
Foreword

Friends of Malabar Headland (FoMH) is a community group formed in April 2000 to protect the natural and cultural heritage of Malabar Headland.

This Draft Community Plan of Management has been prepared by members of FoMH to:

- inform the community about the ecological, natural beauty and cultural values of the Headland; and
- promote discussion in the community about the future of the Headland.

The Commonwealth Government, as the administrative owner of Malabar Headland, is in the process of developing a plan of management for the Headland. However, there has been no community consultation. Rather than wait for this plan to be released, FoMH is initiating a process of public consultation and discussion through this Draft Community Plan of Management.

In developing this document, FoMH have drawn on community feedback via a questionnaire, stalls held at community events and FoMH workshops. The questionnaire surveyed people about their current uses and future vision for Malabar Headland and identified a high level of community interest and passion for the transfer of Malabar Headland to National Park and public open space.

We have drawn on a 1990 draft plan of management¹ prepared under the auspices of Randwick City Council but we also examine important issues not taken up by it.

The Draft Community Plan of Management is made available to individuals and local community groups with an interest in the Headland, Randwick City Council, NSW Government and Commonwealth Government.

Have your say

Friends of Malabar Headland encourage you to provide comments on this Draft Community Plan of Management.

Please send your submission by 31 October 2002 to:

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Acknowledgements

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¹ Manidis Roberts Consultants, Malabar Headland Draft Plan of Management, Randwick Municipal Council, May 1990.

Summary

Malabar Headland is recognised as an area of national significance. The Eastern and Western sections of the Headland are listed on the Register of the National Estate, and in 2001 the Australian Council of National Trusts listed the Headland as one of 32 endangered places in Australia.

This plan proposes that the Commonwealth Government return the entire Headland to the community through the establishment of two parks (see Map 1):

- Boora² National Park, consisting of the Eastern coastal bushland and the Western escarpment bushland; and
- ANZAC Park (currently the rifle range) as public open space.

The creation of these parks will preserve important ecological, cultural and social values and enable them to be enjoyed by the people of Sydney and NSW:

- **Ecological:** Malabar Headland is the largest, most diverse and highest quality area of coastal bushland between Barenjoey Head (Pittwater) and Cape Banks (Botany Bay). It is home to the Eastern Suburbs Banksia Scrub, an endangered plant community recognised under both Commonwealth and State legislation. It also contains 73 hectares of high-quality remnant coastal bushland and supports at least 283 endemic native plant species and 177 bird species. Preserving the Headland will play an important role in maintaining the long-term biodiversity of Sydney's coastal bushland.
- **Cultural:** The Headland contains important cultural heritage sites. These include Aboriginal sites, as well as World War II defence sites such as gun emplacements and a railway cutting.
- **Social:** Malabar Headland has a beautiful ocean setting with spectacular views of the coastline, dramatic sandstone cliffs, and stunning coastal bushland. These values currently attract bushwalkers, bird and whale watchers, rock fishermen and scuba divers, even though public access to the Headland is currently illegal. The creation of the proposed parks will provide an opportunity to introduce a range of sustainable passive and active recreation facilities, such as a coastal walkway and a community education/cultural centre. It will also provide much-needed additional public open space for Sydney's increasing population.

Over the last 15 years, local volunteers have undertaken extensive bush regeneration activities. This community initiative has largely removed the threat of invasive weeds such as Bitou Bush, Lantana, and Pampas Grass, but the effort must be sustained.

In recent years, target shooting on the ANZAC Rifle Range has diminished, and the Commonwealth Government has allowed access to this area for horse riding and model aeroplane flying. In 2001, Federation funding was provided to relocate target shooting to Holsworthy, but this has not yet occurred.

The Commonwealth Government is the current administrative owner of Malabar Headland. Although it has indicated that it is developing a plan of management for the Headland, there has been no community consultation.

Now is the time for the community to discuss ideas for the future use and management of Malabar Headland. There is strong community support to extend the coastal walkway from South Head to La Perouse through Malabar Headland as proposed in the Sydney Regional Environmental Plan (No 14).

² Boora Point is current name of the Southern-most point on Malabar Headland.

Key Recommendations

This Draft Community Plan of Management is intended to provide a starting point for discussion. Its key recommendations include:

Administration and management

- Transfer the ownership of Malabar Headland from the Commonwealth Government to the New South Wales Government.
- NSW National Parks and Wildlife Service to manage Boora National Park in conjunction with the Aboriginal Community.
- Establish Boora Trust to manage ANZAC Park as public open space.
- Re-zone the Western section of the Headland as a National Park and the ANZAC Rifle Range as public open space.

Preservation of indigenous flora and fauna

- Reduce damage to the environment caused by fire, rubbish dumping, motorbikes, weeds, rabbits, horses, feral cats, foxes and dogs.
- Conduct research and actively manage to maintain biodiversity in the long term.
- Create vegetation corridors between the Eastern and Western sections of the Headland.

Conservation and rehabilitation of cultural sites

- Acknowledge, conserve and appropriately interpret the values of the Headland that are relevant for the Aboriginal community.
- Control vandalism and institute conservation management of World War II heritage sites.

Remediation of contaminated land and water

- Remove the current significant risk of harm to human health and the environment. For example, contaminants from the former landfill are polluting the Southern end of Maroubra Beach.
- Clean up contamination from the landfill site to a standard that is fit for use as public open space.
- Maintain a rubbish-free Headland.

Community access for multiple use recreation

- Involve the community in developing the vision and planning for the Headland.

Malabar Headland is a nationally recognised local treasure. It is the duty of the current generation to preserve the ecological, cultural and social values for the use and enjoyment of all future generations.

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1 Introduction

1.1 Location of Malabar Headland

Malabar Headland is a peninsula located between Maroubra Beach and Long Bay and is approximately 12 kilometres south of the Sydney Central Business District. It is the largest and best quality area of native bush in the Sydney Eastern Suburbs, as well as containing Aboriginal engravings and middens and significant World War II historic sites.

With reference to Map 1, the geographic extent of Malabar Headland for the purposes of this plan of management is: the entire area of land bounded by Randwick City Council land on the northern side of Long Bay, Sydney Water Corporation's land, Pioneers Park, Broome Street fence line, Arthur Byrne Reserve and Maroubra Beach. Consistent with the Sydney Regional Coastal Management Strategy, the adjacent marine waters within 5.5km of the coastline are considered part of the study area of this plan of management.

The proposed national park and public open space on Malabar Headland would be a practical and logical extension of the nearby Botany Bay National Park (refer Map 2).

1.2 Why this Plan of Management is Needed

Following increasingly vocal community concern for the protection of the natural and cultural values of the Headland, the Commonwealth has taken some positive steps over the past 2 years in terms of managing the site:

- ◆ Construction of fence along the western boundary and removal of rubbish.
- ◆ A commitment for a 2 year period from July 2002 to spend \$60,000 on a weed spraying and removal program which will greatly support the efforts of the volunteer bush regenerators.
- ◆ Site monitoring, investigation and initial remediation works to address contamination issues.

However, lack of community consultation has resulted in some of the remediation works causing damage to bird habitats and to part of the wetlands near the south end of Maroubra Beach. There also remain many areas of neglect not yet addressed by any of the works.

The Department of Finance & Administration (DoFA) wrote³ to Friends of Malabar Headland (FoMH) in March 2001 stating that the Commonwealth's "... *plan of management is not developed to the stage where it is appropriate for public release or public comment*". That plan or its terms of reference are not available as at August 2002.

Consequently, this draft plan has been prepared concurrently to the Commonwealth's plan.

The role of this draft plan of management is to encourage further community and stakeholder debate on:

- The case for the preservation of the entire Headland in the public domain.
- Policies and actions to be carried out by government, stakeholders and the community in order to meet this vision - especially in relation to the protection of the natural and cultural values.

³ Letter from the Office of the Minister for Finance and Administration dated 8 Mar 2001.

1.3 Key Features of Malabar Headland

There are five major sections within Malabar Headland covered by this plan. Having distinct geographic, natural and cultural features, each may require different strategies to retain natural and cultural values. These sections are shown on Map 3A and described briefly below. Appendix 2 provides a flora species list for the Eastern and Western bushland sections.

1.3.1 Eastern bushland

The Eastern bushland has large areas of relatively undisturbed coastal bushland behind spectacular cliff lines which extend from just south of Maroubra Beach to Long Bay. There are also a number of World War II sites such as gun emplacements, tunnels and a railway cutting.

The bushland provides habitat for many native animals including a wide variety of birds for which it has an international status as a bird watching site, a healthy population of reptiles and a colony of the Common Bentwing Bat. Whale watching is now a frequent activity by the local community and visitors to the area

The quality and diversity of the coastal bushland is unrivalled between Broken Bay and Botany Bay. It contains 270 recorded native plant species of which 114 are not found in the Western bushland. Species present include a number of wattles (*Acacia spp.*), colourful heathland shrubs (eg *Banksia*, *Boronia*, *Callistemon*, *Correa*, *Dillwynia*, *Epacris*), native ferns and grasses.

The Eastern bushland part of Malabar Headland contains the largest remnants of Eastern Suburbs Banksia Scrub (ESBS), a plant community now listed for protection under both Commonwealth and State legislation.⁴

Scientists⁵ generally recognise the ESBS to represent the plant communities occurring on nutrient poor sand deposits in the Sydney eastern and south-eastern suburbs. It has the structural form of sclerophyllous heath or scrub with small areas of woodland, forest or wetland vegetation. This plant community was once common along coastal Sydney but it is now estimated that only 1% of its original area remains. The RCC SoER 2001 noted that the NPWS has almost completed mapping of the ESBS.

Under the EPBC Act, a recovery plan is required for ESBS but this is yet to be completed. According to Environment Australia, ongoing threats to the ESBS include “*fragmentation, weed invasion, and other types of land degradation from human activities andchanges in land tenure*”.⁶

Significant community volunteer bush regeneration activity for over 15 years has left the Eastern bushland virtually free from its former major weeds – Bitou Bush, Pampas Grass and Lantana.

1.3.2 Western bushland

The Western bushland is also of high quality and the plant communities are more varied than in the Eastern bushland. It contains 226 native plant species of which 70 are not recorded in the Eastern bushland (refer Appendix 2) - the species diversity per hectare is three times that of the Eastern bushland.

⁴ *Environment Protection and Biodiversity Conservation (EPBC) Act 1999* (Commonwealth legislation) and *Threatened Species Conservation Act 1997* (State legislation).

⁵ <http://www.ea.gov.au/biodiversity/threatened/communities/east-suburbs-banksia.html>

⁶ www.ea.gov.au/biodiversity/threatened/communities/east-suburbs-banksia

The Western bushland's sandstone escarpment (refer Map 1) provides a magnificent viewing platform overlooking Maroubra Beach and north and south along the coastline. South of the sandstone rock escarpment there is a low forest of Smooth-barked Apple (*Angophora costata*), Christmas Bush (*Ceratopetalum gummiferum*) and grass trees (*Xanthorrhoea resinifera*). On the escarpment there are patches of the protected ESBS, rare orchids, coastal heathland, as well as ephemeral wetlands (an important frog habitat). To the North there is a unique moist gully containing forest with Blueberry Ash (*Elaeocarpus reticulatus*), Lilly Pilly (*Acmena smithii*) and umbrella fern (*Sticherus flabellatus*).

The differences in the plant communities between the Eastern and Western bushland, make the preservation of the both sections vital to conserving local and national biodiversity.

Appendix 3 provides a comprehensive review of the vegetation in the Western bushland and demonstrates the importance of its retention as National Park - and not just for the ESBS that it contains.

While the heartland of the Western bushland is of high quality, the site's edges were badly infested by the invasive weeds Bitou Bush, Lantana and Pampas Grass. Much of the necessary clearance of these, and other weeds, has been completed by community volunteer effort but more work needs to be done.

This area is located close to medium density housing. Community survey results (see section 3 & Appendix 4) identified that local residents make bike and walking transit and are strongly opposed to further housing development.

1.3.3 ANZAC Rifle Range

In contrast, the former ANZAC Rifle Range section which is the central section of the Headland is still used mainly for rifle shooting, horse riding and model aeroplane flying, has sparse bushland. As shown on Map 4, some of this area has suffered from extensive (though inadequately monitored and recorded) landfill operations over the period 1968 to 1988.

It arguably still has habitat value that could be boosted by the creation of regenerated bushland corridors between the Eastern and Western bushland as shown on Map 1.

The wide variety of passive, recreational and educational activities that this area could support and its unique setting between bushland and the Pacific Ocean, make a strong case for its retention as public open space.

1.3.4 Northern bushland

When the boundaries of the eastern section of National Estate bushland were being set in 1986 this area of approximately 4ha adjoining South Maroubra Beach was excluded on account of its then severe infestations of Bitou Bush and Pampas Grass. Volunteer bush regeneration since then has virtually completely eliminated these weeds and there is now no visually detectable boundary between this area and the Eastern bushland.

Apart from being a natural extension of proclaimed National Estate bushland it has special value because it contains:

- a number of indigenous plant species not found elsewhere on the Headland,
- water related habitat for a variety of bird species, and
- a small, though degraded, wetland which could be restored.

These wetlands have been affected by leachate oozing from the landfill areas as well as some physical degradation caused by preliminary site remediation work authorised by the property administrator (DoFA).

Horses straying from the riding school are also causing some physical degradation of the wetlands and spread of weeds.

1.3.5 *Adjacent marine waters*

The marine waters off Malabar Headland contain dolphins, seals, sea dragons and an important colony of Grey Nurse sharks. It also provides habitat for tropical, sub-Antarctic and Antarctic seabirds such as albatross. Penguins are regularly seen in the waters and may be nesting locally.

The various shipwreck sites together with the diversity of marine plants and animals attract a high number of SCUBA groups to the area. The rock shelf areas around the Headland are used throughout the year by fishers who have made a number of paths through bushland slopes to access the fishing spots.

The community survey undertaken by FoMH identified that 34% of respondents stated they accessed the Headland to carry out whale watching. Magic Point and Boora Point (see map 1) provide excellent viewing as they both extend far enough into the Tasman Sea to allow views of the Coast as far as Barenjoey Head north of Pittwater.

These features warrant a marine protected area (MPA), similar to the La Perouse aquatic reserve, to be declared off Malabar Headland. An MPA status for the marine waters would allow current diving and fishing activities other than bait collection to continue. The State Government is currently proposing to declare Magic Point on Malabar Headland as critical habitat for Grey Nurse sharks.

1.4 History

Aboriginal

Malabar Headland was used by a number of Aboriginal tribes. Evidence of habitation includes rock engravings, grinding grooves and middens.

While there has been no comprehensive survey of Aboriginal sites on the Headland, sites on or nearby have been registered with the National Parks and Wildlife Service (NPWS)⁷. The listing of Malabar Headland on the National Estate Register noted that *"It is possible that indigenous cultural values of national estate significance may exist in this place."* Consequently there may arise declarations of *"Aboriginal Places"* on Malabar Headland under section 84 of the National Parks and Wildlife Act 1974 (NP&W Act).

It is generally recognised that local Aboriginal people continue to maintain close contact with the area.

Early European

The first substantiated record of Europeans in the area now known as Malabar Headland was in 1789 when Governor Philip referred to the "finest stream yet seen in the colony flowing into a long bay", a name that was to receive official sanction.

In 1819 a Government Gazette notice advised of land available for rent for farming and grazing purposes in the area, although it is not clear whether this offer was ever taken up. In the late 1820s, a holding of 4,175 acres stretching from Coogee to Long Bay was included under the Church and School Lands. This parcel of land was later to revert to the Crown following the collapse of the Church and Schools Corporation.

Over the course of the 19th century the district was mainly used by fishermen. With the gazettal in 1855 of the new village of Long Bay, reference was made to 400 acres of reserves on the eastern end of the present-day Malabar Headland. Weekend dwellings began to appear around Long Bay during the second half of the 19th century.

⁷ p14 Manidis Roberts Consultants, Malabar Headland Draft Plan of Management 1990.

In 1866 farming land was offered for sale on what was later to become the rifle range, an offer taken up by one or two individuals. In 1902 the State Government reaffirmed the dedication of public recreation reserves on the eastern section of the Headland, appointing 7 trustees to manage these reserves in 1903. Two years later the remainder of the Headland was withdrawn from sale or lease.

The wreck of the *Hereward* (1898) and the *Tokapo* (1899) focused further attention on Maroubra.

The village of Long Bay was renamed Brand in 1899 though this name did not appear to gain wide acceptance. After the *M.V. Malabar* ran aground near Boora Point (refer Map 1) in 1931, local residents were delighted to accept Malabar as the name for their suburb to avoid any association with Long Bay Gaol, established in 1901. Since the 1980s the name Malabar Headland was applied to the Headland by Alan Hall when referring to the flora of the area.

Despite the early attempts at subdivision, the Headland attained some popularity as a picnic ground towards the end of the 19th century. Particularly on the southern side where a contemporary account refer to a “very pretty creek” lined with maidenhair fern and native violets running down from the Maroubra hills and into Long Bay.

Rifle Range

Rifle shooting was the main recreation activity to develop on the Headland. One commentator claims that shooting had been taking place there as early as 1855 and that twelve targets were in operation by 1888, though it is not clear whether this practice had any official sanction. In 1910 the NSW Government dedicated the Headland site for military purposes and use was made of it during World War I. In 1919 the land was surveyed for a permanent firing range and in 1929 control was transferred to the Federal Government for defence purposes in exchange for parcels of land throughout Randwick. The range saw much use during World War II, when various military installations were also constructed on the eastern part of the Headland for defence purposes (refer Map 4).

With the closure of the ANZAC Range at Liverpool in 1967 NSW Rifle Association clubs transferred operations to Long Bay Range, renamed the ANZAC Rifle Range in 1970.

Official military use ceased after the Commonwealth Government announced in 1986 that the Range would be sold.

In the meantime the NSW Rifle Association (NSWRA) retains the right to use the Range until suitable alternative accommodation is made available elsewhere.

In 1988, the Commonwealth invited tenders for the sale of the ANZAC Rifle Range and Western bushland sections of the Headland. The NSWRA obtained an injunction from the NSW Supreme Court that prevented the Commonwealth from accepting tenders.

Through the 1990s the Commonwealth and the NSWRA undertook several legal battles as to whether the NSWRA was entitled to continuation of its use of the ANZAC Rifle Range area. The outcome of this process was a decision that the rifle range had ceased to exist when the Department of Defence stopped using it in 1986. From that time the NSWRA's former rights lapsed.

A communication from DoFA⁸ advised that the Commonwealth had provided a \$9m grant from the 2001 Federation Fund to build a new shooting facility at Holsworthy and proposed that shooting organisations currently using the ANZAC Range relocate to the new Holsworthy facility following its completion.

Rifle range practices from 1855 to date did not provide for proper containment of heavy metals arising from bullets, firing mechanisms or shot pellets. There is inadequate

⁸ Letter from DoFA dated 8 March 2001

control of entry into hazardous areas and apparent inadequate dressing of slopes behind the targets contributes to ricocheting bullets being heard overhead by walkers⁹.

Sydney Water Corporation (SWC) - Sewage Treatment Plant (STP)

A cliff face sewage outfall was established on the headland in 1916 with a treatment plant being added in 1958. In September 1990 a deepwater ocean outfall was commissioned.

The current STP facility provides for primary treatment of sewage with 480ML per day of effluent discharging 3.6 km offshore at a depth of 82 m.

Sydney Water policy is to have a buffer zone of 400 m around the treatment works to minimise impact on the community. SWC also requires access to underground sewer mains. This imposes restrictions on future use of the ANZAC rifle range section of the headland and adjacent bushland areas. Map 4 shows the buffer zones and sewer mains.

Sydney Water have recently agreed to initiate a program of weed removal on STP site.

World War II Sites

Defence emplacements were built on the Headland during World War II to complement existing coastal defence establishments at nearby La Perouse and Bare Island. Following decommissioning of the gun emplacements after the war, the site fell into disrepair.

As noted by the Australian Heritage Commission "... there are 43 important WWII defence sites, including forts, unique gun positions, underground defence facilities, and a sunken munitions railway." Maps 1 & 4 show the location of the major defence sites.

A local community group (FORT) volunteered many years of work to restore the major historic military emplacements. They received some Commonwealth funding support but with the disbanding of the group no further work has been undertaken. Multiple hazards exist, including unguarded holes in the floor area of the tunnels.

The tunnels and chamber below the major gun emplacements are now home to a colony of Common Bentwing bats, an endangered species.

Landfill

Extensive sections of the ANZAC Rifle Range area were used as a landfill site over the period 1968 to 1988 with approximately 1.2 million m³ of landfill being dumped. There is no register of what was dumped on the site and from 1983 the material dumped was not controlled. At the time the landfill was operating, Alexandria/Botany was a major industrial area and, given the close proximity to Malabar Headland, there is a high probability that industrial wastes were disposed of in the landfill. This is supported by anecdotal evidence from local residents.

Map 4 shows the approximate path of leachate from the headland running into the children's swimming area at the South end of Maroubra Beach.

Recent Freedom of Information initiatives by the community groups FoMH and ELEMENT have obtained documentation relating to dumping and contamination issues on Malabar Headland. Although further monitoring, sampling and testing is required, the available information provided sufficient evidence for the NSW EPA to issue a draft *Significant Risk of Harm* notification to DoFA in April 2001.

This notification requires the owner of the land (DoFA) to remediate the site to remove the risk of harm to human health and the environment. Site investigation, monitoring and remediation work is still in progress but, to date, little information on the nature and objectives of the remediation work has been made available to the public.

⁹ Minutes of FoMH meeting 5 July 2001

1.5 Heritage and National Trust Listing

Register of the National Estate

On 11 August 1987 the Western bushland and Eastern bushland included on the Register of the National Estate by the Australian Heritage Commission based on the importance of the coastal heath vegetation and historic fortifications. An extract for the basis for the listing¹⁰ is reproduced in Appendix 1.

Currently the Commonwealth Government is reforming heritage protection. It will introduce 3 Bills into the 2002 Winter Session of Parliament to amend the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). The Bills will establish the Australian Heritage Council (AHC), which will advise the Minister on the listing and protection of heritage sites. The establishment of a National Heritage List will become an additional matter of national environmental significance under the EPBC Act. Heritage sites managed or owned by the Commonwealth can also be placed on a Commonwealth Heritage List.

If a proposed national heritage place requires urgent protection, there is an emergency listing provision to protect the site while an assessment of its heritage values is undertaken by the AHC.

It is not clear whether these Bills will get through the Senate having failed to do so in 2001.

2001 National Trust NSW listing

In March 1989 the Heritage Council of New South Wales placed an Interim Conservation Order (ICO) No. 896 over the Eastern section of the Headland. That ICO lapsed in March 1990. The ICO was requested by the NSW National Trust to counter any possible clearing of the bushland by developers following a call for tenders. The Heritage Office could place a new ICO over the site at any time.

Endangered Place Nomination

In 2001, following a submission by FoMH, Malabar Headland was listed by the Australian Council of National Trusts as one of 32 endangered places in Australia. The trust noted that¹¹:

“There are a number of threats to this site, none the least of which is that precious bushland on the western side of the headland may be destroyed due to the Commonwealth government's housing development plans. There has been inactivity on the part of the Commonwealth and the State governments in proclaiming the area as a National Park, even though there was agreement to do so a decade ago. Government procrastination is resulting in bushland degradation as well as decay and vandalism to the historic WWII sites. Also of concern is the apparent lack of open communication between the Commonwealth and interested parties.”

These listings do not provide a guarantee for protection of the cultural and natural features of Malabar Headland. Full protection can only be achieved through rezoning the land by agreement between the Commonwealth and NSW State Government.

¹⁰ <http://www.ahc.gov.au>

¹¹ http://www.nationaltrust.org.au/ep_nsw_malabar.htm

1.6 Aesthetic values - a walk through Malabar Headland

Lying between Maroubra Beach and Malabar Beach, separated by the old ANZAC Rifle Range, now largely an equestrian school, are two glorious patches of bush, one bounded by the coast, and one bounded by the high-rise housing in Broome Street. These are the best of the last remnants of the once widespread Eastern Suburbs Banksia Scrub. It is amazing that in the middle of a huge city, there is an area so wild and unspoiled as Malabar Headland. This has been due, in large part, to the hideous crack of the rifles over the years and the unappealing entrance to this area.

As you walk beyond the somewhat polluted stormwater channel at the South end of Maroubra Beach, or along the weed-lined track at the end of Fisherman's Road, (on the Malabar side), or through the Tea-tree on the edge of Pioneer Park, it would seem very unlikely that you would come to places of great natural beauty.

Beyond the storm-water channel at the South end of Maroubra Beach, lies Magic Point, the southernmost point on the Maroubra side. Here the bush track leads to a place guarded by impressive, naturally formed sandstone sculptures which gaze out to sea much as do the Easter Island statues. The waves of the Tasman crash against the formidable cliffs and swirl into a huge cave below. Grey Nurse sharks breed in the underwater caverns, and nowadays tourist vessels are usually there in the mornings with keen divers on board. The sea-life is reputed to be very rich; weedy sea-dragons, sea-horses and pipe-fish flourish. Fishermen weave their way along the beautiful rock ledges above the rock platform to shelter behind huge slabs of fallen rock. There they fish in the swirling waters in the channels made by the hollowing out of the volcanic dykes which forced their way through the ancient sandstone many aeons ago. The richness of these waters is in no small part due to the lack of urban run-off from the cliff tops.

A huge dyke divides Magic Point from Boora Point. Here the sandstone cliffs are even higher, dropping about 40m into the sea below. Above the rock platform at Yellow Rock, they curve under, leaving a frightening overhang. In parts of these vertical cliffs, the golden-pinkish sandstone is spectacularly layered, showing the stratification of the original sediments as they were laid down in the ancient lake that formed the Sydney Basin about 200 million years ago.

From above Yellow Rock to Malabar Beach, the exposed rocky slopes provide little shelter. It is a tough environment for land plants. They have adapted to harsh conditions, as salt-laden air, carried by cold winds, or cool breezes and the hot sun assault the surface. The resulting coastal heath, which fringes the headland, and the banksia scrub behind it, rival the rock structures for beauty.

In spring, in particular, this is an Australian coastal Garden of Eden. Flowers, from large banksia to tiny heaths, are multi-hued, exquisite, varied. Wax flowers, wedding bushes, orchids, irises, sundews, bladderworts, cycads, ferns, flannel flowers, peas, wattles, mallees, and other gums, are among the botanical treasures which grow here. As the soil, and the microclimate changes, so the plant community changes. Each area of sandstone, sand, peat, volcanic gravel, or clay, has its own particular community. For example, the endangered Eastern Suburbs Banksia Scrub is found only on the white Pleistocene sands.

Between South Maroubra and Pioneer Park, and bounded by Broome Street, lies the more inland, and more sheltered, bush remnant. It is renowned for the different vegetation it has compared to the coastal section. On the exposed rocky tops, there are glorious views to the East, across the riding school and the Headland, and to the South, Malabar Beach, and all the golf courses to Botany Bay National Park. Here on the escarpment above the old rifle range, one can forget the concrete and asphalt, the hustle and bustle, and the somewhat cramped living conditions of the big city. Here one can feel freedom, space and peace, and give thanks that we still have such a place available for public use and enjoyment.

2 Ownership and Zoning

2.1 Current Ownership and Management

Malabar Headland is one of 180 domestic non-defence properties managed by the Commonwealth Government, Department of Finance and Administration (DoFA) Property Group. The Property Group is required to achieve a commercial rate of return for these properties. Since March 2001 Pricewaterhouse Coopers Process Solutions Pty Ltd has been responsible for property management on behalf of DoFA. The office of Senator Eric Abetz (Special Minister of State) has recently been assigned the coordination role by DoFA for the headland.

DoFA has an obligation¹² to maintain the condition of Malabar Headland to “industry standards”.

Local community activism has resulted in a boost to clean-up and maintenance activities over the past 2 years. However, there remain a number of areas that require further attention under DoFA’s charter of responsibility:

- Remediation of the site to remove the significant risk of harm to the community as per NSW EPA draft statement in April 2001. It is recognised that some remediation work is continuing but no public process is being used by DoFA.
- Effective control of damage to the ESBS community has still not been achieved.
- DoFA has no publicly available Plan of Management for the Headland.

The community understands that DoFA’s policy is to sell, transfer or divest under-performing properties where no public interest reasons exist for retaining them.

Consequently a goal of this draft plan of management is to promote public and stakeholder debate in order to demonstrate that there are significant public interest reasons to retain the entire Headland area as National Park and public open space. This requires DoFA to divest the property to the NSW State Government for management by NPWS and a Trust to be known as Boora Trust for the public open space.

2.2 Current and Proposed Zoning

Land zoning of the Headland is a key determinant in the future use of the site. The current zoning is defined by SREP 14¹³ and the Randwick City Council (RCC) Local Environment Plan (LEP) 1998¹⁴.

SREP 14 requires RCC to prepare development, design and management principles to control all development on the Malabar Headland peninsula. RCC obtained a grant under the National Estate Program (1988/89) to prepare such a plan and engaged the Manidis Roberts Consultants to do so in 1990.

In 1998 Randwick City Council requested DUAP to rezone the Western and Northern bushland areas to 8B National Park Proposed. The Commonwealth Government has yet to endorse this rezoning.

FoMH believes that the zoning of the headland should protect the conservation and cultural values and provide for public open space. This plan supports a change in the zoning as shown in Table 1 and in Maps 3A and 3B.

¹² www.finance.gov.au/

¹³ Sydney Regional Environmental Plan No. 14 - Eastern Beaches 1988. Dept of Environment and Planning. Sydney.

¹⁴ Where inconsistencies occur between SREP 14 and the RCC LEP, then SREP 14 prevails. However SREP 14 does not prevail over State Environmental Planning Policies.

Table 1: Current and proposed zoning of Malabar Headland

Headland Section	Current Zoning (SREP 14 unless stated) (Map 3A)	Zoning Proposed by this Draft Plan of Management (Map 3B)
Eastern bushland (58 ha)	8B Proposed National Park	8 National Park
Western bushland (15 ha)	2B Residential - medium density (LEP)	8 National Park
ANZAC Rifle Range (108 ha)	6B Private Open Space ¹⁵ (LEP) 6(e) Open Space – Recreation Tourism	6A Open Space excluding restored corridors between Eastern and Western bushlands.
Northern bushland (4 ha)	6A Open Space (LEP) 6(c) Open Space – Recreation Proposed	8 National Park

SREP 14 acknowledges (p23) that:

- (a) *It is necessary to protect and enhance significant natural elements such as beaches, cliffs, cliff-top areas, headlands and areas of natural vegetation, including wetlands.*
- (b) *It is necessary to protect items and areas of environmental heritage significance.*
- (c) *A tree planting and revegetation program, including management of remnant areas of indigenous vegetation is essential to improve the whole Eastern Beaches and coastal open space landscape.*
- (d) *Eradication of weeds from existing indigenous vegetation should be undertaken.*
- (e) *In the southern part of the REP area, there are opportunities for increased public access.*
- (f) *From Maroubra to Bomborah Point (Yarra Bay), continuation of the walking trail could link with the Botany Bay National Park. The priority area for achieving a coastal walking trail should be from Bondi to Malabar.*
- (g) *Recreational settings can be assisted by limiting and preferably removing in the longer term, any land use not suitable for the coast where alternative locations can be provided.*

SREP 14 states that the land zoned “residential” west of the peninsula is to remain allocated for medium density housing development. This statement is in conflict with points (a), (b), and (c) above. Land zoned “residential” should be rezoned to “National Park Proposed” (as requested by Randwick Council in 1998).

In regard to point (g) above, Government has allocated Commonwealth funding for the relocation of the Rifle Range from Malabar to Holsworthy.

LEP Heritage Conservation Areas

Two Heritage Conservation Areas listed on the RCC LEP 1998 are present on the headland. One surrounds the Western bushland and the other surrounds the Eastern bushland. Development within these areas is restricted under the LEP.

¹⁵ Zone 6B permits recreation/tourism development.

2.3 Statutory Framework and Strategic Planning Documents

This section provides an overview of the State and Commonwealth legislation that may be applicable to Malabar Headland which is located on Commonwealth owned land.

Under Commonwealth ownership the Commonwealth administers the site under the terms of the *Financial Management and Accountability Act 1997*. This Act provides a framework for the proper management of public money and public property.

Under s.30 of the *Australian Heritage Commission Act 1975*, the Commonwealth Government is prohibited from taking any action which would adversely affect a place listed on the Register of National Estate, unless there are no feasible and prudent alternatives to the action. Malabar Headland (Eastern and Western bushland areas, and WWII coastal defence sites) has been listed on the Register of National Estate since 1987.

Under either Commonwealth or State ownership any proposal which triggers a matter of National Environmental Significance listed by the *Environment Protection and Biodiversity Conservation Act 1999* requires approval from the Commonwealth Environment Minister. The endangered ecological community "Eastern Suburbs Banksia Scrub" located on Malabar Headland is a matter of National Environmental Significance.

Randwick City Council is the consent authority for proposed developments on the Headland. In cases where proposals would significantly impact on the environment, Planning NSW would be the approval authority.

Key legislative Acts relevant to Malabar Headland are presented below.

2.3.1 Commonwealth legislation

The following legislation applies to the Commonwealth in relationship to its ownership of the headland.

Legislative Act	Object of Act	Implication for Malabar Headland
<i>Financial Management and Accountability Act 1997</i>	Provide a framework for the proper management of public money and public property.	Government must properly manage public money and public property.
<i>Australian Heritage Commission Act 1975</i>	Provide protection for items listed on the Register of National Estate.	The Headland Eastern and Western bushland areas, and WWII coastal defence sites are listed on the Register of National Estate. The Commonwealth's actions are constrained by the listing. Under s.30 of the Australian Heritage Commission Act 1975, the Commonwealth is prohibited from taking any action which would adversely affect a place in the Register, unless there are no feasible and prudent alternatives to the action.

The following legislation is applicable to the ownership of the headland by either Commonwealth or State government.

Legislative Act	Object of Act	Implication for Malabar Headland
<i>Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)</i> ¹⁶	Provide Commonwealth involvement in environmental impact assessment based on six matters of “national environmental significance”. Also provide a framework for the accreditation of State and Territory environmental assessment and approval processes.	Eastern Suburbs Banksia Scrub (ESBS) has “national environmental significance”. ESBS is listed as an “Endangered ecological community” under the EPBC Act. Commonwealth Environment Minister decides on approval and conditions for “actions” which may significantly impact on matters of “national environmental significance”, including: a. ESBS community b. Eastern and Western bushland, and World War II coastal defence sites (pending).

2.3.2 State legislation

The following legislation is applicable to the ownership of the Headland by either State or Commonwealth government. However the applicability is not clear in the case of Commonwealth works on Commonwealth land.

Legislative Act	Object of Act	Implication for Malabar Headland
<i>Environmental Planning and Assessment Act 1979</i>	Coordinate the proper management and conservation of natural and artificial resources.	Development consent required under Randwick LEP, SREP14 and SEPPs.
<i>Threatened Species Conservation Act 1995 (TSC Act 1995)</i>	Conservation of threatened species, populations and ecological communities of animals and plants.	NPWS responsible for conservation of threatened species, populations and ecological communities of animals and plants (i.e. Recovery Plan for ESBS)
<i>Contaminated Land Management Act 1997</i>	Assessment, management and remediation of contaminated land. Covers all NSW land and groundwater and associated sediments.	Contamination of State lands from Commonwealth lands (i.e. former landfill contaminant migration). Former landfill site requires remediation. SEPP55 also has relevance.

¹⁶ Eastern and Western bushland, and WWII coastal defence sites are currently listed on the AHC Register of National Estate. If the new legislation is adopted, the bushland and WWII sites would be on the Commonwealth Heritage List as places of national environmental significance.

Legislative Act	Object of Act	Implication for Malabar Headland
<i>Coastal Protection Act 1979</i>	Protect and maintain the coastal region and encourage the balanced utilisation and conservation of the coastal region and its resources.	The Act requires that oceanic water quality and beaches (NSW coast including the Greater Metropolitan Region) be protected. The marine component of the coastal zone extends to the limit of State waters (3 nm seaward from the open coast high water mark).

When the ownership of the headland is transferred to the NSW State Government, the following legislative Acts would also apply:

Legislative Act	Object of Act	Implication for Malabar Headland
<i>Heritage Act 1977</i>	Protection of Non-Aboriginal heritage values	Listing the Headland on the Heritage Office State Register would make the Heritage Council a Consent Authority if the land was transferred to State government. Approval required if impacting on State listed items, and items more than 50 years old.
<i>National Parks & Wildlife Act 1974</i>	Protection of natural and cultural heritage values.	Approval required: to take/kill native flora/fauna, and/or to damage/remove Aboriginal relics and places.
<i>Native Vegetation Conservation Act 1997</i>	Control the clearing of native vegetation and clearing of any vegetation on protected land.	Limits on clearing of native vegetation from protected land but not in Metropolitan areas.
<i>Noxious Weeds Act 1993</i>	Control noxious weeds to the extent necessary to prevent the weeds from spreading to other land.	Noxious weeds need to be controlled to prevent the weeds from spreading to other land.
<i>Protection of the Environment Operations Act, 1997</i>	Minimise impacts of air, noise, water pollution and waste management.	For scheduled activities under this Act, an Environmental Protection Licence would be required.
<i>Water Management Act, 2000</i>	Management of surface and ground water in NSW, both fresh and marine.	Licensing and approval processes are applicable. Part 3A of the <i>River and Foreshores Improvement Act, 1948</i> and those in the <i>Water Act, 1912</i> also apply.

Legislative Act	Object of Act	Implication for Malabar Headland
<i>River and Foreshores Improvement Act 1948</i>	Protection of rivers and foreshores.	Approval is required for works impacting on 'protected land'.
<i>Water Act, 1912</i>	Management of water extraction from waterways.	A licence under the Act is required if water is extracted from waterways.
<i>Fisheries Management Act, 1994</i>	Management of fisheries.	Approval is required for dredging or reclamation work, or to damage marine vegetation.
<i>The Waste Avoidance and Resource Recovery Act, 2001</i>	Reduce waste volumes disposed of in NSW and establish a hierarchy of avoidance, reuse, recycling and reprocessing and disposal.	The Act contains requirements in relation to disposal and transport of waste, and prevents the disposal of waste on any land unless it is an approved waste facility.
<i>The Local Government Act, 1993.</i>	Management of community land in Council ownership or control.	Requires councils to prepare plans of management for land in their ownership or control that is classified for community purposes (i.e. open space).

2.3.3 Listing of Other Instruments

Commonwealth Instruments

- Commonwealth Coastal Policy (1995)
- National strategy for ecologically sustainable development (1992)
- Resource Assessment Commission Coastal Zone Inquiry (Nov 1993)
- Coastal Tourism: A Manual for Sustainable Development (1997)
- National Strategy for the Conservation of Australia's Biological Diversity (1996)

State Instruments

- Memorandum of understanding for coastal action program (signed by the Commonwealth and NSW governments, and the Local Government and Shires Association)
- Department of Planning Circular No.148 - Guidelines for buffer areas of at least 400m wide near a sewage treatment plant
- Department of Planning Circular C10 – Planning in Fire Prone Areas
- Sydney Regional Coastal Management Strategy
- SEPP 19 – bushland in urban areas
- NSW Coastal Package (2001)

-
- DLWC Interim Southern Sydney Regional Strategic Plan (1999)
 - NSW Coastal Management Manual (1990)
 - NPWS Fire Management Manual (2001)

2.4 Proposed Ownership & Management

Areas zoned as National Park would be managed by National Parks and Wildlife Service (NSW). The policies and practices of NPWS would apply.

Areas zoned as public open space would be administered by a Trust that reports to the NSW Environment Minister. This document proposes the name Boora Trust. Boora Trust would comprise traditional owners, stakeholders, NPWS and Local Government. A charter would specify the powers of Boora Trust to manage the areas of the Headland that lie outside the National Park zones.

Charge Boora Trust with:

- establishing permits and controls so that use of the area is shared in ways that serve the aspirations and priorities of the surrounding community.
- operating under a proper financial plan.
- evaluating suitability of users on Public Open Space areas based on a set of criteria to be specified in the Boora Trust charter.
- providing areas, trails and facilities suitable for approved users.

A set of criteria for determining the suitability of users of Public Open Space areas may include:

- impact on indigenous flora and fauna
- compatibility with existing users
- health and safety risk assessment
- level of community demand
- environmental sustainability
- consistency with zoning

3 Developing the Vision for Malabar Headland

It is the objective of this draft plan to promote debate and seek further input from the community and stakeholders on the future of Malabar Headland.

This draft plan of management has been developed by FoMH using internal workshops and community surveys. The overwhelming response from these processes has been a vision to protect the natural and cultural values of Malabar Headland.

3.1 Friends of Malabar Headland Workshops

FoMH undertook internal workshops over 2000/2001 with the objective to develop a vision for Malabar Headland. The workshops identified 5 key objectives.

- ◆ NSW National Parks and Wildlife Service to manage Headland in conjunction with the Aboriginal Community and Boora Trust.
- ◆ Preservation of indigenous flora and fauna.
- ◆ Conservation and rehabilitation of cultural sites.
- ◆ Remediation of contaminated land & water.
- ◆ Community access for multiple use recreation, cultural and education activities.

3.2 Community Survey

FoMH surveyed the community to obtain information from the community on their current and desired uses of Malabar Headland. A total of 223 responses have been obtained to the questionnaire shown in Appendix 5.

Over 20% of respondents reside outside Maroubra and Malabar demonstrating the broader community interest in the natural and cultural features of the Headland.

A good cross-section of age groups was achieved with 20% of respondents under 30 years of age, 50% from 30 to 50 years and 30% over 50 years of age.

The survey revealed a high proportion of the local community regularly accesses Malabar Headland with over 80% of respondents stating they regularly took walks through the Headland. This is despite trespass notification signs and lack of facilities.

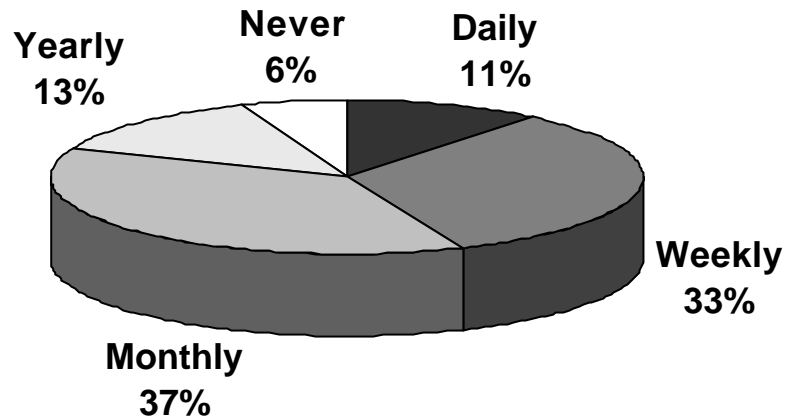
Other popular activities included whale and bird watching, dog walking, bicycle riding, fishing, horse riding, bush regeneration and scuba diving.

Appendix 4 lists commentary provided by survey respondents. An overwhelming response was a call for the protection of the natural and cultural values of Malabar Headland and strong support for the 5 key objectives shown above.

Some survey results are shown in the following graphs.

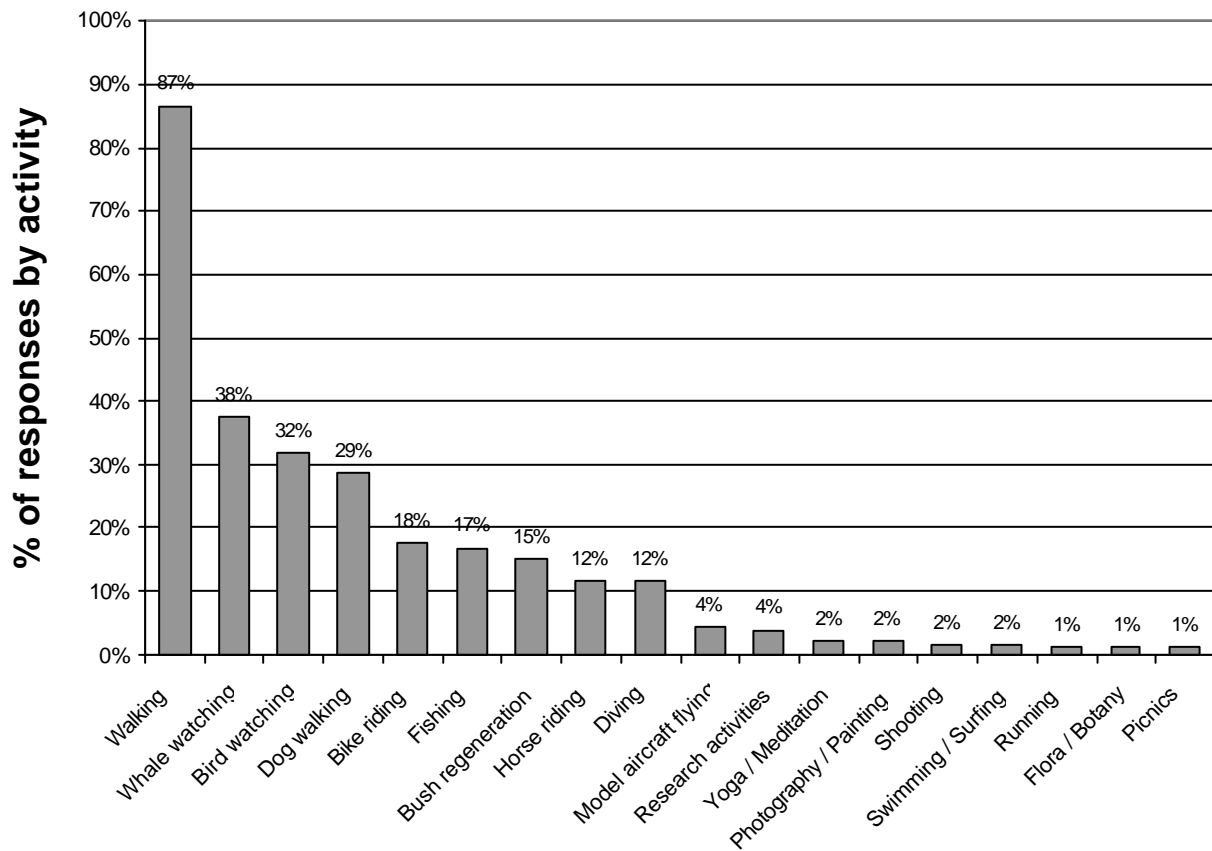
3.2.1 How often do you access Malabar Headland?

- The headland is regularly accessed with 11% of respondents reporting they visit the Headland on a daily basis.



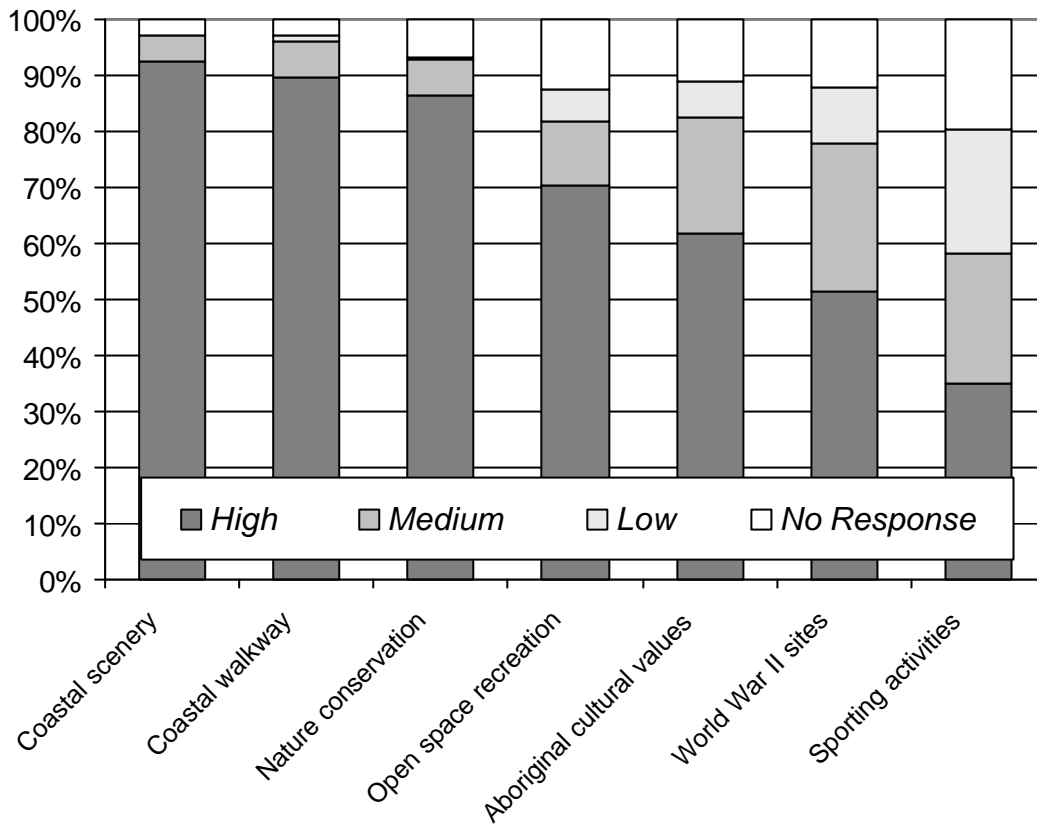
3.2.2 What activities do you currently enjoy on the Headland?

- Walking to enjoy the natural beauty of the Headland is the most popular activity. Most respondents reported more than 1 activity.

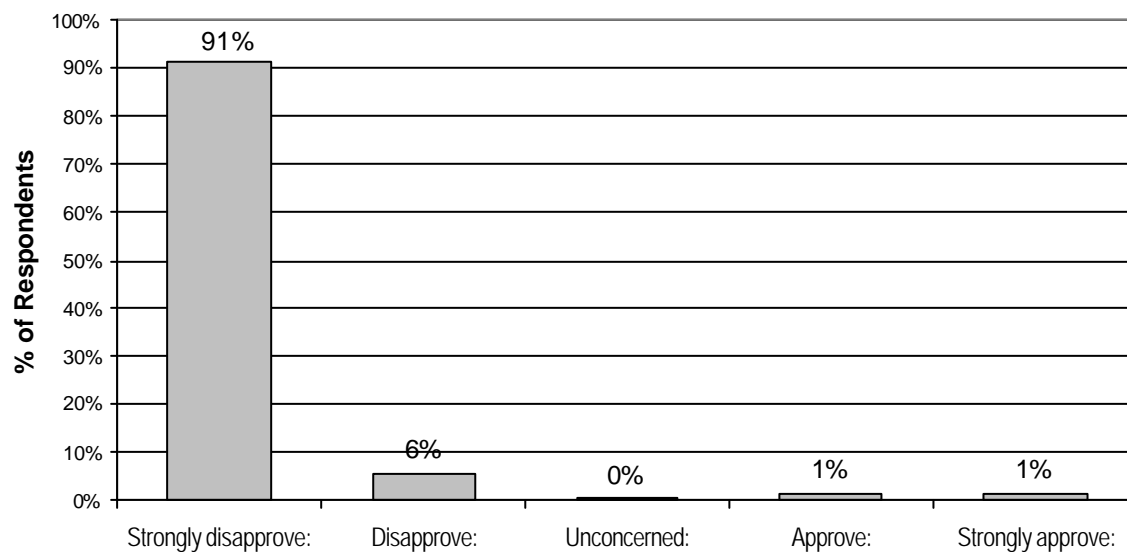


3.2.3 What importance do you attach to the features of Malabar Headland?

- Respondents were asked to rank the features from high to low importance. Coastal scenery, walkway and nature conservation were rated of highest importance.



3.2.4 What is your opinion of housing or commercial development on Malabar Headland?



4 Management Plan Issues and Actions

4.1 National Parks and Wildlife Service (NSW) to manage Headland in conjunction with the Aboriginal Community and Boora Trust

Desired outcome

- Transfer the ownership of Malabar Headland from the Commonwealth Government to the New South Wales Government.
- Eastern, Western and Northern bushland zoned National Park under NPWS administration and managed in conjunction with the Aboriginal community.
- Establish two corridors of revegetation to connect the Eastern and Western bushlands on the edges of the ANZAC Rifle Range (refer Map 1).
- The ANZAC Rifle Range section (excluding the corridor noted above) zoned as 6A Public Open Space administered by Boora Trust.

Current situation

Refer sections 1.2, 1.4 and 1.5 of this document.

The Manidis report, noted that the current owner's "... intention to sell the Western bushland to finance tourist development on the rifle range are not appropriate, given the area's values for nature conservation, its visual significance and potential role in providing recreation opportunities."

Required actions

Action	Responsibility
4.1.1. Handover of the entire Malabar Headland from Commonwealth to State Government.	Commonwealth
4.1.2. Review the adequacy of the Register of National Estate location coordinates and revise.	RCC / NPWS, AHC
4.1.3. Eastern, Western and Northern bushland zoned as 8 National Park under NPWS administration.	State
4.1.4. Establish two corridors for revegetation to connect the Eastern and Western bushlands on the edges of the current ANZAC Rifle Range.	State / RCC / NPWS / Boora Trust
4.1.5. The ANZAC Rifle Range section (excluding the corridor noted above) zoned as 6A Public Open Space under the administration of Boora Trust.	Boora Trust
4.1.6. Establish Boora Trust to manage ANZAC Park as public open space.	State
4.1.7. Name change to Boora National Park on Malabar Headland.	State Govt. / Geog. Names Board
4.1.8. Incorporate Malabar Headland into planning processes for Sydney Regional National Parks.	NPWS
4.1.9. Implement NPWS policies and practices to National Park areas on the Headland, including feral animal control, fire management, weed eradication, etc.	NPWS
4.1.10. Update the Eastern Suburbs bushfire management plan to better address key fire risks to the environmental biodiversity.	Eastern Suburbs Bushfire Mgm. Committee / NPWS / Boora Trust

4.2 Preservation of Indigenous Flora and Fauna

Desired outcome

- Maintenance of existing diverse indigenous flora and fauna.
- Restoration of indigenous flora into defined bushland corridors (refer Map 1).
- Arrest the existing erosion processes.

Current situation

The current recorded plant species distribution as listed in Appendix 2 for Malabar Headland is summarised below:

	Total species recorded	No. Species recorded in that section but not the other
Eastern Bushland	270	114
Western bushland	226	70
Combined areas	340	

It is obvious from this pattern of species distribution that, for the desired outcome to be realised, it is essential that both the Eastern and Western bushland areas need to be preserved by incorporation into the National Park system. Preservation of the flora and fauna should be seen as a National priority.

As already noted, the differences in the species distributions reflects the differences in the Sydney coastal region's wide range of plant communities. These sub-communities are the result of complex differences in such factors as soil composition, patterns of water flows, openness / protection from strong prevailing winds, degree of exposure to salt spray and many others.¹⁷

Fifteen years ago the general quality of the Eastern and Western bushland was sufficiently high to justify their joint entry onto the Register of the National Estate. At that time, however, both areas contained serious infestations of the invasive noxious weeds Bitou Bush, Pampas Grass, and Lantana. Sustained volunteer bush regeneration since then has virtually cleared the 54 ha of the eastern section of these weeds and they are now well towards full control in the 15 ha of the Western section. The excellent quality of the bushland is currently unmatched in the Sydney coastal region.

By the time the bushland becomes National Park it is expected that it will be free from the major invasive weed species. Ongoing maintenance will be necessary to prevent re-infestations.

Until June 2002 virtually nothing had been done by the Commonwealth or by the NSWRA to control the serious infestations of noxious weeds on the former ANZAC Rifle Range land (of which Bitou Bush is by far the most serious). Because Bitou Bush seed is largely dispersed by birds this large neighboring seed source has remained a continuing threat to the bushland. This threat has only recently been seriously considered by DoFA. A 2 year noxious weed management plan has been developed by Randwick City Council in association with Sydney Water and Pricewaterhouse Coopers on behalf of the Commonwealth Government. This commenced operation in July 2002.

The bushland is large enough and of such high quality that it needs little help, other than control of invasive weeds and prevention of disturbance, to maintain its current viability. There is considerable scope for revegetation with indigenous species on selected areas of the former rifle range. In particular bushland/wildlife corridors need to be established

¹⁷ Appendix 2 contains a full species list for the headland. Appendix 3 gives a brief account of the vegetation characteristics of the Western bushland and demonstrates the inappropriateness of its current residential zoning.

on its Northern and Southern boundaries linking together the Eastern and Western bushland (see Map 1). The Southern corridor would incorporate the long, narrow strip of good remnant bushland on the border with land owned by Sydney Water Corporation.

Under the *Threatened Species Conservation Act 1995* and the *Environment Protection and Biodiversity Conservation Act 1999* Malabar Headland acquired special natural heritage status as it contains Eastern Suburbs Banksia Scrub (ESBS). This is an ecological community that, pre-1788, was the predominant ecological community in Sydney's Eastern Suburbs. Today less than 1% of the original community remains. The largest remnants are on the Eastern section of the Headland comprising heath vegetation verging into scrub in more protected areas. The remnants in the Western section are smaller but are still significant because they are mainly of a low woodland form that is now very rare. Under both the State and the Commonwealth Acts ESBS has been declared an endangered ecological community, considerably enhancing the heritage status of Malabar Headland.

It is apparent from the National Estate 1987 listing statement (Appendix 1) that the dumping of rubbish was once a serious problem on the Headland. This has been reduced over recent times through the installation of upgraded fencing and gates in some areas. The main current exception is the occasional dumping of cars.

The legacy of past dumping, still scattered around the site, was substantial. Towards the middle of 2002 a serious clean-up effort was commenced by DASCEM Holdings Pty Ltd (DASCEM) under instruction from DoFA. In addition, the fire-break behind Broome Street was cleared of the highly invasive *Acacia saligna* (W.Aust. wattle tree) from both sides of the fence. In this process the volunteer bush regeneration effort was considerably assisted by the removal of clumps of Bitou Bush, Lantana and piles of dead weed species built up by bush regenerators during the previous 6 months or so. The care exercised for the bushland during the whole of this exercise was much appreciated.

The major long-term management requirement for the headland is the need to develop and implement a strategy for the maintenance of biodiversity. It is a general characteristic of areas with diverse species that their frequency distribution is highly skewed. Typically it consists of a small number of dominant species; larger numbers of common species; and, relatively, much larger numbers of uncommon and rare (to the specific site) species. Maintenance of species diversity is the desired long term outcome, so there will need in due course to undertake replacement planting of locally rare and uncommon species. The success of such a program will require detailed botanical knowledge of the area and indigenous plant propagation expertise.

The Headland is in a unique position to perform the function of a botanical laboratory for the preservation of Sydney's coastal plant diversity and to further understanding of the detailed conditions necessary for maintaining plant species diversity. This is aided by close proximity of University of New South Wales, University of Technology Sydney and the University of Sydney, all of which have hitherto been denied official access to the Headland.

However, a good deal of the necessary detailed botanical information has already been built up within Randwick City Council. This has been a by-product of Council's decision in the early 1990s to foster the planting of locally indigenous species for street planting and for the maintenance and enrichment of its parks and reserves. This shift in focus required its plant nursery, Randwick Community Nursery, to:

- become involved in indigenous seed collection throughout Randwick, which includes Botany Bay National Park as well as Malabar Headland;
- acquire the associated seed storage facilities;
- accumulate detailed information about species location; and
- develop indigenous plant propagation knowledge and techniques.

Some of these activities are now managed by Council's Bushland Management Section.

The basic framework of field knowledge and indigenous plant propagation techniques already exists to enable the Headland to become a focal point for the study and practice of local species diversity maintenance.

A long term program of this sort depends on wider community support. This draft plan of management proposes that an environmental study centre be established on the site. This will provide opportunity for the general public, and especially local and regional primary and secondary schools, to acquire first hand experience of ecological communities. Advantage could be taken of some of the existing building facilities.

Required actions

Action	Responsibility
4.2.1. Retain endemic native vegetation and carry out regeneration and weed control	NPWS
4.2.2. Establish walking trails, signage for approved access points	NPWS / Boora Trust
4.2.3. Coordinate support activities through Randwick City Council and bush regeneration volunteers	RCC / community groups
4.2.4. Create two native vegetation corridors between the Eastern and Western sections of the Headland	NPWS / community groups
4.2.5. Establish Environmental Centre and promote flora and fauna research activities. Maintain the site as a field laboratory for the study of plant species diversity	State Govt. NPWS / NSW Dept. of Educ.
4.2.6. Maintain a flora and fauna database and undertake specific conservation programs where necessary	RCC / Universities
4.2.7. Maintain a seed bank of indigenous vegetation	RCC
4.2.8. Reduce the incidence of introduced pest species such as rabbits, feral cats and dogs (RCC SoER Report 2000 notes NPWS and EA have completed threat abatement plans for predation by feral cats, predation by European Red Fox and competition and land degradation by feral rabbits.	NPWS
4.2.9. Establish and maintain effective site supervision and prompt fence repair as necessary	NPWS / Boora Trust

4.3 Conservation and Rehabilitation of Cultural Sites.

Desired outcome

- Protection of historic and cultural features.
- Aboriginal sites conserved and managed in consultation with local Aboriginal communities.

Current situation

There has been no comprehensive survey of Aboriginal sites on Malabar Headland. However, several sites on or nearby the Headland have been registered with National Parks and Wildlife Service. Rock engraving sites are found on the Headland and middens are located near the south end of Maroubra Beach.

The 1990 draft plan of management assessed the significance of 25 historic World War II and other sites. Five sites were assessed as having high or exceptional heritage significance.¹⁸ However, one of these was the wind generator which was dismantled by Energy Australia in 2001.

Required actions

Action	Responsibility
4.3.1. Undertake an Aboriginal site survey. The scope of this survey should be determined in consultation with the La Perouse Aboriginal Land Council and Aboriginal community	NPWS / La Perouse Aboriginal Land Council
4.3.2. Acknowledge, conserve and appropriately interpret the values of the Headland for the Aboriginal community	NPWS / La Perouse Aboriginal Land Council / Boora Trust
4.3.3. Prepare a conservation plan in conjunction with National Trust and Defence Forces for the World War II sites assessed as having heritage significance	NPWS / AHC
4.3.4. Make safe all the building and infrastructure sites including World War II sites. Any work must take account of the presence of the colony of the Common Bentwing bat	NPWS / Heritage Office
4.3.5. Evaluate option for an education facility. This may include: <ul style="list-style-type: none"> ➤ indigenous heritage ➤ bushland diversity exhibition ➤ bush regeneration training ➤ whale watching and information space ➤ WWII sites walking tour 	NPWS
4.3.6. Enable interested groups to undertake research and publication on the World War II sites	NPWS / Heritage Office

¹⁸ 1990 Plan of Management, Table 1 cultural and historic sites and assessed significance, p 14

4.4 Remediation of Contaminated Land and Water

Desired outcome

- Remediate contaminated lands and waters to a standard that does not pose a significant risk of harm to human health or the environment.

Current situation

Extensive sections of the ANZAC Rifle Range area were used as a landfill site over the period 1968 to 1988 with approximately 1.2 million m³ of landfill being dumped. There is no register of what was dumped on the site and from 1983 the material dumped was not controlled. At the time the landfill was operating, Alexandria/Botany was a major industrial area and, given the close proximity to Malabar Headland, there is a high probability that industrial wastes were disposed of in the landfill.

Recent Freedom of Information initiatives by the community groups FoMH and ELEMENT have obtained documentation relating to dumping and contamination issues on Malabar Headland.

Although further monitoring, sampling and testing is required the available information provides solid evidence to support the draft *Significant Risk of Harm* notification that the NSW EPA issued to DoFA in April 2001.

This notification requires the owner of the land (DoFA) to remediate the site to make it fit for the purpose for which it is to be used.

Required actions

Action	Responsibility
4.4.1. Public release of contamination studies	Commonwealth
4.4.2. Appoint independent site auditor to review contamination assessments and remediation plans	Commonwealth Environment Minister / NSW EPA
4.4.3. Complete the removal of car bodies and surface building waste	Commonwealth
4.4.4. Review leachate control strategy and reconfigure leachate ponds if required	Commonwealth
4.4.5. Further clean up of rubbish on Headland on Clean Up Australia day by volunteers.	Commonwealth / RCC / volunteers
4.4.6. Post warning messages against dumping.	Commonwealth
4.4.7. Keep horses out of the bushland sections.	NPWS
4.4.8. Lock the gates on access roads when not required to be open.	NPWS / Boora Trust
4.4.9. Install signs to warn public of contaminated waters.	Commonwealth / NSW EPA

4.5 Community Access for Multiple Use Recreation, Cultural and Education Activities.

Desired outcome

- National Park areas run under NPWS management policies and practices.
- Community open space available for all to share with sustainable activities (see section 2.4).

Current situation

Public access is currently considered by the Commonwealth Government as trespass. However, the Commonwealth provides access for some commercial activities such as shooting and horse riding under a lease arrangement.

There are a number of examples of successful Government and community based projects that could be used as models for the future management of Malabar Headland:

- Point Nepean, Victoria (old defence land given to Victorian State Government as National Park);
- Hazelhurst, Gymea, NSW (regional gallery and community art facilities); and
- CERES, Brunswick, Victoria (environmental education and demonstration site, community garden, and children's farm).

Required actions

Action	By whom
4.5.1. Extend the Eastern Beaches Coastal Walk through Malabar Headland as shown on Map 1 with amendments based on more detailed review of environmental impacts.	NPWS Planning NSW
4.5.2. Coastal walking track information boards to be installed at appropriate locations.	NPWS
4.5.3. Establish community education program and implement NPWS policy on horse riding, dog walking and bikes in National Park areas.	NPWS
4.5.4. Assess sustainability of proposed activities using criteria specified in the Boora Trust charter and consistent with NPWS management policies. <ul style="list-style-type: none"> ➤ Whale watching ➤ Bird watching ➤ Bush walking / dog walking / jogging ➤ Community gardens ➤ Model aircraft flying ➤ Education & cultural centre ➤ Demonstration environmental centre ➤ Arts centre & sculpture walk ➤ Performance space / open air amphitheatre ➤ Bike riding (BMX run) ➤ Rock climbing ➤ Fishing ➤ Horse trail ➤ Indoor pistol range ➤ Bush regeneration centre / native nursery ➤ Alternate energy facilities (wind, solar etc) 	NPWS / Boora Trust

5 Funding

NPWS and the proposed Boora Trust will manage income and expenditure for activities occurring within respective areas. A cooperative but independent arrangement should be discussed and agreed to by NPWS and Boora Trust prior to the proposed gazettal of Boora National Park. NPWS and the proposed Boora Trust should target a break-even position within 5 years with any profits to be retained separately by NPWS and Boora Trust to cover future expenses on the site.

Income

Existing and potential income sources include:

- Commonwealth government funding, e.g. Landcare grants.
- NSW Government grant funding
- private investment in open space facilities
- leases (horse riding school, gun shooters, model aircraft flying etc)
- environmental education centre (shop sales)
- arts centre and performance space (sale commissions)
- schools, university study (site use fees)
- short stay accommodation for schools and universities
- alternate energy generation
- photography and professional filming, e.g. Mission Impossible
- conference and meeting facilities
- native plant nursery sales
- motor vehicle entry fee to public open space area
- Boora Trust membership
- donations, bequests

Expenditure

Existing and potential expenditure items include:

- contamination remediation works (Commonwealth Government funded)
- salary and contracts
- signage, picnic facilities, rubbish removal
- fire hazard management
- capital works (service roads, walking track repair/construction, erosion repair)
- provision for pedestrian access
- motor vehicle barriers installation
- coastal walk extension
- flora protection measures (barriers to damage)
- weed management and revegetation
- feral pest control
- WWII sites conservation plan for restoration
- adaptive re-use of buildings
- Aboriginal history and site assessment
- fauna surveys
- maintenance works

Volunteer effort

- Volunteer labour (e.g. bush regeneration, volunteer rangers) and materials will be utilised wherever possible to reduce expenditure commitments.

Abbreviations

AHC	Australian Heritage Commission
DASCEM	DASCEM Holdings Pty Ltd
DLWC	Department of Land and Water Conservation
DoFA	Commonwealth Department of Finance & Administration
DUAP	NSW Department of Urban Affairs and Planning
EA	Environment Australia
ELEMENT	Environment group campaigning to save Malabar Headland
EPA	Environment Protection Authority
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
ESBS	Eastern Suburbs Banksia Scrub
FoMH	Friends of Malabar Headland
FORT	Local group established to protect and restore WWII sites
ha	hectare
LEP	Local Environment Plan
m ³	cubic metre
MPA	Marine Protected Area
NPWS	National Parks and Wildlife Service (NSW)
NSWRA	New South Wales Rifle Association
PPL	Protectors of Public Lands
RCC	Randwick City Council
SCUBA	Self contained underwater breathing apparatus
SEPP	State Environment Planning Policy
SREP	Sydney Regional Environment Plan
STP	Sewage Treatment Plant
SWC	Sydney Water Corporation
TSC Act	<i>Threatened Species Conservation Act</i>
WWII	World War II

Appendix 1: Extract of 1987 National Estate Listing for Malabar Headland

Statement of Significance: *The Long Bay area contains two significant remnants of the coastal vegetation which covered the eastern suburbs of Sydney before European Settlement. The only other area that contains remnant coastal vegetation in Sydney's eastern suburbs is at La Perouse (Criteria A.1 and D.1). The vegetation communities of the Long Bay area are of scientific and educational significance because they contain rare examples of coastal communities growing on Pleistocene sand deposits within the Sydney region. These communities have different species composition to those found elsewhere in the region (Criteria B.1 and C.1).*

Both the coastal and western sections of the Long Bay area support a high diversity of plant species, differing in composition because of changes related to position, with the western section being more sheltered. The Peninsula section supports 221 species, seventy-seven of which have not been recorded in the western section and the western section supports 206 species, sixty-two of which are not found in the coastal section (Criterion A.3). The last known population of the Port Jackson mallee (EUCALYPTUS OBSTANS formerly OBTUSIFLORA), which once grew extensively in the eastern suburbs, occurs in both sections of the area. This population is of regional significance within the Sydney area (Criterion B.1).

The natural vegetation on the headland is of aesthetic significance in an area, which maintains very little native vegetation (Criterion E.1).

The area includes a World War Two coastal defence site of historic significance, the Boora Point Battery. This is an imposing, purpose built coastal landmark, which is important for providing tangible evidence of Australia's coastal defence efforts in the Sydney area during World War Two (Criterion A.4). The battery features a number of particularly unusual attributes, including a rare example of 6inch Mark XII gun mountings, a completely underground counter bombardment facility, with gun crew ready rooms, ammunition supply and engine room and a small gauge sunken railway associated with an imposing observation post (Criterion B.2). The battery has particular social significance to World War Two veterans and those involved in its war time operations, or interested in the history of fortifications (Criterion G.1). The area includes a number of additional sites of cultural heritage value, including World War Two graffiti, an imposing contemporary experimental wind generator and features associated with a significant town service - the south-west ocean outfall sewer (Criterion C.2).

It is possible that indigenous cultural values of national estate significance may exist in this place. As yet, the AHC has not identified, documented nor assessed these values. ...

Location : *About 80ha, located on the eastern and western sides of ANZAC Rifle Range, at Malabar, comprising: 1) an area bounded on the north and west by the rear of residential properties on the south-eastern side of Broome Street between Ford Road and Bowen Place, on the east and south by the 28m contour and on the south-west by a straight line joining AMG points: U1837 (1:10,000 orthophoto map, CMA)-Maroubra-38154087 and 38014106; 2) an area bounded on the west by straight lines joining AMG points: 39013997, 39044020, 39234058, 39334096, 39124112 and 39244129 and on the north, east and south by high water mark.*

Appendix 2: List of Recorded Native Flora Species¹⁹

Key to recorders:

!	D. Benson (Royal Botanic Gardens, Sydney)	1978
#	D. Benson (Royal Botanic Gardens, Sydney)	1987
O	Others ²⁰ - only if not in Benson lists	1986+

Key to other information

East	Eastern headland
West	Western headland
N	Not recorded at Botany Bay National Park
U	Uncertain about identification - not observed since 1990
D	Doubtful whether locally indigenous

Species	Family	East	West		
Acacia:-					
*A. echinula~	Mimosaceae	O		N	U
A. longifolia subsp. longifolia	"	!	!#		
A. longifolia subsp. sophorae	"	!	!#		
A. myrtifolia	"	O	O		
A. suaveolens	"	!	#		
A. terminalis	"		O		
A. ulicifolia	"	O	!		
Acianthus fornicatus	Orchidaceae	O			
Acmena smithii	Myrtaceae	O	O		
Actinotus:-					
A. helianthi	Apiaceae	!	O		
A. minor	"		#		
Actites megalocarpa	Asteraceae	O			
Adiantum aethiopicum	Adiantaceae	O	?		
Agrostis avenacea	Poaceae	O			
Allocasuarina:-					
A. distyla	Casuarinaceae	!	#		
A. littoralis	"		#		
A. torulosa	"		O		
Amperea xiphioclada	Euphorbiaceae	O	O		
Angophora costata	Myrtaceae	O	O		
*Anisopogon avenaceus	Poaceae		O	N	
Apium prostratum var. filiforme	Apiaceae	O			
Aotus ericoides	Fabaceae	O			
Aristida ramosa	Poaceae		!		
Asplenium:-					
A. flabellifolium	Aspleniaceae	O			
A. obtusatum	"	O			
Astroloma:-					
*A. humifusum	Epacridaceae	O	O	N	
A. pinifolium	"	!	O		
Austrodanthonia:-					
A. monticola	Poaceae	O			
A. richardsonii	"	O			
A. setacea	"	O			
A. tenuior	"		O		
Austrostipa:-					
A. mollis	Poaceae		O		
A. pubescens	"	O			
Baeckea:-					

¹⁹ This list provided by Mr Alan Hall in a report dated January 2002.

²⁰ Contributed by C. Gibson, P. Akkersdyk, D. Ondinea, D. Hirschfeld, R. Coveny and A. Hall.

Species	Family	East	West		
B. brevifolia	Mytaceae	O			
B. diosmifolia	"	O			
B. imbricata	"	!	O		
Banksia:-					
B. aemula	Proteaceae	!	!#		
B. ericifolia	"	!	!#		
B. integrifolia	"	O	O		
B. oblongifolia(asplenifolia)	"	O	!		
B. robur	"	O			
B. serrata	"	O	O		
*B. spinulosa	"		O		N
Baumea:-					
B. acuta	Cyperaceae	O	O		
B. juncea	"	O			
B. nuda	"		O		
B. rubiginosa	"	O			
B. teretifolia	"	O			
Billardiera scandens	Pittosporaceae	!	#		
Blechnum:-					
*B. camfieldii	Blechnaceae	O			N
B. indicum	"	O			
Boronia:-					
*B. ledifolia	Rutaceae		O		N
B. parviflora	"	O	O		
B. rigens	"		!		
Bossiaea:-					
B. ensata	Fabaceae	O	!		
B. heterophylla	"	O	!#		
B. scolopendria	"	!	#		
Brachyloma daphnoides	Epacridaceae	O	#		
Breynia oblongifolia	Euphorbiaceae	O	O		
Burchardia umbellata	Colchicaceae		O		
Caladenia:-					
*C. alata	Orchidaceae		O		N
*C. caerulea	"		O		N
C. carnea	"		O		
*C. catenata	"	O	O		N
Callistemon:-					
C. citrinus	Myrtaceae	O	O		
C. linearis	"	!	!#		
C. pinifolius	"	O			
*C. rigidus	"	O			N
Calochilus:-					
C. paludosus	Orchidaceae		O		
C. robertsonii	"		O		
Calochlaena dubia	Cyatheaceae		O		
Calytrix tetragona	Myrtaceae	!	#		
Carex pumila	Cyperaceae	O			
Carpobrotus glaucescens	Aizoaceae	!	O		
Cassinia uncata	Asteraceae		O		
Cassytha pubescens	Cassythaceae	!	O		
Casuarina glauca	Casuarinaceae	O			
*Caustis recurvata	Cyperaceae	O			N
Centella asiatica	Apiaceae		O		
Centrolepis :-					
C. fascicularis	Centrolepidaceae	O			
C. strigosa	"	O	O		
Ceratopetalum gummiferum	Cunoniaceae		!		
Cheilanthes sieberi	Sinopteridaceae	O			
Chloanthes stoechadis	Verbenaceae		O		
Chorizandra cymbaria	Cyperaceae	O			
Cissus hypoglauca	Vitaceae	O	O		
*Clematis aristata	Ranunculaceae	O			N
Commelina cyanea	Commelinaceae	O	O		
Conospermum:-					
C. ellipticum	Proteaceae	O			
*C. longifolium	"				N
C. taxifolium	"	!	O		
Correa:-					
C. alba	Rutaceae		O		
C. reflexa var. reflexa	"	O	O		
Corymbia gummifera	Mytaceae	O	#		

Species	Family	East	West		
Cotula australis	Asteraceae	O			
Crassula:-					
C. decumbens var. decumbens	Crassulaceae	O			
C. sieberiana	"	O			
Cryptandra amara	Rhamnaceae	!	O		
Cryptostylis erecta	Orchidaceae	O	#		
Cyathea australis	Cyatheaceae	O	O		
Cyathochaeta diandra	Cyperaceae	!	#		
Cynodon dactylon	Poaceae	O	O		
Cyperus polystachyos	Poaceae	O	O		
Dampiera stricta	Goodeniaceae	!	O		
Darwinia fascicularis	Myrtaceae	!	!#		
Deyeuxia quadrisetata	Poaceae	O			
Dianella:-					
D. caerulea	Phormiaceae	O	#		
D. congesta	"	O	O		
D. revoluta	"	O	O		
Dichelachne					
D. crinita	Poaceae	O	O		
D. micrantha	"	O			
Dichondra repens	Convolvulaceae	O			
Dillwynia:-					
D. floribunda	Fabaceae	O	O		
D. glaberrima	"		O		
D. retorta	"	!	O		
Dodonaea triquetra	Sapindaceae	O	!		
Drosera:-					
D. binata	Droseraceae	O			
D. peltata	"		O		
D. pygmaea	"	O			
D. spatulata	"	O			
Elaeocarpus reticulatus	Elaeocarpaceae		O		
Empodisma minus	Restionaceae	O			
Endiandra sieberi	Lauraceae		?		
Entolasia stricta	Poaceae	O	#		
Epacris:-					
E. longiflora	Epacridaceae	O	!#		
E. microphylla	"	!	#		
E. obtusifolia	"	O	O		
Epaltes australis	Asteraceae	O			
Eragrostis brownii	Poaceae	O	!#		
Eriocaulon scariosum	Eriocaulaceae	O			
Eriostemon australisus	Rutaceae		!#		
Eucalyptus:-					
E. botryoides	Myrtaceae		O		
E. obstans	"	!	#		
*E. piperita	"		O	N	
*E. resinifera	"		!	N	
*E. squamosa	"	O		N	
Eurychorda complanata	Restionaceae	O	O		
Ficus rubiginosa	Moraceae		O		
Gahnia sieberiana	Cyperaceae	O	O		
*Geranium homeanum	Geraniaceae	O		N	
Gleichenia:-					
G. dicarpa	Gleicheniaceae	O	O		
G. rupestris	"	O			
Glycine microphylla	Myrtaceae	O	O		
Gompholobium glabratum	Fabaceae		O		
Gonocarpus:-					
G. micranthus	Haloragaceae	O	O		
G. tetragynus	"	!	#		
G. teucroides	"	O	!#		
Goodenia:-					
G. bellidifolia	Goodeniaceae	O	O		
*G. dimorpha var. angustifolia	"	O	O	N	
G. stelligera	"		O		
Guringalia dimorpha	Resionaceae	O			
Haemodorum planifolium	Haemadoraceae		O		
Hakea:-					
H. dactyloides	Proteaceae	!	O		
H. gibbosa	"	!	O		
H. sericea	"	O	O		
H. teretifolia	"	!	!#		

Species	Family	East	West		
Hardenbergia violacea	Fabaceae	O	O		
Helichrysum elatum	Asteraceae		!#		
Hibbertia:-					
H. acicularis	Dilleniaceae	O	O		
H. diffusa	"	O			
H. emperifolia	"	O	O		
H. fasciculata	"	O	!		
H. linearis	"	!	#		
H. obtusifolia	"		O		
*H. riparia (stricta)	"	!	O	N	
H. scandens	"	O	O		
Histiopteris incisa	Dennstaedtiaceae	O	O		
Hybanthus monopetalus	Violaceae		O		
Hydrocotyle peduncularis	Apiaceae		O		
Hypolaena fastigiata	Restionaceae	!	!		
Hypolepis muelleri	Dennstaedtiaceae	O			
Imperata cylindrica	Poaceae	O	O		
Isolepis:-					
I. cernua	Cyperaceae	O			
I. inundata	"	O			
I. marginata	"	O			
I. nodosa	"	!	O		
I. prolifera	"	O			
Ischaemum australe var. australe	Poaceae		O		
Isopogon anemonifolius	Proteaceae	O			
Juncus:-					
J. continuus	Juncaceae		#		
J. kraussii subsp. australiensis	"	O	O		
J. pallidus	"	O	O		
J. planifolius	"	O	O		
J. usitatus	"	O			
Kennedia rubicunda	Fabaceae	O	O		
Kunzea ambigua	Myrtaceae	O	!#		
Lambertia formosa	Proteaceae	!	!#		
Lasiopetalum ferrugineum	Sterculiaceae	!	O		
Lepidosperma:-					
L. concavum	Cyperaceae		O		
L. filiforme	"	!	!(?)		
L. laterale	"	O	#		
L. neesii	"	O			
*L. quadrangulatum	"	O		N	
L. viscidum	"	!	#		
Leptocarpus tenax	Restionaceae		!		
Leptospermum:-					
L. arachnoides	Myrtaceae	O	O		
L. juniperinum	"	O			
L. laevigatum	"	!	O		
*L. parvifolium	"	O		N	
L. polygalifolium (flavescens)	"	O	O		
L. squarrosus	"	!	#		
L. trinervium(attenuatum)	"		!		
Lepyrodia:-					
L. muelleri	Restionaceae	O			
L. scariosa	"		#		
Leucopogon:-					
L. ericoides	Epacridaceae	!	!#		
L. esquamatus	"	!	O		
*L. juniperinus	"		O	N	
L. parviflorus	"	O	O		
L. virgatus	"	O	O		
Lindsaea linearis	Lindsaeaceae	!	!		
Lobelia alata	Lobeliaceae	O	O		
Lomandra:-					
L. cylindrica	Lomandraceae				
L. filiformis	"	O			
L. glauca	"	!	#		
L. gracilis	"	"	O		
L. longifolia	"	!	O		
L. multiflora	"	O	O		
L. obliqua	"		O		
Lomatia silaifolia	Proteaceae	O	O		
*Lythrum hyssopifolium	Lythraceae	O		N	
Macrozamia communis	Zamiaceae	O	O		

Species	Family	East	West		
Marsdenia suaveolens	Asclepiadaceae		O		
Melaleuca:-					
M. amillarlis	Myrtaceae	!	O		
*M. decora	"		O	N	
M. ericifolia	"	O			
M. hypericifolia<	"	O			
M. nodosa	"	!	!#		
M. squamea	"		O		
M. thymifolia	"	O			
*Melanthera biflora	Asteraceae	O		N	
Micrantheum ericoides	Euphorbiaceae	O			
Microlaena stipoides	Poaceae		O		
Micromyrtus ciliata	Myrtaceae	!	O		
Microtis unifolia	Orchidaceae	O	O		
Mirbelia rubiifolia	Fabaceae	O	O		
Mitrasacme polymorpha	Loganiaceae		O		
Monotoca:-					
M. elliptica	Epacridaceae	!	!#		
M. scoparia	"	O	!		
Myoporum boninense subsp. australe	Myoporaceae	O			
Myriophyllum:-					
*M. gracile	Haloragaceae	O		N	
M. pedunculatum ssp. longibracteatum	"	O			
Notelaea longifolia	Oleaceae	O	O		
Opercularia:-					
O. aspera	Rubiaceae		#		
O. varia	"	!			
*Orthoceras strictum	Orchidaceae		O	N	
Oxalis:-					
*O. exilis	Oxalidaceae	O		N	
O. radicata	"		O		
Oxylobium cordifolium	Fabaceae	O	O		
*Ozothamnus diosmifolius	Asteraceae	O	O	N	
Panicum simile	Poaceae		O		
Paspalidium distans	Poaceae	O	#		
Paspalum:-					
P. distichum	Poaceae	O			
P. vaginatum	"	O			
Patersonia:-					
P. fragilis	Iridaceae	O			
*P. sericea	"		#	N	
Pelargonium australe	Geraniaceae	O			
Persicaria decipiens	Polygonaceae	O			
Persoonia:-					
*P. hirsuta	Proteaceae	O		N	
P. lanceolata	"	O	#		
P. levis	"		O		
Petrophile pulchella	"	O	O		
Philothea:-					
P. buxifolia	Rutaceae	O	O		
P. salsolifolia	"	!	O		
Phragmites australis	Poaceae	O			
*Phyllanthus hirtellus	Euphorbiaceae	!	O	N	
Phylota phyllicoides	Fabaceae	O	O		
Pimelia linifolia	Thymelaeaceae	O	!		
Pittosporum:-					
P. revolutum	Pittosporaceae		O		
P. undulatum	"		!#		
*Plantago debilis	Plantaginaceae		O	N	
*Platylobium formosum	Fabaceae		O	N	
Platysace:-					
P. ericoides	Apiaceae	O	O		
P. lanceolata	"	!	#		
P. stephensonii	"	O	O		
Poa:					
*P. affinis	Poaceae	O		N	
P. poiformis	"		O		
Pomax umbellata	Rubiaceae	O	O		
Poranthera:-					
*P. corymbosa	Euphorbiaceae	O		N	
P. ericifolia	"	O	O		
P. microphylla	"	O			
Pseudognaphalium luteoalbum	Asteraceae	O			

Species	Family	East	West		
<i>Psilotum nudum</i>	Psilotaceae	○			
<i>Pteridium esculentum</i>	Dennstaedtiaceae	○	○		
<i>Pterostylis erecta</i>	Orchidaceae		○		
<i>Ptilothrix deusta</i>	Cyperaceae	○			
Pultenaea:-					
<i>P. daphnoides</i>	Fabaceae	○	○		
<i>P. linophylla</i>	"	!	○		
<i>Rapanea variabilis</i>	Myrsinaceae	○			
<i>Rhagodia candolleana</i> subsp. <i>candolleana</i>	Chenopodiaceae	○			
<i>Rhytidosporum procumbens-</i>	Pittosporaceae	○			U
<i>Ricinocarpus pinifolius</i>	Euphorbiaceae	!	○		
<i>Rulingia hermanniifolia</i>	Sterculiaceae	○	○		
<i>Samolus repens</i>	Primulaceae	○			
<i>Saropsis fastigiata</i>	Restionaceae	!	!#		
<i>Scaevola ramosissima</i>	Goodeniaceae	○			
Schoenoplectus:-					
* <i>S. pungens</i>	Cyperaceae	○			N
* <i>S. validus</i>	"	○			N
Schoenus:-					
<i>S. apogon</i>	Cyperaceae	○			
<i>S. brevifolius</i>	"	○			
<i>S. ericetorum</i>	"	○	○		
* <i>S. melanostachys</i>	"		○		N
<i>Selaginella uliginosa</i>	Selaginellaceae	!	○		
<i>Selliera radicans</i>	Goodeniaceae	○			
Senecio:-					
<i>S. lautus</i> ssp. <i>maritimus</i>	Asteraceae	○			
* <i>S. minimus</i> var. <i>minimus</i>	"	○			N
<i>Schelhammera undulata</i>	Uvulariaceae		○		
<i>Smilax glycyphylla</i>	Smilacaceae	!	#		
<i>Sphaerolobium vimineum</i>	Fabaceae	○			
<i>Spinifex sericeus</i>	Poaceae	○			
<i>Sporobolus virginicus</i>	Poaceae	○			
<i>Sprengelia incarnata</i>	Epacridaceae	○			
Stackhousia:-					
<i>S. muricata</i>	Stackhousiaceae	○			
<i>S. viminea</i>	"	○	○		
* <i>Sticherus flabellatus</i>	Gleicheniaceae		○		N
Styphelia:-					
<i>S. triflora</i>	Epacridaceae		#		
<i>S. viridis</i>	"	!	○		
<i>Tetragonia tetragonoides</i>	Aizoaceae	○			
<i>Thelionema umbellata</i>	Phormiaceae	○	#		
<i>Themeda australis</i>	Poaceae	!	○		
<i>Thelymitra pauciflora</i>	Orchidaceae		○		
<i>Thysanotus tuberosus</i>	Anthericaceae	○	○		
<i>Triglochin striatum</i>	Juncaginaceae	○			
<i>Typha</i> sp. (<i>orientalis</i> ?)	Typhaceae	○			
Utricularia:-					
<i>U. dichotoma</i>	Lentibulariaceae	○			
<i>U. lateriflora</i>	"	○			
<i>Veronica plebeia</i>	Srrophulariaceae	○			
<i>Villarsia exaltata</i> ?	Menyanthaceae	○			
<i>Viminaria juncea</i>	Fabaceae	○	○		
<i>Viola hederacea</i>	Violaceae	○			
<i>Wahlenbergia gracilis</i>	Campanulaceae	○			
<i>Westringia fruticosa</i>	Lamiaceae	!	○		
<i>Woolfsia pungens</i>	Epacridaceae	!	!#		
<i>Xanthorrhoea resinifera</i> (<i>resinosa</i>)	Xanthorrhoeaceae	!	!#		
Xanthosia:-					
<i>X. pilosa</i>	Apiaceae	!	○		
<i>X. tridentata</i>	"		○		
<i>Xylomelum pyriforme</i>	Proteaceae		○		
Zieria:-					
<i>Z. laevigata</i>	Rutaceae	○	○		
<i>Z. pilosa</i>	"	○	○		
<i>Zoysia macrantha</i>	Poaceae	○			

Appendix 3: Why the Western Bushland must be retained²¹

For a number of alleged reasons - that the area contains no rare or endangered species; that its physical quality has deteriorated from unauthorised and inappropriate use and from increased weed infestation; and that such deterioration is likely to continue - it has been suggested that the western section of the National Estate on the ANZAC Rifle Range no longer deserves its national conservation status. This note examines these allegations and attempts to assemble the objective evidence whereby the current quality of the area can be assessed and reasonable judgment be made about its probable future.

The western section of what locals tend to refer to as the Malabar Headland bushland, and its eastern section on the coast between Maroubra and Malabar, were jointly nominated for inclusion on the Register of the National Estate in 1986. They were granted interim registration in October 1986 and final registration in August 1987. The reasonable presumption, given the investigation process that accompanies listing on the Register, is that both areas were then of a quality warranting recognition as of national conservation significance. Before the advent of the ANZAC Rifle Range they were, of course, parts of a single, considerably larger, coastal vegetation community.

I The Physical Condition of the Site

The initial question to be examined is: has the physical condition of the site deteriorated over the last decade? An accurate answer to that question depends on knowledge of the site in both 1986 and 1997. What follows relies on personal observation between these years.

Throughout the period the area has been subject to unauthorised and damaging use by trail bike riders and, more recently, but to a much smaller extent, by allowed horse riding. The damage done by the bike riders in widening tracks, creating jump obstacles and so on is distinctly observable and, given its location, distressing. It has not, nevertheless, been on a scale seriously to disturb the fabric of the site as a whole. This is so, in part, because the bush is quick to re-establish itself. Unused former paths can quickly become impenetrable.

The worst potential threat from the making of tracks through good bush is the introduction of weed species. This is evident to some extent but the interior of this bushland is surprisingly free from weeds. The explanation of this fact has been given by Benson (1987) as: "These (damaging processes), however, have had little effect, because the low-nutrient levels of sandstone soils and well-drained conditions are not suitable for the establishment of urban weeds ...". The condition of the bush ten years later confirms this observation.

This is not to deny that there is now, as there was in 1987, a serious weed problem around the fringes of the site, the major offending species being Bitou Bush, Pampas Grass and Lantana. The extent of this problem is probably less now than it was then. This is not because there has been an active weed control program but is largely a by-product of fire hazard reduction. A few years ago the Department of Administrative Services widened the cleared strip on the western side, between the adjacent dwellings and the bush, by about ten metres. This involved the destruction of some native species but also the removal of most of the invading weeds on this side of the area. Elsewhere, especially on the south and south-eastern borders, the weed problem is somewhat worse than it was but still the weeds do not penetrate far into the bush. A recently established volunteer bush regeneration effort is expected to have a significant impact on the site's weed infestations within a relatively short time.

As in all urban bushland the site suffers from anti-social dumping of household rubbish which detracts from the visual quality of the site but which does not, to any great extent, damage the integrity of its vegetation. In one important respect this situation has improved. While the firebreak was being widened the Department took the opportunity both to remove the largest collection of derelict vehicles and to establish a system of barriers to deter the continued dumping of cars. To date this has been surprisingly effective. As a result both of removal and deterrence the vehicle rubbish problem is less than it was.

On the evidence adduced above it is reasonable to conclude that, on balance, the physical condition of the site is currently much the same as it was a decade ago. Given that a bush regeneration program is now under way and growing local awareness of the value of the site the main remaining problem is to curb the activities of trail makers.

²¹ The Western Section of the National Estate Bushland at Long Bay by A R Hall (1997)

II A Preliminary Assessment of Quality

The assessment of the quality of an area's vegetation is more difficult than the recording of its physical condition and needs to be approached from a number of different perspectives.

At the most superficial level one could define quality in terms of the recorded numbers of indigenous species. If one were to do this literally, in terms of the numbers recorded in 1987 compared with those recorded in 1997, then one could claim that there had been a vast improvement in quality over the last decade. Thus in 1978 Benson (1978), as part of a survey of the whole of the Rifle Range's native vegetation, recorded 42 indigenous species in one sample site of the western portion. In a later inspection of the western section alone, involving three sample sites, the vegetation count rose to 55 (Benson 1987). But 30 of these were not on the first list so that at the time when the national estate status of the site was being established the total recorded number of indigenous species on it was 72. By 1997 the count, based on round-the-year visits and on the findings of a number of people, has risen to 206. This is not, of course, a measure of the improved quality of the site but of greater knowledge of its quality.

A more useful exercise is to compare the count of its vegetation at the same point of time with its sister section on the Register of the National Estate whose status is not being questioned. In doing so it should be appreciated that the western section is about 15 hectares and the eastern 55 hectares. The most useful way to present this count of totals is as follows:

Native Species Recorded on Malabar Headland (refer Appendix 2 for species list)

Total recorded in the east	221
Total recorded in the west	206
Total recorded as if one site	283
Species recorded only in the east	77
Species recorded only in the west	62
Species common to both areas	144

It should be noted that the fourth and sixth rows add to the first, that the fifth and sixth add to the second and that the third is the sum of the fourth, fifth and sixth. Also, about half a dozen of the species in each section are outside the boundaries of their respective national estate areas. The number of species reported here - in total and both in the east and in the west - is much greater than as stated in the current **Register of the National Estate Place Report** which records the situation as it was in May 1990.

A number of observations can be supported on the basis of this summary of the number of plant species on Malabar Headland. Both the eastern and western sections are of much the same species richness. They are clearly parts of the same vegetation complex. At the same time each has a substantial range of species that has not been observed at the other. Their combined species diversity is significantly greater than that of either part taken by itself. That they have joint heritage status is no accident.

On a per hectare basis the species diversity of the western section is considerably greater than the eastern section and that of both areas is much greater than that of Botany Bay National Park which, with an area of some two hundred hectares, has about 350 indigenous species.

III Species Rarity

Neither the western section, nor the eastern one, is notable for rare species when rarity is measured other than on a local basis. Only one, *Rulingia hermanniifolia* (3RCa) has been recorded in both areas, is rare in national terms. Some species, such as the Port Jackson Mallee *Eucalyptus obstans*) which was once common in the area, are now locally rare. The west also has more than a dozen species which are neither in the eastern section nor in Botany Bay National Park. This means that in the whole of eastern Sydney they are very vulnerable species. The latter fact deserves recognition from the standpoint of the desirability of maintaining local species diversity but cannot be expected to rank high on the scales of national species rarity.

IV Rarity of Vegetation Communities

But neither of the two parts of Malabar Headland listed on the Register of the National Estate attained this status on the grounds of species rarity. Considerably more important was the nature of their vegetation communities. Thus the Place Report of the Register of the National Estate Database states: "The vegetation of the Long Bay area is of scientific and educational significance because the communities found in the area are rare examples within the Sydney region of coastal communities growing on Pleistocene sand deposits instead of on skeletal sandstone soils, which is the normal substrate." This statement is somewhat misleading because it appears to imply that all the plant communities in the area

are of this character which, as is clearly recognised elsewhere in the Place Report, is not the case. The words "are rare" in the quoted statement need to be amended to "contain rare".

The scarce plant communities here being referred to have come to be described as **Eastern Suburbs Banksia Scrub (ESBS)**. Their rarity is such that this type of vegetation has recently become one of the first plant communities to be declared an Ecologically Endangered Community under the terms of the **NSW Threatened Species Conservation Act 1995**. There are three main areas of **ESBS** on Malabar Headland all of which are significant because they are remnants of unusually high quality. They are also distinctive for the way in which they demonstrate this community's adaptation to different environmental conditions. Thus the main exposed coastal portion (the largest surviving remnant of the community) is predominantly heath-like verging into scrub in its more protected sections. Most of the main western remnant is sufficiently protected from the prevailing winds to be classified as low woodland/tall scrub. The latter section also probably has a wider range of the characteristic **ESBS** species.

The high quality and the differing characteristics of the three main **ESBS** remnants on Malabar Headland remain amongst the key reasons for the continued joint listing of the two areas on the Register of the National Estate.

V **The Significance of Other Vegetation Communities**

The Australian Heritage Commission's Official Statement of Significance recognises the species diversity of the site (See II above) as satisfying one of its selection criteria. This is so even though, as has already been noted, its Database species count is considerably less than the number of species now known to be there.

In the Commission's Database description of the site attention is drawn, specifically in relation to the west, to the fact that: "The high diversity of plant species found in this section is the result of the combination of sand sheet and sandstone soils which occur here."

Given the doubts that have been expressed about the quality of the western portion it is worth giving greater attention to the reasons for its considerable degree of species diversity.

The species diversity of the two rifle range sites depends importantly on the range of local conditions that they encompass. Here attention is given only to this aspect of the western section.

The West has four main physical components. They are:

- A shallow-soiled and more or less level rocky sandstone platform which backs onto the edge of South Maroubra's residential area and which extends eastwards towards the shooting portion of the rifle range which separates the two bushland remnants. It covers about six tenths of the site.
- A rocky escarpment surrounding three sides of the rock platform which is up to about ten metres in height. The strip of land immediately below it accounts for about one tenth of the area.
- A sloping area below the northern and north-eastern escarpment whose soil consists of deep sands. It covers about one tenth of the area.
- A sloping area to the east and south east supporting a range of vegetation types including another **ESBS** remnant. It accounts for about one fifth of the area.

The vegetation structure of the western section, which is on the coast between about one to two kilometres from the ocean, reflects its physical structure, soil conditions and its exposure to coastal winds.

The dominating physical feature is the sandstone rock platform. The rock is partly exposed and otherwise covered by thin sandy soil. Rising to about 50 ms it is one of the highest points in the Eastern Suburbs. From it the tall buildings of Sydney's central business district (only 11 kms away) are clearly visible. Except on the west, where it is now largely protected by a line of three storey flats, it feels the full force of the frequently strong coastal winds.

The vegetation that has evolved on the rock platform and around it under these conditions has been mapped on the Sydney map of the Royal Botanic Gardens Sydney set of natural vegetation maps (Benson and Howell 1994) as part of the category "Coastal Sandstone Heath". Given the size of the location in question and the scale of the vegetation map this is probably a fair description. It is nevertheless somewhat misleading. Despite its small area the site has four reasonably distinct plant communities only one of which, the smallest, corresponds to one of the subsets formally recognised within the category "coastal sandstone heath".

On the sandstone platform the vegetation ranges from two to four metres in height and is best described as predominantly scrub. The dominant species are Kunzea ambigua and Banksia ericifolia. Less frequent

scrub species are Melaleuca nodosa, Acacia longifolia, Callistemon linearis and Allocasuarina distyla. Epacris longiflora, Epacris microphylla, Woollsia pungens and Leucopogon ericoides are common in the understory as are Lepidosperma laterale and Restio fastigiatus. The exposed conditions have ensured that the few tree species are either mallees, notably the now locally rare Port Jackson Mallee Eucalyptus obstans), or ones which, on this section of the site, are of low growth (Angophora costata and Corymbia gummifera). They are barely higher than the surrounding scrub. The heath-like character of parts of the site largely reflect past fire history. The longer the period since the last fire the more does the dominant vegetation approximate scrub rather than heath.

Immediately below the escarpment of the rock platform is a fairly narrow strip with a reasonable degree of protection from the prevailing winds. This supports a small woodland community reminiscent of those common elsewhere in Sydney in the vicinity of low cliffs. The main trees are Angophora costata and Corymbia gummifera with a few Eucalyptus piperita. Some of the species found here but not elsewhere on the rifle range are Elaeocarpus reticulatus, Banksia spinulosa, Pultenaea daphnoides and its most abundant ground cover, the fern Sticherus flabellatus.

A range of plant communities is to be found on the slopes below this narrow woodland strip. To the north, in a sheltered depression, is an **Eastern Suburbs Banksia Scrub** remnant in the somewhat unusual form of low woodland/tall scrub most of its scrub species here being between two to four metres high. This is one of the best remaining examples of **ESBS** which, as already noted, has recently obtained the status of an Endangered Ecological Community. It contains a wide selection of the plant species that make up this community.

The Pleistocene sands, which are taken to delineate **ESBS**, extend to the northern end of the slopes below the eastern escarpment. This section has suffered far more from the dumping of fill and the making of an access road but still supports a small **ESBS** plant community in its heath rather than scrub form whose spring-time blossom is a poignant reminder of what was once a far more extensive and common sight in east Sydney.

Farther south along the eastern slopes, beyond the no botanist's land of the small bore rifle range and its surrounds which is a haven for noxious weeds, there is an extension of the Kunzea ambigua/Banksia ericifolia scrub which is dominant on the rock platform. This merges almost imperceptibly into the section which fits the Coastal Sandstone Heath category Banksia ericifolia/Allocasuarina distyla. Viewed from the edge of the escarpment above, one of the most distinctive species in this dense patch of scrub is Hakea gibbosa. This particular combination is of interest because it provides a clear link with the similar plant community which constitutes a large part of the eastern section of the rifle range's National Estate bushland.

Near the south-eastern corner there is another small **ESBS** remnant which is also of a low woodland/tall scrub form. Amongst other things it includes the best clump of Christmas Bush Ceratopetalum gummiferum on the headland.

Note has already been taken of the significance of the **ESBS** ecological community. Regard ought also to be given to the Kunzea ambigua/Banksia ericifolia vegetation community. As a species Kunzea ambigua is common throughout the Sydney region. As the dominant species of a plant community it is much less common. Thus it is an infrequent species in the eastern portion of Malabar Headland and there are now only two other Kunzea ambigua scrub communities in eastern Sydney, both a few kilometres to the south. One, alongside Jennifer Street is badly degraded. The other, alongside Bunnerong Road in Chifley, is still of good quality but its long narrow shape and relatively small size (three to four hectares) make it much more vulnerable than in the area here under examination. To what extent the existing remnants in the Eastern Suburbs formed part of a single larger community is now uncertain. There is, however, little doubt that Kunzea ambigua scrub was once widespread in Sydney, and that the west's example of it is probably the best now surviving on the coast between Broken Bay and Botany Bay. There is thus a strong case for its retention as a representative sample of this form of Sydney's pre-European vegetation.

Apart from its intrinsic quality the west's Kunzea ambigua scrub has an important role to play in helping to preserve the integrity of the west's **ESBS** remnants. This is so not merely as an up-hill buffer against potential degradation processes. Many of the distinctive **ESBS** species are not limited to deep sandy soils. There is, indeed, a larger number of the set of **ESBS** species in the western section as a whole than in the **ESBS** portions taken by themselves. The preservation of the species of this endangered ecological community on Malabar Headland depends partly on the survival of its neighboring plant communities.

VI Conclusion

The quality of the eastern section of Malabar Headland's National Estate bushland is unquestioned. So too should that of the western section be unquestioned. The differences between them are not matters of quality. They are only such as to make their joint heritage value significantly greater than either part alone. Their degree of species diversity is much the same but their species mix is by no means identical. For example, two of the area's most beautiful species - *Epacris longifolia* and *Eriostemon australasius* - are not present in the east. Moreover, the west contains about a dozen species that are not present in the east nor present elsewhere in the City of Randwick. This effectively means not elsewhere in the whole of the Eastern Suburbs. Each contains a range of vegetation communities including some of the best remnants of the ecologically endangered community, **Eastern Suburbs Banksia Scrub**. While the types of vegetation communities over-lap each supports ones not present on the other. Together they remain testimony to the variety of Sydney's coastal vegetation.

What remains of Eastern Sydney's indigenous vegetation is only a small fraction of what it was in 1788. All that is left is more or less endangered. The best hope that future generations will have some opportunity directly to appreciate this pre-European vegetation is the conservation of all its remaining bushland but especially those parts with the quality and potential long term viability of both sections of Malabar Headland's National Estate bushland.

VII Update July 2002

The passage of time has only served to reinforce the need to preserve the whole of the western section. Its indigenous species count now stands at 226 of which 70 are recorded only in the west. In addition there are the fruits of five years' volunteer bush regeneration and, more recently, the long over-due rubbish removal by the firm DASCEM on behalf of the Commonwealth Government.

The heartland of the west has long been relatively weed free. Now two-thirds of its lengthy perimeter has been cleared of its primary weed infestations by volunteer effort and a substantial part of the remaining problem has been eased by Randwick Council's work in Pioneer Park on its southern boundary. Plans are in hand by the Commonwealth for the serious Bitou Bush infestation adjacent to the small bore rifle range.

The substantial amounts of rubbish, from dumped cars downwards, that was not cleared in the mid 1990s and much of the lesser additions since then has recently been cleared out under contract by DASCEM. It also assisted the bush regeneration effort, as part of its brief to strengthen the fire break on the western boundary with the residential area, by clearing bush regenerators' accumulations of dead weed vegetation and by removing the increasing infestations of the invasive species *Acacia saligna* along the fire break.

The dumping of any new rubbish has been greatly reduced by the building of the fence between the bush and the residential buildings in June 2001.

References Cited by Appendix 3

Benson, D. Brief Survey of Native Vegetation at Long Bay Rifle Range Royal Botanic Gardens, Sydney 1978

Benson, D. Assessment of Native Vegetation - Western End of Long Bay Rifle Range Royal Botanic Gardens, Sydney 1987

(Both the above are reproduced as appendices in Manidis Roberts Consultants Malabar Headland -Draft Plan of Management Sydney, 1990)

Benson, D and Howell, J. The Natural Vegetation of the Sydney 1:100,000 Map Sheet Cunninghamia Vol 3(4) 1994 pp. 677-787

Register of the National Estate Database Report - Long Bay Area Australian Heritage Commission 1997

Appendix 4: Commentary extracted from community survey

Commentary provided by Survey Respondents

A continuing of the walkway from Bondi to La Perouse instead of finishing at Maroubra
A good pathway would stop degradations people try to find a dry path
A sculpture walk in the open space recreation area + community facilities. Education.
Aboriginal "bush tucker" walk
Ban on commercial use of land/license. Land given over to the protection of native flora with some open public access
Banning out the Rifle Ranging in the area and preserve the area as natural patrimony
Be cleansed, reopen to public.
Better walkways
Block off access to trail bikes / motorbikes riders who constantly use the area
Boardwalks in some areas, keeping as National Park. Stress release area essential to well being of myself and all community. Air regeneration.
Clean out cars & leave alone. Try to block off access via rifle range (avoiding barriers near car park)
Clean up the creeks and waterways
Clear the weeds.
Coastal walk, National Park
Convert to National Park.
Definitely no high rise
Develop as National Park plus passive recreation areas for bike riding, horse riding etc.
Don't change it in any way. Preserve the headland.
Don't develop.
Ecological study centre, community garden lots
Education area for ecology & Aboriginal culture
Enjoyment of a natural undeveloped site where native flora, natural rock formations and coastline prevail. It's the closest thing to being able to go on a full bushwalk (the cliffs are reminiscent of the renowned views of Albany in the national park (south west W.A.) Please maintain this beautiful, unique, natural environment close to its natural state (beyond the rifle range). It's the reason I continue to live in Maroubra. Some signage regarding Aboriginal importance of the area. If leave rifle range as open space - that's OK
Environmental conservation education centre,
Get rid of sewerage stink pipes and stormwater from the bay.
Golf course
Have the entire area (rifle range etc) changed and retained as bushland.
I applaud the creation of a public park with a coastal walkway along the cliff top.
I wish that Malabar Headland be declared as National Park and Open Space for the community access.
I think they should clear up the pathway
I'd like to see it as National Park
If anything is to be done, turn into public housing. Take my grandchildren to the beach.
Its unique for its walk.
Just to be let as is natural
Keep housing (out). We need all space especially this kind.
Keep it green for all to enjoy
Keep it the way it is
Keep it the way it is
Keep Malabar riding school
Leave as is (15 respondents)
Leave in natural state.
Leave it alone to be enjoyed by all.
Leave it alone, make a better path.
Leave it as a nature reserve
Leave it as is for my children to enjoy.
Leave it as it is – but weeds removed
Leave it in its natural state
Let's have more to see of our beautiful bush
Linking Eastern Suburbs coastal walks
Maintain as open land.
Make it into a park
Make the running track clearer like Bondi to Coogee
Malabar headland is a valuable recreational area, as we live there, what's becoming more obvious is not the actual headland but the amount of shellfish being harvested there illegally

Commentary provided by Survey Respondents

Marine environment. Malabar Headland should be an emphasis of preserving unique remnant bushland, the natural environment of this area is paramount for protection.

Markets (once a month), more trees

Meditation away from buildings

National Park (8 respondents + additional responses as below)

National park - little or no entrance fees

National Park – open to the public

National Park for the use of all who need to see coastal nature

National Park status or wilderness.

National Park, bbqs, walks

National park, coastal walking, no housing

National Park, extend Coastal walkway, open space-public

National Park, wildlife corridors, public recreation

National Park. Continuation of boardwalk.

National Park. Get rid of stormwater.

National Park. Using the beach / rock pools. Taking children to the playground.

National park/community use of buildings

National Parkland, coastal walkway, cycling, running, horse riding area

Native regeneration, dive marine reserve, protected area management, proper land use planning.

Nicer coastal walking

No development. Public use only. National Park.

No privatization

Open parkland

Open space, recreation area. Continue boardwalk and walk from Maroubra through to Botany Bay

Open to public as parkland

Orienteering, guided walks, mountain biking

Park + limited picnic areas, dog walking

Parkland / picnic grounds for everyone to enjoy

Permanent sculpture gardens

Please leave as is - a little cleanup needed?

please retain rifle range and open space is a necessity

Please retain some space in Sydney! Don't build it all up. Please!

Preserve it, regenerate it, save it. My kids and I love it.

Preserve WW2 forts and regenerate bushland

Public space preserved for present and future generations. Open space enhances the area & available for everybody.

Recreation area. Keep it as is.

Regenerate coastal vegetation and leave for the public.

Reinstate wetland areas

Release of Commonwealth plans for the area

Remain as is for local residents to enjoy open spaces.

Remain as is (6 respondents)

Restoration of foreshore area funded by low rise development over encapsulated pollution

Retain as it is and place heritage listings on WWII fortification emplacements

Retain whole headland as National Park

Save as a National Park. No residential development. Retain existing open space as public. Rehabilitate degraded areas. Regenerate bush

Should be a Federation Park & managed by a trust or all the bush to be National Park (East and West) and the centre a State Recreation Area.

Should be for everyone to enjoy

Should be public recreation area-catering for school? Family use (such as developing rifle range) + natural state. Live locally. Activity (with kids) impacted by access difficulties

Signposts with info on local fauna and flora

Sit down, watch the scenery for stress relief. Keep it as it is!

To be kept in its natural state, no developments of the land for housing

Tours for wildlife, Aboriginal & WWII sights and local plant life

Turn into National Park + Education Facility

Upgrade coastal walkway from Maroubra to Malabar

Upgrade coastal walkway from Maroubra to Malabar

Walking tracks (6 respondents)

Windpower + nature reserve

WW2 sites to be preserved and brought up to standard

Appendix 5: Community Survey Questionnaire

MALABAR HEADLAND QUESTIONNAIRE

Friends of Malabar Headland is a community based organisation with a goal to have the entire Malabar Headland site declared as National Park and Open Space for all the community to access.

The Federal Government has given the administration of Malabar Headland to their property manager PriceWaterhouseCoopers and are preparing a plan of management for the site. However, the local community has not been involved in the preparation of such a plan.

The information collected will be used to provide input into a community plan of management.

1. How often do you visit Malabar Headland? Daily Weekly Monthly
 Yearly Never → go to Q4

1. How do you get to Malabar Headland? Car Walk Public
 Bike Other

3. What activities do you currently enjoy on the Headland?

- | | | |
|--------------------------------------|------------------------------------------------|--------------------------------------------|
| <input type="checkbox"/> Walking | <input type="checkbox"/> Bird watching | <input type="checkbox"/> Whale watching |
| <input type="checkbox"/> Dog walking | <input type="checkbox"/> Horse riding | <input type="checkbox"/> Bush regeneration |
| <input type="checkbox"/> Fishing | <input type="checkbox"/> Research activities | <input type="checkbox"/> Shooting |
| <input type="checkbox"/> Bike riding | <input type="checkbox"/> Model aircraft flying | <input type="checkbox"/> Diving |
| <input type="checkbox"/> Other | | |

4. Please circle the importance to you of the following features of Malabar Headland.

Coastal scenery	high	medium	low
Coastal walkway	high	medium	low
Nature conservation	high	medium	low
Aboriginal cultural values	high	medium	low
World War II sites	high	medium	low
Sporting activities	high	medium	low
Open space recreation	high	medium	low

Please list any suggestions that you have for Malabar Headland

.....

5. What would be your opinion of housing or commercial development on Malabar Headland?

Strongly disapprove Disapprove Unconcerned Approve Strongly Approve

Postcode

Age Group < 20 20 – 30 30 – 40
 40 – 50 50 – 60 60+

Thank you for taking the time to fill in this questionnaire