan;
  - baseline surveys of fauna including mammals, rock platform species and fresh water fauna;
  - base-line surveys of flora and plant distribution;
  - visitor surveys including visitor numbers, activities, expectations, experiences and impacts;
  - compilation of existing marine environment data and identification of research priorities for marine species and habitats in cooperation with the NSW Marine Parks Authority.
- 10.3 Examples of monitoring programs that will be implemented include:
  - vegetation monitoring before and after fire;
  - monitoring and updating of plant species occurrence and locality databases and GIS;
  - Park visitor numbers, impacts and experience;
  - water quality monitoring that is part of a regional total catchment management assessment, including monitoring of bird species;
  - weed monitoring and research, including established programs to monitor Bitou bush and other major problem species, and contributions to and active participation with other agencies in the release and monitoring of biological control agents for Bitou bush;
  - monitoring of damaged areas that are rehabilitating;
  - monitoring wildlife populations, in particular significant species such as the Eastern Bristlebird, Ground parrot, Green and Golden Bell frog, Giant Burrowing frog, Little penguin, seals, or threats to those species;

- monitoring feral animal populations, particularly black rats and foxes;
  - monitoring of seagrass beds and assessing impacts; and
  - monitoring how this Plan is implemented.
- 10.4 The Director will undertake or encourage research into natural and cultural heritage as indicated in the relevant sections of this Plan. Research consistent with the objectives of this Plan likely to provide a net benefit to Park management will be encouraged and commissioned where appropriate.
- 10.5 The Director will seek, and make every reasonable effort to allocate and secure, continuing funding for high priority research, surveys and monitoring projects in Booderee.
- 10.6 The Director will require researchers to deliver reports in hard copy and on computer disk. Reports must include a comprehensive plain English summary.
- 10.7 The Director will maintain a central registry of research reports at Park Headquarters, with additional copies provided to the Council and the Environment Australia library.
- 10.8 The Director will develop an effective system to manage research data by continuing to develop relevant computerised databases and a GIS. Access to research data and to remote information and library facilities will be improved. Such information will be made available to the Council.
- 10.9 Where appropriate and with approval of the Council, research and monitoring projects will be extended to include Council land.
- 10.10 Where appropriate, the Director will cooperate with the Department of Defence for joint research and monitoring and for sharing the results of such activities.
- 10.11 Wherever practicable, Park staff and Community members will be involved in monitoring programs. Guidelines will be developed for staff, consultants or permittees to assist researchers in carrying out and communicating their research in a manner that is appropriate for Park staff and Community members.
- 10.12 All research activities within the Park will be undertaken in accordance with a permit from the Director.
- 10.13 Research permit applications will be assessed and the granting of a permit will be considered where the research:
- is consistent with the Act and Regulations;
  - is relevant to park management principles;
  - is conducted by a researcher with appropriate credentials and experience;
  - will not threaten the conservation status of a species;
  - will not affect cultural sites in a negative way;
  - is for scientific and not for commercial purposes;
  - cannot reasonably be done outside the Park; and
  - is essential to investigate a potentially detrimental event or situation, for example disease outbreak in an endangered species population.

- 10.14 Research permits will be managed so as to:
- avoid conflict or undesirable overlap of research activities;
  - ensure minimal disturbance to the Park and Park operations;
  - avoid potential adverse impacts on the Park’s resources;
  - ensure that any benefits derived from research, whether financial or non-financial, are shared; and
  - apply appropriate permit conditions.
- 10.15 Research permit conditions will include but not necessarily be limited to:
- research results to be made available to the Director (granting of a permit will not negate the need to obtain other permits, for example banding permits);
  - any benefits derived from research, whether financial or non-financial, are to be shared;
  - researcher permit holders to be bound by the same rules as other Park visitors unless specifically provided for;
  - research permit holders to be exempt from the Park use fee while conducting approved research; and
  - research to be conducted discretely and out of the view of Park visitors where possible.
- 10.16 As requests to conduct educational research activities are frequently received these will be assessed with reference to the level of demand. Activities which may cause adverse impacts in this context and which are unlikely to be allowed include vertebrate fauna trapping, marine organism collecting and large groups of people walking through vegetation. Activities conducted by experienced researchers as part of an ongoing project that meets the research priorities of the Park may be permitted as a student participatory project.
- 10.17 Where regulations are made under s.301 of the EPBC Act with respect to access to biological resources in Commonwealth areas, the Director will adopt management practices consistent with the regulations, including ensuring an appropriate benefit sharing agreement is in place.

## 11. EVALUATION AND PERFORMANCE

**Aim:** to evaluate progress in implementing the Plan and conduct a final technical audit.

### Background

This Management Plan has been developed on the basis of the financial and staff resources, expectations and knowledge available in 2001. Management techniques considered appropriate now can be expected to change with time as our knowledge continues to improve. One of the functions of the Board, in conjunction with the Director, is to monitor the management of the Park. Monitoring the implementation of this Plan will provide a basis for development of the next plan for the Park.

There is increasing recognition that traditional output measures fail to adequately assess performance, and that the development of practical and meaningful outcome measures, applicable to protected area management, is essential. Through the Australia and New Zealand Environment and Conservation Council, Commonwealth, State and Territory agencies are consulting on designs for practical and scientifically robust performance indicators to underpin a comprehensive system of outcome-based reporting.

As outcome-based reporting becomes better defined, it is probable that future plans of management will include performance indicators, relating to the stated aims in the plan. When performance indicators are an integral part of the management plan, performance assessment will be more objective and informative.

Until outcome-based reporting is developed for protected area management, the following system of assessment will continue to be applied.

### Prescriptions

- 11.1 The Park Manager will present an annual report on the implementation of management prescriptions described in this Plan, and programmed in the implementation schedule, to the Park Board and, through the Director, to the Minister for their information.
- 11.2 Towards the end of the period of implementation of this Plan, the Park Board and the Director will commission an independent technical audit of this Plan with the following terms of reference:
  - to consider each prescribed management action and determine whether or not it was carried out;
  - to evaluate the performance of each prescribed action in relation to the objective or objectives it was intended to serve;
  - in the case of any prescribed action that was not implemented, or which failed to achieve the desired outcome, to determine the cause;
  - to report the results of the audit to the Park Board together with an overall assessment of the delivery of the Plan in relation to its objectives; and



- in the light of this Plan’s performance, to recommend to the Director and to the Minister any changes to the objectives and prescribed actions that should be considered during the preparation of the next plan.
- 11.3 The technical audit will also help to monitor the conservation of the National Estate values of the Park

## MISCELLANEOUS

## APPENDIX 1

## SIGNIFICANT SPECIES

**Flora**

## Scientific name

## Common name

Nationally vulnerable – listed as vulnerable under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) and the *Threatened Species Conservation Act 1995* (NSW). Occurs in six conservation reserves but fewer than 1000 plants known to occur in conservation reserves.

*Syzygium paniculatum*

Magenta cherry

Nationally rare (Briggs & Leigh 1996) – Occur in three conservation reserves (*Grevillea*, *Leptospermum*, & *Platysace*), six conservation reserves (*Pultenaea*) and nine conservation reserves (*Rulingia*). Population size in Booderee National Park is unknown for each species. Of these five taxa, only *Rulingia hermanniifolia* is known to have more than 1000 plants in conservation reserves.

*Grevillea macleayana*

–

*Leptospermum epacridoideum*

–

*Platysace stephensonii*

–

*Pultenaea villifera*

Yellow bush pea

*Rulingia hermanniifolia*

–

Conservation status unknown but suspected to be endangered, vulnerable or rare nationally. Booderee National Park is the only known conservation reserve in which it occurs, but the size of the population here is not accurately known. It has not been recorded here since the 1980s.

*Corybas undulatus*

Tailed helmet orchid

Species at or close to the limit of their distribution in Booderee National Park (Taws 1998)

*Acacia elongata*

Swamp wattle, Slender wattle

*Amyema cabbagei*

Sheoak mistletoe

*Atriplex cinerea*

Grey saltbush, Coast saltbush

*Austrostipa stipoides*

–

*Bacopa monnieri*

–

*Baeckea ramosissima*

Rosy heath myrtle, Rosy baeckea

## Flora

### Scientific name

### Common name

Species at or close to the limit of their distribution in Booderee National Park (Taws 1998) *continued*

<i>Blechnum indicum</i>	Swamp water fern
<i>Callistemon linearis</i>	Narrow-leaved bottlebrush
<i>Canthium coprosmoides</i>	Coast canthium
<i>Caustis recurvata</i> var. <i>recurvata</i>	–
<i>Chloanthes stoechadis</i>	Common cloanthes
<i>Conospermum ericifolium</i>	–
<i>Conospermum longifolium</i> subsp. <i>mediale</i>	–
<i>Crinum pedunculatum</i>	Swamp lily
<i>Daviesia alata</i>	Winged bitter pea
<i>Endiandra sieberi</i>	Hard corkwood
<i>Eucalyptus obstans</i>	Port Jackson mallee
<i>Eucalyptus sclerophylla</i>	Scribbly gum
<i>Gompholobium grandiflorum</i>	Large wedge pea
<i>Goodenia heterophylla</i> subsp. <i>eglandulosa</i>	–
<i>Leucopogon amplexicaulis</i>	–
<i>Leucopogon rodwayi</i>	Rodway's bearded heath
<i>Lomandra cylindrica</i>	Needle matrush
<i>Melaleuca capitata</i>	–
<i>Mirbelia rubrifolia</i>	Heathland mirbelia
<i>Notolaea ovata</i>	–
<i>Olearia axillaris</i>	Coastal daisy bush
<i>Peperomia leptostachya</i>	–
<i>Persoonia mollis</i> subsp. <i>caleyi</i>	Soft geebung
<i>Petrophile pulchella</i>	Conesticks
<i>Petrophile sessilis</i>	–
<i>Phebalium squamulosum</i> subsp. <i>argenteum</i>	Scaly phebalium
<i>Philotheca buxifolius</i> subsp. <i>buxifolius</i>	Waxflower
<i>Pisonia umbellifera</i>	Birdlime tree
<i>Styphelia triflora</i>	Five corners
<i>Styphelia tubiflora</i>	–
<i>Zieria laevigata</i>	Angular zieria

## Fauna

### Endangered and vulnerable fauna

Cwlth		NSW		Scientific name	Common name	Status in Park
End	Vul	End	Vul			
			X	<i>Phascogale carolinensis</i>	Koala	U
			X	<i>Pseudomys gracilicaudatus</i>	Eastern chestnut mouse	R
			X	<i>Sminthopsis leucopus</i>	White-footed dunnart	R
X			X	<i>Eubalea australis</i>	Southern right whale	R
	X		X	<i>Megaptera novaengliae</i>	Humpback whale	R
			X	<i>Physeter macrocephalus</i>	Sperm whale	R
			X	<i>Calyptrorhynchus lathami</i>	Glossy black cockatoo	R
			X	<i>Charadrius mongolus</i>	Mongolian plover	R
		X		<i>Charadrius (Thinornis) rubicollis</i>	Hooded plover	R
			X	<i>Crocethia (Calidris) alba</i>	Sanderling	R
X		X		<i>Dasyornis brachypterus</i>	Eastern bristlebird	R
	X		X	<i>Diomedea (Thalassarche) cauta</i>	Shy albatross	R
	X	X		<i>Diomedea exulans</i>	Wandering albatross	R
			X	<i>Diomedea melanopbris</i>	Black-browed albatross	R
			X	<i>Haematopus fuliginosus</i>	Sooty oystercatcher	R
			X	<i>Haematopus longirostris</i>	Pied oystercatcher	R
			X	<i>Ixobrychus flavicollis</i>	Black Bittern	R
			X	<i>Lophoictinia isura</i>	Square-tailed kite	R
			X	<i>Ninox strenua</i>	Powerful owl	R
			X	<i>Pandion haliaetus</i>	Osprey	R
			X	<i>Petroica rodinogaster</i>	Pink robin	R
			X	<i>Pezoporus wallicus</i>	Ground parrot	R
	X		X	<i>Phoebastria fusca</i>	Sooty albatross	R
	X		X	<i>Polytelis swainsonii</i>	Superb parrot	R
X		X		<i>Pterodroma leucoptera</i>	Gould's petrel	R
	X		X	<i>Pterodroma neglecta</i>	Kermadec petrel	R
			X	<i>Pterodroma solandri</i>	Providence petrel	R
			X	<i>Puffinus assimilis</i>	Little shearwater	R
		X		<i>Sterna albifrons</i>	Little tern	R
			X	<i>Sterna fuscata</i>	Sooty tern	R

Fauna						
Endangered and vulnerable fauna <i>continued</i>						
Cwlth		NSW		Scientific name	Common name	Status in Park
End	Vul	End	Vul			
			X	<i>Tyto novaehollandiae</i>	Masked owl	R
	X		X	<i>Heleioporus australiacus</i>	Giant burrowing frog	R
	X	X		<i>Litoria aurea</i>	Green and golden bell frog	R
	X	X*		<i>Carcharias taurus</i>	Grey Nurse Shark	R

Cwlth Listed as endangered (End) or vulnerable (Vul) under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth)

NSW Listed as endangered (End) or vulnerable (Vul) under the *Threatened Species Conservation Act 1995* (NSW);

X\* = listed as endangered under the *Fisheries Management Act 1994* (NSW)

Status in Booderee National Park: R = confirmed record; U = unconfirmed record

## International treaties and agreements

- Agreement between the Government of Australia and the Government of Japan for the Protection of Migratory Birds and Birds in Danger of Extinction and their Environment (JAMBA):
  - of the 76 birds listed under this agreement, 18 are found in Booderee;
- Agreement between the Government of Australia and the Government of the People's Republic of China for the Protection of Migratory Birds and their Environment (CAMBA):
  - of the 81 birds listed under this agreement, 18 are found in Booderee.
- Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention):
  - of the species listed under this convention, 58 are found in Booderee.

Bird species listed under international instruments				
Common name	Scientific name	CAMBA	JAMBA	Bonn
Wedge-tailed shearwater	<i>Puffinus pacificus</i>		J	
Short-tailed shearwater	<i>Puffinus tenuirostris</i>		J	
Sooty shearwater	<i>Puffinus griseus</i>	C	J	
Providence petrel	<i>Pterodroma solandri</i>			M
Shy albatross	<i>Diomedea (Thalassarche) cauta</i>			M
Wandering albatross	<i>Diomedea exulans</i>			M
Black-browed albatross	<i>Diomedea melanophris</i>			M
Sooty albatross	<i>Phoebastria fusca</i>			M
Brown booby	<i>Sula leucogaster</i>	C	J	
Great egret	<i>Egretta alba</i>	C	J	
Eastern reef egret	<i>Egretta sacra</i>	C		
Eastern curlew	<i>Numenius madagascariensis</i>	C	J	F
Bar-tailed godwit	<i>Limosa lapponica</i>	C	J	F
Greenshank	<i>Tringa nebularia</i>	C	J	F
Red knot	<i>Calidris canutus</i>			F
Masked lapwing	<i>Vanellus miles novaehollandiae</i>			F
Black-fronted plover	<i>Charadrius melanops</i>			F
Double-banded plover	<i>Charadrius bicinctus</i>			F
Mongolian plover	<i>Charadrius mongolus</i>			F
Hooded plover	<i>Charadrius rubicollis</i>			F
Red-capped plover	<i>Charadrius ruficapillus</i>			F
Ruddy turnstone	<i>Arenaria interpres</i>	C	J	F
Latham's snipe	<i>Capella (Gallinago) bardwickii</i>	C	J	F

## Bird species listed under international instruments

Common name	Scientific name	CAMBA	JAMBA	Bonn
Curlew sandpiper	<i>Calidris ferruginea</i>	C	J	F
Sanderling	<i>Crocethia (Calidris) alba</i>	C	J	F
Pomarine jaeger	<i>Stercorarius pomarinus</i>	C	J	
Arctic skua	<i>Stercorarius parasiticus</i>		J	
Caspian tern	<i>Hydropogone tschegrava (caspia)</i>	C		
Crested tern	<i>Sterna bergii</i>		J	
Little tern	<i>Sterna albifrons</i>	C	J	
Common noddy	<i>Anous stolidus</i>	C	J	
White-throated needletail	<i>Hirundapus caudacutus</i>	C		
Fork-tailed swift	<i>Apus pacificus</i>	C	J	
Maned duck	<i>Chenonetta jubata</i>			F
Musk duck	<i>Biziura lobata</i>			F
Pacific black duck	<i>Anas superciliosa</i>			F
Hardhead	<i>Aythya australis</i>			F
Black swan	<i>Cygnus atratus</i>			F
Chestnut teal	<i>Anas castanea</i>			F
Grey teal	<i>Anas gibberifrons</i>			F
Wedge-tailed eagle	<i>Aquila audax</i>			F
White-bellied sea-eagle	<i>Haliaeetus leucogaster</i>	C		F
Little eagle	<i>Hieraaetus morphnoides</i>			F
Brown falcon	<i>Falco berigora</i>			F
Peregrine falcon	<i>Falco peregrinus</i>			F
Brown goshawk	<i>Accipiter fasciatus</i>			F
Grey goshawk	<i>Accipiter novaehollandiae</i>			F
Marsh harrier	<i>Circus aeruginosus</i>			F
Australian hobby	<i>Falco longipennis</i>			F
Australian kestrel	<i>Falco cenchroides</i>			F
Black-shouldered kite	<i>Elanus notatus</i>			F
Whistling kite	<i>Haliastur sphenurus</i>			F
Osprey	<i>Pandion haliaetus</i>			F
Collared sparrowhawk	<i>Accipiter cirrbocephalus</i>			F

C = listed in CAMBA

J = listed in JAMBA

M = specifically listed in the Bonn convention

F = included in a family listing in Appendix 2 of the Bonn convention

# APPENDIX 2

## AUSTRALIAN IUCN RESERVE MANAGEMENT PRINCIPLES (EXTRACT)

### **Schedule 8 Australian IUCN reserve management principles (regulation 10.04)**

#### **Part 1: General administrative principles**

##### *1. Community participation*

Management arrangements should, to the extent practicable, provide for broad and meaningful participation by the community, public organisations and private interests in designing and carrying out the functions of the reserve or zone.

##### *2. Effective and adaptive management*

Management arrangements should be effective and appropriate to the biodiversity objectives and the socio-economic context of the reserve or zone. They should be adaptive in character to ensure a capacity to respond to uncertainty and change.

##### *3. Precautionary principle*

A lack of full scientific certainty should not be used as a reason for postponing measures to prevent degradation of the natural and cultural heritage of a reserve or zone where there is a threat of serious or irreversible damage.

##### *4. Minimum impact*

The integrity of a reserve or zone is best conserved by protecting it from disturbance and threatening processes. Potential adverse impacts on the natural, cultural and social environment and surrounding communities should be minimised as far as practicable.

##### *5. Ecologically sustainable use*

If resource use is consistent with the management principles that apply to a reserve or zone, it should (if it is carried out) be based on the principle (the principle of ecologically sustainable use) that:

- (a) natural resources should only be used within their capacity to sustain natural processes while maintaining the life-support systems of nature; and
- (b) the benefit of the use to the present generation should not diminish the potential of the reserve or zone to meet the needs and aspirations of future generations.

##### *6. Transparency of decision-making*

The framework and processes for decision-making for management of the reserve or zone should be transparent. The reasons for making decisions should be publicly available, except to the extent that information, including information that is culturally sensitive or commercial-in-confidence, needs to be treated as confidential.



### *7. Joint management*

If the reserve or zone is wholly or partly owned, by Aboriginal people, continuing traditional use of the reserve or zone by resident indigenous people, including the protection and maintenance of cultural heritage, should be recognised.

## **Part 2: Principles for each IUCN category**

### *3. National park*

**Note:** This category corresponds to the IUCN protected area management category II.

- 3.01 The reserve or zone should be protected and managed to preserve its natural condition according to the following principles.
- 3.02 Natural and scenic areas of national and international significance should be protected for spiritual, scientific, educational, recreational or tourist purposes.
- 3.03 Representative examples of physiographic regions, biotic communities, genetic resources, and native species should be perpetuated in as natural a state as possible to provide ecological stability and diversity.
- 3.04 Visitor use should be managed for inspirational, educational, cultural and recreational purposes at a level that will maintain the reserve or zone in a natural or near natural state.
- 3.05 Management should seek to ensure that exploitation or occupation inconsistent with these principles does not occur.
- 3.06 Respect should be maintained for the ecological, geomorphologic, sacred and aesthetic attributes for which the reserve or zone was assigned to this category.
- 3.07 The needs of indigenous people should be taken into account, including subsistence resource use, to the extent that they do not conflict with these principles.
- 3.08 The aspirations of traditional owners of land within the reserve or zone, their continuing land management practices, the protection and maintenance of cultural heritage and the benefit the traditional owners derive from enterprises, established in the reserve or zone, consistent with these principles should be recognised and taken into account.

### *5. Habitat/species management area*

**Note:** This category corresponds to the IUCN protected area management category IV.

- 5.01 The reserve or zone should be managed primarily, including (if necessary) through active intervention, to ensure the maintenance of habitats or to meet the requirements of collections or specific species based on the following principles.
- 5.02 Habitat conditions necessary to protect significant species, groups or collections of species, biotic communities or physical features of the environment should be secured and maintained, if necessary through specific human manipulation.
- 5.03 Scientific research and environmental monitoring that contribute to reserve management should be facilitated as primary activities associated with sustainable resource management.

- 5.04 The reserve or zone may be developed for public education and appreciation of the characteristics of habitats, species or collections and of the work of wildlife management.
- 5.05 Management should seek to ensure that exploitation or occupation inconsistent with these principles does not occur.
- 5.06 People with rights or interests in the reserve or zone should be entitled to benefits derived from activities in the reserve or zone that are consistent with these principles.
- 5.07 If the reserve or zone is declared for the purpose of a botanic garden, it should also be managed for the increase of knowledge, appreciation and enjoyment of Australia's plant heritage by establishing, as an integrated resource, a collection of living and herbarium specimens of Australian and related plants for study, interpretation, conservation and display.

## APPENDIX 3

### RISKS AND PRESCRIPTIONS – BOODEREE NATIONAL PARK

This Appendix to the Management Plan lists some of the main risks to human health and safety and to conservation that are considered in the Plan and some of the most relevant prescriptions that address these risks. The list is not comprehensive and further information on management of a range of risks in Booderee National Park is found in the Plan.

Risks to human health and safety	
Type of risk	Prescriptions in Management Plan
Injury to or death of visitors at cliffs (in particular, visitors fishing from rocks)	<ul style="list-style-type: none"> <li>• 7.6.5</li> <li>• 7.3.9</li> <li>• 7.1.2, 7.1.8</li> <li>• 9.3.17</li> </ul>
Injury to or death of staff, visitors or the public due to fire	<ul style="list-style-type: none"> <li>• 5.3.1 – 8, 10 – 14, 28, 35, 37</li> <li>• 9.1.6</li> <li>• 9.11.1, 4, 11, 14</li> </ul>
Injury to or death of visitors or staff due to road accidents	<ul style="list-style-type: none"> <li>• 9.3.1, 9.3.18</li> <li>• 9.4.5, 6, 11, 12, 13, 15</li> </ul>
Injury to or death of visitors through accidents while in park (other than on roads, at entry station, cliffs or through fire)	<ul style="list-style-type: none"> <li>• 3.13, 16, 17</li> <li>• 7.1.2, 7.1.10</li> <li>• 7.3.1, 4, 5, 9</li> <li>• 7.4.2, 7.4.3</li> <li>• 7.5.4 – 7.5.5</li> <li>• 9.1.6</li> <li>• 9.3.1</li> <li>• 9.11.1</li> </ul>
Illness of people due to sewage system failures & outflows (caused by loss of power or other incident)	<ul style="list-style-type: none"> <li>• 5.2.1</li> <li>• 9.3.14</li> <li>• 9.5.7, 8, 9, 11, 13</li> </ul>
Injury to or death of staff due to workplace accidents & incidents	<ul style="list-style-type: none"> <li>• 9.3.1, 9.3.8</li> </ul>

## Risks to conservation of natural and cultural heritage

Type of risk	Prescriptions in Management Plan
Damage to cultural sites or loss of cultural heritage due to ineffective management of developments or activities	<ul style="list-style-type: none"> <li>• 2.3.1 – 2.3.14</li> <li>• 4.1 – 4.16</li> <li>• 9.3.6</li> </ul>
Damage to landscape or soil erosion due to poorly managed developments	<ul style="list-style-type: none"> <li>• 2.3.1 – 2.3.14</li> <li>• 5.1.1 – 5.1.8</li> </ul>
Reduced biodiversity or water quality due to sewage spills, oil spills, poorly managed developments, use of chemicals or other activities within or outside the park	<ul style="list-style-type: none"> <li>• 2.3.1 – 2.3.14</li> <li>• 5.2.1 – 5.2.11</li> <li>• 5.3.30</li> <li>• 6.3.1 – 6.3.5</li> <li>• 6.4.2</li> <li>• 6.5.3</li> <li>• 7.2.11</li> <li>• 9.1.6</li> <li>• 9.3.6, 9.3.20</li> <li>• 9.5.1 – 9.5.13</li> </ul>
Reduced biodiversity due to overuse of water from Lake Windermere during low rainfall years	<ul style="list-style-type: none"> <li>• 5.2.13, 14, 16, 17</li> <li>• 9.2.5 – 9.2.7</li> </ul>
Reduced biodiversity due to extensive fire	<ul style="list-style-type: none"> <li>• 5.3.1 – 5.3.37</li> <li>• 5.4.9 – 5.4.11</li> <li>• 9.1.6</li> <li>• 9.11.1, 4, 11, 14</li> <li>• 10.3, point 1</li> </ul>
Reduced biodiversity in the park due to severing of habitat corridor across Bherwerre isthmus by vegetation clearing outside the park	<ul style="list-style-type: none"> <li>• 5.4.7, 15, 16, 17, 25</li> <li>• 9.11.3, 9.11.5</li> <li>• 10.2, points 2 &amp; 3</li> <li>• 10.3, point 7</li> </ul>
Reduced biodiversity due to infestation by weeds	<ul style="list-style-type: none"> <li>• 5.5.1 – 9, 13 – 15</li> <li>• 6.4.1 – 6.4.7</li> <li>• 9.11.4, 10, 11</li> <li>• 10.3, point 5</li> </ul>
Reduced biodiversity due to impacts of feral animals	<ul style="list-style-type: none"> <li>• 5.5.1 – 3, 10 – 15</li> <li>• 6.5.1 – 6.5.7</li> <li>• 10.3, point 8</li> </ul>
Reduced marine biodiversity due to marine pests (e.g. <i>Caulerpa</i> algae)	<ul style="list-style-type: none"> <li>• 5.5.1, 2, 12</li> <li>• 10.2, point 5</li> <li>• 10.3, point 9</li> </ul>
Reduced biodiversity due to poorly managed visitor activities or commercial activities	<ul style="list-style-type: none"> <li>• Chapter 7 prescriptions</li> <li>• Chapter 8 prescriptions</li> <li>• 5.4.2</li> </ul>
Failure to improve resource use (energy, water, materials) & reduce waste	<ul style="list-style-type: none"> <li>• 5.2.16</li> <li>• 9.2.1 – 9.2.9</li> <li>• 9.3.8</li> </ul>

# BIBLIOGRAPHY

- Australian Heritage Commission (1993). *Register of the National Estate*. Canberra.
- Briggs, J.D. and Leigh, J.H. (1996). *Rare or Threatened Australian Plants: 1995 revised edition*. CSIRO Publishing, Melbourne.
- Cho, G., Georges, A. and Stoujesdik, R. (eds) (1995). *Jervis Bay – A place of cultural, scientific and educational value*. Kowari 5. Australian Nature Conservation Agency. Canberra.
- Egloff, B. (1981). *Wreck Bay: an Aboriginal Fishing Community*. Canberra. Australian Institute of Aboriginal and Torres Strait Islander Studies.
- Egloff, B. Navin, K. and Officer, K. (1995). *Jervis Bay National Park and Botanic Gardens as Aboriginal Land. A final report to the Minister on the significance of the land and water in the Region of Jervis Bay Territory to indicate the appropriateness of a grant under the Aboriginal Land Grant (Jervis Bay Territory) Act 1986 (as amended)*.
- Garnett, S.T. and Crowley, G.M. (2000) *The Action Plan for Australian Birds 2000*. Environment Australia
- Ingwersen (1976). *Vegetation of the Jervis Bay Territory*. Department of the Capital Territory. Conservation Series Number 3.
- IUCN – The World Conservation Union (1994). *Guidelines for Protected Area Management Categories*, IUCN, Switzerland.
- Meehan, A.J. and. West, R.J (2000). Recovery times for a damaged *Posidonia australis* bed in south eastern Australia. *Aquatic Botany*, Vol 67, 161-167.
- Navin, K. and Officer, K. (1993). *Archaeological Investigation: Proposed Water, Sewerage and Transmission Line Easements, Bberwerre Peninsula, Jervis Bay*.
- Sachs, K. (1997). *Survey of Sullivan's recorded Aboriginal Site to Assess Site Condition*.
- Sullivan, M. E. (1977). *Aboriginal Sites of Bberwerre Peninsula*.
- Taws, N. (1997). *Vegetation Survey and Mapping of Jervis Bay Territory*. Report commissioned by Parks Australia.
- Taws, N. (1998). *Fire and Vegetation Management in Jervis Bay Territory*. Report commissioned by Parks Australia.
- Thompson (1998). *Booderee National Park Research Audit*. Report commissioned by Park Australia.

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