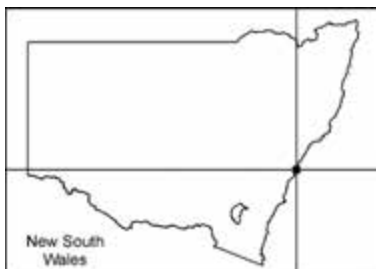
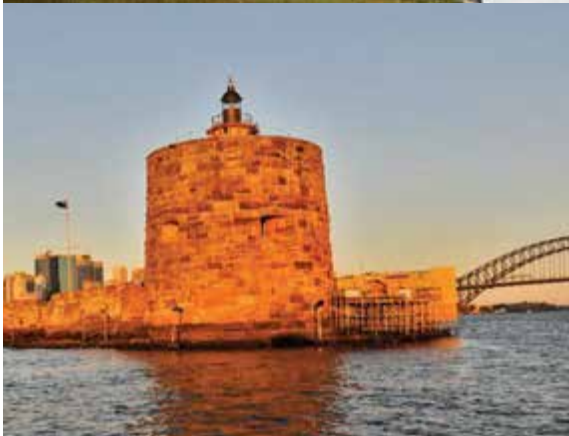


Plan of Management



Sydney Harbour National Park 2012







Nurture. Understand. Learn. Enjoy.

A scenic view of a rocky coastline. The foreground shows a steep, layered rock cliff face in shades of tan and brown, with some sparse green vegetation. The middle ground is dominated by a deep blue sea. In the distance, a yellow kayak with two people is visible on the water. The background features a forested hillside with more rocky outcrops. The overall scene is bright and clear, suggesting a sunny day.

Foreword

This plan of management describes how the NSW National Parks and Wildlife Service (NPWS) will conserve the natural and cultural heritage of the park while providing unique and enriching experiences for visitors to Sydney Harbour.

The park is one of the smaller national parks in New South Wales. At just under 400 hectares it sits within a protected areas system totalling around 7 million hectares of land.

Though small the park contains an extraordinary diversity of natural and cultural heritage, as well as some of Sydney's most valued sites for outdoor recreation, special events and celebrations.

The park is distinguished by the number and significance of historic sites around the harbour, including the fortifications at Fort Denison, the North Head Quarantine Station, the recreational parklands of Nielsen Park and Shark Island and the mast of the first HMAS Sydney at Bradleys Head.

A remarkable variety of natural heritage persists and even thrives within the park. The Nielsen Park she-oak is wholly restricted to the park, while the endangered long-nosed bandicoot and little penguin of North Head are two of the State's most treasured and intensively managed wildlife populations.

The protection of the park and its natural and cultural heritage is dependent upon the support and understanding of the community as well as the work of NPWS. Volunteers in particular have a critical part to play in the future of the park.

A critical aspect of the plan of management is the commitment to offering the community and visitors a diverse array of opportunities to experience, enjoy and appreciate the park. Future visitor experiences will span recreational pursuits such as bushwalking along the Sydney Harbour Scenic Walk or picnicking at Nielsen Park, through to fine dining at Fort Denison or short stay accommodation in a harbour-side heritage property. NPWS will be actively

looking for partners to craft and deliver a range of innovative visitor experiences to complement and enhance appreciation of the park.

The NSW *National Parks and Wildlife Act 1974* requires that a plan of management be prepared for each national park. A draft plan of management for Sydney Harbour National Park was placed on public exhibition from 12 December 2010 to 30 April 2011. The submissions received were carefully considered before adopting this plan.

This plan contains a number of actions to achieve the NSW 2021 priority to 'Protect our native vegetation, biodiversity, land, rivers and coastal waterway', including development and implementation of a pest management strategy, undertaking a systematic fauna and flora survey, and fire management strategies. The plan also contains actions towards 'more people using parks', including preparation of an interpretation and education strategy, which will consider how to provide safe visitor access to the park whilst protecting the natural and cultural heritage of the park.

This plan of management establishes the scheme of operations for Sydney Harbour National Park. In accordance with s.73B of the *National Parks and Wildlife Act 1974*, this plan of management is hereby adopted.



Robyn Parker MP
Minister for the Environment

A scenic view of a riverbank. In the foreground, there is a body of water with a greenish tint. A sandy beach runs along the middle ground, with several large, dark rocks scattered across it. Behind the beach is a dense forest of green trees. A large, prominent tree with a thick, reddish-brown trunk and a wide, spreading canopy is a focal point in the upper half of the image. The overall scene is bright and natural.

Statement on behalf of the Metropolitan Local Aboriginal Land Council

Aboriginal communities have a profound association and connection to the land. The land and water, flora and fauna within a landscape are central to Aboriginal spirituality and contribute to Aboriginal identity. Aboriginal communities associate natural resources with the use and enjoyment of foods and medicines, caring for the land, passing on cultural knowledge, kinship systems and strengthening social bonds.

Aboriginal heritage and connection to nature are inseparable from one another and need to be managed in an integrated manner across the landscape.

In the management of the headlands and islands of the Sydney Harbour National Park, Aboriginal cultural values will provide an anchor point for conserving and experiencing Australia's shared history and contributing to the momentum of reconciliation.

Opportunities supporting reconnection to the land for city-based Aboriginal Australians is a major focus of the Sydney Harbour National Park Plan of Management.

Sydney has a rich Aboriginal presence and heritage but these aspects of Sydney's character have until recently been largely invisible to non-Aboriginal people. The sites and stories that are so much a part of the heritage of the park will be made more accessible with opportunities to explore Sydney's living Aboriginal cultural heritage, past and present.

Paul Morris
CEO, Metropolitan Local Aboriginal Land Council

ACKNOWLEDGEMENT

This plan of management was prepared by staff of the Metropolitan North East Region of the NSW National Parks and Wildlife Service (NPWS), part of the Office of Environment and Heritage, Department of Premier and Cabinet.

NPWS acknowledges the traditional custodians of the land on which Sydney Harbour National Park is situated.

NPWS will work in a respectful manner with the Aboriginal people in Caring for Country.

NPWS is grateful to all the organisations and individuals who contributed to the preparation of this plan of management. These included the Metropolitan North East Region Advisory Committee, the Stakeholder Working Group (SWG), the staff of Metropolitan Branch of NPWS and Elton Consulting.

Front Cover: Bradleys Head. Photographer: Kevin McGrath

P23 and P38: Little penguin. Photographer: David Jenkins

All other photographs: Kevin McGrath and NPWS

For additional information or any inquiries about this park contact the NPWS Metropolitan North East Regional Office at Bobbin Head, Ku-ring-gai Chase National Park.

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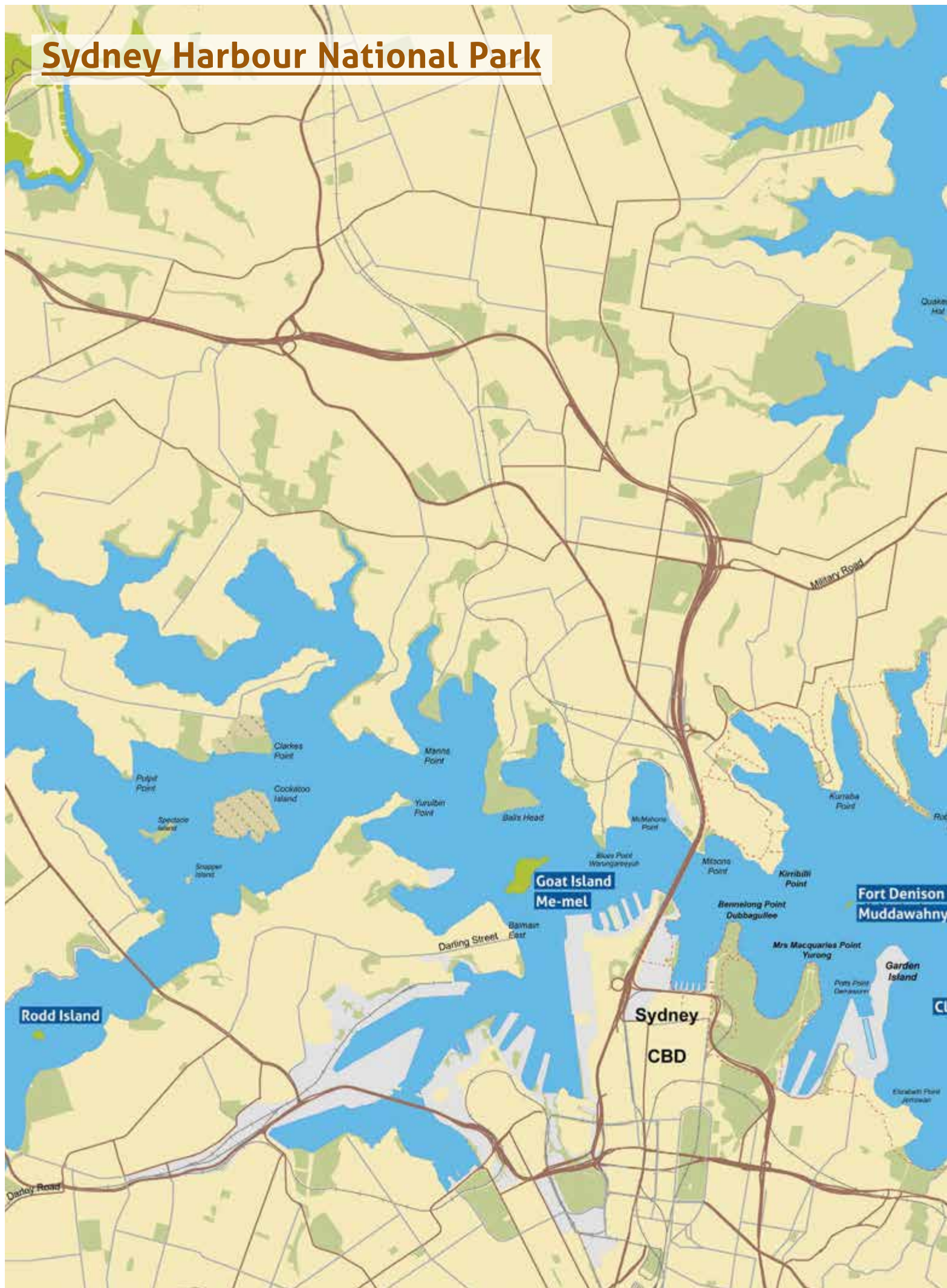
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The background image shows a rugged, rocky coastline. In the foreground, there are dark, textured rocks with small pools of water. To the left, a vertical rock face shows distinct horizontal layers of reddish-brown and yellowish-orange. In the distance, a blue body of water meets a clear sky. A semi-transparent blue rectangular box is overlaid on the upper half of the image, containing the text 'section 01' and 'Park Vision' in white, underlined font.

section 01
Park Vision



Sydney Harbour National Park







Statement of Significance

Sydney Harbour is universally acknowledged as a place of extraordinary natural beauty and as the setting for the great global city that Sydney has become. Sydney Harbour National Park is an integral part of this setting.

The harbour is more than a jewel – it is Sydney’s heart. Framing the waters of Sydney Harbour are its headlands and islands, bays and beaches. These special places contain a wealth of heritage resulting from the custodianship of Aboriginal people and the early phases of the harbour’s development for maritime industries, quarantine, defence and recreation. The resilience of nature and the survival of this rich heritage in such close proximity to the city is truly inspiring. These formerly closed lands have now entered the public domain as our public parklands.

The easy accessibility of this park at the heart of a city provides a constant reminder of our connection to the natural world and shared past. It has offered many Sydneysiders their first opportunity to forge their relationships with the landscape and their heritage. Creating vibrant opportunities for new generations to embrace these aspects of their life is a great responsibility for the managers of the park.

Many generations have shaped today’s Sydney Harbour National Park. Aboriginal people nurtured

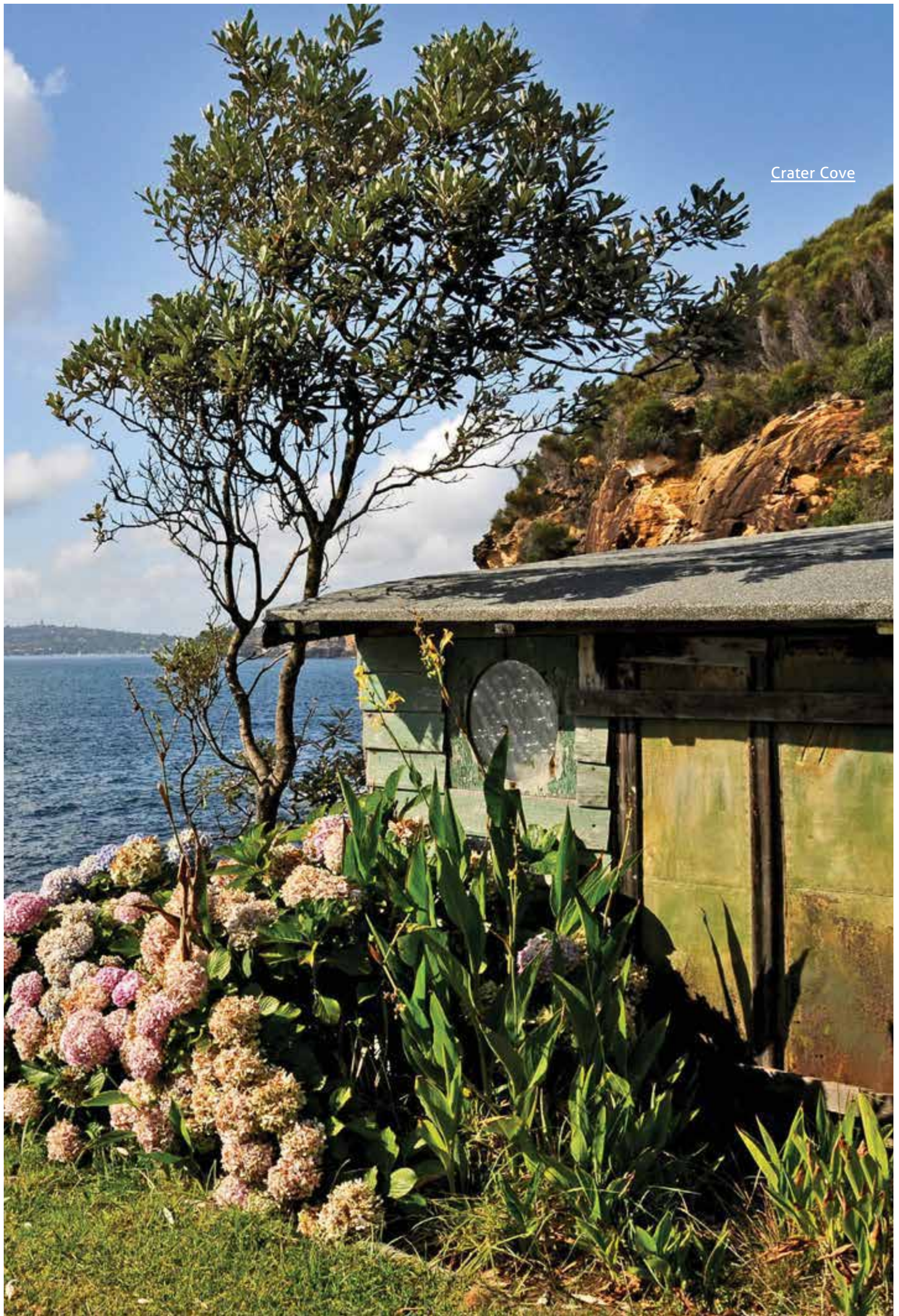
the landscape over millennia and continue a deep connection to the harbour, early settlers brought their own customs and desires and sought to develop, protect and enjoy these lands. Public recreation, the military’s presence and strong public support for the land’s protection precluded the kind of intense development witnessed elsewhere along the harbour foreshores. The park has been shaped by the history of settlement.

Today, NPWS and its partners are restoring habitats and protecting wildlife, conserving

significant cultural heritage places and providing a myriad of visitor opportunities. The open spaces, natural settings and historic places of Sydney Harbour National Park offer opportunities for recreation, research, events, education, self-development and exploration and cultural renewal.

The park sits within a complex array of public and private lands. Sustaining the harbour’s landscapes and heritage will require strong partnership and shared purpose amongst all those who care about this special place.

Crater Cove



Guiding Principles

The following guiding principles have been developed to inform the management of the park. They will be applied in conjunction with the legislation and policy framework that applies to all national parks.



Conserve natural and cultural heritage

Natural heritage management will conserve, sustain and enhance the biological and geological diversity of the landscape.

Aboriginal people have the primary role in determining how their heritage should be managed. We will work with the Aboriginal community to ensure that their heritage is managed with care and respect.

The management of the park's historic heritage will be sensitive to the history and patterns of use that have determined their significance.

Land that will significantly contribute to the park and its values may be added.

GUIDING PRINCIPLE 01

Manage sustainably

We will adopt sustainability practices in all of our projects, facilities, programs and operations. The use of renewable energy, recycled and energy efficient materials and quality design will be encouraged. The plan will implement the best contemporary business practices and monitor policy relating to sustainability management of the national park. We will seek opportunities in each precinct to promote sustainability and stewardship to park visitors, neighbouring communities and to other stakeholders.

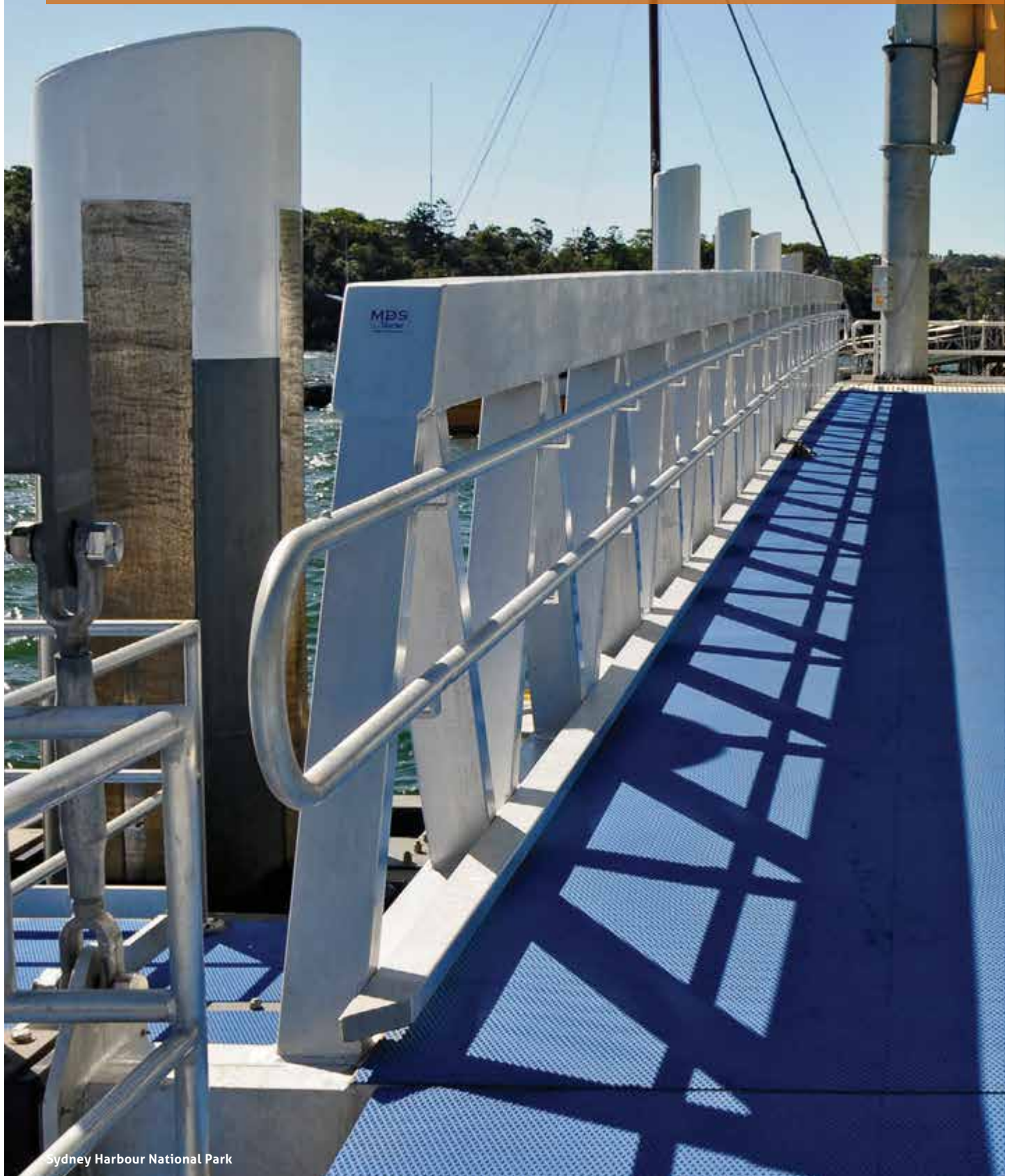
GUIDING PRINCIPLE 02



Improve accessibility

We will maximise our visitors' opportunities to enjoy the natural and cultural heritage of the park by providing infrastructure and other services that meet their special needs.

GUIDING PRINCIPLE 03





Welcome all visitors

There will be increased emphasis on the commitment to ensure the enjoyment of this generation and future generations through the provision of facilities that offer high-quality visitor experiences. The park will offer opportunities to enhance the health and well being of our community.

People will be welcome to enjoy experiences that recognise the culturally and linguistically diverse backgrounds, interests and ages of our visitors.

GUIDING PRINCIPLE 04



Improve transport linkages

We will encourage the provision of a wide range of public transport options to access key destinations around the park. Special emphasis will be given to encouraging the provision of regular water transport.

**GUIDING
PRINCIPLE** 05



Conserve for the future

We will look to and conserve for the future by responding to people's desire for tranquil and active enjoyment of the park. We will promote wider appreciation of and education about the park's value as a community asset of national significance. We will build community support for investment in the care, conservation and protection of the park as a legacy for future generations.

GUIDING PRINCIPLE 06



Partnerships and collaboration

We will strive to create partnerships that conserve and protect the park. We recognise that the park cannot and should not be managed in isolation from the rest of Sydney Harbour and its community of interest. Partnership will be sought with agencies of state and federal government and local councils, as well as the community, Aboriginal groups, visitors, volunteer groups, education, conservation and heritage sectors and appropriate corporate partners. Mutual obligation for the care of the park with local communities will be developed along with monitoring and reviewing the way the park is managed and used.

GUIDING PRINCIPLE 07

Values and Threats

This plan separates the park into twelve geographical areas or precincts. One of the reasons for adopting a precinct approach is that the values and threats in each precinct are extremely variable. Section 02 includes details of the values and threats that are particular to each precinct. The following summarises the shared values and threats across the park. Section 04 contains more detailed information and references.

Values

This plan aims to conserve the natural and cultural values of the park.

The location, landforms and plant and animal communities of an area have determined how it has been used and valued by both Aboriginal and non-Aboriginal people.

These values may be attached to the landscape as a whole or to individual components, for example to plant and animal species used by Aboriginal people. For reasons of clarity and document usefulness, individual values and issues are dealt with separately, however, their inter-relationships are recognised.

LANDSCAPE VALUES

Sydney Harbour National Park protects much of the scenic backdrop to Sydney Harbour and together with the waters of the harbour and adjoining foreshore, comprises Australia's greatest harbour and maritime city.

The park has outstanding scenic and aesthetic qualities valued by the community, including spectacular sandstone cliffs and headlands, small sandy beaches and rocky foreshores, natural vegetation, grassed clearings, historic structures and plantings.

ECOSYSTEMS VALUES

The longevity and persistence of the native bush in the park is evidenced by its survival, despite its close proximity to the city. It is an important indicator that long-term sustainable urban living in conjunction with the natural environment is achievable.

Sydney Harbour National Park remains floristically rich with up to 400 native plant species and a number of rare plant and animal species, and vegetation communities of high scientific value. A number of populations, species and communities in the park have been formally listed under the NSW *Threatened Species Conservation 1995* (TSC Act) and Commonwealth *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act). This includes the long-nosed bandicoot and little penguin populations at North Head and the Nielsen Park she-oak.

The waterways support a great diversity of aquatic species and aquatic habitats. The park is adjacent to two aquatic reserves, while the entire coastal zone adjoining the park has been declared as an Intertidal Protected Area.

The park provides valuable habitat in the centre of Sydney for a number of native birds and animals and complements other land reserved for nature conservation in the Sydney metropolitan area.

Some of the original legacy of these bushlands has not persisted. Local extinctions have been particularly severe in relation to native mammals such as bandicoots, gliders, wallabies and the marsupial carnivores.

Two important objectives of managing the park are to avoid any future loss of species and to look at opportunities to reverse the process of local extinctions. In some cases this will come through improvements to environmental conditions and natural re-colonisation of the park, while in others it may require the reintroduction of appropriate species.

CULTURAL HERITAGE VALUES

Sydney Harbour National Park contains much evidence of Aboriginal occupation and offers opportunities to see aspects of life before and after European settlement. Many of the sites reflect life around a bountiful waterway and include middens and engravings of marine life. All of the landscapes of the park and harbour are of significance to Aboriginal people who maintain a close relationship with the land.

The strong ongoing association between Aboriginal people and the park is highlighted by the gazettal in 2005 of two Guringai Resting (Aboriginal) Places within the park at North Head and at Reef Beach.

The historic places of the park play a critical role in our understanding of the development of Sydney and of the nation. They demonstrate the themes of immigration, navigation, defence, quarantine, maritime industry and settlement.

Sites of recognised national and state significance in the park include the North Head Quarantine Station, the Middle Head/ Georges Head complex of fortifications, Goat Island and Bradleys Head. Fort Denison, Nielsen Park and the islands also contain places of high historical value.

SCIENTIFIC AND RESEARCH VALUE

There has been a history of scientific study or research around Sydney Harbour, long before the gazettal of the park. The laboratories on Rodd Island in the 1880s are one of the earliest examples. Since then there have been a number of studies undertaken in relation to park management including threatened species, pest management, archaeology, climate change and recreation management. The proximity to a number of research institutions ensures a strong affiliation by the scientific community with the park.

RECREATION AND TOURISM VALUES

Sydney Harbour is one of the most recognisable destinations in Australia. It is a unique destination given it is one of the only urban environments surrounded by national parkland. The natural beauty of Sydney Harbour National Park and its interconnectedness with the city makes the area a drawcard for locals and a must-see icon for visiting tourists.

As Sydney is the dominant gateway and starting point for most international holidays, the park plays an important role as a visitor's first introduction to the country. Visitor's engagement with the park will have a decisive influence on their subsequent experiences in, and views of, the national park system.

The appeal and international recognition of Sydney Harbour as a destination means this area forms a core focus of state branding and marketing. Sydney Harbour forms the backdrop to many cultural, heritage and art institutions, the venue for events and festivals, and a place for the recreational pastimes of locals.

EDUCATION AND INTERPRETIVE VALUES

The diversity of natural and cultural values, combined with the easy accessibility of Sydney Harbour National Park, provide many opportunities to enrich visitor experience through interpretation and educational programs. Key themes include Aboriginal heritage, contemporary Aboriginal perspectives on the harbour and culture, the colonial and historic development of the harbour, the challenges of protecting urban bushland and wildlife populations, and other sustainable use and management options.

The threatened species and populations in the park have been subject to extensive research, as has the potential climate change impacts on significant heritage sites such as Fort Denison. The park and its natural and cultural resources provide a rich environment for undertaking and encouraging research that contributes to more effective management practices and builds on the rich legacy of existing information about the park.

The park has the potential, through collaborative education and research programs, to yield information and contribute to a greater understanding of Australia's natural and cultural history.

Threats

It is remarkable that so many of the core values of Sydney Harbour National Park have survived the development of Sydney. However, the ongoing persistence of these values cannot be assumed, and both natural and cultural values require careful management of the threats to their continued survival.

Threats which apply across much or most of the park include:

- » Habitat fragmentation through urban development
- » Pests and invasive species
- » Climate change, especially sea level rise and altered rainfall patterns
- » Dieback including that induced by *Phytophthora cinnamomi*
- » Grazing of seeds and seedlings by pests such as black rats and rabbits
- » Predation by foxes and domestic carnivores
- » Inappropriate fire regimes and wild fires
- » Excessive nutrients and sediment from stormwater run-off, favouring weed species, reducing water quality and smothering aquatic habitats
- » Erosion
- » Physical damage caused by visitors
- » Fragmentation
- » Aquatic pest risks.

The relatively small size of the park and its accessibility to research and tertiary institutions generates an opportunity for long-term monitoring and research into the effect and management of many of the above threats. Research programs include those concerning *P. cinnamomi*, impacts/management, sea level rise impacts on heritage structures, stormwater discharge into aquatic habitats, the impact of rabbit grazing on plant recruitment and the impact of black rats as an invasive species.

Clark Island



Desired Outcomes

The care, protection and management of Sydney Harbour National Park will ensure its long-term stewardship for current and future generations. The plan of management 2012 sets aspirations for the management of the park relating to focus areas that have been identified during key stakeholder and community consultation.

A number of the desired outcomes are interrelated and together will contribute to the successful management, protection and visitor enjoyment of the park.



Outcome 1

Conserve the natural values of the park

The care, protection and restoration of the natural values of the park will continue to be the highest priority

WHERE WE WANT TO BE IN 2022

Despite over 200 years of urban impact, the landscapes of Sydney Harbour National Park retain functioning ecosystems and significant natural biodiversity. These ecosystems will be maintained and protected from a range of local impacts such as invasive species and stormwater, and global impacts such as those resulting from climate change. Consideration will be given to the addition of areas to Sydney Harbour National Park and partnerships with neighbouring land managers will be strengthened to further secure the park's natural values.

Continued leadership will be required to balance environmental protection with the many other values of the park, such as its outstanding cultural heritage elements and contemporary visitor experiences. Environmental protection isn't just about biodiversity, it is also about conservation of landscape and catchment values such as water, soil and air quality and about reducing our ecological footprint.

The park's bushland plays a critical role as a refuge for flora and fauna species, some of which are protected under threatened species legislation. The resilience of nature

in such close proximity to the city is truly inspiring and threats to the survival of these threatened plants, animals and bushland will be managed as a high priority. This will include the implementation of appropriate fire regimes, and pest and stormwater management programs.

Enhancement of the environmental and habitat qualities of the bushland will be a priority as a means of improving resilience to future climate change and other threats and as a way of actively reversing the decline in species diversity and abundance. The bushland also acts as a buffer zone and filter between the urban surroundings and the aquatic environments and with good co-operative management can result in improved water quality and food availability for the cetaceans and birds of prey coming into the harbour. Opportunities will also be investigated for appropriate reintroductions of species where and if conditions are suitable and natural recruitment is not possible.

The park will continue its role as a precious remnant of an environment that has been otherwise dramatically altered over recent times.

OUR GOALS

- » The range of natural ecosystems within the park is conserved.
- » The remnant plants, animals and vegetation within the park are protected and enhanced by ameliorating environmental impacts associated with pest species, inappropriate use and past land use practice.
- » Habitat corridors within and beyond the park are identified and conserved in partnership with the relevant stakeholders.
- » Fire is managed as a key element in the care of the bush's ecology.
- » Interpretation of the park's natural values engages and inspires the community and assists with management of inappropriate visitor use.
- » Energy efficiency of visitor and operational facilities is improved.
- » Water and waste are managed sustainably including the use of recycled water and water sensitive design in facilities.
- » Partnerships for environmental sustainability innovation are strengthened, aiming for carbon-neutral operations.

- » Partnerships with universities for research and monitoring of natural values will assist park management.
- » Knowledge of *P. cinnamomi* and the threats it places on the long-term survival of plant and animal species in the area will be improved. Where possible the spread of *P. cinnamomi* will be controlled and its impact on native vegetation reduced.
- » Water quality and flows moving onto and off the park's land are managed to mimic natural conditions.

KEY PROJECTS

PROJECT 1

Bushland Health

Develop strategies to proactively address threats to bushland health and resilience. Priority will be given to the continued management of known threats such as the fungus *Phytophthora cinnamomi* root rot and nutrient discharge into the park, both of which have the potential to compromise the long-term viability and health of our harbour-side bushland and its flora and fauna.



PROJECT 2

Conservation of Threatened Species, Populations and Communities

A strong commitment will be given to the management of threatened species, populations and communities whose future is largely or wholly dependent on Sydney Harbour National Park, to ensure the long-term persistence of viable populations. Implementation of actions in relevant recovery plans, threat abatement plans and the priorities action statement will receive a high priority.





Outcome 2

Celebrate and nurture contemporary and traditional Aboriginal culture

The Aboriginal perspective will provide an anchor point for conserving and experiencing Australia's shared history

WHERE WE WANT TO BE IN 2022

Sydney Harbour National Park, with its tangible collection of important Aboriginal sites and global accessibility, can become an internationally recognised place to experience and appreciate the world's most ancient living culture. Personal journeys of discovery and emotional connections involving Aboriginal people will take place across land which sustained Aboriginal people before modern Australia was imagined.

The primary focus of Aboriginal heritage management in Sydney Harbour National Park has been the management of the physical aspects of Aboriginal culture such as rock engravings and middens. Whilst this is important, the less tangible aspects of Aboriginal culture require greater recognition. Such aspects include resting places, place names, stories and plant and animal resource use.

OUR GOALS

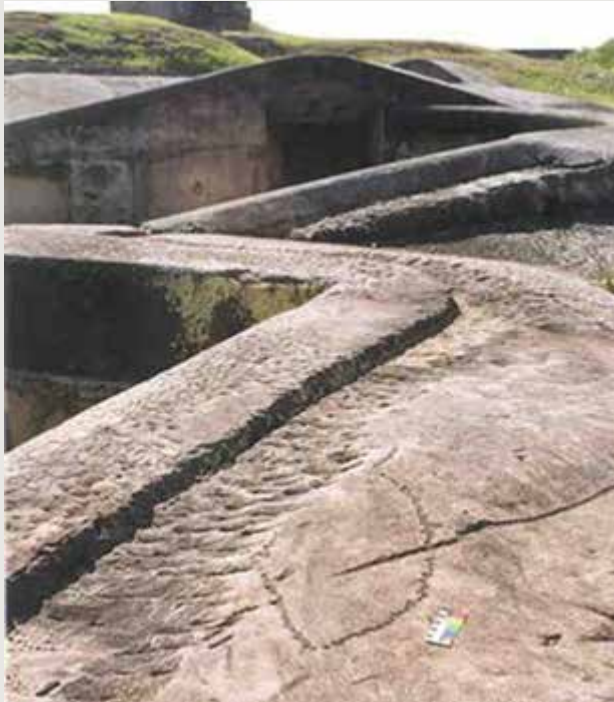
- » Aboriginal heritage is protected and conserved for future generations.
 - » Aboriginal people are actively involved in decision-making in the implementation of this plan, including cooperative management of Aboriginal Places.
 - » Employment, partnerships and economic and tourism opportunities for and with Aboriginal people are made available where possible.
 - » Understanding of the Aboriginal history of the land and islands of the park is improved through research and interpreted with the assistance of Aboriginal people and other agencies such as the Sydney Harbour Foreshore Authority (SHFA), Sydney Harbour Federation Trust (SHFT), City of Sydney and local government.
- » Key sites have dual names and Aboriginal people interpret their culture and guide visitors in the park.
 - » Both contemporary and traditional Aboriginal culture is nurtured and conserved within the park in partnership with Aboriginal people.

KEY PROJECTS

PROJECT 3

Aboriginal Discovery Partnership

Work in partnership with the Aboriginal people of Sydney, and other stakeholders, to develop and expand programs to interpret both traditional and contemporary Aboriginal culture throughout Sydney Harbour.





Outcome 3

Celebrate the historic heritage values of the park

Conserve the historic heritage values of the park and celebrate and promote knowledge and understanding of Australia's history

WHERE WE WANT TO BE IN 2022

Distinguished by its exceptional historic heritage intertwined with natural heritage, this cultural landscape of Sydney Harbour National Park holds rich layers of history. A substantial collection of historic buildings, sites and objects within the park tells stories of Australia's colonisation including the interactions with Indigenous people. There are also significant stories to be told around migration, defence, quarantine, harbour protection and conservation, recreation, suburban expansion and industry.

Historic buildings, sites and collections will receive attention commensurate with their level of significance and regional priorities and resources. The stories of Sydney and Australia will continue to be told through the park, as these places are protected for generations to come.

Visitors will be made aware of these stories, as historic heritage interpretation will be a core discovery experience in Sydney Harbour National Park. Contemporary and innovative approaches to learning will be used, such as combining learning through discovery with walking or other recreational experiences.

Interpretation will be contemporary, yet inclusive of all, as technology evolves and a wider range of choices are available for learning.

We will explore ways of enhancing personal experiences of, and connections to, historic heritage sites through activities which bring them into day to day use by the community. We will pursue opportunities to adaptively use heritage places for events, performances, accommodation and festivals. Appropriate uses are those which promote the conservation of the core values of the site, are sympathetic to the context of the site and which retain social relevance.

Partnerships with other historic heritage practitioners and managers will result in collective capacity-building and excellence in historic heritage management. We will share information and collaborate with agencies such as SHFT and the Historic Houses Trust.

OUR GOALS

» All state and nationally significant buildings, sites and collections of historic heritage significance are managed in accordance with appropriate planning documents.

- » Detailed planning for historic heritage precincts ensures a holistic approach, as historic layers and other value sets are integrated and managed as cultural landscapes.
- » An audit of all historic sites is complete and a condition monitoring system is in place across the park.
- » Places within the park are managed as linked histories and themes that extend beyond the park boundary.
- » A successful cultural discovery program is operating across the park, offering genuine experiences and visitor information and interpretation utilising contemporary and inclusive technologies.
- » Use of the park's historic heritage at selected, suitable sites is an integral component of conservation.
- » Heritage experts and managers of adjoining heritage properties are partners with information exchange, joint research, training and planning for historic heritage.

KEY PROJECTS

PROJECT 4 Harbour Islands

Enrich the visitor experience to Australia's finest harbour park, through the revitalisation of the five park islands, with a particular focus on the largest and most complex of the group, Goat Island. Encourage the integration and adaptive re-use of buildings to these key cultural tourism destinations for Sydney, enhancing visitation and working in partnership with other agencies for a shared vision for Sydney Harbour.



PROJECT 5 Green Point and Constables Cottage, Camp Cove Project

Prepare a landscape design plan for the First Landing Place at Camp Cove and the entrance to the park at Constables Cottage, including interpretation, signage and redesign of this important heritage place within the park and adjoining local government area.





Outcome 4

Provide enriching and memorable experiences in the park

An iconic park offering a depth of visitor experiences in a stunning setting

WHERE WE WANT TO BE IN 2022

Few national parks in Australia are more accessible to both domestic and international visitors than Sydney Harbour National Park. As Sydney is the predominant gateway and starting point for most international holidays, the park plays an important role as a visitor's first introduction to the country, as well as our national park system. Visitors' engagement with Sydney Harbour National Park will ultimately frame the experiences they will have in a national park around the state and indeed the country. Globally, visitors are increasingly motivated by a desire to gain new and authentic experiences which enable them to immerse themselves in the character and culture of a destination. These 'experience seekers' are interested in understanding new people and places, in personal development, and in engaging in activities which provide a contrast to their everyday life. This interest is strongly aligned with what Sydney Harbour National Park has to offer.

Nature and national park tourism is regarded as a growth area in Australian tourism. In addition to the 'experience seekers' segment, there is ongoing high interest in iconic destinations for those seeking more packaged national park experiences with 'soft adventure' options. Another

growth area is volunteer tourism where participants have an engaging experience as they contribute to a better environment. Cultural tourism remains popular with international tourists and is a growth area both domestically and with local communities. From small picnics to New Years Eve firework spectaculars, the vantage points in the park are popular places for Sydneysiders to celebrate and enjoy special events.

Sydney Harbour National Park, with its outstanding heritage, stunning landscapes and 'stand alone' precincts, is ideally configured for delivery of these experiences on a 'mind, body, spirit' level. The park will be a key Sydney experience for all and will showcase how nature and cultural heritage can coexist within a city environment.

Recreational and tourism activities will be managed to maximise the visitor experience whilst minimising impacts on the natural and cultural values of the park. Visitors will know that they are within a national park and will be aware of any protective measures that go with this special status. Provision of a wide range of experiences attracts an eclectic mix of visitors. Spatial and temporal separation as well as other management measures will be in place to minimise both conflicts

between participants of different recreational pursuits and impacts on park neighbours.

Close cross-government, tourism industry and corporate partnerships and a cross-tenure, integrated approach to marketing the Sydney Harbour National Park experience contributes to a highly satisfying visit.

OUR GOALS

- » The park offers a wide range of visitor experiences that are responsive to tourism and social trends and target specific market segments.
- » Visitor experiences meet the needs of local, national and international visitors for both passive and active recreation, embracing the trend for 'mind body and spirit' recreation and the universal popularity of walking.
- » Visiting the park is a key Sydney experience and the park will seek to complement and add value to those experiences provided off park.
- » Visitors' expectations of their park experience are met with effective marketing and high levels of enjoyment across all activities.
- » A variety of accommodation types and comfort levels are provided for visitors to enjoy overnight or longer breaks in the park.

- » Cross-tenure masterplanning, between federal, state and private sector adjoining owners maintains heritage values and improves visitor experiences.
- » Government and private sector investment will enhance and expand visitation opportunities in the park and contribute to heritage conservation.
- » Public and private transport access to the park by water is a popular and essential means of accessing a number of park precincts and will be supported and encouraged.
- » Impacts associated with recreation and public gatherings are managed to minimise impact on the park's heritage values, other participants and neighbours. Private activities and events that impact on the park's values and accepted customary visitor enjoyment, will not be permitted.
- » Risk associated with visitation in the park is managed by regular safety inspections and maintenance of recreational facilities.
- » Sydney Harbour Scenic Walk will be an example of close cross-tenure cooperation between public land managers, enabling an iconic tourism experience rivalling some of the great European walks. Linked to the northern and southern parts of Sydney's Great Coastal Walk from Barrenjoey to Royal National Park, there will be integrated and seamless infrastructure and signage to ensure fragmentation and loss of the walk's identity does not occur.
- » Increased visitor appreciation and awareness of the park's values, through educational and interpretive programs, is achieved.

KEY PROJECTS

PROJECT 6

Sydney Harbour Scenic Walk

Develop the Sydney Harbour Scenic Walk as an iconic section of Sydney's Great Coastal walk from Barrenjoey to Royal National Park, linking existing tracks and upgrading others into one world-class circuit of the harbour. Form partnerships with adjacent land managers in developing this walk to ensure compatible and consistent infrastructure and signage. The walk will showcase the spectacular landscape, natural and cultural heritage, famous structures, scenic grandeur and urban diversity to become a 'must do' attraction for residents and interstate and international visitors.





Outcome 5

Improved access to the park for all

We will provide park facilities and services which meet the needs of all sectors of the community

WHERE WE WANT TO BE IN 2022

Consistent with the principles of respect, helpfulness and responsiveness, we will seek to maximise the accessibility of park experiences to all visitors. Programs and facilities will be provided for visitors with diverse needs.

Visitor experiences in Sydney Harbour National Park will include those suitable for people with disabilities and their carers.

Children, who have been under-represented in visitation to parts of the park, will be attracted by new interactive and contemporary learning experiences. This will provide increased opportunities for school visits, including those schools with high proportions of disadvantaged students and high levels of cultural diversity.

Aboriginal communities will have greater opportunities to be involved with Sydney Harbour National Park.

A critical part of meeting the needs of visitors is to provide information about the park in ways that are accessible to culturally and linguistically diverse (CALD) communities and which offer a sense of welcome and invitation

to all. The primary park entrances at North Head, Middle Head, South Head, Bradleys Head and Nielsen Park will be welcoming, well planned and designed and focused on visitor convenience and information provision. Park entry treatments will express the 'feel' of the park as a whole together with the 'feel' of individual precincts.

Places of national heritage significance, such as the First Landing Place of Governor Phillip at Camp Cove, will be celebrated with excellence in landscape design. Precinct planning will ensure visits to historic places protect heritage and other values and facilitate visitor safety, learning and enjoyment.

OUR GOALS

- » Visitor facilities, interpretation and safety information and programs are provided for all, including the disadvantaged and those with reduced mobility and in consideration of CALD communities.
- » A range of classes of tracks and viewing areas are available in the park, including 'all access' paths and viewing areas.
- » Park vehicular traffic may be restricted in specific locations at specific times, predominantly to allow for pedestrian and mobility-impaired access and for facility servicing.
- » Education and interpretation facilities and programs available in the park are suitable for a wide range of abilities and backgrounds including children and CALD communities.
- » Access for visitors is improved through well-priced, well-promoted and co-coordinated public transport.
- » Water access caters for visitors with a range of physical abilities.
- » Key precincts and facilities are of a high standard and demonstrate excellence in design through detailed precinct planning.
- » Visitor experiences and heritage conservation are heightened through excellence in park landscape and facility design.

KEY PROJECTS

PROJECT 7

Enhanced Park Access

Provide improved access at key park locations, including North Head, Goat Island, Nielsen Park, Middle Head and Bradleys Head. The project will focus on including improved access for people of all levels of ability and CALD communities. It will provide information, education and interpretation for a wide range of visitors, including children and people from a diverse range of cultures.



KEY PROJECTS

PROJECT 8

Bradleys Head and Nielsen Park Recreational Parklands

Prepare landscape design plans for the Bradleys Head and Nielsen Park precincts that retain and enhance the integrity of these precincts as the recreational parklands for which the community so passionately fought and which ensure resilience for high seasonal visitation.





Outcome 6

Strengthen and create partnerships

Strengthen and create strong and enduring partnerships that widen the visitor experience and enhance the protection of park values throughout the harbour landscape

WHERE WE WANT TO BE IN 2022

Partnerships will be vital in realising the vision for Sydney Harbour National Park. Partnerships will occur across all outcome areas and will have a range of purposes.

Joint projects and planning with neighbouring natural resource managers, such as local government, Sydney Harbour Federation Trust (SHFT), Sydney Metropolitan Catchment Management Authority (SMCMA), Department of Primary Industries (DPI) and NSW Roads and Maritime Services, will ensure complementary and mutually agreeable outcomes and successful cross tenure management of significant precincts such as North and Middle Heads.

Research partnerships with universities will further understanding of the park's values and assist improved management.

Ongoing partnerships with Destination NSW and the tourism industry, such as integrated marketing and promotion, will strengthen appropriate messaging and promotion and assist in presenting the park as a premier tourist destination.

Sydney Harbour National Park will continue to partner with others to host some of the city's key cultural events. The range of

events utilising the park could potentially be expanded with temporary venues for events such as the Sydney Writer's Festival, the Sydney Food Festival and the Sydney Festival.

Strong community partnerships with neighbours, including residents and local government, will be sought in balancing expanded visitor opportunities and wider public access with the protection of the park's amenity. A sense of mutual obligation for the care of the natural and cultural heritage values of the park and adjacent local government areas will be encouraged.

Volunteers will have fulfilling roles in aspects of park management and care. Programs will result in benefits both to the park and to the individuals or organisations involved. Volunteers will expand their knowledge and skills, and their involvement will build a constituency for conservation and result in direct on-ground improvements.

NPWS will partner with the private sector in the delivery of a number of services and opportunities in the park. Expressions of interest will be sought for private sector involvement in the delivery of visitor experiences to complement

those provided by the NPWS. Commercial operators may deliver a number of other visitor services such as guided tours and recreational activities. Infrastructure improvements and maintenance will be undertaken by specialist contractors and supervised by NPWS staff in the areas of heritage conservation and restoration and park infrastructure works.

OUR GOALS

- » Strong partnerships with universities and other research sectors and institutions will inform and improve park management.
- » NPWS will collaborate with other public land managers such as SHFT, DPI and Sydney Metropolitan CMA (SMCMA) and local government, in a cross-tenure approach with joint projects and integrated planning in a manner that focuses on achieving common management aims
- » Strong industry partnerships are in place with stakeholders such as the tourism, culture and events sectors.
- » A sense of mutual obligation is demonstrated with open and cooperative relationships between NPWS and local communities that assist in conserving heritage whilst maintaining neighbourhood amenity.

- » Volunteer programs are successful with programs such as the corporate volunteers program, international volunteer conservation programs and local programs such as 'green web'.
- » Private sector partnerships and other opportunities result in a net benefit to the park and support NPWS in achieving the eight desired outcomes stated in this plan of management.
- » A consultative approach is continued with ongoing community engagement assisting decision-making, management, marketing and improvements to the park.
- » NPWS continues to work closely with local, state and federal government agencies, land managers, residents and research institutions to improve urban design such that stormwater is regarded as a resource rather than a burden and where a range of water sensitive design techniques are adopted to protect the park and aquatic environments.
- » A framework is developed for the management of shared infrastructure, including roads, with SHFT and other stakeholders.

KEY PROJECTS

PROJECT 9

North Head Sanctuary

Build partnerships when creating a sanctuary for endangered flora and fauna across the whole of North Head. This will involve all North Head stakeholders, volunteers, tertiary institutions, lessees and other land managers. NPWS and other stakeholders will work closely with the Department of Primary Industries (DPI) to ensure the integration of the terrestrial areas of North Head and Dobroyd Head with the marine protected areas.





Outcome 7

Robust management of the park is sustained

The park will serve as demonstration of best-practice conservation management

WHERE WE WANT TO BE IN 2022

National parks with values that are as significant and complex as those of Sydney Harbour National Park, require robust management. The management team, and other NPWS teams involved in the park, have a sound reputation for effective decision-making, strong relationships and positive engagement with all stakeholders. NPWS develops strategic planning that provides management principles and a framework for the integrated management, protection, interpretation and monitoring of the heritage values of the park. These principles will be effectively applied in the park, including a coordinated research agenda and monitoring and evaluation. Professionalism will continue to be demonstrated across all aspects of park management and service delivery.

OUR GOALS

- » High-quality research and ongoing monitoring inform park management.
- » NPWS park management policies, including community consultation, inform this plan of management and are applied in the management of the park.
- » The range of accepted and adopted standards and procedures around facility and landscape design/construction/maintenance, cultural heritage protection, bushland restoration, habitat enhancement, threatened species management, fire management, public consultation, Aboriginal partnerships, risk management and visitor safety and enjoyment are utilised at all times in the park.
- » Assets are prioritised for maintenance using the NPWS corporate Asset Maintenance System.
- » NPWS invests in optimal projects and improvements towards realising the vision for Sydney Harbour National Park.
- » NPWS policies for addressing climate change impacts from sea level rise are translated into clearly articulated management responses for those involved in the care of the park.
- » NPWS extends the outcomes of the sea rise vulnerability studies of Fort Denison and Goat Island to other sites around the harbour to identify natural, cultural and recreational assets that may be adversely impacted by climate change.
- » The projected impacts of sea level rise inform decisions on maintenance and replacement priorities for vulnerable harbour-side assets.
- » NPWS liaises with appropriate experts and institutions, including the Sydney Institute of Marine Studies, to identify measures that may enhance the environmental resilience of those inter-tidal communities that adjoin the park.
- » Improved knowledge and understanding of the implications of climate change on the values of the planning area enable informed management decisions.
- » Programs to reduce the pressures arising from other threats such as habitat fragmentation, invasive species, bushfires, pollution and urban expansion help mitigate the effects of climate change.
- » Activities and attractions in the park complement and are integrated and reciprocated with those of adjoining land owners.
- » Education is recognised as imperative in extending people's understanding and appreciation of the park's values and engendering a sense of personal responsibility for their protection
- » Sydney Harbour National Park and SHFT lands benefit from strong management integration.

KEY PROJECTS

PROJECT 10 **Climate Change Mitigation**

As part of the park wide inter-tidal asset maintenance and heritage protection, NPWS will monitor impacts and implement best-practice maintenance and adaptation for sites directly impacted by rising sea levels. Such sites include Fort Denison, inter-tidal ecosystems, Aboriginal middens, sea walls and wharves.



PROJECT 11 **Gap Bluff Adaptive Re-use**

Realise the potential for exemplary adaptive re-use of the Gap Bluff precinct. Through investigation of appropriate community and commercial uses, provide increased opportunities for visitor appreciation and access to the site.





Outcome 8

Contribute to the goal of easy and safe transport to and within the park

Getting to and around the national park will be easy for everyone

WHERE WE WANT TO BE IN 2022

For public transport to become an acceptable alternative mode of transport in a car dependent society, a holistic approach by all partners and the development of a unified strategy are required.

A range of options will be investigated for transport to and from the park and between its precincts. Key park precincts will be easily reached by public transport that is coordinated with other transport modes, is well-priced, and is widely promoted.

A daily harbour water transport shuttle service, leaving Circular Quay/Darling Harbour at frequent intervals and visiting the park's islands and mainland sites, would be a popular Sydney experience. The harbour shuttle could operate like other major city tourist services, such as the Bateau Mouche on the Seine in Paris or the Boston Islands ferry service in the United States, offering a day ticket and a hop-on / hop-off service. The service will deliver both independent travellers and tour groups to a range of park attractions, activity nodes and accommodation in a similar way to the red open-top tour buses. It will be a 'must do' signature experience

for Sydney's visitors and may be offered by either the public or private sector.

Whilst the Sydney Harbour Scenic Walk and other walking tracks in the park will not be accessible to cyclists, access on sealed roads in the park to reach walking tracks will be supported with bicycle lock-up facilities at major track heads and parking areas.

Private access to the park by kayak and other water craft will be welcomed, however, mooring to public wharves is generally not permitted due to limited space and regular use by public and private water transport vessels.

Traffic travelling around and within the park will be managed, where possible, to minimise congestion and protect visitor and neighbour amenity.

A high and increasing proportion of park visitors access park precincts using modes of transport other than private motor vehicles. Options to be investigated will include the creation of traffic-free areas such as road closures, park-and-ride schemes, controlled parking zones, high-quality

and integrated public transport networks, the encouragement of sustainable and car-free tourism, and raising awareness to change visitor and local attitudes and behaviour.

OUR GOALS

- » Partnerships with the tourism sector enhance access to the park from the Harbour.
- » A strongly patronised, efficient harbour hopper service operates from Circular Quay to key visitor precincts in the park.
- » New facilities are available for and are well-used by visitors accessing the park by non-motorised means.
- » Negotiations with adjacent land managers and local councils result in traffic and parking solutions that are acceptable to all.
- » Sustainable transport options are included in promotional materials and at / in park information points and sources.
- » Partnerships with local councils, bicycle user groups and other stakeholders result in bicycle links and facilities at appropriate locations such as track heads on the edge of the park.

KEY PROJECTS

PROJECT 12

The Harbour Shuttle

Work with government agencies and other stakeholders to establish and promote a Sydney Harbour shuttle service. The service would travel at frequent intervals, departing from the city and making a range of stops in Sydney Harbour National Park and its islands. The service would also stop at other key harbour destinations and be promoted as a Sydney Harbour tourist experience.



Summary of Key Projects

The following is a summary of the projects which embody the aspirations set by the community and the park managers for the park. Whilst they are not the only initiatives which will be implemented by NPWS over the life of the plan, they represent the high priority projects which will protect our precious national park for generations to come while providing a range of unique experiences for visitors.

BUSHLAND HEALTH

1

Develop strategies to proactively address threats to bushland health and resilience. Priority will be given to the continued management of known threats such as the fungus *Phytophthora cinnamomi* root rot and nutrient discharge into the park both of which have the potential to compromise the long-term viability and health of our harbour-side bushland and its flora and fauna.



CONSERVATION OF THREATENED SPECIES, POPULATIONS AND COMMUNITIES

2

A strong commitment will be given to the management of threatened species, populations and communities whose future is largely or wholly dependent on Sydney Harbour National Park, to ensure the long-term persistence of viable populations. Implementation of actions in relevant recovery plans, threat abatement plans and the priorities action statement will receive a high priority.



ABORIGINAL DISCOVERY PARTNERSHIP

3

Work in partnership with the Aboriginal people of Sydney, and other stakeholders, to develop and expand programs to interpret both traditional and contemporary Aboriginal culture throughout Sydney Harbour.



HARBOUR ISLANDS

4

Enrich the visitor experience to Australia's finest harbour park, through the revitalisation of the five park islands, with a particular focus on the largest and most complex of the group, Goat Island. Encourage visitation to these key cultural tourism destinations for Sydney, working in partnership with other agencies for a shared vision for Sydney Harbour.



GREEN POINT AND CONSTABLES COTTAGE, CAMP COVE PROJECT

5

Prepare a landscape design plan for the First Landing Place at Camp Cove and the entrance to the park at Constables Cottage, including interpretation, signage and redesign of this important heritage place within the park and adjoining local government area.



SYDNEY HARBOUR SCENIC WALK

6

Develop the Sydney Harbour Scenic Walk as an iconic section of Sydney's Great Coastal walk from Barrenjoey to Royal National Park, linking existing tracks and upgrading others into one world-class circuit of the harbour. Form partnerships with adjacent land managers in developing this walk to ensure compatible and consistent infrastructure and signage. The walk will showcase the spectacular landscape, natural and cultural heritage, famous structures, scenic grandeur and urban diversity to become a 'must do' attraction for residents and interstate and international visitors.



ENHANCED PARK ACCESS

7

Provide improved access enhancements at key park locations, including North Head, Goat Island, Nielsen Park, Middle Head and Bradleys Head. The project will focus on including improved access for people of all levels of ability and culturally and linguistically diverse communities. It will provide information, education and interpretation for a wide range of visitors, including children and people from a diverse range of cultures.



BRADLEYS HEAD AND NIELSEN PARK RECREATIONAL PARKLANDS

8

Prepare landscape design plans for the Bradleys Head and Nielsen Park precincts that retain and enhance the integrity of these precincts as the recreational parklands for which the community so passionately fought and which ensure resilience for high seasonal visitation.



NORTH HEAD SANCTUARY

9

Build partnerships when creating a sanctuary for endangered flora and fauna across the whole of North Head. This will involve all North Head stakeholders, volunteers, tertiary institutions, lessees and other land managers. NPWS and other stakeholders will work closely with the Department of Primary Industries (DPI) to ensure the integration of the terrestrial areas of North Head and Dobroyd Head with the marine protected areas.



CLIMATE CHANGE MITIGATION

10

As part of the park wide inter-tidal asset maintenance and heritage protection, NPWS will monitor impacts and implement best-practice maintenance and adaptation for sites directly impacted by rising sea levels. Such sites include Fort Denison, inter-tidal ecosystems, Aboriginal middens, sea walls and wharves.



GAP BLUFF ADAPTIVE RE-USE

11

Realise the potential for exemplary adaptive re-use management of the Gap Bluff precinct. Through investigation of appropriate community and commercial uses, provide increased opportunities for visitor appreciation and access to the site.

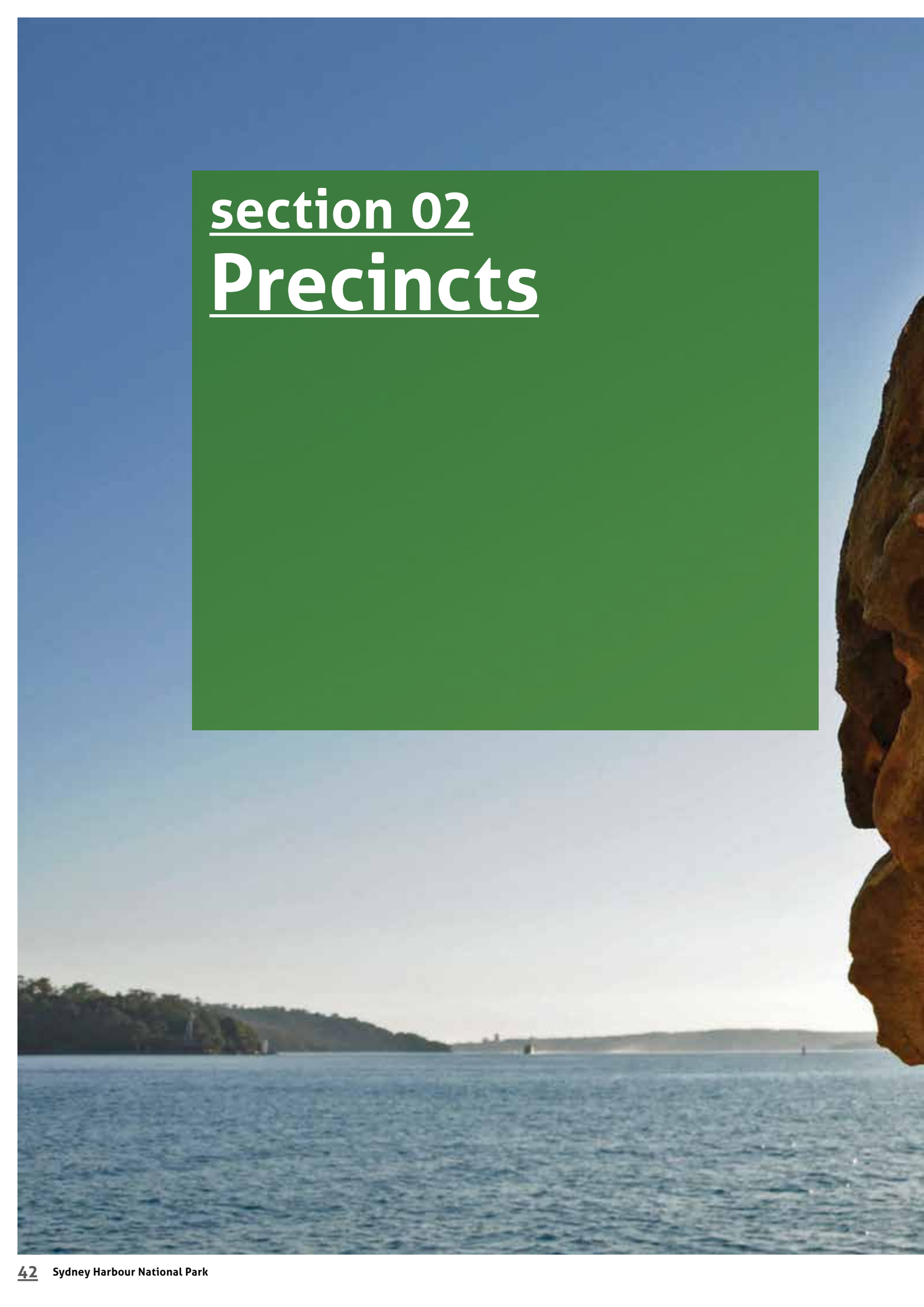


THE HARBOUR SHUTTLE

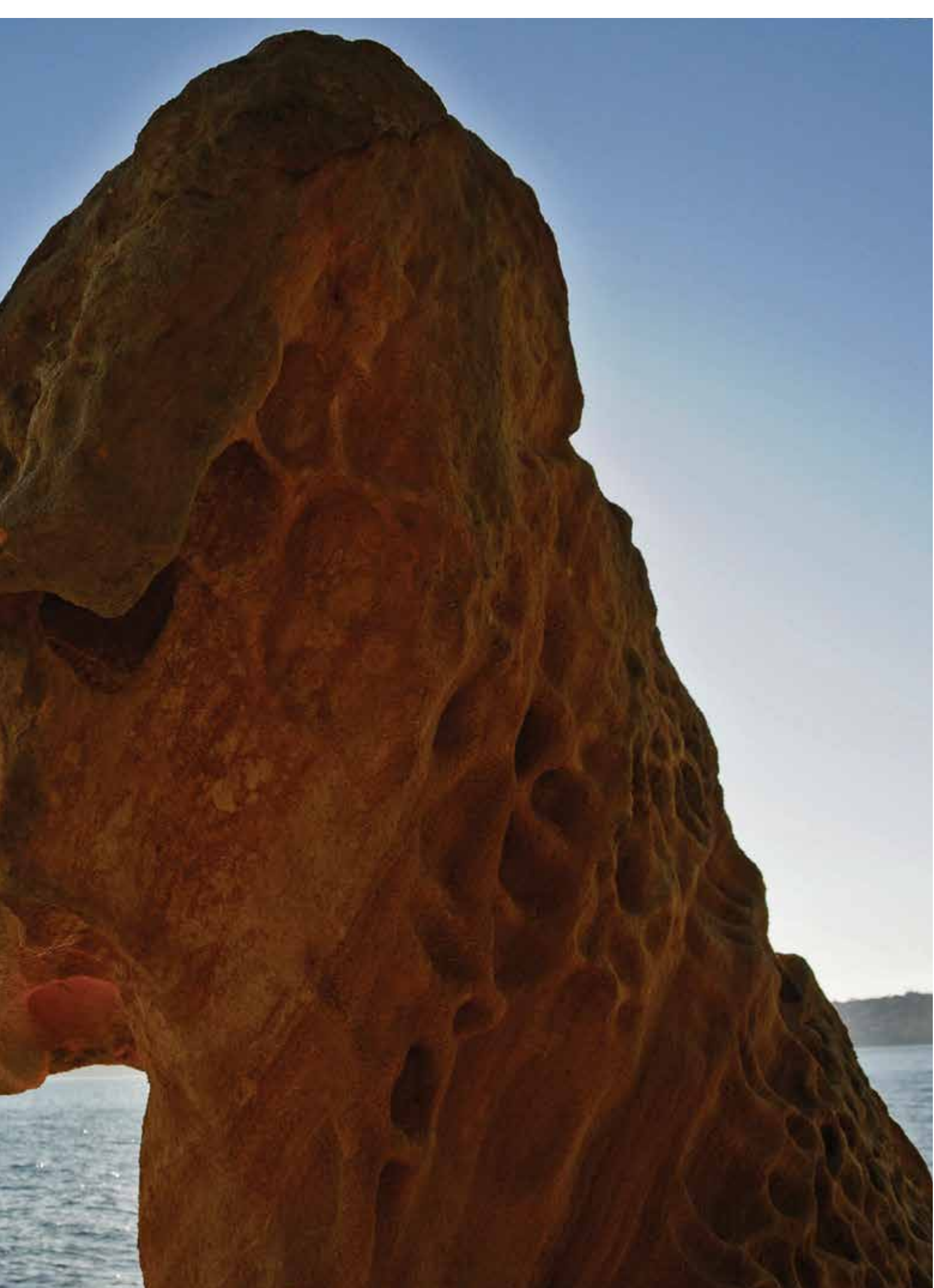
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Work with government agencies and other stakeholders to establish and promote a Sydney Harbour shuttle service. The service would travel at frequent intervals, departing from the city and making a range of stops in Sydney Harbour National Park and islands of the park. The service would also stop at other key harbour destinations and be promoted as a Sydney Harbour tourist experience.





section 02
Precincts



Precinct Plans of Management

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All Precincts: Common Issues

What we are going to do across the whole park

WHAT WE ARE GOING TO DO	
<p>OUTCOME 1</p> <p>Conserve the natural values of the park</p> <p>The care protection and restoration of the natural values of the park will continue to be the highest priority</p>	<p>Vegetation</p> <ul style="list-style-type: none"> » Continue to support existing bush regeneration programs within the park. » Select and sample sites to establish quality baseline data on the current floristic and faunal composition of the park. » Develop and implement strategies for the maintenance of views from public lookouts. » Include consideration of the potential impact on existing views when conducting supplementary plantings during bush regeneration programs. » Utilise where feasible native plants grown from local seed sources in bushland restoration projects. <p>Fauna</p> <ul style="list-style-type: none"> » Continue to utilise the NPWS Atlas of NSW Wildlife database for the systematic recording of wildlife in the park. » Continue to undertake research to determine the desirability and feasibility of reintroducing locally-extinct native animal species. » Actively manage silver gull nesting colonies on park islands to reduce the impact of nesting activities on the park's natural, cultural and recreational values and to contribute to effective silver gull management. <p>Threatened Species</p> <ul style="list-style-type: none"> » Implement threatened species actions from relevant recovery plans or the PAS. The highest priority will be actions for populations, species or communities where the park comprises a critical component of their total distribution. » Establish monitoring regimes for threatened plant species and vegetation communities to measure the success of management practices in maintaining or improving their conservation status. <p>Weeds and Pests</p> <ul style="list-style-type: none"> » Implement the relevant actions from the <i>NSW Statement of Intent for Infection of Native Plants by Phytophthora cinnamomi</i> and management plans for other harmful pathogens such as myrtle rust <i>Uredo rangelii</i> in co-operation with adjoining land managers. » Prioritise weed and feral animal control in those areas subject to fire or other major disturbance events. » Implement an evaluation regime to measure the effectiveness of weed control, particularly in relation to conservation outcomes. » Prioritise fox, rabbit and black rat control for the park. » Include management options for silver gulls and Australian ibis in the regional pest management strategy. » Implement measures to reduce the proliferation of aquatic weeds and pests.

WHAT WE ARE GOING TO DO

Fire

- » Identify and undertake, or contribute to, research projects aimed at improving knowledge and understanding of fire management in the park.
- » Work with the local bush fire management committee to coordinate and prioritise fuel management activities across the park.
- » Update or rewrite the reserve fire management strategy and consider inclusion of the following:
 - Utilisation of fire for ecological management purposes including vegetation succession, nutrient export and dieback control
 - Implementation of measures to reduce the occurrence of unplanned bushfires and the spread of bushfires in and adjacent to the park
 - Application of fire regimes that are appropriate for long-term maintenance of the park's plant and animal communities
 - Undertaking rapid suppression of unplanned fires where possible.

Stormwater

- » Prepare and implement a strategy to improve the management of stormwater flowing into and across the park and into the harbour in partnership with councils, adjacent land managers and neighbours.
- » Include in the strategy options for stormwater management, and the resulting erosion and nutrient seepage issues at the land /water interface, as a priority towards minimising water quality impacts in adjoining aquatic habitats.

Pets

- » Pets other than assistance animals are not permitted in Sydney Harbour National Park.

Horse Riding

- » There is currently no known horse riding in Sydney Harbour National Park. Horse riding is not considered appropriate in the planning area as it has the potential to accelerate erosion, introduce weeds and be in conflict with other park users. Horse riding is therefore not permitted in Sydney Harbour National Park.

Other

- » Continue energy and water saving initiatives and reduce waste collection requirements through recycling and visitor education programs.
- » Harvest rainwater by the installation of water tanks for water re-use in toilets and for external uses.
- » Support tertiary sector field research programs offering opportunities to enhance the natural and cultural values of the park.
- » Expand the Sydney Harbour National Park corporate and community volunteer program across the park.

WHAT WE ARE GOING TO DO

OUTCOME 2

Celebrate and nurture contemporary and traditional Aboriginal culture

The Aboriginal perspective will provide an anchor point for conserving and experiencing Australia's shared history

- » In consultation with local Aboriginal communities, undertake regular inspections of known Aboriginal sites to monitor condition and emerging threats.
- » Liaise with the Aboriginal people of Sydney on matters relating to the protection, management and interpretation of the Aboriginal cultural heritage of each precinct.
- » Continue liaison with local Aboriginal communities regarding park management issues, particularly in relation to the interpretation and management of sites such as the Grotto Point engravings.
- » Consider dual naming of sites throughout the park, in consultation with local Aboriginal communities, to reflect previous and ongoing connection to Country.
- » Identify an appropriate location, or locations, within the park for Aboriginal culture camps. Protocols for the conduct of such camps will be determined in consultation with local Aboriginal communities.
- » In consultation with local Aboriginal communities, review the adequacy of information on Aboriginal and cultural landscapes, places and objects within the NSW Government Aboriginal Heritage Information Management System.
- » NPWS will continue to facilitate NAIDOC week activities within the park and participate in the Guringai Festival.
- » Aboriginal Discovery will become a routine component of the tour program within the park.
- » Research and facilitate recording of contemporary contact and pre-contact culture of precincts, including regular recording of Aboriginal site condition.
- » Develop and facilitate a range of on-park activities to encourage improved understanding of Aboriginal culture among both the Aboriginal and non-Aboriginal community.
- » Protect Aboriginal sites from potential negative impacts caused by visitation and landscape management practices.

WHAT WE ARE GOING TO DO

OUTCOME 3

Celebrate the historic heritage values of the park

Conserve the historic heritage values of the park and celebrate and promote knowledge and understanding of Australia's history

- » Implement the recommendations of the *NPWS Fortifications of Sydney Harbour and Botany Bay Strategic Plan 2007*.
- » Undertake an oral history project to seek out and document the memories, associations and attachments of Aboriginal and non-Aboriginal communities, families and individuals with particular places and events within the park.
- » Develop and implement cyclic maintenance plans for the park's historic buildings and structures in accordance with the applicable conservation planning documents and/or *NSW Heritage Act 1977* minimum maintenance standards.
- » Manage buildings retained for their cultural values, and wherever possible, continue public use. Investigate appropriate adaptive re-use options for all such buildings that do not currently serve a recreational or operational use.
- » Buildings may be adapted and leased for the purpose of sustainable visitor and tourist uses. For example, visitor and tourist accommodation, administration, equipment hire, interpretation, restaurant, café, kiosk and other food and drink outlets, conferences and functions, retail outlets, facilities to enable activities of a sporting nature to be carried out, information centres and booking outlets.
- » Identify historic landscapes, buildings and structures within the park that are not covered by an existing conservation planning document. Assess the potential threats and opportunities associated with these places to determine if they warrant formal conservation management plans. Prepare heritage assessments for those at risk or with unrealised visitor-use potential.
- » Document the current uses of heritage sites across the park and assess the appropriateness of existing uses. Critically review sites currently used for administrative purposes or staff accommodation and identify opportunities to replace these with uses which enhance visitor access and enjoyment if appropriate.
- » Investigate the registration of the whole of Sydney Harbour National Park on the State Heritage List.
- » Continue to prepare inventories and manage the moveable heritage collection for the park, recognising the work already completed on collections for the Quarantine Station, Fort Denison and Goat Island.
- » Complete and implement actions from conservation management plans that have been prepared for heritage sites within the park.
- » Implement conservation and maintenance works as specified in conservation management plans.

WHAT WE ARE GOING TO DO

OUTCOME 4

Provide enriching and memorable experiences in the park

An iconic park offering a depth of visitor experiences in a stunning setting

- » Complete the production and release of the pilot interpretative podcast for the walking track between Taronga Zoo and Clifton Gardens. Expand the program across the remainder of the Sydney Harbour Scenic Walk.
- » Work in partnership with local Aboriginal communities, and other stakeholders, to develop and expand programs on the harbour islands to interpret both traditional and contemporary Aboriginal culture throughout Sydney Harbour.

Adventure Activities

- » Rock climbing, rock sports, abseiling and other forms of access down the vertical rock faces is currently not permitted in Sydney Harbour National Park.

The permissibility of rock climbing and other forms of cliff access in the park will be conditional upon the preparation and approval by NPWS of a Sydney Harbour National Park Cliff Access Strategy (SHNPCAS);

The SHNPCAS will assess the suitability of specific locations in the park for controlled cliff access. The assessment process will include consideration of the following:

- Expert advice on the suitability of the various sections of rock face for climbing activities, including but not limited to, a geotechnical report,
- Advice from NSW Police and other rescue agencies,
- The availability of practical options for restricting access to the cliff edge,
- The adequacy and legality of any fixing points or other infrastructure used to access the cliff edge or cliff face,
- An assessment of the environmental impacts of installing any required infrastructure,
- The development of a program to conduct ongoing monitoring of any approved sites in regard to environmental condition and safety.

Approval will only be given for access to sites that satisfy all of these matters and subject to the implementation of any conditions arising from the assessment processes.

A lease or licence may be issued for the installation, maintenance and operation of any infrastructure identified in the SHNPCAS.

In the circumstance where the SHNPCAS is not approved by NPWS, rock climbing will not be permitted in any part of Sydney Harbour National Park.

- » Base jumping is not permitted in the park.
- » Orienteering and rogaining will be permitted on walking tracks and roads subject to written consent.
- » Triathlons, marathons and bicycle races will be permitted on formed roads only, subject to written consent from NPWS.

WHAT WE ARE GOING TO DO

Training

- » Australian Defence Force training activities will be permitted within the park subject to the *Military Training Activities Policy 2008*.
- » Training for search and rescue organisations will be permitted in the park.
- » Implement a licensing system for personal trainers and fitness groups limiting opportunities based on other uses in the areas.

Visitor Safety

- » Identify the access points through the park that are used by anglers and, where appropriate, install signs advising on the hazards of rock fishing. Rescue devices may be installed in the park adjacent to high-risk angling sites subject to environmental impact assessment.

Visitor Services

- » Portable toilets and other temporary infrastructure may be provided in non-vegetated areas of the park.
- » Mobile refreshment vendors may be permitted to operate under licence in the park at peak visitor times and during special events.
- » Portable gas barbeques will be permitted but heat beads, wood and other types of stoves are not permitted.
- » Establish an integrated park-wide visitor data system for the ongoing collection, storage and analysis of visitor use data.
- » Seek to enter into partnerships with transport operators for the provision of an integrated guided tour package within the park.

Accommodation / Camping

- » Conduct a review of all houses in the park to assess their suitability for visitor and tourist accommodation or other alternative uses that benefit the park.
- » Camping is not permitted in any part of Sydney Harbour National Park except Clark Island. Camping is only permitted on Clark Island if formally approved by NPWS through the issue of a consent, licence or lease.

Planning and Coordination

- » Prepare and implement a park-wide interpretation and education strategy or specific precinct strategies.
- » Monitor impacts associated with tourism and recreation on heritage places to ensure that they do not exceed the level of change allowed under the relevant conservation management plan.
- » Regularly monitor all fortifications to identify emerging visitor safety risks and to detect the presence of threatened species such as bent-wing bats.

WHAT WE ARE GOING TO DO

New Buildings

- » New buildings will only be permitted on Goat Island, Shark Island, Fort Denison and Gap Bluff precincts. Permitted locations and uses for possible new buildings are detailed in each precinct.

Education

- » Assist visitor appreciation of park values and park protection measures and enhance environmental awareness through public education and interpretation facilities and services.
- » Periodically review educational information presented and interpreted by commercial operators and other bodies, to ensure high-quality standards are met.

Special activities and events

- » NPWS will continue to work with stakeholders in the development of protocols for the implementation of events across SHNP consistent with the *NPWS Sustainability Assessment Guidelines*.
- » Utilise the park for events including those that are part of major Sydney festivals. Any event requiring a lease or licence under s.151 of the *National Parks and Wildlife Act 1974* (NPW Act) must meet the Sustainability Assessment Criteria.
- » *The National Parks and Wildlife Amendment (Visitors and Tourists) Act 2010* clarifies the range of purposes for which a lease or licence may be issued in NSW national parks. The Act requires that new leases and licences must comply with the Sustainability Assessment Criteria adopted by the Director General of the Department of Premier and Cabinet. These are designed to ensure that lease operations do not have an adverse impact on reserve values and meet best-practice standards for environmental performance. Further detail on the Sustainability Assessment Criteria is provided in Section 04 Appendices.
- » Prepare event management plans for all events involving more than 400 people.
- » Continue to work with stakeholders in the development of guidelines for the organisation and implementation of events across the park. These guidelines will be regularly monitored to ensure sustainable outcomes for park visitors and neighbours.
- » Adopt waste separation and minimisation practices in the management of events in the park.

WHAT WE ARE GOING TO DO

OUTCOME 5

Improved access to the park for all

We will provide park facilities and services which meet the needs of all sectors of the community

- » Ensure that information about the availability of park facilities for the mobility impaired is included on the NPWS website and on other appropriate websites.
- » Design and adapt educational and interpretive facilities to be accessible for the mobility impaired.
- » Implement the *NPWS Risk Management System* in the park, including regular inspection of high-risk structures such as lookouts, fortifications, heritage buildings, bridges and walking tracks along cliffs.
- » Provide opportunities for mobility-impaired persons to participate in special events within the park.
- » Ensure provision of adequate designated disabled parking spaces in all carparks in the park.
- » Investigate the provision of multilingual translations when preparing interpretive, promotional and educational materials.
- » Implement the *Sydney Harbour Scenic Walk Strategy 2010*, including the staged upgrade of the sections within the park and the negotiation of an interagency agreement for the coordinated implementation of design and signage standards across all tenures.
- » Prepare and implement cyclical maintenance plans for maritime infrastructure in the park including wharves, sea walls, swimming enclosures, weirs and moorings.
- » Review the requirements and feasibility of adaptation of park wharves to allow for the improved access for mobility impaired in accordance with the *Disability Standards for Accessible Public Transport Act 2002*.
- » Implement the *DECCW Disability Action Plan 2009 – 2012* as it applies to the park.
- » Where considered appropriate, prepare precinct-specific landscape design plans to retain and enhance heritage values.
- » Provide high-quality, well-designed landscape elements at major entrances to the park to demonstrate pride and quality in presentation.

WHAT WE ARE GOING TO DO

OUTCOME 6

Strengthen and create partnerships

Strengthen and create strong and enduring partnerships that widen the visitor experience and enhance the protection of park values throughout the harbour landscape

- » Partner with park lessees and other harbour land management authorities in the delivery of integrated, high-quality visitor experiences across Sydney Harbour.
- » Build partnerships and continue to nurture relationships with volunteers and other supporters of NPWS. Ensure that volunteers have opportunities to contribute meaningfully to park management in ways that meet their personal needs and aspirations.
- » Investigate new ways of fostering inter-agency and community-wide cooperation in biodiversity management and weed management including the sharing of data, equipment, expertise and training opportunities amongst park neighbours, relevant private and public authorities, other protected area management agencies, and members of local communities.
- » Continue to work closely with government agencies and other neighbours to ensure effective cross-boundary management of feral animals.
- » Expand the volunteer program by engaging appropriately trained volunteers in roles such as visitor liaison officers, heritage site caretakers, biodiversity surveyors and bush regenerators. Adopt the campground host program where feasible.
- » Prepare a register of required research to encourage the involvement of research institutions and individuals in the park.
- » Liaise with local tourism associations, other government agencies and tourism operators to ensure that all relevant promotional material provides accurate information concerning the recreational opportunities available in the park.
- » Continue to work with councils and neighbours over boundary encroachments, management of asset protection zones, household garden refuse deposits in the park and education and prevention programs.
- » Seek partnerships with the education and cultural sectors, to encourage use of the harbour islands for small-scale special events under the umbrella of larger programs and festivals such as the Sydney Festival, Crave, Vivacity, Vivid, Sydney Writers' Festival, Biennale and Sydney Film Festival.
- » Collaborate with tourism authorities in the implementation and review of applicable tourism plans and strategies.

WHAT WE ARE GOING TO DO

OUTCOME 7

Robust management of the park is sustained

The park will serve as demonstration of best-practice conservation management

- » Prepare a cyclical maintenance plan for the park's walking tracks.
- » Minimise the carbon footprint of existing and future uses of the park through the implementation of energy and water saving initiatives.
- » Assess introduced animal control priorities according to established criteria to ensure the most effective use of resources.
- » Ensure bush regeneration and Landcare groups are provided with guidance on best-practice techniques and that, wherever possible, their work is directed to the highest conservation priorities for environmental restoration and rehabilitation.
- » Establish and implement strategies to facilitate the systematic collection of floristic and faunal data of bushland areas as base data and establish permanent monitoring sites as a tool for the improved management of fire and weeds.
- » Undertake a review of signage requirements for the park with a priority for park entry and interpretive signage for high visitation areas. In reviewing signage requirements, look at appropriate means of providing warning and directional signage, for security, baiting, and other routine management programs. Priorities for new entry signs include North Head and Bradleys Head.
- » Assess the condition of service infrastructure (ie. power, water, electricity, sewer, telecommunications) and access roads which are critical to inholdings and leases. Prepare cyclic maintenance plans and replacement schedules for these assets.
- » Undertake annual inspections of wharves in accordance with NSW Roads and Maritime Services safety audit requirements.
- » Monitor the impacts of sea level rise and design new infrastructure to accommodate projected changes.
- » Disseminate the results of climate change research conducted within the park.
- » Complete licence agreements for all alien uses in the park.
- » Follow water sensitive urban design principles where more natural solutions to water quality and flow issues are not appropriate.
- » Develop a framework for the management and maintenance of NPWS shared roads and other infrastructure.
- » Work with the Community Fireguard, NSW Fire Brigades and neighbours to provide annual pre-season preparation and assistance with hazard reduction burning.
- » Ensure any upgrades or new facilities incorporate environmentally sustainable features and are of high-quality, long-lasting materials.

WHAT WE ARE GOING TO DO

OUTCOME 8

Contribute to the goal of easy and safe transport to and within the park

Getting to and around the national park will be easy for everyone

- » Identify routes for bicycle travel to the park consistent with local government bike plans and, where appropriate, provide bicycle racks.
- » Permit bicycles on public vehicular roads and service roads but not on walking tracks or at any other locations specified in this plan.
- » Maintain the network of roads and walking tracks in the park to provide access for visitors to undertake a wide range of activities.
- » Identify the desired future and character of each road in the park by precinct and manage accordingly, with special emphasis on methods to reduce wildlife fatalities.
- » Continue to work with state and local government agencies to ensure clear directional signs outside the park for visitors wishing to access the park.
- » Maintain a range of vehicle-based lookouts for the elderly and less mobile.
- » Support the implementation of a regular water transport service to Watsons Bay, Manly, Quarantine Station and Clifton Gardens.
- » Seek cost-effective ferry transport to provide visitor access to all harbour islands.





Precinct 01: Nielsen Park and Hermitage Foreshore

The significance and diversity of values in the Nielsen Park precinct demand a complex set of management responses. Perhaps more than any other part of the park, the precinct is characterised by a strong tradition of recreational uses, notably picnicking and swimming but also small-scale celebrations.

Despite the development and modifications associated with the precinct's recreational uses, it also supports highly significant elements of cultural and natural heritage. The future challenge will be to successfully manage traditional and new recreational pursuits whilst conserving the character of the recreational parklands, the buildings of the Greycliffe Estate and the remnant bushland.

Nielsen Park at Vacluse was incorporated into Sydney Harbour National Park in 1978, while the Hermitage Foreshore was added in 1984. The precinct has a wide diversity of values across cultural, social, aesthetic, recreational and natural themes. The precinct contains both natural and modified landscapes and a range of buildings and other built items. Aboriginal sites are also found in the precinct. The precinct's remnant flora and fauna ranges across national, state, regional and local levels of conservation significance.

Nielsen Park has a strong recreation tradition based around Shark Beach and the swimming enclosure. The Hermitage Foreshore walking track links Rose Bay to Nielsen Park as part of the Sydney Harbour Scenic Walk. Large parts of the precinct are quiet and secluded whilst other areas near the beach are often very busy and

crowded. The precinct has a strong focus on both natural and cultural conservation including, by eastern suburbs standards, a relatively large tract of remnant bushland with threatened species. The strong Aboriginal and historical themes are important for education and interpretation.

To improve access and the enjoyment of visitors, Nielsen Park has been targeted in several of the key projects in this plan of management. The major project is **Project 8 Bradleys Head and Nielsen Park Recreational Parklands** where both of these areas are recognised for their recreational values. The aim is to address the needs of the visitors, lessees and neighbours and enhance the visitor experience through careful review and planning of these important foreshore public areas. Other projects include:

- » **Project 1 Bushland Health**
- » **Project 2 Conservation of Threatened Species, Populations and Communities**
- » **Project 3 Aboriginal Discovery Partnership**
- » **Project 6 Sydney Harbour Scenic Walk**
- » **Project 7 Enhanced Park Access**

Details of these key projects are outlined in Section 01 of the plan.

The Precinct and its Context

Description

The precinct lies on the south side of Port Jackson and extends in a southerly direction along the foreshore of Rose Bay to Bayview Hill Road and to Bottle and Glass Point in the north, backing onto Vaucluse Road and Greycliffe Avenue.

The 20-hectare Nielsen Park section of the precinct lies to the north whilst the narrow, elongated Hermitage Foreshore section, extends to the south. Access to this popular location is generally by private vehicle or by bus transport from Edgecliff Railway Station or Circular Quay. There is limited on-street parking. An internal service road, off Vaucluse Road, provides pedestrian and management vehicle access to Steele Point, Greycliffe House and the park workshop.

Planning context

Nielsen Park is located in the Woollahra local government area.

Whilst under the *Environmental Planning and Assessment Act 1979* (EPA Act), Woollahra Council has no formal role in the statutory approval of proposed works within Sydney Harbour National Park, the plan of management is prepared so that wherever possible it is consistent with local government plans.

Within Nielsen Park there are both natural and cultural values of significance. Greycliffe House and the Steele Point Battery are important heritage items. Examples of significant plant and animal species, such as the Nielsen Park she-oak *Allocasuarina portuensis*, sunshine wattle *Acacia terminalis* subsp. *terminalis* and the powerful

owl *Ninox strenua*, are managed in accordance with the provisions of the *Threatened Species Conservation Act 1995* (TSC Act)

Further details about the planning context are provided in Section 04 Appendices.





Significant Values and Considerations

Natural features

The precinct is characterised by sandstone slopes and gullies with Mt Trefle, at around 40 metres above sea level, the highest point. Shark Beach spans the headlands between Steele Point and Bottle and Glass Point. In some areas of the precinct, the natural vegetation has been replaced by exotic plantings and lawns, however much of the precinct is remnant bushland. Although only a relatively small area, this remnant is very significant as it is the largest area of foreshore bushland south of the harbour (the nearest large remnants are as far south as Malabar and Botany Bay). As such, this precinct conserves representatives of a once more widespread and abundant fauna and flora. The most intact vegetation is that on Mt Trefle, which has been the focus of a volunteer bush regeneration program for a number of years, however even parts of this area remain degraded by weed invasion. Two vegetation communities are represented in this precinct: coastal sandstone woodland and coastal sandstone heath/littoral thicket.

Over 180 native plant species have been recorded from Nielsen Park; but also around 120 weed species. The most significant plant species within this precinct is the endangered *Allocasuarina portuensis* which was only discovered in 1986; at that time the total known population was only 10 plants, all within Nielsen Park. None of these original plants survive, and the existing population within Nielsen Park is all from propagated material. In addition, the remnant bushland provides important habitat for the endangered *Acacia terminalis* subsp. *terminalis*, which along with the habitat of the Nielsen Park she-oak is being degraded by weed invasion. Maintaining the Nielsen Park she-oak propagules and their habitat is a high priority for this precinct, as these represent the last known population in the wild. Similarly, maintaining and enhancing habitat for the sunshine wattle is a high priority.

This precinct provides essential habitat for native fauna, including species that are now rare within the local area. Around 65 species of native fauna have been recorded from this precinct in the past, but for many of these species there are few recent records. The majority of the fauna species are birds, with few reptiles, frogs or native mammals known from the precinct. The only threatened fauna species known to forage within this precinct is *N. strenua* which is listed as vulnerable under the TSC Act. However, five regionally significant fauna species (the southern scaly-foot *Pygopus lepidopus*, common tern *Sterna hirundo*, topknot pigeon *Lopholaimus antarcticus*, white-winged triller *Lalage tricolour*, and water rat *Hydromys chrysogaster*) have been recorded from this precinct, but most of these records are more than 20 years old. Introduced animals such as cats, foxes and black rats also hunt and forage within the precinct.

Cultural history

The precinct provides evidence, in the form of tangible sites and artefacts, of Aboriginal occupation. Over hundreds if not thousands of years, the park and surrounds provided essentials for life; shelter, food resources and fresh water. The significance of the park to contemporary Aboriginal people needs to be explored further.

Nielsen Park contains a number of middens and a variety of rock shelter sites. Site patterning in Nielsen Park reflects the topographic, geological and environmental context of the area. Rock engravings, axe grinding grooves and rock shelters are all found in areas of sandstone outcropping. Midden sites are found in greatest number on the shore. Some midden sites have been disturbed, particularly in rock shelters, due to modern visitation.

The precinct developed across a series of historical phases, including occupation by the Birrabirragal Clan (up to 1793), subdivision and purchase (1793-1910), management by the Nielsen Park Trust (1911–1968) and management by NPWS (1968–present).

Nielsen Park is considered to be of state significance as it represents the mostly intact Greycliffe Estate, including the JF Hilly-designed Victorian Gothic marine villa. The park has associations with the Wentworth Family and a number of prominent men and women from the political, legal and commercial circles of Victorian Sydney.

The park has strong associations with William Notting and his community-funded organisation, the Harbour Foreshores Vigilance Committee. This committee lobbied for the preservation of harbour foreshore lands for public recreation and, together with the Secretary for Lands Niels Nielsen, was responsible for the resumption of the private Greycliffe estate to form Nielsen Park.

In 1914, Greycliffe House became the Lady Edeline Hospital for Babies, only the second hospital established in Australia for infants under the age of two years. It was later used as the Vacluse Tresillian Mothercraft Home and Training School, only the third such home established. The Margaret Harper Wing acknowledges an association with Dr Margaret Harper, medical director of the Tresillian hospitals.

The Steele Point Battery, one of the most intact of the 1871 series of harbour defences, also has state significance.

The park provides a suite of recreational facilities of varying architectural design, all of which were sympathetically designed to match the surrounding landscape, and some of which have been used continuously by the public for over 90 years.

Nielsen Park wharf, built in 1917, was destroyed in May 1974 by cyclonic winds.



Built environment and services

There are approximately 15 buildings in the precinct plus a number of fortifications pathways, roads and recreational facilities. Toilets, change rooms, seats and a shark net are provided.

Full details of built items are found in the *Nielsen Park Conservation Management Plan 2012* (CMP).

Recreation

The precinct has very high levels of repeat visitation and a significant proportion of visitors are local, with 71% travelling less than half an hour to reach the precinct (NPWS 2005). The most popular summertime activities in the precinct are 'swimming' (73%), 'rest and relax' (67%), 'short walk of less than an hour' (45%), 'socialise with family and friends' (44%) and 'picnic / bbq' (39%). Levels of visitor satisfaction are particularly high at this precinct with 73% of visitors surveyed 'very satisfied' with their visit. Aspects that visitors state are important but have lower satisfaction levels are 'amount of carparking' and 'condition of toilets'.

The number of visitors varies greatly with most weekends, summer holidays and public holidays being by far the busiest. There is available capacity for increased visitation at other times.

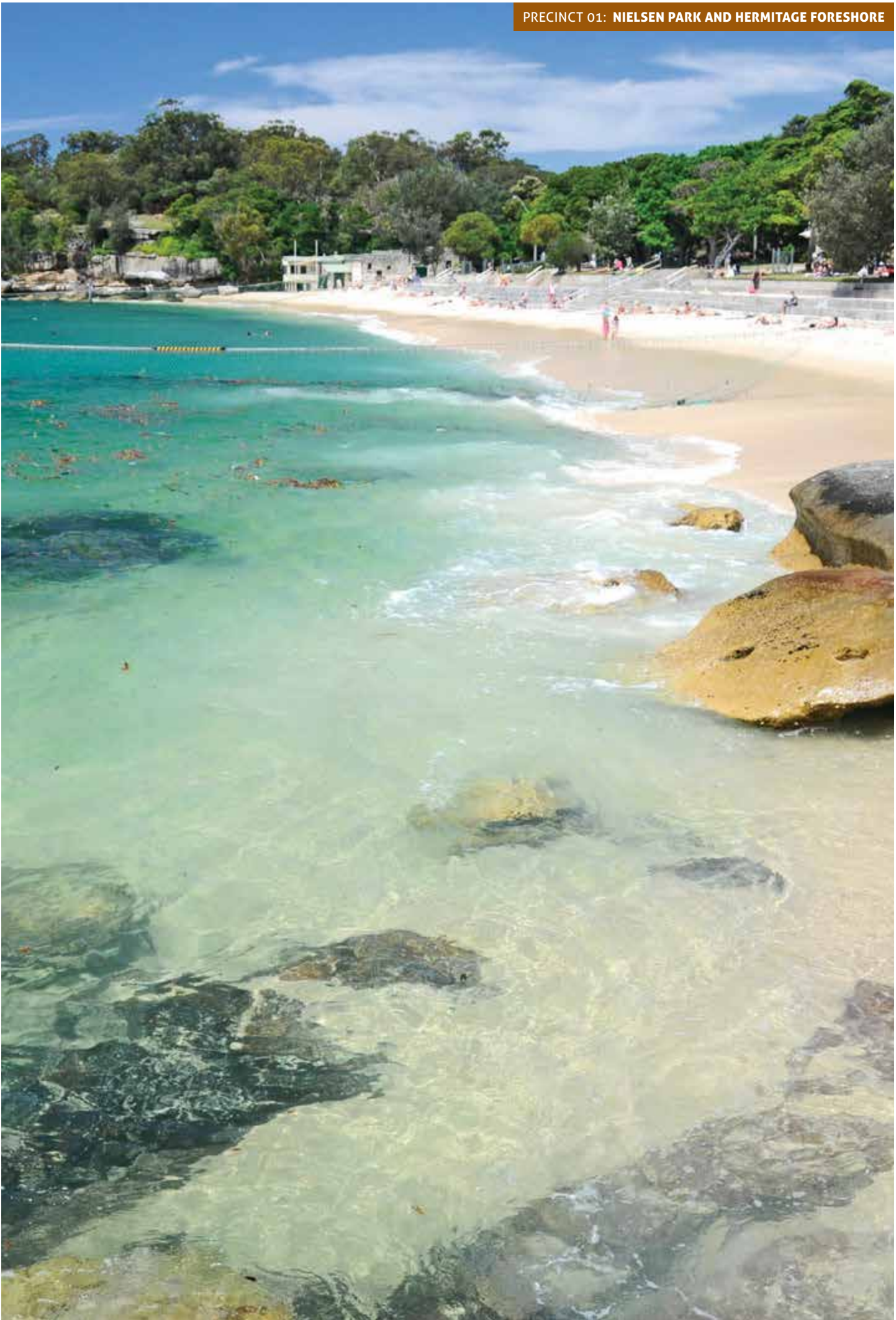
The netted enclosure at Shark Beach is an important drawcard for the precinct.

The nets are removed annually for cleaning marine growth and repairing torn panels. Leaving the nets in place during the winter storm period exposes them to damage or loss through extreme wave action.

The net at nearby Parsley Bay is also removed during winter for cleaning and repair.

Year-round harbour swimming enclosures are located nearby at Redleaf Pool (Double Bay) and Watsons Bay Baths.

The annual net removal does generate concern about a heightened risk of shark attack. Research by the Department of Primary Industries (DPI) into the movements of bull sharks within Sydney Harbour would suggest that they leave the harbour by the end of April and are absent over the winter months. NPWS will consider the implications of any new research about shark behaviour in Sydney Harbour with respect to the annual removal of the Shark Beach net.



What We Are Going To Do



Outcome 1

Conserve the natural values of the park

OUR AIM FOR THE PRECINCT

Through working with volunteers and other stakeholders, the ecology of the precinct will be maintained and improved, securing the viability of existing native plant and animal species. Biodiversity conservation works will be sustainable including limiting weed removal to areas that can be maintained.

WHAT WE ARE GOING TO DO

Prepare and implement a tree management and replacement strategy to include significant trees such as the avenue of figs.

Manage the canopy of trees to maintain visual connectivity with the harbour, removing or pruning vegetation that detracts from the park's cultural view scapes.

Whole of park actions as they apply to Nielsen Park and Hermitage Foreshore precinct

Continue the Nielsen Park bush regeneration program, including the Hermitage Foreshore walking track and Bottle and Glass Point areas.

Prepare and implement a strategy to improve the management of stormwater flowing into and across the park and into the harbour in partnership with Woollahra Council, Strickland House and individual neighbours. Include in the strategy options for stormwater management, and the resulting erosion and nutrient seepage issues at the land / water interface, as a priority towards minimising water quality impacts in adjoining aquatic habitats.

Continue energy and water saving initiatives and reduce waste collection requirements through recycling and visitor education programs.

Harvest rainwater through the installation of water tanks for water re-use in dressing shed toilets and for external uses (showers and foot wash).

Implement the relevant actions from the *NSW Statement of Intent for Infection of Native Plants by Phytophthora cinnamomi* and management plans for other harmful pathogens such as myrtle rust *Uredo rangellii* in co-operation with adjoining land managers.



Outcome 2

Celebrate and nurture contemporary and traditional Aboriginal culture

OUR AIM FOR THE PRECINCT

Aboriginal cultural heritage will be protected and maintained and the Aboriginal community will guide its management.

WHAT WE ARE GOING TO DO

Whole of park actions as they apply to Nielsen Park and Hermitage Foreshore precinct

Continue to liaise with the Aboriginal people of Sydney on matters relating to the protection, management and interpretation of the Aboriginal cultural heritage of the precinct.

Research and facilitate recording of contemporary contact and pre-contact culture of the precinct, including annual recording of Aboriginal site condition.

Facilitate on-park activities to encourage improved understanding of Aboriginal culture among both the Aboriginal and non-Aboriginal community.

Protect Aboriginal sites from potential negative impacts caused by visitation and landscape management practices.

Consider dual naming of locations within the precinct to reflect previous and ongoing connection to Country.





Outcome 3

Celebrate the historic heritage values of the park

OUR AIM FOR THE PRECINCT

Historic buildings, sites, landscapes and collections will be conserved and, wherever possible, made accessible to the public.

WHAT WE ARE GOING TO DO

Provide high-quality historic heritage interpretive and educational material commensurate with the high significance of the Greycliffe Estate and the Steele Point Battery, considering a range of methods and avoiding a proliferation of static signs in the historic precinct.

Improve public access, interpretation and use of the precinct's historic buildings including Greycliffe House and the fortifications.

Ensure that future adaptive re-use of Greycliffe House and associated buildings is sensitive to its high historic heritage significance, and is consistent with the *Conservation Management Plan 2012*.

Seek State Heritage listing for Nielsen Park and Greycliffe House or alternatively for the entire Sydney Harbour National Park.

Complete implementation of the Greycliffe Gardens Landscape Plan.

Whole of park actions as they apply to Nielsen Park and Hermitage Foreshore precinct

Complete and implement actions from the *Conservation Management Plan 2012*.



Outcome 4

Provide enriching and memorable experiences in the park

OUR AIM FOR THE PRECINCT

Traditional passive recreation opportunities will be maintained and enriched with the addition of new visitor opportunities, whilst protecting natural and cultural heritage values and allowing a greater diversity of visitors to enjoy the precinct.

WHAT WE ARE GOING TO DO

Provide and maintain visitor infrastructure and services that support the traditional passive recreation opportunities of the precinct.

Continue to lease the Nielsen Park Kiosk, Kiosk Cottage, Kiosk Garage and Halbert Pavilion for the purposes of a café, restaurant and function centre.

In the event that the current lease comes to an end, new adaptive uses for the buildings will be considered to support sustainable visitor and tourist use and enjoyment.

Review the provision of appropriate First Aid equipment in close proximity to the beach.

Ensure that the lease or licence agreements governing the operation of the Nielsen Park Kiosk and any other commercial activities within the precinct, include effective measures for minimising the impact of visitor noise.

Work with lessees and licensees and the local community to identify and address any emerging issues relating to commercial activities within the precinct.

Greycliffe House and its associated buildings, including the Margaret Harper Wing, Dressing Pavilion and Gardeners Cottage, will be investigated for new adaptive uses to support sustainable visitor and tourist use and enjoyment.

For example, these buildings may be adapted and leased for purposes such as accommodation, administration, interpretation, restaurant, conferences and functions.

Operate Steele Point Cottage as self-contained holiday accommodation.

Investigate its potential packaging with existing or new lessees in the park.

Provide a netted swimming enclosure at Shark Beach in the warmer months, removing the net for maintenance in the colder months.

Implement measures to discourage unauthorised after hours use of the precinct.

Whole of park actions as they apply to Nielsen Park and Hermitage Foreshore precinct

Implement the *Sydney Harbour Scenic Walk Strategy 2010*, upgrading and signposting existing tracks to provide an effective link with sections outside of the park.

Utilise the precinct for events that are part of Sydney festivals and that are within the precinct's capacity.

Implement a licensing system for personal trainers and fitness groups limiting opportunities based on other uses in the areas.





Outcome 5

Improved access to the park for all

OUR AIM FOR THE PRECINCT

The less physically able and a diversity of cultures will have increased opportunities to enjoy the precinct.

WHAT WE ARE GOING TO DO

Investigate public uses to increase access and opportunities for people with disabilities and those from diverse cultures at Greycliffe House and other precinct buildings and structures.

Continue negotiations with Woollahra Council for the acquisition of Greycliffe Avenue carpark in exchange for the carpark at Watsons Bay and improve parking and access for those with mobility impairment.

Investigate increased disabled access to all current and new facilities, including additional disabled parking spaces both within the precinct and (in consultation with Woollahra Council) in adjoining Council facilities.

Investigate the installation of handrails to improve access to the beach from the promenade.

Install directional and interpretive signs to Bottle and Glass Point and other locations at the extremities of the precinct.

Prepare a landscape design plan for the Nielsen Park and Hermitage Foreshore precinct that retains and enhances the precinct as a recreational parkland with rich heritage values.



Outcome 6

Strengthen and create partnerships

OUR AIM FOR THE PRECINCT

Continue to support and build on partnerships including strong volunteer and local government partnerships.

WHAT WE ARE GOING TO DO

Work with Woollahra Council and neighbours to improve stormwater issues in the Hermitage Foreshore area.

NPWS will liaise with the State Property Authority and other relevant stakeholders about the future management of Strickland House, and in particular the bushland components of its grounds, for the purpose of improving the Vaucluse Road entrance to the national park and potentially extending the habitat for *Allocasuarina portuensis*.

Work closely with precinct lessees to ensure that noise and other impacts on the local community are appropriately managed.

Whole of park actions as they apply to Nielsen Park and Hermitage Foreshore precinct

Continue to support and expand volunteer bush regeneration programs.





Outcome 7

Robust management of the park is sustained

OUR AIM FOR THE PRECINCT

The precinct will provide an excellent example of sound park management including the areas of stakeholder consultation, research, monitoring and evaluation and decision-making.

WHAT WE ARE GOING TO DO

Continue to support the excellent work of bush regenerator volunteers in weed control maintenance throughout the remnant bushland.

Provide high-quality, well-designed landscape elements at major entrances to demonstrate pride and quality in presentation. In particular, investigate redesign of the entrance at Greycliffe Avenue including the relocation of the garbage recycling bays.

Whole of park actions as they apply to Nielsen Park and Hermitage Foreshore precinct

Implement the recovery plan for *A. portunensis*.

Implement recovery actions for *A. terminalis* subsp. *terminalis*.



Outcome 8

Contribute to the goal of easy and safe transport to and within the park

OUR AIM FOR THE PRECINCT

Negotiations with adjacent land managers, public transport providers and local councils will result in improved transport, traffic and parking solutions.

WHAT WE ARE GOING TO DO

Investigate reinstatement of public water-based access either at or in the vicinity of Nielsen Park and the introduction of a transport link.

Liaise with Woollahra Council regarding the construction of bus shelters at existing bus stops on Vaucluse Road.

Whole of park actions as they apply to Nielsen Park and Hermitage Foreshore precinct

Identify routes for bicycle travel to the park consistent with local government bike plans and, where appropriate, provide bicycle racks.

Permit bicycles on public vehicular roads but not on walking tracks in the park or on the promenade at Shark Beach.



**South Head
Camp Cove
Green Point**

(Sydney Harbour National Park)

South Head

Head Lighthouse
Keepers Cottage

Assistant Lighthouse
Keepers Cottage

Hornby Light

South Head
Heritage Trail

Inner South Head
Numerous unofficial tracks

Lady Bay

(nude bathing permitted)

*Pacific
Ocean*

HMAS Watson
(Military Reserve)
(no public access)

*Port
Jackson*

Constables
Cottage

*Camp
Cove*

Kiosk

33 Cliff Street

proposed track

First Fleet
Landing Place

Fortifications

Proposed walking
track extension

*Green
Point*

Green Point
Cottage

Former Marine
Biological Station

(See
Gap Bluff
Map)



	Sydney Harbour Scenic Walk
	Unofficial track area
	Parking area
	National Park
	SH Federation Trust

Precinct 02: South Head, Camp Cove and Green Point

South Head, Camp Cove and Green Point precinct is located on the south headland of Sydney Harbour. The primary management goals for the precinct are to conserve and interpret the rich cultural landscape and to continue to offer access to some of Sydney's most popular outdoor recreational experiences.

South Head, parts of Camp Cove and Green Point were incorporated into Sydney Harbour National Park by 1980. This precinct includes the 19th century Hornby Light complex set amongst World War II fortifications that form a significant part of Sydney's fortifications history. The South Head section of the Sydney Harbour Scenic Walk meanders around the headland, providing spectacular views back to the city and out to sea. The walk's vantage points have become key places for whale watching and harbour event viewing, particularly the start of the Sydney Hobart Yacht Race on Boxing Day.

Captain Arthur Phillip, with a party of officers and marines, landed in Port Jackson on 21 January 1788 at an unnamed place which, in original accounts, is consistent with the beachfront at Camp Cove. The group made a meal at this place, boiling meat over a campfire on the beach. This occasion marks the first landing of members of the First Fleet within Port Jackson, and the first known European landing in Sydney Harbour.

Today, the beach at Camp Cove, managed by Woollahra Council, is a popular swimming spot and a venue for scuba diving, both day and night. Lady Bay (Jane) Beach, gazetted as a 'clothing optional' beach, is popular for nude bathing.

This area is the subject of **Project 5 Green Point and Constables Cottage, Camp Cove Project** to prepare a landscape design plan for the First Landing Place at Camp Cove including interpretation, signage and redesign of this important heritage place within the park and adjoining local government area. The area is also a key element of **Project 6 Sydney Harbour Scenic Walk**, providing essential links in this walk. Details of these projects are included in Section 01.

The Precinct and its Context

Description

South Head precinct is the southern headland at the entrance to Sydney Harbour. Its land mass and cliffs form a promontory that has protected the harbour and created sheltered water since the drowning of the river valley. It is a place that has borne witness to many significant events.

The precinct includes the park at Green Point, with its cottage and parking area at the end of Pacific Street. It also includes the strip of land commencing at the entrance road to HMAS Watson and bounded to the west by Cliff Street and to the east by HMAS Watson. Included in this section are Constables Cottage, the adjacent brick cottage in Cliff Street and the carpark. The precinct then includes a strip of land along the harbour edge from Camp Cove Beach north to South Head, bounded on the east by HMAS Watson. The presence of HMAS Watson at South Head limits access to this section to pedestrian traffic only.

Planning context

This precinct is served by a ferry direct from Circular Quay to Watsons Bay and by bus from Circular Quay, Edgecliff or Bondi Junction train stations.

The precinct is located in the Woollahra local government area.

Whilst under the *Environmental Planning and Assessment Act 1979* (EPA Act), Woollahra Council has no formal role in the statutory approval of proposed works within Sydney Harbour National Park, the plan of management is prepared so that wherever possible it is consistent with local government plans.

Of note is the *Local Government Amendment (Nude Bathing) Act 1996* No 133 which amends the *Local Government Act 1993* to allow nude bathing on certain beaches. [Assented to 12 December 1996] This includes Lady Bay (Jane) Beach.

The Sydney Harbour National Park (1980 Boundary) and the Sydney Harbour Entrance, which includes the South Head peninsula, are listed on the Register of the National Estate (RNE). A number of items within the precinct are also listed on the RNE, including the Hornby Light and the two Lightkeepers Cottages. As such, they are covered by the *Environmental Protection and Biodiversity Act (EPBC Act)* until 2012.

The Barracks Group and Cliff House in HMAS Watson and the former Marine Biological Station on Pacific Street, Watsons Bay, were formerly listed on the RNE and are now on the Commonwealth Heritage List. These sites adjoin the national park precinct and therefore the provisions of the EPBC Act would apply to any actions in the park affecting Commonwealth heritage places.

Further details about the planning context are provided in Section 04 Appendices.



Significant Values and Considerations

Natural features

Except for the dramatic cliff lines, boulders and rock shelves, the natural landscape of the South Head precinct of the park has been largely modified by human intervention. Most parts of the site were cleared when it was a defence establishment. The natural setting, particularly the cliffs, ocean and harbour elements of South Head, contribute greatly to its significance and have influenced the way in which the place developed.

Historical photographs indicate that the entire headland has been cleared and modified. There has been some natural regrowth of coastal banksia *Banksia integrifolia* and other coastal heath species over the past 50 years, supplemented by a planting program from 1997 to 2000. Remnant vegetation is coastal sandstone plateau heath, dominated by *Melaleuca armillaris* and *Kunzea ambigua*. There are, however, high levels of weeds over much of the headland and along the Cliff Street boundary. There have also been plantings of coral trees both at Green Point and at the commencement of the track to South Head.

Whilst the remnant bushland areas of South Head suffer from weed invasion, they provide important habitat for native fauna. Although this vegetation type is well represented elsewhere within the Sydney Basin, there are few examples of this once more widespread community south of the harbour until you reach Malabar Headland and Botany Bay.

Prior to 1788, the Watsons Bay area would have hosted a diverse fauna. Most of these species are now extinct due to the loss of habitat from military and housing development. Much of the remaining fauna consists of relatively common and widespread species, largely birds. However, the remnant vegetation may also provide intermittent habitat for some migratory and nomadic bird species, when particular species are flowering or conditions are otherwise suitable.

Since the 1980s, some 82 species of native animal have been recorded in the precinct including one frog, seven reptiles, 72 birds and two native mammals. As is the case elsewhere in the park, micro-bats have not been surveyed or

have only been poorly surveyed, and it is likely that additional species could be added to the mammal list. This list now only includes the common brushtail possum and the grey-headed flying-fox *Pteropus poliocephalus*. Fourteen of the 72 bird species are seabirds or shorebirds spotted from South Head, such as shearwaters, gannets, terns and cormorants, which do not utilise the remnant vegetation of the precinct. Twelve regionally significant fauna species have been recorded from this precinct, but most of these records are old. Seven introduced birds, the introduced black rat, foxes and cats have been recorded in the precinct and undoubtedly have impacts on the remaining native fauna.

The only threatened fauna recorded from the precinct are the vulnerable powerful owl *Ninox strenua* and the grey-headed flying-fox *P. poliocephalus*, which intermittently forage within the reserve. There is no suitable roosting habitat for these two species within the reserve, and the flying-foxes most likely come from the population that roost by day in the Royal Botanic Gardens. In addition, there are

old records of sooty oystercatchers *Haematopus fuliginosus* foraging on the rocks and foreshores near this precinct, and a single record of the diamond firetail *Staganopleura guttata* (which may actually have been an aviary escape). Both these species are listed as vulnerable under the *Threatened Species Conservation Act 1995* (TSC Act). New Zealand and Australian fur seals may also occasionally utilise the foreshores and rock platforms as haul-out sites, and both of these species are also listed as vulnerable.

The developed nature of the headland means that there is stormwater run-off. Garden escapes and weeds, introduced accidentally or as cultural plantings, have subsequently taken hold within these sites. There are drainage systems throughout the sites, but much of the stormwater drainage is poorly managed and discharges directly into the harbour without any level of treatment. Above the Camp Cove carpark, there is frequent water discharge that ceases only in very dry conditions. Excessive nutrient-rich water is a threat to remaining native vegetation in the precinct.

The intense level of use of the Heritage Trail and the unofficial foot pads leading off the Heritage Trail to inner South Head, affect native vegetation establishment. Informal track formation has been reduced in recent years with the use of exclusion fencing south of Lady Bay Beach. However, it is still evident with numerous tracks leading to historic features on the cliff edge north of Lady Bay Beach.

This part of the park is known for its scenic views. These views are experienced from inner South Head, such as from the defence installations and on the track to the Head and from The Gap, especially from its southern side. In addition, there are views into the South Head area from Middle Head and North Head and from the water. Views and vistas should be considered when making decisions about vegetation management. Similarly, impacts on bird species which utilise dense cover should be considered in decision making about view management and weed control.



Cultural history

The precinct provides evidence, in the form of tangible sites and artefacts, of Aboriginal occupation of the area over thousands of years. The Aboriginal Heritage Information Management System (AHIMS) lists 15 sites within the precinct, although only eight have been re-located in recent years.

Of the eight sites, two are middens and one is a shelter with midden. These have been assessed as locally significant. The remaining five sites, which are engravings, are considered to be of regional significance.

Camp Cove is of cultural significance to Aboriginal and non-Aboriginal Australians as it is the site of Governor Arthur Phillip's harbour landing in 1788 and his meeting with the area's Aboriginal people. According to the historical research, the Birrabirragal people were the original inhabitants of this area.

In the early 1800s, the area was an outpost of Sydney and important for signalling and observation. The 1850s shipwrecks of the Dunbar and the Catherine Adamson led to the construction of the Hornby Light and associated lightkeepers' cottages in the late 1850s. An obelisk was also constructed for safety and

navigation. Between 1850 and 1950 defence installations, emplacements, and searchlight shelters were constructed.

The many historical overlays within the precinct extend into adjoining tenures. Defence installations are spread across adjacent sites including the World War II harbour boom, spread across the water. Parts of the Hornby Battery, located within HMAS Watson, can be easily seen but not the Inner Battery and rifle walls. Best-practice conservation of South Head requires synergy in management across a patchwork of tenures.

From 1850 to 1980 access to most of the site was restricted, with the exception of the Camp Cove beach area which was publicly accessible. Since the entire precinct was opened to the public, the number of walkers and runners has steadily increased and the precinct is enjoyed for fishing, swimming and viewing. The precinct is in effect an '*Open Air Museum*' where the whole of a site forms the museum and visitors wander around at their own pace. This visitation aspect is often overlooked due to pre-occupation with views and lack of engaging interpretation.

Two early Victorian stone cottages at Inner South Head, the Head Lightkeepers Cottage and the semi-detached Assistant Lightkeepers Cottage have been partially conserved. The Assistant Lightkeepers Cottage is occupied by NPWS staff, while the Head Lightkeepers Cottage is unoccupied and its interior requires restoration. The two timber cottages within South Head, Constables Cottage at Camp Cove and Green Point Cottage, provide self-contained accommodation. The brick cottage in Cliff Street, adjacent to Constables Cottage, is deemed to be of no heritage significance.

Built environment and services

The precinct contains a number of historic buildings including Constables Cottage and those in the Hornby Light complex. Parts of South Head have limited water, electricity and sewerage infrastructure which would require assessment prior to any proposed development.

Details of the structures are provided in the *Conservation Management Plan for South Head 2010*.

Recreation

The precinct provides a variety of experiences across iconic, recreational, cultural and urban respite themes. Green Point is accessible by car with on-site parking while Lady Bay Beach and Hornby Light are walk-in sites. Walking tracks are available from all sites and interconnect so that visitors may move freely from one experience to another. Lady Bay Beach provides for non-motorised boat landing and clothing optional swimming. Cultural heritage elements and water views are present at all sites.

All sites within the precinct are suitable for picnics. Lady Bay Beach / Heritage Walk provides for basic day use with toilets and drinking water while Green Point is a medium day use area with toilets provided. Two self-contained cottages are provided in this precinct, located either end of Camp Cove.

The majority of visits are made by residents who live within 30 minutes travel time of this precinct. There is no park entry fee at this precinct.

There is an opportunity to further develop the tourism potential of the precinct through mutually beneficial partnerships between NPWS and tourism operators, managers of adjoining and related sites and development of the NPWS Discovery program.

There is potential to develop occasional tourism activities in conjunction with HMAS Watson, particularly for the shared defence features.

Woollahra Council has been approached and has agreed in principle to work with NPWS on the proposed redevelopment of the entrance to South Head at Camp Cove. This involves investigating the future of the existing council kiosk, Constables Cottage and the toilet facilities.

What We Are Going To Do



Outcome 1

Conserve the natural values of the park

OUR AIM FOR THE PRECINCT

The remnant bushland will be carefully managed to reduce weed species and improve habitat for the remaining and migratory fauna species. Stormwater and the excessive high nutrient discharge will be controlled to reduce the impact on vegetation.

WHAT WE ARE GOING TO DO

Engage corporate and community volunteers in the removal of weeds and restoration of the native vegetation along the South Head Heritage Walk.

Prepare and implement a tree management strategy in consultation with Woollahra Council and including coral trees.

Actively manage the intense usage of the informal tracks leading off the Heritage Trail to Inner South Head.

Whole of park actions as they apply to South Head, Camp Cove and Green Point precinct

Improve the management of stormwater flowing into and across the precinct and into the harbour, in partnership with HMAS Watson.

Continue energy and water saving actions and reduce waste collection requirements through recycling and visitor education programs.

Implement *Phytophthora cinnamomi* management protocols.



Outcome 2

Celebrate and nurture contemporary and traditional Aboriginal culture

OUR AIM FOR THE PRECINCT

Involvement of members of the Aboriginal community in the planning and interpretation of aspects of the precinct, particularly Green Point, will be sought.

WHAT WE ARE GOING TO DO

Whole of park actions as they apply to South Head, Camp Cove and Green Point precinct

Liaise with local Aboriginal communities regarding the management and interpretation of the precinct. Particular emphasis will be placed on the interpretation of Aboriginal and European contact.

Protect Aboriginal sites from potential negative impacts caused by visitation and landscape management practices.

In consultation with the Aboriginal community, consider dual naming of precinct locations to reflect previous and ongoing connection to Country.





Outcome 3

Celebrate the historic heritage values of the park

OUR AIM FOR THE PRECINCT

Historic buildings, sites and collections will be conserved and, wherever possible, made accessible to the public.

WHAT WE ARE GOING TO DO

Prepare a landscape design plan for the 'First Landing Place at Camp Cove' and the entrance to the park at Constables Cottage, including interpretation, signage and redesign of this important heritage place within the park and adjoining local government area.

Provide an integrated signage strategy for the precinct so that visitors to the Watsons Bay Village and the precinct sites are aware of the national park status and national significance of the precinct.

Implement conservation and maintenance actions from the *Conservation Management Plan for South Head March 2010*.

Implement the maintenance and risk management recommendations of the *NPWS Fortifications of Sydney Harbour and Botany Bay Strategic Plan 2007*, in particular those relating to the World War II anti-submarine features at Green Point and above ground elements at South Head.

Provide for improved public access to the Head Lightkeepers Cottage and historic fortifications, including underground structures.





Outcome 4

Provide enriching and memorable experiences in the park

OUR AIM FOR THE PRECINCT

Traditional passive recreation opportunities will be maintained while the precinct is enriched with new tourism opportunities. These new initiatives will allow a greater diversity of visitors to experience the magnificence of the harbour headland and the tranquillity of Camp Cove.

WHAT WE ARE GOING TO DO

Provide an enhanced entry statement at the entrance to South Head including a map, information about the precinct's history and walks within the precinct.

Provide new seating and picnic furniture of high-quality design at scenic locations at South Head, Green Point and Camp Cove Beach.

In consultation with Woollahra Council, investigate the removal of the beach-front kiosk and toilets.

Constables Cottage will be investigated for new adaptive uses to support sustainable visitor use and enjoyment. For example, this building may be adapted and leased for purposes such as a restaurant, café, kiosk or other food and drink outlets or for accommodation.

Manage unauthorised uses of the bushland adjacent to the clothing optional Lady Bay Beach in collaboration with NSW Police, Woollahra Council, HMAS Watson and NSW Department of Health.

Green Point Cottage will be investigated for new adaptive uses to support sustainable visitor use and enjoyment. For example, this building may be adapted and leased for purposes such as accommodation, or as a restaurant.

The 33 Cliff St Cottage will be investigated for new adaptive uses to support sustainable visitor and tourist use and enjoyment. For example, these buildings may be adapted and leased for purposes such as accommodation.

The Assistant Lightkeepers Cottage will be investigated for new adaptive uses to support sustainable visitor use and enjoyment. For example, these buildings may be adapted and leased for purposes such as accommodation or a café.

The Head Lightkeepers Cottage will be subject to internal stabilisation works and investigated for new adaptive uses to support sustainable visitor use and enjoyment. For example, these buildings may be adapted and leased for purposes such as accommodation, a café or restaurant and exhibitions.

Whole of park actions as they apply to South Head, Camp Cove and Green Point precinct

Implement the *Sydney Harbour Scenic Walk Strategy 2010*, as it applies to this precinct, providing upgrading of sections and links to sections outside the park and directional signs.

Utilise the precinct for events that are part of major Sydney festivals and that are within the precinct's capacity.

Seek to enter into a partnership with transport operators for the provision of an integrated guided tour package within the precinct.





Outcome 5

Improved access to the park for all

OUR AIM FOR THE PRECINCT

New beach, bush and historic site opportunities, including facilities and visitor experiences, will be explored and promoted for the less physically able and for a diverse cultural community.

WHAT WE ARE GOING TO DO

Investigate improved access arrangements through HMAS Watson to provide unassisted disabled access to Inner South Head. Consider modifications at Green Point and Constables Cottages to enhance access for the mobility impaired.

Provide high-quality interpretive and educational material, considering all methods from static signs to audio and video, allowing for consideration of diversity amongst visitors and difficult access to the headland.

Install directional and interpretive signs to and from Watsons Bay across the precinct.

Work with the Sydney Harbour Federation Trust (SHFT) to design and construct an access-for-all link through SHFT's Victoria Street Reserve across the beach-side elevation of the Marine Biological Station to Green Point.

Whole of park actions as they apply to South Head, Camp Cove and Green Point precinct

Investigate increased access, including for the mobility impaired, to all current and new facilities, including additional disabled parking spaces.



Outcome 6

Strengthen and create partnerships

OUR AIM FOR THE PRECINCT

Build on relationships with stakeholders and volunteers who are involved in the management of the South Head peninsula. These partners include the Department of Defence (HMAS Watson), Sydney Ports Corporation (Hornby Light), NSW Roads and Maritime Services (obelisk, foreshores and waters), SHFT (Marine Biological Station) and Woollahra Council (Gap Park, Camp Cove Beach) and volunteer bush regenerators. NSW Police are also involved in rescues, special event visitor management and enforcement.

WHAT WE ARE GOING TO DO

Develop and implement a Memorandum of Understanding with the University of NSW Faculty of the Built Environment to involve students in 'on park' research and design projects such as the South Head, Camp Cove and Green Point precinct landscape design plan.

Whole of park actions as they apply to South Head, Camp Cove and Green Point precinct

Continue to support the volunteer bush regeneration program.

Continue partnerships with Woollahra Council and SHFT in delivering the SHSW project.





Outcome 7

Robust management of the park is sustained

OUR AIM FOR THE PRECINCT

The precinct will provide an excellent example of sound park management including the areas of stakeholder consultation, research, monitoring and evaluation and decision-making including best-practice redevelopment of Green Point and the Camp Cove area.

WHAT WE ARE GOING TO DO

Introduce park use fees in the parking area at Camp Cove.

Whole of park actions as they apply to South Head, Camp Cove and Green Point precinct

Establish and implement strategies to facilitate the systematic collection of floristic data of bushland areas, including establishment of permanent monitoring sites.

Implement a licensing system for personal trainers and fitness groups in consultation with Woollahra Council, utilising this and Nielsen Park precincts as models for the whole park.



Outcome 8

Contribute to the goal of easy and safe transport to and within the park

OUR AIM FOR THE PRECINCT

Negotiations with adjacent land managers, public transport providers and local councils will result in transport, traffic and parking solutions that provide acceptable solutions.

WHAT WE ARE GOING TO DO

Investigate transfer of the parking area / road from Woollahra Council to NPWS in exchange for parking in the Nielsen Park precinct.

Investigate and, if agreed, transfer to HMAS Watson, maintenance responsibilities for the road at the South Head entrance to HMAS Watson subject to obtaining agreement that this would not lead to further restrictions to visitor access to the precinct.

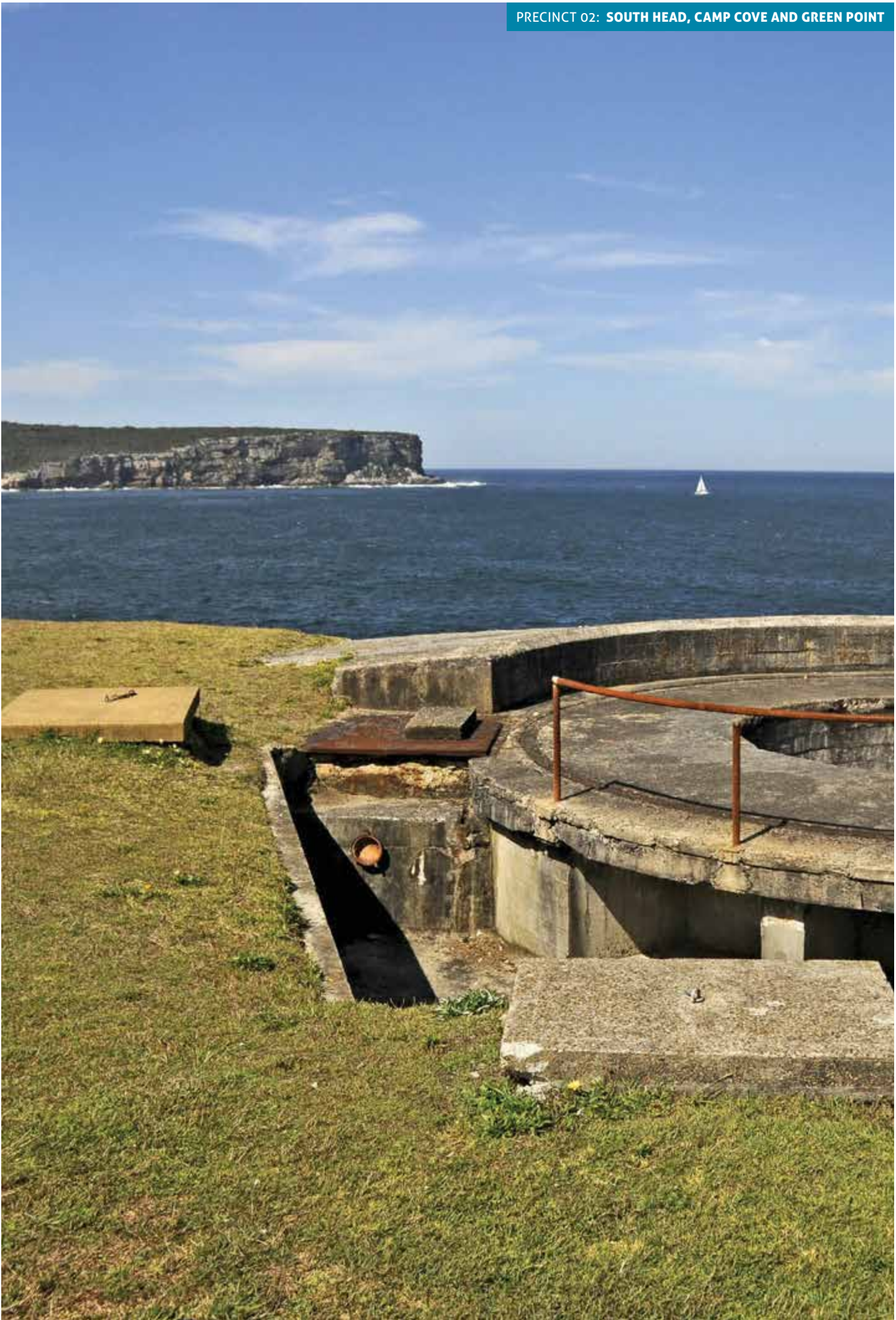
Whole of park actions as they apply to South Head, Camp Cove and Green Point precinct

Identify routes for bicycle travel to the park consistent with local government bike plans and, where appropriate, provide bicycle racks.

Permit bicycles on public vehicular roads but not on walking tracks including the Heritage Track at South Head.

Continue negotiations with boat operators to provide additional water access to Watsons Bay wharf as part of the harbour water transport shuttle concept.







Precinct 03: Gap Bluff

The Gap Bluff precinct is located just to the west of the South Head precinct and is in close proximity to HMAS Watson and the suburb of Watsons Bay. Many tourists are attracted to the famous Gap, which provides views down the harbour as well as along the Sydney coast.

The precinct is roughly oval shaped with a series of broad vegetated terraces falling towards the west. The lowest terrace is cleared and grassed. There are a number of buildings and archaeological sites dating from the precinct's use as a defence establishment. These include the 1936 Officers Mess and Garden, the 1895 Former Workshop, the 1938 Armoury and the site of the 1912 Artillery Barracks. Landscape features include an avenue of Norfolk Island pines, large phoenix palms and gateposts at the road entrance to the precinct.

The upper terraces of the Gap Bluff precinct are now heavily vegetated by bushland, cultural plantings and weeds. Until the 1980s, this area was dominated by masonry and timber structures, roads, paths and open grassy clearings. The buildings in this higher area were demolished when the area became part of the national park.

The current lookouts retain an open setting with low native heath and spectacular water views.

Gap Bluff precinct is an important historic area within the park. The historic buildings have a history of substantial modification, inviting serious consideration for further adaptive re-use and increased public access.

The precinct does not retain significant areas of native vegetation with much of it being formerly cleared and now infested with weeds. However, the threatened species sunshine wattle *Acacia terminalis* subsp. *terminalis* does occur in the precinct. Many of the plant species, both native and exotic, require intervention to reduce threats to historic structures and adverse impacts on the views from public lookouts.

The renewal of the Gap Bluff precinct is the aim of **Project 11 Gap Bluff Adaptive Re-use**. The intent of the project is to realise the potential for exemplary adaptive re-use management of the Gap Bluff precinct to provide increased opportunities for visitor appreciation and access to the site. Details of these projects are included in Section 01.

The Precinct and its Context

Description

The precinct is located to the north of Gap Park, managed by Woollahra Council and to the south of HMAS Watson, managed and occupied by the Training Authority Maritime Warfare of the Royal Australian Navy. It is bounded on the west by Cliff Street as far as the entrance road to HMAS Watson and on the east by rugged 40 metre high sandstone cliffs and the Tasman Sea. Included in this precinct is the carpark at the junction of Military Road and Cliff Street, which is currently utilised more by patrons of the nearby hotel than national park visitors. The precinct was added to Sydney Harbour National Park in 1982 after over 80 years of use for defence purposes.

Planning context

The precinct is located in the Woollahra local government area.

The area is the subject of Woollahra Council's Gap Park Master Plan 2008 which includes objectives to;

- » Investigate and encourage a complementary visitor management and infrastructure approach to the adjacent Gap Bluff area by NPWS.
- » Support NPWS's complementary proposal for a future trail link via Gap Bluff to Military Road and on to South Head.

The Barracks Group and Cliff House in HMAS Watson are listed on the Commonwealth Heritage List. These sites adjoin the national park precinct and therefore the provisions of the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act) would apply to any actions in the park affecting Commonwealth heritage places.

Further details about the planning context are provided in Section 04 Appendices.

Significant Values and Considerations

Natural features

The natural features and values cover the entire South Head area and are therefore duplicated in part in this precinct and the South Head, Green Point and Camp Cove precinct. However, there are notable differences. One such difference is the occurrence of threatened species.

Except for the dramatic cliff lines, boulders and rock shelves, the natural landscape of the South Head area of the park has been largely modified by human intervention. Most parts of the site were cleared when it was a defence establishment. The natural setting, particularly the cliffs, ocean and harbour elements of South Head contribute greatly to its significance and have influenced the way in which the place developed.

Historical photographs indicate that the entire headland has been cleared and modified. There has been some natural regrowth of *Banksia integrifolia* and other coastal heath species over the past fifty years, supplemented by a planting program from 1997 – 2000. Remnant vegetation is coastal sandstone plateau heath, dominated by *Melaleuca armillaris* and *Kunzea ambigua*. There are, however, high levels of weeds over much of the headland and along the Cliff Street boundary. There have also been plantings of coral trees both at Green Point and at the commencement of the track to South Head.

Whilst the remnant bushland areas of South Head suffer from weed invasion, they provide

important habitat for native fauna. Although this vegetation type is well represented elsewhere within the Sydney Basin, there are few examples of this once more widespread community south of the harbour until you reach Malabar Headland and Botany Bay.

The precinct contains two species classified as endangered under the *Threatened Species Conservation Act 1995* (TSC Act). *Acacia terminalis* subsp. *terminalis* is located on rocky slopes within and around HMAS Watson. This species is currently restricted to rocky bushland areas in the eastern suburbs, North Head and Middle Head. Several planted specimens of Nielsen Park she-oak, *Allocasuarina portuensis* are located down-slope of the Armoury and along a drainage line to the north. *Allocasuarina portuensis* is restricted to plantings in Nielsen Park and three other sites. The sites of the plantings at Gap Bluff are inappropriate in terms of habitat type, soil disturbance and range. Therefore, in the event of their senescence, it would be ineffective to replace them in the same location.

Prior to 1788, the Watsons Bay area would have hosted a diverse fauna. Most of these species are now extinct due to the loss of habitat from military and housing development. Much of the remaining fauna consists of relatively common and widespread species, largely birds. However, the remnant vegetation may also provide intermittent habitat for some migratory and nomadic bird

species when particular species are flowering or conditions are otherwise suitable.

Since the 1980s, some 82 species of native animal have been recorded in the precinct including one frog, seven reptiles, 72 birds and two native mammals. As is the case elsewhere in the park, micro-bats have not been or have been poorly surveyed, and it is likely that additional species could be added to the mammal list. This list now only includes the common brushtail possum *Trichosurus vulpecula* and the grey-headed flying-fox *Pteropus poliocephalus*. Fourteen of the 72 bird species are seabirds or shorebirds spotted from South Head, such as shearwaters, gannets, terns and cormorants, which do not utilise the remnant vegetation of the precinct. Twelve regionally significant fauna species have been recorded from this precinct, but most of these records are old. Seven introduced bird species, black rats, foxes and cats have been recorded in the precinct and undoubtedly have impacts on the remaining native fauna.

The only threatened fauna recorded from the precinct are the vulnerable powerful owl *Ninox strenua* and the grey-headed flying-fox *P. poliocephalus*, which intermittently forage within the reserve. There is no suitable roosting habitat for these two species within the reserve, and the flying foxes most likely come from the population that roost by day in the Royal Botanic Gardens. In addition, there are old records of sooty oystercatchers

Cultural history

Haematopus fuliginosus foraging on the rocks and foreshores near this precinct, and a single record of the diamond firetail *Staganopleura guttata* (which may actually have been an aviary escape); both these species are listed as vulnerable under the TSC Act. New Zealand and Australian fur seals may also occasionally utilise the foreshores and rock platforms as haul-out sites, and both of these species are also listed as vulnerable.

The developed nature of the headland means that there is stormwater run-off. Garden escapes and weeds, introduced accidentally or as cultural plantings, have subsequently taken hold within these sites. There are drainage systems throughout the sites, but much of the stormwater drainage is poorly managed and discharges directly into the harbour without any level of treatment. Excessive nutrient-rich water is a threat to remaining native vegetation in the precinct.

This part of the park is known for its scenic views. These views are experienced from inner South Head, such as from the defence installations and on the track to the Head and from The Gap, especially from its southern side. In addition, there are views into the South Head area from Middle Head and North Head and from the water. Views and vistas should be considered when making decisions about vegetation management. Similarly, impacts on bird species which utilise dense cover should be considered in decision making

about view management and weed control.

The Birrabirragal people occupied the South Head peninsula, managing the vegetation and fishing and collecting shellfish from the surrounding rock platforms and waters. When Europeans arrived in 1788, South Head was the site of a number of meetings between the two groups and more sustained interaction took place after the establishment of the signal station at Outer South Head in 1790.

The following decades saw the alienation of the area from the local Aboriginal people, although some small groups continued to live in the wider Woollahra area throughout the 19th century and continued some of their traditional practices.

Unlike the northern part of South Head, the Gap Bluff area was relatively undeveloped until around the early 20th century. From that time, along with the area now occupied by HMAS Watson, it was almost exclusively used by the Army. From 1895 it was the Artillery Practice Battery and Workshop, from 1912 it was the School of Gunnery and then the Navy's Radar School and from the 1950s it was the Army's National Service depot. Gap Bluff precinct was transferred from the defence forces to NPWS in 1982.

At the height of its use from the 1950s to 1980s, the area accommodated a dense array of masonry and timber structures covering the mostly level north eastern part of the area, interlinked by numerous roads and paths. Due

to the intense development of this area by the Department of Defence, there are no recorded Aboriginal sites in the Gap Bluff precinct.

Although many former building sites were reclaimed and concealed by revegetation after the site was transferred to NPWS, the entire precinct contains a wealth of archaeological evidence and a number of standing buildings from both the late 1800s School of Gunnery period and the more intensive use during and after World War II. A basic and preliminary archaeological survey, undertaken for the CMP, identified a number of substantial structural remains and large areas of debris from the demolition of the buildings.

Despite the heavy vegetation cover, it is still possible to see the various terraces and understand the arrangement of building, roads, equipment and terraced gardens. The development of the military landscape of training facilities from the 1870s to the 1980s is still readable, although the sense of openness and connection between the different areas has been obscured.

Built environment and services

In summary, the main buildings are the Armoury and the Officers Mess, the former workshop, which is now a cottage, and a public toilet building. All buildings have been modified, with the Officers Mess as late as the 1990s, to provide lecture theatres for a proposed educational facility.

The precinct is serviced with electricity, mains water and sewer and telephone services. There is a bitumen sealed access road and parking for vehicles.

There are a number of paths and walkways, some associated with previous buildings and others purpose built to link walking tracks to Gap Park and South Head. Many of the walkways have extensive fencing due to the proximity to cliff edges.

Recreation

The Gap Bluff Centre consists of two imposing former military buildings. These buildings, the Armoury and the Officers Mess, have both been significantly altered and have served as function centres since the 1990s. The adjacent Gap Park and Gap Lookout is a key destination for international visitors and is generally well-known as 'The Gap'.

The precinct includes a walk which forms part of the Sydney Harbour Scenic Walk and in turn part of the Coastal Walk from Barrenjoey Headland to Royal National Park. Transport links via a cross-harbour water transport service, would improve visitor opportunities by allowing transport to Manly and other harbour destinations without having to return to Circular Quay.

The precinct provides spectacular views back to the city and has been a long-term popular venue for weddings and special events. The Gap Bluff precinct has links to Gap Park but requires development to enable a link to Camp Cove and South Head.

From a visitor perspective, the Watsons Bay area has many appealing features including accommodation, restaurants, hotel, shops, beach with swimming enclosure, fishing, walking tracks with extensive views, and historic sites. The area has public transport options of both bus and ferry. The Gap Bluff precinct contributes to this suite of opportunities.

This precinct is served by bus from Circular Quay, Edgecliff or Bondi Junction train stations and ferry from Circular Quay. It provides an iconic experience with spectacular coastal and harbour views.

The majority of visits are made by people living within one hour's travel time of this precinct. There is no park entry fee at this precinct.

What We Are Going To Do



Outcome 1

Conserve the natural values of the park

OUR AIM FOR THE PRECINCT

The precinct's vegetation will be managed to improve the condition of the regenerating bushland and to secure the viability of the population of *Acacia terminalis* subsp. *terminalis*.

WHAT WE ARE GOING TO DO

Monitor potential areas of asbestos contamination associated with the former army buildings and remove any exposed materials.

Implement a tree replacement strategy consistent with the *Conservation Management Plan 2010* for the precinct.

Ensure that any replacement plantings do not impede views to the harbour from the Armoury and Officers Mess.

Whole of park actions as they apply to Gap Bluff precinct

Implement Priority Actions for the recovery of *Acacia terminalis* subsp. *terminalis*.

Engage corporate and community volunteers to assist with the removal of weeds and restoration of the natural bushland.

In consultation with Woollahra Council, investigate options for improving the quality of stormwater flowing from the precinct into the harbour.

Implement *P. cinnamomi* management protocols for all works within the precinct.



Outcome 2

Celebrate and nurture contemporary and traditional Aboriginal culture

OUR AIM FOR THE PRECINCT

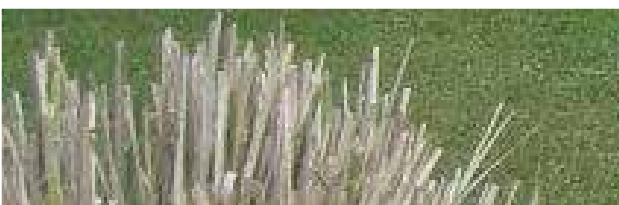
The Aboriginal community will be consulted as part of a whole-of-national park approach to the protection, management and interpretation of Aboriginal sites and history.

WHAT WE ARE GOING TO DO

As part of the precinct signage package, develop information that provides Aboriginal interpretation of the precinct and investigate dual naming.

Whole of park actions as they apply to Gap Bluff precinct

Liaise with local Aboriginal communities on matters relating to the protection, management and interpretation of the Aboriginal cultural heritage of The Gap and South Head area.





Outcome 3

Celebrate the historic heritage values of the park

OUR AIM FOR THE PRECINCT

The archaeological remains, historic buildings, installations and sites will be conserved and interpreted and, wherever possible, made accessible to the public.

WHAT WE ARE GOING TO DO

Protect heritage structures from potential damage from invasive plants (eg figs) visitor behaviour, operation of plant and equipment, vehicles and erosion.

Whole of park actions as they apply to Gap Bluff precinct

Implement conservation and maintenance works as specified in the Conservation Management Plan 2010.

Implement the *NPWS Fortifications of Sydney and Botany Bay Strategic Plan 2007* in relation to the fortifications within the Gap Bluff precinct.

Provide high-quality interpretive and educational material, considering all methods from static signs to audio and video allowing for consideration of diversity amongst visitors and commensurate with the significance of Gap Bluff.



Outcome 4

Provide enriching and memorable experiences in the park

OUR AIM FOR THE PRECINCT

Traditional passive recreation opportunities will be maintained and enriched with new tourism opportunities that allow a greater diversity of visitors to experience the magnificence of the harbour headland and spectacular coastal walk.

WHAT WE ARE GOING TO DO

The Gap Bluff complex of buildings is currently managed by NPWS for conferences, functions and staff accommodation. New adaptive uses for the buildings will be investigated to support sustainable visitor or tourist use and enjoyment. For example, the buildings may be adapted and leased for purposes such as visitor and tourist accommodation, administration, a restaurant or for conferences and functions.

Any new buildings or structures are to be located within an area bounded by the entrance road, the public toilets, the Armoury, the Cottage and the Officers Mess carpark, as marked on the Gap Bluff precinct map. No new buildings are permitted between the Officers Mess and The Gap.

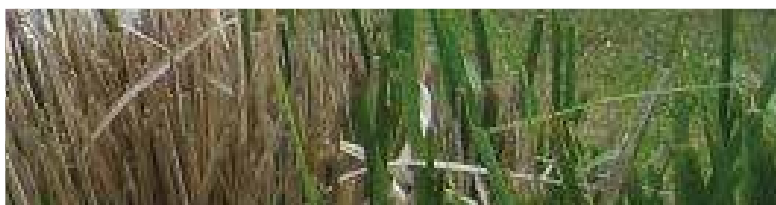
Upgrade the cliff-edge walking track from Gap Park to the boundary of HMAS Watson, to support the *Woollahra Council Gap Bluff Suicide Prevention Strategy* and improve visual amenity, public safety and accessibility.

Any new buildings or structures may be leased for purposes consistent with the management principles of the park, including but not limited to visitor or tourist accommodation, conferences and functions, restaurant, café, kiosk and other food outlets.

Whole of park actions as they apply to Gap Bluff precinct

Implement the *Sydney Harbour Scenic Walk Strategy 2010*. This will involve the upgrading of existing walking tracks and the construction of short sections of walking track to enable links with tracks in adjacent precincts.

Provide signs at the entrance to Gap Bluff, including a map and information about the precinct and the national park's walks.





Outcome 5

Improved access to the park for all

OUR AIM FOR THE PRECINCT

To provide opportunities through improved design of landscape and building interiors for all visitors to enjoy.

WHAT WE ARE GOING TO DO

Provide disabled parking spaces in carparking areas.

Install a multilingual package of directional, entry and interpretive signage, so that visitors to the Watsons Bay Village and the precinct are aware they are visiting a national park and places of significance.

Prepare a landscape design plan for the Gap Bluff precinct that takes full advantage of the opportunity to integrate historic and cultural heritage with native bushland and the excellent city and coastal views.

Whole of park actions as they apply to Gap Bluff precinct

Implement the NPWS Risk Management System in the park, including regular inspection of high risk structures such as lookouts, fortifications, heritage buildings, bridges and walking tracks along cliffs.



Outcome 6

Strengthen and create partnerships

OUR AIM FOR THE PRECINCT

Continue to support and build on partnerships including strong volunteer and government partnerships.

WHAT WE ARE GOING TO DO

Introduce park use fees in the parking area at the Cliff Street and Military Road intersection.

Maintain liaison with NSW Police and Woollahra Council regarding operational management of the site and the implementation of the *Gap Bluff Suicide Prevention Strategy*.

Strengthen the partnership with Woollahra Council around managing issues of joint concern such as the Sydney Harbour Scenic Walk project, carparks and Gap Park links.

Whole of park actions as they apply to Gap Bluff precinct

Continue to support the volunteer bush regeneration program.





Outcome 7

Robust management of the park is sustained

OUR AIM FOR THE PRECINCT

The precinct will provide an excellent example of how a commercial partnership can be developed to provide high-quality visitor experiences consistent with park values.

WHAT WE ARE GOING TO DO

Realise the potential for exemplary adaptive re-use management of the Gap Bluff precinct. Provide increased opportunities for visitor appreciation and access to the site through investigation of appropriate and sustainable community and commercial uses.

Whole of park actions as they apply to Gap Bluff precinct

Reduce waste collection requirements through recycling and visitor education programs.

Incorporate specific environmental sustainability requirements into any commercial leases or licences established in the precinct.

Continue energy and water saving initiatives such as harvesting rainwater through the installation of water tanks for water re-use in toilets and for external uses including gardens.



Outcome 8

Contribute to the goal of easy and safe transport to and within the park

OUR AIM FOR THE PRECINCT

Negotiations with adjacent land managers, public transport providers and local councils will result in transport, traffic and parking solutions that are acceptable to all.

WHAT WE ARE GOING TO DO

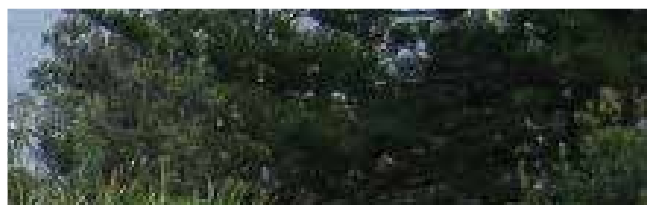
Install directional and interpretive signs to and from Watsons Bay public transport locations.

Whole of park actions as they apply to Gap Bluff precinct

Support and promote the implementation of a regular water transport service to Watsons Bay, as part of an outer harbour service to Manly, Quarantine Station and Clifton Gardens, to complement the existing Sydney Ferries and Matilda Cruises services.

Identify routes for bicycle travel to the park consistent with local government bike plans and, where appropriate, provide bicycle racks.

Permit bicycles on public vehicular roads but not on walking tracks.





Precinct 04: North Head

The focus for this precinct is complex.

Both the precinct's cultural and natural heritage is highly significant. The challenge is to successfully manage a range of both traditional and new visitation opportunities and high visitation demand, whilst conserving the precinct's heritage under a whole-of-headland approach.

North Head is characterised by its visual prominence and isolation. The headland holds special significance to Aboriginal people and its location, geology and history of development and use have given rise to a remarkable collection of flora and fauna and historic sites.

North Head precinct, at 183 hectares in area, is the largest of all the Sydney Harbour National Park precincts. The precinct surrounds the North Head Sanctuary (former School of Artillery) which is managed by the Sydney Harbour Federation Trust (SHFT). Together, these public lands form a significant parcel of around 260 hectares of public parklands. These parklands lend themselves to a high level of integration across the boundaries of tenure. NPWS is committed to working with SHFT to achieve this objective. SHFT has made a significant contribution towards such integrated management by declaring the Former School of Artillery as an environmental 'sanctuary'. This emphasises the sanctuary qualities inherent in the headland's status as a virtual island with only one road entry point

North Head contains relatively intact and rare ecosystems and significant cultural heritage, providing opportunities for conservation, education, research and recreation. The awe-inspiring views, from spectacular cliff-top vantage points out to sea and across the harbour, attract many visitors.

North Head is not just a natural landmark but a recreational treasure. The

potential for an increase in the scope and variety of recreational opportunities based around the sanctuary values is well recognised by land managers and eagerly sought by visitors and operators alike.

The nationally significant and National Heritage listed North Head includes the Quarantine Station, a site of over 70 heritage buildings. The site provides services in the areas of cultural tourism, accommodation, conferences and functions under a leasehold arrangement. The operator of the Quarantine Station, and potentially those within the Artillery School, are major partners in developing and offering diverse and high-quality experiences for visitors to North Head.

North Head is the focus for **Project 9 North Head Sanctuary** based around the concept of the North Head Sanctuary. The aim of this project is to create a sanctuary for endangered flora and fauna across the whole of North Head. This will involve all North Head stakeholders, volunteers, tertiary institutions, lessees and other land managers and will also ensure the integration of the terrestrial areas of North Head and Dobroyd Head with the marine protected areas of North Harbour and Cabbage Tree Bay aquatic reserves. The complex and diverse nature of the headland encompasses components of seven other key projects including:

- » **Project 1 Bushland Health**
- » **Project 2 Conservation of Threatened Species, Populations and Communities**
- » **Project 3 Aboriginal Discovery Partnership**
- » **Project 6 Sydney Harbour Scenic Walk**
- » **Project 7 Enhanced Park Access**
- » **Project 10 Climate Change Mitigation**
- » **Project 12 The Harbour Shuttle**

Details of these projects are included in Section 01.

The Precinct and its Context

Description

North Head forms the northern headland of Sydney Harbour. Located in the Manly local government area, land-based entry to this precinct is only possible through the Manly central business district and residential streets.

North Head Scenic Drive, Collins Beach Road and Bluefish Road provide public and management vehicular access routes within the headland.

The headland includes the Quarantine Station in Sydney Harbour National Park, former School of Artillery and North Fort Artillery Museum managed by SHFT, Australian Institute of Police Management (AIPM) and the North Head Sewerage Treatment Plant. A number of institutions are located between the North Head precinct and the Manly residential area including St Paul's College school, St Patrick's Estate including the International College of Management and new boutique housing, and Manly Hospital.

The Sydney Harbour National Park component of North Head is 183.52 hectares of the total of around 275 hectares. The remainder of the land is managed by SHFT (73.75 hectares of which 10 hectares is the Department of Defence's, North Fort), Sydney Water (16.06 hectares) and the Australian Institute of Police Management (1.74 hectares).

Planning context

The precinct falls within the Manly local government area and is zoned 8(a) National Park. The North Head School of Artillery is zoned special uses 5(a). The entire headland is a Foreshore Scenic Protection Area.

The *Manly Local Environmental Plan* (LEP) lists the Quarantine Station, North Head fortifications, roadway, walls, School of Artillery and cemetery as items of the environmental heritage of Manly under Schedule 4 of the LEP.

Of further relevance to this precinct, Manly Council has prepared coastline management plans for North Harbour and Manly Cove.

Other legislation requiring consideration includes but is not limited to:

- » *Rural Fires Act 1997*
- » *Threatened Species Conservation Act 1995*
- » *Fisheries Management Act 1994 No 38*
- » Fisheries Management (Aquatic Reserves) Regulation 2002
- » *Environment Protection and Biodiversity Conservation (EPBC) Act 1999*

North Head – Sydney, of which Sydney Harbour National Park is a part, has been assessed by the Australian Heritage Council and was included as a place on the National Heritage List in 2006.

The *Sydney Harbour Federation Trust Act 2001* applies to lands that adjoin the park.

Under this Act, plans prepared by the Trust must accord with the objects of the Trust.

NON-STATUTORY PLANS

Non-statutory plans relevant to this precinct include but are not limited to:

- » *Sharing Sydney Harbour Access Plan (SSHAP) 2003*
- » *Sydney Harbour Foreshores and Waterways Area Development Control Plan 2005*. This DCP is a non-statutory document that supports the Harbour SEPP and applies to Sydney Harbour and its foreshores.

Further details about the planning context are provided in Section 04 Appendices.

Significant Values and Considerations

Natural features

North Head was formed 90 million years ago during the Late Cretaceous Period. Following rifting of the Tasman Sea and uplift of the Hornsby Plateau, stream erosion began to cut into the plateau surface. This erosion excavated the valley system now flooded by Sydney Harbour and left behind the ridges and plateau remnants forming the high ground and headlands around the harbour. There have been at least eight sea level changes over the past 700,000 years, and as a result of these changes in sea level, North Head has on various occasions formed a mesa, an island and a tied island. The main valleys of North Head are the landward extensions of these ancient valleys in the bed of Sydney Harbour. The largest valley extends from Manly Hospital to Collins Beach and is the landward extension of the palaeovalley in Spring Cove.

North Head is a tied island, composed primarily of Triassic age sandstone, shale and laminite from the Hawkesbury Sandstone and Newport Formations, which are exposed in the cliffs and rock platforms from outer North Head to Shelly Beach Headland. Above the 60 metre contour, North Head is a plateau with a central north-south trending ridge of Pleistocene-aged dune sands up to 30 metres thick. These sands are a significant aquifer; wetlands are developed where the sand deposits are shallow and where sand chokes valleys on the western side and springs rise at the

boundary between the sands and the Hawkesbury Sandstone. These feed the perennial stream entering the harbour at Collins Beach, the stream at Quarantine Station and the stream flowing beside the Sewage Treatment Works.

The North Head precinct contains a more expansive area of bushland than any other precinct in the park, and protection of the natural heritage values are a high priority for this precinct. North Head has a mosaic of vegetation communities including Sydney Harbour's most extensive area of heath and scrub vegetation; the most notable being the largest remaining example of Eastern Suburbs Banksia Scrub (ESBS), listed as an endangered ecological community. The natural ecosystems have been partly protected by North Head's isolation, but even within this precinct have been both fragmented and subjected to varying degrees of human impact. This includes clearance of much of the headland for military purposes. North Head's unusual history of development and management has left a legacy on the landscape. However, even the lawn areas within North Head provide important habitat for at least some species, such as long-nosed bandicoots *Perameles nasuta* which forage extensively in these grassed areas.

Approximately 460 species of plants have been found at North Head within the different vegetation communities. Recent mapping identifies eight different

vegetation communities on the headland: coastal rock-plate heath, coastal sandstone plateau heath, Eastern Suburbs Banksia Scrub (ESBS), coastal sandstone ridge-top woodland, coastal sandstone gully forest, littoral thicket and a small patch of temperate littoral rainforest. The coastal sandstone heaths and scrub form dense vegetation thickets up to 2 metres high on shallow stony soils on Hawkesbury Sandstone. The heath is dominated by sclerophyllous vegetation such as heath banksia *Banksia ericifolia*, coastal banksia *B. integrifolia*, red bloodwood *Corymbia gummifera*, smooth-barked apple *Angophora costata*, various heath species, and tea-tree *Leptospermum laevigatum*. Common ESBS species include *B. ericifolia*, *B. serrata*, *Eriostemon australasius*, *Leptospermum laevigatum*, *Monotoca elliptica*, *Pteridium esculentum*, *Ricinocarpos pinifolius* and *Xanthorrhoea resinifera*. The coastal sandstone gully forest with smooth-barked apple *Angophora costata*, grey gum *E. punctata* and forest red gum *E. tereticornis* is found on more sheltered slopes and near creeklines such as on the western side of North Head. Coastal sandstone ridgetop woodland with smooth-barked apple and bangalay *E. botryoides* is found in more exposed sandstone slopes.

There are four plant species listed under the NSW TSC Act or the Commonwealth EPBC Act recorded on North Head: the sunshine wattle *Acacia terminalis* subsp. *terminalis* (endangered); Camfield's

stringybark *Eucalyptus camfieldii* (vulnerable); the hairy geebung *Persoonia hirsuta* (endangered); and the rice flower *Pimelea curviflora* var. *curviflora* (vulnerable); although the latter species may be a planted individual. In addition, a further five regionally significant plant species occur across North Head: *Guringalia dimorpha*, *Hibbertia nitida*, *Darwinia leptantha*, *Erythrorchis cassythoides* and *Rulinga hermanniifolia*.

The fauna and flora of this precinct are perhaps better known than other precincts, as numerous flora and fauna surveys have been conducted for the headland including a systematic survey in 1986 and recent surveys commissioned by SHFT. A total of 146 fauna species have been recorded within the North Head precinct including 106 bird species (seven of which are introduced species), 20 mammals (nine of which are introduced species), 14 reptiles and six amphibians. However, some of these species such as the brown antechinus *Antechinus stuartii* and the native bush rat *Rattus fuscipes* now no longer occur.

Probably the most significant elements of the fauna at North Head are the two populations listed as endangered under the TSC Act: the endangered long-nosed bandicoot *Perameles nasuta* population at North Head and the endangered little penguin *Eudyptula minor* population in the Manly Point area. Of further

importance is the declaration of 'critical habitat' for the little penguin population, which includes nesting and potential nesting areas in this precinct from west of Collins Beach to Cannae Point and includes Collins, Store and Quarantine Beaches; foraging habitat which extends up to 50 metres from the shore line and lies within North (Sydney) Harbour Aquatic Reserve, is included as critical habitat. Fox control to protect both these threatened populations, has been identified as a high priority in the state-wide Fox Threat Abatement Plan. Any works or developments in these precincts will need to be consistent with the conservation of these two populations.

In addition to threatened fauna species, 28 regionally significant fauna species have been recorded on the headland. Some introduced species, in addition to foxes, have the potential to impact on flora and fauna on North Head, particularly the introduced black rat and the rabbit. At times, introduced rabbit populations on North Head can be large, and have the potential to impact on the Eastern Suburbs Banksia Scrub EEC and regeneration of other species, particularly post-fire, as well as on cultural heritage values; at such times, rabbit control is a priority for this precinct.

The extensive bushland of North Head provides habitat for at least seven threatened fauna species listed as vulnerable: red-crowned toadlet *Pseudophryne australis*,

little eagle *Hieraetus morphnoides*, spotted harrier *Circus assimilis*, powerful owl *Ninox strenua*, barking owl *Ninox connivens*, grey-headed flying-fox *Pteropus poliocephalus* and the eastern bentwing-bat *Miniopterus schreibersii oceanensis*. Whilst not all of these species are resident, (for example, some such as the wide-ranging grey-headed flying-fox, powerful and barking owls just forage within the precinct intermittently), maintaining suitable habitat for these species is a priority for this precinct.

Despite North Head's relative isolation, there are a number of threats to the biodiversity conserved in this precinct which include:

- » Predation of flora and fauna by domestic and feral animals
- » Fatalities due to vehicular traffic
- » Fragmentation and loss of habitat due to clearing for development of carparks, walking tracks and new facilities
- » Weed infestation
- » Inappropriate fire regimes
- » Stormwater run-off causing changes to nutrient levels, erosion, weed seed dispersal and leading to dieback and the spread of fungus *Phytophthora cinnamomi*.

Addressing these threats to ensure that the natural heritage values of North Head are maintained, is a priority for this precinct.

Cultural history

North Head precinct is part of the Kay-ye-my clan's traditional Country. Over hundreds if not thousands of years, the park and surrounds provided essentials for life, being shelter, food resources and fresh water. North Head was also a pivotal point for Aboriginal ceremony.

Evidence of Aboriginal use of North Head has been recorded in at least 35 separate locations across this landscape. Sites include rock engravings, rock shelters with deposit and/or art, open camp sites, middens and burials. Most sites are concentrated on the western, harbour-side of North Head, generally in association with the small coves and beaches and close to fresh water sources.

The shell middens commonly occur in rock shelters, usually with shallow deposits. A range of rocky shore shell species but very few fish and marine bone and few stone artefacts have been recorded in these shelters. Implements include a shell possibly hafted onto the end of spear throwers (one of three locations in Sydney) and there is possible evidence for skin working identified on stone and bone artefacts from earlier undated excavations in rock shelters at Collins Cove. At least two edge-ground axes have been located at North Head, as well a small number of stone flakes.

At least one burial has been located in a rock shelter on North Head, associated with shell material. The skeleton of a child and an adult were removed from a rock shelter at Cannae Point in the 1960s.

Both rock engravings and painted motifs occur at North Head. Engravings occur in rock shelters and on open rock platforms, and include footprints, a fish or whale, a wallaby, circles and a shark. A source of white and reddish/brown ochre has been located on North Head.

A declared Aboriginal Place (Guringai Resting Place – Quarantine Station) is located on North Head and Aboriginal place names have been recorded for locations on the southern side of North Head, and include Boree, and Garungal or Car-gang-gel.

As the most dominant harbour headland, North Head was of importance for navigation from First Fleet times. By 1809, navigational plans showed an obelisk in the area that would become the quarantine station. A ten metre high obelisk still exists on this site making it potentially one of the oldest European structures on the foreshores of Sydney Harbour. From 1828, Spring Cove was used for ship-based quarantine until quarantine activities were transferred to Quarantine Beach, in 1837 where on-shore facilities were established. Store Beach to the north provided a separate point of entry for supplies and personnel. Although the whole of the headland was set aside for quarantine purposes, the area close to Quarantine Beach developed as the focus for quarantine activity with functional areas located on the valleys, hillsides and ridges surrounding Store and Quarantine

beaches. In the 1890s, the western boundary of the quarantine area was defined by a stone wall. Modified in the 1930s, it now acts as a physical boundary to the relatively undeveloped, natural bushland areas of North Head.

North Head remained isolated until 1859 when a 60-acre land grant adjoining the quarantine area was made for the construction of a Catholic Archbishop's residence. A seminary was built on this land in 1879.

It was not until the 1930s that major defence installations were constructed at North Head. The construction of gun emplacements, magazines, engine room, pump chambers, tunnels and plotting room and the mounting of guns were completed early in 1936 and were based on the assessment of the potential threat from the Japanese navy. The barracks and other accommodation were constructed in the late 1930s. During World War II, North Head was one of the most heavily fortified sites in Australian history. The radar station installed at Blue Fish in 1942 is one of only two installed and is the oldest surviving in Australia. The Army School of Artillery was established at North Head in 1946 and the strength of the school fluctuated over the years with a resurgence in the 1960s during the Vietnam War. Due to the isolation and limitations of the site, the school was relocated to Victoria in 1998. The School of Artillery is now managed by the Sydney Harbour Federation Trust (SHFT).

Recreation

North Head's deep-water anchorages, rugged cliffs and landward isthmus provided an easily-guarded, naturally-isolated site for quarantine purposes. This sense of isolation has since been reinforced by:

- » the Catholic Church's St Patrick's Estate and the Commonwealth government's control of the area which has resulted in the persistence of most of the headland's native vegetation
- » views into and from North Head, in particular from the Quarantine Station, in which little development is visible
- » the landmark location of North Head at the mouth of Middle Harbour and the seaward entrance to Port Jackson from the Pacific Ocean
- » the relatively large scale and size of North Head in the context of Port Jackson's scale.

North Head precinct is served by a ferry from Circular Quay to Manly Wharf and by bus from Manly Wharf. Private vehicles can access the precinct through Manly, with carparking locations at three sites within the precinct.

A wide range of recreation activities take place in North Head precinct delivering a range of experiences across iconic, cultural and urban respite themes. There is an overwhelming sense of isolation from every day city life.

Naturalness varies widely across the precinct with nooks of more natural areas accessible by foot for those visitors seeking quietness and seclusion, while other areas are open and modified from the natural state.

The headland is a spectacular vantage point for regular local visitors and tourists. Sights include ships passing through Sydney Heads and the seasonal whale migration. Major events such as the start of the annual Sydney Hobart Yacht Race and New Year's Eve fireworks attract large crowds and have been and will continue to be well managed by NPWS. NPWS will continue to work with the Trust and the Quarantine Station lessees to ensure events that attract large numbers of visitors are well managed and adequately consider the headland's wildlife. Large sections of the national park's bushland habitat are protected from visitation impacts, in that access to these areas is prohibited. By developing a system of walking tracks and restricting activities such as triathlons and other sports to roads and walking tracks, these areas will remain protected.

The precinct includes the 30-hectare Quarantine Station area managed by a lessee principally for tourism purposes. Visitor opportunities provided by the lessee include dining, a range of accommodation types, guided tours, function and conference venues, a visitor centre and

educational programs. In addition to other transport options, the Quarantine Station wharf is available for visitor transfer by water taxi or other vessels.

The precinct's walking tracks and routes connect with those on other public land tenures including the walk to Shelly Beach and Little Manly Cove. Connectivity between the national park visitor sites in this precinct is through the North Head Sanctuary managed by the SHFT.

The three beaches in this precinct provide for still-water swimming and non-motorised boat landing.

The precinct is generally unsuitable for group picnics with few open grass areas. However, the North Head Sanctuary has easily accessible picnic sites and also a visitor centre, self-guided walk, museum and café.

With significant population increases projected in older age groups and the generally flat nature of the headland, improved opportunities for the mobility impaired, such as bird hides and high standard tracks and lookout platforms, would be well utilised.

Visitor numbers are highest in the Fairfax Lookout and Quarantine Station areas and lowest along the Blue Fish Track.

The precinct's individual sites vary in their level of attraction. Fairfax Lookout attracts a significant number of international, national and state visitors. Store Beach, Blue Fish Track and the Quarantine Station attract a significant number of Sydneysiders and Collins Flat Beach is overwhelmingly visited by local residents.

There is a park use fee at carparks on the headland. Other sites do not have an entry cost for day visitors. North Head Sanctuary does not currently charge a park entry or use fee.

Visitor numbers and visitor behaviour are having a noticeable impact on recreational quality at Store Beach and Collins Beach, particularly during the summer months. This is generally attributed to a lack of nearby toilet facilities and wind and water-borne litter, rather than litter left by visitors.

ADVENTURE ACTIVITIES

Background

Rock climbing is prohibited under the National Parks and Wildlife Regulation except where climbing is expressly approved in the relevant plan of management. Across NSW, approval for climbing has been granted in specific areas within Blue Mountains, Warrumbungle and Ku-ring-gai Chase national parks. Approval has not previously been provided in Sydney Harbour National Park due to the small size of the park, the incompatibility with other park users and the environmental impacts associated with rock climbing.

Desired Outcome

- » To provide opportunities for special visitor experiences through carefully selected and controlled adventure activities that involve minimal risk to participants and for environmental damage.

Issues

- » Adventure activities such as rock climbing have the potential to conflict with other park uses at North Head. The number of visitors to North Head is increasing and most visitors visit North Head for the harbour and city views, for whale watching and for viewing specific harbour events such as the start of the Sydney Hobart Yacht Race.
- » There is an acknowledged increased risk to visitors who may be enticed to the cliff edge to view rock climbers

- » Trampling of vegetation and the creation of new tracks is damaging to the environment and to the flora and fauna of the area
- » Rescue operations are hazardous
- » Geotechnical reports indicate that the cliffs at North Head are unstable
- » Much of the face at North Head is comprised of poor quality, 'chossy' rock.
- » Fishing clubs have voiced concern about any outcomes in the plan of management that may impact their ability to utilise ladders on the cliff faces to access the rock platforms.

North Head precinct will be included in the preparation of a park-wide strategy to be known as the Sydney Harbour National Park Cliff Access Strategy (SHNPCAS).

The SHNPCAS will assess the suitability of specific locations in the park for controlled cliff access. The assessment process will include consideration of the following:

- » Expert advice on the suitability of the various sections of rock face for climbing activities, including but not limited to, a geotechnical report
- » Advice from NSW Police and other rescue agencies
- » The availability of practical options for restricting access to the cliff edge

Built environment and services

- » The adequacy and legality of any fixing points or other infrastructure used to access the cliff edge or cliff face
- » An assessment of the environmental impacts of installing any required infrastructure
- » The development of a program to conduct ongoing monitoring of any approved sites in regard to environmental condition and safety.

Approval will only be given for access to sites that satisfy all of these matters and subject to the implementation of any conditions arising from the assessment processes.

A lease or licence may be issued for the installation, maintenance and operation of any infrastructure identified in the SHNPCAS.

Orienteering and rogaining will be permitted on formed walking tracks and roads with written consent. Provision of a risk assessment and appropriate public liability insurance will be a requirement for consent.

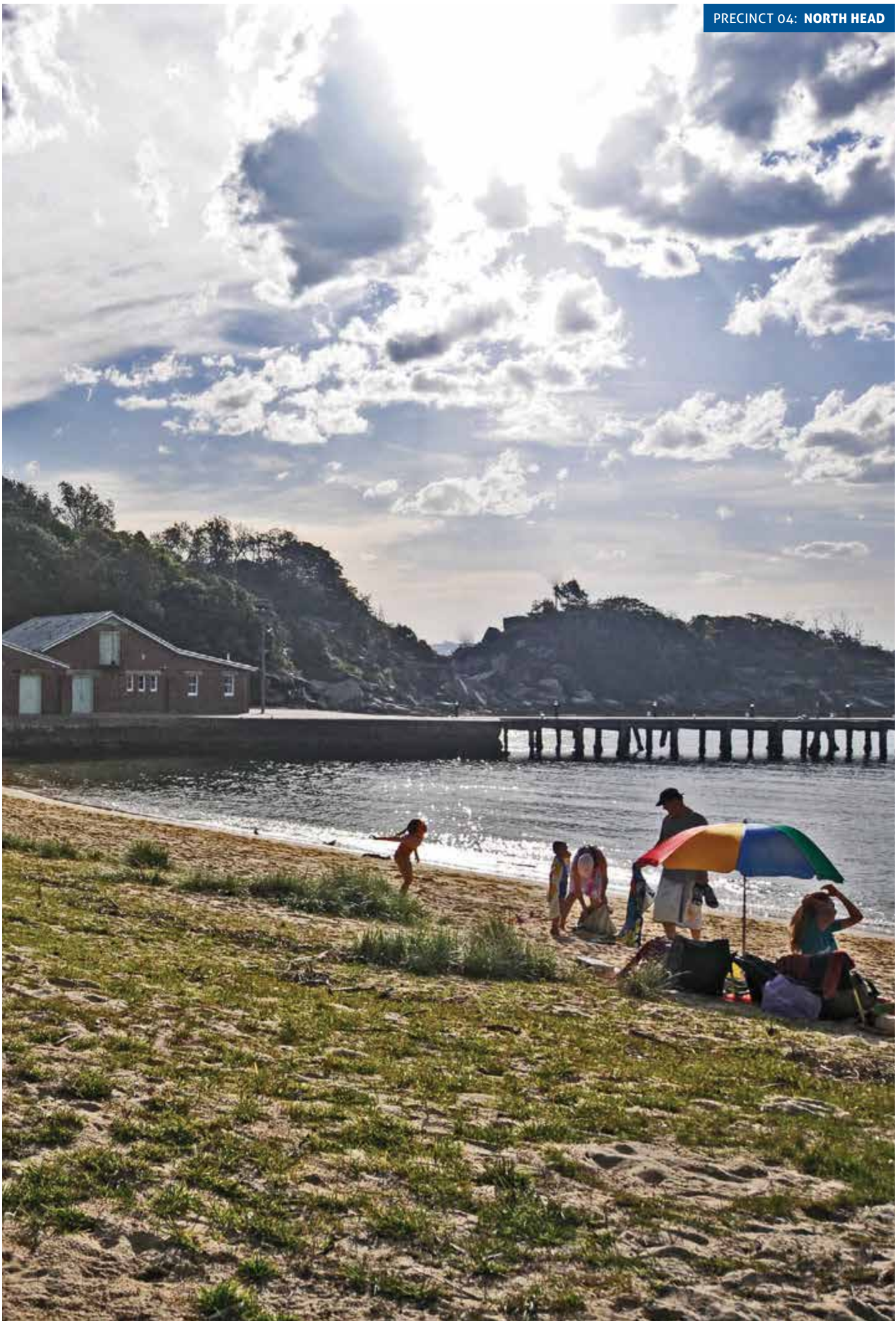
Base jumping is not permitted in Sydney Harbour National Park.

Support will continue for relevant groups and authorities with search and rescue activities in the planning area.

An opportunity may arise in co-operation with an approved commercial operator, to provide safe access to the rock platform for anglers.

The precinct has an extensive collection of buildings and structures, mostly located at the Quarantine Station, with 65 buildings in total. The precinct's World War II defence structures are extensive and range in levels of significance, although are generally in poor condition. Other land managers have equally large numbers of buildings located at the School of Artillery, Australian Institute of Police Management, North Fort Museum, Sydney Water Sewerage Treatment plant and the adjacent complexes of Manly Hospital and St Patrick's Estate. The North Fort area in the North Head Sanctuary is being considered as a visitor hub for the whole headland, with reorganisation and upgrading of carparking, toilets and café and visitor information facilities.

The precinct includes a network of roads, walking tracks, carparks and pathways. Services include town water, electricity and different levels of sewerage management.



What We Are Going To Do



Outcome 1

Conserve the natural values of the park

OUR AIM FOR THE PRECINCT

The headland's ecosystems, through a whole-of-headland approach, will be conserved through active management including the amelioration of environmental impacts associated with pest species, inappropriate visitor use and past land-use practice.

WHAT WE ARE GOING TO DO

Enter into an agreement, such as a Memorandum of Understanding initially with SHFT and the other major land managers on the headland, to secure optimal management of the headland's natural heritage.

Work with NSW Department of Primary Industries (DPI), SHFT and other key stakeholders to expand the North Head Sanctuary to incorporate the Cabbage Tree Bay Aquatic Reserve and North Harbour Aquatic Reserve.

Investigate linking the aquatic reserves around the headland with the national park through establishing an intertidal or marine protected area.

Support SHFT in the implementation of the 'Sydney Harbour Green Precincts' energy and water project and expand where appropriate.

Support Manly Council and SHFT in the 'no domestic pet policy' for those living within the precinct and in close proximity to boundaries.

Maintain the evening North Head Scenic Drive road closures to reduce wildlife fatalities and control vandalism.

Liaise with the NSW Department of Health regarding the potential transfer or rezoning of those lands below Manly Hospital which may have sufficient natural heritage values to warrant their inclusion in the park.

Whole of park actions as they apply to North Head precinct

Establish and implement strategies to facilitate the continued systematic collection of floristic and faunal data of bushland areas, to support base data collected in 1986.

Investigate re-introduction of native fauna species that once lived on the headland, working with SHFT and other North Head stakeholders.

Prepare and implement a strategy to improve the management of stormwater flowing into and across the park and into the harbour in partnership with Manly Council, Manly Hospital and individual neighbours. As part of this strategy, give consideration to the future management of lands at the rear of Manly Hospital above Collins Beach as a means of improved management of this environment and, in particular, the area of littoral rainforest.

Continue to implement the recovery plans for the endangered species, communities and populations found on the headland including *E. minor* and *P. nasuta* populations, littoral rainforest and ESBS.

Implement innovative energy and water saving initiatives and reduce waste collection requirements through recycling and visitor education programs.

Prepare and implement a policy for the management of vegetation that detracts from or impedes cultural and public views, such as from major lookouts and fortifications.

Amend the fire management strategy for the headland as new research on threatened species requirements, maintenance of biodiversity and asset protection becomes available.

Rehabilitate tracks and trails constructed for prescribed burning or wildfire operations.

Prioritise the rehabilitation of threatened species habitat in precinct weed management programs.

Retain exotic species with significant cultural values and manage them to prevent spread into native plant communities.





Outcome 2

Celebrate and nurture contemporary and traditional Aboriginal culture

OUR AIM FOR THE PRECINCT

The significance of North Head to the Aboriginal people is acknowledged and respected. The management and interpretation of sites, and spiritual and historical connections, will involve the Aboriginal people of Sydney.

WHAT WE ARE GOING TO DO

Investigate the development of a bush food and medicinal plant and animal interpretive walking track at North Head.

Research stories concerning little penguin *E. minor* and its significance to the Aboriginal community past and present.

Whole of park actions as they apply to North Head precinct

Continue to liaise with the local Aboriginal community on matters relating to the protection, management and interpretation of Aboriginal cultural heritage across the headland and including the marine protected areas.

Research and facilitate recording of contemporary, contact and pre-contact culture of the precinct, including regular inspection and recording of Aboriginal site condition.

Undertake conservation works in consultation with the local Aboriginal community to protect Aboriginal sites if any are being negatively impacted by visitors, feral animals or any other natural or artificial process.

Facilitate on-park activities to encourage improved understanding of Aboriginal culture among both the Aboriginal and non-Aboriginal community.

Consider dual naming of locations within the precinct to reflect previous and ongoing connection to Country.



Outcome 3

Celebrate the historic heritage values of the park

OUR AIM FOR THE PRECINCT

The precinct's historic heritage will be managed and conserved in a whole-of-headland context, providing greater opportunity for understanding of its range and complexity.

WHAT WE ARE GOING TO DO

Continue to lease the Quarantine Station buildings for the purposes permitted under the *Conditions of Approval and Lease 2002* including accommodation and ancillary facilities, conferences, functions and events, restaurant and educational and guided activities. The site and collections are to be managed consistent with the headland's status on the National Heritage List.

Remove vegetation growing in heritage structures and protect these structures from physical damage from erosion, visitors, vehicles and other plant and equipment such as mowers.

Record, assess and prepare a conservation program for stone structures including walls on the headland.

Record and conserve rock engravings at Old Mans Hat.

Whole of park actions as they apply to North Head precinct

The recommendations of the *Quarantine Station Conservation Management Plan* will continue to be implemented.

Conserve, manage and interpret the precinct's military history and sites in a whole-of-headland context, implementing the recommendations in the *NPWS Fortifications of Sydney Harbour and Botany Bay Strategic Plan 2007*.





Outcome 4

Provide enriching and memorable experiences in the park

OUR AIM FOR THE PRECINCT

The range of recreational opportunities will be maintained but will be reviewed in light of visitor impacts at Fairfax Lookout and the three beaches. Management will be guided by the headland sanctuary objectives and will be sensitive to the precinct's significant natural and cultural values.

WHAT WE ARE GOING TO DO

Work with SHFT to share the new proposed 'entry point' to the sanctuary on North Fort Road.

Assess and, where required, improve precinct carparking and other visitor facilities and services in consultation with SHFT, to enhance enjoyment and to complement those offered by adjacent public parkland providers.

Locations on North Head will be assessed as part of the Sydney Harbour National Park Cliff Access Strategy for possible use for rock climbing, access for rock fishing and commercial tours.

Erect signs to manage the illegal use and installation of ladders and other equipment used to climb the rock faces at North Head.

Ensure management of vehicle access during special events is consistent with the objectives of the park and the sanctuary concept and with the development and implementation of a transport management policy.

Investigate the installation of toilet facilities in the Collins Beach area.

Reduce risks to wildlife by implementing measures to discourage inappropriate after hours use of the precinct.

Work with St Patrick's Estate and Manly Council to secure access for the Sydney Harbour Scenic Walk (SHSW) from Shelley Beach through St Patrick's land, to the boundary of Sydney Harbour National Park.

Whole of park actions as they apply to North Head precinct

Continue to work with SHFT and other North Head stakeholders to develop the SHSW with a commitment to minimal environmental impact and visitor safety. The *Sydney Harbour Scenic Walk Strategy 2010* includes a number of proposed new walking tracks, the upgrading of others and the formalisation of lookouts on the headland. These include some of the following:

A new walking track is proposed around the outer margin of the one way section of North Head Scenic Drive, to improve safety for visitors by providing separation of pedestrians from vehicle traffic.

A new walking track is to be constructed from the roundabout at the entrance to the Quarantine Station to the carpark at the end of Collins Beach Road.

A new walking track is proposed in the bushland at the back of Collins Beach to provide an alternative to the beach access.

A new low key lookout is proposed on the eastern side of North Head at the end of the old vehicle track off Gunners Walk. This will provide walkers with excellent coastal views and whale watching opportunities.

Rationalise the section of the SHSW which follows the boundary fence of the Sewerage Treatment Plant from North Head to Blue Fish Point.

Full details are available in the document *A Strategy for the Development of a Sydney Harbour Scenic Walk 2010* prepared by Gondwana Consulting.





Outcome 5

Improved access to the park for all

OUR AIM FOR THE PRECINCT

North Head precinct will provide a wide range of opportunities for people including those with disabilities and those from a diversity of cultural and linguistic backgrounds.

WHAT WE ARE GOING TO DO

Provide high-quality, well-designed landscape elements at the entrance to North Head at Park Hill Arch to demonstrate pride and excitement at what lies beyond on North Head.

Prepare and implement an integrated signage package for the precinct including entry, information, directional, regulatory and interpretive signage.

Construct a visitor viewing platform at the lookout adjacent to the North Fort entrance. Consideration is to be given to a design competition for this structure.

Improve access by developing new opportunities for the mobility impaired. These may include bird hides, accessible walking tracks, lookout platforms, and potentially new improved access opportunities in aquatic reserves.

Whole of park actions as they apply to North Head precinct

Seek advice from Manly Council Access Committee and others on improved and increased opportunities for the mobility impaired to enjoy the precinct.

Investigate the provision of multilingual translations when preparing interpretive, promotional and educational materials.

Ensure provision of adequate designated disabled parking spaces in all carparks in the precinct.

Design and adapt educational and interpretive facilities to be accessible for the mobility impaired.



Outcome 6

Strengthen and create partnerships

OUR AIM FOR THE PRECINCT

Continue to support and build on existing partnerships and create new partnerships.

WHAT WE ARE GOING TO DO

Investigate opportunities to integrate the visitor services and cultural tourism products offered at the Quarantine Station with other visitor experiences across the park.

Manage the little penguin critical habitat area in liaison with the Penguin Wardens, Taronga Zoo, Manly Council, NSW Roads and Maritime Services and NPWS Threatened Species Unit.

In collaboration with all North Head land managers, prepare a North Head Masterplan to guide the development and delivery of integrated visitor services, including the walking track network, parking and public toilet facilities. The plan will be publicly exhibited and comments invited.

Strengthen partnerships with groups such as the North Head Sanctuary Foundation, Manly Council and the Manly community generally to actively support, engage and work towards the holistic management of North Head.

Where appropriate, involve all North Head and Dobroyd Head stakeholders, DPI, volunteers, tertiary institutions, lessees and other land and aquatic area stakeholders and managers in the integrated management of the terrestrial areas of North Head and Dobroyd Head with the marine protected areas of North (Sydney) Harbour and Cabbage Tree Bay aquatic reserves.





Outcome 7

Robust management of the park is sustained

OUR AIM FOR THE PRECINCT

The precinct will provide an excellent example of sound park management, particularly in the areas of sustainability and the management of natural and cultural heritage values.

WHAT WE ARE GOING TO DO

Utilise the opportunity of a whole-of-headland approach to implement research, education and interpretation programs about the uniqueness of North Head within the urban environment and add to the knowledge bank of the possible effects of climate change.

Whole of park actions as they apply to North Head precinct

Strongly commit to the management of threatened species, populations and communities through the implementation of actions in relevant recovery plans, the priorities action statement and threat abatement plans to ensure the long-term persistence of viable populations.



Outcome 8

Contribute to the goal of easy and safe transport to and within the park

OUR AIM FOR THE PRECINCT

Manage and promote transport to, from and within the precinct in a way that supports and does not compromise the goals of the North Head sanctuary.

WHAT WE ARE GOING TO DO

Work with SHFT, other North Head stakeholders and transport operators to develop regular, safe and economical transport options for the precinct.

Consider a range of options for the movement of visitors within the precinct including access via Quarantine Station wharf.

Review the road network and parking options in a whole-of-headland approach.

Whole of park actions as they apply to North Head precinct

Identify routes for bicycle travel to the park consistent with local government bike plans and, where appropriate, provide bicycle racks.

Bicycles are permitted on public vehicular roads and service trails, including on designated routes within the Quarantine Station, but not on walking tracks throughout the precinct.







Precinct 05: Dobroyd Head

Dobroyd Head precinct provides the pivotal link between a number of areas of remnant bushland around the harbour. The intact condition of Dobroyd Head's vegetation results in natural values being given a dominant priority in this precinct.

Other important values of the precinct include a number of easily accessible Aboriginal engraving sites and the cluster of historic huts at Crater Valley. Recreational opportunities will focus on low impact activities such as bush walking, Discovery tours and learning and educational activities. Adventure activities will be discouraged.

Dobroyd Head precinct is located in the suburbs of Clontarf and Balgowlah Heights and forms part of the Middle Harbour and North Harbour foreshores. The precinct extends from Castle Rock in the south west to Forty Baskets Beach in the north west and covers an area of 75 hectares. Its four kilometres of shoreline includes Washaway Beach, Grotto Point, Crater Valley and Reef Beach, all linked by the Sydney Harbour Scenic Walk.

Arabanoo Lookout and Tania Park are located on the plateau above and the precinct includes a number of other scenic vantage points offering great views of the harbour, Manly, Quarantine Station and Sydney Heads.

The precinct, like many others in Sydney Harbour National Park, has a unique combination of ecological, historical, social and recreational features. These include the Aboriginal rock engravings and navigation lighthouse at Grotto Point, seven huts at Crater Valley, the secluded Reef Beach with an Aboriginal midden and burial site and a high diversity of flora and fauna.

The Sydney Harbour Scenic Walk and subsidiary tracks link these localities, allowing in-depth exploration of the precinct and beyond.

To improve access and visitor enjoyment and to ensure the long-term viability and integrity of the bush, Dobroyd Head precinct has been targeted in key projects in the plan of management. These include:

- » **Project 1 Bushland Health** and
- » **Project 6 Sydney Harbour Scenic Walk**

Details of these projects are included in Section 01.

The Precinct and its Context

Description

Dobroyd Head precinct lies to the west of North Head, forming the western boundary of the North (Sydney) Harbour Aquatic Reserve and the northern boundary at the entrance to Middle Harbour. The nearest Sydney suburbs are Balgowlah and Clontarf.

The precinct contains one of the largest areas of native bushland remaining on Sydney Harbour's foreshores, with its protection secured as part of the original reservation of Sydney Harbour National Park in 1975.

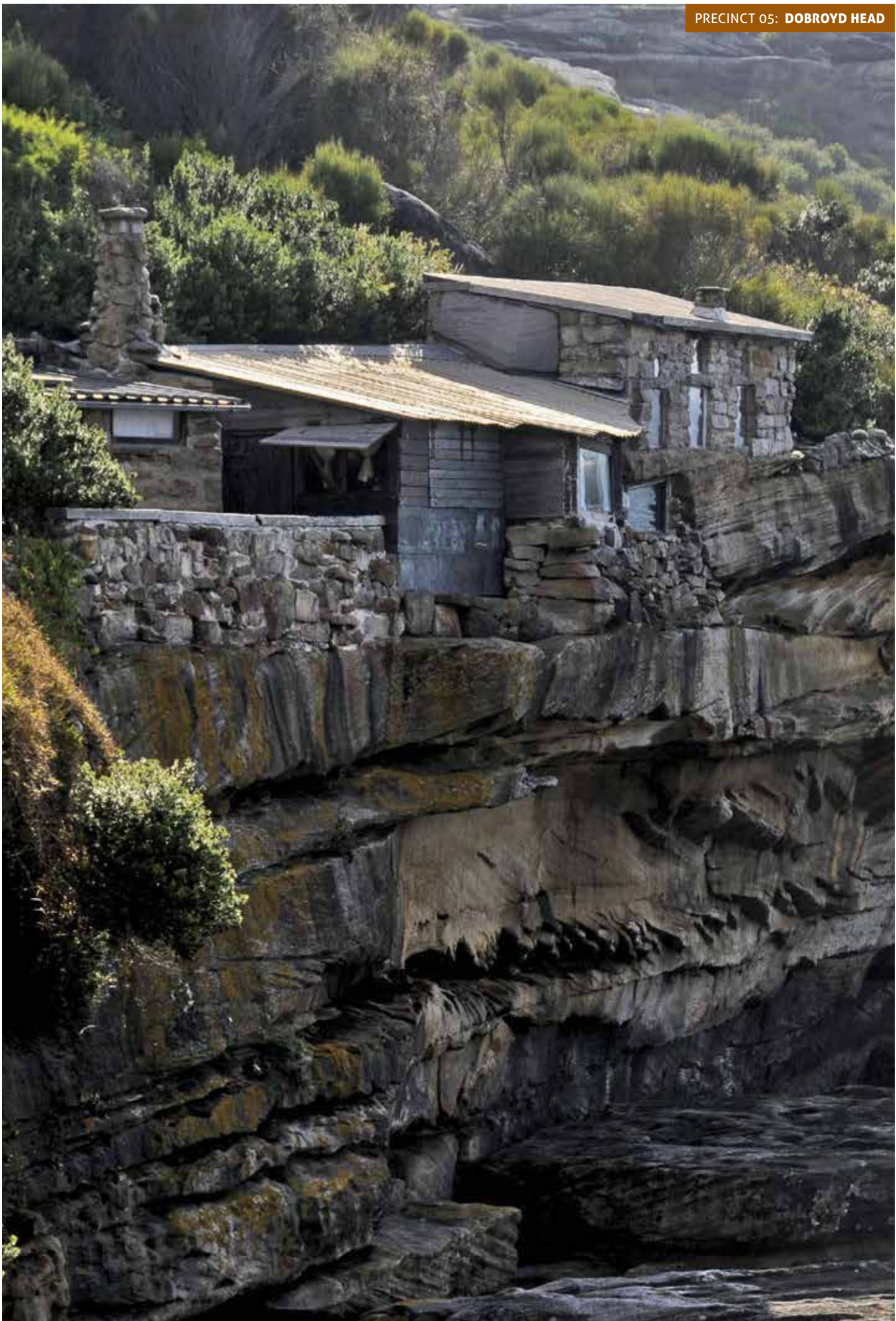
The diversity and richness of flora and fauna species is similar to North Head. These two headlands are linked by North (Sydney) Harbour Aquatic Reserve offering a breadth of protected area terrestrial and marine habitats, supporting flora and fauna populations such as the endangered little penguin *Eudyptula minor* population. The gazetted critical habitat for the *E. minor* population covers both North Head and Dobroyd Head.

Planning context

The precinct falls within the Manly local government area and is zoned 8 – *National Park* in the local environmental plan. Within the Dobroyd Head precinct, the Fortifications, Crater Valley Huts, Grotto Point Light, and the landscapes of Dobroyd Headland and Grotto Point and the Harbour Foreshores are listed under Schedule 4 as items of the environmental heritage of Manly local government area.

Further details about the planning context are provided in Section 04 Appendices.





Significant Values and Considerations

Natural features

After North Head, Dobroyd Head precinct contains the largest remnant of relatively undisturbed bushland in Sydney Harbour National Park. The spectacular landscape is dominated by Hawkesbury Sandstone of moderate relief with steep slopes and low cliffs above a rocky shoreline, with some sandy beaches. Triassic age sandstone, shale and laminite from the Hawkesbury sandstone and Newport formations are exposed in the cliffs and rock platforms. Two basaltic dykes, presumed to be of Jurassic age, intrude the Triassic rocks. Above the contour of Dobroyd Head is a plateau with a central north-south trending ridge of Pleistocene-aged dune sands up to 30 metres thick. These sands are a significant aquifer; wetlands are developed where the sand deposits are shallow and where sand chokes valleys on the western side and springs rise at the boundary between the sands and the Hawkesbury Sandstone.

Dobroyd Head precinct contains a mosaic of vegetation communities typical of Hawkesbury Sandstone including coastal sandstone plateau heath (some of which is wet heath and sedgeland), coastal rock plate heath, coastal sandstone headland scrub, coastal sandstone ridge-top woodland and coastal sandstone gully forest. The heath and scrub communities form dense vegetation thickets on shallow stony soils and dominant species include the heath and coastal Banksias *Banksia ericifolia* and *B. integrifolia*, scrub

she-oak *Allocasuarina distyla*, tea trees *Leptospermum laevigatum* and various other heath species including *Epacris* spp. On the slopes and low ridge-tops (up to 10 metres) Sydney sandstone ridge-top woodland occurs, and in more sheltered locations, coastal sandstone gully forest dominated by bangalay *Eucalyptus botryoides*, smooth-barked apple *Angophora costata*, and red bloodwood *Corymbia gummifera* occurs. In the wetter gullies, understorey species include the tall shrubs *Callicoma serratifolia*, lilly-pilly *Acmena smithii* and sweet pittosporum *Pittosporum undulatum*. The latter species is becoming a significant environmental weed. Within this precinct there are scattered rocky outcrops and small seepage areas dominated by the regionally significant shrub *Rulingia hermanniifolia*.

This precinct harbours a diverse flora, with the most recent vegetation survey recording 300 native plant species but also 103 introduced weed species. Two endangered plant species: the sunshine wattle *Acacia terminalis* subsp. *terminalis* and the magenta lilly-pilly *Syzigium paniculatum* have been recorded from this precinct, although the latter species is understood to have been planted in the hut garden in the 1930s and is unlikely to be a local, indigenous species.

An additional three regionally significant plant species, *Platysace stephensonii*, *Rulingia hermanniifolia* and *Leucopogon amplexicaulis* were found at Dobroyd Head during the most recent vegetation survey.

These varied vegetation communities also support a moderately diverse fauna that is representative of the fauna community that was once more widespread around the harbour foreshores. Around 107 species have been recorded from Dobroyd Head in the past, including five species of frog, 21 species of reptile, 69 species of native bird and seven species of native mammal. However, some of these species, such as the native bush rat *Rattus fuscipes* and the brown antechinus *Antechinus stuartii*, are now locally extinct on the headland. Some additional species of microbat probably also utilise the headland, but there has been little surveying for micro-bats across most of the precincts in Sydney Harbour National Park. A number of feral animal species occur in this precinct including five introduced bird species, introduced rats, foxes, and rabbits.

Three fauna species listed as vulnerable under the *Threatened Species Conservation Act 1995* (TSC Act), the red-crowned toadlet *Pseudophryne australis*, the grey-headed flying-fox *Pteropus poliocephalus* and the powerful owl *Ninox strenua*, are recorded regularly within this precinct. The

Cultural history

latter two species regularly forage within the precinct, and *P. australis* is a resident species with scattered records across the headland. In addition, the critically endangered regent honeyeater *Anthochaera phrygia* is an occasional visitor to the area when suitable species are flowering, being most recently recorded in 2004. The vulnerable superb fruit-dove *Ptilinopus superbus* has been recorded only on a single occasion and is undoubtedly a vagrant. Any works or developments in this precinct should also apply the considerations for the protection of *P. australis* habitat outlined under the Bradleys Head precinct profile, as well as ensure the protection of habitat for other threatened and non-threatened fauna and flora species. In addition to threatened species, 17 species of regionally significant fauna such as the she-oak skink *Cyclodomorphus michaeli*, southern scaly-foot *Pygopus lepidopus* (a legless lizard which is often mistaken for a snake), water rat *Hydromys chrysogaster*, eastern stone gecko *Diplodactylus vittatus*, tree-base litter skink *Carlia foliorum*, white-bellied sea-eagle *Haliaeetus leucogaster*, rock warbler *Origma solitaria* and whistling kite *Haliastur sphenurus* may be found in this predominantly bushland precinct.

Although not part of the critical habitat declaration for the endangered little penguin population *Eudyptula minor* in Sydney's North Harbour, the eastern shorelines of Dobroyd Head have been identified as potential nesting habitat for the population. Any future works in this part of the precinct should ensure that this habitat is maintained and not adversely impacted.

The location of Tania Park at the top of the plateau has implications for the drainage and vegetation below in Sydney Harbour National Park. A plan of management has been prepared by Manly Council for Seaforth Oval, Keirle Park and Tania Park. It makes recommendations for water flow and nutrient level management as well as covering a number of other management issues which have direct relevance to Sydney Harbour National Park. Protecting core bushland areas and their associated natural heritage values from the impacts of high nutrient loads, weed invasion and other impacts associated with the adjoining urban areas, should be a high priority for this precinct.

There are a number of Aboriginal sites recorded in the vicinity of the precinct including an archaeological midden deposit and engraving at Reef Beach, rock engravings at Grotto Point and hand stencils in a rock shelter near Forty Baskets Beach (not in the national park).

The Reef Beach midden was partly eroded by a high tide and storm in May 1974, when human skeletal material was exposed and removed. This was found to be an Aboriginal burial site and recent repatriation of Aboriginal remains has resulted in the site's designation as an Aboriginal Place.

In January 1788, Arthur Phillip noted Aboriginal people living in caves at what is now Wellings Reserve, to the north west of Dobroyd Head in Manly Cove, North Harbour. The Aboriginal people living around Sydney Harbour referred to themselves as the Eora with the Cannalgal, Kay-ye-my and Cammeragal clans living on the north side of Sydney Harbour. Looking out over Middle Head, Arabanoo Lookout is named after the Aboriginal man kidnapped in December 1788, on Governor Phillip's orders, to establish communications with the Aboriginal people.

Grotto Point was first named by the exploratory expedition of Captain Hunter and Lieutenant Bradley, who moored there on the night of 28 January 1788.

Built environment and services

From the 1870s, Balgowlah Heights was part of Sydney's defences. The land at Dobroyd Head was designated Reserve Number 6 for harbour defences in 1871. Some of this land remained undeveloped and is now parkland or reserve.

Grotto Point was resumed by the State Government as a public reserve in 1908 and other than a small portion set aside for the Grotto Point Light, was dedicated in 1912. Reef Beach, in July 1911, was resumed by the Lands Minister Niels Nielsen and formalised in 1912. The lower part of Reef Beach, totalling 13.5 acres, was dedicated as a public reserve in 1923 but the upper part, about 17 acres, wasn't dedicated as a public reserve until 1965.

Sydney Harbour National Park was established in 1975. At the time, it incorporated only Reef Beach and Grotto Point, with the larger portion incorporated into the park in 1979. The first hut in Crater Valley was built in 1923 and the last one was built in 1960, although a hut that burned down in 1957 was rebuilt in 1961-62.

Few people lived at Crater Valley during the Depression, although some of the men who built the first hut sometimes stayed in their hut for a few weeks at a time. Use of the huts continued on a casual basis.

Only one hut was occupied during the depression and use declined from the late 1950s to the early 1970s when a new generation of dwellers renovated and occupied them, some on a permanent basis. Crater Valley was added to the park in 1979 and in 1989, residents were evicted based on health reasons. The huts were to be removed but a battle ensued and the huts remained. In 1990, a draft conservation management plan was prepared with guidelines for conservation and management including caretaker access but no overnight stays. This agreement continues today with the caretakers, generally descendants of the hut builders, maintaining the huts and undertaking visitor inspections on weekends on a casual, voluntary basis.

The Sydney Harbour Scenic Walk passes through the park at Dobroyd Head. This section of the walk is well known as part of the Manly Scenic Walk, a very popular walk from The Spit to Manly.

There are a number of formal and informal lookouts in the precinct, the main one in the national park being Arabanoo Lookout. Arabanoo Lookout was recently upgraded as a joint project with Manly Council for the Centenary of Federation.

Public toilets are located at Reef Beach and are connected to town water and sewer. Reef Beach also hosts an outdoor classroom and a section of boardwalk and retaining wall to protect the remains of the Aboriginal midden and burial site.

The lighthouse at Grotto Point (not in the national park but surrounded by it) was constructed in 1910 and officially commissioned in September 1911. It is an important navigation aid for vessels entering the harbour and is maintained by Sydney Ports Corporation.

Recreation

This precinct can be reached by bus from Manly Wharf, although there is a walk of a few hundred metres from the bus stop to the nearest park entrance. Entrances to the precinct are at Dobroyd Scenic Drive, Cutler Road and Beatty Street and from the Sydney Harbour Scenic Walk.

Dobroyd Head precinct provides both an iconic experience with spectacular harbour views from Arabanoo Lookout and other parts of the precinct, and an urban respite experience with its expanse of bushland. Cultural heritage elements, such as Crater Valley huts and World War II fortifications, are also available on a visit to this precinct. Arabanoo Lookout is a prominent stop for tourist coaches.

Walking tracks through the park link the sites within this precinct and connect to or form part of the Manly Scenic Walk, which is part of the Sydney Harbour Scenic Walk.

The precinct does not have facilities for car-based group picnics, however adjacent or nearby local government-managed areas do including Tania Park, Clontarf Reserve,

Wellings Reserve and North Harbour Reserve. As such, this precinct forms the 'natural' component of a visit to the Balgowlah Heights / Clontarf area.

Reef and Castle Rock beaches provide still-water swimming and non-motorised boat landing areas.

The main day use activities in this precinct are walking and viewing the spectacular harbour. Day use facilities in this precinct are only available at Reef Beach which is a basic day use area with flush toilets, a cold shower and drinking water. Toilets and drinking water managed by Manly Council, are available at nearby Forty Baskets Beach and Tania Park.

At the lookouts and along the main walking route, a significant proportion of visits are made by those living over one hour travel time from the precinct. Reef Beach and Castle Rock Beach have higher proportions of visits by locals.

A park entry fee is not applied at this precinct.



What We Are Going To Do



Outcome 1

Conserve the natural values of the park

OUR AIM FOR THE PRECINCT

Bushland will be protected and enhanced through better management of nutrient-rich and polluted stormwater and continued bush regeneration.

WHAT WE ARE GOING TO DO

Liaise with the Department of Education and local schools to foster involvement in use of Dobroyd Head area for environmental education projects.

Introduce water saving solutions such as rainwater tanks at Reef Beach toilets.

Implement fuel reduction strategies to ensure a mosaic burn pattern across the precinct and reduction of the risk of fire emanating from the Crater Valley huts.

Install signs at Tania Park entrance road, lookouts and carparks to inform visitors of reasons not to feed birds and possible penalties.

Whole of park actions as they apply to Dobroyd Head precinct

Continue to support the ongoing bush regeneration program and protection of core bushland areas.

Expand the existing Corporate and Community Volunteer Program to include Dobroyd Head.

Continue to improve the management of stormwater flowing into and across the precinct and into the harbour in partnership with Manly Council, research institutions such as University of Sydney, Geosciences Unit and individual neighbours.

Work with Manly Council to manage stormwater in accordance with its *Tania Park Plan of Management*.

Implement *Phytophthora cinnamomi* management protocols.

Continue conservation of the endangered population of little penguins *E. minor* under the Recovery Plan and through the integrated management of the North Harbour Aquatic Reserve and Cabbage Tree Bay Aquatic Reserve marine protected areas with the North Head and Dobroyd Head precincts.



Outcome 2

Celebrate and nurture contemporary and traditional Aboriginal culture

OUR AIM FOR THE PRECINCT

Protect and interpret, with the support of the Aboriginal people of Sydney, the rich evidence of Aboriginal culture in this area.

WHAT WE ARE GOING TO DO

In consultation with the local Aboriginal community, clean the rock engravings at Grotto Point in accordance with approved management practices to ensure clear definition and presentation to avoid uncontrolled outlining by visitors.

Whole of park actions as they apply to Dobroyd Head precinct

Inspect and re-record Aboriginal sites, such as the engravings at Grotto Point. Conduct regular monitoring of the condition of the sites to detect and address any adverse impacts from visitation or landscape management practices.

Consider dual naming of key locations within the precinct.

Continue to liaise with traditional custodians, the Metropolitan Local Aboriginal Land Council and the Aboriginal people of Sydney on matters relating to the protection, management and interpretation of the Aboriginal cultural heritage of the precinct.

Research and record history and stories associated with Aboriginal heritage of the area and utilise in preparation of an education kit for teachers.





Outcome 3

Celebrate the historic heritage values of the park

OUR AIM FOR THE PRECINCT

The historic buildings, sites and landscapes will be conserved and, wherever possible, made accessible to the public.

WHAT WE ARE GOING TO DO

Undertake a formal review of the 1990 draft *Conservation Plan for the Crater Valley Huts* and associated cultural landscape and prepare a heritage assessment.

Provide a program for public access to Crater Valley huts for historic heritage appreciation purposes.

Work with the existing Crater Valley caretakers to expand the volunteer base for site management and interpretation.

Implement appropriate fuel reduction measures in the immediate vicinity of the huts.

Review management and implement measures for protection of World War II fortifications.



Outcome 4

Provide enriching and memorable experiences in the park

OUR AIM FOR THE PRECINCT

Dobroyd Head precinct will continue to be a key park destination for passive recreation and for education with an emphasis on the natural environment and Aboriginal cultural heritage.

WHAT WE ARE GOING TO DO

Provide public day use access to Crater Valley Huts for heritage appreciation purposes as part of the Discovery program.

Investigate the provision of overnight caretaker accommodation in one of the huts including the installation of facilities such as a composting toilet, water tanks and solar energy.

Maintain the walking track to Crater Valley to a basic standard only, with works to control erosion and provide for minimal safe access until such time as the heritage assessment is completed and future guidelines provided.

Provide high-quality Aboriginal and historic heritage interpretive and educational material to include Arabanoo lookout, Grotto Point engravings, Crater Valley and Reef Beach.

Investigate safety and visitor facility requirements to allow an increase in the number of visitors to Crater Valley huts. This will require improvements to the walking track conditions and better directional signposting.

Maintain the access track to Washaway Beach.

Whole of park actions as they apply to Dobroyd Head precinct

Provide an entry statement at the main entrances to Dobroyd Head precinct with park entry signs followed by park information signs including walks within the precinct and the national park.

Implement the *Sydney Harbour Scenic Walk Strategy 2010* as it applies to this precinct. This will include upgrade of the existing walking track from the boundary at Castle Rock with an upgrade and formalisation of the lookout in this location. Also formalisation of lookouts in the Tabulam Road location, at Tania Park south west along the road from Arabanoo Lookout and on the knoll south of Reef Beach is proposed.





Outcome 5

Improved access to the park for all

OUR AIM FOR THE PRECINCT

New opportunities for facilities and visitor experiences will be explored and promoted for the beach, bush and historic sites for the less physically able and for a diverse cultural community.

WHAT WE ARE GOING TO DO

Work with Manly Council to provide additional parking for people with disabilities near Tania Park and in harbour viewing areas.

Investigate and implement improved presentation of Aboriginal engravings at Grotto Point through sensitive assessment of the context in the landscape.

Investigate enhancement of the outdoor classroom facility at Reef Beach, involving local schools in the project.

Whole of park actions as they apply to Dobroyd Head precinct

Investigate opportunities for multilingual translations when preparing interpretive or promotional materials.

Provide internet-based information on sites such as sydneyforall.com and a specific brochure on the precinct's accessible sites for mobility-impaired people in collaboration with Manly Council's Access Committee.

Consider a wide diversity of visitors in the preparation of education and information materials for the precinct.

Provide high-quality, well-designed landscape elements at major precinct entrances to demonstrate pride and quality in presentation in line with national park design guidelines.

Ensure lookouts at high levels and over small coves on the Sydney Harbour Scenic Walk display design excellence.



Outcome 6

Strengthen and create partnerships

OUR AIM FOR THE PRECINCT

Continue to support and build on existing partnerships and create new partnerships.

WHAT WE ARE GOING TO DO

Work with the Crater Valley caretakers to expand the volunteer base for the ongoing conservation and interpretation of the huts.

Work with Manly Council to improve public access and signage at Dobroyd Head.

Partner with Aboriginal groups to increase understanding of the Aboriginal cultural significance of the precinct.

Work with Manly Council and neighbours over boundary encroachments, management of asset protection zones, household garden refuse deposits in the park and education and prevention programs in the dog off leash area of Tania Park.

Whole of park actions as they apply to Dobroyd Head precinct

Work with bush regeneration volunteers in the national park and in conjunction with the Manly Council's bushland restoration program.

Work with Manly Council on issues involving management of Sydney Harbour Scenic Walk through representation on the Manly Scenic Walkway Committee.





Outcome 7

Robust management of the park is sustained

OUR AIM FOR THE PRECINCT

The precinct will provide an excellent example of sound park management including community consultation around management issues, education, threatened species recovery and research.

WHAT WE ARE GOING TO DO

Whole of park actions as they apply to Dobroyd Head precinct

Implement the threatened species recovery plan as required for the *E. minor* population in relation to Dobroyd Head foreshore.

Develop educational materials for use at the existing Reef Beach outdoor classroom.

Work with the Community Fireguard, NSW Fire Brigades and neighbours to provide annual pre-season preparation and assistance with hazard reduction burning.

Establish and implement strategies to facilitate the systematic collection of floristic and faunal data of bushland areas as base data and establish permanent monitoring sites as a tool for the improved management of fire and weeds.



Outcome 8

Contribute to the goal of easy and safe transport to and within the park

OUR AIM FOR THE PRECINCT

Negotiations with neighbours and the local council will result in traffic and parking solutions that are acceptable to all.

WHAT WE ARE GOING TO DO

Work with Manly Council on the improvement of parking around Tania Park to prevent vehicles from blocking key lookout areas, and improve stormwater management from the road and carparks into the park.

Whole of park actions as they apply to Dobroyd Head precinct

Identify routes for bicycle travel to the park consistent with local government bike plans and, where appropriate, provide bicycle racks.

Bicycles are permitted on public vehicular roads and service roads but are not permitted on walking tracks in the precinct.

Review directional signage in surrounding suburban roads to improve directions to the park for vehicles, cyclists and pedestrians.





Precinct 06: Middle Head

The management goals for the precinct will focus on conservation and interpretation of the highly significant Aboriginal and historical values.

The complex and interesting evolution of the unique military collection of sites will be presented to visitors in innovative and traditional ways. Natural values will be protected and the degraded, weed infested areas improved.

A priority goal for the Middle Head precinct is to work with the adjoining land managers to more closely integrate management of the exceptionally significant natural and cultural values of the entire headland.

Middle Head precinct holds important cultural significance for Aboriginal and non-Aboriginal people alike. Bungaree's Farm, cared for by the Aboriginal man Bungaree, is known to have been located in this area. The precinct contains an exceptionally significant, extensive collection of fortifications and associated structures. The precinct is a key destination for visitors to the secluded beaches, walking tracks, historic sites and, more recently, the nearby range of Harbour Trust-leased visitor services and facilities. The highly modified areas will continue to provide the

setting for recreational facilities and activities whilst the highly significant remnant bushland will be nurtured, enhanced and extended, based on a landscape revegetation plan developed to achieve a balance between the natural and cultural settings.

The Middle Head precinct is included in a number of the plan's key projects. The principal projects for this precinct are the treatment of the root rot virus *Phytophthora cinnamomi* as part of **Project 1 Bushland Health**, conservation of the threatened species sunshine wattle, *Acacia terminalis* subsp. *terminalis* in **Project 2 Conservation of Threatened Species, Populations and Communities** and the upgrading and formalisation of walking tracks as part of **Project 6 Sydney Harbour Scenic Walk**. Other projects include:

- » **Project 3 Aboriginal Discovery Partnership**
- » **Project 7 Enhanced Park Access**
- » **Project 12 The Harbour Shuttle**

Details of these projects are outlined in Section 01.

The Precinct and its Context

Description

Middle Head precinct extends along the Mosman foreshore from Clifton Gardens / Chowder Bay in the south to Cobblers Beach in the north. The precinct falls into two discrete areas with one portion adjacent to and south of Rawson Oval and the other the coastal strip overlooking Sydney Harbour. The precinct abuts the whole southern side of Headland Park and bookends its western and eastern extremities. The Sydney Harbour Federation Trust (SHFT) manages this historically significant parkland that, together with the national park, forms a significant natural, cultural and recreational asset.

Planning context

The precinct falls within the Mosman local government area and under the draft *Mosman Local Environmental Plan 2008* Schedule 5 – Environmental heritage Sydney Harbour National Park at Middle Head and Georges Heights, Georges Head Fortifications complexes, Middle Head Fort Complex, Obelisk Point Fortifications Complex, Rock Casemate and Semi-Underground Armoured Casemate Battery and are designated as state significant. The pair of navigational obelisks in the Chowder Bay part of the precinct is designated as locally significant.

Middle Head is listed as a strategic foreshore site under the state government *Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005* which applies to the whole of Sydney Harbour waterways, the foreshores and the entire harbour catchment.

The Middle Head Fort Complex is designated as being of state significance and is listed on the State Heritage Register.

The *Local Government Amendment (Nude Bathing) Act 1996 No 133* which amended the *Local Government Act 1993* to allow nude bathing on certain beaches. [Assented to 12 December 1996] includes provisions for Obelisk and Cobblers Beaches in this precinct.

Lands managed by the Sydney Harbour Federation Trust adjoin the park. Accordingly the *Sydney Harbour Federation Trust Act 2001* applies.

Under this Act, plans prepared by the Trust must accord with the objects of the Trust, details of which are provided in Section 04 Appendices.



Significant Values and Considerations

Natural features

The precinct has had a long history of modification and disturbance, generally due to clearing for construction of the fortifications and associated buildings and infrastructure dating back to 1801. This has compromised natural values in some areas. The precinct falls over a variety of aspects including easterly, northerly and south easterly. All of the remnant native vegetation in the precinct falls below the ridgeline and has, and continues to be, subjected to large volumes of run-off which is nutrient rich and in some instances contaminated with fuel, chemicals, lead and asbestos as a result of previous military uses.

A successful corporate volunteer program, under the guidance of NPWS staff, has improved sections of the precinct's vegetation through programs of weed removal and park maintenance.

The bushland does however support three distinct vegetation communities: coastal sandstone ridge-top woodland with smooth-barked apple *Angophora costata* and bangalay *Eucalyptus botryoides*, coastal gully forest and littoral thicket in more protected slopes. The area to the north west of Clifton Gardens contains an additional community of closed coastal scrub dominated by coastal banksia *Banksia integrifolia*, and scrub she-oak *Allocasuarina distyla* with a canopy of *A. costata*. The endangered *Acacia terminalis* subsp. *terminalis* is found in bushland throughout the precinct and in the adjoining areas. Managing threats to this species, particularly from weed invasion, is a high priority in this precinct.

Overall, 71 species of animal have been recorded from this precinct including four frog species, 12 reptile species, 45 bird species, and 11 mammal species. These numbers however, include six introduced bird species and four introduced mammals such as black rats, house mice, foxes, and cats. The only threatened fauna species recorded from this precinct is the vulnerable eastern bentwing-bat *Miniopterus schreibersii oceanensis* which is known to roost in fortifications and associated tunnels and gun emplacements at Middle Head. These may be important over-wintering sites for the population around the harbour. Any developments or activities should ensure that they do not impact adversely on these roosting habitats. Four regionally significant fauna species have been recorded including Burton's legless lizard *Lialis burtonis* and the whistling kite *Haliastur sphenurus*.

Parts of the natural areas are severely infested with weed species and the fungal pathogen *P. cinnamomi*. This situation is exacerbated by the nutrient rich run-off from the lands along the ridge which drain directly into the national park. There are also a number of exotic species planted in the ex-military building complexes neighbouring the park and in the adjacent urban areas, which spread into the bush. Addressing and limiting the spread of dieback associated with *P. cinnamomi* is a priority for this precinct.

Cultural history

Middle Head precinct may be part of the Cammeragal clan's traditional Country, located on the north side of Sydney Harbour. Early reports indicate that Middle Head was most likely called Kuba Kaba', or 'Ca-ba Ca-ba' by local Aboriginal people.

The precinct is part of the exceptional collection of Mosman local government area's Aboriginal archaeological heritage, a concentration not found elsewhere in the metropolitan area, with many sites occurring within the park. Close by at Balmoral is the richest Aboriginal rock shelter deposit excavated in the Sydney area. It is estimated that Aboriginal people had been using this site as far back as 3,600 years ago. Remains in the deposit are evidence of the past presence of wallabies, kangaroos and wombats in this area.

Aboriginal rock engravings occur in the precinct, with the most significant and fascinating located on the apron of a gun emplacement at the Outer Forts.

Documentary evidence suggests that the Middle Head / Georges Heights area was the location of land that was benevolently, yet naively, given to Bungaree by Governor Macquarie in an attempt to break the nomadic habits of Sydney's Aboriginal communities. Bungaree

was the first Aboriginal person to circumnavigate the continent with Flinders and for many years acted as a mediator between the British and Aboriginal people.

The precinct has experienced a number of historical phases. Two surviving navigation obelisks above Obelisk Beach are part of early colonial government harbour navigation facilities. As early as 1801, during the Napoleonic War, a battery was constructed north of Obelisk Bay as the area was seen as important for the defence of the harbour. From the 1840s, the Middle Head area underwent a succession of construction periods, the most significant occurring during the 1870s. During this period, the Outer Middle Head battery was constructed and by 1890, a defensive ditch had been completed across the headland. By the 1880s, a cluster of buildings had been completed at Middle Head that were part of the School of Gunnery. These buildings are now used by NPWS as administration offices and staff and volunteer accommodation

Middle Head Road was constructed in 1870 and Chowder Bay Road in the 1890s. Both roads were built with stone edging, which is evident today. The underground armoured and beehive casemates on Chowder Bay Road were

constructed in 1885 and 1871 respectively and are recommended in the draft conservation management plan and NPWS Fortifications of Sydney Harbour and Botany Bay Strategic Plan 2007 as having national significance.

It was not until World War I that use of the precinct again intensified. Further construction and modification works took place with the onset of World War II. Construction of HMAS Penguin, the adjacent navy base, commenced in 1941. In 1945, Italian prisoners of war were housed in huts near Obelisk Beach. These huts were demolished by 1961.

With the developments in military technology, coastal armaments became obsolete and were decommissioned. There was a brief revival of military use of the fortifications at Middle Head in the 1960s, with the training of officers to withstand torture prior to serving in Vietnam. There are a series of corrugated iron and mesh cages and a water tank remaining in the underground engine room from this period. The fortifications at Middle Head, combined with those at Georges Head, Bradleys Head and Fort Denison, are of national significance, being the most diverse and complete collection of fortifications and defence sites in Australia.

Built environment and services

Middle Head precinct's historic heritage buildings have been adapted for a range of uses including administration offices, staff and volunteer accommodation, a minor works workshop and a storage compound for materials, plant and equipment. The Soldiers Institute is currently used for the corporate volunteer program and serves as a lecture and community uses room. There is a proposal to fit out the building as an emergency management centre for the local council and emergency response organisations. A kitchen facility is being designed to better accommodate the corporate volunteer program. The precinct's water, sewerage and electricity infrastructure are provided and serviced through lands managed by SHFT. Public carparking for the precinct is provided at the junction of Middle Head and Chowder Bay roads, along Chowder Bay Road and at Rawson Oval off Cross St, Bradleys Head. Chowder Bay Rd is included in the Sydney Harbour National Park.

Recreation

Middle Head precinct is served by bus from Spit Junction. The precinct provides opportunities for a variety of experiences with its spectacular harbour and ocean views, cultural heritage, bushland and beaches. Significant cultural heritage elements are a dominating feature of this precinct.

The precinct has pockets of more natural areas for those visitors seeking quietness and seclusion contrasting with open areas associated with the historic defence infrastructure.

A walking track extends through the length of this precinct, connecting to SHFT public open space and then council-managed parks. It forms part of the Sydney Harbour Scenic Walk and links with various smaller tracks of a range of classes.

The main day use activities in this precinct are walking, cultural heritage appreciation, viewing and nude bathing. This precinct is a basic day use area with toilets and drinking water. However, nearby SHFT public open space contains cafés, restaurants, an art centre, university and educational research facilities, a conference centre,

child care centre and a range of small businesses from a framing shop to a veterinary clinic. The redevelopment of the SHFT lands at Chowder Bay, Georges Heights and Middle Head will continue to have an impact on the surrounding national park areas, particularly with increased visitation.

Cobblers Beach and Obelisk Beach provide for clothing-optional swimming and non-motorised boat landing.

School excursions are catered for with guided tours of the forts, and other Discovery activities are held in the precinct.

A significant proportion of visits are made by those living over one hour's travel time from the precinct. There are park use fees for vehicles at the SHFT end of Chowder Bay Road. SHFT also has parking meters within the lands they manage.

Visitor numbers and inappropriate behaviour in the areas adjacent to the beaches are having a deleterious effect on the bushland and recreational values.

What We Are Going To Do



Outcome 1

Conserve the natural values of the park

OUR AIM FOR THE PRECINCT

Bushland areas impacted by previous land uses will be rehabilitated and enhanced, with continued protection of flora and fauna including the area's endangered species.

WHAT WE ARE GOING TO DO

Prepare a review of all known weed species in the precinct, including abundance and distribution, to inform priority setting for the volunteer program.

Continue to remove weeds and other vegetation encroaching on and damaging historic structures and features.

Carry out a comprehensive assessment of natural and cultural landscapes and vegetation, and define areas for the removal of native vegetation and long-term maintenance of clearings.

Whole of park actions as they apply to Middle Head precinct

Introduce a systematic, long-term monitoring program to measure the effectiveness of bush regeneration and pest control programs.

Reduce the distribution and abundance of all existing weed and pest species found in the precinct (and where feasible eradicate).

Utilise native plants grown from local seed sources in bushland restoration projects.

Implement the relevant actions from the *NSW Statement of Intent for Infection of Native Plants by Phytophthora cinnamomi* and management plans for other harmful pathogens in co-operation with adjoining land managers.

Continue to implement priority actions for the conservation of the endangered species *A. terminalis* subsp. *terminalis*.

Continue to support tertiary sector field research programs, offering opportunities to enhance the natural and cultural values of the headland.



Outcome 2

Celebrate and nurture contemporary and traditional Aboriginal culture

OUR AIM FOR THE PRECINCT

Aboriginal cultural heritage will be protected and interpreted in co-operation with the Aboriginal community including traditional custodians and Metropolitan and La Perouse Local Aboriginal Land Councils, together with Mosman Council and the Sydney Harbour Federation Trust.

WHAT WE ARE GOING TO DO

Protect and interpret the Outer Forts rock engraving site, involving members of the Aboriginal community.

Participate with Mosman Council in the annual May to July Guringai Festival.

Promote and encourage the implementation of the Aboriginal Teachers' Kit and booklet based on the *Mosman Aboriginal Heritage Study 2005* initiated by NPWS.

Implement recommendations from the *Mosman Aboriginal Heritage Study 2005*.

Whole of park actions as they apply to Middle Head precinct

Inspect Aboriginal sites regularly with members of the Aboriginal community and ensure protection of sites from visitor impacts.





Outcome 3

Celebrate the historic heritage values of the park

OUR AIM FOR THE PRECINCT

High-quality conservation of the highly significant, unique collection of historic sites will be promoted and continued.

WHAT WE ARE GOING TO DO

Promote and interpret the precinct's historic heritage to a wider audience and in a tenure-blind manner.

Investigate innovative interpretation and activities to provide a wider audience with fortification access for example, use of the armoured casemate for exhibitions or performances.

Whole of park actions as they apply to Middle Head precinct

Implement the recommendations of the *NPWS Fortifications of Sydney Harbour and Botany Bay Strategic Plan 2007* which identifies priorities for conservation works. This includes the preparation of a staged conservation works plan and a number of high priority maintenance works for this highly complex, extensive and significant site.

Complete and implement a public safety and conservation risk assessment for the historic sites, considering recommendations from the *NPWS Fortifications of Sydney Harbour and Botany Bay Strategic Plan 2007*.





Outcome 4

Provide enriching and memorable experiences in the park

OUR AIM FOR THE PRECINCT

Innovative, safe and well-managed recreational opportunities will be provided to a wider audience to allow exploration and discovery of the fascinating history of the precinct and adjoining lands.

WHAT WE ARE GOING TO DO

Complement recreational opportunities provided by other land managers at Chowder Bay, Georges Heights and Clifton Gardens.

Apply park use fees in the carparks along Chowder Bay Road.

Provide opportunities for passive recreation such as picnics, walking and sightseeing, as well as places for contemplation, in a bushland setting with spectacular views. Consider provision of furniture at these locations.

Integrate tours and access to fortifications and other sites across multiple tenures, to enable the complete history of the headland to be interpreted.

The Middle Head complex of buildings will be investigated for new adaptive uses to support sustainable visitor or tourist use and enjoyment. For example, these buildings may be adapted and leased for purposes such as accommodation, conferences and functions and administration.

Provide opportunities for the sustainable use and possible licensing of the cleared sections of the precinct for events, functions and appropriate community uses.

Manage inappropriate activities in the bushland behind the clothing-optional Obelisk Beach and Cobblers Beach in collaboration with NSW Police and NSW Department of Health.

Whole of park actions as they apply to Middle Head precinct

A new walking track is proposed to provide an off-road pedestrian link between the SHFT land at Chowder Bay, traverse above Obelisk Beach and link to the new track to the 1801 fort. From here another new track is proposed to link with the outer forts at Middle Head. Another single, principal walking track is proposed to consolidate the myriad tracks in the bushland above Cobblers Beach. Informal tracks will be closed and rehabilitated. This will formalise part of the Sydney Harbour Scenic Walk. Three new lookouts are proposed for this area to formalise existing informal lookout areas.

In line with recommendations of the *NPWS Fortifications of Sydney Harbour and Botany Bay Strategic Plan 2007*, construct walking tracks for the protection and reduction of impacts on historic structures.





Outcome 5

Improved access to the park for all

OUR AIM FOR THE PRECINCT

Middle Head precinct will demonstrate excellence in landscape design and provide opportunities for people with disabilities. Interpretation will be designed to suit a diversity of cultural and linguistic backgrounds.

WHAT WE ARE GOING TO DO

Investigate opportunities for access to underground fortifications for the mobility impaired.

Prepare a landscape design plan for the precinct to ensure continued delineation between natural bushland areas and the cultural landscape and high-quality visitor facilities.

Provide high-quality, well-designed landscape elements at the entrance to the precinct

Whole of park actions as they apply to Middle Head precinct

Investigate increased disabled access to all current and proposed facilities.

Work with SHFT to ensure adequate provision of designated parking for people with disabilities at the entrance to the precinct.

Provide high-quality interpretive and educational material considering all methods from static signs to audio, allowing for consideration of diversity amongst visitors.

Investigate the need for multilingual translations when preparing interpretive or promotional materials.



Outcome 6

Strengthen and create partnerships

OUR AIM FOR THE PRECINCT

Continue to support and build on existing partnerships and create new partnerships.

WHAT WE ARE GOING TO DO

Continue to liaise with SHFT and other neighbours to ensure reciprocal arrangements are in place for high-quality presentation on boundary areas.

Continue to work with SHFT and Mosman Council in the creation of a unified Headland Park.

Provide and implement strategies for cross-tenure pest management in line with NPWS's role as the lead agency in natural area conservation.

Work with neighbouring small businesses, such as those operating out of Chowder Bay and currently including Land's Edge and Plunge Dive, to integrate operations that will benefit all parties.

Whole of park actions as they apply to Middle Head precinct

Continue working with neighbours, in particular SHFT and Mosman Council, to resolve stormwater issues from ex-military developments along precinct boundaries at Cross Street, Rawson Oval, Georges Heights, Chowder Bay and Middle Head.





Outcome 7

Robust management of the park is sustained

OUR AIM FOR THE PRECINCT

Middle Head precinct will provide the opportunity to demonstrate best practice in the engagement of volunteers in bushland management.

WHAT WE ARE GOING TO DO

Support research into the management of *P. cinnamomi*.

Support volunteers to play a key role in the precinct's remnant vegetation management and in other activities such as community gardens.

Investigate alternative locations for the NPWS works storage compound away from the highly visible entrance to the park and Cobblers Beach access road. As an interim measure, maintain brush fencing and negotiate landscaping of the entrance with SHFT.



Outcome 8

Contribute to the goal of easy and safe transport to and within the park

OUR AIM FOR THE PRECINCT

Work with local government and transport agencies to negotiate improved access and transport solutions for the precinct.

WHAT WE ARE GOING TO DO

Discourage private vehicle use within the Middle Head precinct forts area to allow for safe and enjoyable use by pedestrians and cyclists.

Support neighbouring organisations in investigating the provision of improved transport solutions to the precinct, including public transport and safe bicycle access.

Continue to assess the impacts on wildlife of night access on roads through bushland areas. Implement strategies to reduce wildlife fatalities including along Chowder Bay Road and Middle Head Road.

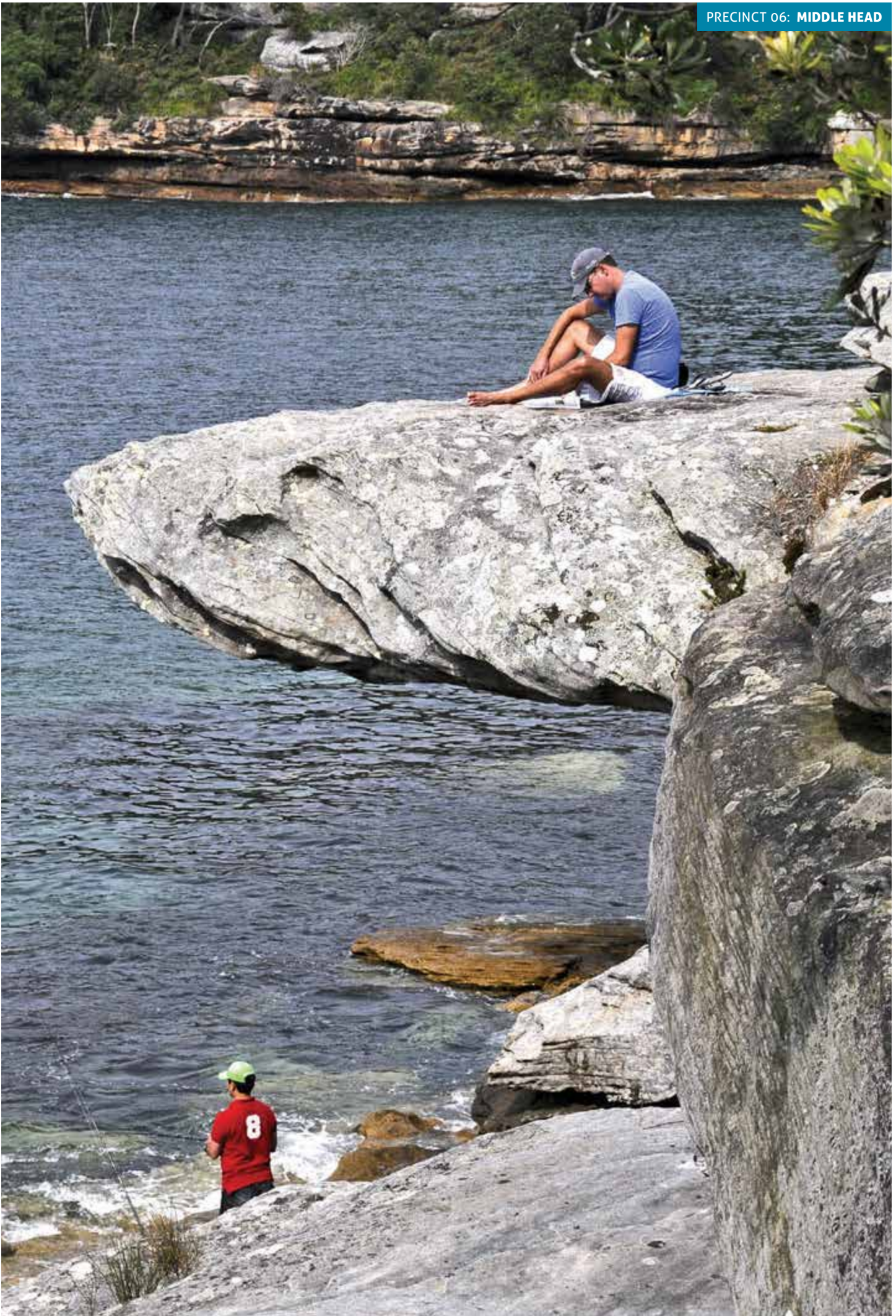
Whole of park actions as they apply to Middle Head precinct

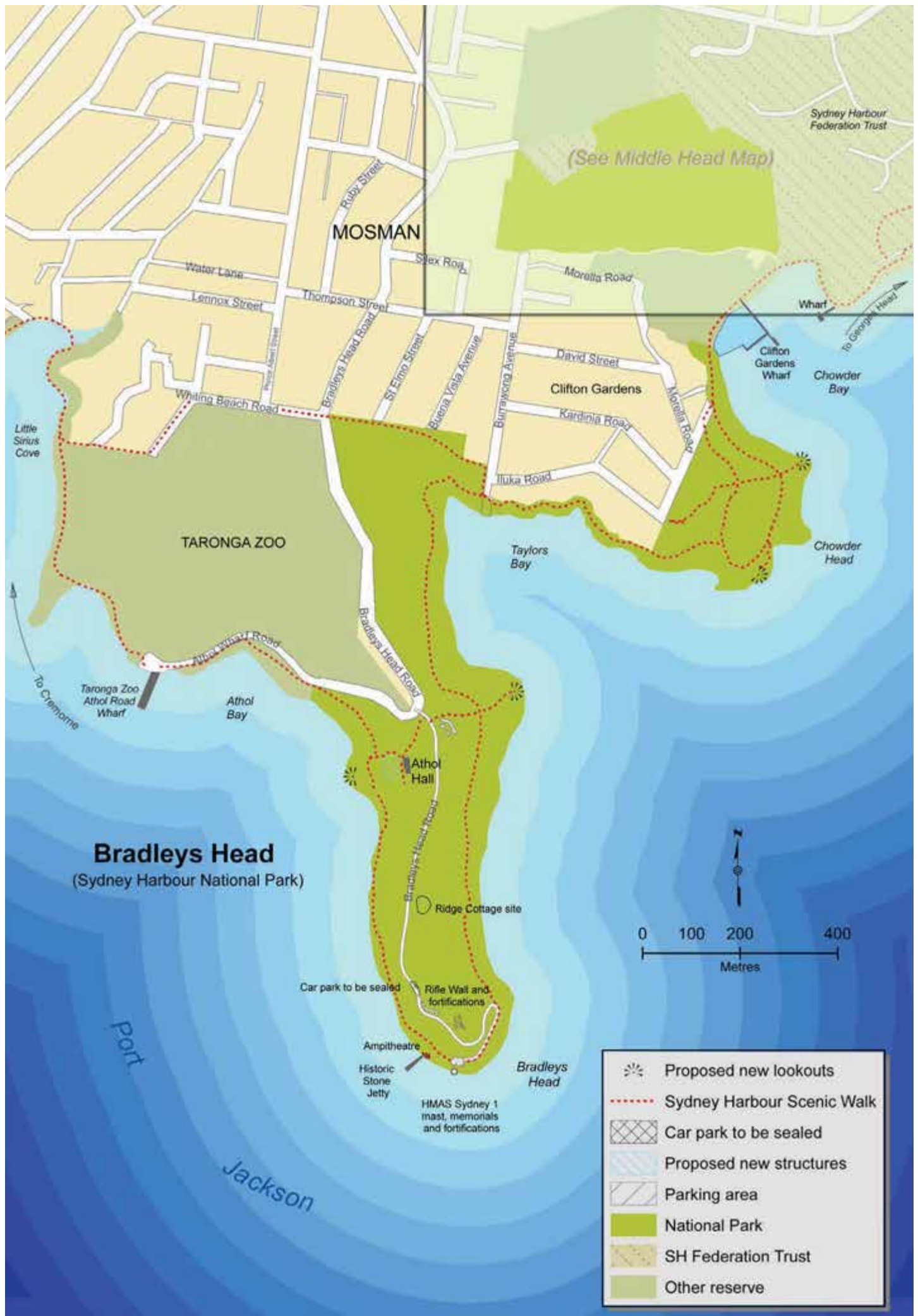
Encourage private sector establishment of a harbour water transport shuttle service, including a Clifton Gardens wharf stop, to link Sydney Harbour Scenic Walk and to increase transport options to Middle Head precinct.

Identify routes for bicycle travel to the park consistent with local government bike plans and, where appropriate, provide bicycle racks.

Permit bicycles on public vehicular roads but not on walking tracks in the precinct.







Precinct 07: Bradleys Head

Bradleys Head precinct is bounded by Taronga Zoo to the west and follows the foreshore area to include Taylors Bay and Chowder Head to the east. Clifton Gardens separates Bradleys Head precinct and the Middle Head precinct of Sydney Harbour National Park.

The Bradleys Head section of the precinct is easily reached by various modes of transport, although it has limited parking space and a narrow access road terminating at the water's edge. Surrounded by bushland, the award-winning amphitheatre, high-standard walking track and the facilities at Athol Hall provide opportunities for a range of visitor activities.

In contrast, Chowder Head at the eastern end of the precinct is a natural bushland area accessed by the Sydney Harbour Scenic Walk which offers a unique, tranquil and secluded experience so close and yet so far from the busy city.

Conservation of the precinct's bushland is vital to the future of the flora and fauna in the area. Bradleys Head precinct is a core section of Mosman's bushland corridor. Given the precinct's good public transport access from the city, it is an ideal place for visitation that will engender support for conservation and national parks.

To improve access and the enjoyment of visitors, Bradleys Head has been targeted in several of the key projects in this plan of management.

The key project for this precinct is **Project 8 Bradleys Head and Nielsen Park Recreational Parklands**. It involves preparing landscape design plans for the Bradleys Head and Nielsen Park precincts that retain and enhance their integrity as the recreational parklands for which the community so passionately fought and which ensures their resilience during high seasonal visitation. Bradleys Head is a priority for this work, based on the proposed centenary celebrations of the first entry of the Australian Naval Fleet into Sydney Harbour planned for 2013.

Bradleys Head precinct is also a component of several key projects including:

- » **Project 1 Bushland Health**
- » **Project 2 Conservation of Threatened Species, Populations and Communities**
- » **Project 3 Aboriginal Discovery Partnership**
- » **Project 6 Sydney Harbour Scenic Walk**
- » **Project 7 Enhanced Park Access**
- » **Project 10 Climate Change Mitigation**
- » **Project 12 The Harbour Shuttle**

Details of these projects are outlined in Section 01.

The Precinct and its Context

Description

Bradleys Head precinct has rich and complex layers of history including evidence of Aboriginal occupation in the many sites, military history and a recreational history which continues today. There is also evidence of the strong influence of North Shore residents over government decisions. In the 1880s, when Bradleys Head was considered for laboratory-based rabbit extermination experiments, locals strenuously objected and the project was established at Rodd Island instead. Further, when exploratory work was underway for a coal mine at Bradleys Head in the 1890s, local property owners became hostile and the site was subsequently moved to Birchgrove.

The early use of the headland for military purposes and then as recreation grounds ensured the survival of much of its native vegetation. As well as preserving biodiversity, this bushland forms a prominent part of the scenic

backdrop to Sydney Harbour. Bradleys Head is also the site of the *HMAS Sydney I* memorial, with the mast located on the point and a series of memorial plaques adjacent.

Both Bradleys Head and Chowder Head are important for their native bushland which, for the most part, remains as it was when the First Fleet arrived over 220 years ago. This is characteristic of the north side of the harbour and contrasts with the southern shores where much of the vegetation has been replaced by urban development.

The precinct's bushland is in good condition except for the urban fringes and in the narrow section below Iluka Road. These areas are subjected to high nutrient loads through stormwater run off, rubbish and garden refuse dumping, weed seed invasion, illegal tree removal and pruning for views and dieback associated with the root rot fungus *Phytophthora cinnamomi*.

Planning context

The precinct falls within the Mosman local government area.

The *Sydney Regional Environmental Plan (SREP) 2005 (Sydney Harbour Catchment)* applies to this precinct, including sections 38 and 39 which make specific reference to national parks.

The lighthouse and the mast of *HMAS Sydney I*, located on the Sydney Harbour foreshore at Bradleys Head, are designated as being of state significance under the *NSW Heritage Act 1977* and are State Heritage listed.

The nearby military forts, which were constructed on the headland in the 19th century as part of a series of defence sites around the harbour, are also included in the listing.

Further details about the planning context are provided in Section 04 Appendices.



Significant Values and Considerations

Natural features

Bradleys Head and Chowder Head are important for the extent and relatively intact condition of their native bushland which, for the most part, remains as it was when the First Fleet arrived. This is rare in Sydney and is a characteristic of the north side of the harbour. On the southern shores, much of the vegetation has been replaced by housing.

The precinct is characterised by woodlands to open forest dominated by a variety of species but particularly Sydney peppermint *Eucalyptus piperita* and smooth-barked apple *Angophora costata*, and contains a variety of understory shrub species including acacias and coastal banksia *Banksia integrifolia*. Some coastal sandstone headland scrub also occurs at Bradleys Head. Coastal sandstone ridgetop woodland dominates much of the precinct with *A. costata* and bangalay *Eucalyptus botryoides* occurring on more exposed sandstone slopes. Coastal sandstone gully forest with *A. costata*, grey gum *Eucalyptus punctata* and forest red gum *E. tereticornis* occurs near drainage lines on sheltered sandstone slopes such as on the western side of Bradleys Head and the slopes down to Taylors Bay. The rocky foreshores and cliff faces, and sandy beaches provide more localised habitats for a range of plant species such as ferns and mosses.

The threatened sunshine wattle *Acacia terminalis* subsp. *terminalis* occurs at both Chowder and Bradleys Head and is listed as vulnerable under the *Threatened*

Species Conservation Act 1995 (TSC Act). In addition, there are a number of significant plant species that have not been recorded in the area since 1903 and require investigation to determine their status.

The bushland provides refuge for many species that were once more widespread across the headlands surrounding Sydney Harbour. Archaeological evidence found in local Aboriginal shell middens indicates that the local fauna was once more diverse and included larger animals such as wombats, kangaroos, wallabies and dingoes. Since the 1950s, around 120 animal species have been recorded from Bradleys and Chowder heads, although many have not been recorded in recent years. These headlands still support a diverse bird fauna, around 15 reptile and frog species, and more modest native mammal fauna species numbers including both brush-tailed and ring-tailed possums, native water rats, grey-headed flying-foxes and probably a number of other microbat species (which remain poorly surveyed across the park). A number of feral animal species also occur in the precinct including rabbits, foxes and the introduced black rat.

The most significant fauna population on the headland is undoubtedly the vulnerable red-crowned toadlet *Pseudophryne australis*, which is listed as a threatened species under the TSC Act. *P. australis* is only found in the Sydney Basin and the population at Bradleys Head is one of the

largest known around the harbour. Any activities in this precinct will need to take particular care to protect the habitat of *P. australis* as the species is sensitive to habitat alteration as a result of too frequent and very hot fires, road and track works, water pollution and changes in water quality associated with urban run-off and bush rock removal.

Two threatened nomadic animal species have been recorded foraging at these headlands from time to time: the endangered swift parrot *Lathamus discolor* and the vulnerable grey-headed flying-fox *Pteropus poliocephalus*. A further four threatened bird species listed as vulnerable (the little eagle *Hieraetus morphnoides*, superb fruit-dove *Ptilinopus superbus*, little lorikeet *Glossopsitta pusilla* and varied sittella *Daphoenositta chrysoptera*) have been recorded foraging at these headlands in the past, but only the little eagle and varied sittella have been recorded in recent years. In addition to threatened species, these headlands provide habitat for more than 18 regionally significant animal species (four reptiles, 13 birds and the water rat).

Much of the woodland and forest on the headland is in good condition but the urban fringes and the narrow section below Iluka Road are suffering in response to the changed conditions of urban development. These areas are subjected to high nutrient loads and polluted stormwater run-off favouring *P. cinnamomi*, resulting in severe dieback. Rubbish, garden refuse and

Cultural history

weed seed invasion, as well as illegal tree removal and pruning for views, are also issues in these locations. Protecting core bushland areas from these impacts is an important priority for these headlands.

While definite clan boundaries are difficult to determine, it has been suggested (Attenbrow 2010) that the land in the Bradleys Head area and east to Manly (Gayamaygal country) was probably Borogegal land. The name Borogegal was probably associated with what is today known as Bradleys Head (Attenbrow 2010).

The precinct contains part of the exceptional collection of Aboriginal archaeological heritage found in the Mosman local government area, with a concentration not found elsewhere in the metropolitan area. The rock art engravings and painted figures include hand stencils, whales, fish, macropods and ancestral beings. Shell middens are found on the foreshore at Bradleys Head with a large deposit on the eastern side of the headland.

Bradleys Head is named after William Bradley, the First Lieutenant of First Fleet flagship *HMS Sirius*. Bradley created watercolour paintings and descriptions of the headland in his 1788 journal. The Mosman area and Bradleys Head were key locations for defence installations, with the first on Bradleys Head built by convicts in 1839 and a circular parapet added later. New defences were built on the headland in the 1870s with the withdrawal of the British garrison from the colony. These take the form of three gun emplacements with ordinance and underground battery and rifle wall. A defence ditch encircles the lower part of the headland. Stone for construction was quarried on site and a stone jetty with railway tracks was constructed to receive stores.

The municipality of Mosman was created in 1893 at a time when there were 1600 residents. Visitors began to flock to these areas and the headland's focus changed from military to recreation in the 1890s. The pleasure gardens at Athol Hall were created with a hotel, dance hall and picnic pavilions. Taronga Zoo was opened in 1916 and the jetty at Bradleys Head was utilised in the transfer of animals from a zoo on the south side of the harbour.

Athol Hall and associated gardens are located on the western slopes of Bradleys Head. Alexander Ferrier, granted land at Bradleys Head in 1836, built a dwelling in the 1840s, and by the 1860s the property had been developed as a 'Pleasure Ground', known then as the Athol Gardens Family Hotel. Similar facilities were established around the harbour at Cremorne Point, Balmoral Beach, Pearl Bay, Clontarf and Clifton Gardens where a multi storey hotel, several dancing pavilions, picnic ground and a large circular bathing enclosure were constructed.

By the 1900s, the habit of dancing and drinking on Sundays was being frowned upon by society and Athol dance hall's popularity and attendance declined. In 1908, the State Government regained control of the land with the aim of protecting its natural features and character for public benefit. In 1975, the area was transferred to NPWS as part of Sydney Harbour National Park with the aim of protecting and conserving the historic buildings and landscape.

Built environment and services

Public facilities and built elements of the precinct include:

- » Historic Athol Hall at the entrance to the precinct on Bradleys Head Road, currently leased as a café and function centre
- » Public toilets adjacent to Athol Hall, connected to sewer via Taronga Zoo
- » Public toilets at the harbour foreshore carpark at Bradleys Head. These are not connected to the sewer but have three phase power connected to allow for a pump station for sewer connection. The toilets are currently pumped out. An accessible toilet cubicle is provided
- » Drinking water
- » Carparks located at the entrance to the headland, at the historic rifle wall and at the end of the road at the harbour edge
- » The award-winning amphitheatre located in the stone quarry at the foreshore
- » The *HMAS Sydney I* mast and war memorial
- » A picnic rotunda
- » Ports corporation jetty and light house, not available for public use
- » Part of the Sydney Harbour Scenic Walk track linking Taronga Zoo wharf to Chowder Bay. Approximately 500 metres of this track from the amphitheatre is wheelchair accessible
- » A sealed, narrow road, gated at the entrance and closed from 8pm to 6am
- » Dinghy racks at Taylors Bay.

Recreation

Bradleys Head precinct is served by buses from the city, North Sydney and Taronga Zoo Wharf. There is a regular ferry service from Circular Quay to Taronga Zoo wharf.

The precinct provides an iconic experience with spectacular harbour views from Bradleys Head amongst a natural bushland setting with cultural heritage elements.

A walking track extends through the length of this precinct, connecting to council-managed parks and to Sydney Harbour Federation Trust public open space. It forms part of the Sydney Harbour Scenic Walk.

Bradleys Head is a major day use area in terms of the types of facilities available and the opportunity for car-based group picnics. However, group sizes are restricted by the size of open space sites and parking limitations. Nearby Clifton Gardens Pleasure Ground and Sirius Cove Reserve (both managed by Mosman Council) have space and facilities for larger groups.

Taylors Bay provides for still-water swimming and non-motorised boat landing.

A significant proportion of visits are made by those living within one hour travel time from the precinct.

A park use fee applies in the Bradleys Head section of this precinct.

What We Are Going To Do



Outcome 1

Conserve the natural values of the park

OUR AIM FOR THE PRECINCT

All remnant bushland will be conserved and threatened species protected.

WHAT WE ARE GOING TO DO

Continue bush regeneration at Athol Hall, Iluka Road, Taylors Bay and Morella Road sections of the precinct.

In accordance with the *Sydney Harbour Scenic Walk Strategy 2010*, consolidate, close and rehabilitate unnecessary walking tracks particularly at Chowder Head.

Rehabilitate the degraded area on the ridge above Bradleys Head, known as the Ridge Cottage site, and incorporate into the landscape design plan for the headland.

Whole of park actions as they apply to Bradleys Head precinct

Harvest rainwater from the roofs of buildings through the installation of water tanks, and use in toilets.

Investigate the installation of solar panels at Athol Hall for power generation for the precinct and for supply back to the grid.

Implement applicable measures for the red-crowned toadlet *Pseudophryne australis* from the priorities action statement.

Implement the applicable measures from the priorities action statement for the threatened grey-headed flying-fox *Pteropus poliocephalus*.

Review management of vegetation where this impinges on views from public lookouts. Areas for consideration include the vicinity of Athol Hall.

Establish and continue to implement strategies to facilitate the systematic collection of floristic and faunal data of bushland areas as base data and establish permanent monitoring sites.

Implement *P. cinnamomi* management protocols.



Outcome 2

Celebrate and nurture contemporary and traditional Aboriginal culture

OUR AIM FOR THE PRECINCT

The rich collection of sites in this area will be protected and, where appropriate, utilised for educational purposes based on the newly developed Aboriginal Heritage of Mosman Teachers Kit and booklet 2010. Assistance will be sought from the Aboriginal community in this endeavour.

WHAT WE ARE GOING TO DO

Work with Aboriginal staff at Taronga Zoo on joint programs that benefit Aboriginal heritage in the precinct.

Whole of park actions as they apply to Bradleys Head precinct

Research and facilitate recording of contemporary, contact and pre-contact culture of the precinct, including annual recording of Aboriginal site condition.

Facilitate on-park activities to encourage improved understanding of Aboriginal culture among both the Aboriginal and non-Aboriginal community.

Review management of Aboriginal sites to ensure protection from potential impacts caused by visitation and landscape management practices.

Consider dual naming of locations within the precinct to reflect previous and ongoing connection to Country.

Continue to liaise with traditional custodians and the Metropolitan Local Aboriginal Land Council in the protection, management and interpretation of the precinct's Aboriginal cultural heritage.





Outcome 3

Celebrate the historic heritage values of the park

OUR AIM FOR THE PRECINCT

Develop a greater awareness of the harbour's historic heritage through interpretation of the collection of sites at this precinct, which is one of the richest and most easily accessible.

WHAT WE ARE GOING TO DO

Finalise the draft *Conservation Management Plan for Athol Hall* and implement its actions.

Provide high-quality historic heritage interpretive and educational material, commensurate with the significance of the precinct and its elements, considering a range of methods from static signs to audio and visual.

Regularly remove vegetation that has germinated in the fortifications' stonework.

Investigate management of trees and other vegetation in the immediate vicinity of the historically significant rifle wall, to prevent further stone work deterioration.

Construct replica cannon carriages and return the cannons to the precinct.

Whole of park actions as they apply to Bradleys Head precinct

Promote interpretation and improved access to the historically significant fortifications.



Outcome 4

Provide enriching and memorable experiences in the park

OUR AIM FOR THE PRECINCT

The precinct will continue to offer a diversity of well-managed passive recreation opportunities with an emphasis on the Sydney Harbour Scenic Walk and on Bradleys Head as a viewing point for major Sydney Harbour events.

WHAT WE ARE GOING TO DO

Investigate the opening and interpretation of the historic military defensive ditch as part of the Sydney Harbour Scenic Walk and as an opportunity for historic interpretation.

Continue to lease Athol Hall for the purpose of café, restaurant and functions centre.

In the event that the current lease comes to an end, new adaptive uses for the buildings will be considered to support sustainable visitor and tourist use and enjoyment.

New picnic structures may be constructed on the grassed areas below the hall and incorporated into the Athol Hall lease.

Investigate the involvement of Taronga Zoo volunteers in interpretation / education programs and tours in the precinct.

Install fencing along the walking track between Bradleys Head and Taronga Zoo, for visitor safety and vegetation management purposes.

Investigate the feasibility of connecting the foreshore toilets to the mains sewer.

Upgrade the existing and formalise a new lookout at Chowder Head.

Formalise a new lookout on Bradleys Head at the southern end of Taylors Bay.

Upgrade the informal lookout with city views above the foreshore near Athol Hall.

Whole of park actions as they apply to Bradleys Head precinct

Complete the production and release of the pilot interpretative podcast for the walking track between Taronga Zoo and Clifton Gardens. Expand the program across the remainder of the Sydney Harbour Scenic Walk.

Implement a licensing system for personal trainers and fitness groups, limiting opportunities based on other uses in the area.





Outcome 5

Improved access to the park for all

OUR AIM FOR THE PRECINCT

Utilise Bradley's Head precinct to showcase exemplary park visitor precinct design to complement the award-winning foreshore amphitheatre.

WHAT WE ARE GOING TO DO

Develop a co-operative interpretation program for migrants and culturally diverse members of the community with Taronga Zoo and the Royal Botanic Gardens, utilising the bushland at Bradleys Head.

Install a hand basin in the disabled persons' cubicle in the foreshore toilet block and extend the toilet facility at Athol Hall to include a disabled access cubicle.

Investigate refurbishment of the *HMAS Sydney I* mast and memorials as part of the centenary celebrations of the first entry of the Australian Naval Fleet into Sydney Harbour, planned for October 2013.

Ensure the landscape design plan retains the integrity of the precinct as a recreational parkland.

Seek recognition of the Bradleys Head memorials as a Military Memorial of National Significance under the *Military Memorials of National Significance Act 2008*.

Prepare a landscape design plan for the precinct that retains and enhances the precinct as a recreational parkland with rich heritage values.

Whole of park actions as they apply to Bradleys Head precinct

Investigate the need for multilingual translations when preparing interpretive or promotional materials.

Investigate increased disabled access to all current and new facilities, including additional disabled parking spaces.

Involve the local government access committee in improving or increasing facilities for the mobility impaired, including information provision.

Ensure that information about the availability of park facilities for the mobility impaired is included on the NPWS and other appropriate websites.



Outcome 6

Strengthen and create partnerships

OUR AIM FOR THE PRECINCT

Continue to support and build on partnerships with neighbours, volunteers, Mosman Council, Taronga Zoo and other key stakeholders.

WHAT WE ARE GOING TO DO

Continue to work with the Royal Australian Navy and other support agencies in management of the *HMAS Sydney I* memorial.

Whole of park actions as they apply to Bradleys Head precinct

Continue to support the volunteer bush regeneration and walking track maintenance programs.

In partnership with Mosman Council and individual neighbours, prepare and implement a stormwater management strategy to reduce the impacts of stormwater flowing into and across the precinct and into the harbour from Bradleys Head Road and neighbouring properties.

Continue working with Taronga Zoo and other stakeholders in feral animal management.





Outcome 7

Robust management of the park is sustained

OUR AIM FOR THE PRECINCT

Bradleys Head precinct will provide the opportunity to demonstrate best-practice management in vegetation research and management, historic site interpretation and visitor facility design.

WHAT WE ARE GOING TO DO

Address the impacts of climate change and sea level rise on the sea walls, historic sandstone jetty and Aboriginal shell midden.

Relocate dinghy racks installed at Taylors Bay, as they are in the wrong location for owners of boats moored in Taylors Bay and are not used.

Whole of park actions as they apply to Bradleys Head precinct

Upgrade the Sydney Harbour Scenic Walk link from Taronga Zoo to Chowder Bay in accordance with the *Sydney Harbour Scenic Walk Strategy 2010*.

Establish a research program for the better understanding and management of *P. cinnamomi*.



Outcome 8

Contribute to the goal of easy and safe transport to and within the park

OUR AIM FOR THE PRECINCT

Work with local government and transport agencies to negotiate improved access and transport solutions for the precinct.

WHAT WE ARE GOING TO DO

Seek partnerships for the development and implementation of a ferry / zoo / bushwalk tourist package utilising a harbour water transport shuttle service and drop off / pick up at Taronga Zoo wharf and Chowder Bay wharf.

Seal existing unsealed carparking spaces at the Rifle Wall and at the ridge cottage site on Bradleys Head Road.

Liaise with Mosman Council regarding the construction of a bus shelter and lay-by at the Bradleys Head Road entrance to the precinct.

Whole of park actions as they apply to Bradleys Head precinct

Identify routes for bicycle travel to the park consistent with local government bike plans and, where appropriate, provide bicycle racks.

Bicycles are permitted on public vehicular roads and service roads but not on walking tracks throughout the precinct.



Shark Island

Sydney Harbour National Park

Historic Structure

Degaussing Station
Department of Defence

Gazebo

Historic Structure

Degaussing Station
Department of Defence

Port

Jackson

Wharf



0 25 50
Metres

-  Picnic Shelter
-  Path / Track
-  Steps
-  Proposed kitchen facility
-  National Park



Precinct 08: Shark Island

The 'gardenesque'-style character of the island is of high cultural significance and will be conserved and interpreted for park visitors.

Shark Island is 1.5 hectares in area and lies 450 metres north of Woollahra Point. The highest point is 10 metres above sea level.

Shark Island, or Boam-billy as referred to by Aboriginal people, has a fascinating history. Beginning in the 1830s, it was established as a classic recreational parkland by the Clark and Shark Island Trust.

Today, visitors can travel to the island on the regular ferry service and spend time picnicking, swimming, fishing and enjoying a private party or special event.

Improved visitor access and an increased range of high-quality recreational experiences will be provided on the island. Public events such as performances, plays, food festivals and arts events will be supported and the island will continue to be available for limited exclusive hire. All visitor services will be designed in ways that minimise the direction of noise towards the foreshore suburbs.

Improving access and the enjoyment of visitors to Shark Island is the subject of several of the key projects in this plan including:

- » **Project 3 Aboriginal Discovery Partnership**
- » **Project 4 Harbour Islands**
- » **Project 10 Climate Change Mitigation**
- » **Project 12 The Harbour Shuttle**

Details of these projects are outlined in Section 01.

The Precinct and its Context

Description

Shark Island's significance is derived from its diverse range of uses over time and its long and continuing use as a recreational area for the people of Sydney.

Shark Island has evolved as a national park destination for small groups, family functions and public events. It is available for exclusive use for booked private events such as weddings and parties. It is a popular location for viewing major harbour events.

Planning context

Shark Island does not fall within any local government area but does have visual and historic links with the mainland's Woollahra Council and with the Department of Defence.

The wharf is leased from NSW Roads and Maritime Services, manager of the Sydney Harbour sea bed to mean high water mark, and maintained by NPWS. Of relevance to the management of the wharf is the *Disability Standards for Accessible Public Transport 2002* (in force under subsection 31 (1) of the *Disability Discrimination Act 1992*). This Act requires assessment of all public transport wharves for upgrading for access for the disabled subject to a range of conditions detailed in the Act.

A conservation management plan was prepared for the island in 1997, by students from the Sydney University Master of Heritage Conservation Program, and many of the recommendations have been implemented.

Further details about the planning context are provided in Section 4 Appendices.



Significant Values and Considerations

Natural features

The island today is predominantly a modified landscape with a few elements of indigenous vegetation extant. Most of the original vegetation was removed to accommodate previous uses. In the early 20th century when the island became a popular recreational destination, it was landscaped with fashionable Edwardian plants such as hoop pine *Araucaria cunninghamii*, Canary Island palm *Phoenix canariensis*, *Aloe sp.*, *Agave sp.* and *Yucca sp.* Many of these specimens remain today. The rock platforms and beach provide important habitat for marine and intertidal life.

There is a population of brush-tailed possum *Trichosurus vulpecula* resident on the island. The native water rat *Hydromys chrysogaster* and various birds visit the island.

Cultural history

The Kameragal clan lived to the north of Sydney Harbour and the Cadigal clan lived to the south. Both were from the Guringai linguistic group and both may have used the island. The Aboriginal name for Shark Island is 'Boam-billy'.

Evidence of Aboriginal life on the island is in the form of at least two middens and scatters of stone artefacts. The shells used for decoration on the island's 20th century buildings were possibly sourced from middens on the island.

The island has had a history from the 1830s of recreational use interspersed with other uses. From 1871 to 1900 the island was used for human, stock and dog quarantine. The first jetty for unloading stock was constructed in 1878 at the south eastern point where the current jetty is located. In 1904 the Clark Island Trust, controlled by the Lands Department, was given responsibility for Shark Island and visitors continued to picnic on the island.

The large Edwardian pavilion was constructed in 1911. Between 1911 and 1919, the island was planted with a large range of typically Edwardian trees and shrubs (see above) and water tanks, concrete picnic shelters and garden seats were installed.

During World War II, Shark Island was used as a storage depot by the Royal Australian Navy (RAN). 1950 saw the upgrading of visitor facilities and the construction of a pathway around the foreshore. Potable water was transported to the island weekly and a ranger was employed by the Maritime Services Board. The island has buildings and equipment on the foreshore which are part of the degaussing station located on the opposite foreshore at Steele Point, Nielsen Park. These were constructed by the Royal Australian Navy and are still operational today and used for demagnetising ships.

Shark Island was part of the original national park reservation in 1975.



Built environment and services

Dominant built features are the pavilion (1911) and wharf. Other visitor infrastructure includes a toilet block and concrete picnic shelters, seats and tables. Sydney Water supplies potable water and takes sewage from the island via submarine pipes linking the mainland at Point Piper. Electricity is supplied by the Department of Defence from the Degaussing Station at Steele Point, Nielsen Park. The water, sewer lines and current toilet block were installed, and the wharf reconstructed, in 1976-77.

Recreation

A visit to Shark Island is a special experience, with its spectacular harbour and city views and sense of isolation and tranquillity.

Currently, Shark Island is available for picnicking on a daily basis through a regular ferry service or by private transport.

Shark Island plays an important role in the celebration of special events such as New Year's Eve fireworks, Australia Day celebrations and the Boxing Day Sydney Hobart Yacht race start. It is increasingly included as a venue in Destination NSW's cultural programs.

Shark Island can be booked on an exclusive basis by groups for parties and functions. The potential for enhanced facilities to support functions is under consideration.

The principal contentious issue in relation to Shark Island is the potential noise drift to the suburbs around the harbour foreshore. There has been a recent history of complaints arising from island functions, especially where amplified music has been used.

The island provides a unique urban respite. In terms of facilities, the precinct is a medium day use area and has facilities for group picnics. A significant proportion of visits are made by those living over one hour's travel time from the precinct. A landing fee and booking for all visits applies at this precinct, although this is not always adhered to.

What We Are Going To Do



Outcome 1

Conserve the natural values of the park

OUR AIM FOR THE PRECINCT

The remnant gardenesque style plantings will be conserved and interpreted together with the remaining Port Jackson and Morton Bay figs and other significant native species. The cultural landscape will have precedence over the natural.

WHAT WE ARE GOING TO DO

Investigate and undertake the installation of solar panels on picnic and toilet buildings or stand alone. Investigate use of the power generated for wharf lighting.

Prepare and implement a tree management and replacement strategy.

Investigate the implications of sea level rise on intertidal zone habitats and biodiversity. Encourage continuing and new research of these areas and their ecology.

Whole of park actions as they apply to Shark Island precinct

Expand the Sydney Harbour National Park corporate and community volunteer program to Shark Island, enabling people to spend time on the island undertaking volunteer weed removal and landscape maintenance works.

Harvest rainwater through the installation of water tanks for water re-use in toilets and for external uses.



Outcome 2

Celebrate and nurture contemporary and traditional Aboriginal culture

OUR AIM FOR THE PRECINCT

Aboriginal cultural heritage will be protected and maintained and the Aboriginal community will guide its management.

WHAT WE ARE GOING TO DO

Whole of park actions as they apply to Shark Island precinct

Implement dual naming of the island.

Research and facilitate recording of contemporary contact and pre-contact Aboriginal culture regarding the island.

Facilitate on-park activities to encourage improved understanding of Aboriginal culture among both the Aboriginal and non-Aboriginal community.

Continue to liaise with the local Aboriginal people of Sydney on matters relating to the protection, management and interpretation of the Aboriginal cultural heritage of the island.

Work in partnership with local Aboriginal communities and other stakeholders to develop and expand programs on Shark Island to interpret both traditional and contemporary Aboriginal culture throughout Sydney Harbour.





Outcome 3

Celebrate the historic heritage values of the park

OUR AIM FOR THE PRECINCT

The cultural landscape, including the Edwardian pavilion and the early 20th century plantings, will be conserved and interpreted.

WHAT WE ARE GOING TO DO

Investigate new commercial partnerships to provide tourist experiences with an emphasis on the island's cultural heritage.

Ensure regular maintenance and repairs to historic structures, including the stonework of sea walls and grottos and painting of the gazebo.

Whole of park actions as they apply to Shark Island precinct

Review, endorse and implement the *Shark Island Conservation Management Plan 1997* prepared for the island.

Provide high-quality historic heritage interpretive and educational material commensurate with the high cultural and recreation significance of the island.



Outcome 4

Provide enriching and memorable experiences in the park

OUR AIM FOR THE PRECINCT

Traditional passive recreation opportunities will be maintained and enriched with new tourism experiences, whilst protecting natural and cultural heritage values and allowing a greater diversity of visitors to enjoy the island.

WHAT WE ARE GOING TO DO

Promote the island as a venue for functions and events, including major cultural events such as the Sydney Festival, with numbers limited to a maximum of 800 persons on the island at any one time.

Replace (after detailed recording) the 1950s picnic shelters with updated structures of simple design and orientation, possibly including new locations if determined in the masterplanning process.

Review the restrictions of visiting hours, activities, visual impacts and in particular sound amplification, to minimise impacts generated from island visitation on neighbours.

Permit the provision of infrastructure to support catered functions, such as outdoor kitchen facilities. The proposed location is adjacent to the amenities building, where water and power are available.

Assess the condition of the foreshore walking track in light of possible sea level rise impacts and repair or demolish as appropriate.

Provide an entry statement at the island's wharf arrival point including interpretation of the island's features.





Outcome 5

Improved access to the park for all

OUR AIM FOR THE PRECINCT

The less physically able and a diversity of cultures will have increased opportunities to enjoy the island. The precinct will demonstrate excellence in landscape management and design, including the provision and updating of visitor facilities to a high-quality standard.

WHAT WE ARE GOING TO DO

Design and construct island pathways that provide an accessible route from the wharf to the gazebo and amenities block.

Prepare a landscape plan for the island to appropriately balance the island's competing values, maximising cultural landscape elements and their interpretation and achieving high-quality amenity for visitors.

Provide high-quality, well-designed landscape elements at the island's wharf entrance to signal the special qualities of the island that lie ahead.

Whole of park actions as they apply to Shark Island precinct

Install interpretive and information signage on the island. Temporary signs should be located at the entrance to the island (wharf and beach) to indicate if the venue is hired.

Review the requirements and feasibility for adaptation of the wharf to allow improved access for mobility impaired people, in accordance with *the Disability Standards for Accessible Public Transport 2002*.



Outcome 6

Strengthen and create partnerships

OUR AIM FOR THE PRECINCT

Continue to support and build on strong volunteer and commercial partnerships in conservation of and visitation to Shark Island.

WHAT WE ARE GOING TO DO

Formalise an agreement with the Department of Defence for the degaussing station infrastructure on the island and use of the power supply.

Provide support for volunteer vegetation management programs.





Outcome 7

Robust management of the park is sustained

OUR AIM FOR THE PRECINCT

The precinct will provide an excellent example of sound park management, including adaptation to sea level rise.

WHAT WE ARE GOING TO DO

Whole of park actions as they apply to Shark Island precinct

As part of park wide inter-tidal asset maintenance, monitor the impacts and implement best practice asset maintenance and adaptation for assets directly impacted by rising sea levels, such as Shark Island wharf and rock platform and foreshore structures.

Ensure any upgrades or new facilities incorporate environmentally sustainable features and are of high-quality, long-lasting materials.



Outcome 8

Contribute to the goal of easy and safe transport to and within the park

OUR AIM FOR THE PRECINCT

Provide for easier public access to the island.

WHAT WE ARE GOING TO DO

Continue the regular water-based shuttle service to Shark Island for independent visitors.

Whole of park actions as they apply to Shark Island precinct

Investigate and, if approved, implement the waiving of the landing fee for independent visitors. Fees are to be continued for groups and private bookings.



Clark Island

Sydney Harbour National Park



Port

Jetty
(no public
boat
access)

Wharf

Jackson



0 25 50
Metres

-  Picnic Table
-  Path / Track
-  Steps
-  Proposed location for camping, functions and events.
-  National Park



Precinct 09: Clark Island

The primary focus for the island is for an increased range of small-scale, high-quality recreational experiences in a natural setting.

Clark Island, a small island less than one hectare in size, offers a tranquil bushland setting in the heart of Sydney Harbour, a unique picnic location for small groups and family functions. The island is situated 350 metres from Darling Point on the harbour's southern shore. The Aboriginal name is Billong-olola.

Along with Shark Island to its east, it was well established in the mould of recreational parklands by the early 20th century and holds a special place in the memories of many in the Sydney community.

A company providing Aboriginal cultural tours regularly takes visitors to Clark Island. The island can be booked on an exclusive basis by groups for functions and is one of the key spectator venues for New Year's Eve fireworks and other harbour events. In previous years, it was a venue for theatre company performances and continues to offer a unique 'stage' for cultural events.

Improving the access and enjoyment of visitors to Clark Island has been targeted in several of the key projects in this plan of management. The main project is **Project 3 Aboriginal Discovery Partnership**, where we will work in partnership with the Aboriginal people of Sydney and other stakeholders, to develop and expand programs to interpret both traditional and contemporary Aboriginal culture throughout Sydney Harbour.

Other projects where Clark Island will feature include:

- » **Project 4 Harbour Islands**
- » **Project 10 Climate Change Mitigation**
- » **Project 12 The Harbour Shuttle**

Details of these projects are outlined in Section 01.

The Precinct and its Context

Description

Clark Island, or Billong-olola as referred to by Aboriginal people, is a small island in the stunning waterscape at the heart of Sydney Harbour. Sited just off the foreshore at Darling Point, it represents the quiet and remote character of Sydney Harbour prior to European settlement.

The reclaimed grassed areas are contained by historic seawalls, with stairs and pathways that extend to the upper levels of the island. Although largely replanted with native vegetation in the 1970s, the island has some large remnant species such as Port Jackson fig *Ficus rubiginosa*, which need care and protection.

The wharf on the western side of the island has become a regular entry point for people arriving in smaller vessels including kayaks, boats and water taxis. A small jetty adjacent to the wharf allows for NPWS vessel mooring to service facilities on the island.

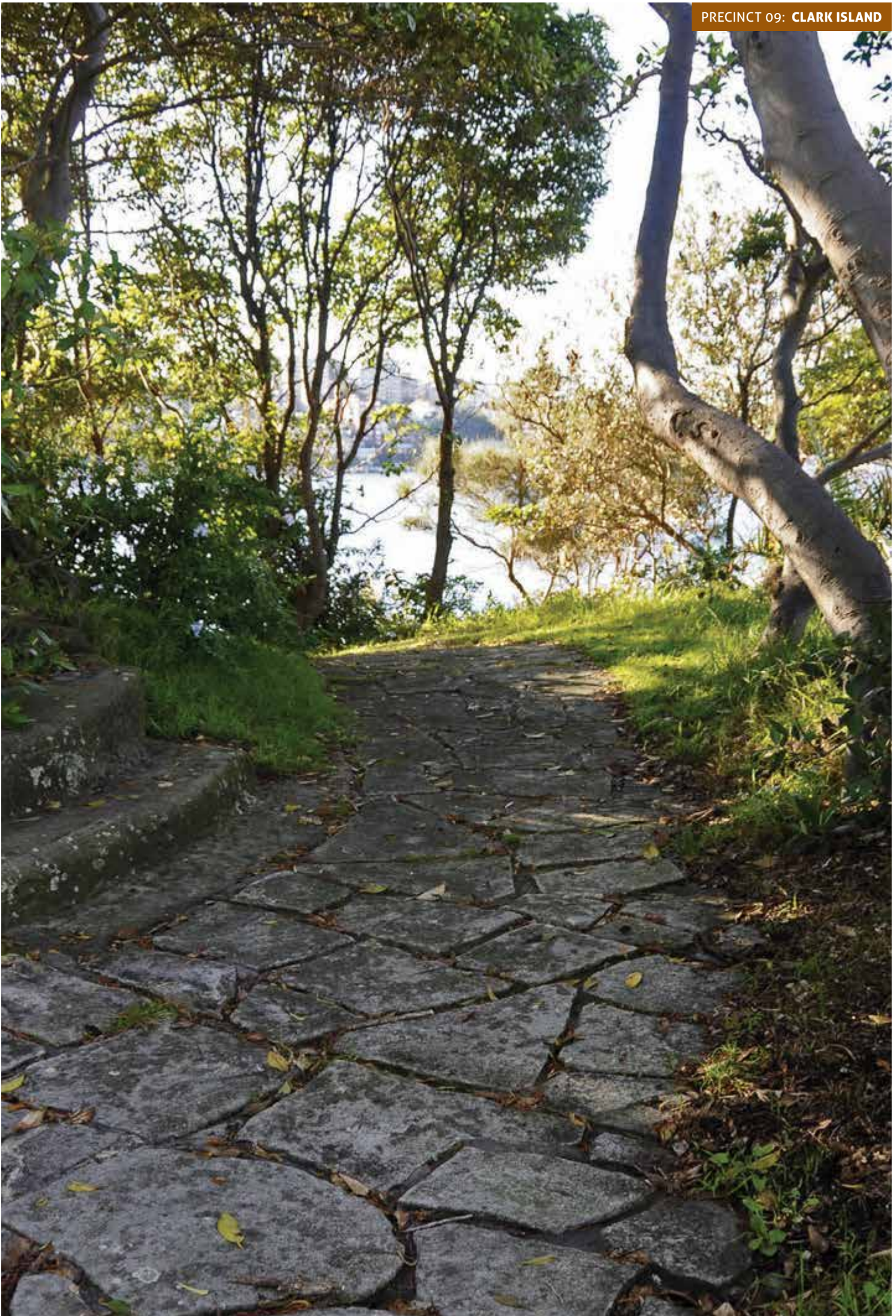
Planning context

The adjacent suburb of Darling Point is part of the Woollahra local government area, and council has a strong interest in how the island is utilised.

The wharf is leased from NSW Roads and Maritime Services but maintained by NPWS. The *Disability Standards for Accessible Public Transport 2002* (in force under subsection 31 (1) of the *Disability Discrimination Act 1992*) applies to the Clark Island wharf and sets minimum standards for the wharf and associated access points.

Further details about the planning context are provided in Section 04 Appendices.





Significant Values and Considerations

Natural features

This small rocky island has increased in size due to reclamation and the construction of sea walls. Wind-sculpted, substantial sandstone rocks and rocky overhangs characterise the island.

The island's vegetation was originally typically Port Jackson fig *Ficus rubiginosa*, Sydney red gum *Angophora costata*, sweet pittosporum *Pittosporum undulatum*, she-oak *Casuarina* spp. and *Banksia* spp. Today there is some remnant vegetation, but much has been replanted, as the island was cleared in the 1800s to grow vegetables. The understorey is composed of small native shrubs and some weed species.

The remnant and planted vegetation provides habitat for a number of native fauna species and a vegetative link to other bushland areas on the mainland, such as Bradleys Head.

Fauna on the island includes birds such as the Australian magpie *Gymnorhina tibicen*, laughing kookaburra *Dacelo novaeguineae*, pied currawong *Strepera graculina* and various sea birds and ducks. Various bats, possums and rats (native and non-native) may be present or visit. Reptiles, such as skinks and many invertebrates, live on the island.

Bush regeneration programs to control weed species are conducted with the assistance of volunteers.

Cultural history

Billong-olola is the Aboriginal name for the island. The Kameragal clan lived to the north of Sydney Harbour and the Cadigal clan lived to the south. Both were from the Guringai linguistic group and both may have used the island. The Cadigal people are the recognised traditional owners of Sydney Cove. Today, there is little tangible evidence of Aboriginal life on the island. It is understood that the island was frequently visited by local Aboriginal people, with the natural rocky shoreline adapted for use as a fish trap.

Clark Island was named after Lieutenant Ralph Clark, an officer of the marines in the First Fleet of 1788. Like all officers, he was encouraged to grow food for the colony and was given permission to do so on the island. Whilst there was some measure of success, the crops were often stolen and as result, the project was abandoned.

From the 1860s, the island was a popular picnic spot for the growing and increasingly prosperous colony. 'Picnic on Clark Island 1870', a large painting by artist Montague Scott, hangs in Sydney's Mitchell Library.

The island was proclaimed a public reserve in 1879. To improve the island's amenities, the Clark Island Trust was established in 1892. Remnants of built items from this period are still present, such as water tanks and the timber jetty. The island was long associated with the Sydney Flying Squadron Sailing Club. Clark Island was transferred to the Defence Department during World War II and the remains of one of the three Japanese midget submarines was stored on the island for a short time. Part of one of the midget submarines is now located on Garden Island and is available for public viewing. Clark Island became part of Sydney Harbour National Park in 1975.

Built environment and services

The island has a jetty suitable for limited passenger transfer. Picnic furniture and toilet facilities are provided for visitors. A series of steps and pathways connect different levels of the island and a 70-metre concrete pathway runs along the eastern and northern side. Rock overhangs are supported by masonry and stone supports, for public safety reasons. A brass plaque provides limited information about the early history of the island.

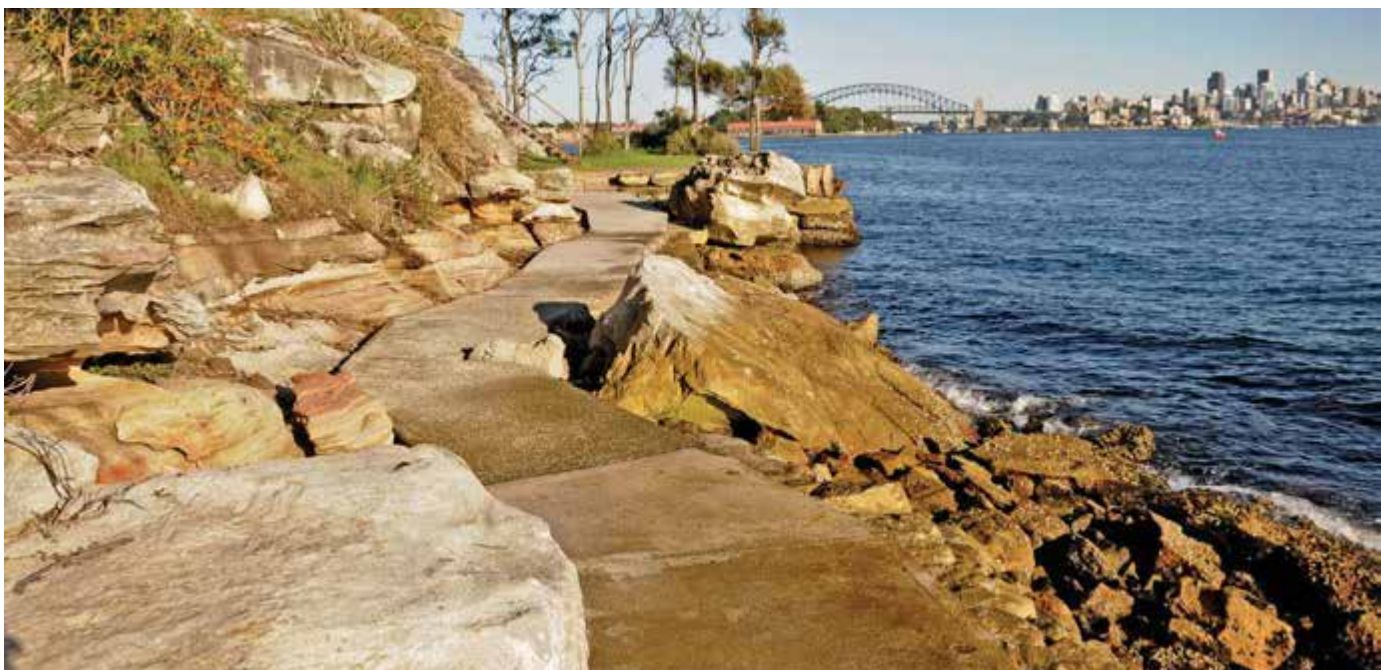
Town water, sewer and electricity are available and are connected to the mainland.

Recreation

Clark Island has a long history of recreation, with its convenient location and its setting in a priceless natural and cultural landscape. Clark Island is available to visitors for small gatherings such as picnics, with bookings required through NPWS.

The island may be hired exclusively for functions. There is currently no regular public transport service to the island however access is available by private or charter vessel, including kayaks and other private means of transport. Mooring at the wharf is not permitted due to its limited size, such that drop off and pick up only are permitted.

Clark Island provides an urban respite experience. In terms of facilities, this precinct is a medium day use area and has facilities for group picnics. A significant proportion of visits are made by those living over one hour's travel time from the precinct. A landing fee and booking for all visits applies to this precinct.



What We Are Going To Do



Outcome 1

Conserve the natural values of the park

OUR AIM FOR THE PRECINCT

Of the five islands in Sydney Harbour National Park, Clark Island differs from the others in that it is the most natural, with minimal built structures and a significant coverage of native vegetation. Maintaining this uniqueness, by conserving natural habitat and interpreting the natural environment of the harbour islands, is a primary aim.

WHAT WE ARE GOING TO DO

Consider expansion of the volunteer program to include potentially enabling volunteers to spend an over night on the island for bush regeneration and maintenance work.

Management of the bush on the island will aim to recreate, to the best of our knowledge, the pre-1788 landscape.

Maintain cleared grassed areas on the island for recreational use.

Install solar lighting on the wharf.



Outcome 2

Celebrate and nurture contemporary and traditional Aboriginal culture

OUR AIM FOR THE PRECINCT

Clark Island will be a place for community learning around Aboriginal culture and the story of Sydney.

WHAT WE ARE GOING TO DO

Allow construction of campfire facilities for use by Aboriginal and other tour groups, to include low key seating and fire place. Aboriginal people will be consulted on the design and location, with a preference for the currently cleared areas.

Whole of park actions as they apply to Clark Island precinct

Implement dual naming of the island.

Research and facilitate the recording of contemporary contact and pre-contact Aboriginal culture regarding the island.

Facilitate island-based activities to encourage improved understanding of Aboriginal culture among both the Aboriginal and non-Aboriginal community.

Involve the Aboriginal community in the presentation and interpretation of Aboriginal culture.

Work in partnership with the local Aboriginal community and other stakeholders to develop and expand programs to interpret both traditional and contemporary Aboriginal culture throughout Sydney Harbour.





Outcome 3

Celebrate the historic heritage values of the park

OUR AIM FOR THE PRECINCT

Interpret the rich history of the island, and make the information available using interesting and contemporary means.

WHAT WE ARE GOING TO DO

Prepare and implement a heritage management plan for the island, aimed at conserving and interpreting the cultural landscape of the island in line with heritage significance assessment recommendations.

Provide interpretive information to tell the story of Aboriginal and European history, including the island's role in harbour sailing and other recreational pursuits, and the World War II Japanese attack on Sydney.



Outcome 4

Provide enriching and memorable experiences in the park

OUR AIM FOR THE PRECINCT

Traditional participatory recreation opportunities will be maintained and enriched with new tourism experiences, whilst protecting natural and cultural heritage values and allowing a greater diversity of visitors to enjoy the island.

WHAT WE ARE GOING TO DO

Continue the enhancement of Aboriginal-focused guided opportunities with activities such as story telling, star gazing and bush tucker picnics.

Continue to promote the island as a venue for functions, with numbers limited to a maximum of 250 persons on the island at any one time.

Review the restrictions of visiting hours, activities, visual impacts and in particular sound amplification, to minimise impacts generated from island visitation on neighbours.

Camping is permitted on Clark Island subject to formal approval by NPWS through the issue of consent, licence or lease.

Continue the use of Clark Island for special events such as New Year's Eve, Sydney Festival, Crave, Vivacity, Vivid, Sydney Writers' Festival, Biennale and Sydney Film Festival.

Pursue harbour-based events such as Clark Island to Shark Island swimming and kayaking events, subject to the acquisition of an aquatic licence from NSW Roads and Maritime Services.





Outcome 5

Improved access to the park for all

OUR AIM FOR THE PRECINCT

Through landscape management and design, the less physically able and a diversity of cultures will have increased opportunities to enjoy the island.

WHAT WE ARE GOING TO DO

Investigate the viability of improved access for the disabled to and within the Clark Island precinct.

Investigate specialist tours for culturally and linguistically diverse (CALD) communities with a not-for-profit Aboriginal tour operator.

Prepare a landscape plan for Clark Island to guide the provision and maintenance of cleared and bushland areas and amenities for future use of the island.

Monitor the condition of and maintain the foreshore walking track on the eastern side of the island. A reassessment of the materials used may be required due to sea level rise and wave action.

Upgrade the picnic furniture on the island.

Whole of park actions as they apply to Clark Island precinct

Provision of a regular public transport service to the island will require assessment of the wharf for upgrading under the requirements of the *Disability Standards for Accessible Public Transport 2002* (in force under subsection 31 (1) of the *Disability Discrimination Act 1992*).



Outcome 6

Strengthen and create partnerships

OUR AIM FOR THE PRECINCT

Through continued bush regeneration work with volunteers and other stakeholders, Clark Island's vegetation will be improved. Partnerships will be pursued to allow a more diverse range of activities for visitors to enjoy the island.

WHAT WE ARE GOING TO DO

Continue to support the island's volunteer bush regeneration program and seek expansion of the corporate program currently operating at Middle Head. This involves volunteer staff from corporate entities working under the guidance of NPWS experts to remove weeds and participate in park maintenance activities.

Seek partnerships with the education and cultural sectors, to encourage small-scale special events on the island.





Outcome 7

Robust management of the park is sustained

OUR AIM FOR THE PRECINCT

The precinct will provide an excellent example of sound park management including adaptation to sea level rise, community engagement and cultural and ecotourism to a unique destination.

WHAT WE ARE GOING TO DO

Examine options for energy and water saving and reduce waste collection requirements through recycling and visitor education programs.

Whole of park actions as they apply to Clark Island precinct

Ensure the maintenance and stability of the wharf, pathway and seawalls of Clark Island cognisant of sea level rise predictions.

Include the island in the park-wide review of signage.

Ensure any development on the island uses environmental sustainability best-practice.

Ensure any long term proposals for the island consider predicted sea level rises.

Ensure any upgrades or new facilities incorporate environmentally sustainable features and are of high-quality, long-lasting materials.



Outcome 8

Contribute to the goal of easy and safe transport to and within the park

OUR AIM FOR THE PRECINCT

Include Clark Island in a regular, easily accessed harbour shuttle service.

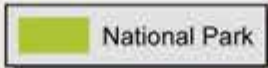
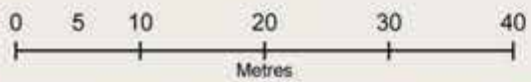
WHAT WE ARE GOING TO DO

Investigate the introduction of a regular low cost option water transport shuttle service to Clark Island for independent visitors.



Fort Denison

Sydney Harbour National Park



Precinct 10: Fort Denison

Conservation of this unique site is the key focus, requiring detailed monitoring and adaptation, where feasible, for the impacts of climate change and the continual physical processes of winds, tides, waves and associated currents. At the same time, facilitating continued public use as an historic site and utilising the site to interpret its history is important.

Fort Denison, or Mat-te-wan-ye as it is known by the local Aboriginal people, is one of the most distinctive, unique and iconic landmarks in Sydney Harbour. Constructed over the years from the 1840s, the fort was completed in 1862. The Martello tower, on the northern end of the island, is one of only two in the southern hemisphere and is one of the finest examples of its kind in the world.

Fort Denison is recognised by the people of Sydney as an historic fortification that remains an enduring feature in a changing harbour context. Fort Denison is listed under the *NSW Heritage Act 1977* for its state level of significance.

The precinct has undergone stonework conservation to address outstanding maintenance and repairs. It is the subject of research into the process of climate change-induced sea level rise.

Research to date indicates that the island is highly vulnerable to any form of sea level rise. At the upper level predictions and in its current configuration, it would be profoundly affected. Even if the sea walls were adapted, seepage would still occur through the foundation.

Many in the community have fond memories of visits to Fort Denison as children, and it is important to maintain and increase public access and appreciation of the site.

Fort Denison has been targeted in a number of the key projects in this plan of management due to its location and status. Visitor access is very important.

Project 7 Enhanced Park Access and **Project 12 The Harbour Shuttle** aim to increase and improve access to the park for all. Other projects applying to this precinct include **Project 4 Harbour Islands** and **Project 10 Climate Change Mitigation**.

Details of these projects are outlined in Section 01.

The Precinct and its Context

Description

Fort Denison is a unique island fortification close to the heart of the city, its closest land fall being Garden Island.

Its Martello tower, a small defensive fort, is the only one in Australia and the last to be built in the world. Built in the mid 19th century in response to a military threat that did not eventuate, it was obsolete before completion. The fort covers an area of only 0.2 hectares and although originally a rocky outcrop, it was cut down in parts to water level for the construction of the barracks and fortification.

A museum display is housed in the barracks along with a café. Tours are conducted daily and the café is also open seven days and provides a venue for after-hours functions and events.

The site is a popular destination for a diverse range of visitors including school groups, and is currently serviced by a regular ferry service from Circular Quay and Darling Harbour.

Planning context

Fort Denison is located in unincorporated waters and is not subject to any local government legislation. The fort, however, is in close proximity to the City of Sydney and North Sydney local government areas.

A number of state government agencies have responsibility for infrastructure on the island and NSW Roads and Maritime Services is responsible for the sea bed surrounding the island.

Sydney Ports Corporation maintains the tide gauge, navigation light and fog bell on the island and the Bureau of Meteorology maintains an anemometer on the flag pole. Licences from NPWS are required for these.

NSW Water Police implement legislation regarding the lessee's liquor licence.

Fort Denison is of state significance and is listed on the State Heritage Register.

Under the *Disability Standards for Accessible Public Transport 2002* (in force under subsection 31 (1) of the *Disability Discrimination Act 1992*), there is a requirement for wharves which are used by passengers in conjunction with travelling on a public transport service, to meet certain requirements. Fort Denison wharf requires consideration for compliance.

Further details about the planning context are provided in Section 04 Appendices.





Significant Values and Considerations

Natural features

There are few natural identifying features remaining in this precinct as the island has been completely altered. The fact that it is no longer referred to as an island but as a fort is indicative of this situation. The only remaining natural features occur in the intertidal zone. However, the other 'natural' features are the remnant historic plantings including an edible fig *Ficus carica* on the upper terrace and a date palm *Phoenix canariensis* in the lower courtyard area. The *P. canariensis* (one remaining of two) in particular has a landmark quality, due to its size and its incongruous prominence on what is essentially a rocky island. The *F. carica*, despite its age, continues to bear fruit. Both specimens are reminders of the long domestic history of the island associated with the island caretakers, a history which spans more decades than the active fort.

Cultural history

Fort Denison is of national and international significance as an exceptionally fine and intact example of a 19th century defence fortification that is unique within Australia. Located in Sydney Harbour, neighbouring the Sydney Opera House and the Sydney Harbour Bridge, Fort Denison is a landmark that represents colonial Australian settlement. The fort is associated with several phases of Australian history.

It is highly probable that it was used by local Aboriginal people. Governor Arthur Phillip renamed it Rock Island soon after European settlement to Sydney Cove, but it was informally known as Pinchgut Island. This colourful name is commonly believed to refer to the island's use as place of punishment for convicts until the early 1800s, and the starvation diet they received there of bread and water. The name may also refer to the nautical term that indicates the island's location at the narrowest point of the harbour. The island, previously approximately 25 metres above mean sea level (the Martello Tower is 15.4 metres above mean sea level) was then modified for defensive use firstly as a battery and then as a fort. As a fort, it demonstrates the administration and politics of the British Empire and the need for defensive structures in the colonies.

For most of the 20th century, the island and fort took on a maritime role. It continues to be a reference point for tide measurement and changing navigation techniques. Fort Denison is the only island site entirely covered with a fortification within Sydney Harbour and it retains the integrity of its completed 1862 form. In an international context, the combination of a Martello tower and associated barracks is unusual and rare. The fort, built entirely of local sandstone, demonstrates the evolution from an island to convict shaped rock battery, to a completed fort. The Martello tower on Fort Denison is unique as a European-styled coastal fort constructed in Australia. It is of international significance as one of only two towers in the southern hemisphere that survive intact. It forms part of a worldwide group of similarly styled and dated European coastal fort towers built during this period.

The tower is also of international significance for the integrity of its original casemated ordnance and sidearms. Fort Denison is recognised by the people of Sydney as an historic fortification that remains an enduring feature in a changing harbour context. The very nature of its massive sandstone construction, combined with its isolation and comparative inaccessibility, adds to its mystique and its landmark status within Sydney Harbour.

Built environment and services

The fort has town water, electricity and sewer. The wharf is leased from NSW Roads and Maritime Services and maintenance is the responsibility of NPWS. The barracks building was converted to a museum. A commercial kitchen and dining room were installed in 1999-2000. The toilet facilities were upgraded and connected to the sewer at this time.

Also on the island is a tide gauge which has been operating continuously since 1865, a fog bell, navigational markers and a beacon. The Bureau of Meteorology operates a weather facility on the island and publishes observations at half-hourly intervals on their website.

At 1pm every day, Fort Denison staff fire a cannon. This practice began in 1906 to enable sailors to set their ships' chronometers correctly. The daily gun continued until World War II, when the authorities stopped it for fear of alarming residents. The practice recommenced in 1986.

Recreation

Fort Denison has a strong visual presence in the harbour landscape and is a well-recognised local landmark. It provides a cultural and iconic experience. An auditory reminder of its presence is the daily firing of the fort's cannon at 1pm.

Fort Denison is available to visitors through tours, with ferries departing from Circular Quay and Darling Harbour. Tours include entry and a guided tour of the Martello Tower and a visit to the museum and historic tide gauge room. A café, operated by a lessee, is available for food and beverages. In the evenings, the venue is available for exclusive hire for functions and events.



What We Are Going To Do



Outcome 1

Conserve the natural values of the park

OUR AIM FOR THE PRECINCT

Monitoring of climate change-induced sea level rise will guide future planning and use of the precinct.

WHAT WE ARE GOING TO DO

Review the advice and implement where practicable, the recommendations contained in DECCW Coastal Unit's *Sea Level Rise Vulnerability Study for Fort Denison* (October 2008).

Examine options for energy and water saving and the reduction of waste collection requirements.

Continue seagull management to ensure Fort Denison does not become a nesting site.



Outcome 2

Celebrate and nurture contemporary and traditional Aboriginal culture

OUR AIM FOR THE PRECINCT

The Aboriginal cultural heritage of the island, prior to the construction of the fortifications, will be researched and interpreted where appropriate.

WHAT WE ARE GOING TO DO

Research and facilitate recording of contemporary, contact and post-contact history of the precinct with the involvement of the Aboriginal community, to provide data for potential Discovery tours in partnership with City of Sydney and other agencies.

Whole of park actions as they apply to Fort Denison precinct

Consider dual naming of Fort Denison.





Outcome 3

Celebrate the historic heritage values of the park

OUR AIM FOR THE PRECINCT

The fort will be conserved and the rich history of the island will be made available to visitors.

WHAT WE ARE GOING TO DO

Manage the collection of moveable heritage associated with Fort Denison.

Encourage ongoing research into the history and physical development of the fort.

Monitor the condition of *P. canariensis* and *F. carica* and seek the advice of an arborist if required.

Continue to provide water to *F. carica* and *P. canariensis* in summer as required to maximise their health.

Re-lay the turf on the upper terrace (with archaeological supervision) to improve the look and safety for visitors of this area.

Encourage and promote the fort's exceptional educational opportunities for schools and the general public.

Continue a program of preventative and cyclical maintenance.

Whole of park actions as they apply to Fort Denison precinct

Plan for future works based on the vulnerability assessment of climate change-induced sea level rise.



Outcome 4

Provide enriching and memorable experiences in the park

OUR AIM FOR THE PRECINCT

Traditional passive recreation will be maintained and enriched with new tourism opportunities, allowing a range of visitors the special 'island and historical experience' of Fort Denison.

WHAT WE ARE GOING TO DO

Continue to lease the Fort Denison barracks and forecourt for the purpose of café, restaurant and functions centre.

In the event that the current lease comes to an end, new adaptive uses will be considered to support sustainable visitor and tourist use and enjoyment.

Investigate the feasibility of declaring the island a 'non smoking' venue.

Daily tours will continue to operate ensuring that day time visitors have the opportunity for face-to-face interpretation of the island's heritage.

Ensure that Fort Denison continues to play a key role in special events on Sydney Harbour.

Ensure visitor safety and comfort by limiting numbers to no more than 200 visitors at any one time.

Ensure visitor safety and comfort by limiting the number of visitors in the Martello Tower to a maximum of 20 per guided group.

Improve the marketing and promotion for Fort Denison.

Permit construction of storage sheds in the yard, and other discrete well-designed storage facilities for the operation of the restaurant or similar use, if approved after heritage and environmental assessment and consideration of alternative options.

Work with the lessee to ensure that restaurant operations enhance visitor appreciation and experience of the core heritage values of the island.





Outcome 5

Improved access to the park for all

OUR AIM FOR THE PRECINCT

Due to the predicted vulnerability of the site to salt water inundation as a result of climate change-induced sea level rise, the wharf and other facilities will be upgraded as a priority to allow access for all. The fort's appearance will be to the highest possible standard and the significant visual elements of the fort will be well presented to the public.

WHAT WE ARE GOING TO DO

Develop a detailed design plan for an undercover outdoor dining/function area that does not compromise the visual presentation of the fort, particularly on arrival at the site, including appropriate lighting for night functions. A new structure for this purpose would be permitted subject to environmental and heritage impact assessment.

Develop a system to monitor, assess and address the impact of sea level rise, wave action and boat traffic on the fort structure.

Provide improvements for the mobility impaired including hand rails in the Martello tower and tunnel.

Whole of park actions as they apply to Fort Denison precinct

Maintain the toilet facilities for the disabled to a clear, clean and accessible standard.

Promote the availability and accessibility of the precinct.

Review the requirements and feasibility for adaptation of the wharf to allow improved access for mobility-impaired people in accordance with the *Disability Standards for Accessible Public Transport 2002* (in force under subsection 31 (1) of the *Disability Discrimination Act 1992*). Fort Denison is currently the highest priority precinct for upgrade to these standards.



Outcome 6

Strengthen and create partnerships

OUR AIM FOR THE PRECINCT

Develop partnerships with stakeholders to improve visitor opportunities and conserve the fort.

WHAT WE ARE GOING TO DO

Seek appropriate partnerships to continue monitoring and research on the impacts of sea level rise on this important historic site.

Include Fort Denison in the wider presentation of Sydney Harbour's coastal forts.

Seek partnerships with the education and cultural sectors, to encourage use of the island for small-scale special events on the island under the umbrella of larger programs and festivals such as the Sydney Festival, Crave, Vivacity, Vivid, Sydney Writers' Festival, book launches and celebrity events.

Negotiate with NSW Roads and Maritime Services for assistance with protection of the fort structure by implementing and regulating an 'irregular manoeuvre prohibited' zone distance off for commercial adventure vessels (CAV).

Work with the restaurant lessee to ensure that visitors to the island are supported by high-quality services and experiences.





Outcome 7

Robust management of the park is sustained

OUR AIM FOR THE PRECINCT

Fort Denison precinct will provide an excellent example of high-quality conservation.

WHAT WE ARE GOING TO DO

Implement and publicly promote the research and monitoring programs established for the precinct including the DECCW Coastal Unit's *Sea Level Rise Vulnerability Study for Fort Denison* (October 2008)

Adapt access to the fort to compensate for predicted sea level rise.

Implement recommendations to reduce sea water inundation below the floors of the barracks building and other infrastructure.

Continue the program of research into materials conservation and repair.



Outcome 8

Contribute to the goal of easy and safe transport to and within the park

OUR AIM FOR THE PRECINCT

Fort Denison will continue to have a regular, easily accessed water transport shuttle service.

WHAT WE ARE GOING TO DO

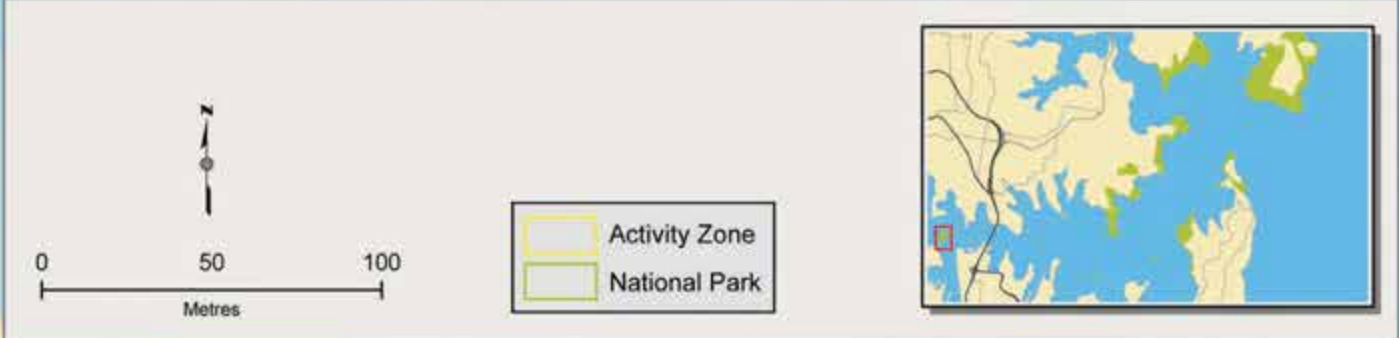
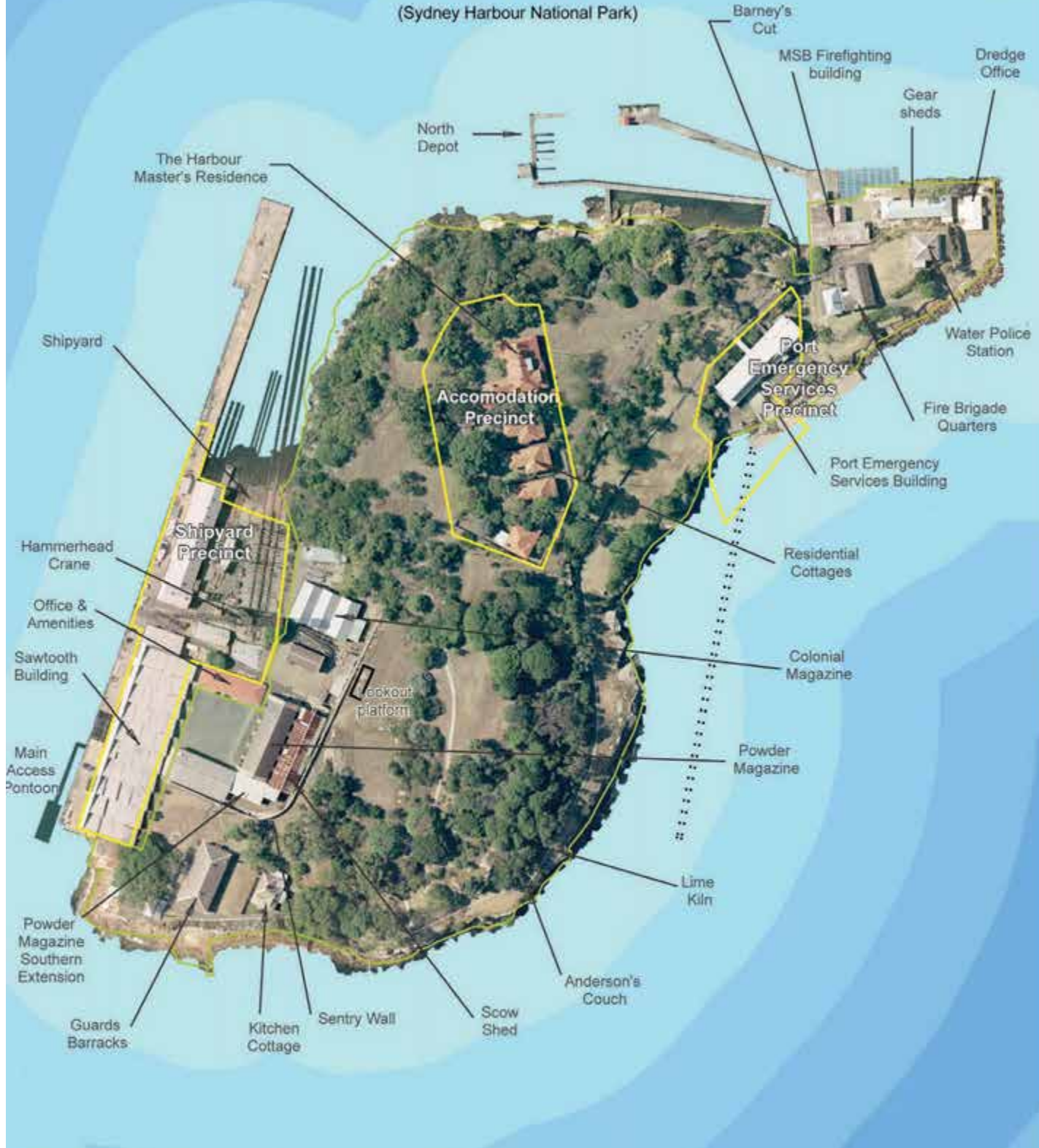
Ensure continued and improved water transport services to the fort.

Prepare a feasibility assessment for the provision of disabled access for the Fort Denison Wharf.



Goat Island

(Sydney Harbour National Park)



Precinct 11: Goat Island

Goat Island is the largest of the park's five islands, and one of the eight remaining islands of Sydney Harbour. The six and a half-hectare island contains the richest and most diverse array of Aboriginal, historic and natural heritage values of all the park islands. Of particular note are the more than 30 buildings and other structures dating from the 1830s to the 1960s.

Dominating the waters to the west of the Harbour Bridge, Goat Island or 'Me Mel' truly sits at the eye of Sydney Harbour.

Wide public access has been denied at Goat Island over most of the last two centuries. During the colonial period, this resulted from the island's use for the storage of explosives and housing of convicts. Throughout most of the 20th century, Goat Island was the administrative and operational base for the management of Sydney Harbour, first by the Sydney Harbour Trust and then by its successor, the Maritime Services Board (MSB).

Goat Island was transferred from the management of the MSB to NPWS in 1995. This did not result in the island being widely opened to general public access, largely because of the poor condition of much of the island's basic infrastructure and associated hazards.

Public access has been limited to special events, such as film festivals and the 1998 Biennale, supervised and specialised tours. The successful Australian television show 'Water Rats' was filmed and produced on the island from 1995 to 2001.

An ambitious program to address potential hazards and to prepare

the island for broader community use commenced in 2005. Over the next four years, more than 9 million dollars was spent on repairing wharfs, replacing steps and pathways and undertaking essential conservation works.

During this period, a draft masterplan was prepared outlining various proposals for the establishment of visitor services to the island. Following the public exhibition of the draft masterplan, the then Minister for Climate Change and the Environment appointed the Goat Island Reference Group (GIRG) to consider the public submissions on the plan and to provide formal recommendations to the Minister on the future development and management of the island.

The GIRG deliberated over a two-year period, considering a huge array of background information including a draft conservation management plan that was being prepared for the island.

The full text of the GIRG recommendations is reproduced on pages 177 and 178, comprising an overarching 'Vision' for the island along with a set of 'Guiding Principles'.

Project 4 Harbour Islands aims to revitalise the five islands of Sydney Harbour National Park, with a particular focus on Goat Island, as the largest and most complex of the group.

Details of this project are outlined in Section 01.

The Precinct and its Context

Description

Located west of the Harbour Bridge, Goat Island has a commanding position in the harbour very close to the Balmain peninsula and Barangaroo. As with all islands, there is a certain mystique and experience of isolation regardless of its proximity to the mainland.

Many aspects of the island have high significance, in particular the Aboriginal and historical heritage, evidenced by the remains of Aboriginal occupation, stories both recorded and spiritual and the colonial buildings from the 19th century. More recently, the island was home and work place to many whose memories and recollections form strong ties with the place and play a significant part in the interpretation of the site.

Following the arrival of the First Fleet in 1788, the island has remained in government control until the present day, being used for a range of purposes from gun powder storage to government shipbuilding yard. Most recently, in 1994, it was transferred from the NSW Maritime Services Board (MSB) to the NSW National Parks and Wildlife Service (NPWS), before being incorporated into Sydney Harbour National Park in 1995.

Planning context

Goat Island is unincorporated land, therefore not within any local government area. It does, however, have a close visual proximity and historical connection to Leichhardt, North Sydney and the City of Sydney local government areas. The adjacent foreshore areas at Birchgrove, Balmain East, McMahons Point and Millers Point are generally zoned for medium to high density residential development. Potential impacts of noise and visual amenity on nearby residential areas need to be considered in determining future operations and uses of the island.

Potential sites for land-based facilities for servicing Goat Island and the other national park islands are being investigated.

Goat Island is listed as a heritage item on the NSW State Heritage Register. This listing includes all the buildings and structures on the island, but excludes the wharfage which is subject to a separate lease with NSW Roads and Maritime Services.

Goat Island and its component parts, some 65 separate items, are heritage items within the NPWS Section 170 Register. The island as a whole is listed in the NPWS Historic Heritage Information Management System Register (# 1387).

The access wharf on the south west of Goat Island has been upgraded to meet the requirements of the *Disability Standards for Accessible Public Transport 2002* (in force under subsection 31 (1) of the *Disability Discrimination Act 1992*).

Further details about the planning context are provided in Section 4 Appendices.



Goat Island Reference Group

Vision and Recommendations for Goat Island

Goat Island Reference Group Vision

The Goat Island Reference Group (GIRG) developed the following guiding principles and vision for Goat Island.

For Goat Island to be a special place of beauty and unique experience, revived and enjoyed by the public as part of the natural and cultural domain and a focal point of one of Sydney's most valuable community assets – the network of national parks, reserves and visual landscapes.

Through retention, conservation and promotion of its outstanding natural, Aboriginal and European cultural heritage, Goat Island would become recognised as a place of national significance, featuring its pre-European shoreline and vegetation, and convict-constructed stone buildings.

Goat Island Reference Group Guiding Principles

The island and its most significant features would be conserved, interpreted and used in accordance with the following:

- » The most significant heritage elements of the island's history to be preserved, restored and revived.
- » Goat Island's natural values, including its natural shoreline and rock-form curtilage, and indigenous vegetation, to be highlighted and the interpretation of those values linked to the nearby 'green headlands' of Sydney Harbour.
- » The ability to tell the island's rich Aboriginal history and for visitors to experience Aboriginal heritage would be an important part of the island's interpretive activities and use.
- » The convict built stone and other colonial buildings and structures (1831-1865) in the Magazine precinct and the Water Police precinct, being of outstanding heritage significance, to be carefully restored and protected for visitor interpretation and experience.
- » Buildings, structures and operations which have a materially adverse impact on the values of the Magazine and Water Police precincts and their highly significant heritage features, and on the natural heritage values of the island, to be removed, in order to properly present, interpret and experience those heritage values and features.



- » The island's 20th century maritime history to be represented and its interpretation enabled by retention of the Harbour Masters Residence and four residential cottages on the knoll of the island; part of the western Broadside Wharf; the workshop buildings and structures to be used where appropriate for repair and maintenance of small wooden boats (The repair workshop, the repair workshop addition, the slipway workshop buildings and the 1949 winch house , and the 150 ton slipway and the 1925 slipway : items 2, 2a, 3 and 7 , and 29 and 113 of the inventory in the Conservation Management Plan 2011) in the Shipyard precinct and the amenities building (item 22) in the magazine precinct.
 - » The present commercial shipyard operations and the shipyard precinct buildings and structures adjacent to the Magazine precinct (The ship repair workshop, the addition to the ship repair workshop, the winch house (500 ton), the hammerhead crane, and the 500 ton shipway: items 1, 1a, 8, 9 and 30 in the inventory) have a materially adverse impact on that very significant precinct and its proper interpretation. The operations are also likely to be impacted upon in the future by the effects of climate change. In accordance with the vision and visitor experiences being proposed for the island, the present operations should cease and the above buildings and structures be removed.
- Such maritime features and on-going operations – and some of the important 'working harbour' heritage – are more suitably sited and interpreted elsewhere e.g. on Cockatoo Island.
- » The probable effects of climate change, high winds and tides on the lowest parts of the island to be taken into account when considering the retention/removal of buildings and structures on those parts of the island, along with a consideration of their significance and condition.
 - » Goat Island to be preserved, restored, revived, interpreted, used and promoted as a special destination and experience for the quiet enjoyment and education of the visiting public in accordance with its beauty and special natural and cultural heritage.
 - » The Harbour Masters Residence and the four residential cottages on the knoll of the island to be considered for visitor service facilities (including eating facilities) and overnight accommodation. On appropriate occasions, the island could be used appropriately for special events, primarily harbour-centred and orientated.
 - » Goat Island, as an island location, with its natural form and special heritage qualities, has considerable potential value as a community asset in heritage and tourism terms. It constitutes a unique opportunity to protect, conserve
- and promote these major assets together, as part of a major city tourism attraction – the Harbour – in a central city locale.
- » Appropriate accommodation, interpretation, catering, events and other tourism activities and services would best be managed and operated by government and/or corporate sector specialist entities in ways which can properly protect the special values of the Island and use and manage them as a public asset, with access to and exposure of the island's features, values and amenities to the public being a principle guiding the use of the island.
 - » Goat Island to continue to be managed as part of Sydney Harbour National Park. Additional buildings and structures identified by the Goat Island Reference Group as having an adverse visual and operational impact and detracting from the island's heritage values and significance include:
 - » The scow shed and boat shed in the Magazine precinct;
 - » The ship repair workshop and addition and 500-tonne slipway in the Shipyard precinct, subject to lease conditions and obligations;
 - » The dredge office, gear sheds, fire fighting building and wharves in the North Depot precinct;
 - » The Port Emergency Services building in the Emergency Services precinct; and
 - » The wharf and associated buildings in the South Depot precinct.

Significant Values and Considerations

Natural features

Goat Island forms an outstanding visual landscape, being one of several Sydney Harbour islands that contribute to the overall beauty and pattern of the harbour. The island is notable for its steep cliffs, central ridgeline, rocky shoreline, remnant sandstone outcrops and indigenous vegetation, and areas of dense regrowth.

Prior to 1788, the vegetation of the island would have been broadly reflective of that of the adjacent harbour foreshores of today, although it is likely to have been less species rich. This vegetation community, coastal sandstone ridge-top woodland with a scrub and herbaceous layer, is typically dominated by *Angophora costata*, *Eucalyptus botryoides*, and *Banksia integrifolia*.

Modifications to the pre-European landscape of Goat Island have been extensive and substantial for both the landform and the locally indigenous vegetation, and involved extensive quarrying, benching of sites, and substantial clearing from 1831. However, since the 1980s, plantings and vegetation regrowth, including many weed and non-indigenous species, have given the island the appearance, particularly from the water, of being densely vegetated.

Whilst Goat Island may once have hosted a diversity of fauna species (albeit less than in the surrounding headlands), the remaining fauna is now in poor condition. Remaining mammal species recorded on the island include the regionally significant water rat *Hydromys chrysogaster*, the vulnerable grey-headed flying-fox *Pteropus poliocephalus*, and up to eight species of

insectivorous micro-bat. Only three species of frog and three species of reptile have been recorded on the island. The bird fauna is similarly not very diverse and with only 19 bushland native bird species, 11 native shorebird and waterbird species recorded on and around Goat Island.

Unlike many other precincts within Sydney Harbour National Park, Goat Island has had more intense micro-bat survey. Of the eight species of microbat recorded foraging on the island at night, four are threatened species – the eastern freetail-bat *Mormopterus norfolkensis*, little bentwing-bat *Miniopterus schreibersii oceanensis*, eastern false pipistrelle *Falsistrellus tasmaniensis*, and the large-footed myotis *Myotis macropus*. However, to-date the last two species have only been tentatively identified from their echolocation calls. At least some of these micro-bats (as well as the grey-headed flying-fox) commute from other locations on the mainland to forage by night on the island. Future developments on the island should consider the impacts of any changed lighting shadows on the foraging behaviour of the threatened micro-bats.

The black rat *Rattus rattus* and three introduced bird species are the only introduced vertebrates now inhabiting the island. A silver gull colony commenced breeding on the island in 2004, and is considered to be an intrusive element due to adverse impacts on the island's landscape and cultural heritage values and public health issues due to high numbers and excessive food and faecal waste.

Cultural history

Prior to 1831, when the first recorded European use of the island commenced, Goat Island was frequented by Aboriginal people, especially the Wangal people. The Wangal people inhabited the area on the southern side of Sydney Harbour and referred to the island as 'Me-mel' (various spellings known) with various meanings associated with eyes or vision. Bennelong, who is believed to have been a Wangal man, claimed hereditary ownership of Goat Island and was often seen on the island with his wife Barangaroo.

Goat Island has been highly modified with some level of quarrying, infill, construction, lime burning or landscaping across virtually the entire island. It is likely that much evidence of Aboriginal occupation was removed during this period. The only remaining recorded site is a single shell midden, the remains of many meals gathered from the shores of the island.

The island itself and its history have strong historical and cultural significance and connections for Aboriginal people today.

Development on the island, since 1831, has been extensive and post-settlement clearing, levelling and construction has served to somewhat obscure the natural features of the island.

Hundreds of tonnes of high-quality sandstone were quarried for public buildings in Sydney up until 1832 when up to 200 convicts were moved from the prison ship *Phoenix* to live on the island. Convict labour was used to level a site and construct the gun powder magazine for the storage of explosives for the colony. The building was completed in 1836.

In 1837, the Water Police Station was moved from Long Nose Point to Goat Island on a high point on the north eastern end. To separate the police area from the convicts, a shallow canal was cut through the rock. This was known as Barney's Cut, after the Commanding Royal Engineer Captain George Barney. The stone cottage, built to accommodate the officer in charge and his crew of six and two cells, were designed by Mortimer Lewis, who also designed the Customs House at Circular Quay.

By 1846, most of the colony's gun powder was stored on Goat Island, including both the colonial government stores and privately-owned powder. During this time, the large convict wall and sentry box and soldiers' barracks and kitchen were constructed. In 1865, the government powder stores were moved to Spectacle Island with the merchant's holdings remaining. The Water Police building was used as a cartridge making laboratory when the water police moved to Dawes Point, also in 1865.

In 1901, the Sydney Harbour Trust was established to control the port of Sydney. Goat Island was established as the headquarters for the Trust, which operated until 1936 when it was replaced by the Maritime Service Board.

From the early 1900s, there was a new building phase on the island with the construction of the Harbour Masters residence in 1903 along with three other residences. Tugs and dredges were stationed at Goat Island and wharves constructed. The shipyard was constructed and it utilised the convict buildings for

Built environment and services

storage and workers' facilities. At its peak, there were 170 vessels at the island and during 1920 to 1930, the slipways were constructed to enable all the maintenance to be carried out on the island. More housing and single men's barracks were constructed to house staff and the Harbour Fire Brigade. By the 1930s, 120 people lived on the island.

During World War II, the island operations continued to revolve around the MSB duties on the harbour – utilising dredges, barges, tugs, launches and fire floats. Operations also involved building the Harbour Boom and preparing the keel blocks for the construction of the dock at Garden Island.

A shark-proof swimming area was enclosed on the north side of the cut and dredged sand was brought in for the beach. A recreation hall was also constructed, and those living on the island formed a tight-knit community.

After World War II, the MSB continued building its own wooden vessels and by 1948 three slipways were in use. In 1960, a 500-ton slipway was built to accommodate the MSB's larger vessels.

When Mort Dock at Balmain closed in 1963, the hammerhead crane built there in 1924 was moved to the island. At its peak, there were 500 daily workers on the island including 35 shipwrights. By 1964, the MSB began to scale down and worked passed to other agencies. Houses were demolished, and by 1984 only 14 people were living on the island. A conservation management plan, prepared in 1985, recommended that the island and its heritage be preserved as an historic site and opened to the public. It was decided in 1990, that the MSB no longer required Goat Island and Fort Denison and both were to be added to Sydney Harbour National Park.

Management responsibility for Goat Island was transferred from the MSB to NPWS in May 1994. The rationale for transferring the island to NPWS was twofold. The island was becoming increasingly unsuitable as an operational base for the MSB, and it was recognised that the significant heritage values of the island warranted a higher level of protection. This saw a radical transition in the role of the island from an operational maritime depot to being part of a national park, with a management focus on the conservation and interpretation of the natural and cultural values of the island.

Goat Island has over 30 buildings, ranging from the Powder Magazine, constructed between 1833 and 1838, to the maritime workers' amenities building built in 1964.

The island has five wharves, a number of sea walls and a shipyard containing a 10-tonne cantilever crane, two large slipways (650 and 150 tonne) and two smaller covered slipways.

Recent major works (2007-12) have included the installation of a new wheelchair-accessible pontoon and gang way, conservation works to the colonial sandstone buildings and the former Harbour Masters Residence, cliff-edge fencing upgrade, major wharf repairs and the removal of redundant and dilapidated wharfage.

A commercial lease is currently in place over part of the former shipyard. This generates income and provides for the ongoing use of the shipyard facilities. Whilst the existing lease expires in 2016, there is an option to renew for a further 20 years to 2036.

The island is connected to mainland sewer, water and electricity supplies. Telstra Corporation manages a telecommunications line which runs from East Balmain, through Goat Island, to Blues Point by submarine cable. Sydney Ports Corporation manages a number of navigation devices, including a tanker lead light, on the island. Both of these uses pre-dated the gazettal of Goat Island as part of the national park.

Recreation

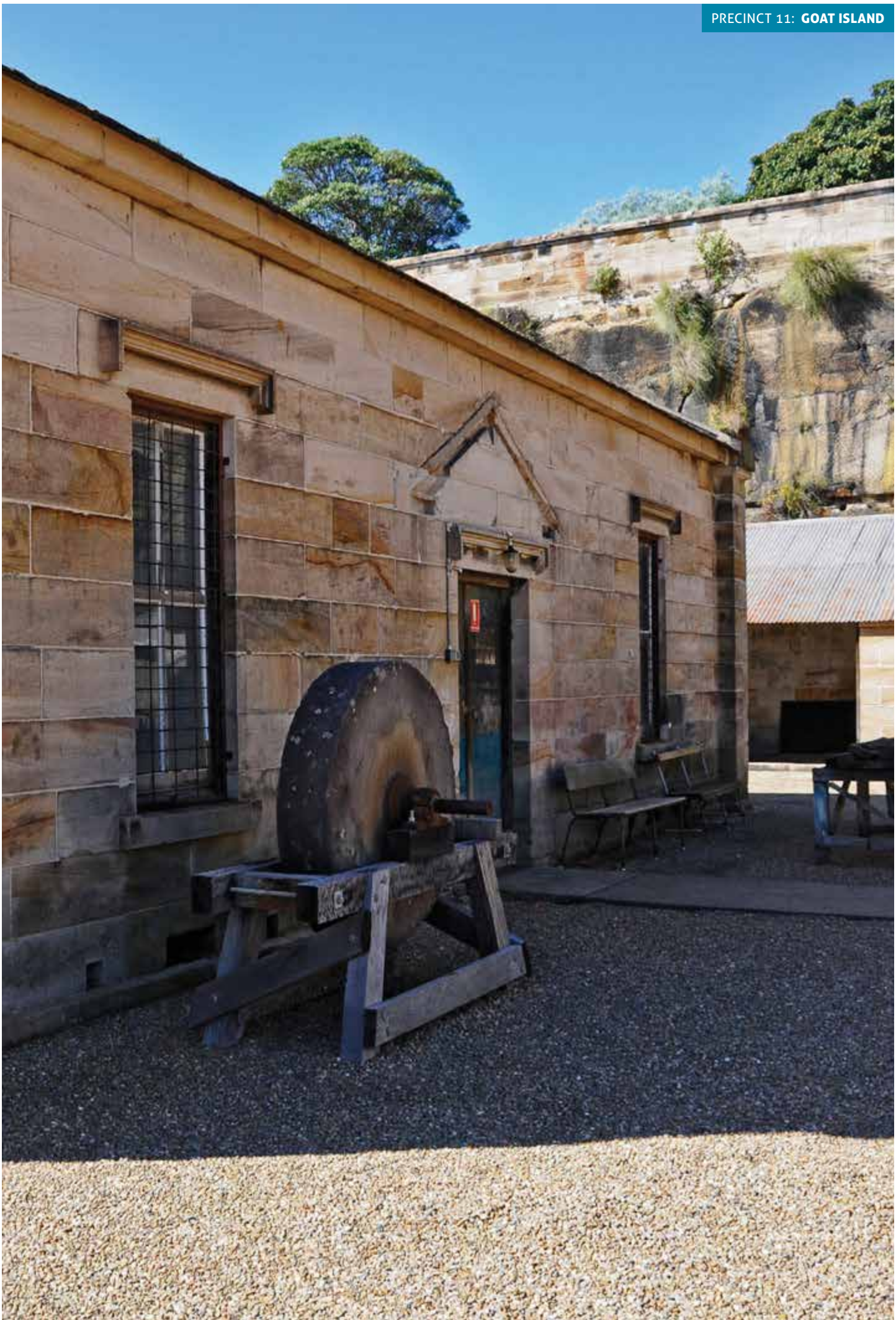
Goat Island is in a prime location to offer a wide range of recreational activities, ranging from passive enjoyment of the spectacular views and landscape to participation in major events and functions or educational activities and opportunities.

As a recreation / tourism asset for Sydney, Goat Island works on a number of levels. It is high-quality open space in an extraordinary location, with great potential for family recreation and activities such as picnics and for the quiet enjoyment and education of the visiting public.

The buildings and associated outdoor spaces are well suited for staging highly differentiated functions and events, from those that cater to small groups to large festival experiences such as viewing New Year's Eve fireworks. This is all strongly enhanced by thematic links and proximity to other attractions in the city including The Rocks, and other harbour islands and foreshore locations.

Since Goat Island became part of the national park, recreation has been limited to guided tours, private and public functions and events, such as the Goat Island Film Festival and Biennale, and pre-booked New Year's Eve fireworks viewing. The television series 'Water Rats' was filmed on the island and the production offices were located in the shipyard precinct for approximately six years. Park entry fees currently apply at this precinct through the booked tour / event fees.

Goat Island precinct will play an important role in increasing the range and number of visitors to Sydney Harbour National Park as well as the types of visitor experiences on offer. Where possible, heritage buildings, landscapes and views will be made accessible to the public.



What We Are Going To Do



Outcome 1

Conserve the natural values of the park

OUR AIM FOR THE PRECINCT

Developing a sustainable and balanced ecology that enhances the natural values of the island landscape.

WHAT WE ARE GOING TO DO

Define and manage areas with remnant vegetation values through bushland rehabilitation methods including removal of exotics, woody weeds and non-local native species.

Identify areas where native vegetation will be expanded through weed control and planting. Identify areas with cultural heritage values and open grassy areas (both native and exotic grass species) and develop specific horticultural procedures to maintain their cultural and recreational values.

Remove redundant and non-significant powerlines and poles and overhead lighting which impact visually on significant views.

Identify areas with existing remnant vegetation values, those where native vegetation can be encouraged to expand and those of significance as cultural landscape. Develop appropriate treatment and management procedures for each of the defined landscape classes.

Establish a more natural form of shoreline in those sections of the foreshore not required for operational wharves or structural support.

Whole of park actions as they apply to Goat Island precinct

Investigate and implement water, energy saving and recycling technology initiatives. Implement interpretive and education programs to reinforce strategies with visitors.

Undertake weed and feral animal control programs.

Control the size of the silver gull colony to reduce the impact of nesting activities on the island's natural, cultural and recreational values and to contribute to effective silver gull management.



Outcome 2

Celebrate and nurture contemporary and traditional Aboriginal culture

OUR AIM FOR THE PRECINCT

The significance of Goat Island to Aboriginal people will remain a key component in the interpretation of the island's shared history.

WHAT WE ARE GOING TO DO

Facilitate island-based activities to encourage improved understanding of Aboriginal culture among both the Aboriginal and non-Aboriginal community.

Encourage Aboriginal enterprises for the delivery of indigenous interpretive programs and tours on Goat Island. Such programs will be subject to consultation with local Aboriginal community organisations. All interpretation programs on Goat Island will acknowledge the significance of the island's Aboriginal heritage and community associations.

Whole of park actions as they apply to Goat Island precinct

Research and facilitate recording of contemporary contact and pre-contact Aboriginal culture regarding the island.

Continue to liaise with the Aboriginal people of Sydney on matters relating to the protection, management and interpretation of the Aboriginal cultural heritage of the island.

Work in partnership with the local Aboriginal community and other stakeholders to develop and expand programs to interpret both traditional and contemporary Aboriginal culture throughout Sydney Harbour.





Outcome 3

Celebrate the historic heritage values of the park

OUR AIM FOR THE PRECINCT

Goat Island's historic buildings, structures, sites and collections will be conserved and interpreted.

WHAT WE ARE GOING TO DO

Seek approval, as required, from the Heritage Council for the removal of buildings and structures that are not required for visitor service purposes and which detract from the significance, condition, integrity or interpretative potential of the island's exceptional cultural and natural heritage values.

As an initial priority, seek approval to remove the two amenities buildings in the Magazine precinct and the corrugated iron addition to the Queens Powder Magazine.

Develop a vibrant and innovative interpretation and visitor program around the heritage values of the island including educational and training opportunities, appropriate and innovative adaptive re-use of selected buildings and an events and functions program.

Continue to undertake and/or facilitate research into the history, built heritage and archaeology of the island, particularly through research partnerships, and utilise new information in interpretive programs.

Conserve, adapt and manage buildings and structures on Goat Island in accordance with the *Goat Island Conservation Management Plan 2011* and any conditions identified by the NSW Heritage Council.



Outcome 4

Provide enriching and memorable experiences in the park

OUR AIM FOR THE PRECINCT

To provide special recreational and educational experiences for visitors that draw upon and emphasize the cultural and natural heritage qualities of Goat Island.

WHAT WE ARE GOING TO DO

Finalise the *Goat Island Masterplan* and implement its staged and integrated approach to the establishment of Goat Island as a key visitor destination in Sydney Harbour.

Develop an innovative education and interpretation program including multi-media presentations, temporary and permanent art works, and face-to-face tours.

Seek private sector partners to deliver appealing visitor experiences associated with the island's landscape and scenic values, and the natural, Aboriginal, convict, colonial and maritime heritage.

Continue to provide guided tours, dynamic key cultural activities and special events such as the annual viewing of the New Year's Eve fireworks.

Develop a special events program for the island including key cultural activities in Sydney's events calendar such as the Sydney Writers' Festival, Crave and Biennale.

Consider design and construction of a viewing platform behind the convict wall to view the magazine and shipyard areas.

Outcome 4 is continued on the next page.





Outcome 4

WHAT WE ARE GOING TO DO

The National Parks and Wildlife Amendment (Visitors and Tourists) Act 2010 clarifies the range of purposes for which a lease or licence may be issued in NSW national parks. The Act requires that new leases and licences must comply with the Sustainability Assessment Criteria adopted by the Director General of the Office of Environment and Heritage. These are designed to ensure that lease operations do not have an adverse impact on reserve values and meet best-practice standards for environmental performance. Further detail on the Sustainability Assessment Criteria is provided in Section 04 Appendices.

- » All buildings on Goat Island will be investigated for new adaptive uses to support sustainable visitor or tourist use and enjoyment.
- » All adaptation and fitout works must be consistent with the assessment of significance and compatible uses in the *Goat Island Conservation Management Plan 2011 (CMP)*.

Harbour Masters residence and associated cottages

The Harbour Masters Cottage and four residences will be investigated for new adaptive uses to support sustainable visitor use and enjoyment. For example, the buildings may be adapted and leased for purposes such as accommodation, administration or as a restaurant or café.

New buildings or structures may be constructed within the Accommodation Precinct (marked on the map). Any new buildings may be leased for purposes such as visitor or tourist accommodation, administration, equipment hire, as a restaurant, café, kiosk and other food and drink outlet, including a bar, conferences and functions, retail outlets, facilities to enable activities of a sporting nature to be carried out, information centres and booking outlets.

Any new buildings or structures are to be located within an area including the Harbour Masters residence, the four cottages and extending beyond their surrounding fenced yards.

See map for details (p. 174).

The Port Emergency Services Building (PESB)

The Port Emergency Services Building will be investigated and may be adapted and leased for purposes of sustainable visitor or tourist use and enjoyment. For example, the building may be adapted and leased for purposes such as accommodation, as a restaurant, café, kiosk, bar and other food and drink outlet, conferences and functions.

In the circumstances where NPWS does not obtain the required environmental heritage approvals for the adaptive re-use and / or leasing of the Port Emergency Services building, the building will be prioritised for removal. If removed, the shoreline will be rehabilitated to a natural form.

A new building or structure may be constructed on the site of the Port Emergency Services Building, and leased for purposes including but not limited to accommodation, as a restaurant, café, kiosk, bar and other food and drink outlet, conferences and functions, retail outlet, facilities to enable activities of a sporting nature to be carried out, information centres and booking outlets. Access lifts may be added to the structure to provide improved access.





Outcome 4

WHAT WE ARE GOING TO DO

Shipyard Precinct

Most of the buildings within the Shipyard precinct are currently leased for the purposes of the operation of a shipyard. In the event that the current lease comes to an end, new adaptive uses will be considered to support sustainable visitor and tourist use and enjoyment for all of the buildings within the precinct.

New buildings or structures may be constructed within the shipyard precinct. New buildings may be leased for purposes such as visitor and tourist accommodation, administration, equipment hire, as a restaurant, café, kiosk and other food and drink outlet, conferences and functions, retail outlets, facilities to enable activities of a sporting nature to be carried out, information centres and booking outlets.

The location of the Shipyard precinct is shown on the Goat Island precinct map.

Guards Barracks

The Barracks building will be investigated for new adaptive uses to support the purposes of sustainable visitor or tourist use and enjoyment. For example, the building may be adapted and leased for purposes including accommodation, as a restaurant, café, kiosk, bar and other food and drink outlet, conferences and functions.

Kitchen Cottage

The Kitchen Cottage will be investigated for new adaptive uses to support the purposes of sustainable visitor or tourist use and enjoyment. For example, the building may be adapted and leased for purposes including accommodation, as a restaurant, café, kiosk, bar and other food and drink outlet.

A new building or structure may be constructed at the rear of the Kitchen Cottage. The new buildings may be leased for purposes such as visitor or tourist accommodation, administration, equipment hire, as a restaurant, café, kiosk and other food and drink outlet, including a bar, conferences and functions and retail outlets.

Wharves

New wharves may be constructed where required for safe and sustainable access to and from the island.

Water Police Building

The Water Police Building will be investigated for new adaptive uses to support sustainable visitor use and enjoyment. For example, the building may be adapted and leased for purposes such as accommodation, administration or as a café.

Magazine Precinct

Buildings in the Magazine Precinct will be investigated for new adaptive uses to support sustainable visitor use and enjoyment.

For example, the buildings may be adapted and leased for purposes such as accommodation, administration, as a café, kiosk or other food and drink outlet, conferences and functions.

Whole island

Visitor facilities such as shade structures, picnic tables, seating, pathways, stairs, access lifts, fences and toilets may be constructed in accordance with the *Goat Island Conservation Management Plan 2011* and the *Goat Island Masterplan*.





Outcome 5

Improved access to the park for all

OUR AIM FOR THE PRECINCT

New experiences and facilities will seek to accommodate Sydney's increasingly diverse cultural community while endeavouring to remove barriers to access.

WHAT WE ARE GOING TO DO

Provide wheelchair-accessible toilets on the island.

Provide wheelchair access to the Magazine precinct and eastern side of the island and investigate the feasibility of providing wheelchair access to the northern side of the island.

Remove, when no longer required for commercial shipping, the navigation infrastructure (lead beacons and day markers) from the island in consultation with Sydney Ports and NSW Roads and Maritime Services.

Liaise with Telstra Corporation regarding the removal or adaptation of the submarine cable sign intruding on the Water Police precinct's rocky knoll.

Whole of park actions as they apply to Goat Island precinct

Investigate the need for multilingual interpretative information.

Install directional and interpretive signs where required.



Outcome 6

Strengthen and create partnerships

OUR AIM FOR THE PRECINCT

Continue to support and build on strong volunteer, commercial and local government partnerships established to support the vision for Goat Island.

WHAT WE ARE GOING TO DO

Investigate utilising the island's colonial heritage for traditional trades training and educational purposes in partnership with government institutions and the private sector.

Negotiate a formal agreement with Telstra Corporation and Sydney Ports to manage and maintain major telecommunications and navigation infrastructure on the island.

Continue to seek a land base to support NPWS operations on the island.

Whole of park actions as they apply to Goat Island precinct

Work in partnership with Sydney Harbour stakeholders and land managers towards a shared vision and lasting legacy for the people of Sydney and Australia by enhancing the amenity, conserving values and providing public access to Goat Island. Partnerships will be sought specifically with the Sydney Harbour Federation Trust (SHFT) and Sydney Harbour Foreshore Authority (SHFA) to weave Goat Island into the lives of the people of Sydney and its visitors.

Develop strong partnerships with the private sector to deliver key outcomes of the *Goat Island Masterplan*.

Seek partnerships with the education and cultural sector, to encourage use of the island for special events such as the Sydney Festival, Crave, the Sydney Writers' Festival and Biennale.

Encourage the City of Sydney to include Goat Island in the Eora Journey project.

Permit shipyard operations to continue under the terms of the existing lease. If that lease is relinquished or otherwise extinguished, any replacement will be conditioned to ensure that the operation of the shipyard is fully compatible with interpretation and visitor use of the adjoining magazine precinct and the overall retention and promotion of the cultural and natural heritage values of the island. Preference will be given to operators whose principal work relates to timber or heritage vessels.





Outcome 7

Robust management of the park is sustained

OUR AIM FOR THE PRECINCT

The precinct will provide an excellent example of best-practice management in relation to conservation, training and adaptive re-use design and including environmental sustainability.

WHAT WE ARE GOING TO DO

Investigate the installation of solar power-generating devices on the island.

Progressively replace overhead street lighting with solar lighting where such lighting is demonstrated to be cost effective and produces a lower carbon footprint over its operational life and install more energy efficient globes.

Whole of park actions as they apply to Goat Island precinct

Minimise the carbon footprint of existing and future uses through implementing energy and water saving initiatives.

Minimise waste generation and maximise recycling opportunities.

Monitor the impacts of sea level rise and design new infrastructure to accommodate projected changes.

Where feasible and consistent with the CMP, require all future commercial operations to adopt sustainability measures such as harvesting rainwater and generating solar power.

Consider the probable effects of climate change, high winds and tides on the lowest parts of the island when considering the retention / removal of buildings and structures on those parts of the island, along with consideration of their significance and condition.

Ensure any upgrades or new facilities incorporate environmentally sustainable features and are of high-quality, long-lasting materials.



Outcome 8

Contribute to the goal of easy and safe transport to and within the park

OUR AIM FOR THE PRECINCT

Provide safe and more-flexible visitor access to Goat Island to service proposed visitation opportunities.

WHAT WE ARE GOING TO DO

Continue to seek the most cost-effective water transport to provide visitor access to Goat Island.

Design and implement improved access paths around the island.



Rodd Island

Sydney Harbour National Park

Iron
Cove

Picnic
Shelters

Fenced
wildlife
area

Wharf



Precinct 12: Rodd Island

The primary focus for the island is for an increased range of small-scale, high-quality recreational experiences in a cultural heritage setting where visitors engage with the island's fascinating history.

Sited in Iron Cove, Rodd Island is the furthest west of the Sydney Harbour National Park precincts. Along with Goat Island, this small island is in close proximity to Sydney's inner western suburbs.

Rodd Island, along with Clark Island to the east, became a public recreation reserve in 1879. Shortly afterwards, this use was revoked and Rodd Island was established as a Pasteur Institute for the study of disease organisms. The island is also noted for the quarantining of the French stage and screen actress Sarah Bernhardt's dogs, during her visit and performances in Sydney in 1891. The laboratories closed in 1894 and the island once again became important for recreation. Reclamation occurred around 1899, with the island increasing in size from 0.47 to 0.67 hectares.

The island was added to Sydney Harbour National Park in 1981 following community outcry about the proposal to lease the island for a hotel and marina.

Rodd Island with its historic summer houses, gazebo and hall, has a unique character. It is currently utilised for independent visits and limited, small-scale special public events.

To improve access and the enjoyment of visitors Rodd Island has been targeted in several of the key projects in this plan of management including:

- » **Project 4 Harbour Islands**
- » **Project 10 Climate Change Mitigation**
- » **Project 12 The Harbour Shuttle**

Details of these projects are available in Section 01.

The Precinct and its Context

Description

Rodd Island represents a romantic and remote element of an earlier Sydney Harbour and Parramatta River character.

Rodd Island may currently be visited during daylight hours for picnics or may be hired exclusively for a day through NPWS, with access by private or charter vessel. Mooring at the wharf is not permitted due to its limited size, such that drop off and pick up only are permitted.

Planning context

Rodd Island is unincorporated and is therefore not subject to any local government legislation. However, the adjacent suburbs are part of the Leichhardt and Canada Bay local government areas and these councils have an interest in the visual relationship of island.

The wharf is leased from NSW Roads and Maritime Services, manager of the Sydney Harbour sea bed to mean high water mark, and maintained by NPWS. Of relevance to the management of the wharf is the *Disability Standards for Accessible Public Transport 2002* (in force under subsection 31 (1) of the *Disability Discrimination Act 1992*). This Act requires assessment of all public transport wharves for upgrading for access for the disabled subject to a range of conditions detailed in the Act.

Further details about the planning context are provided in Section 04 Appendices.





Significant Values and Considerations

Natural features

This small rocky island has increased in size due to reclamation and the construction of sea walls. The island's vegetation was originally typically Port Jackson fig *Ficus rubiginosa*, Sydney red gum *Angophora costata*, sweet pittosporum *Pittosporum undulatum*, she-oak *Casuarina* spp. and *Banksia* spp. Today, there is some remnant vegetation but much has been replanted as the island was cleared in the 1800s when it was used as the Pasteur Institute. The understorey is composed of small shrubs and some weed species.

Fauna on the island includes visiting birds such as the Australian magpie *Gymnorhina tibicen*, laughing kookaburra *Dacelo novaeguineae*, pied currawong *Strepera graculina* and various sea birds and ducks. Various bats, possums and rats (native and non-native) may be present or visit. Reptiles, such as skinks, and many invertebrates live on the island.

Cultural history

More is known about the European history of the island than the early Aboriginal history. The area was used by the Wangal clan, and Aboriginal use of the island is evidenced through shell midden remains. The use of shells for lime-making, foreshore reclamation and development on the island have together obliterated any significant evidence of Aboriginal culture.

Brent Clement Rodd, one of the largest land owners in the Drummoyne-Five Dock area, desired the island for his own private recreation area following his alarm at the removal of the island's trees and rocks by locals. Mr Rodd offered to buy the island, paid a deposit to the Lands Department in 1858 and gave the island his name.

Rodd did not proceed with the full payment in the time allowed and so forfeited the deposit. Arguments ensued with the government until 1879 when, together with Snapper Island, Rodd Island was gazetted as a public recreation reserve. This use was overturned in 1888 when a site was required for laboratories to test possible controls for the rabbit plague. Bradleys Head and Shark Island had been approved for this

purpose but objections from local residents were sufficient to have the site moved to Rodd Island. The island's status as a public recreation reserve for the inner west was apparently of less consequence.

Though a solution to the rabbit problem was not found, the involvement of Pasteur's microbiologist Dr Loir continued. In the 1890s, the island's laboratory provided a vaccine to treat illnesses caused by anthrax bacteria. It was during this time that the actress Sarah Bernhardt visited and performed in Sydney. She was convinced to stay on the basis that her pug dog would be quarantined in Rodd Island, where she could visit during her stay. A relationship developed with Dr Loir, who even managed a walk-on role in one of her plays.

The biological laboratory was closed in 1894 and the island was returned to its use for public recreation. The original house that accompanied the laboratory was converted to a dance hall, whilst the laboratory buildings were removed. The small, detached kitchen was converted to a caretaker's residence. With the 1900 onset of the bubonic plague in Sydney, the Sydney Harbour

Built environment and services

Trust controlled the harbour foreshores, including Rodd Island. It was during this time that the island's reclamation commenced, trees were planted and summer houses, gazebos and grottos erected. Prior to World War II, Rodd Island was extremely popular for picnics with as many as 1000 people crowded onto the island.

The island was leased to the United States Army during World War II, and again returned to the public in 1945 at the war's end. Subsequent caretakers undertook boat repairs to supplement their income, and added improvements to the house and picnic facilities. In 1965, 13,000 people are reported to have visited the island, where current annual visitation is approximately 700 persons. The island was leased to a number of boat charter operators by the state government, and in 1979, a private proponent submitted a development application for a new restaurant, accommodation and a marina. The community rebelled, and in 1981, the state government responded by announcing that the island would be added to Sydney Harbour National Park. The island was opened to the public in 1984 as part of the national park.

The island has a wharf that is suitable for transfer of passengers by small charter vessels. There are three gazebo-style picnic shelters (circa 1920s), toilet facilities, a dance hall (1889) and a small residence. Town water, sewer and electricity are available and are connected to the mainland. A series of steps and pathways connect different levels of the island. Rock overhangs and grottos are supported by masonry and stone supports, for public safety reasons.

Recreation

The island is currently visited for independent picnics, private functions such as weddings and limited, small-scale special public events. There is potential for increased and more diversified visitor access and opportunities, including special events such as performances, plays, food festivals and arts events. To achieve this, there is a need for improved public access, such as the addition of a regular ferry service.

There is currently no regular public transport service to the island. However, access is available by private or charter vessel. Mooring at the wharf is not permitted due to its limited size, such that drop off and pick up only are permitted.

Rodd Island provides a cultural, iconic and urban respite experience. The precinct is a major day use area in terms of facilities. A landing fee applies. Visitor numbers are low and impacts are nil or mild across the range of values.

What We Are Going To Do



Outcome 1

Conserve the natural values of the park

OUR AIM FOR THE PRECINCT

Rodd Island is one of five islands managed as part of Sydney Harbour National Park. It is probably the least well known and visited of the five islands. Its historic, recreational buildings in an island setting make it a unique public place. Maintaining this uniqueness by conserving buildings and cultural plantings and interpreting the fascinating history, is a primary aim.

WHAT WE ARE GOING TO DO

Prepare and implement a tree management and replacement strategy.

Encourage visiting wildlife, including the masked lapwing *Vanellus miles*, by maintaining both the open and enclosed grassed areas on the island

Investigate and undertake the installation of solar panels on picnic and toilet buildings, or stand alone, including utilisation for wharf lighting.

Whole of park actions as they apply to Rodd Island precinct

Harvest rainwater through the installation of water tanks for water re-use in toilets, and for external uses.



Outcome 2

Celebrate and nurture contemporary and traditional Aboriginal culture

OUR AIM FOR THE PRECINCT

Although evidence of Aboriginal cultural heritage on the island is minimal, Aboriginal heritage will be researched, protected and recorded and the Aboriginal community will guide its management.

WHAT WE ARE GOING TO DO

Whole of park actions as they apply to Rodd Island precinct

Research and facilitate recording of contemporary contact and pre-contact Aboriginal culture regarding the island.

Involve the Aboriginal community in the presentation and interpretation of sites.

Continue to liaise with the Aboriginal people of Sydney on matters relating to the protection, management and interpretation of the Aboriginal cultural heritage of the island.





Outcome 3

Celebrate the historic heritage values of the park

OUR AIM FOR THE PRECINCT

The rich cultural heritage, including buildings, planting and landscape structures, will be conserved and interpreted.

WHAT WE ARE GOING TO DO

Prepare and implement a heritage assessment for the island, to conserve and interpret the unique buildings including the house, hall, gazebo, summer houses and grottos.

Provide interpretive materials to inform and educate the community about the fascinating and significant history of the island.



Outcome 4

Provide enriching and memorable experiences in the park

OUR AIM FOR THE PRECINCT

Traditional passive recreation opportunities will be maintained and enriched with new tourism experiences, whilst protecting natural and cultural heritage values and allowing a greater diversity of visitors to enjoy the island.

WHAT WE ARE GOING TO DO

Review the restrictions of visiting hours, activities, visual impacts and in particular sound amplification, to minimise impacts generated from island visitation on neighbours.

Review the landing fee and booking arrangements to encourage kayakers and others to stop on the island.

Partner Sydney Harbour / Parramatta River park management bodies and recreation providers in the development of a kayak heritage trail experience, incorporating Rodd Island.

Buildings on Rodd Island will be investigated for new adaptive uses to support sustainable visitor or tourist use and enjoyment.

For example, these buildings may be adapted and leased for purposes such as accommodation, as a restaurant, café, kiosk and other food and drink outlet, conferences and functions.

Whole of park actions as they apply to Rodd Island precinct

Provide an entry statement at the island's wharf arrival point.

Limit total numbers of island visitors to 250 persons at any one time, with a preference for use by smaller groups.





Outcome 5

Improved access to the park for all

OUR AIM FOR THE PRECINCT

The less physically able and a diversity of cultures will have increased opportunities to enjoy the island. The precinct will demonstrate excellence in landscape design. A sustainable approach is considered a primary focus for the on-going maintenance and development of the precinct.

WHAT WE ARE GOING TO DO

Upgrade the toilet facilities to improve use for the mobility impaired and to a standard to complement island access levels.

Prepare a landscape design plan to appropriately balance the island's range of values, maximising cultural landscape elements and their interpretation, and achieving high-quality amenity for visitors.

Whole of park actions as they apply to Rodd Island precinct

Review the requirements and feasibility for adaptation of the wharf to allow improved access for mobility impaired people in accordance with *the Disability Standards for Accessible Public Transport 2002* (in force under subsection 31 (1) of the *Disability Discrimination Act 1992*).

Install directional and interpretive signage on the island.



Outcome 6

Strengthen and create partnerships

OUR AIM FOR THE PRECINCT

Develop partnerships with community stakeholders to improve and increase community ownership and use of the island.

WHAT WE ARE GOING TO DO

Contact the Australian Society for Microbiology to investigate possible partnerships and involvement in the island, given its significant history in the microbiology field.

Develop partnerships with Leichhardt and Canada Bay Councils and other community stakeholders, to improve and increase community interest, ownership and use of the island.

Whole of park actions as they apply to Rodd Island precinct

Seek partnerships with the education and cultural sectors, to encourage use of the island for small-scale special events on the island under the umbrella of larger programs and festivals such as the Sydney Festival, Crave, Vivacity, Vivid, Sydney Writers' Festival, Biennale and Sydney Film Festival.





Outcome 7

Robust management of the park is sustained

OUR AIM FOR THE PRECINCT

The precinct will provide an excellent example of sound park management.

WHAT WE ARE GOING TO DO

Whole of park actions as they apply to Rodd Island precinct

Prepare and implement a strategy to adaptively manage Rodd Island's marine assets to accommodate the predicted sea level rise.

Examine a range of options for energy and water saving on the island, such as water tanks to harvest rainwater for use in the toilets.

Include the island in the park wide review of signage.

Ensure any upgrades or new facilities incorporate environmentally sustainable features and are of high-quality, long-lasting materials.



Outcome 8

Contribute to the goal of easy and safe transport to and within the park

OUR AIM FOR THE PRECINCT

Include Rodd Island in a regular, easily-accessed ferry shuttle service.

WHAT WE ARE GOING TO DO

As part of the proposed improved access for kayaks and other personal craft, investigate and identify a suitable landing site.

Whole of park actions as they apply to Rodd Island precinct

Investigate the introduction of a regular, low-cost water-based shuttle service to Rodd Island for independent visitors.



section 03

Implementation
Table





Introduction

This plan of management establishes a scheme of operations for Sydney Harbour National Park. It will remain in force until amended or replaced in accordance with s.73B of the *National Parks and Wildlife Act 1974* (NPW Act). The plan is part of a system of management that includes the NPW Act, management policies, established conservation and recreation philosophies, and strategic planning at corporate, branch and regional levels. The latter may include development of related plans such as regional operational plans, species recovery plans, fire management plans and conservation management plans.

Relative priorities for activities identified in this plan are set out in the table below.

These priorities are subject to the availability of necessary staff and funds, and to any special requirements of the Chief Executive or Minister.

High (H) priority activities are those considered imperative to achievement of the objectives and desired outcomes. They must be undertaken in the near future to avoid significant deterioration in natural, cultural or management resources.

Medium (M) priority activities are those that are necessary to achieve the objectives and desired outcomes but are not urgent.

Low (L) priority activities are desirable to achieve management objectives and desired outcomes but can wait until resources become available.

Ongoing (O) activities are undertaken on an annual basis or are statements of management intent that will direct the management response if an issue arises.

The environmental impact of proposed activities will be assessed at all stages in accordance with established environmental assessment procedures. If the impacts of any activity proposed in this plan are found to be unacceptable, the activity will not be undertaken or will be modified so as to comply with the environmental assessment outcomes.

Note that: to assist brevity, actions in the body of this plan that restate NPWS policy have not been replicated in this implementation table.

Implementation Table

Precinct	Outcome	Management response	Priority
Outcome 1 Conserve the natural values of the park			
All Park Key Project 1	1	Develop strategies to proactively address threats to bushland health and resilience. Priority will be given to the continued management of known threats such as the fungus <i>Phytophthora cinnamomi</i> root rot and nutrient discharge into the park, both of which have the potential to compromise the long-term viability and health of our harbour-side bushland and its flora and fauna.	High
All Park	1	Continue to support existing bush regeneration programs within the park.	Ongoing
All Park	1	Prepare and implement a strategy to improve the management of stormwater flowing into and across the park and into the harbour in partnership with Councils, adjacent land managers and neighbours.	Medium
All Park	1	Continue energy and water saving initiatives and reduce waste collection requirements through recycling and visitor education programs.	Medium
All Park	1	Utilise where feasible native plants grown from local seed sources in bushland restoration projects.	Ongoing
All Park	1	Harvest rainwater through the installation of water tanks for water re-use in toilets and for external uses.	Medium
All Park	1	Develop and implement strategies for the maintenance of views from public lookouts.	Low
All Park	1	Select and sample sites to establish quality baseline data on the current floristic and faunal composition of the park.	Low
All Park	1	Include consideration of the potential impact on existing views when conducting supplementary plantings during bush regeneration programs.	Ongoing
All Park	1	Continue to undertake research to determine the desirability and feasibility of reintroducing locally-extinct native animal species.	Ongoing
All Park Key Project 2	1	Implement actions from relevant recovery plans, the priorities action statement and threat abatement plans. The highest priority will be actions for populations, species or communities where the park comprises a critical component of their total distribution.	High and Ongoing
All Park	1	Establish monitoring regimes for threatened plant species and vegetation communities to measure the success of management practices in maintaining or improving their conservation status.	Low
All Park	1	Implement the relevant actions from the <i>NSW Statement of Intent for Infection of Native Plants by Phytophthora cinnamomi</i> and management plans for other harmful pathogens such as myrtle rust <i>Uredo rangelii</i> in co-operation with adjoining land managers.	High and Ongoing
All Park	1	Implement an evaluation regime to measure the effectiveness of weed control, particularly in relation to conservation outcomes.	Low

Precinct	Outcome	Management response	Priority
Outcome 1 Conserve the natural values of the park			
All Park	1	Identify and undertake, or contribute to, research projects aimed at improving knowledge and understanding of fire management in the park.	Low
All Park	1	Update or rewrite the <i>Sydney Harbour National Park Fire Management Strategy</i> .	Low
All Park	1	Work with the local bush fire management committee to co-ordinate and prioritise fuel management activities across the park.	Ongoing
All Park	1	Actively manage silver gull nesting colonies on park islands to reduce the impact of nesting activities on the park's natural, cultural and recreational values and to contribute to effective silver gull management.	Ongoing
All Park	1	Support tertiary sector field research programs offering opportunities to enhance the natural and cultural values of the park.	Medium
All Park	1	Expand the Sydney Harbour National Park corporate and community volunteer program across the park.	Medium
All Park	1	Implement measures to reduce the proliferation of aquatic weeds and pests.	Ongoing
All Park	1	Prioritise fox, rabbit and black rat control for the park.	Ongoing
All Park	1	Prioritise weed and feral animal control in those areas subject to fire or other major disturbance events.	Ongoing
Nielsen Park & Hermitage Foreshore (1)	1	Prepare and implement a tree management and replacement strategy to include significant trees such as the avenue of figs.	High
Nielsen Park & Hermitage Foreshore (1)	1	Manage the canopy of trees to maintain visual connectivity with the harbour, removing or pruning vegetation that detracts from the park's cultural viewscales.	Ongoing
South Head, Camp Cove & Green Point (2)	1	Engage corporate and community volunteers in the removal of weeds and restoration of native vegetation along the South Head Heritage Walk.	Low
South Head, Camp Cove & Green Point (2)	1	Prepare and implement a tree management strategy in consultation with Woollahra Council and including coral trees.	High
South Head, Camp Cove & Green Point (2)	1	Actively manage the intense use of the informal tracks leading off the Heritage Trail to Inner South Head.	Ongoing
Gap Bluff (3)	1	Monitor potential areas of asbestos contamination associated with the former army buildings and remove any exposed materials.	Ongoing
Gap Bluff (3)	1	Implement a tree replacement strategy consistent with the <i>Conservation Management Plan 2010</i> for the precinct.	High
Gap Bluff (3)	1	Ensure that any replacement plantings do not impede views to the harbour from the Armoury and Officers Mess.	Ongoing
North Head (4)	1	Enter into an agreement, such as a Memorandum of Understanding, initially with Sydney Harbour Federation Trust (SHFT) as the other major land manager on the headland, to secure optimal management of the headland's natural heritage.	High

Precinct	Outcome	Management response	Priority
Outcome 1 Conserve the natural values of the park			
North Head (4)	1	Prepare and implement a policy for the management of vegetation that detract from or impede cultural and public viewsapes, such as from major lookouts and fortifications.	Medium
North Head (4)	1	Rehabilitate tracks and trails constructed for prescribed burning or wildfire operations.	Ongoing
North Head (4)	1	Prioritise the rehabilitation of threatened species habitat in precinct weed management programs.	Ongoing
North Head (4)	1	Retain exotic species with significant cultural values and manage them to prevent spread into native plant communities.	Low
North Head (4)	1	Support Manly Council and SHFT in the 'no domestic pet policy' for those living within the precinct and in close proximity to boundaries.	Ongoing
North Head (4)	1	Work with NSW Department of Primary Industries (DPI), SHFT and other key stakeholders to expand the North Head Sanctuary to incorporate the Cabbage Tree Bay Aquatic Reserve and North Harbour Aquatic Reserve.	High
North Head (4)	1	Investigate linking the aquatic reserves around the headland with the national park through establishing an intertidal or marine protected area.	Low
North Head (4)	1	Support SHFT in the implementation of the 'Sydney Harbour Green Precincts' energy and water project and expand where appropriate.	Medium
North Head (4)	1	Maintain the evening North Head Scenic Drive road closures to reduce wildlife fatalities and control vandalism.	High
North Head (4)	1	Prepare and implement a strategy to improve the management of stormwater flowing into and across the park and into the harbour in partnership with Manly Council, Manly Hospital and individual neighbours. As part of this strategy, give consideration to the future management of lands at the rear of Manly Hospital above Collins Beach as a means of improved management of this environment and, in particular, the area of littoral rainforest.	Medium
Dobroyd Head (5)	1	Liaise with Department of Education and local schools to foster involvement in use of Dobroyd Head area for environmental education projects.	Low
Dobroyd Head (5)	1	Introduce water saving solutions such as rainwater tanks at Reef Beach toilets.	Low
Dobroyd Head (5)	1	Implement fuel reduction strategies to ensure a mosaic pattern across the precinct and reduction of the risk of fire emanating from the Crater Valley huts.	High
Dobroyd Head (5)	1	Install signs at Tania Park entrance road, lookouts and carparks to inform visitors of reasons not to feed birds and possible penalties.	Medium
Middle Head (6)	1	Prepare a review of all known weed species in the precinct, including abundance and distribution, to inform priority setting for the volunteer program.	Medium
Middle Head (6)	1	Continue to remove weeds and other vegetation encroaching on and damaging historic structures.	Ongoing

Precinct	Outcome	Management response	Priority
Outcome 1 Conserve the natural values of the park			
Middle Head (6)	1	Carry out a comprehensive assessment of natural and cultural landscapes and vegetation, and define areas for the removal of native vegetation and long-term maintenance of clearings.	Medium
Bradleys Head (7)	1	Continue bush regeneration at Athol Hall, Iluka Rd, Taylors Bay and Morella Rd sections of the precinct.	Ongoing
Bradleys Head (7)	1	Consolidate, close and rehabilitate unnecessary walking tracks, particularly at Chowder Head in accordance with the SHSW Strategy 2010.	Medium
Bradleys Head (7)	1	Rehabilitate the degraded area on the ridge above Bradleys Head, known as the Ridge Cottage site, and incorporate into the landscape design plan for the headland.	Medium
Shark Island (8)	1	Investigate and undertake the installation of solar panels on picnic and toilet buildings or stand alone and for wharf lighting.	Medium
Shark Island (8)	1	Prepare and implement a tree management and replacement strategy.	High
Shark Island (8)	1	Investigate the implications of sea level rise on intertidal zone habitats and biodiversity. Encourage continuing and new research of these areas and their ecology.	High
Clark Island (9)	1	Consider expansion of the volunteer program to include potentially enabling volunteers to spend an over night on the island for bush regeneration and maintenance work.	Medium
Clark Island (9)	1	Management of the bush on the island will aim to recreate, to the best of our knowledge, the pre-1788 landscape.	High
Clark Island (9)	1	Maintain cleared grassed areas on the island for recreational use.	Ongoing
Clark Island (9)	1	Install solar lighting on the wharf.	Low
Fort Denison (10)	1	Review the advice and implement where practicable, the recommendations contained in DECCW Coastal Unit's <i>Sea Level Rise Vulnerability Study for Fort Denison</i> (October 2008).	High
Fort Denison (10)	1	Examine options for energy and water saving and the reduction of waste collection requirements.	High
Fort Denison (10)	1	Continue seagull management to ensure Fort Denison does not become a nesting site.	Ongoing
Goat Island (11)	1	Define and manage areas with remnant vegetation values through bushland rehabilitation methods including removal of exotics, woody weeds and non-local native species.	High
Goat Island (11)	1	Identify areas where native vegetation will be expanded through weed control and planting. Identify areas with cultural heritage values and open grassy areas (both native and exotic grass species) and develop specific horticultural procedures to maintain their cultural and recreational values.	High
Goat Island (11)	1	Remove redundant and non-significant powerlines and poles and overhead lighting which impact visually on significant views.	Low
Goat Island (11)	1	Identify areas with existing remnant vegetation values, those where native vegetation can be encouraged to expand and those of significance as cultural landscape. Develop appropriate treatment and management procedures for each of the defined landscape classes.	High

Precinct	Outcome	Management response	Priority
Outcome 1 Conserve the natural values of the park			
Goat Island (11)	1	Establish a more natural form of shoreline in those sections of the foreshore not required for operational wharves or structural support.	Medium
Rodd Island (12)	1	Prepare and implement a tree management and replacement strategy.	Medium
Rodd Island (12)	1	Encourage visiting wildlife including masked lapwing <i>Vanellus miles</i> nesting birds by maintaining both the open and enclosed grassed areas on the island.	Ongoing
Rodd Island (12)	1	Investigate and undertake the installation of solar panels on picnic and toilet buildings, or stand alone, including utilisation for wharf lighting.	Low
Outcome 2 Celebrate and nurture contemporary and traditional Aboriginal culture			
All Park	2	Liaise with the Aboriginal People of Sydney on matters relating to the protection, management and interpretation of the Aboriginal cultural heritage of each precinct.	High and Ongoing
All Park	2	Research and facilitate the recording of contemporary contact and pre-contact culture of precincts, including regular recording of Aboriginal site condition.	High
All Park	2	Develop and facilitate a range of on-park activities to encourage improved understanding of Aboriginal culture among both the Aboriginal and non-Aboriginal community.	Medium
All Park	2	Protect Aboriginal sites from potential negative impacts caused by visitation and landscape management practices.	Ongoing
All Park	2	Work in partnership with local Aboriginal communities and other stakeholders to develop and expand programs on the harbour islands to interpret both traditional and contemporary Aboriginal culture throughout Sydney Harbour.	High
Key Project 3			
All Park	2	In consultation with local Aboriginal communities, undertake regular inspections of known Aboriginal sites to monitor condition and emerging threats.	Ongoing
All Park	2	Continue liaison with local Aboriginal communities regarding park management issues, particularly in relation to the interpretation and management of sites such as Grotto Point engravings.	Medium
All Park	2	Consider dual naming of sites throughout the park, in consultation with local Aboriginal communities, to reflect previous and ongoing connection to Country.	Low
All Park	2	Identify an appropriate location, or locations, within the park for Aboriginal culture camps. Protocols for the conduct of such camps will be determined in consultation with local Aboriginal communities.	Low
All Park	2	In consultation with local Aboriginal communities, review the adequacy of information on Aboriginal and cultural landscapes, places and objects within the OEH Aboriginal Heritage Information Management System.	Low
All Park	2	Continue to facilitate NAIDOC week activities within the park and participate in the Guringai Festival.	Ongoing
All Park	2	Ensure Aboriginal Discovery becomes a routine component of the tour program within the park.	Medium

Precinct	Outcome	Management response	Priority
Outcome 2 Celebrate and nurture contemporary and traditional Aboriginal culture			
Gap Bluff (3)	2	As part of the precinct signage package, develop information that provides Aboriginal interpretation of the precinct and investigate dual naming.	Medium
North Head (4)	2	Investigate the development of a bush food and medicinal plant and animal interpretive walking track at North Head.	Low
North Head (4)	2	Research stories concerning the little penguin <i>E. minor</i> and its significance to the Aboriginal community past and present.	Low
Dobroyd Head (5)	2	In consultation with the local Aboriginal community, clean the rock engravings at Grotto Point in accordance with approved management practices to ensure clear definition and presentation to avoid uncontrolled outlining by visitors.	Medium
Middle Head (6)	2	Protect and interpret the Outer Forts rock engraving site, involving members of the Aboriginal community.	Medium
Middle Head (6)	2	Participate with Mosman Council in the annual May to July Guringai Festival.	High
Middle Head (6)	2	Promote and encourage the implementation of the Aboriginal Teachers' Kit and booklet based on the <i>Mosman Aboriginal Heritage Study 2005</i> initiated by NPWS.	Ongoing
Middle Head (6)	2	Implement recommendations from the <i>Mosman Aboriginal Heritage Study 2005</i> .	High
Bradleys Head (7)	2	Work with Aboriginal staff at Taronga Zoo on joint programs that benefit Aboriginal heritage in the precinct.	Medium
Clark Island (9)	2	Allow construction of campfire facilities for use by Aboriginal and other tour groups, to include low key seating and a fire place. Aboriginal people will be consulted on the design and location, with a preference for the currently cleared areas.	Low
Fort Denison (10)	2	Research and facilitate recording of contemporary, contact and post-contact history of the precinct with the involvement of the Aboriginal community, to provide data for potential Discovery tours in partnership with City of Sydney and other agencies.	Medium
Goat Island (11)	2	Facilitate island-based activities to encourage improved understanding of Aboriginal culture among both the Aboriginal and non-Aboriginal community.	Medium
Goat Island (11)	2	Encourage Aboriginal enterprises for the delivery of indigenous interpretive programs and tours on Goat Island. Such programs will be subject to consultation with local Aboriginal community organisations. All interpretation programs on Goat Island will acknowledge the significance of the island's Aboriginal heritage and community associations.	Medium

Precinct	Outcome	Management response	Priority
Outcome 3 Celebrate the historic heritage values of the park			
All Park Key Project 4	3	Enrich the visitor experience to Australia's finest harbour park, through the revitalisation of the five park islands, with a particular focus on the largest and most complex of the group, Goat Island. Encourage the integration and adaptive re-use of buildings to these key cultural tourism destinations for Sydney, enhancing visitation and working in partnership with other agencies for a shared vision for Sydney Harbour.	High
All Park	3	Complete and implement actions from conservation management plans that have been prepared for heritage sites within the park.	Ongoing
All Park	3	Implement conservation and maintenance works as specified in conservation management plans.	Ongoing
All Park	3	Implement the recommendations of the <i>NPWS Fortifications of Sydney Harbour and Botany Bay Strategic Plan 2007</i> .	Ongoing
All Park	3	Undertake an oral history project to seek out and document the memories, associations and attachments of Aboriginal and non-Aboriginal communities, families and individuals with particular places and events within the park.	Low
All Park	3	Develop and implement cyclic maintenance plans for the park's historic buildings and structures in accordance with the applicable conservation management plans and / or <i>NSW Heritage Act 1977</i> minimum maintenance standards.	Medium
All Park	3	Identify historic landscapes, buildings and structures within the park that are not covered by an existing conservation management plan. Assess the potential threats and opportunities associated with these places to determine if they warrant the preparation of formal conservation management plans. Prepare heritage assessments for those at risk or with unrealised visitor-use potential.	Low
All Park	3	Document the current uses of heritage sites across the park and assess the appropriateness of existing uses. Critically review sites currently used for administrative purposes or staff accommodation and identify opportunities to replace these with uses which enhance visitor and tourist use and enjoyment.	Low
All Park	3	Investigate the registration of the whole of Sydney Harbour National Park on the State Heritage List.	Low
All Park	3	Continue to prepare inventories and manage the moveable heritage collection for the park, recognising the work already completed on collections for the Quarantine Station, Fort Denison and Goat Island.	Ongoing
All Park	3	Manage buildings retained for their cultural values, and wherever possible, continue public use. Investigate appropriate adaptive re-use options for all such buildings that do not currently serve a recreational or operational use.	Ongoing
All Park	3	Buildings may be adapted and leased for the purpose of sustainable visitor and tourist uses. For example visitor and tourist accommodation, administration, equipment hire, interpretation, restaurant, café, kiosk and other food and drink outlets, conferences and functions, retail outlets, facilities to enable activities of a sporting nature to be carried out, information centres and booking outlets.	Ongoing

Precinct	Outcome	Management response	Priority
Outcome 3 Celebrate the historic heritage values of the park			
Nielsen Park & Hermitage Foreshore (1)	3	Provide high-quality historic heritage interpretive and educational material commensurate with the high significance of the Greycliffe Estate and the Steele Point Battery, considering a range of methods and avoiding a proliferation of static signs in the historic precinct.	Medium
Nielsen Park & Hermitage Foreshore (1)	3	Improve public access, interpretation and use of the precinct's historic buildings including Greycliffe House and the fortifications.	Medium
Nielsen Park & Hermitage Foreshore (1)	3	Ensure that the future adaptive re-use of Greycliffe House and associated buildings is sensitive to its high historic heritage significance and is in accordance with the <i>Conservation Management Plan 2012</i> .	High
Nielsen Park & Hermitage Foreshore (1)	3	Seek State Heritage listing for Nielsen Park and Greycliffe House or alternatively for the entire Sydney Harbour National Park.	Low
Nielsen Park & Hermitage Foreshore (1)	3	Complete implementation of the <i>Greycliffe Gardens Landscape Plan</i> .	Medium
South Head, Camp Cove & Green Point (2)	3	Prepare a landscape design plan for the First Landing Place at Camp Cove and the entrance to the park at Constables Cottage including interpretation, signage and redesign of this important heritage place within the park and adjoining local government area.	High
Key Project 5			
South Head, Camp Cove & Green Point (2)	3	Provide an integrated signage strategy for the precinct so that visitors to the Watsons Bay Village and the precinct sites are aware of the national park status and national significance of the precinct.	Medium
South Head, Camp Cove & Green Point (2)	3	Implement conservation and maintenance actions from the <i>Conservation Management Plan for South Head March 2010</i> .	Ongoing
South Head, Camp Cove & Green Point (2)	3	Implement the maintenance and risk management recommendations of the NPWS <i>Fortifications of Sydney Harbour and Botany Bay Strategic Plan 2007</i> , in particular those relating to the World War II anti-submarine features at Green Point and above ground elements at South Head.	Ongoing
South Head, Camp Cove & Green Point (2)	3	Provide for improved public access to the Head Lightkeepers Cottage and historic fortifications, including underground structures.	Medium
Gap Bluff (3)	3	Protect heritage structures from potential damage from invasive plants (eg figs) visitor behaviour, operation of plant and equipment, vehicles and erosion.	Ongoing
North Head (4)	3	Continue to lease the QS buildings for the purposes permitted under the <i>Conditions of Approval and Lease</i> including accommodation and ancillary facilities, conferences, functions and events, restaurant and educational and guided activities. The site and collections are to be managed consistent with the headland's status on the National Heritage List.	Ongoing
North Head (4)	3	Remove vegetation growing in heritage structures and protect these structures from physical damage from erosion, visitors, vehicles and other plant and equipment such as mowers.	Ongoing

Precinct	Outcome	Management response	Priority
Outcome 3 Celebrate the historic heritage values of the park			
North Head (4)	3	Record, assess and prepare a conservation program for stone structures including walls on the headland.	Medium
North Head (4)	3	Record and conserve rock engravings at Old Mans Hat.	Low
Dobroyd Head (5)	3	Undertake a formal review of the 1990 draft <i>Conservation Plan for the Crater Valley Huts</i> and associated cultural landscape and prepare a heritage assessment.	Medium
Dobroyd Head (5)	3	Provide a program for public access to Crater Valley huts for historic heritage appreciation purposes.	Medium
Dobroyd Head (5)	3	Work with the existing Crater Valley caretakers to expand the volunteer base for site management and interpretation.	Medium
Dobroyd Head (5)	3	Implement appropriate fuel reduction measures in the immediate vicinity of the huts.	High
Dobroyd Head (5)	3	Review management and implement measures for protection of World War II fortifications	Low
Middle Head (6)	3	Promote and interpret the precinct's historic heritage to a wider audience and in a tenure-blind manner.	Ongoing
Middle Head (6)	3	Investigate innovative interpretation and activities to provide a wider audience with fortification access. eg use of the armoured casemate for exhibitions or performances.	Medium
Bradleys Head (7)	3	Finalise the draft <i>Conservation Management Plan for Athol Hall</i> and implement its actions.	Medium
Bradleys Head (7)	3	Provide high-quality historic heritage interpretive and educational material, commensurate with the significance of the precinct and its elements, considering a range of methods from static signs to audio and visual.	High
Bradleys Head (7)	3	Regularly remove vegetation that has germinated in the fortifications' stonework.	Medium
Bradleys Head (7)	3	Investigate management of trees and other vegetation in the immediate vicinity of the historically significant rifle wall, to prevent further stone work deterioration.	Medium
Bradleys Head (7)	3	Construct replica cannon carriages and return the cannons to the precinct.	Low
Shark Island (8)	3	Investigate new commercial partnerships to provide tourist experiences with an emphasis on the island's cultural heritage.	High
Shark Island (8)	3	Ensure regular maintenance and repairs to heritage structures, including the stonework of sea walls and grottos and painting of the gazebo.	Ongoing
Clark Island (9)	3	Prepare and implement a heritage management plan for the island, aimed at conserving and interpreting the cultural landscape of the island in line with heritage significance assessment recommendations.	Medium
Clark Island (9)	3	Provide interpretive information to tell the story of Aboriginal and European history, including the island's role in harbour sailing and other recreational pursuits, and the World War II Japanese attack on Sydney.	Medium

Precinct	Outcome	Management response	Priority
Outcome 3 Celebrate the historic heritage values of the park			
Fort Denison (10)	3	Manage the collection of moveable heritage associated with Fort Denison.	Ongoing
Fort Denison (10)	3	Encourage ongoing research into the history and physical development of the fort.	Medium
Fort Denison (10)	3	Monitor the condition of the date palm and fig tree and seek the advice of an arborist if required.	Ongoing
Fort Denison (10)	3	Continue to provide water to the fig tree and date palm in summer as required to maximise their health.	Ongoing
Fort Denison (10)	3	Re-lay the turf on the upper terrace (with archaeological supervision) to improve the look and safety for visitors of this area.	Medium
Fort Denison (10)	3	Encourage and promote the fort's exceptional educational opportunities for schools and the general public.	Medium
Goat Island (11)	3	Seek approval, as required, from the Heritage Council for the removal of buildings and structures that are not required for visitor service purposes and which detract from the significance, condition, integrity or interpretative potential of the island's exceptional cultural and natural heritage values.	Ongoing
Goat Island (11)	3	As an initial priority, seek approval to remove the two amenities buildings in the Magazine precinct and the corrugated iron addition to the Queens Powder Magazine.	High
Goat Island (11)	3	Develop a vibrant and innovative interpretation and visitor program around the heritage values of the island including educational and training opportunities, appropriate and innovative adaptive re-use of selected buildings and an events and functions program.	Medium
Goat Island (11)	3	Continue to undertake and/or facilitate research into the history, built heritage and archaeology of the island, particularly through research partnerships, and utilise new information in interpretive programs.	Medium
Goat Island (11)	3	Conserve, adapt and manage buildings and structures on Goat Island in accordance with the <i>Goat Island Conservation Management Plan 2011</i> and any conditions identified by the NSW Heritage Council.	High
Rodd Island (12)	3	Prepare and implement a heritage assessment for the island, to conserve and interpret the unique buildings including the house, hall, gazebo, summer houses and grottos.	Medium
Rodd Island (12)	3	Provide interpretive materials to inform and educate the community about the fascinating and significant history of the island.	Low

Precinct	Outcome	Management response	Priority
Outcome 4 Provide enriching and memorable experiences in the park			
All Park	4	Seek to enter into partnerships with transport operators for the provision of an integrated guided tour package within the park.	Medium
All Park	4	Prepare a Sydney Harbour National Park Cliff Access Strategy to assess the suitability of specific locations in the park for controlled cliff access.	Medium
All Park	4	Assist visitor appreciation of park values and park protection measures and enhance environmental awareness through public education and interpretation facilities and services.	Ongoing
All Park	4	NPWS will continue to work with stakeholders in the development of protocols for the implementation of events across SHNP consistent with the NPWS Sustainability Assessment Guidelines.	Medium
All Park	4	Utilise the park for events including those that are part of major Sydney festivals. Any event requiring a lease or licence under s.151 of the National Parks and Wildlife Act 1974 (NPW Act) must meet the Sustainability Assessment Criteria.	Ongoing
All Park	4	Adopt waste separation and minimisation practices in the management of events in the park.	Medium
All Park Key Project 6	4	Implement the <i>Sydney Harbour Scenic Walk Strategy 2010</i> upgrading, linking and signposting tracks to provide an effective connection with sections outside of the national park.	High
All Park	4	Utilise the park for events including those that are part of major Sydney festivals. Any event requiring a lease or licence under s151 of the <i>National Parks and Wildlife Act 1974</i> must meet the Sustainability Assessment Criteria.	Ongoing
All Park	4	Implement a licensing system for personal trainers and fitness groups, limiting opportunities based on other uses in the areas.	Ongoing
All Park	4	Establish an integrated park-wide Visitor Data System for the ongoing collection, storage and analysis of visitor use data.	Low
All Park	4	Prepare and implement a park-wide interpretation and education strategy or specific precinct strategies.	Low
All Park	4	Monitor impacts associated with tourism and recreation on heritage places to ensure that they do not exceed the level of change allowed under the applicable conservation management plan.	Ongoing
All Park	4	Complete the production and release of the pilot interpretative podcast for the walking track between Taronga Zoo and Clifton Gardens. Expand the program across the remainder of the Sydney Harbour Scenic Walk.	Ongoing

Precinct	Outcome	Management response	Priority
Outcome 4 Provide enriching and memorable experiences in the park			
All Park	4	Conduct a review of all houses in the park to assess their suitability for visitor and tourist accommodation or other alternative uses that benefit the park.	High
All Park	4	Periodically review educational information presented and interpreted by commercial operators and other bodies, to ensure high-quality standards are met.	Ongoing
All Park	4	Continue to work with stakeholders in the development of guidelines for the organisation and implementation of events across the park. These guidelines will be regularly monitored to ensure sustainable outcomes for park visitors and neighbours.	Medium
All Park	4	Identify the access points through the park that are used by anglers and, where appropriate, install signs advising on the hazards of rock-fishing. Rescue devices may be installed in the park adjacent to high-risk angling sites subject to environmental impact assessment.	High
All Park	4	Regularly monitor all fortifications to identify emerging visitor safety risks and to detect the presence of threatened species such as bent-wing bats.	Ongoing
Nielsen Park & Hermitage Foreshore (1)	4	Provide and maintain visitor infrastructure and services that support the traditional passive recreation opportunities of the precinct.	Ongoing
Nielsen Park & Hermitage Foreshore (1)	4	Review the provision of appropriate First Aid equipment in close proximity to the beach.	Medium
Nielsen Park & Hermitage Foreshore (1)	4	Continue to lease the Nielsen Park Kiosk, Kiosk Cottage, Kiosk Garage and Halbert Pavilion for the purposes of a café, restaurant and function centre. In the event that the current lease comes to an end, new adaptive uses for the buildings will be considered to support sustainable visitor and tourist use and enjoyment.	Ongoing
Nielsen Park & Hermitage Foreshore (1)	4	Work with lessees and licensees and the local community to identify and address any emerging issues relating to commercial activities within the precinct.	Ongoing
Nielsen Park & Hermitage Foreshore (1)	4	Ensure that the lease or licence agreements governing the operation of the Nielsen Park Kiosk and any other commercial activities within the precinct, include effective measures for minimising the impact of visitor noise.	Ongoing
Nielsen Park & Hermitage Foreshore (1)	4	Greycliffe House and its associated buildings, including the Margaret Harper Wing, Dressing Pavilion and Gardeners Cottage, will be investigated for new adaptive uses to support sustainable visitor and tourist use and enjoyment. For example, these buildings may be adapted and leased for purposes such as accommodation, administration, interpretation, conferences and functions or as a restaurant.	Medium
Nielsen Park & Hermitage Foreshore (1)	4	Operate Steele Point Cottage for self-contained holiday accommodation. Investigate its potential packaging with existing or new lessees in the park.	Ongoing

Precinct	Outcome	Management response	Priority
Outcome 4 Provide enriching and memorable experiences in the park			
Nielsen Park & Hermitage Foreshore (1)	4	Provide a netted swimming enclosure at Shark Beach in the warmer months, removing the net for maintenance in the colder months.	Ongoing
Nielsen Park & Hermitage Foreshore (1)	4	Implement measures to discourage unauthorised after hours use of the precinct.	Medium
South Head, Camp Cove & Green Point (2)	4	The 33 Cliff St Cottage will be investigated for new adaptive uses to support sustainable visitor and tourist use and enjoyment. For example, these buildings may be adapted and leased for purposes such as accommodation, as a café or kiosk, equipment hire and facilities to enable activities of a sporting nature to be carried out.	High
South Head, Camp Cove & Green Point (2)	4	Provide an enhanced entry statement at the entrance to South Head including a map, information about the precinct's history and walks within the precinct.	Medium
South Head, Camp Cove & Green Point (2)	4	Provide new seating and picnic furniture of high-quality design at scenic locations at South Head, Green Point and Camp Cove Beach.	Medium
South Head, Camp Cove & Green Point (2)	4	In consultation with Woollahra Council, investigate the removal of the beach-front kiosk and toilets.	Medium
South Head, Camp Cove & Green Point (2)	4	Constables Cottage will be investigated for new adaptive uses to support sustainable visitor use and enjoyment. For example, this building may be adapted and leased for purposes such as a restaurant, café, kiosk or other food and drink outlets or for accommodation.	High
South Head, Camp Cove & Green Point (2)	4	Manage unauthorised uses of the bushland adjacent to the clothing optional Lady Bay Beach in collaboration with NSW Police, Woollahra Council, HMAS Watson and NSW Department of Health.	High
South Head, Camp Cove & Green Point (2)	4	Green Point Cottage will be investigated for new adaptive uses to support sustainable visitor use and enjoyment. For example, this building may be adapted and leased for purposes such as accommodation, or as a restaurant.	High
South Head, Camp Cove & Green Point (2)	4	The Assistant Lightkeepers Cottage will be investigated for new adaptive uses to support sustainable visitor use and enjoyment. For example, these buildings may be adapted and leased for purposes such as accommodation or as a café.	High
South Head, Camp Cove & Green Point (2)	4	The Head Lightkeepers Cottage will be subject to internal stabilisation works and investigated for new adaptive uses to support sustainable visitor use and enjoyment. For example, these buildings may be adapted and leased for purposes such as accommodation, as a restaurant or café or for exhibitions.	Medium
Gap Bluff (3)	4	The Gap Bluff complex of buildings is currently managed by NPWS for conferences, functions and staff accommodation. New adaptive uses for the buildings will be investigated to support sustainable visitor or tourist use and enjoyment. For example, the buildings may be adapted and leased for purposes such as visitor and tourist accommodation, administration, as a restaurant or for conferences and functions.	High

Precinct	Outcome	Management response	Priority
Outcome 4 Provide enriching and memorable experiences in the park			
Gap Bluff (3)	4	Any new buildings or structures are to be located within an area bounded by the entrance road, the public toilets, the Armoury, the Cottage and the Officers Mess carpark, as marked on the Gap Bluff precinct map. No new buildings are permitted between the Officers Mess and The Gap.	Ongoing
Gap Bluff (3)	4	Upgrade the cliff-edge walking track from Gap Park to the boundary of HMAS Watson, to support the <i>Woollahra Council Gap Bluff Suicide Prevention Strategy</i> and improve visual amenity, public safety and accessibility.	High
North Head (4)	4	Work with SHFT to share the new proposed 'entry point' to the sanctuary on North Fort Road.	Medium
North Head (4)	4	Assess and, where required, improve precinct parking and other visitor facilities and services in consultation with Sydney Harbour Federation Trust, to enhance enjoyment and to complement those offered by adjacent public parkland providers.	High
North Head (4)	4	Locations on North Head will be assessed as part of the Sydney Harbour National Park Cliff Access Strategy for possible use for rock climbing, access for rock fishing and commercial tours.	Medium
North Head (4)	4	Erect signs to manage the illegal use and installation of ladders and other equipment used to climb the rock faces at North Head.	High
North Head (4)	4	Ensure management of vehicle access during special events is consistent with the objectives of the park and the sanctuary concept and with the development and implementation of a transport policy.	Ongoing
North Head (4)	4	Investigate the installation of toilet facilities in the Collins Beach area.	Medium
North Head (4)	4	Reduce risks to wildlife by implementing measures to discourage inappropriate after hours use of the precinct.	Medium
North Head (4)	4	Work with St Patrick's Estate and Manly Council to secure access for the Sydney Harbour Scenic Walk (SHSW) from Shelley Beach through St Patrick's land, to the boundary of Sydney Harbour National Park.	Low
Dobroyd Head (5)	4	Provide public day use access to Crater Cove huts for heritage appreciation purposes as part of the Discovery program.	Ongoing
Dobroyd Head (5)	4	Investigate the provision of overnight caretaker accommodation in one of the huts including the installation of facilities such as a composting toilet, water tanks and solar energy.	Medium
Dobroyd Head (5)	4	Maintain the walking track to Crater Valley to a basic standard only, with works to control erosion and provide for minimal safe access until such time as the heritage assessment is completed and future guidelines provided.	Ongoing
Dobroyd Head (5)	4	Provide high-quality Aboriginal and historic heritage interpretive and educational material to include Arabanoo lookout, Grotto Point engravings, Crater Cove and Reef Beach.	High
Dobroyd Head (5)	4	Maintain the access track to Washaway Beach.	Low

Precinct	Outcome	Management response	Priority
Outcome 4 Provide enriching and memorable experiences in the park			
Dobroyd Head (5)	4	Investigate safety and visitor facility requirements to allow an increase in the number of visitors to Crater Valley huts. This will require improvements to the walking track conditions and better directional signposting.	Medium
Middle Head (6)	4	Complement recreational opportunities provided by other land managers at Chowder Bay, Georges Heights and Clifton Gardens.	Medium
Middle Head (6)	4	Apply park use fees in the carparks along Chowder Bay Road.	Ongoing
Middle Head (6)	4	Provide opportunities for passive recreation such as picnics, walking and sightseeing, as well as places for contemplation, in a bushland setting with spectacular views. Consider provision of furniture at these locations.	Medium
Middle Head (6)	4	Integrate tours and access to fortifications and other sites across multiple tenures to enable the complete history of the headland to be interpreted.	Medium
Middle Head (6)	4	The Middle Head complex of buildings will be investigated for new adaptive uses to support sustainable visitor or tourist use and enjoyment. For example, these buildings may be adapted and leased for purposes such as accommodation, conferences, administration or functions.	Ongoing
Middle Head (6)	4	Provide opportunities for the sustainable use and possible licensing of the cleared sections of the precinct for events, functions and appropriate community uses.	Medium
Middle Head (6)	4	Manage inappropriate activities in the bushland behind the clothing-optional Obelisk and Cobblers beaches in collaboration with NSW Police and NSW Department of Health.	High
Bradleys Head (7)	4	Investigate the opening and interpretation of the historic military defensive ditch as part of the Sydney Harbour Scenic Walk and as an opportunity for historic interpretation.	Medium
Bradleys Head (7)	4	Continue to lease Athol Hall for the purposes of a café, restaurant and function centre.	Medium
		In the event that the current lease comes to an end, new adaptive uses for the buildings will be considered to support sustainable visitor and tourist use and enjoyment.	
Bradleys Head (7)	4	New picnic structures may be constructed on the grassed areas below the hall and incorporated into the Athol Hall lease.	Low
		Investigate the involvement of Taronga Zoo volunteers in interpretation / education programs and tours in the precinct.	
Bradleys Head (7)	4	Install fencing along the walking track between Bradleys Head and Taronga Zoo, for visitor safety and vegetation management purposes.	Medium
Bradleys Head (7)	4	Investigate the feasibility of connecting the foreshore toilets to the mains sewer.	High
Bradleys Head (7)	4	Upgrade the existing and formalise a new lookout at Chowder Head.	Medium

Precinct	Outcome	Management response	Priority
Outcome 4 Provide enriching and memorable experiences in the park			
Bradleys Head (7)	4	Formalise a new lookout on Bradleys Head at the southern end of Taylors Bay.	Medium
Bradleys Head (7)	4	Upgrade the informal lookout with city views above the foreshore near Athol Hall.	Medium
Shark Island (8)	4	Provide an entry statement at the island's wharf arrival point including interpretation of the island's features.	Medium
Shark Island (8)	4	Replace (after detailed recording) the 1950s picnic shelters with updated structures of simple design and orientation, possibly including new locations if determined in the masterplanning process.	Low
Shark Island (8)	4	Review the restrictions of visiting hours, activities, visual impacts and in particular sound amplification, to minimise impacts generated from island visitation on neighbours.	Ongoing
Shark Island (8)	4	Assess the condition of the foreshore walking track in light of possible sea level rise impacts and repair or demolish as appropriate.	Medium
Shark Island (8)	4	Promote the island as a venue for functions and events, including major cultural events such as the Sydney Festival, with numbers limited to a maximum of 800 persons on the island at any one time.	Ongoing
Shark Island (8)	4	Permit the provision of infrastructure to support catered functions, such as outdoor kitchen facilities. The proposed location is adjacent to the amenities building, where water and power are available.	Medium
Clark Island (9)	4	Continue the enhancement of Aboriginal-focused guided opportunities with activities such as story telling, star gazing and bush tucker picnics.	Medium
Clark Island (9)	4	Continue to promote the island as a venue for functions, with numbers limited to a maximum of 250 persons on the island at any one time.	Medium
Clark Island (9)	4	Review the restrictions of visiting hours, activities, visual impacts and in particular sound amplification, to minimise impacts generated from island visitation on neighbours.	Ongoing
Clark Island (9)	4	Camping is permitted on Clark Island subject to formal approval by NPWS through the issue of consent, licence or lease.	Ongoing
Clark Island (9)	4	Continue the use of Clark Island for special events such as New Year's Eve, Sydney Festival, Crave, Vivacity, Vivid, Sydney Writers' Festival, Biennale and Sydney Film Festival.	Ongoing
Clark Island (9)	4	Pursue harbour-based events, such as Clark Island to Shark Island swimming and kayaking events, subject to the acquisition of an aquatic licence from NSW Roads and Maritime Services.	Medium
Fort Denison (10)	4	Investigate the feasibility of declaring the island a 'non-smoking' venue.	Medium
Fort Denison (10)	4	Daily tours will continue to operate ensuring that day time visitors have the opportunity for face-to-face interpretation of the island's heritage.	Ongoing
Fort Denison (10)	4	Ensure that Fort Denison continues to play a key role in special events on Sydney Harbour.	Ongoing

Precinct	Outcome	Management response	Priority
Outcome 4 Provide enriching and memorable experiences in the park			
Fort Denison (10)	4	Ensure visitor safety and comfort by limiting numbers to no more than 200 visitors at any one time.	Ongoing
Fort Denison (10)	4	Ensure visitor safety and comfort by limiting the number of visitors in the Martello Tower to a maximum of 20 per guided group.	Ongoing
Fort Denison (10)	4	Work with the lessee to ensure that restaurant operations enhance visitor appreciation and experience of the core heritage values of the island.	Ongoing
Fort Denison (10)	4	Improve the marketing and promotion for Fort Denison.	Medium
Fort Denison (10)	4	Continue to lease the Fort Denison barracks and forecourt for the purpose of café, restaurant and functions centre. In the event that the current lease comes to an end, new adaptive uses will be considered to support sustainable visitor and tourist use and enjoyment.	Ongoing
Fort Denison (10)	4	Permit construction of storage sheds in the yard, and other discrete well-designed storage facilities for the operation of the restaurant or similar use, if approved after heritage and environmental assessment and consideration of alternative options.	Ongoing
Goat Island (11)	4	Finalise the <i>Goat Island Masterplan</i> and implement its staged and integrated approach to the establishment of Goat Island as a key visitor destination in Sydney Harbour.	High
Goat Island (11)	4	Develop an innovative education and interpretation program including multi-media presentations, temporary and permanent art works, and face-to-face tours.	Medium
Goat Island (11)	4	Seek private sector partners to deliver appealing visitor experiences associated with the island's landscape and scenic values, and the natural, Aboriginal, convict, colonial and maritime heritage.	High
Goat Island (11)	4	Continue to provide guided tours, dynamic key cultural activities and special events such as the annual viewing of the New Year's Eve fireworks.	Ongoing
Goat Island (11)	4	Develop a special events program for the island including key cultural activities in Sydney's events calendar such as the Sydney Writers' Festival, Crave and Biennale.	Medium
Goat Island (11)	4	Consider design and construction of a viewing platform behind the convict wall to view the magazine and shipyard areas.	Low
Goat Island (11)	4	Visitor facilities such as shade structures, picnic tables, seating, pathways, stairs, access lifts, fences and toilets may be constructed in accordance with the <i>Goat Island Conservation Management Plan 2011</i> and the <i>Goat Island Masterplan</i> .	High
Goat Island (11)	4	All buildings on Goat Island will be investigated for new adaptive uses to support sustainable visitor or tourist use and enjoyment (see pages 186-187 for more detail).	High

Precinct	Outcome	Management response	Priority
Outcome 4 Provide enriching and memorable experiences in the park			
Goat Island (11)	4	All adaptation and fitout works must be consistent with the assessment of significance and compatible uses in the <i>Goat Island Conservation Management Plan 2011</i> .	Ongoing
Rodd Island (12)	4	Review the landing fee and booking arrangements to encourage kayakers and others to stop on the island.	High
Rodd Island (12)	4	Partner Sydney Harbour / Parramatta River park management bodies and recreation providers in the development of a kayak heritage trail experience, incorporating Rodd Island.	Medium
Rodd Island (12)	4	Review the restrictions of visiting hours, activities, visual impacts and in particular sound amplification, to minimise impacts generated from island visitation on neighbours.	Medium
Rodd Island (12)	4	Buildings on Rodd Island will be investigated for new adaptive uses to support sustainable visitor or tourist use and enjoyment. For example, these buildings may be adapted and leased for purposes such as accommodation, as a restaurant, café, kiosk and other food and drink outlet, conferences and functions.	Medium
Outcome 5 Improved access to the park for all			
All Park Key Project 7	5	Provide improved access enhancements at key park locations, including North Head, Goat Island, Nielsen Park, Middle Head and Bradleys Head. The project will focus on including improved access for people of all levels of ability and culturally and linguistically diverse communities. It will provide information, education and interpretation for a wide range of visitors, including children and people from a diverse range of cultures.	High
All Park	5	Investigate the provision of multilingual translations when preparing interpretive, promotional and educational materials.	Medium
All Park	5	Ensure provision of adequate designated disabled parking spaces in all carparks in the park.	Ongoing
All Park	5	Design and adapt educational and interpretive facilities to be accessible for the mobility impaired.	Medium
All Park	5	Review the requirements and feasibility of the adaptation of park wharves to allow for improved access for the mobility impaired in accordance with the <i>Disability Standards for Accessible Public Transport Act 2002</i> .	High
All Park	5	Ensure that information about the availability of park facilities for the mobility impaired is included on the NPWS and other appropriate websites.	Medium
All Park	5	Implement the NPWS Risk Management System in the park, including regular inspection of high-risk structures such as lookouts, fortifications, heritage buildings, bridges and walking tracks along cliffs.	Ongoing
All Park	5	Provide opportunities for mobility-impaired persons to participate in special events within the park.	Ongoing

Precinct	Outcome	Management response	Priority
Outcome 5 Improved access to the park for all			
All Park	5	Implement the <i>Sydney Harbour Scenic Walk Strategy 2010</i> , including the staged upgrade of the sections within the park and the negotiation of an interagency agreement for the coordinated implementation of design and signage standards across all tenures.	Ongoing
All Park	5	Prepare and implement cyclical maintenance plans for maritime infrastructure in the park including wharves, sea walls, swimming enclosures, weirs and moorings.	Medium
All Park	5	Implement the <i>DECCW Disability Action Plan 2009 – 2012</i> as it applies to the park.	Ongoing
Nielsen Park & Hermitage Foreshore (1)	5	Investigate new public uses to increase access and opportunities for people with disabilities and those from diverse cultures at Greycliffe House and other precinct buildings and structures.	Medium
Nielsen Park & Hermitage Foreshore (1)	5	Continue negotiations with Woollahra Council for the acquisition of Greycliffe Ave carpark in exchange for carpark at Watsons Bay and improve parking and access for those with mobility impairment.	Low
Nielsen Park & Hermitage Foreshore (1)	5	Investigate increased disabled access to all current and new facilities, including additional disabled parking spaces both within the precinct and (in consultation with Woollahra Council) in adjoining council facilities.	Medium
Nielsen Park & Hermitage Foreshore (1)	5	Investigate the installation of handrails to improve access to the beach from the promenade.	Medium
Nielsen Park & Hermitage Foreshore (1)	5	Install directional and interpretive signs to Bottle and Glass Point and other locations at the extremities of the precinct.	Low
Nielsen Park & Hermitage Foreshore (1)	5	Prepare a landscape design plan for the Nielsen Park and Hermitage Foreshore precinct that retains and enhances the precinct as a recreational parkland with rich heritage values.	High
Nielsen Park & Hermitage Foreshore (1)	5	Prepare a landscape design plan for Nielsen Park precinct that retains and enhances its integrity as a recreational parkland for which the community so passionately fought and which ensures resilience for high seasonal visitation.	High
Key Project 8(i)			
South Head, Camp Cove & Green Point (2)	5	Investigate improved access arrangements through HMAS Watson to provide unassisted disabled access to Inner South Head. Consider modifications at Green Point and Constables Cottages to enhance access for the mobility impaired.	Medium
South Head, Camp Cove & Green Point (2)	5	Provide high-quality interpretive and educational material, considering all methods from static signs to audio and video, allowing for consideration of diversity amongst visitors and difficult access to the headland.	Medium
South Head, Camp Cove & Green Point (2)	5	Install directional and interpretive signs to and from Watsons Bay across the precinct.	Medium
South Head, Camp Cove & Green Point (2)	5	Work with the Sydney Harbour Federation Trust (SHFT) to design and construct an access-for-all link through SHFT's Victoria Street Reserve across the beach-side elevation of the Marine Biological Station to Green Point.	Medium

Precinct	Outcome	Management response	Priority
Outcome 5 Improved access to the park for all			
Gap Bluff (3)	5	Provide disabled parking spaces in carparking areas.	Ongoing
Gap Bluff (3)	5	Install a multilingual package of directional, entry and interpretive signage, so that visitors to the Watsons Bay Village and the precinct are aware they are visiting a national park and places of significance.	Medium
Gap Bluff (3)	5	Prepare a landscape design plan for the Gap Bluff precinct that takes full advantage of the opportunity to integrate historic and cultural heritage with native bushland and the excellent city and coastal views.	Medium
North Head (4)	5	Improve access by developing new opportunities for the mobility impaired. These may include bird hides, accessible walking tracks, lookout platforms, and potentially new improved access opportunities in aquatic reserves.	Medium
North Head (4)	5	Provide high-quality, well-designed landscape elements at the entrance to North Head at Park Hill Arch to demonstrate pride and excitement at what lies beyond on North Head.	Medium
North Head (4)	5	Prepare and implement an integrated signage package for the precinct including entry, information, directional, regulatory and interpretive signage.	High
North Head (4)	5	Construct a visitor viewing platform at the lookout adjacent to the North Fort entrance. Consideration is to be given to a design competition for this structure.	Low
Dobroyd Head (5)	5	Work with Manly Council to provide additional parking for people with disabilities near Tania Park and in harbour viewing areas.	Low
Dobroyd Head (5)	5	Investigate and implement improved presentation of Aboriginal engravings at Grotto Point through sensitive assessment of the context in the landscape.	High
Dobroyd Head (5)	5	Investigate enhancement of the outdoor classroom facility at Reef Beach, involving local schools in the project.	Medium
Middle Head (6)	5	Investigate opportunities for access to underground fortifications for the mobility impaired.	Medium
Middle Head (6)	5	Prepare a landscape design plan for the precinct to ensure continued delineation between natural bushland areas and the cultural landscape and high-quality visitor facilities.	Medium
Middle Head (6)	5	Provide high-quality, well-designed landscape elements at the entrance to the precinct.	Medium
Bradleys Head (7)	5	Develop a cooperative interpretation program for migrants and culturally diverse members of the community with Taronga Zoo and the Royal Botanic Gardens, utilising the bushland at Bradleys Head.	Medium
Bradleys Head (7)	5	Install a hand basin in the disabled person's cubicle in the foreshore toilet block and extend the toilet facility at Athol Hall to include a disabled access cubicle.	High
Bradleys Head (7)	5	Investigate refurbishment of the <i>HMAS Sydney I</i> mast and memorials and surrounding landscape as part of the centenary celebrations of the first entry of the Australian Naval Fleet into Sydney Harbour, planned for October 2013.	High

Precinct	Outcome	Management response	Priority
Outcome 5 Improved access to the park for all			
Bradleys Head (7) Key Project 8(ii)	5	Prepare a landscape design plan for Bradleys Head precinct that retains and enhances its integrity as a recreational parkland for which the community so passionately fought and which ensures resilience for high seasonal visitation.	High
Bradleys Head (7)	5	Seek recognition of the Bradleys Head memorials as a Military Memorial of National Significance under the <i>Military Memorials of National Significance Act 2008</i> .	Medium
Shark Island (8)	5	Design and construct island pathways that provide an accessible route from the wharf to the gazebo and amenities block.	Medium
Shark Island (8)	5	Prepare a landscape design plan to appropriately balance the island's competing values, maximising cultural landscape elements and their interpretation and achieving high-quality amenity for visitors.	Medium
Shark Island (8)	5	Provide high-quality, well-designed landscape elements at the island's wharf entrance to signal the special qualities of the island that lie ahead.	Medium
Clark Island (9)	5	Investigate the viability of improved access for the disabled to and within the Clark Island precinct.	Low
Clark Island (9)	5	Investigate specialist tours for CALD with the not-for-profit Aboriginal tour operator.	Medium
Clark Island (9)	5	Prepare a landscape design plan for Clark Island to guide the provision and maintenance of cleared and bushland areas and amenities for future use of the island.	Medium
Clark Island (9)	5	Monitor the condition of and maintain the foreshore walking track on the eastern side of the island. A reassessment of the materials used may be required due to sea level rise and wave action.	Medium
Clark Island (9)	5	Upgrade picnic furniture on the island.	Low
Fort Denison (10)	5	Develop a detailed design plan for an undercover outdoor dining/function area that does not compromise the visual presentation of the fort, particularly on arrival at the site, including appropriate lighting for night functions. A new structure for this purpose would be permitted subject to environmental and heritage impact assessment.	Medium
Fort Denison (10)	5	Develop a system to monitor, assess and address the impact of sea level rise, wave action and boat traffic on the fort structure.	Ongoing
Fort Denison (10)	5	Provide improvements for the mobility impaired including hand rails in the Martello tower and tunnel.	Medium
Goat Island (11)	5	Provide wheelchair-accessible toilets on the island.	Medium
Goat Island (11)	5	Provide wheelchair access to the Magazine precinct and eastern side of the island and investigate the feasibility of providing wheelchair access to the northern side of the island	High
Goat Island (11)	5	Remove, when no longer required for commercial shipping, the navigation infrastructure (lead beacons and day markers) from the island in consultation with Sydney Ports and NSW Roads and Maritime Services.	Low

Precinct	Outcome	Management response	Priority
Outcome 5 Improved access to the park for all			
Goat Island (11)	5	Liaise with Telstra Corporation regarding the removal or adaptation of the submarine cable sign intruding on the Water Police precinct's rocky knoll.	Low
Rodd Island (12)	5	Upgrade the toilet facilities to improve use for the mobility impaired and to a standard to complement island access levels.	Medium
Rodd Island (12)	5	Prepare a landscape design plan to appropriately balance the island's range of values, maximising cultural landscape elements and their interpretation, and achieving high-quality amenity for visitors.	Medium
Outcome 6 Strengthen and create partnerships			
All Park	6	Collaborate with tourism authorities in the implementation and review of applicable tourism plans and strategies.	Ongoing
All Park	6	Continue to work with councils and neighbours over boundary encroachments, management of asset protection zones, household garden refuse deposits in the park and education and prevention programs.	Ongoing
All Park	6	Seek partnerships with the education and cultural sectors, to encourage use of the harbour islands for small-scale special events under the umbrella of larger programs and festivals such as the Sydney Festival, Crave, Vivacity, Vivid, Sydney Writers' Festival, Biennale and Sydney Film Festival.	Ongoing
All Park	6	Partner with park lessees and other harbour land management authorities in the delivery of integrated, high-quality visitor experiences across Sydney Harbour.	Ongoing
All Park	6	Build partnerships and continue to nurture our relationships with volunteers and other supporters of NPWS. Ensure that volunteers have opportunities to contribute meaningfully to park management in ways that meet their personal needs and aspirations.	Ongoing
All Park	6	Investigate new ways and continue fostering inter-agency and community-wide cooperation in biodiversity and weed management including the sharing of data, equipment, expertise and training opportunities amongst park neighbours, relevant private and public authorities, other protected area management agencies, and members of local communities.	Low
All Park	6	Continue to work closely with government agencies and other neighbours to ensure effective cross-boundary management of feral animals.	Ongoing
All Park	6	Expand the volunteer program by engaging appropriately trained volunteers in roles such as visitor liaison officers, heritage site caretakers, biodiversity surveyors and bush regenerators. Adopt the campground host program where feasible.	Medium
All Park	6	Prepare a Register of Required Research to encourage the involvement of research institutions and individuals in the park.	Low
All Park	6	Liaise with local tourism associations, other government agencies and tourism operators to ensure that all relevant promotional material provides accurate information concerning the recreational opportunities available in the park.	Low

Precinct	Outcome	Management response	Priority
Outcome 6 Strengthen and create partnerships			
Nielsen Park & Hermitage Foreshore (1)	6	Work with Woollahra Council and neighbours to improve stormwater issues in the Hermitage Foreshore area.	Ongoing
Nielsen Park & Hermitage Foreshore (1)	6	NPWS will liaise with the State Property Authority and other relevant stakeholders about the future management of Strickland House, and in particular the bushland components of its grounds, for the purpose of improving the Vaucluse Road entrance to the national park and potentially extending the habitat for <i>Allocasuarina portuensis</i> .	Low
Nielsen Park & Hermitage Foreshore (1)	6	Work closely with precinct lessees to ensure that noise and other impacts on the local community are appropriately managed.	Ongoing
South Head, Camp Cove & Green Point (2)	6	Develop and implement a Memorandum of Understanding with the University of NSW Faculty of the Built Environment to involve students in 'on park' research and design projects such as the South Head, Camp Cove and Green Point precinct landscape design plan.	High
Gap Bluff (3)	6	Introduce park use fees in the parking area at the Cliff St and Military Rd intersection.	High
Gap Bluff (3)	6	Maintain liaison with NSW Police and Woollahra Council regarding operational management of the site and the implementation of the <i>Gap Bluff Suicide Prevention Strategy</i> .	Ongoing
Gap Bluff (3)	6	Strengthen the partnership with Woollahra Council around managing issues of joint concern such as the Sydney Harbour Scenic Walk project, carparks and Gap Park links.	Ongoing
North Head (4) Key Project 9	6	Build partnerships when creating a sanctuary for endangered flora and fauna across the whole of North Head. This will involve all North Head stakeholders, volunteers, tertiary institutions, lessees and other land managers. NPWS and other stakeholders will work closely with the Department of Primary Industries (DPI) to ensure integration of the terrestrial areas of North Head and Dobroyd Head with the marine protected areas.	High
North Head (4)	6	Investigate opportunities to integrate the visitor services and cultural tourism products offered at the Quarantine Station with other visitor experiences across the park.	Medium
North Head (4)	6	Manage the little penguin critical habitat area in liaison with the Penguin Wardens, Taronga Zoo, Manly Council, NSW Roads and Maritime Services and the NPWS Threatened Species Unit.	Ongoing
North Head (4)	6	In collaboration with all North Head land managers, prepare a <i>North Head Masterplan</i> to guide the development and delivery of integrated visitor services, including the walking track network, parking and public toilet facilities. The masterplan will be publicly exhibited and comments invited.	Medium
North Head (4)	6	Where appropriate, involve all North Head and Dobroyd Head stakeholders, Department of Primary Industries, volunteers, tertiary institutions, lessees and other land and aquatic area stakeholders and managers in the integrated management of the terrestrial areas of North Head and Dobroyd Head with the marine protected areas of North (Sydney) Harbour Aquatic Reserve and Cabbage Tree Bay Aquatic Reserve.	Low

Precinct	Outcome	Management response	Priority
Outcome 6 Strengthen and create partnerships			
Dobroyd Head (5)	6	Work with the Crater Valley caretakers to expand the volunteer base for the ongoing conservation and interpretation of the huts.	Medium
Dobroyd Head (5)	6	Work with Manly Council to improve public access and signage at Dobroyd Head.	Medium
Dobroyd Head (5)	6	Partner with Aboriginal groups to increase understanding of the Aboriginal cultural significance of the precinct.	Medium
Dobroyd Head (5)	6	Work with Manly Council and neighbours over boundary encroachments, management of asset protection zones, household garden refuse deposits in the park and education and prevention programs in the dog off leash area of Tania Park.	Medium
Middle Head (6)	6	Continue to liaise with SHFT and other neighbours to ensure reciprocal arrangements are in place to for high-quality presentation on boundary areas.	Ongoing
Middle Head (6)	6	Continue to work with SHFT, and Mosman Council in the creation of a unified Headland Park.	Ongoing
Middle Head (6)	6	Provide and implement strategies for cross-tenure pest management in line with NPWS's role as the lead agency in natural area conservation.	Ongoing
Middle Head (6)	6	Work with neighbouring small businesses, such as those operating out of Chowder Bay and currently including Land's Edge and Plunge Dive, to integrate operations that will benefit all parties.	Ongoing
Bradleys Head (7)	6	Continue to work with the Royal Australian Navy and other agencies in management of the <i>HMAS Sydney I</i> memorial.	High
Shark Island (8)	6	Provide support for volunteer vegetation management programs.	Ongoing
Shark Island (8)	6	Formalise an agreement with the Department of Defence for the degaussing station infrastructure on the island and use of the power supply.	Medium
Clark Island (9)	6	Seek partnerships with the education and cultural sectors, to encourage small-scale special events on the island.	Medium
Clark Island (9)	6	Continue to support the island's volunteer bush regeneration program and seek expansion of the corporate program currently operating at Middle Head. This involves volunteer staff from corporate entities working under the guidance of NPWS experts to remove weeds and participate in park maintenance activities.	Ongoing
Fort Denison (10)	6	Seek appropriate partnerships to continue monitoring and research on the impacts of sea level rise on this important historic site.	Medium
Fort Denison (10)	6	Include Fort Denison in the wider presentation of Sydney Harbour's coastal forts.	Medium
Fort Denison (10)	6	Seek partnerships with the education and cultural sectors, to encourage use of the island for small-scale special events on the island under the umbrella of larger programs and festivals such as the Sydney Festival, Crave, Vivacity, Vivid, Sydney Writers' Festival, book launches and celebrity events.	Ongoing

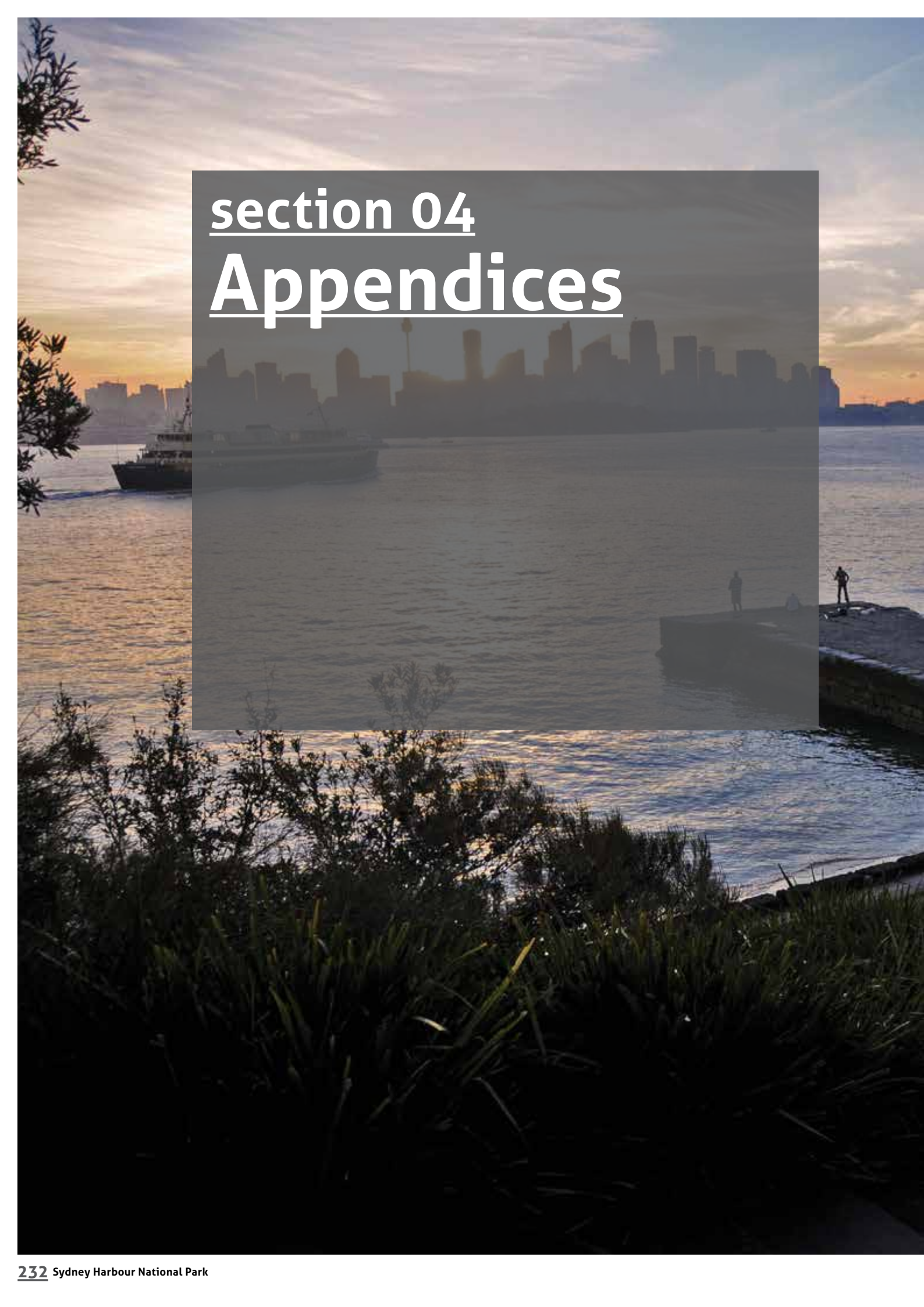
Precinct	Outcome	Management response	Priority
Outcome 6 Strengthen and create partnerships			
Fort Denison (10)	6	Negotiate with NSW Roads and Maritime Services for assistance with protection of the fort structure by implementing and regulating an 'irregular manoeuvre prohibited' zone distance off for commercial adventure vessels (CAV).	Medium
Fort Denison (10)	6	Work with the restaurant lessee to ensure that visitors to the island are supported by high-quality services and experiences.	Ongoing
Goat Island (11)	6	Investigate utilising the island's colonial heritage for traditional trades training and educational purposes in partnership with government institutions and the private sector.	Ongoing
Goat Island (11)	6	Negotiate a formal agreement with Telstra Corporation, Sydney Ports to manage and maintain major telecommunications and navigation infrastructure on the island.	Low
Goat Island (11)	6	Continue to seek a land base to support NPWS operations on the island.	High
Rodd Island (12)	6	Contact the Australian Society for Microbiology to investigate possible partnerships and involvement in the island, given its significant history in the microbiology field.	Medium
Rodd Island (12)	6	Develop partnerships with Leichhardt and Canada Bay Councils and other community stakeholders, to improve and increase community interest, ownership and use of the island.	Medium
Outcome 7 Robust management of the park is sustained			
All Park Key Project 10	7	As part of park wide inter-tidal asset maintenance and heritage protection, NPWS will monitor impacts and implement best-practice maintenance and adaptation for sites directly impacted by rising sea levels. Such sites include Fort Denison, inter-tidal ecosystems, Aboriginal middens, sea walls and wharves.	High
All Park	7	Establish and implement strategies to facilitate the systematic collection of floristic and faunal data of bushland areas as base data and establish permanent monitoring sites as a tool for the improved management of fire and weeds.	Medium
All Park	7	Prepare a cyclical maintenance plan for the park's walking tracks.	Ongoing
All Park	7	Disseminate the results of climate change research conducted within the park.	Ongoing
All Park	7	Follow water sensitive urban design principles where more natural solutions to water quality and flow issues are not appropriate.	Ongoing
All Park	7	Minimise the carbon footprint of existing and future uses of the park through the implementation of energy and water saving initiatives.	Ongoing
All Park	7	Monitor the impacts of sea level rise and design new infrastructure to accommodate projected changes.	High
All Park	7	Undertake a review of signage requirements for the park with a priority for park entry and interpretive signage for high visitation areas. In reviewing signage requirements, look at appropriate means of providing warning and directional signage, for security, baiting, and other routine management programs. Priorities for new entry signs include North Head and Bradleys Head.	Medium

Precinct	Outcome	Management response	Priority
Outcome 7 Robust management of the park is sustained			
All Park	7	Ensure any upgrades or new facilities incorporate environmentally sustainable features and are of high-quality, long-lasting materials.	Ongoing
All Park	7	Assess the condition of service infrastructure (ie. power, water, electricity, sewer, telecommunications) and access roads which are critical to inholdings and leases. Prepare cyclic maintenance plans and replacement schedules for these assets.	Medium
All Park	7	Undertake annual inspections of wharves in accordance with NSW Roads and Maritime Services safety audit requirements.	Ongoing
All Park	7	Complete licence agreements for all alien uses in the park.	Ongoing
All Park	7	Develop a framework for the management and maintenance of NPWS shared roads and other infrastructure.	Low
All Park	7	Work with the Community Fireguard, NSW Fire Brigades and neighbours to provide annual pre-season preparation and assistance with hazard reduction burning.	High
Nielsen Park & Hermitage Foreshore (1)	7	Continue to support the excellent work of bush regeneration volunteers in weed control maintenance throughout the precinct's remnant bushland.	Ongoing
Nielsen Park & Hermitage Foreshore (1)	7	Provide high-quality, well-designed landscape elements at major entrances to demonstrate pride and quality in presentation. In particular, investigate redesign of the entrance at Greycliffe Ave including the relocation of the garbage recycling bays.	Medium
South Head, Camp Cove & Green Point (2)	7	Introduce park use fees in the parking area at Camp Cove.	High
Gap Bluff (3) Key Project 11	7	Realise the potential for exemplary adaptive re-use of the Gap Bluff precinct. Through investigation of appropriate community and commercial uses, provide increased opportunities for visitor appreciation and access to the site.	High
North Head (4)	7	Utilise the opportunity of a whole-of-headland approach to implement research, education and interpretation programs about the uniqueness of North Head within the urban environment and add to the knowledge bank of the possible effects of climate change.	Medium
Middle Head (6)	7	Support research into the management of <i>Phytophthora cinnamomi</i> .	Ongoing
Middle Head (6)	7	Support volunteers to play a key role in the precinct's remnant vegetation management and in other activities such as community gardens.	Ongoing
Middle Head (6)	7	Investigate alternative locations for the NPWS works storage compound away from the highly visible entrance to the park and Cobblers Beach access road. As an interim measure, maintain brush fencing and negotiate landscaping of the entrance with SHFT.	High
Bradleys Head (7)	7	Address the impacts of climate change and sea level rise on the sea walls, historic sandstone jetty and Aboriginal shell midden.	Medium

Precinct	Outcome	Management response	Priority
Outcome 7 Robust management of the park is sustained			
Bradleys Head (7)	7	Relocate dinghy racks installed at Taylors Bay, as they are in the wrong location for owners of boats moored in Taylors Bay and are not used.	Medium
Clark Island (9)	7	Examine options for energy and water saving and reduce waste collection requirements through recycling and visitor education programs.	Medium
Fort Denison (10)	7	Implement and publicly promote the research and monitoring programs established for the precinct including the DECCW Coastal Unit's <i>Sea Level Rise Vulnerability Study for Fort Denison</i> (October 2008).	Medium
Fort Denison (10)	7	Adapt access to the fort to compensate for predicted sea level rise.	Low
Fort Denison (10)	7	Implement recommendations to reduce sea water inundation below the floors of the barracks building and other infrastructure.	Medium
Fort Denison (10)	7	Continue the program of research into materials conservation and repair.	Ongoing
Goat Island (11)	7	Investigate the installation of solar power-generating devices on the island.	Low
Goat Island (11)	7	Progressively replace overhead street lighting with solar lighting where such lighting is demonstrated to be cost effective and produces a lower carbon footprint over its operational life and install more energy efficient globes.	Low
Outcome 8 Contribute to the goal of easy and safe transport to and within the park			
All Park Key Project 12	8	Work with government agencies and other stakeholders to establish and promote a Sydney Harbour shuttle service. The service would travel at frequent intervals, departing from the city and making a range of stops in Sydney Harbour National Park and its islands. The service would also stop at other key harbour destinations and be promoted as a Sydney Harbour tourist experience.	High
All Park	8	Identify routes for bicycle travel to the park consistent with local government bike plans and, where appropriate, provide bicycle racks.	High
All Park	8	Seek cost-effective ferry transport to provide visitor access to all harbour islands.	High
All Park	8	Maintain the network of roads and walking tracks in the park to provide access for visitors to undertake a wide range of activities.	Ongoing
All Park	8	Identify the desired future and character of each road in the park by precinct and manage accordingly, with special emphasis on methods to reduce wildlife fatalities.	Ongoing
All Park	8	Continue to work with state and local government agencies to ensure clear directional signs outside the park for visitors wishing to access the park.	Ongoing

Precinct	Outcome	Management response	Priority
Outcome 8 Contribute to the goal of easy and safe transport to and within the park			
All Park	8	Maintain a range of vehicle-based lookouts for the elderly and less mobile.	Ongoing
All Park	8	Support the implementation of a regular water transport service to Watsons Bay, Manly, Quarantine Station and Clifton Gardens.	High
Nielsen Park & Hermitage Foreshore (1)	8	Investigate reinstatement of public water-based access either at or in the vicinity of Nielsen Park and the introduction of a transport link.	Low
Nielsen Park & Hermitage Foreshore (1)	8	Liaise with Woollahra Council regarding the construction of bus shelters at existing bus stops in Vacluse Road.	Low
South Head, Camp Cove & Green Point (2)	8	Investigate transfer of the parking area / road from Woollahra Council to NPWS in exchange for parking in the Nielsen Park precinct.	Ongoing
South Head, Camp Cove & Green Point (2)	8	Investigate and, if agreed, transfer to HMAS Watson, maintenance responsibilities for the road at the South Head entrance to HMAS Watson subject to obtaining agreement that this would not lead to further restrictions to visitor access to the precinct.	Medium
Gap Bluff (3)	8	Install directional and interpretive signs to and from Watsons Bay public transport locations.	Medium
North Head (4)	8	Work with SHFT, other North Head stakeholders and transport operators to develop regular, safe and economical transport options for the precinct.	Medium
North Head (4)	8	Consider a range of options for the movement of visitors within the precinct including access via Quarantine Station wharf.	Medium
North Head (4)	8	Review the road network and parking options in a whole-of-headland approach.	Medium
Dobroyd Head (5)	8	Work with Manly Council on the improvement of parking around Tania Park to prevent vehicles from blocking key lookout areas, and improve stormwater management from the road and carparks into the park.	Medium
Middle Head (6)	8	Discourage private vehicle use within the Middle Head precinct forts area to allow for safe and enjoyable use by pedestrians and cyclists.	Medium
Middle Head (6)	8	Support neighbouring organisations in investigating the provision of improved transport solutions to the precinct, including public transport and safe bicycle access.	Medium
Middle Head (6)	8	Continue to assess the impacts on wildlife of night access on roads through bushland areas. Implement strategies to reduce wildlife fatalities including along Chowder Bay Road and Middle Head Road.	Ongoing

Precinct	Outcome	Management response	Priority
Outcome 8 Contribute to the goal of easy and safe transport to and within the park			
Bradleys Head (7)	8	Seek partnerships for the development and implementation of a ferry / zoo / bushwalk tourist package utilising a harbour shuttle service and drop off / pick up at Taronga Zoo wharf and Chowder Bay wharf.	Medium
Bradleys Head (7)	8	Seal existing unsealed carparking spaces at Rifle Wall and the former Ridge Cottage on Bradleys Head Road.	Medium
Bradleys Head (7)	8	Liaise with Mosman Council regarding the construction of a bus shelter and lay-by at the Bradleys Head Road entrance to the precinct.	Low
Shark Island (8)	8	Continue the regular water-based shuttle service to Shark Island for independent visitors.	Ongoing
Clark Island (9)	8	Investigate the introduction of a regular low cost option water transport shuttle service to Clark Island for independent visitors.	Low
Fort Denison (10)	8	Ensure continued and improved water transport services to the fort.	Ongoing
Fort Denison (10)	8	Prepare a feasibility assessment for the provision of disabled access at the Fort Denison wharf.	Medium
Goat Island (11)	8	Design and implement improved access paths around the island.	Medium
Goat Island (11)	8	Continue to seek the most cost-effective water transport to provide visitor access to Goat Island.	High
Rodd Island (12)	8	As part of the proposed improved access for kayaks and other personal craft, investigate and identify a suitable landing site.	Low



section 04
Appendices





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Location, Gazettal and Regional Context

Sydney Harbour National Park is one of a group of national parks in the Sydney metropolitan area which includes Botany Bay, Ku-ring-gai Chase, Garigal, Lane Cove and Royal national parks.

Sydney Harbour National Park is one of a group of national parks in the Sydney metropolitan area which includes Botany Bay, Ku-ring-gai Chase, Garigal, Lane Cove and Royal national parks. These national parks conserve sections of the coastline and river and estuary foreshores and are the major areas conserving Sydney's sandstone ecosystems.

Sydney Harbour National Park covers 393 hectares of headlands, beaches and islands in and around Sydney Harbour. On its boundaries are aquatic reserves, suburbs of Sydney, defence reserves, commercial development and marine facilities. The park also adjoins a number of conservation and open space reserves managed by local councils and the Sydney Harbour Federation Trust. The park includes six headlands on the northern side of the harbour (North Head, Dobroyd Head, Middle Head, Georges Head, Chowder Head and Bradleys Head) and two on the south side of the harbour (South Head and Steele Point at Nielsen Park). The five islands within the park are Shark Island, Clark Island, Fort Denison, Goat Island and Rodd Island.

In 1968, when the National Trust first proposed the establishment of one national park around Sydney Harbour incorporating all public foreshore lands, there were already a number of recreational reserves around the harbour preserved as a result of local residents' lobbying. In 1975, Sydney Harbour National Park was established over parts of North Head, Dobroyd Head, Bradleys Head, Shark Island and Clark Island to protect the scenic gateway to the city and the remnant vegetation of Sydney Harbour. In 1979, following negotiations with the Commonwealth Government, land previously used for defence purposes was added to the park, and various other parcels of land have since been added. The most recent additions were Fort Denison and Goat Island, which were reserved as part of the park in 1995. Part of Goat Island occupied by the shipyard is land that is vested in the Minister under Part 11 of the NPW Act. This land is not yet gazetted as part of Sydney Harbour National Park.

The Commonwealth–State Land Exchange Agreement of 1979 identified a number of other areas for inclusion in the park, including land within the School of Artillery at North Head and within 10 Terminal Regiment at Middle Head, directly abutting the park. However, these lands were transferred to the Sydney Harbour Federation Trust, which was established in 2001.

The waters of the harbour, while not within the park, are an essential element to understanding and appreciating Sydney Harbour National Park and provide both a link and a barrier between the different sections of the park.

Sydney presently has a population of around 4.4 million people and the park is a major recreational resource for the people of Sydney. With its Sydney Harbour location, the park is extremely well-positioned for tourism.

Sydney Harbour National Park is within the Woollahra, Mosman and Manly local government areas and the geographical areas of the Sydney Metropolitan Catchment Management Authority and the Metropolitan and La Perouse local Aboriginal land councils.

Management Context

Legislative and Policy Framework

The management of Sydney Harbour National Park is in the context of a legislative and policy framework, primarily including the *National Parks and Wildlife Act 1974* (NPW Act) and NPW Regulation, *Threatened Species Conservation Act 1995* (TSC Act) and *Heritage Act 1977* and the policies of the National Parks and Wildlife Service (NPWS).

Other legislation and associated instruments, international agreements and charters also apply to the management of the area. In particular, the *Environmental Planning and Assessment Act 1979* (EPA Act) may require the assessment and mitigation of the environmental impacts of works proposed in this plan. The Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) also applies in relation to actions that may impact upon migratory species, threatened species listed under this Act or values of a national heritage site.

A plan of management is a statutory document under the NPW Act. Once the Minister has adopted a plan, the plan must be carried out and no operations may be undertaken in relation to the lands to which the plan relates unless the operations are in accordance with the plan. This plan will also apply to any future additions to Sydney Harbour National Park. Should management strategies or works be proposed in future that are not consistent with this plan, an amendment to the plan will be required.

Management Purposes and Principles

National parks are reserved under the NPW Act to protect and conserve areas containing outstanding or representative ecosystems, natural or cultural features or landscapes or phenomena that provide opportunities for public appreciation and inspiration and sustainable visitor use.

Under the Act, national parks are managed to:

- » conserve biodiversity, maintain ecosystem functions, protect geological and geomorphological features and natural phenomena and maintain natural landscapes;
- » conserve places, objects, features and landscapes of cultural value;
- » protect the ecological integrity of one or more ecosystems for present and future generations;
- » promote public appreciation and understanding of the park's natural and cultural values;
- » provide for sustainable visitor or tourist use and enjoyment that is compatible with conservation of natural and cultural values;
- » provide for sustainable use (including adaptive re-use) of any buildings or structures or modified natural areas having regard to conservation of natural and cultural values; and
- » provide for appropriate research and monitoring.

The primary purpose of national parks is to conserve natural and cultural heritage. Opportunities are provided for appropriate visitor use in a manner that does not damage conservation values.

Values and Threats

This plan aims to conserve both the natural and cultural values of Sydney Harbour National Park.

This plan aims to conserve both the natural and cultural values of Sydney Harbour National Park. The location, landforms and plant and animal communities of an area have determined how it has been used and valued by both Aboriginal and non-Aboriginal people. These values may be attached to the landscape as a whole or to individual components, for example to plant and animal species used by Aboriginal people. For reasons of clarity and document usefulness, individual values and issues are dealt with separately, however, their inter-relationships are recognised. Included in the values are references to relevant legislation important for the management of these values.

Geology, Landforms and Hydrology

Sydney Harbour formed about 6,000 years ago when the sea rose to its present level, drowning the Parramatta River valley. The Hawkesbury Sandstone terrain of steep hills, long narrow ridges, deep rocky valleys and intricately eroded cliffs typifies the landscape in the park. Older Narrabeen series formations can be seen at the base of North Head, while the central ridge of North Head consists of aeolian sand dunes overlaying sandstone. Remains of basalt dykes which intruded through the sedimentary rocks are visible at Bottle and Glass Point, Bradleys Head and North Head.

Most of the soils in Sydney Harbour National Park are highly erodible, shallow, stony, infertile quartz sands derived from Hawkesbury Sandstones. On the plateaus where drainage is impeded, organic matter accumulates to produce dark peaty soils. On the sides of ridges and hills, clayey subsoils develop. The soils are phosphorus deficient and hence an increase in nutrients from urban run-off has detrimental impacts on native vegetation, which is adapted to low nutrient levels. High nutrient levels encourage weed invasion.

The cliffs and beaches within the park, with their vegetation of heath, scrub and woodland, provide a contrast to the grassed picnic areas and surrounding urban and industrial areas. Much of the vegetation is regrowth which has followed the cessation of defence activities, while other areas are dominated by cultural plantings. Both the native vegetation and major cultural plantings are now an important part of the park's landscape.

Historic structures are important parts of the landscape. Fortifications, monuments, navigational aids and buildings are visible from both the land and the water. Their form and scale provides a contrast to the natural environment and the other built elements around the harbour.

Large areas of the foreshore have been modified by landscape reclamation and the construction of seawalls. Many of the seawalls in the park are now old and subject to erosion. Seawall repair and restoration is required in a number of areas to prevent foreshore erosion.

Generally, the park is located down-slope of urban areas and is consequently affected by nutrient-rich run-off. Of particular concern are areas where stormwater has been directed into the park, resulting in gullying, siltation, pollution and the introduction of weeds. Negotiations with local councils have resulted in some stormwater being redirected into stormwater drains, but in other areas this is still a problem.

Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005 (Harbour SEPP) covers all the waterways and islands of the Harbour, the foreshores and entire catchment. It establishes a set of planning principles to be used by councils for the preparation of planning instruments, for the hydrological catchment of the Harbour. It also zones the waterways into nine different zones to suit the differing environmental characteristics and land uses of the harbour and its tributaries.

The Harbour SEPP includes a range of matters for consideration by consent authorities assessing development within the 'Foreshores and Waterways Area'. These are aimed at ensuring better and consistent development decisions and include such issues as ecological and scenic quality, built form and design, maintenance of views, public access and recreation and working harbour uses. The SEPP includes provisions relating to heritage conservation and wetlands protection and provides planning controls for strategic foreshore sites.

Clauses in the SEPP that are of particular relevance to this plan of management include:

- » objectives of Zone No 8 (a) National Parks;
- » Zone W2 Environmental Protection Zone provides protection for the North (Sydney) Harbour Aquatic Reserve;
- » development control within National Parks (clause 19);
- » matters for consideration (clauses 20–27);
- » Section 38 and 39;
- » heritage provisions (clauses 52–60); and
- » wetland protection provisions (clauses 61–63).

In addition, Schedule 4 of the Harbour SEPP lists the following as heritage items:

- » Stone Wharf, Bradleys Head (item 25);
- » Green Point Obelisk (item 48);
- » Shark, Clark, Goat islands and Fort Denison.

The Harbour SEPP's Section 38: Development on land in waterways adjoining national parks states:

Development for any purpose for which development is authorised to be carried out under the *National Parks and Wildlife Act 1974* may be carried out without development consent in the waterway adjoining land that is reserved under that Act, where the development spans the mean high water mark and is part of any other development or activity being carried out on that land.

Section 39: Development and activities in vicinity of national parks states:

A consent authority must not grant consent to development in any part of the waterway that would be likely to affect land that is reserved under the *National Parks and Wildlife Act 1974* if it is of the opinion that the proposed development is not consistent with the provisions contained in the *Guidelines for developments adjoining National Parks and Wildlife Service land* (as in force on the day on which this clause, as substituted by State Environmental Planning Policy (Repeal of Concurrence and Referral Provisions) 2008, commenced).

Management of stormwater entering the national park is the subject of local environmental plans and development control plans created under the EPA Act, and local government policy.

Flora

Sydney Harbour National Park includes the spectacular sandstone headlands at the entrance to Sydney Harbour being North Head, South Head and Dobroyd Head, as well as the harbour foreshore headlands of Middle Head and Bradleys Head, and Nielsen Park. The park also includes a number of islands being Shark, Clark, Goat and Rodd islands and Fort Denison. This range of landscapes has allowed a wide range of vegetation and flora to survive, providing the bushland backdrop for the iconic Sydney Harbour setting.

Since European settlement, much of the vegetation has been modified with some areas having been completely cleared for military or other purposes. This is in contrast to the other coastal national parks around Sydney, where there has been a shorter time period of exposure to urban development and lesser degrees of urban impact. Since gazetted as a national park in 1975, most areas have been allowed to regenerate and the park now contains a wide range of plant communities and habitats, particularly those associated with Hawkesbury Sandstone. Sydney Harbour National Park's natural soils and biodiversity are not reproducible in the human-made and contrast with the replanting and reconstruction of semi-natural environments, such as those at Homebush Bay and Darling Harbour. While these parks provide pleasing aesthetic landscapes, they lack Sydney Harbour National Park's links with the natural past. As such, the presence and ongoing maintenance of the natural attributes of Sydney Harbour National Park need high overall priority.

SIGNIFICANCE OF SYDNEY HARBOUR NATIONAL PARK FLORA

The flora of the park is part of the Sydney coastal Hawkesbury Sandstone vegetation which is significant for its diversity, high degree of endemism and its relationships with sclerophyll vegetation elsewhere in the Southern Hemisphere (Benson 2009).

A number of vegetation communities are spread over four geographically separate headlands and five islands within the park. They include:

- » Eastern Suburbs Banksia Scrub (ESBS), an endangered ecological community listed under the TSC Act and the EPBC Act. A significant area of ESBS occurs on North Head, straddling land in the national park and the Sydney Harbour Federation Trust lands. ESBS was once extensive in the eastern suburbs but has almost all been cleared. The largest remaining area is on North Head. The Recovery Plan for ESBS (DEC 2004) provides strategies for the recovery of this community (Table A).
- » Extensive areas of coastal sandstone plateau heath on North Head and Dobroyd Head including wet heath and sedgeland.
- » Coastal sandstone headland scrubs with coastal banksia *Banksia integrifolia* on Bradleys Head and Dobroyd Head.
- » Coastal sandstone gully forest with smooth-barked apple *Angophora costata*, grey gum *Eucalyptus punctata* and forest red gum *Eucalyptus tereticornis* near creeklines on sheltered sandstone slopes such as on the western side of North Head and at Bradleys Head.
- » Coastal sandstone ridge-top woodland with *A. costata* and bangalay *Eucalyptus botryoides* on more exposed sandstone slopes.

Rocky foreshores and cliff faces, and sandy beaches provide more localised habitats for a range of plant species such as ferns and mosses. Most of the islands have been cleared, although Goat and Clark islands still have remnants of their original flora. The lawns and old gardens in many places include specimens of exotic trees and shrubs which may have heritage significance.

Ecological features of regional significance include coastal sclerophyll heath on low nutrients soils, foreshore woodlands, fire-dependent vegetation and foreshore to intertidal zones.

The TSC Act lists threatened species, endangered populations and endangered ecological communities in NSW. The TSC Act also lists key threatening processes (KTPs), which are identified as having or likely to have significant impacts on the conservation of threatened native flora and fauna.

The NSW Office of Environment and Heritage (OEH) has prepared a priorities action statement (PAS) to promote the recovery of threatened species and the abatement of KTPs in New South Wales. The PAS outlines the strategies for ameliorating threats listed under the TSC Act including the preparation of threat abatement and recovery plans. The PAS is based on 34 unique recovery and threat abatement strategies. Under each strategy, several actions may be listed, and these are further categorised into high, medium and low priority actions, and, where feasible, are assigned to the broad geographic area where they are best placed to occur. A large number of actions have been identified for implementation within Sydney Harbour National Park.



Sydney Harbour National Park is floristically rich with 300 native plant species recorded on North Head, the largest single precinct of the park. There are up to an additional 100 native plant species elsewhere in the national park (Benson 2009). Three native plant species found in the national park are of national conservation significance. The Nielsen Park she-oak *Allocasuarina portuensis* and a form of sunshine wattle *Acacia terminalis* subsp. *terminalis* are listed as endangered species under the TSC Act and the EPBC Act. A recovery plan (NPWS 2000) provides strategies for recovery of *A. portuensis*. Camfield's stringybark *Eucalyptus camfieldii* is listed as vulnerable under the TSC Act and the EPBC Act. Strategies for the recovery of *A. terminalis* subsp. *terminalis* and *E. camfieldii* are set out in the PAS (Table A).

There are records for several other listed species in the park, however their current occurrence in Sydney Harbour National Park needs to be confirmed.

TABLE A: SIGNIFICANT COMMUNITIES AND FLORA SPECIES RECORDED IN SYDNEY HARBOUR NATIONAL PARK AND PAS ACTIONS

SCIENTIFIC NAME	STATUS	ACTIONS NEEDED*	PRECINCTS RECORDED
State/national significance			
Eastern Suburbs Banksia Scrub	Endangered Ecological Community NSW TSC Act	<ul style="list-style-type: none"> » Implement feral animal control programs. » Determine and apply appropriate fire management practices. » Consider off-site impacts in the assessment of nearby developments. » Prevent stormwater run-off from entering sites. » Install fencing, gates, formal tracks (where appropriate) and signs to manage access and prevent rubbish dumping. » Implement weed control programs. » Protect remnants from clearing and further fragmentation. » Restore degraded habitat using bush regeneration techniques. » Prepare site specific management plans. 	North Head
<i>Acacia terminalis</i> subsp. <i>terminalis</i>	Endangered Species NSW TSC Act, National EPBC Act	<ul style="list-style-type: none"> » Ensure personnel involved in track and road maintenance are able to identify the sub-species and are aware of their locations. » Ensure appropriate fire regime so as to avoid frequent fire and long absences of fire. » Manage threats at known sites. » Undertake appropriate weed control activities when necessary. » Protect known sites from clearing and degradation. » Establish an appropriate monitoring program for known sites. » Undertake research into the biology and ecology of the sub-species, in particular its response to fire. » Conduct surveys of all areas of suitable habitat within Sydney Harbour and Botany Bay National Parks. 	North Head, Nielsen Park, Gap Bluff
<i>Allocasuarina portuensis</i>	Endangered Species NSW TSC Act, National EPBC Act	<ul style="list-style-type: none"> » Maintain ex situ collection. » Implement appropriate fire regimes. » Undertake weed control. » Undertake habitat restoration. » Assist natural regeneration eg after ecological burns. » Monitor sites. » Assess hybridity status of planted individuals. » Undertake research into biology and ecology of species. » Continue translocations where appropriate. 	Nielsen Park

SCIENTIFIC NAME	STATUS	ACTIONS NEEDED*	PRECINCTS RECORDED
<i>Eucalyptus camfieldii</i>	Vulnerable Species NSW TSC Act, National EPBC Act	<ul style="list-style-type: none"> » Measures should be taken to reduce the impact of arson eg. buffer zones around arson-prone areas to prevent spread of fire, as well as buffers around populations. » Where fuel reduction is required to protect human life and property, mechanical means that leave populations intact should be pursued in preference to burning. » Protect areas of known and potential habitat from clearing and disturbance. » Prevent further loss and fragmentation of habitat. » Investigate appropriate fire intervals and management practices. » Undertake surveys within potential habitat. 	North Head
<i>Persoonia hirsuta</i>	Endangered Species NSW TSC Act, National EPBC Act	<ul style="list-style-type: none"> » Search for as part of baseline audit. 	North Head 1967, needs confirmation
<i>Pimelea curviflora</i> <i>var. curviflora</i>	Vulnerable Species NSW TSC Act, National EPBC Act	<ul style="list-style-type: none"> » Search for as part of baseline audit. 	South Head, needs confirmation
<i>Syzygium paniculatum</i>	Vulnerable Species NSW TSC Act, National EPBC Act	<ul style="list-style-type: none"> » Search for as part of baseline audit. 	Crater Cove 1987, needs confirmation
Regional significance			
<i>Guringalia dimorpha</i>	Reg signif	<ul style="list-style-type: none"> » Assess regional significance 	North Head
<i>Melaleuca hypericifolia</i>	Reg signif	<ul style="list-style-type: none"> » Assess regional significance 	Dobroyd Head
<i>Eucalyptus obstans</i>		<ul style="list-style-type: none"> » Assess regional significance 	
<i>Hibbertia nitida</i>	Rs 2RC local pop	<ul style="list-style-type: none"> » Assess regional significance 	North Head
<i>Pultenaea dentata</i>		<ul style="list-style-type: none"> » Assess regional significance 	La Perouse

SCIENTIFIC NAME	STATUS	ACTIONS NEEDED*	PRECINCTS RECORDED
<i>Darwinia leptantha</i>	Local disjunct pop	» Assess regional significance	North Head to Cronulla
<i>Erythrorchis cassythoides</i>	3RC local disjunct pop	» Assess regional significance	North Head
<i>Rulingia hermanniifolia</i>	Regionally signif	» Assess regional significance	North Head
Old records (last recorded)			
<i>Botrychium australe</i>	1914	» Search for as part of baseline audit	Middle Head
<i>Cassinia denticulata</i>	1903	» Search for as part of baseline audit	Bradleys Head
<i>Conospermum tenuifolium</i>	1880	» Search for as part of baseline audit	Middle Head
<i>Dipodium roseum</i>	1903	» Search for as part of baseline audit	Bradleys Head
<i>Gompholobium grandiflorum</i>	1903	» Search for as part of baseline audit	Bradleys Head
<i>Melaleuca linariifolia</i>	1900	» Search for as part of baseline audit	Middle Head
<i>Muellerina celastroides</i>	1918	» Search for as part of baseline audit	Nielsen Park
<i>Muellerina eucalyptoides</i>	1918	» Search for as part of baseline audit	Nielsen Park
<i>Notothixos subaureus</i>	1918	» Search for as part of baseline audit	Nielsen Park
<i>Orthoceras strictum</i>	1912	» Search for as part of baseline audit	Middle Head
<i>Velleia lyrata</i>	1903	» Search for as part of baseline audit	Bradleys Head
<i>Stylidium graminifolium</i>	1903	» Search for as part of baseline audit	Bradleys Head
<i>Podolobium ilicifolium</i>	1802	» Search for as part of baseline audit	Middle Head

* actions are not confined to Sydney Harbour National Park.

STATE OF KNOWLEDGE AND INFORMATION GAPS

There has been general collecting of plants around Sydney Harbour since specimens were sent back to England by the First Fleet officers, so the general flora is well known. More recently there have been local surveys, mostly confined to single precincts, particularly North Head, or islands. There are a few student research projects but many of these take the form of unpublished reports or theses, and are often inaccessible to park managers.

However, there has been no systematic collection of floristic data for any part of the park except for North Head in 1986. As a result, there is no database on which to assess changes in species abundance or indeed loss of species. There needs to be a flora survey across all sections of the park to provide a baseline database. This database should include the current floristic composition together with the location of permanent monitoring sites, including species recorded historically but not seen recently (Table A). Such survey work will also provide material for use in park interpretation programs.

The significance of black rat seed predation is unknown in endangered ecological communities such as Eastern Suburbs Banksia Scrub, and investigation of these impacts where high density rat populations occur (particularly post-fire) are needed.

THREATS AND PRESSURES ON FLORA

Native plants and vegetation communities in Sydney Harbour National Park face a range of threats. A large number of these threats are listed as KTPs under the TSC Act.

The most widespread threat to flora is degradation and alteration of native vegetation. Threats which contribute to habitat degradation include:

» **Weed invasion** from a variety of sources including garden escapes, with around 100 exotic species recorded across the park. Major weed species include *Lantana camara*, *Ligustrum* spp. and *Asparagus* spp. Various weed species are listed as KTPs. There is concern about native species becoming weedy, for example sweet pittosporum *Pittosporum undulatum* and coastal tea-tree *Leptospermum laevigatum*, due to changed conditions such as lack of fire. Weeds pose a major threat to biodiversity when they out-compete and displace native plant species, and may place threatened species under increased pressure. Weeds can replace entire components (e.g. ground layers) of communities, including endangered ecological communities, and decrease ecological integrity. Many weed species have the potential to form monocultures if left uncontrolled.

- » **Deposition of nutrients** from stormwater drains and run-off, making the soil more suitable for exotic weed species than for native plant species.
- » **Dieback** of trees and other species in a number of precincts caused by the soil pathogen *Phytophthora cinnamomi*. Responses may include keeping visitors to tracks as far as possible, and upgrading tracks to boardwalks in wet or periodically wet sites, providing shoe-cleaning stations at major track entrances and providing general education about not bringing soil in on shoes and boots. *P. cinnamomi* is likely to become an increasing issue in bushland further afield, such as Ku-ring-gai Chase National Park and Blue Mountains National Park, so an education program in Sydney Harbour National Park is very relevant.
- » **Inappropriate fire regimes** with low and high frequency fire resulting in changes to habitat including altered vegetation structure and species composition, weed invasion, senescent vegetation and loss of species. Responses required include experimental burns at North Head, Bradleys Head and Middle Head with appropriate pre-fire and post-fire recording. This will need to be followed up with weed control to facilitate native regeneration.

- » **Grazing and predation of seeds and seedlings** by the European rabbit *Oryctolagus cuniculus* and the introduced black rat *Rattus rattus*, which may result in the poor recruitment of some plant species, soil erosion and weed dispersal. Grazing by rabbits can also have effects on the structure and composition of endangered ecological communities and can prevent recruitment of threatened plants. The significance of black rat seed predation is unknown in endangered ecological communities such as Eastern Suburbs Banksia Scrub.
- » **Physical trampling** of vegetation by off-track walkers and vehicles.
- » **Illegal removal of bush rock and of dead wood** for firewood, both of which provide important habitat elements for a variety of fauna.
- » **Climate change** increasing saltwater intrusion into low-lying fresh habitats and changing climate conditions resulting in species shifts or extinctions.

MANAGEMENT OF FLORA

Critical priorities have been identified for both single species weed control and integrated bush regeneration which targets a suite of weeds. Critical priorities for control largely aim to protect endangered ecological communities and populations and the habitat of other threatened species. Critical priorities relating to native flora include:

- » Eastern Suburbs Banksia Scrub EEC (North Head);
- » Littoral Rainforest EEC (North and Dobroyd heads);
- » *Allocasuarina portuensis* (Nielsen Park, South Head and Hermitage Foreshore);
- » *Acacia terminalis* subsp. *terminalis* (Nielsen Park, Hermitage Foreshore, Bottle and Glass Point and South, North, Middle, Georges and Bradleys heads);
- » *Eucalyptus camfieldii* (North Head);
- » *Syzygium paniculatum* (Dobroyd Head).

A *Feral Rabbit Management Plan* and has been implementing integrated control across North Head (with neighbours) since 2004. More recently, an integrated rabbit control program has been implemented with two neighbouring landholders at Middle Head. Black rat control is carried out in heritage buildings when necessary.

FLORA MONITORING PROGRAMS

There is no ongoing flora monitoring program occurring across the park. Flora monitoring at individual sites occurs as part of bush regeneration projects. Detailed weed mapping was undertaken in the national park in 1996 and sections of the park were re-mapped in 2008. Weed mapping revealed large numbers of weeds, but not all of these have significant impact. For example, 179 species of weed were recorded during weed mapping in Nielsen Park/Hermitage Foreshore alone, but probably less than 50 of these may pose significant threats.

Fauna

The park's native fauna are protected under the NPW Act (excluding fish and invertebrates). The TSC Act also applies to threatened fauna species and endangered fauna populations in NSW (as above). Under the Threatened Species Conservation Regulation 2002, little penguin *Eudyptula minor* critical habitat was declared at North Harbour. Critical habitat is an area that is crucial to the survival of an endangered species, population or ecological community. The declaration of critical habitat provides greater protection and stricter controls over activities in the area.

This declaration of critical habitat was based on the biological requirements of the little penguin population and the potential impacts of known and suspected threats. The declared critical habitat contains areas known for to be used for penguin nesting and for travelling to their nests. If these areas were lost, there is a chance the population would not survive. The critical habitat declaration is designed to help the penguins breed successfully and protect them from attacks by predators.

In addition to the PAS, four threatened fauna species recorded in Sydney Harbour National Park have recovery plans, although only the first two listed below are specific to Sydney Harbour National Park:

- » *Recovery Plan for the Endangered Population of Little Penguins Eudyptula minor at Manly;*

- » *Draft Recovery Plan for the Endangered North Head Long-nosed Bandicoot Perameles nasuta Population;*
- » *Recovery Plan for Large Forest Owls;* and
- » *Draft Recovery Plan for the Barking Owl Ninox connivens.*

The NPWS Park Management Policy Manual also guides management of fauna in reserves, and includes specific policies which relate to the management of overabundant wildlife, release and rehabilitation of fauna, translocation of threatened fauna and pest management. In addition, there are two species conservation plans which guide the management of two threatened species within Sydney region. These are:

- » *Conservation Plan for the Eastern Bentwing-bat Miniopterus schreibersii oceanensis;* and
- » *Conservation Plan for the Red-crowned Toadlet Pseudophryne australis.*

More than 233 species of vertebrate fauna have been recorded within Sydney Harbour National Park (this figure includes historical records, vagrants, occasional visitors, migrants and sea/shore birds). This includes seven frog, 31 reptile, 167 bird and 28 mammal species. However today, the existing resident fauna is probably far less with at least 33 of these species (birds) not having been recorded in the last 20 years and many other birds being irregular visitors to the park.

Much of the vegetation within the park been severely modified since European settlement with many areas completely cleared for military or other purposes. However, since gazetted as a national park in 1975, most areas have been allowed to regenerate and the national park now contains a wide range of fauna habitats, supporting a variety of fauna characteristic of the Sydney Basin, particularly those associated with Hawkesbury Sandstone. Available fauna habitats within the park can be broadly divided into eight main types:

- » Rocky foreshores and cliff faces.
- » Beaches.
- » Coastal sandstone plateau heath.
- » Coastal sandstone headland scrub.
- » Coastal sandstone gully forest.
- » Coastal sandstone ridge-top woodland.
- » Lawns and planted gardens.
- » Buildings, particularly the fortifications which provide habitat for at least one threatened micro-bat species

Although each of these habitats supports characteristic fauna, much of the fauna occurs within more than one habitat type within the park. Even the man-made lawns provide important foraging habitat at North Head for the endangered long-nosed bandicoot *Perameles nasuta* population. In general, the diversity of vertebrate fauna groups is highest in the forest and woodland habitats, but maintaining the suite of fauna found in the national park is dependant upon maintaining all habitat types.

SIGNIFICANCE OF SYDNEY HARBOUR NATIONAL PARK TO FAUNA

Despite being a series of isolated islands of vegetation on the foreshores of Sydney Harbour, the park provides significant fauna habitat in the regional context, since these areas represent most of the largest fragments of remnant vegetation around the harbour. As such, Sydney Harbour National Park provides refuge for common fauna species that were once more widespread around the harbour, and has an important role to play as a reference area for what the harbour foreshores and islands might once have looked like.

The park also plays a key role in resource provision for wider-ranging fauna species. Significant resources include:

- » Tree hollows for bird and micro-bat species.
- » Nectar resources for the threatened grey-headed flying-fox *Pteropus poliocephalus* and a suite of nomadic and migratory nectar feeding-honeyeaters.
- » Over-wintering sites for the threatened eastern bentwing-bat *Miniopterus schreibersii oceanensis* in various fortifications.
- » Potential foraging sites for species of migratory shore, heath, forest and woodland bird.

Six species of birds are regular summer-breeding migrant birds, normally arriving in September or October and leaving in March or April. A further six species are regular winter migrants and include the white-fronted tern from New Zealand *Sterna striata*, golden whistler *Pachycephala pectoralis*, rose robin *Petroica rosea* and yellow-faced honeyeater *Lichenostomus chrysops* from the mountain ranges west of Sydney and the spangled drongo *Dicrurus bracteatus* from the north.

Seven bird species are regular migrants from the northern hemisphere and others are irregular migrants that are listed on the China-Australia-Migratory-Bird Agreement (CAMBA) or the Japan-Australia-Migratory Bird Agreement (JAMBA). More than sixteen species of pelagic seabirds can be readily seen from the various scenic lookouts over the harbour and Pacific Ocean.

The park also provides habitat for threatened fauna species and two threatened fauna populations (see Table B). Over 15 threatened fauna species have been recorded, although many of these may no longer occur in the park or make rare visits and have not been recorded in many years. Two endangered fauna populations occur within the park. The long-nosed bandicoot *Perameles nasuta* population at North Head and the little penguin *Eudyptula minor* population in the Manly Point area are listed as endangered under the TSC Act. In addition, critical habitat has been declared under the TSC Act for the endangered little penguin population which includes known nesting burrows, possible foraging areas (seagrass beds within Spring Cove) and also identifies potential nesting areas (Dobroyd Head, Cannae Point and parts of Little Manly Point). The terrestrial areas of critical habitat are typically situated in the first 50 metres from the water and the aquatic areas extend 50 metres out from the mean high water mark.

In addition to threatened fauna species, the park also provides habitat for more than 46 regionally significant fauna, many of which are thought to be declining across the Sydney Basin or are poorly recorded in other reserves. Also conserved in Sydney Harbour National Park are two species of fauna that are endemic to the Sydney Basin bioregion. These are the red-crowned toadlet *Pseudophyrne australis* and the rock warbler *Origma solitaria*.

Of particular scientific interest is the type locality for the brown antechinus *Antechinus stuartii* at Spring Cove, North Head. The specimen collected from here by J. Stuart in 1837 was the basis for the description of both the genus *Antechinus* and the species *Antechinus stuartii* by William Sharp Macleay in 1841. This small dasyurid is one of the most common small mammals along the east coast of Australia, but there have been no confirmed records in Sydney Harbour National Park since the late 1980s. Another significant specimen collected was the eastern quoll *Dasyurus viverrinus* found dead on the road in Nielsen Park in 1963. This was the last known locality on mainland Australia for this species, although it still survives in Tasmania.

**TABLE B: THREATENED FAUNA SPECIES AND POPULATIONS RECORDED
WITHIN SYDNEY HARBOUR NATIONAL PARK**

Common Name	Scientific Name	Status	Last recorded	Precincts recorded
Species				
Regent Honeyeater	<i>Anthochaera phrygia</i>	Critically Endangered Species NSW TSC Act, Endangered Species National EPBC Act	Pre-1900	Dobroyd Head
Swift Parrot	<i>Lathamus discolor</i>	Endangered Species NSW TSC Act, National EPBC Act	1973	Bradleys Head
Grey-headed flying-fox	<i>Pteropus poliocephalus</i>	Vulnerable Species NSW TSC Act, National EPBC Act	Recent	Goat Island, Bradleys, Dobroyd & North Heads, but probably other precincts
Superb Fruit Dove	<i>Ptilinopus superbus</i>	Vulnerable Species NSW TSC Act	1968	Bradleys & Dobroyd heads
Sooty Tern	<i>Sterna fuscata</i>	Vulnerable Species NSW TSC Act	1972	Bradleys Head
Diamond Firetail	<i>Stagonopleura guttata</i>	Vulnerable Species NSW TSC Act	1985	South Head
Sooty Oystercatcher	<i>Haematopus fuliginosus</i>	Vulnerable Species NSW TSC Act	1987	Hermitage Foreshore & South Head
Pied Oystercatcher	<i>Haematopus longirostris</i>	Vulnerable Species NSW TSC Act	1987	Shark Island
Red-crowned Toadlet	<i>Pseudophryne australis</i>	Vulnerable Species NSW TSC Act	Recent	Bradleys, Dobroyd & North Heads
Barking Owl	<i>Ninox connivens</i>	Vulnerable Species NSW TSC Act	Recent	North Head
Powerful Owl	<i>Ninox strenua</i>	Vulnerable Species NSW TSC Act	Recent	Nielsen Park, North, Dobroyd & South heads
Eastern False Pipistrelle	<i>Falsistrellus tasmaniensis</i>	Vulnerable Species NSW TSC Act	Recent	Tentatively identified from echolocation calls on Goat Island
Eastern Bentwing-bat	<i>Miniopterus schreibersii oceanensis</i>	Vulnerable Species NSW TSC Act	Recent	Fortifications at Middle Head & Georges Head (May to September), recorded foraging at North Head & Goat Island, but probably also forages elsewhere
Eastern Freetail-bat	<i>Mormopterus norfolkensis</i>	Vulnerable Species NSW TSC Act	Recent	Goat Island
Large-footed Myotis	<i>Myotis macropus</i>	Vulnerable Species NSW TSC Act	Recent	Tentatively identified from echolocation calls on Goat Island
New Zealand Fur Seal	<i>Arctocephalus forsteri</i>	Vulnerable Species NSW TSC Act	Recent	Occasionally (but relatively infrequently) use the rocky foreshores as haul out resting sites
Australian Fur Seal	<i>Arctocephalus pusillus doriferus</i>	Vulnerable Species NSW TSC Act	Recent	Occasionally (but relatively infrequently) use the rocky foreshores as haul out resting sites
Population				
Long-nosed bandicoot population at North Head	<i>Perameles nasuta</i> population at North Head	Endangered Population NSW TSC Act	Current	North Head
Little penguin (<i>Eudyptula minor</i>) population in the Manly Point area	<i>Eudyptula minor</i> population in the Manly Point area	Endangered Population NSW TSC Act	Current	Manly Point

STATE OF KNOWLEDGE AND INFORMATION GAPS

There have been many vertebrate fauna surveys of Sydney Harbour National Park, with the most recent multi-species survey being conducted in 2004 at Dobroyd Head. Most of the surveys are of single precincts or islands, so the fauna of individual headlands is relatively well known. Other surveys have focused on a single group of species e.g. reptiles at Dobroyd Head or birds across the entire park. Perhaps the best known fauna taxa are birds which have received much attention from bird-watching groups and individuals, and professional ornithologists. Conversely, two vertebrate groups, micro-bats and nocturnal birds, have received little survey attention and it is likely that further survey work will detect more species or more widespread distribution of known species. Almost nothing is known of the invertebrate fauna of the park.

Most of the detailed fauna studies have focused on the two threatened fauna populations. Being surrounded by Australia's largest urban population and its proximity to many of Sydney's universities, the park has been utilised as a research site. There have been a large number of student research projects on topics other than threatened fauna, many of these in the form of unpublished reports or theses often inaccessible to park managers.

Further investigation is also needed to determine whether predation by the black rat on juvenile bandicoots in nests and penguin eggs, is having a significant impact on the two endangered populations at North Head.

THREATS AND PRESSURES ON FAUNA

Fauna in Sydney Harbour National Park face a wide range of threats. A large number of these threats are listed as key threatening processes (KTP) under the TSC Act.

As a series of isolated headlands, the park is vulnerable to catastrophic events, such as extreme wildfires or arson attacks, because most headlands lack connectivity with other native vegetation which supports similar animal populations. Hence, the potential for recolonisation, particularly of non-flying ground-dwelling animals, is low. This isolation may make some fauna populations susceptible to 'inbreeding depression' where harmful genes increase in frequency, reducing the vigour and viability of the population and potentially leading to extinction.

Probably the most widespread threat to fauna populations is degradation and alteration of native vegetation, which results in loss or changes to key fauna habitat elements. Threats which contribute to habitat degradation include:

- » weed invasion from a variety of sources including garden escapes causing habitat degradation by altering shelter and food availability (positively and negatively) for fauna. Various weed species are listed as KTPs;
- » deposition of nutrients from stormwater drains and run-off which make the soil more suitable for exotic weed species than for native plant species;
- » dieback of trees in a number of precincts caused by the pathogen *Phytophthora cinnamomi* sometimes resulting in the loss of hollow-bearing trees;

- » low and high frequency fire resulting in changes to habitat (such as altered vegetation structure and species composition, weed invasion, senescent vegetation and loss of species);
- » grazing and predation of seeds and seedlings by rabbits and the introduced black rat which may result in the poor recruitment of some plant species;
- » physical trampling of vegetation by walkers and vehicles off-track; and
- » illegal removal of bush rock and of dead wood for firewood, both of which provide important habitat elements for a variety of fauna.

Predation by non-native carnivores such as the European red fox *Vulpes vulpes*, feral and domestic cat *Felis catus* and domestic dog *Canis lupus familiaris* also pose significant threats to native fauna, particularly the endangered long-nosed bandicoot and little penguin populations. Mortality from collision with motor vehicles is also a threat to many animal species, and is considered a major threat to the endangered long-nosed bandicoot population at North Head, as shown by population viability modelling. Although currently a relatively minor threat to fauna, competition and predation by aggressive and overabundant native and exotic bird species such as the common myna *Acridotheres tristis*, common starling *Sturnus vulgaris*, pied currawong *Strepera graculina* and noisy miner *Manorina melanocephala* have the potential to impact on other bird populations, particularly at bushland edges.

Dumping of unwanted pets may also pose a potential threat through introduction of diseases, such as toxoplasmosis, and establishment of feral populations which predate upon or compete with native species for food and habitat. A wide range of pet animals have been dumped in the national park in the past including the domestic cat and dog, guinea pig *Cavia porcellus* and chicken *Gallus gallus*. Some of these have managed to at least temporarily establish feral populations.

The introduced black rat *Rattus rattus* has been linked with extinction and range reduction of a number of bird species on islands, although there is little evidence to suggest that this has occurred on mainland Australia. However, since many of the precincts in the park resemble islands surrounded by urban development, impacts on native fauna are likely. Predation by the black rat on juvenile bandicoots in nests and of penguin eggs is affecting the two endangered populations at North Head. Extremely high numbers of black rat have been recorded at North Head during long-nosed bandicoot population monitoring. The degree of impact this species is having on biodiversity is unknown.

MANAGEMENT OF FAUNA

The recovery plans for both the endangered little penguin and long-nosed bandicoot populations detail management actions for the recovery and maintenance of these populations. A variety of these actions have been implemented for a number of years.

With the exception of the two endangered populations, most fauna population management within Sydney Harbour National Park has been through habitat management and pest animal control. Habitat management is achieved through weed management and bush regeneration activities. A number of targeted weed and bush regeneration programs have been implemented, aimed at improving habitat for both threatened and non-threatened species and populations and maintaining endangered ecological communities. Habitat management is also achieved through ecological burns, which aim to keep the frequency of fire events within the ecological thresholds determined for each community in the *Sydney Harbour National Park Fire Management Strategy*. Fire management aims to maintain a mosaic of habitats, suitable for the varied habitat requirements of resident fauna. Pest animal control primarily targets

foxes and rabbits. Black rat control is also carried out in heritage buildings when necessary. Feral cat control has not been identified as a critical priority, but cage trapping occurs to remove problem cats when they are observed. The impact of hunting by domestic cats from neighbouring properties is unknown, but is probably large.

Under the *European Red Fox Threat Abatement Plan*, North Head precinct is an identified site for the protection of the endangered population of little penguins at Manly and the endangered population of long-nosed bandicoots at North Head. The PAS for the vulnerable eastern bentwing-bat *Miniopterus schreibersii oceanensis* also requires control of foxes at important roosting sites. The Middle Head / Georges Head fortifications are significant over-winter roosting sites for this species in Sydney. NPWS participates in a co-operative, cross-tenure fox control program coordinated by the Urban Feral Animal Action Group (UFAAG) – Sydney North Fox Control Program. This involves 17 other land management agencies.

Critical priorities for weed control largely aim to protect endangered ecological communities and populations and the habitat of other threatened species. Weed control priorities related to native fauna include:

- » Entrances to fortifications and associated flyways utilised by the eastern bentwing bat (Middle and Georges heads); and
- » The habitat of endangered long-nosed bandicoot and little penguin populations at North Head, noting that in little penguin critical habitat, this will require preparation of species impact statements as removal of some woody weeds may actually constitute a threat.

FAUNA MONITORING PROGRAMS

Monitoring of the endangered little penguin population has been occurring since 1996. Formal monitoring of the endangered long-nosed bandicoot population has been occurring since 2002.

There has also been sporadic monitoring of the eastern bentwing bat population roosting in the fortifications and red-crowned toadlets, but there is a need for both the monitoring protocols and their implementation to be formalised. In addition, there are a number of monitoring requirements as part of the conditions attached to the lease of Quarantine Station, some of these include specific fauna monitoring.

No other native fauna monitoring programs have been conducted in the national park, and unlike western Sydney NPWS reserves, no baseline monitoring sites have been established.



OPPORTUNITIES

The flora and fauna habitats of Sydney Harbour National Park provide opportunities for awareness raising and education of the general public on:

- » the importance of bushland remnants;
- » the diversity of fauna conserved in these urban remnants;
- » threats faced by fauna; and
- » management challenges in an urban environment.

Proximity of the national park to a large number of universities provides opportunities to develop and build upon existing research partnerships. Development of a research prospectus, particularly focusing on issues that would aid management, would undoubtedly improve opportunities. Of primary importance in strengthening this partnership is the need to better capture, and make available to managers, unpublished research such as past fauna surveys.

Opportunities may also exist to develop partnerships with other land managers around Sydney Harbour in fauna monitoring programs. An example would be a monitoring program on over-winter use by the threatened eastern bentwing bat in fortifications and heritage buildings managed by Sydney Harbour Federation Trust or other agencies.

Pests

Pest species are plants and animals that have negative environmental, economic and social impacts and are most commonly introduced species. Pests can have impacts across the range of park values, including impacts on biodiversity, cultural heritage, catchment and scenic values.

The *Metropolitan North East Region Pest Management Strategy* identifies pest species across the region's parks and details priorities for control (including actions listed in the PAS and threat abatement plans (TAPs) prepared under the TSC Act). The pest management strategy also identifies where other site or pest specific plans or strategies need to be developed to provide a more detailed approach.

The pest management strategy identifies high priority pest species occurring in the park including four significant vertebrate pest species and eight noxious weed species, together with ten exotic perennial grasses.

The overriding objective of the pest management strategy is to minimise adverse impacts of introduced species on biodiversity and other park and community values whilst complying with legislative responsibilities.

The *Rural Lands Protection Act 1998* requires land managers to eradicate (continuously suppress and destroy) declared pest animals to the extent necessary to minimise the risk of the pest causing damage to any land. Rabbits are a declared pest animal.

The *Noxious Weeds Act 1993* declares noxious plants in four categories, W1 to W4, according to the specific action required to control them. Weeds are classified on a local government area basis.

The objects of this Act are:

- » To identify noxious weeds in respect of which particular control measure need to be taken;
- » To specify those control measures;
- » To specify the duties of public and private land holders as to the control of those noxious weeds; and
- » To provide a framework for the state-wide control of those noxious weeds likely to spread.

The *Pesticides Act 1999* and the *Pesticides Regulation 1995* regulate the use of all pesticides in NSW, and include specific requirements for record keeping, training and notification of use.

The *NPWS Park Management Policy Manual* contains specific policies which guide pest management. An example is the state-wide policy directive requiring conservation risk assessments for the application of pesticides on park, to ensure that an appropriate level of environmental assessment is carried out prior to application.



The main pest-related key threatening processes listed under the TSC Act that apply to Sydney Harbour National Park are:

- » Predation by the European red fox *Vulpes vulpes*;
- » Predation by the feral cat *Felis catus*;
- » Competition and grazing by the feral European rabbit *Oryctolagus cuniculus*;
- » Invasion and establishment of exotic vines and scramblers;
- » Infection of native plants by *Phytophthora cinnamomi*;

- » Invasion of native plant communities by bitou bush and boneseed *Chrysanthemoides monilifera*;
- » Invasion of native plant communities by exotic perennial grasses;
- » Invasion, establishment and spread of lantana *Lantana camara*; and
- » Predation by plague minnow *Gambusia holbrooki*.

The NSW Threatened Species Priorities Action Statement (PAS) outlines the strategies for ameliorating threats listed under the TSC Act, including the preparation of threat abatement plans (TAPs) for key threatening processes. The *European Red Fox TAP* is one that is applicable to Sydney Harbour National Park.

The *NPWS Metropolitan North East Regional Pest Management Strategy* prioritises and provides guidance for the management of pest (plant and animal) species in a selection of Sydney's national parks including Sydney Harbour National Park. In addition to the regional pest management strategy, there is a *Predator and Pest Animal Plan 2008* for North Head Quarantine Station.

Fire

The primary fire management objectives of NPWS are to protect life and property and community assets from the adverse impacts of fire, whilst managing fire regimes to maintain and protect biodiversity and cultural heritage. Fire is a natural feature of many environments and is essential for the survival of some plant communities. However, inappropriate fire regimes can lead to loss of particular plant and animal species and communities, and high frequency fires have been listed as a key threatening process under the TSC Act.

A fire management plan was prepared for Sydney Harbour National Park in 2004. More recently, a Type 2 or map-based fire management strategy (FMS) was prepared for North Head precinct (DECC 2008). These fire management plans guide fire management within the park and should be consulted for all fire-related matters.

The management of fire within Sydney Harbour National Park is particularly challenging. This is due to the small and fragmented nature of these foreshore areas and islands and the range of cultural sites, all adjacent to densely populated Sydney suburbs.

The 2004 fire management plan requires updating and / or a Type 2 map-based FMS prepared for unique precinct areas. This update / rewrite is required due to both planned and unplanned fire incidents that have occurred in the park since 2004. Other drivers for the update / rewrite include significant asset upgrades, both within and adjacent to the park. Examples are increased tourist accommodation / visitation at the Quarantine Station, infrastructure upgrades and visitation increases at sites managed by the Sydney Harbour Federation Trust at North Head and Middle Head and upgrades to the sewage treatment plant and Australian Institute of Police Management at North Head. Additional, high-standard walking track infrastructure has been constructed in the park and there has been, and will continue to be, increased park visitation, warranting revised fire protection strategies.

NPWS maintains cooperative arrangements with surrounding landowners, Fire and Rescue NSW and the Rural Fire Service (RFS) and is actively involved with the Manly, Mosman, North Sydney Bush Fire Management Committee (BFMC). Cooperative arrangements include fire planning, fuel management and information sharing. Hazard reduction programs, ecological burning proposals and fire trail works are submitted annually to the BFMC.

A number of recovery plans recommend experimentation burns for determining optimal fire frequencies for species / vegetation community management. This ongoing research, together with mapping of new plant species and communities within the park, also necessitates fire management strategy updating. The improved mapping of the occurrence of the pathogen *Phytophthora cinnamomi* also has implications for fire management.

Climate Change

Anthropogenic climate change has been listed as a key threatening process under the *Threatened Species Conservation Act 1995* and the *Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth). To the year 2050, Sydney's expected climate change and associated impacts (NSW Department of Planning 2010) include:

- » A hotter climate – Sydney falls within an area of NSW projected to be 1–3°C hotter by 2050.
- » More frequent and intense bushfires – The expected increases in temperature, evaporation and high fire risk days are likely to influence bushfire frequency and intensity across Sydney. The bushfire season is likely to be extended as a result of warmer temperatures, and fire frequency is likely to increase.
- » More rain in spring and summer – Although within an area of NSW where summer and spring rainfall are projected to rise by 10–20%, Sydney's autumn rainfall is expected to be unchanged and winter rainfall is expected to decline by 20–50% by 2050. These changes would affect the amount of water reaching rivers and creeks with the greatest change projected to be in summer. Major increases in run-off are likely to impact on the stormwater system and, where capacity is reached, cause flooding. In areas close

to tidal waters, the frequency, height and extent of flooding in low lying areas are expected to increase due to the combined effects of changes to rainfall and sea level rise.

- » Rising sea level – Sea levels along the NSW coast are projected to rise by 40 cm by 2050 and 90 cm by 2100, although higher rates of sea level rise cannot be ruled out. Higher sea levels will lead to increased tidal inundation, flooding of low-lying land, and beach recession. Changes in tides caused by sea level rise will affect coastal ecosystems, access to and use of public and private lands, historical and cultural heritage values, and public and private infrastructure.

More broadly, climate change will increase pressures on biodiversity. The rate and extent of predicted warming is likely to exceed the ecological tolerances of many species. Individual species have two possible survival mechanisms in response to changes in climate – adaptive evolution or migration. Evolutionary responses are likely to be too slow for most species to adapt in the short term. Shifts in distribution, behavioural changes, and local extinction are therefore more likely responses but the ability of species to shift their range may be compromised by loss, fragmentation and isolation of natural habitats. So although species may have a wide tolerance, the real problem may be that they are out-competed by other species.

The potential impact of climate change is difficult to assess since it depends on the compounding effects of other pressures, particularly barriers to migration and pressure from weeds and feral animals. In Sydney Harbour National Park, species and ecosystems are already under significant pressure (see Flora and Fauna sections in these Appendices) making potential impacts particularly difficult to assess. While programs to reduce pressures arising from such threats will help reduce the severity of the effects of climate change, they will need to be tailored to the park in consideration of the significant pressures already occurring.

NPWS will be informed by the most up-to-date climate change research and projections to assist impact mitigation and adaptation within the park. A particular focus for Sydney Harbour National Park will be on rising sea level impacts. The park includes culturally significant infrastructure at the land / water interface such as Fort Denison, Goat Island and sea walls. In addition to inundation of historic heritage items, Aboriginal middens may also become inundated or eroded through wave action. These cultural heritage sites are also visitation precincts, supporting a range of highly significant recreation and tourism opportunities. Shifting of intertidal zones will threaten ecosystems with expected impacts such as soil salinity increases and resulting pressures on flora and fauna.

In relation to other expected climate change impacts, NPWS will respond by adaptive management in programs such as those for fire, pest and weed management.

Aboriginal Heritage

Sydney Harbour National Park lies within the traditional Country of the Darug and Guringai linguistic groups comprising the Cannalgal, Kay-ye-my and Cammeragal peoples on the northern side of the Harbour and the Birrabirragal, Wangal and Cadigal peoples on the southern side. The park was the location of first contact sites between Aboriginal people and Europeans at North Head, Camp Cove and Middle Head in the late 1700s. Almost half of Sydney's Aboriginal population died in the smallpox epidemic of 1789. The following decades saw the alienation of Aboriginal peoples from the area, although small groups continued to live in places such as the wider Woollahra area throughout the 19th century and continued some of their traditional practices.

The land, water, plants and animals within a landscape are central to Aboriginal spirituality and contribute to Aboriginal identity. Aboriginal communities associate natural resources with the use and enjoyment of foods and medicines, caring for the land, passing on cultural knowledge, kinship systems and strengthening social bonds. Aboriginal heritage and connection to nature are inseparable and need to be managed in an integrated manner across the landscape.

Aboriginal sites are places with evidence of Aboriginal occupation or that are related to other aspects of Aboriginal culture. They are

important as evidence of Aboriginal history and as part of the culture of local Aboriginal people.

Within Sydney Harbour National Park, more than 70 Aboriginal sites have been recorded. There have been systematic surveys of parts of the park including North Head, Bradleys Head and Chowder Head. Unrecorded sites may exist. Site types recorded include rock engravings, middens, shelters with middens, shelters with art, shelters with deposits, open camp sites, axe grinding grooves, burial sites, contact sites and mission sites. Features found at these sites include artefacts such as edge-ground axes and stone flakes, earth mounds, shells, art (pigment or engraved), grinding grooves, burials, Aboriginal ceremony and dreaming, habitation structures and ochre quarries.

Sites of particular significance in the park include:

- » North Head precinct. This precinct was a place for Aboriginal ceremony. Evidence of Aboriginal use of North Head has been recorded in at least 35 separate locations across this landscape. At least one burial has been located in a rock shelter on North Head and the precinct contains a declared Aboriginal Place.
- » Dobroyd Head precinct, containing an Aboriginal reburial site which has been declared an Aboriginal Place and rock engravings at Grotto Point and Reef Beach.

- » Bradleys Head and Middle Head precincts. These precincts contain part of the exceptional collection of Aboriginal archaeological heritage found in the Mosman local government area, a concentration not found elsewhere in the metropolitan area.

- » Land at Middle Head, given to Bungaree by Governor Macquarie in an attempt to break the nomadic habits of Sydney's Aboriginal communities. Bungaree was the first Aboriginal person to circumnavigate the continent with Flinders and acted as a mediator between the British and Aboriginal people.
- » Goat Island where Bennelong, who is believed to have been a Wangal man, claimed hereditary ownership of the island and was often seen with his wife Barangaroo.

Most precincts contain evidence of Aboriginal life, however the more an area has been disturbed from its natural state, the lower the number of sites recorded. For example, Gap Bluff precinct and Clark Island contain few or no Aboriginal sites. The use of shells for lime-making, foreshore reclamation and development on Rodd Island have together obliterated any significant evidence of Aboriginal culture.

Some midden sites have been disturbed, particularly in rock shelters, due to modern visitation. A range of management responses

are proposed in this plan of management, to address such impacts and better-protect the park's Aboriginal heritage.

While NPWS has legal responsibility for the protection of Aboriginal sites and places under the NPW Act, it acknowledges the right of Aboriginal people to make decisions about their own heritage. It is therefore policy that Aboriginal communities be consulted and involved in the management of Aboriginal sites, places and related issues, and the promotion and presentation of Aboriginal culture and history.

The park lies within the geographical area of the Metropolitan and La Perouse local Aboriginal land councils.

The Metropolitan Local Area Land Council's (LALC) area of interest is the north side of the harbour whilst the La Perouse LALC's area of interest is the south side. Traditional custodians such as the Darug and Guringai peoples and other Aboriginal people, have a role to play in the management of sites and their heritage.

Sydney Harbour National Park contains two Aboriginal Places declared under s.84 of the NPW Act. An Aboriginal Place is an area of special significance to Aboriginal culture and declaration provides recognition of the significance of the area and its heritage values which relate to traditions, observances, customs, beliefs or history of Aboriginal people.

Aboriginal Places are protected under s.90 of the NPW Act.

Two sections of Sydney Harbour National Park have been declared an Aboriginal Place.

- » Curingai Resting Place – Quarantine Station Manly.
- » Curingai Resting Place – Reef Beach Balgowlah.

Part 6 of the NPW Act provides specific protection for Aboriginal objects and places by making it an offence to harm them. If harm to Aboriginal objects and places is anticipated, an Aboriginal Heritage Impact Permit should be applied for under s.87 and s.90 of the NPW Act. Any permit issued would be subject to conditions towards optimal Aboriginal heritage protection in the context of the activity. While

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The individual precincts in this plan of management describe Aboriginal culture and Aboriginal heritage features of the park in more detail.



Historic Heritage

Whilst all historic sites in Sydney Harbour National Park are protected under the NPW Act, their management is based on the principles of the ICOMOS (International Committee on Monuments and Sites) Burra Charter, which NPWS has adopted. Conservation is based on respect for the existing fabric and setting of a place and involves the least possible intervention.

North Head – Sydney, of which Sydney Harbour National Park is a part, has been assessed by the Australian Heritage Council and included as a place on the National Heritage List (EPBC Act). It has outstanding heritage value to the nation because of its:

- » Importance in the course, or pattern, of Australia’s natural or cultural history.
- » Possession of uncommon, rare or endangered aspects of Australia’s natural or cultural history.
- » Potential to yield information that will contribute to an understanding of Australia’s natural or cultural history.
- » Importance in demonstrating the principal characteristics of: (i) a class of Australia’s natural or cultural places; or (ii) a class of Australia’s natural or cultural environments.
- » Importance in exhibiting particular aesthetic characteristics valued by a community or cultural group.

Management principles for National Heritage places are established under regulations to the EPBC Act. These principles state that the primary objectives for the management of National Heritage places are to identify, protect, conserve, present and transmit National Heritage values to future generations.

A number of sites in the park are of special significance and are listed on the NSW State Heritage Register:

- » North Head Quarantine Station and Reserve (item # 1003);
- » Fort Denison (item #985);
- » Goat Island (item #989);
- » Middle Head Military Fortifications (item #999); and
- » Georges Head Military Fortifications (item #987).

These items are listed as they are of particular importance to the people of NSW and enrich understanding of our history and identity. Under the *Heritage Act 1997*, all items listed on the State Heritage Register must have a conservation management plan prepared and be maintained in accordance with best-practice management principles, including maintenance to at least the minimum standards required under that Act.

The *Heritage Act 1977* also gives statutory protection to relics that form part of archaeological deposits.

Section 170 Register

Under s.170 of the Heritage Act, each government instrumentality is required to establish and keep a Heritage and Conservation Register that details each item of environmental heritage the agency owns or occupies. NPWS maintains HHIMS (Historic Heritage Information Management System), which identifies individual buildings and sites within NPWS parks, many of which are worthy of inclusion on the State Heritage Register. The s.170 register is a subset of the data on the HHIMS register.

Woollahra Local Environmental Plan 1995

The Gap Bluff precinct of the park is zoned 8 National Park and Nature Reserve under the *Woollahra Local Environmental Plan 1995* (LEP). The LEP includes heritage protection clauses and a heritage schedule identifying heritage items and conservation areas. A number of this precinct's items are listed on Schedule 3 including:

- » Gap Bluff area (Watsons Bay) – Gunnery school group, comprising: former Officers Mess (part of Conference Centre);
- » Former battery workshop (Ranger's Cottage);
- » Former armoury (part of Conference Centre);
- » Former School of Gunnery latrine (toilets); and
- » Practice battery at seaward cliffs.

The LEP also defines heritage conservation areas. This precinct is part of the Watsons Bay Heritage Conservation Area (HCA). Whilst under the EPA Act, Woollahra Council has no formal role in the statutory approval of proposed works within Sydney Harbour National Park, this plan of management is prepared so that wherever possible, it is consistent with local government plans.

Watsons Bay Heritage Conservation Area Development Control Plan 2003

The *Watsons Bay HCA Development Control Plan 2003* (DCP) provides principles for development in the public domain and guidance for those areas administered by government agencies including NPWS. The DCP has a detailed statement of significance generally consistent with that developed by the *South Head Conservation Management Plan 2010* (CMP). However, the DCP identifies the coral trees on Cliff Street as a cultural planting, recommends their retention and states that new development should not include flat-roofed buildings. The coral trees are being actively removed due to public safety issues associated with their brittle and unstable nature. A 2006 arborist's report recommends removal of all coral trees within the next five years. The CMP allows for replacement of the coral trees, when they become senescent, with alternate species and allows for pavilion-type additions if necessary to the Gap Bluff cottage. Flat-roofed additions (if required) would be acceptable to the Gap Bluff Centre as it originally had a flat roof. The CMP allows for enhanced disabled access.

This DCP also analyses views, and includes a map of views that should be protected by vegetation management in this precinct of the park. Of further relevance to the precinct, the DCP also

includes guidelines for appropriate alterations and additions to significant items and for new buildings if such changes are proposed.

National Heritage Listing

http://www.environment.gov.au/heritage/laws/publicdocuments/pubs/105759_01.pdf

This link provides the gazettal notice for the 2006 National Heritage Listing of North Head.

Sydney Harbour National Park contains a large suite of heritage buildings, sites and collections, representing multiple layers of history often overlooked by Sydneysiders and tourists alike. The national park landscape allows visitors to discover the reality of the city's development, including the struggle to survive in a hostile environment. This is evidenced in the layers of cultural sites within the national park and adjoining lands. These places illustrate the first contact sites with Aboriginal people at North Head, Camp Cove and Middle Head, the story of immigration at the Quarantine Station and Australia's defence history at the nine composite defence installations (fortifications). Table C lists the historic sites and features found in the park, their level of significance and conservation applicable management plans. The park's exceptional historic diversity is evident in the 34 NSW Historical Themes represented (Table D) (Heritage Office 2006).

TABLE C: SYDNEY HARBOUR NATIONAL PARK HISTORIC SITES LIST AND SIGNIFICANCE

PRECINCT	NAME AND FEATURES	SIGNIFICANCE	CONSERVATION MANAGEMENT PLAN
Nielsen Park and Hermitage Foreshore	Nielsen Park and Steele Point <ul style="list-style-type: none"> » 11 buildings » Steele Point Cottage and garage » Greycliffe and Margaret Harper Wing » Halbert pavilion » toilet blocks » change rooms » café and garage » surf lifesaving club » gardeners cottage » associated gardens and landscape (plantings, paths etc) » small movable collection 	State	Draft
Nielsen Park and Hermitage Foreshore	Steele Point rock cut gun battery	State	Draft
South Head and Camp Cove/Green Point	Inner South Head: Hornby Head <ul style="list-style-type: none"> » 3 buildings » Hornby Head Lightkeepers Cottage » Assistant Lightkeepers Cottage » associated paths and landscaping 	State	Draft
South Head and Camp Cove/Green Point	South Head defence installations <ul style="list-style-type: none"> » engine room and collection » gun emplacement » searchlight shelter around Hornby Head » Lady Jane beach search light shelter and defensive structures 	State	Draft
South Head and Camp Cove / Green Point	Green Point Cottage <ul style="list-style-type: none"> » 1 building » 33 Pacific Street house » garden 	nil	Draft
South Head and Camp Cove / Green Point	Arthur Phillip monument, Green Point	nil	Draft
South Head and Camp Cove / Green Point	Navigation obelisk	nil	Draft
South Head and Camp Cove / Green Point	Camp Cove defence installations <ul style="list-style-type: none"> » gun emplacement » rifle walls » cobblestone walls » anti-submarine and torpedo boom 	State – as part of collection of defence sites	Draft

PRECINCT	NAME AND FEATURES	SIGNIFICANCE	CONSERVATION MANAGEMENT PLAN
South Head and Camp Cove / Green Point	Camp Cove Constables Cottage » 1 building		Draft
Gap Bluff	Gap Bluff buildings » 3 buildings including Officers Mess, armoury, cottage » Associated landscaping and gardens	State	Draft
Gap Bluff	Upper Gap Bluff defence installations » Practice battery	State	Draft
North Head	Quarantine Station » 67 timber buildings » 2 cemeteries » rock engravings » Aboriginal sites » landscape elements » 12 000 movable objects	State* and National#	Y
North Head and Aquatic Reserves	North Head anti aircraft installations » Concrete defence installation	State* – as part of fortification assemblage	Y
Dobroyd Head	Crater Cove » 8 huts » associated landscaping	Local (State as part of NPWS-wide hut/cabin collection)	N
Middle Head	Georges Head military fortifications » 3 buildings » armoured and rock-cut (beehive) casemates » observation tower	State*	Y
Middle Head	Middle Head military fortifications » 2 separate complexes consisting of various elements including cobblestone roads, defensive walls and ditches, gun emplacements, search light shelters etc	State*	Y
Middle Head	Middle Head buildings » 6 timber buildings including houses, stores and outbuildings » fencing, archaeological sites	State*	Y

PRECINCT	NAME AND FEATURES	SIGNIFICANCE	CONSERVATION MANAGEMENT PLAN
Middle Head	Obelisk Beach » 1801 rock cut defence installation	State	N
Bradleys Head	Bradleys Head » <i>HMAS Sydney I</i> mast	State	N
Bradleys Head	Bradleys Head fortifications » gun emplacements, guns, loop-holed wall	State	Y
Bradleys Head	Athol Hall » 2 buildings » Athol Hall and early outbuilding » associated paths, gardens, landscaping	Local	Y
Shark Island	» 6 buildings » picnic shelters, toilet block » associated landscape and paths, water tank	Local	Not required
Clark Island	» 1 building » toilets » associated landscape and paths, water tank	Local	Not required
Fort Denison	» 1 building » fort installation with 7 guns » movable collection of approximately 200 items	State* and National	Y Requires an update
Goat Island	» 31 buildings » shipyard precinct, powder magazine precinct, residences, water police building etc » movable collection of approximately 400 items. Multiple archaeological sites, remains of 6 wharves, 4 slipways and landscape elements	State* and National	Draft
Rodd Island	» 6 buildings » dance hall, residence, picnic shelters, change rooms. » associated landscape, grotto and paths	Local and State	Y

* indicates that the site is listed on the State Heritage Register

indicates the site is included on the National Heritage List (EPBC Act)

TABLE D: STATE HISTORIC THEMES IN SYDNEY HARBOUR NATIONAL PARK

NSW STATE HISTORIC THEME	SITES AND PLACES IN SYDNEY HARBOUR NATIONAL PARK THAT DEMONSTRATE THIS THEME
Environment – naturally evolved	» Sydney Harbour National Park
Aboriginal cultures and interaction with other cultures	<ul style="list-style-type: none"> » Axe grinding grooves » open camp sites » coastal middens and shelter » shelters with art work » Goat Island » Fort Denison » Shark Island » 2 Aboriginal Places
Convict	<ul style="list-style-type: none"> » Goat Island » 1801 fort, Middle Head » early stages of construction Fort Denison
Ethnic influences	» Quarantine Station
Migration	» Quarantine Station
Agriculture	<ul style="list-style-type: none"> » Bungaree’s Farm, Middle Head » Rodd Island
Commerce	<ul style="list-style-type: none"> » Nielsen Park kiosk » Athol Hall » Goat Island shipyard
Environment-cultural landscape	<ul style="list-style-type: none"> » Nielsen Park » Athol Hall and landscape » North Head » South Head
Events	<ul style="list-style-type: none"> » HMAS <i>Sydney I</i> mast, Bradleys Head » Bradleys Head amphitheatre » coastal fortifications » Green Point boom net remains » Fort Denison and mini-submarine attack
Exploration	» North Head
Fishing	» coastal areas of the park
Health	<ul style="list-style-type: none"> » Greycliffe and Margaret Harper Wing, Nielsen Park » Quarantine Station » Rodd Island quarantine
Industry	» fortifications, lime kiln, Goat Island
Mining	» quarry, Goat Island
Pastoralism	» Bungaree’s Farm, Middle Head
Science	<ul style="list-style-type: none"> » Quarantine Station » Rodd Island rabbit extermination program
Technology	<ul style="list-style-type: none"> » tide gauge, Fort Denison » fort design and associated ordnance » magazines, Goat Island

NSW STATE HISTORIC THEME	SITES AND PLACES IN SYDNEY HARBOUR NATIONAL PARK THAT DEMONSTRATE THIS THEME
Transport	<ul style="list-style-type: none"> » Wharfs and slipways, harbour islands » South Head » Bradleys Head » cobblestone roads, Middle Head » Camp Cove
Towns, suburbs and villages	<ul style="list-style-type: none"> » Quarantine Station » Middle Head » South Head » Nielsen Park
Land tenure	<ul style="list-style-type: none"> » Nielsen Park
Utilities	<ul style="list-style-type: none"> » Water storage, Fort Denison
Accommodation	<ul style="list-style-type: none"> » Quarantine Station » Middle Head buildings » Steele Point Cottage » Greycliffe House and Estate, Nielsen Park » Gardeners Cottage, Nielsen Park » Green Point Cottage » Cliff St residences » South Head Lightkeepers Cottage and Assistant Lightkeepers Cottage » Gap Bluff Cottage » Crater Cove huts » Goat Island
Labour	<ul style="list-style-type: none"> » Goat Island » Fort Denison » harbour tracks
Defence	<ul style="list-style-type: none"> » North Head WWII anti aircraft installations » Middle Head outer and inner fort complexes and associated residential/mess buildings » Obelisk Bay 1801 battery » Bradleys Head » Chowder Bay casemates » Fort Denison » Steele Point » South Head battery » Gap Bluff » Green Point
Government and administration	<ul style="list-style-type: none"> » Harbour Masters house, Goat Island » Quarantine Station

NSW STATE HISTORIC THEME	SITES AND PLACES IN SYDNEY HARBOUR NATIONAL PARK THAT DEMONSTRATE THIS THEME
Law and order	<ul style="list-style-type: none"> » Water Police Station, Goat Island » Andersons Couch, Goat Island » Fort Denison, gibbet
Welfare	<ul style="list-style-type: none"> » Greycliffe and Margaret Harper Wing, Nielsen Park
Domestic life	<ul style="list-style-type: none"> » Greycliffe Estate
Creative endeavour	<ul style="list-style-type: none"> » Scratchley and Jervis (coastal defences) » James Barnett (designer Steele Point) » JF Hilly (architect Greycliffe, Gardeners Cottage, Nielsen Park) » colonial and government architect office (Cable Station, Rodd Island) » FR de Wolski (engineer in chief of Defence Works) » Mortimer Lewis (water police station, Goat Island)
Leisure	<ul style="list-style-type: none"> » Nielsen Park » Bradleys Head » Shark Island » Clark Island » Rodd Island » Athol Hall » Nielsen Park dressing sheds, toilets, swimming enclosure, café and pavilion
Social institutions	<ul style="list-style-type: none"> » Dance Hall, Rodd Island » picnic shelters, Shark Island
Sport	<ul style="list-style-type: none"> » tennis courts, Middle Head
Birth and death	<ul style="list-style-type: none"> » Nielsen Park – Margaret Harper Wing and Tresillian mothers and babies home » Cape Banks cemetery » Fort Denison, gibbet
Persons	<ul style="list-style-type: none"> » Bennelong, Goat Island » Bungaree, Middle Head » William Wentworth (Greycliffe Estate, Nielsen Park) » Arthur Phillip (Green Point) monument » Sarah Bernhardt, Rodd Island (used to quarantine her dogs)

STATE OF KNOWLEDGE AND INFORMATION GAPS

All of the significant historic sites within Sydney Harbour National Park have site-specific planning documents. These documents provide a brief history, specify why the place is significant and identify appropriate future management and conservation actions to be taken at the place. Some of these documents have been professionally prepared and endorsed. Others, especially sites of less significance, have been prepared by graduate students, and a small number are still in draft form waiting completion. The plans for Fort Denison, Middle Head and Bradleys Head will all shortly require updating.

The collection of harbour fortifications is covered by the NPWS *Fortifications of Sydney Harbour and Botany Bay Strategic Plan 2007*, which identifies priorities for conservation work, public access and interpretation. In addition, there are individual site conservation plans for most of the fortification complexes.

A number of the key sites within the park are in need of conservation and repair work. In particular, major conservation programs are in progress at the Quarantine Station, Goat Island and Fort Denison. Further research and on-site work is required at the concrete and stone forts at Middle Head and Georges Head to address the issues of concrete cancer.

Extensive historical research into the history and development of Sydney Harbour has been undertaken by a number of historians over many years. However historical research related to the heritage places within Sydney Harbour National Park has tended to be less comprehensive, and usually associated with the preparation of management documents, rather than with specific research projects. Some areas that might warrant further research in the future include: the development of 19th and 20th century recreational landscapes in conjunction with the early harbour conservation movements; the history of track construction and access around the harbour; and the surviving ordinance of Sydney Harbour's forts.

The movable collection associated with the park, which is primarily located at Quarantine Station, Goat Island, Fort Denison, and Nielsen Park, is apart from Quarantine Station, generally not well documented. There is no accessible list of items from these sites and no systematic conservation, documentation or research program associated with them. In addition, there is no centralised database for site records such as maps, plans, historic photos, oral history recordings, and no centralised repository for these.

THREATS AND PRESSURES ON HISTORIC HERITAGE

The historic heritage of Sydney Harbour National Park survives within the hostility of the salt-laden harbour environment and with the threat of climate change-induced sea level rise. Fire and vandalism are also considerable threats to the condition and 'in some instances' survival of structures.

Conservation issues are largely associated with the effects of exposure to a marine environment, including water ingress, salt migration and spalling of masonry. Physical deterioration is particularly evident in the sandstone buildings (Fort Denison, Goat Island, rock-cut (beehive) casemate) and sea walls (Rodd Island, harbour islands) as well as in the concrete fortifications (Middle Head, South Head, Georges Head).

Whilst many of the sites are well maintained, a number have serious maintenance liabilities related to their age, original construction methods and limited maintenance over a period of years. Sandstone and concrete stabilisation works are generally of a high cost. These sites include: the rock-cut (beehive) casemate; Georges Head; Goat Island barracks and magazine precinct; Middle Head fortifications; and most of the sea walls. Wharf repairs are required on Clark Island, Shark Island and Fort Denison.

Many of the parks sites of state heritage significance are not listed on the State Heritage Register. In some instances, this may affect the ability to apply for grant-funded programs.

Parts of the movable heritage collection are scattered without suitable storage, and significant parts of it are not recorded on a centralised database. Work has commenced on the development of a database, with the lessee responsible for recording the collection at the Quarantine Station.

A detailed study of sea level rise and its impact on Fort Denison and Goat Island (Watson & Lord 2008/2009) indicates that climate change-induced sea level rise projections range between 20cm and 100cm over the next 100 years and that this will have a significant impact on the park's harbour islands and beaches. Long range planning and priority setting will have to take these studies into account.

Lease conditions aim to protect historic heritage values while providing successful visitor opportunities. Points of potential tension with heritage values commonly include changes to building fabric, outdoor seating, storage and rubbish disposal.

Weeds readily invade disturbed or built areas and can cause significant damage to cultural heritage sites. High priority weed control programs largely target protection of cultural heritage sites including:

- » Listed Aboriginal heritage places (including middens, burials, and rock engravings at North Head, Reef Beach, Tania Park and Milk Beach in Nielsen Park);
- » Fortifications and gun emplacements (The Gap, Middle, Georges, Bradleys and Southheads).

Rabbits can disturb the foundations of historically significant sites. Control of feral pigeons and common starlings roosting in or on buildings at Nielsen Park, has been identified as a high priority in the damage-prevention of historic heritage.

MANAGEMENT OF HISTORIC HERITAGE

The historic heritage sites, buildings and movable heritage within Sydney Harbour National Park have generally been conserved and maintained to a high standard in line with conservation management plans. The Nielsen Park and Middle Head building complexes, Fort Denison and Rodd Island are some of the many examples of well-conserved and presented sites that meet current conservation and maintenance standards and have ongoing maintenance and conservation programs in place.

Funding and project partnerships have been a key component of heritage conservation programs around the harbour. Joint funding is currently in place for the Fort Denison stone conservation program. A multi-agency approach to the presentation and interpretation of the harbour fortifications has been in progress for two years; and corporate programs in place at Middle Head assist in the fortification conservation work at this site.

Leases operating the park's in historic heritage buildings or precincts could be more successful in achieving positive conservation outcomes through raising funds for conservation and management. Other buildings are used for park management purposes or staff accommodation (Table E). Short stay accommodation in harbour-side heritage cottages (Steele Point Cottage, Constables Cottage and Green Point Cottage) has proved to be a successful strategy for achieving both conservation and a satisfying visitor experience.

TABLE E: HISTORIC HERITAGE BUILDINGS WITH CURRENT LONG OR SHORT TERM USES

SITE NAME	TYPE OF USE
Quarantine Station	Head lease for cultural heritage tourism facility with restaurant, accommodation, tours and education programs
Crater Valley	Volunteer maintenance program. No overnight stays
Middle Head	NPWS offices, staff and volunteer accommodation
Athol Hall	Café/restaurant and functions
Fort Denison	Café/restaurant and functions
Rodd Island	Function bookings for hall + staff accommodation
Goat Island	Staff accommodation
Steele Point Cottage, Nielsen Park	Short stay accommodation
Greycliffe House, Nielsen Park	NPWS office, accommodation
Margaret Harper Wing, Nielsen Park	Staff accommodation
Gardeners Cottage, Nielsen Park	Staff accommodation
Halbert Pavilion, Nielsen Park	Functions (part of café lease)
Kiosk	Café/restaurant and functions
Green Point Cottage	Short stay accommodation
Constables Cottage, Camp Cove	Short stay accommodation
South Head Gap Bluff Centre	Function centre
Assistant Lighthouse Keepers Cottage, South Head	Staff accommodation

Some of the key historic heritage achievements of the past five years include:

Quarantine Station

The 27-hectare site encompassing 67 buildings is leased for cultural tourism purposes. Under the lease, the site has undergone extensive conservation and adaptation works to buildings, artefacts and landscape features. Conservation and adaptation works are approximately 70% complete. Major achievements include the adaptation of the former luggage store into a visitor centre and the boiler house into a harbour-side restaurant. Carparking on the site has been upgraded and formalised, garden beds and historic pathways rejuvenated and the extensive moveable heritage collection conserved and re-housed. NPWS undertook the reconstruction by of two large timber buildings, a hospital ward and an accommodation block, both of which had burnt down in recent years.

Goat Island

Between 2005 and 2010, the Goat Island project has achieved the provision of safe public access and substantial conservation works on the majority of the island's most significant buildings and structures. A draft masterplan and the *Goat Island Conservation Management Plan 2011* have also been prepared to establish a vision for the island and to guide all future works. Whilst substantial progress has been made in securing Goat Island's future, significant works are still needed and will be confirmed with the finalisation of the masterplan.

Nielsen Park

The Nielsen Park Dressing Pavilion change rooms and Greycliffe House were the subject of significant conservation works in 1999 and 2000. Notting Parade tunnel was repaired and re-opened in 2004 and major repairs on the swimming and life saving club were completed at this time. Steele Point Cottage was repaired and fitted out for short-term holiday accommodation in 2006. Apart from these projects, the park has required very little maintenance work as the site and buildings, with few exceptions, are in excellent condition. Minor works are now required to the Gardeners Cottage, promenade and Greycliffe House.

Fortifications

A strategic plan for the management of Sydney Harbour National Park and Botany Bay National Park fortifications was prepared in 2007, representing a major milestone in coastal fortifications management. Fort Denison, Middle Head, and Bare Island (the latter in Botany Bay) are the key conservation priorities for the next five years.

A program of stone works and major periodic maintenance is underway on Fort Denison. NPWS has funding partners for the program, being the Department of Commerce Centenary Stonework Program (CSP) and the National Heritage Investments Initiative. And will implement a Stonework Strategy developed in partnership with the CSP over this time. The Fort Denison museum display was upgraded in 2008 and a series of regular guided tours and occasional events (for example 'chip and chat' talks explaining the stoneworks) are a feature of the site.

A three-year program of works to the timber military buildings at Middle Head has just been completed. In addition to the building work, a successful corporate volunteer program has been established which includes conservation work to some of the fortifications. Current proposals include uncovering a cobblestone road, excavating the entrance tunnel to one of the fortifications which has been previously backfilled, and the excavation of a back-filled gunemplacement.

The fortifications are a key component of the Discovery visitor programs run within the park. Tours are available to North Head, Middle Head, Georges Head, Fort Denison and South Head. NPWS has been working with the Sydney Harbour Federation Trust and Sydney Harbour Foreshore Authority to develop joint interpretive products for the suite of coastal harbour fortifications.

HISTORIC HERITAGE MONITORING PROGRAMS

A park-wide condition monitoring system has not been established for Sydney Harbour National Park. The Quarantine Station has its own condition monitoring processes in place, associated with the lease arrangements. Generally, condition monitoring and compliance are informally determined through implementation of the various conservation management plans. An audit of these plans, including the degree of compliance and implementation, would be an effective way to determine both the efficacy of the plans and the current condition of the heritage assets.

OPPORTUNITIES

Several key precincts within the park require a more detailed level of landscape planning to resolve key issues such as circulation, pedestrian and vehicle access and interpretation. These include Middle Head, Nielsen Park, North Head and South Head.

A small number of conservation planning documents for key sites need to be finalised (Nielsen Park Athol Hall, Rodd Island, Crater Valley Huts and South Head) and a number of others need some updating (Fort Denison and Middle Head fortifications).

An interpretation strategy for the cultural and natural heritage assets of the park is a key planning document that is critical to the development of visitor programs and facilities related to the park's cultural heritage assets. Some sites have individual interpretation plans, however better integration is required across the park. Currently, much of the on-site interpretation is delivered through a successful tour program. It is especially important that this program continues for sites with limited access (some of the fortifications for example), however the program needs to be enhanced with self-guided tour opportunities, downloadable information and on-site signage or pamphlets.

Further opportunities exist throughout the park for creating more visitor accommodation and function venue facilities. In general, short stay accommodation and functions are considered to be a suitable means of funding conservation work on the park's significant former residential buildings and providing additional visitation opportunities.

Further partnerships need to be developed to facilitate conservation of the park's heritage places. Volunteer programs, together with corporate funding and sponsorship opportunities, need further development.

Recreation and Tourism

Visitor opportunities provided in national parks are generally those that are ecologically sustainable and which directly contribute to the visitor's understanding and appreciation of the area.

With its spectacular views of Sydney Harbour, the coast and the city, Sydney Harbour National Park shares the high visitation levels common to Sydney's other iconic national parks including Blue Mountains, Ku-ring-gai Chase and Royal national parks. Sydney Harbour National Park receives over 1.5 million visits each year (NPWS 2005, Veal 2006, Roy Morgan 2009). Although Sydney Harbour National Park attracts a higher visitation level from domestic visitors, the park is especially well-suited to international visitation with its global city and iconic harbour location. Domestically, it is the fifth most visited national park by Australians in NSW. Its location within greater Sydney, a city of around 4 million people, and its strong interface with both residential and commercial areas makes it accessible to a large population. As such, the majority of visits to Sydney Harbour National Park are by domestic visitors and mostly Sydney residents.

Visitors to Sydney Harbour National Park cross the entire range, from neighbours, and Sydneysiders to intrastate, interstate and international travellers. Neighbours visit the national park's precincts on a

regular basis for fitness activities such as walking and swimming. Other Sydneysiders from further afield visit less frequently but for longer periods for special occasions and activities such as New Year's Eve and Boxing Day celebrations, festivals, school excursions and iconic half day to day walks. International guests seek authentic experiences that enable them to immerse themselves in the character and culture of a place.

NPWS aims to 'develop a greater and more diverse constituency for parks and conservation by encouraging existing park visitors to spend more time in parks and making a parks experience more accessible and attractive to a wider range of people' (DECC 2008). A tourism taskforce set up to identify enhancements for nature tourism in NPWS parks identified Sydney and surrounds as a 'product enhancement focal point' and 'iconic experiences' in Sydney's national parks as a priority for product development, marketing and promotion (DECC 2008).

The demand and supply considerations below guide the application of these goals to Sydney Harbour National Park and this plan of management:

NEIGHBOURS

The local residential population will continue to grow. In 2006, the population of the three local government areas closest to the national park was 120,300. This population is projected to grow by 8.4% to 130,400 by 2021 (Department of Planning 2009). This indicates that demand for public open space, including Sydney Harbour National Park, will continue to increase.

Compared with Australian averages, in 2006, the population of Manly, Mosman and Woollahra local government areas had:

- » A high proportion of professionals and managers;
- » Higher than average incomes;
- » A higher than average population of families without children; and
- » A higher proportion living in units / apartments and a lower proportion living in attached / detached housing.

Growth is projected to be highest in the 65+ age group.

Alternate passive open space areas in the vicinity of Sydney Harbour National Park include council-managed beaches, bays and parks, North Head Sanctuary and Headland Park managed by the Sydney Harbour Federation Trust and Centennial Park, managed by the Centennial and Moore Park Trust, adjacent to the south of the Woollahra LGA.

Residents of greater Sydney, when recreating close to home, predominantly engage in outdoor recreation on a regular basis for health and fitness reasons in activities such as walking, jogging / running, swimming, cycling and other exercise-based activities (Ipsos Eureka 2010). It is suggested that residents in the vicinity of Sydney Harbour National Park are no different. This study found that other motivations such as enjoyment are seen more as secondary benefits or by-products of knowing one was doing something to improve one's health and wellbeing. The overwhelming majority of study participants across regional and metropolitan areas cite walking as their preferred method of regular outdoor recreation because it is the easiest form of exercise to undertake. Younger participants are more likely than older participants to engage in the more active fitness pursuits such as jogging, cycling, swimming and team sports. Older participants were more likely to obtain their regular exercise through walking. In 2018, the most popular forms of regular outdoor recreation for fitness and health, in descending order, are projected to be:

1. Walking on roads or footpaths for recreation;
2. Water sports;
3. Running or jogging outdoors
4. Cycling on a sealed bike path or track ie off road; and
5. Cycling on roads or footpaths for recreation.

The study found that those living near to bush, parks or waterways are more likely to engage in their preferred regular activity in or near these areas than on streets and footpaths, provided they could be accessed easily from home. This is because these areas were considered more picturesque, safer and more comfortable to recreate in, yet were still very convenient. This is applicable to Sydney Harbour National Park precincts that are within easy reach of neighbourhoods. For those living in locations near water, engaging in activities on, in or near water were seen as an essential part of their lifestyle.

Implications for Sydney Harbour National Park with regard to neighbours are:

- » An increased number of visits by the local populations to Dobroyd Head and North Head precincts;
- » A slightly increased number of visits by the local population to Middle Head and Bradleys Head precincts;
- » An increased number of visits by the local population to Nielsen Park and Hermitage Foreshore, South Head and Camp Cove / Green Point and Gap Bluff precincts;
- » Generally strong local community support for the national park's values and support for conservation; and
- » Greater demand for health and fitness recreation in the precincts that are located amongst neighbourhoods.

SYDNEYSIDERS

The Sydney metropolitan area's population is growing. Sydney had a population of 3,977,200 in 2006. It is projected to grow by 19% to 4,751,900 in 2021. The population of Sydney is ageing. Whilst all other age brackets are projected to grow by between 14% and 17% between 2006 and 2021, the 65+ age group is projected to grow by 50.5%. Sydney has a higher proportion of overseas-born people than the Australian average.

The predominant reason that Sydneysiders choose a particular national park to visit over another is 'convenience and closeness to home' (NPWS 2005). An effective way to address this need is to provide opportunities in locations that meet demographic demands for activities. This is mostly possible given the distribution of major parks, including national parks, scattered across greater Sydney.

However Sydney Harbour National Park's popularity with wider Sydney residents is expected to continue, even with the enhancement of park experiences in other parts of Sydney. Its special qualities and the staging of major events in and around the harbour will remain popular with Sydneysiders for 'occasional experiences' (Ipsos Eureka 2010). This study found that occasional nature-based outdoor recreation is seen as 'more of an experience than an activity, affording a chance to escape, to bond or socialise, or an opportunity to do something different, fun, challenging and / or adventurous. This form of recreation often requires planning, can take from half a day to multiple days and is typically undertaken on weekends

or on holidays. Such outdoor recreation includes bushwalks and hiking, picnics, fishing, camping, scenic driving, trips to the beach, taking kids to the park, visiting scenic or historical locations, boating and other water sports, snow sports and adventure sports'.

The 'day out' was found to be the most common form of occasional nature-based outdoor recreation because it usually involves one or more particular outdoor activities over an extended period of time out of the house. Bushwalking was most commonly engaged in on days out such as these, and activities based around the water were also a preferred form of occasional outdoor recreation. Such activities included going to the beach, boating, fishing, surfing and swimming. Other activities incorporated into a day out include scenic driving or visiting a scenic spot or historical location, a picnic or barbecue, swimming at a beach or waterhole, bike riding, and informal ball or other sports. Such days out are particularly popular among those with children, extended family groups and groups of friends, where a range of activities are available that appeal to all members of the group. Water activities, particularly going to the beach, were seen as something people of all ages could enjoy. Water was also considered by most to be a desirable scenic component for a hike or bushwalk. These types of outings generally required some planning in terms of selecting a location and preparing and packing food and / or other equipment, and the selected location was almost always accessible by car.

Of high importance, for the majority of occasional nature-based outdoor activities, was having somewhere to park the car and toilet facilities. Study participants who also liked having somewhere to eat or to purchase food, somewhere safe for children to play, and barbecues. For some participants who engaged in outdoor activities to socialise with family and friends, it was important that the chosen location have a range of activities that appeals to all members of the group.

Study participants who commonly engaged in fishing, suggested that cleaning tables and bins could be provided at appropriate locations. Some participants pointed to opportunities for more bike tracks.

With regard to the preferred level of setting modification in which to recreate in a natural area, more modified settings were preferred for fitness activities and those involving social or family interaction, such as picnicking and barbecues. In these situations, naturalness is often happily traded for convenience. Man-made structures that are useful were welcomed for most types of outdoor recreation, particularly for families with children and older participants.

Mid-level classes of naturalness were preferred for most outdoor nature-based experiences, with the vast majority of those interested in bushwalking preferring trails and boardwalks, for their own comfort as well as to protect the natural environment from damage.

Higher classes of naturalness were considered most important for adventure pursuits such as hiking, caving and canyoning, or activities that were undertaken to seek out isolation, time-out or peace and quiet. However, this was related more to a perceived acceptable level of naturalness, rather than a desire for completely untouched surroundings.

Very few study participants preferred a totally untouched, natural environment. While the preservation of untouched environments was seen as important from an environmental conservation perspective, such places were not commonly seen as environments within which to recreate. Entering such naturalness classes represented the potential for getting lost, and for encountering danger and harm. Some feared for their safety where there were no other people present, while others were apprehensive about encountering only one or two strangers in a remote location.

In 2018, the most popular forms of occasional nature-based outdoor recreation, in descending order, are projected to be:

1. Water sports;
2. Nature study;
3. Bushwalking for <2 hrs;
4. Picnicking; then
5. Visiting landmarks, lookouts and scenery.

DOMESTIC TOURISTS

After a decline in 2009, domestic overnight travel in the Sydney tourism region grew by 5% on 2009 figures to 7.2 million visits in 2010. Over the same period, the number of visitor nights in Sydney Region grew by 6% to 20.3 million in 2010. The annual growth rate for this tourism sector is forecast to be 3.9% to 2017 (TNSW 2011)

Sydney attracts a higher proportion of the 'pampadour' holiday traveller mindset, or 'luxury seekers' than NSW the average across NSW tourist regions. This travel mindset has steadily increased as a proportion of domestic overnight travellers rising from 18.8% in 2006 to 29% in 2009.

Despite the decline in domestic overnight travel in Australia per se, domestic overnight travellers' visits to Australia's national parks increased at an average annual rate of 7% between 2001 and 2007. Visiting national parks / state parks and whale / dolphin watching have shown the largest growth of all nature tourism activities. This reflects that nature / national park tourism is regarded as a growth area in global tourism.

INTERNATIONAL TOURISTS

While comprising a very small proportion of NSW national parks visitation, international tourists are significant in some destinations and have the potential to become more significant in Sydney Harbour National Park. Although a fall of international tourist arrivals in Australia (2.1% and 2.2% in Sydney) in 2008 concurrent with the global financial crisis occurred, in the longer term, it is forecast that international tourist numbers will increase at an annual rate of 1.7% to 2017 (Tourism Forecasting Committee 2008). Sydney Harbour National Park is extremely well-positioned to capture these visitors with 94% of NSW's international visitors spending time in Sydney.

There was an average annual growth rate of 3% in international visitors to Australia's national parks between 2001 and 2007 (Tourism Research Australia 2007). This further reflects findings that nature / national park tourism is a growth area in global tourism.

NATURE TOURISM TRENDS

Nature and national park tourism is regarded as a growth area in global tourism. In Australia, despite recent overall declines in tourism growth, participation in park visitation, and related nature and cultural heritage tourism, appears to have remained strong.

Globally, there have been changes in holiday and travel attitudes resulting in changed expectations about experiences in parks. More visitors are motivated by a desire to gain new and 'authentic' experiences which enable them to immerse themselves in the character and culture of a destination. They are interested in understanding new people and places, in personal development, and in engaging in activities which provide a contrast to their everyday life. There is a high interest in iconic destinations and experiences. There is also a growth in participation in volunteer tourism such as wildlife monitoring, conservation program support and other activities which offer an immersive and engaging experience that contributes to the environment.

New markets are seeking more packaged park experiences with 'soft adventure' options (catering for a range of fitness levels and budgets) for tourists who are less experienced in outdoor pursuits and / or with limited time. Cultural tourism, whilst traditionally recognised as of greatest interest to international markets, is becoming increasingly important to domestic visitors and the local community.

Nature tourists can also be divided into 'skilled in nature' or 'comfort in nature' categories (Tourism Victoria 2008). Skilled in nature tourism participants tend to have a high level of interest and knowledge of the activity; actively seek out physical challenges; are prepared to stay in more remote locations with limited or no facilities; will travel to destinations solely to undertake the activity; and are more likely to be self-guided. Skilled in nature participants represent 15% of nature tourism visitors and overall are lower yield (Tourism Victoria 2008). Such visitors are likely to already be committed to nature conservation goals.

'Comfort in nature' tourism visitors have a more casual interest but do seek out immersive experiences in the natural environment that provide learning opportunities (Tourism Victoria 2008). These participants will undertake activities for shorter durations; many lack the skills to undertake the activities without a guide; require appropriate accommodation and facilities; and make up a large proportion (85%) of the market for nature tourism. They seek out a broader range of tourism experiences, including food and wine and cultural heritage. Comfort in nature participants are a higher yielding market (Tourism Victoria 2008).

It is considered that Sydney Harbour National Park is more suited to the 'comfort in nature tourism' visitor.

The implications in Sydney Harbour National Park with regard to tourists are:

- » Demand for traditional park activities, such as walking, remains high. However, there is also demand for a range of associated infrastructure and services such as well-designed trails and trail information. There is also increasing use of 'soft adventure' and higher comfort options such as roofed accommodation and luxury camping. Sydney Harbour National Park is ideally suited to 'comfort in nature' tourists, with its location in a city with a plethora of other activities to engage in over a short time period, and its easily accessible location. Its significant built heritage assets, often in spectacularly beautiful settings, can provide for 'soft adventure' experiences and packages.
- » The 'pampadour / luxury seeker' holiday traveller mindset is significant and is increasing in Sydney, such that opportunities for boutique accommodation in special places of the national park could capture this market.
- » A niche market has developed for iconic overnight walking trails for both independent walkers and those seeking softer options, such as guiding and accommodation services provided by commercial partners. The Sydney Harbour Scenic Walk, optionally packaged with overnight accommodation and cultural heritage and water-based experiences, could meet the preferences of the 'international experience seeker' and a range of domestic park visitors.
- » Sydney Harbour National Park, with its outstanding heritage, stunning landscapes and 'stand alone' precincts, is ideally configured for delivery of these experiences. Visiting the park can become a key Sydney experience.
- » High-quality, actively-experiential recreational opportunities, visitor facilities and sustainable tourism product suited to both the international and domestic markets, is well-matched to the park.

Visitation Planning

A number of strategies and policies around visitation and tourism inform this plan of management.

This plan of management will contribute towards a number of goals in *NSW 2021 – A plan to make NSW number one*, with those relating to park visitation including:

- » Goal 23 – Increase Opportunities for People to Look After their Own Neighbourhoods and Environments, through support for bush regeneration programs on the park and surrounding bushland, and joint education programs with Council and community organisations;
- » Goal 26 – Fostering Opportunity and Partnership with Aboriginal People, through recognition of cultural values, community involvement, encouraging Aboriginal culture tours; and
- » Goal 27 – Enhance Cultural, Creative, Sporting and Recreation Opportunities, through maintenance of visitor facilities and provision of interpretation.

NPWS Living Parks Strategy (2006)

Living Parks – A Sustainable Visitation Strategy (DECC 2006) sets strategic directions, principles and actions aimed at protecting the natural and cultural values of parks, while offering a variety of quality visitor experiences; environmentally sustainable facilities, infrastructure and services; enhanced community health and well-being; and community economic benefits.

NSW Taskforce on Tourism and National Parks

The Taskforce on Tourism and National Parks was appointed by the NSW Government to provide advice on practical methods to expedite the NSW State Plan tourism objectives and to report on an enhanced level of sustainable nature and cultural based tourism on NSW public lands. This included identification of ways to increase management resources and conservation benefits from tourism in parks and reserves.

Tourism NSW Strategies

The *2008 NSW Tourism Strategy* (Tourism NSW 2008) aims to increase domestic and international visitation to NSW through a collaborative approach between government and industry. Key strategies include:

- » increased promotion of Sydney (which includes Sydney Surrounds);
- » expansion of regional tourism;
- » stronger industry and government agency partnerships and collaboration; and
- » addressing of supply-side infrastructure and services, including those related to national parks, aviation services, accommodation and business development for tourism operators.

Sharing Sydney Harbour Access Plan

The plan's vision is to improve public access to, and enhance the recreational enjoyment of, Sydney Harbour and its tributaries for the people of Sydney and visitors to the city. Public access enhancements in this plan of management, to Clark Island for example, align with this vision.

Projects proposed under the Sharing Sydney Harbour Access program must align with the planning principles set out in clauses 14(b) and 14(c) of the Harbour SEPP. These planning principles are concerned with improving public access to the Sydney Harbour foreshore.

Disability Standards for Accessible Public Transport 2002 (in force under subsection 31 (1) of the Disability Discrimination Act 1992)

The access wharf on the south south-western section of Goat Island has been upgraded to meet these requirements.

Leasing and licensing buildings, structures and businesses

NATIONAL PARKS AND WILDLIFE AMENDMENT (VISITORS AND TOURISTS) ACT 2010

Changes to the NPW Act, introduced through the *National Parks and Wildlife Amendment (Visitors and Tourists) Act 2010*, seek to clarify but not broaden the range of lease and licence purposes possible in NSW national parks. The amendment strengthens the checks and balances in the Act relating to environmental impacts of visitor facilities and activities by introducing new sustainability measures that aim to better-protect the reserve system's natural and cultural values.

The amendment creates a single, simpler provision that sets out the purposes for which leases and licences can be granted in a park and significantly raises the bar in terms of environmental standards for those leases and licences. The amendment does this, first, by establishing that the Minister must not grant a lease or a licence unless satisfied that it is compatible with the natural and cultural values of the land and its surroundings; provides for the sustainable and efficient use of natural resources, energy and water; and any new or modified structures are of an appropriate built form and scale, including bulk, height, footprint, setbacks and density.

Secondly, the amendment requires that the Director-General adopt Sustainability Assessment Criteria that detail how these matters are to be considered, and that these criteria may not be varied in the future unless the Chief Executive has consulted with the National Parks and Wildlife Advisory Council and the Council has agreed that any variation, on balance, maintains or improves environmental outcomes. In addition, the amendment increases public scrutiny of our leasing and licensing arrangements through providing more opportunities for the public to have a say in what happens in their parks.

SUSTAINABILITY ASSESSMENT CRITERIA

Lease or licence proposals under s.151 of the NPW Act must demonstrate that they are compatible with natural and cultural values, provide for sustainable use of resources, and demonstrate high-quality design. These requirements apply to the range of activities and uses listed in s.151A of the Act, including visitor accommodation, emergency services buildings, research facilities, recreation and sporting facilities, and the undertaking of events and conferences.

The Director-General has adopted Sustainability Assessment Criteria which are to be used to inform consideration of projects requiring a lease or licence. The

criteria are supported by guidelines and templates for the preparation of sustainability assessments.

The requirement to undertake a sustainability assessment will apply to all proposals requiring a lease or licence under s.151, and to projects of a similar kind being undertaken by NPWS. In deciding whether a NPWS project should be subject to the criteria, a general 'rule-of-thumb' is to consider whether it is the type of proposal that an external party would be likely to seek a lease or licence for.

As an example, a proposal by NPWS to build new cabins for visitor accommodation would clearly need to apply the criteria. In comparison, stand-alone works by NPWS to improve a picnic area, such as new shade shelters, toilet upgrade and barbecues, or to construct a new walking trail, would likely not need to apply the criteria as these are not projects that an external proponent would typically consider seeking a lease or licence for (except as part of a related visitor or tourism proposal).

In most cases, sustainability assessments for visitor and tourism projects will need to be completed and submitted together with existing environmental assessment documentation, namely a Review of Environmental Factors (REF) or Conservation Risk Assessment (CRA).

Management Operations and Other Uses

There are two NPWS park management offices and works depots located in the park. Harbour South Area office and works depot is located at Nielsen Park, Vaucluse and Harbour North Area office and works depot is located at Middle Head. These two NPWS management Areas have recently been amalgamated into one to become Harbour Area.

Additional offices are located at the Quarantine Station and on Goat Island, where workshop facilities are located for the islands.

Most of the park is connected to mains power, gas, water and sewerage services. Much of the sewerage and water infrastructure in the park is old and requires renewal or upgrading to meet acceptable standards. Recent upgrades of services have included sewerage connections for the islands, Reef Beach and Athol Hall facilities and an electrical upgrade for supply to the Quarantine Station.

As part of the sewerage upgrade, electricity has been provided to Clark Island, Rodd Island and Fort Denison. Electricity is supplied to Shark island via the Royal Australian Navy degaussing station, a component of which is located on the island.

Garbage collection and recycling is provided in all precincts other than the islands, by either park staff or contractors. There is a policy of 'take your garbage with you' for all islands except Fort Denison. This policy does not apply for major events, where a rubbish removal service is provided.

NPWS utilises access roads through Sydney Harbour Federation Trust (SHFT) land at Middle Head and through HMAS Watson at South Head. This access is required for park management purposes and to access staff accommodation.

There are a number of leases, licences and other occupancies within Sydney Harbour National Park held by other service authorities, with some pre-dating the reservation of the park. This property interest is considered to be an existing interest under the NPW Act and, as such, may continue. Where appropriate, NPWS may seek to amend the conditions of the existing interest or replace it with a lease, licence or easement granted under the NPW Act.

These include:

- » navigational aids on North Head, Middle Head, Fort Denison and Goat Island;
- » access roads to the SHFT North Head Sanctuary (Former School of Artillery), the Australian Institute of Police Management Centre (AIPM), North Head Sewerage Treatment Works, SHFT land (former Army Maritime School) at Chowder Bay, the Navy degaussing station at Steele Point, HMAS Watson and the Hornby Light;
- » the NSW Roads and Maritime Services tidal gauging station and Bureau of Meteorology anemometer on Fort Denison;
- » power lines to various light stations;

- » sewerage pipelines from HMAS Watson and Garden Island to Fort Denison;
- » power lines and light poles on North Head, South Head and Bottle and Glass Point;
- » an electricity sub-station on Gap Bluff;
- » light poles on Middle Head and Morella Road;
- » a gas pipeline on North Head;
- » a sewerage pumping station at Taylors Bay;
- » the Navy degaussing station on Shark Island;
- » the main cross-harbour telephone cable which crosses Goat Island; and
- » the NSW Police Department radio shed and mast on Middle Head.

Negotiations will be initiated to either license easements or develop formal management agreements for those which do not have current agreements, or to remove redundant services.

Utilities and management facilities in the park require regular maintenance. These facilities have been incorporated into an assets maintenance system, so that their number, extent, condition, replacement and annual maintenance costs is quantified, and appropriate levels of funding sought and acquired for their management.

Bibliography

- Attenbrow, V.J. 2010. *Sydney's Aboriginal Past. Investigating the Archaeological and Historical Records*. (2nd edition – soft cover). UNSW Press, Sydney.
- Australian Bureau of Statistics, 2006, *Census Quickstats*, viewed 15 March 2010, <http://www.censusdata.abs.gov.au/ABSNavigation/prenav/ProductSelect?newproducttype=QuickStats&btnSelectProduct=View+QuickStats+%3E&collection=Census&period=2006&areacode=LGA16700&geography=&method=&productlabel=&producttype=&topic=&navmapdisplayed=true&javascript=true&breadcrumb=LP&topholder=0&leftholder=0¤taction=201&action=401&textversion=false>.
- Benson, Doug, Royal Botanic Gardens Trust, Sydney, pers comm. May 2009.
- Benson, Doug, 2011, *Native plants of Sydney Harbour National Park: historical records and species lists, and their value for conservation monitoring*. *Cunninghamia* volume 12 no 1.
- Briggs, J. D. & Leigh, J. H. 1996, *Rare or Threatened Australian Plants*. CSIRO Australia, Collingwood, Victoria.
- Calkin and Associates, 2006, *Park Tourism Use and Demand Analysis*. Unpublished Report for Department of Environment and Climate Change, Sydney, NSW.
- Chapman, G.A. and Murphy, C.L. 1989, *Soil Landscapes of the Sydney 1:100 000 Sheet*. Soil Conservation Service, Sydney.
- Commonwealth of Australia, 2006, Inclusion of a Place in the National Heritage List (North Head). *Commonwealth Gazette No. S 70, Friday, 12 May 2006*.
- DEC, 2004, *Adaptation Strategy for Climate Change Impacts on Biodiversity in NSW; National Biodiversity and Climate Change Action Plan 2004-2007*. Department of Environment and Conservation, Sydney, NSW.
- DEC, 2006, *Recovery Plan for the Large Forest Owls*. Department of Environment and Conservation, Sydney, NSW.
- DEC, 2004, *Fire Management Plan Sydney Harbour and Botany Bay (La Perouse precinct) National Parks*. Department of Environment and Conservation, Sydney, NSW.
- DECC, 2007, *NSW Priorities Action Statement*. Viewed 22 September 2009 and available online at: http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/home_PAS_new.aspx.
- DECC, 2008, *Final Report of Taskforce on Tourism and National Parks*. Sydney, NSW.
- DECC, 2008, *Parks and Wildlife Group Strategic Plan 2008-10*. Internal Plan, Department of Environment and Climate Change, Sydney, NSW.
- DECC, 2008, *Sydney Harbour National Park Fire Management Strategy – North Head Precinct*. Department of Environment and Climate Change, Sydney, NSW.
- DECC, 2008, *Sydney Region Pest Management Strategy 2008-2011*. Department of Environment and Climate Change, Sydney, NSW.
- Department of Planning, 2009, *New South Wales Statistical Local Area Population Projections, 2006-2036 Sydney*. Department of Planning, Sydney, NSW.
- DEWHA, 2008, *Threat Abatement Plan for Competition and Land Degradation by Rabbits*. Commonwealth Department of the Environment, Water, Heritage and Arts, Canberra, ACT.
- Gondwana Consulting, 2010, *Sydney Harbour Scenic Walk Strategy*. A strategy prepared for the NSW National Parks and Wildlife Service, Sydney, NSW.

- Ipsos Eureka, 2010, *Nature-based outdoor recreation demand and preferences quantitative research findings – Greater Sydney*. Prepared for NSW National Parks and Wildlife Service, Sydney.
- National Parks and Wildlife Amendment (Visitors and Tourists) Bill 2010* and <http://www.environment.nsw.gov.au/protectedareas/developmntadjoiningdecc.htm>
- NPWS, 2000, *Allocasuarina portuensis Recovery plan 2000-2010*. Page(s) 50. [Online]. NSW NPWS. Available from: <http://www.environment.gov.au/biodiversity/threatened/publications/recovery/a-portuensis/index.html>.
- NPWS, 2000, *Endangered Population of Little Penguins Eudyptula minor at Manly Recovery Plan*. NSW National Parks and Wildlife Service, Hurstville.
- NPWS, 2001, *Threat Abatement Plan – Predation by the Red Fox (Vulpes vulpes)*. NSW National Parks and Wildlife Service, Hurstville.
- NPWS, 2002, *Long-nosed Bandicoot population at North Head*. Threatened species information. NSW National Parks and Wildlife Service, Sydney.
- NPWS, 2003, *Draft Recovery Plan for the Barking Owl*. NSW National Parks and Wildlife Service, Hurstville.
- NPWS, 2004, *Eastern Suburbs Banksia Scrub Endangered Ecological Community Recovery Plan*. Department of Environment and Conservation, Hurstville, NSW.
- NPWS, 2005, *Research Report – Visitors to Central Branch Parks 2004/05 Sydney North Region Focus*. Unpublished report prepared for NSW National Parks and Wildlife Service, Sydney.
- NPWS, 2007, *Fortifications of Sydney Harbour and Botany Bay Strategic Plan*. Unpublished report prepared for the NSW National Parks and Wildlife Service, Sydney.
- NSW Government, 2010, *Metropolitan Plan for Sydney 2036 Part G. Tackling Climate Change and Protecting Sydney's Natural Environment*. Department of Planning, Sydney, NSW.
- Roy Morgan Research, 2009, *Annual Visits to PWG Managed Parks in New South Wales – Final Report*. A report prepared for the Department of Environment, Climate Change and Water (DECCW), Hurstville.
- Tourism Forecasting Committee, 2008, *Forecast 2008, Issue 2*. Tourism Research Australia, Canberra.
- Tourism NSW, 2010, *NSW Tourism Statistics*. Viewed 24 May 2010.
- Tourism Research Australia, 2007, *Nature Tourism in Australia 2007*. Canberra.
- Tourism Victoria, 2008, *Victoria's Nature-based Tourism Strategy 2008–2012*. viewed 7 July 2008 and available online at: www.tourism.vic.gov.au/images/stories/TV52_NBT_288_Final_lr.pdf.
- Veal, A. J. 2006, *National Park Visitation Estimates and Projections*. Unpublished Report for Department of Environment and Climate Change, Sydney, NSW.
- Watson P.J. and Lord, D.B. 2008, *Fort Denison Sea Level Rise Vulnerability Study*. A report prepared by the Coastal Unit, NSW Department of Environment and Climate Change, Sydney, NSW.
- Watson P.J. and Lord, D.B. 2009, *Goat Island Sea Level Rise Vulnerability Study*. A report prepared by the Coastal Unit, NSW Department of Environment and Climate Change, Sydney, NSW.
- Woollahra Council, 2008, *Gap Park Master Plan*.

Glossary and Acronyms

Glossary

Adaptive re-use	Modification of a building or its existing curtilage to suit an existing or proposed use. Can only occur if the modification is undertaken in a sustainable manner; the modification and use are not inconsistent with the conservation of the natural and cultural values of the land; and the modification is compatible with the retention of the cultural significance of the building or structure.
Adventure activities	A variety of self-initiated activities utilising an interaction with the natural environment that contains elements of real or apparent danger, in which the outcome, while uncertain, can be influenced by the participant and circumstance. (relates to clause 21 of the NPW Regulation)
Allowed	The activity is permissible and is allowed under current OEH policy and the plan of management, without further consent being required.
Amenities building	A public building that is usually constructed in a visitor area for toilet facilities, showers and maybe laundry facilities.
Appropriate recreation	Recreation that is in accordance with the essential nature and spirit of the management principles for the relevant park, does not substantially interfere with implementation of management objectives, is culturally appropriate and does not have an unacceptable degree of environmental or social / cultural impact.
Appropriate uses	Those activities that are consistent with legislation and OEH policies.
Approval	Includes a consent, licence, permission or some form of authorisation.
Barbecue shelter	A structure that provides shade and shelter over a barbecue for park visitors to cook and prepare food. Normally a roof supported by posts but may have one or more walls for additional protection.
Burra Charter	The Burra Charter provides guidance for the conservation and management of places of cultural significance (cultural heritage places), and is based on the knowledge and experience of Australia ICOMOS members.
Café	A building or part of a building with indoor and / or outdoor seating used for the sale of light meals and refreshments. May be dine in but may also provide a take-away service.
Camping area	A visitor facility area providing for overnight accommodation, mostly in the form of tent camping but can also include permanent on-site tents.
Carpark	An area set aside for the safe parking of cars, may have a sealed or unsealed surface, may have formed parking bays (usually for more than one or two vehicles) or not. Does not include road pull-off areas.
Conference / Education / Field studies centre	A centre that provides training, conference, education or meeting facilities. Would typically include a large room with seating capacity of 20 people or more. May also include catering and dining facilities and in some instances, accommodation may be attached. May be used for staff, holiday or other accommodation.
Cottage / House	A dwelling that provides accommodation, typically for one family. Normally includes bedrooms, bathroom, kitchen, dining, laundry and living areas.
Critical habitat	Habitat declared under Part 3 of the TSC Act that is critical to the survival of species or populations listed under the TSC Act.
Critically endangered ecological community	An ecological community listed under Part 2 of Schedule 1a of the TSC Act, that is at an extremely high risk of extinction in NSW in the near future.
Critically endangered species	A species listed under Part 1 of Schedule 1a of the TSC Act, that is at an extremely high risk of extinction in NSW in the near future.

Day use area	An outdoor space used by visitors providing for day use, as distinct to overnight use. The most common activity in day use areas is picnicking although some day use areas provide for other visitor uses. (see also 'Picnic area')
Basic day use area	Small area with minimal facilities.
Medium day use area	Area which includes basic toilets and picnic tables.
Major day use area	Area that includes defined parking sites, water, picnic shelters (barbecues optional).
Major / Intensive day use area	Large area with extensive and developed facilities including playgrounds, barbecues and, in some cases, recycling facilities.
Disabled access / Access for people with disabilities	Access constructed in accordance with AS1428 'Design for Access and Mobility' for use by people with restricted mobility.
Ecologically sustainable development (ESD)	ESD requires the effective integration of economic and environmental considerations in decision-making processes. It can be achieved through implementing the following principles: the precautionary principle; intergenerational equity; conservation of biological diversity and ecological integrity; and the inclusion of environmental factors in the valuation of assets and services. (<i>Protection of the Environment Administration Act 1991 s.6(2)</i>)
Ecotourism	Nature-based tourism that involves education and interpretation of the natural environment and is managed to have minimal environmental impact on the sites visited. The definition recognises that the natural environment includes cultural components and that there should be an appropriate return to the local community and the long-term conservation of the resource (Commonwealth Department of Tourism 1994).
Endangered ecological community	An ecological community listed under Part 3 of Schedule 1 of the TSC Act, that is facing a very high risk of extinction in NSW in the near future.
Endangered population	A population listed under Part 2 of Schedule 1 of the TSC Act, that is facing a very high risk of extinction in NSW in the near future.
Endangered species	A species listed under Part 1 of Schedule 1 of the TSC Act, that is facing a very high risk of extinction in NSW in the near future.
Fire ring	Wood-fuelled communal fire place, with or without a barbecue plate, which may be surrounded by seating.
Historic building	A building that has heritage value and may be either over 25 years old, or listed on the relevant council list (local significance), state heritage register (state significance) Commonwealth EPBC Act (national significance) or international (world heritage property). May have, currently, or have had previously, a range of uses.
Historical / Cultural garden or plantings	Any plantings, either native or introduced, that have been historically planted at that location. This definition does not include plants which have spread significantly beyond the original plantings or seedlings of original plants, but may include replacement plantings. Examples of historical planting include, but are not limited to, stands of trees and flowers planted along roads or access routes, ornamental gardens and plants at historic sites, cultural plantings at cemeteries, orchards and hedges. May have heritage significance, but may also be a potential weed source.

Historic precinct / curtilage	A landscape area that is of historic significance. All elements of the precinct, such as landscaping, fences and gates, lamp standards, paving, garden furniture and outbuildings, may all make their own contributions to the heritage significance of the place.
Interpretation	Programs, activities and facilities aimed at giving visitors greater awareness, understanding and appreciation of the features and significance of the park.
Key threatening process	A process listed under Schedule 3 of the TSC Act that adversely affects threatened species, populations or ecological communities, or could cause species, populations or ecological communities that are not threatened to become threatened.
Kiosk	A building or part of a building used for the sale of light take-away refreshments. No formalised seating is provided.
Landscape design plan	A graphic illustration of the aesthetic and functional layout of the built outdoor environment, including visitor facilities, access routes, heritage and conservation assets and park infrastructure. It may draw upon detailed technical documentation such as conservation management plans or financial viability assessments, but this will depend on a range of contextual matters (physical, social, economic, political and cultural factors) including the quality of existing background information.
Lookout	A high place or structure used for observation and viewing.
Management response	The actions or strategies which are documented in a park plan of management.
Management principles	A set of principles set out in the NPW Act for each category of land reserved under the NPW Act.
Modified natural area	An area of land where the native vegetation cover has been substantially modified or removed by human activity (other than activity relating to bushfire management or wildfire) and that is identified in a plan of management as not being appropriate for, or capable of, restoration. (Section 151B)
Monitoring	Ongoing review, evaluation and assessment to detect changes in condition, with reference to a baseline condition.
Motor vehicle	A motor car, bus, motor cycle or other apparatus propelled on land, snow or ice wholly or partly by volatile spirit, steam, gas, oil or electricity.
Nature-based recreation	A recreational activity in which the experience of the natural environment forms a major motivation.
Park	All 'protected area' tenures managed by NPWS.
Permissible	An activity which can occur under legislation, but which may require approval.
Pets	'Pet' means an animal generally kept in a domestic situation for the benefit of the animal and its owner. Pets may be native or non-native animals including (but not limited to) dogs, cats, other small mammals, reptiles and birds but not horses and other livestock. 'Assistance animal' has the same meaning as in the <i>Companion Animals Act 1998</i> and the <i>Commonwealth Disability Discrimination Act 1992</i> . That is, a guide dog, a dog trained to assist a disabled person in activities where hearing is required, and any other animal trained to assist a disabled person to alleviate the effect of their disability.
Picnic area	A maintained visitor area set aside for outdoor food preparation, consumption and general recreation for groups and individuals. Tables, shelters, barbeques and toilet facilities may be provided. No camping allowed.

Picnic shelter	A structure that provides shade and shelter for park visitors for seating and food consumption. Normally a roof supported by posts but may have one or more walls for additional protection. May or may not have picnic tables, barbeques and/or other facilities.
Playground	A designated area consisting of constructed play equipment such as swings, climbing structures and slides designed for children's recreation.
Priorities Action Statement (PAS)	A statement under Part 5A of the TSC Act that sets out strategies to promote the recovery of threatened species, populations and communities and sets out priorities and performance indicators for each species.
Prohibited	An activity that cannot be undertaken under legislation and / or a plan of management.
Public access road	An access road open for vehicle use by the general public. May also be available for walking, cycling etc.
Regenerate	A process where ecological communities that have been subject to some form of disturbance such as clearing, logging or weed invasion, are restored to a good condition or natural state. This process can occur through natural processes or management intervention.
Rehabilitate	To restore an ecological community to a good condition or former state using management intervention.
Restaurant	A building or part of a building with indoor and / or outdoor seating that serves prepared food and beverages to be consumed on the premises. Typically, a more formalised atmosphere with table service provided. Generally, no take-away service is available.
Restoration	Returning the existing fabric of an historic place to a known earlier state by removing accretions or by reassembling existing components without the introduction of new material. (Burra Charter)
Restricted public access road	An access road generally closed to use by the public, however access via locked gates may be permitted by permit.
Threatened species, population and ecological community	Species, populations and ecological communities listed under Schedules 1 or 2 of the TSC Act.
Tower	A tall framework or structure, the elevation of which is functional.
Vehicle	Includes: <ul style="list-style-type: none"> (a) a boat or other object that, while floating on water or submerged, whether wholly or partly, under water, is wholly or partly used for the conveyance of persons or things; (b) an apparatus that, while propelled, or directed or controlled, in the air by human or mechanical power or by the wind, is wholly or partly used for the conveyance of persons or things; (c) a motor vehicle; (d) an apparatus propelled, or directed or controlled, upon land, snow or ice by human or animal power or by the wind; and (e) a trailer or caravan, whether or not it is in the course of being towed. (NPW Act)

Viewing platform	A structure for viewing scenic values of an area while maintaining a high level of visitor safety.
Visitor centre	A place that provides information on the area's attractions and is often a retail outlet for maps, brochures, souvenirs and items relevant to the local area. Provides displays that interpret the natural and cultural features of the local environment.
Visitor facility	Any form of infrastructure or development undertaken on a park for the use and enjoyment of visitors.
Vulnerable ecological community	An ecological community listed under Part 2 of Schedule 2 of the TSC Act, that is facing a high risk of extinction in NSW in the medium term.
Vulnerable species	A species listed under Part 1 of Schedule 2 of the TSC Act that is facing a high risk of extinction in NSW in the medium term.
Walking track classes	An accessibility and difficulty grading as defined by AS2156 Walking Tracks.
Class 1 'All access track'	All access track with a hard surface, and moderate to high level of interpretation / signage, suitable for a large number of visitors including those with reduced mobility. The width is a minimum 1200mm and the gradient complies with AS1428 Design for Access and Mobility.
Class 2 'Graded track'	Graded track generally with a hard surface dependent on usage, and moderate to high level of interpretation / signage suitable for large numbers of visitors. The width is a minimum width of 900mm and the gradient is a maximum of 1:10 with minimal steps.
Class 3 'Walking track'	Walking track generally with a modified surface, requiring a moderate level of fitness where interpretation / signage is not common. The width is variable and generally less than 1200mm. The gradient is generally 1:10 but may be exceeded for short lengths. Steps may be common.
Class 4 'Hiking track'	Generally distinct surface without major modification to the ground, with no interpretive signage. The width is variable and the gradient is limited by environmental and maintenance considerations.
Class 5 'Marked route'	Marked route with limited modification to the natural surface and track alignment may be indistinct in places. Suitable for visitors with advanced outdoor knowledge and skills in finding their own way along indistinct tracks in remote locations. Width is variable and the gradient may include steep sections of unmodified surfaces.
Class 6 'Unmarked route'	No modification of the natural environment. Suitable for highly experienced walkers to explore remote and challenging natural areas without reliance on management tracks. The gradient is likely to include steep sections of unmodified surfaces.

Acronyms

AHIMS	Aboriginal Heritage Information Management System
CALD	Culturally and Linguistically Diverse (community)
DCP	Development Control Plan
DECCW	Department of Environment, Climate Change and Water
DPI	Department of Primary Industries
EEC	Endangered Ecological Community
ESBS	Eastern Suburbs Banksia Scrub
GIRG	Goat Island Reference Group
ICOMOS	International Committee on Monuments and Sites
KTP	Key Threatening Process
LEP	Local Environmental Plan
LGA	Local Government Area
MOU	Memorandum of Understanding
MSB	Maritime Services Board
NAIDOC	National Aborigines and Islanders Day Observance Committee
NPWS	National Parks and Wildlife Service
OEH	Office of Environment and Heritage
PAS	NSW Threatened Species Priorities Action Statement
RAN	Royal Australian Navy
SEPP	State Environmental Planning Policy
SHFA	Sydney Harbour Foreshore Authority
SHFT	Sydney Harbour Federation Trust
SHNP	Sydney Harbour National Park
SHSW	Sydney Harbour Scenic Walk
SMCMA	Sydney Metropolitan Catchment Management Authority
SREP	Sydney Regional Environmental Plan
TAP	Threat Abatement Plan