Office of Environment & Heritage
NSW National Parks & Wildlife Service

Plan of Management

Parramatta River Regional Park

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NSW National Parks and Wildlife Service

March 2015

This plan of management was adopted by the Minister for the Environment on 3 February 2015.

Acknowledgments

This plan of management was prepared by staff of the Metropolitan and Mountains Branch of the NSW National Parks and Wildlife Service (NPWS), part of the Office of Environment and Heritage (OEH).

NPWS acknowledges that Parramatta River Regional Park is located in the traditional country of the Wallumedegal (or Wallumattagal) Clan.

FRONT COVER: Bedlam Bay, Parramatta River Regional Park (photo: OEH/Isabelle Connolly)

For additional information or any inquiries about this park or this plan of management, contact the NPWS Valleys Area Office, Lane Cove National Park, Lady Game Drive, Chatswood NSW 2067 or by telephone on (02) 8448 0400.

Published by:
Office of Environment and Heritage NSW
59–61 Goulburn Street, Sydney NSW 2000
PO Box A290, Sydney South NSW 1232

Phone: (02) 9995 5000 (switchboard)
Phone: 131 555 (environment information and publications requests)
Phone: 1300 361 967 (national parks, climate change and energy efficiency information and publications requests)
Fax: (02) 9995 5999
TTY: (02) 9211 4723
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Foreword

Parramatta River Regional Park is located at Bedlam Bay, on the northern bank of the Parramatta River just west of the Gladesville Bridge, approximately 10 kilometres from Sydney's central business district.

Established in 2001, this small park is an important recreational resource, set within a historically significant cultural landscape. Visitor infrastructure includes a lookout, interpretive signage, a jetty and boat ramp, walking tracks that link with regional routes and may be used for leashed dog walking, and a sports oval.

The NSW *National Parks and Wildlife Act 1974* requires that a plan of management (PoM) be prepared for each regional park. A draft PoM for the park was placed on public exhibition between 28 June and 26 September 2013. The seven submissions received on the draft PoM were carefully considered before adopting this PoM.

This PoM contains a number of actions to achieve the *NSW 2021* goal to enhance cultural, creative, sporting and recreation opportunities (Goal 27). It also promotes the *NSW 2021* goals to protect our natural environment (Goal 22), increase opportunities for people to look after their own neighbourhoods and environments (Goal 23) and foster partnerships with Aboriginal people through consultation (Goal 26).

This PoM establishes the scheme of operations for the park. In accordance with section 73B of the *National Parks and Wildlife Act 1974*, this PoM is hereby adopted.

Robert Stokes MP

Minister for the Environment

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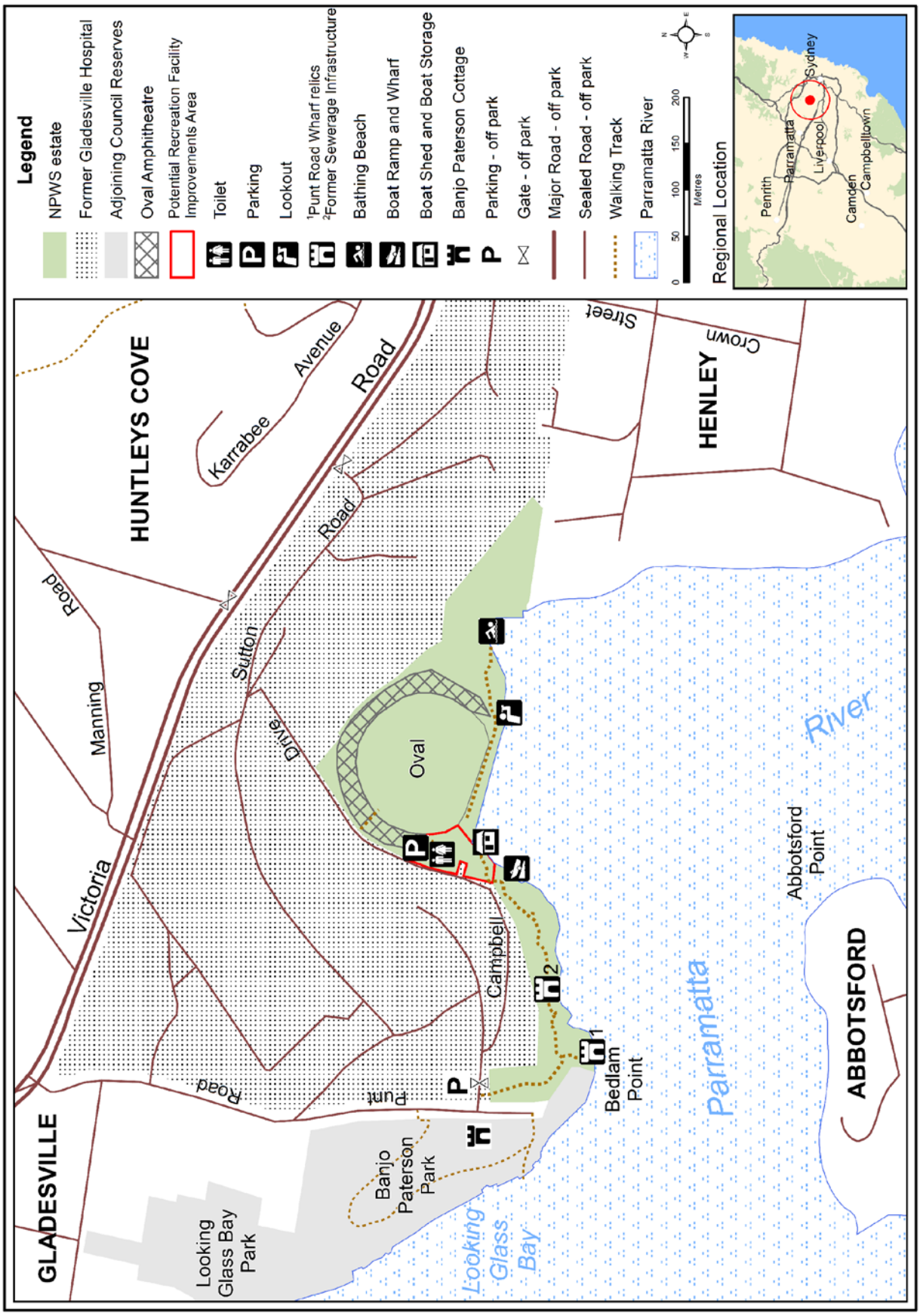
Map 1. Parramatta River Regional Park



1. Introduction

1.1 Location, gazettal and regional context

Features	Description
Parramatta River Regional Park	
Location	Parramatta River Regional Park (referred to as 'the park' in this plan) is located at Bedlam Bay in Gladesville, approximately 10 kilometres north-west of Sydney's Central Business District and 16 kilometres east of Parramatta (see Map 1). The park is located on the foreshore of the northern side of the Parramatta River, west of the Gladesville Bridge.
Area	The park covers approximately 4.6 hectares and is long and narrow in shape, oriented in an east–west direction. The widest point of the park is located at the oval (see Map 1). The foreshore boundary along the Parramatta River extends to the mean high water mark.
Reservation date	The park was reserved as a regional park under the *National Parks and Wildlife Act 1974* (NPW Act) on 25 May 2001.
Previous tenure	Before the land now comprising the park was transferred to the management of the National Parks and Wildlife Service (NPWS) in 1998, most of it had been owned and managed by the then NSW Department of Health (now NSW Ministry of Health). The reclaimed land on which the boat shed is situated was acquired from the former NSW Department of Maritime Services. Under its previous tenure, the park was part of the southern section of the site of the former Gladesville Hospital, a facility established in the late 1830s to care for the mentally ill. The land was used to access the hospital by boat, was part of the hospital's formal and vegetable gardens, and was the location for sewerage infrastructure. It was also used to access the river for bathing, and for other sport and recreational activities.
Regional context	
Biogeographic region	The park is situated within the Pittwater subregion of the Sydney Basin Bioregion, and in the Mitchell Landscape known as the Port Jackson Basin. It is part of a larger network of protected lands along the foreshores of Parramatta River and Sydney Harbour.
Surrounding land use	The park is bounded by the former Gladesville Hospital site to the north, north-east and north-west. Parramatta River bounds the park to the south. Punt Road, Banjo Paterson Park, Banjo Paterson Restaurant and a car park (owned by the NSW Ministry of Health but licensed for use to Ryde City Council) are located to the west of the park. Residential areas of the suburb of Henley abut the park's south-east.
Other authorities	The park is situated within the areas of the Metropolitan Aboriginal Land Council, Greater Sydney Local Land Services and Hunters Hill Council.

1.2 Statement of significance

Parramatta River Regional Park is considered to be of significance for:

Landscape values

- The park is located on a significant waterfront location along the Parramatta River that forms the main tributary and western arm of Australia's iconic Sydney Harbour. Visitors to the park can enjoy water views from elevated sections of the walking track, the foreshore and the oval precinct.
- The park forms part of a strong cultural landscape, particularly when viewed from the Parramatta River, demonstrating the built structures and open spaces of the historic Gladesville Hospital from the early nineteenth century up until the present time.

Biological values

- The park provides habitat for native plants and animals along the banks of the Parramatta River, close to the centre of Sydney, and complements other land reserved for nature conservation in the Sydney metropolitan area. Habitats include rocky foreshore, beaches, remnant native vegetation of coastal sandstone communities, mangrove and areas of dense introduced vegetation.
- The park provides a biodiversity link to nearby reserves and vegetation corridors including Banjo Paterson Park and Looking Glass Bay Park to the west and Gladesville Reserve to the east. The park is also situated within a designated vegetation corridor that extends from Bedlam Bay in a north-easterly direction towards Riverglade Reserve, Gladesville Reserve and Tarban Creek Reserve.
- The densely vegetated parts of the park provide a refuge for small birds that are uncommon in the urban environment.

Aboriginal heritage values

- The park contains evidence of Aboriginal occupation including open and shelter midden sites that offer opportunities to better understand aspects of Aboriginal cultural practices along the Parramatta River before European settlement. Such sites represent a small percentage of those that would once have been present and are therefore a depleted resource and relatively rare (Context Landscape Design et al. 2001).

Historic heritage values

- A sandstone cutting, former 1830s punt house area and remains of the sandstone wharf at Bedlam Point mark the first section of the convict-built Great North Road at the point where the road met the punt across the Parramatta River. The wharf is below the high water mark and therefore not located within the park. The remains of the Great North Road that are associated with the punt are a significant representation of the early phases of the harbour's development and mode of transport between the southern and northern shores. The cable punt was replaced by a ferry service in 1860. Other portions of the Great North Road located outside the park are listed on the World Heritage List, the National Heritage List and the State Heritage Register as the best surviving examples of large-scale convict transportation and colonial expansion through the presence and labour of convicts (UNESCO 2012).
- The park forms a significant element of a cultural landscape that demonstrates the setting of the former Gladesville Hospital and the changing nature of psychiatric healthcare over time. The cultural landscape is of exceptional historic significance (Tanner & Associates 2001) and the component that forms the park contains physical elements of the hospital's evolution including stone walls, former gardens and botanical plantings, sewerage infrastructure, the oval, sea walls, amphitheatre, jetty, boat house and bathing beach.

- The jetty and boat house on the foreshores of the park formed the original gateway to the historically significant Gladesville Hospital site until the Gladesville Bridge was opened in 1884 and Victoria Road became the main point of access.
- The significance of the Great North Road and the former Gladesville Hospital site is partly due to their early construction dates in Australian colonial history, their intactness and their rarity in demonstrating the early development of Sydney.

Recreation and tourism

- The park provides respite from city living and recreation opportunities on the shores of the iconic landscape of Sydney Harbour including a lookout for view appreciation, public toilets, informal picnic spots, walking tracks with interpretation of the Aboriginal and European history of the park and asylum, and a sports oval.
- The park provides on-leash dog walking opportunities.
- The park is part of a regional walking corridor known as the Parramatta River Walk that commences at Woolwich Wharf and circulates along the northern side of the Harbour, through Bedlam Bay to Parramatta via a network of open spaces. The park also forms part of the Gladesville Bridge to Ryde Bridge Walk, and connects with the Harbour Circle Walk.
- The park provides a destination for boating enthusiasts and kayakers who can access the park and the waterway via the jetty and boat ramp.

2. Management context

2.1 Legislative and policy framework

The management of regional parks within New South Wales is in the context of a legislative and policy framework, primarily the NPW Act and Regulation, the *Threatened Species Conservation Act 1995* (TSC Act) and NPWS policies.

Other legislation, international agreements and strategies may also apply to management of the area. In particular, the *Environmental Planning and Assessment Act 1979* may require assessment of the environmental impact of works proposed in this plan. The NSW *Heritage Act 1977* may apply to the excavation of known archaeological sites or sites with potential to contain historical archaeological relics. The Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) may apply in relation to actions that impact on matters of national environmental significance, such as migratory and threatened species listed under that Act.

Given the park's location on the foreshores of Sydney Harbour, the park also needs to be managed in accordance with the objectives under the *Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005* and its stated planning principles.

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 within Parramatta River Regional Park except in accordance with this plan. This plan will also apply to any future additions to the park. Should management strategies or works be proposed for the park that are not consistent with this plan, an amendment to the plan will be required.

2.2 Management purposes and principles

Regional parks are reserved under the NPW Act to protect and conserve areas in a natural or modified landscape that are suitable for public recreation and enjoyment.

Under section 30H of the NPW Act, regional parks are managed to:

- provide opportunities for recreation and enjoyment in natural or modified landscapes
- identify, interpret, manage and conserve the park so as to maintain and enhance significant landscape values
- conserve natural and cultural values
- 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.

2.3 Specific management directions

While the park shares a boundary with, and was formerly part of, the former Gladesville Hospital site, it is annexed from and separate to the land that is managed by the NSW Ministry of Health. However future use options for the remainder of the former Gladesville Hospital site are likely to have an impact on the park and ongoing liaison between the two agencies will be critical to ongoing management of the park.

In addition to the general principles for the management of regional parks (refer Section 2.2 of this plan, above), the following specific management directions apply to the management of Parramatta River Regional Park:

- promote visitor and community appreciation of the natural and cultural heritage values of the park, in addition to its values as a recreation area
- recognise and protect traditional and contemporary Aboriginal cultural heritage, landscape and spiritual values by providing opportunities for the traditional custodians and the local Aboriginal community to help identify, protect, interpret and manage the park's heritage values
- protect and enhance the park's non-indigenous heritage values including structures, the cultural landscape, significant remnant heritage plantings and view corridors
- work with local community groups and volunteers to enhance and conserve the natural and cultural heritage values of the park
- consider practical and site-based measures to protect the foreshore and the associated heritage values from sea level rise
- actively seek liaison with the NSW Ministry of Health during planning for the future use of the remainder of the former Gladesville Hospital site and over the long term
- explore options for possible future leasing of part of the park for increased recreational and sporting activities.

3. Values

This plan aims to conserve the natural, cultural and recreational values of Parramatta River Regional Park. These values may be attached to the landscape as a whole or to individual components of the landscape, for example to plant and animal species used by Aboriginal people.

3.1 Geology, landscape and hydrology

The park is located in the Sydney Basin and is situated on the northern foreshore of the Parramatta River, a drowned river valley that forms the main tributary and western arm of Sydney Harbour. The park comprises a crescent shaped ridge enclosing a south facing valley and a riverside bay known as Bedlam Bay.

The park overlies Hawkesbury Sandstone, a sedimentary rock dating from the Triassic period 252 to 201 million years ago (Chapman & Murphy 1989). In the west of the park, this geology results in rugged to undulating valley sides that are typical of the harbour foreshore. Slopes tend to be greater than 25 per cent gradient with rock outcrops, rocky benches, broken scarps and boulders (Chapman & Murphy 1989). The eastern portion of the park is flat to undulating, primarily as a result of the construction of the oval.

Soils in the park are shallow discontinuous lithosols (a soil where the B horizon directly overlies hard rock and contains rock fragments) and siliceous sands (sands high in silica) associated with rocky outcrops. Soils are typically stony and highly permeable with low soil fertility. Abundant organic matter as a result of thick weed growth and a south-facing aspect has resulted in a darker topsoil colour which becomes lighter with depth. Soils in the park range from strongly acid to slightly acid (Chapman & Murphy 1989).

Extensive modification of the natural landforms, soils and hydrological processes has occurred since 1788. These modifications include the construction of sea walls, terraces, and sewerage and drainage infrastructure. Land reclamation and the dumping of rubbish from the former Gladesville Hospital have also contributed to the change in the natural contours in some places (Context Landscape Design et al. 2001). The area immediately behind the former bathing beach may be unstable due to an accumulation of refuse including building rubble that may comprise contaminants, although weed growth is currently stabilising the area.

The park is a small catchment of the Parramatta River that is bounded by Punt Road, Victoria Road and the former Gladesville Hospital site. A large stormwater outlet, located adjacent to the boat shed, drains water from the former Gladesville Hospital site, originating near the former tennis courts at the top of the oval and circulating under the oval to the outlet. Disused sewerage infrastructure, comprising settling ponds partly filled with clean rubble, is located in the western section of the park. There are several minor drainage pipelines within the park including a drain near the former bathing beach that may originate from the swimming pool within the hospital grounds and an old clay pipeline on the beach nearest to the former punt ruins.

Issues

- The oval and the oval foreshore have been identified as being affected by ‘class 2’ acid sulfate soils within the *Hunters Hill Council Local Environmental Plan 2012.* Any works in this vicinity will need to be carried out in accordance with acid sulfate soil management guidelines (Ahern et al. 1998).
- The oval is constructed on fill of unknown origin that may contain contaminants. No studies have been conducted to date to determine the contaminants.

- In the absence of comprehensive and consistent data relating to stormwater management devices, the Bedlam Bay sub-catchment of the Parramatta River Estuary may require additional gross pollutant management (AECOM 2010).
- The Parramatta River is widely known to have been stressed by pollution draining into the river over the last two centuries, particularly in the period before 1970. As a result, the river's embankments and sediments are known to be contaminated with a range of heavy metals and chemicals including organochlorine compounds and polycyclic aromatic hydrocarbons to levels that are among the highest reported in the world (AECOM 2010). Halmeg Mill, which was located at the end of Punt Road on the edge of Looking Glass Bay, manufactured linseed oil, lead paint, varnish, putties, caulking compounds, printing inks and linoleum from 1923 to 1974 and may have contributed to localised contamination. Contaminated sediments in the river have resulted in a commercial fishing ban throughout Sydney Harbour and its tributaries, including the Parramatta River (AECOM 2010). A sign has been erected at the western entrance to the park advising recreational anglers on the health of the river and its seafood and states limits on consumption. Bedlam Bay is listed as a low priority for remediation works on sediments in the draft *Parramatta River Estuary Coastal Zone Management Plan* (Cardno 2012).
- Rock outcrops and soils including unpaved tracks are prone to soil erosion and potential rock falls, particularly during heavy rainfall (Chapman & Murphy 1989). The two beaches, rock platforms, and the vegetated and non-vegetated shoreline areas are also vulnerable to short-duration erosion events caused by severe storms, vessel wash, flooding, high tides and informal public access. Longer-term recession or accretion may also destabilise banks and can be caused by changes to mean sea level, sediment availability, and changes in river hydrodynamics due to foreshore and channel realignment and dredging (AECOM 2010). Currently there is evidence of foreshore erosion at the beach on the eastern side of the park although woody weeds are partially retaining the shore and preventing erosion.
- Currently there is no coordinated, catchment-wide plan with sufficient technical detail to guide the improvement of water quality from all the catchments draining to Sydney Harbour. Greater Sydney Local Land Services is working to improve the health of Sydney Harbour and its catchment with a water quality improvement plan to assist local councils and government agencies in the catchment (SMCMA 2012).

Desired outcomes

- Exposure of acid sulfate soil is avoided in accordance with acid sulfate soils management guidelines.
- Soil erosion and subsidence is minimised, areas prone to foreshore erosion and areas previously used for dumping and reclamation are stabilised, and risks from contaminants are mitigated.
- Environmental impacts to the Parramatta River are cooperatively reduced.

Management response

3.1.1 Prepare an acid sulfate soils management plan for all major works on the oval in accordance with the NSW Acid Sulfate Soils Manual.

3.1.2 Assess the park for risks relating to the land stability and presence of contaminants, and implement recommendations as required.

3.1.3 Contribute to any multi-agency initiatives to improve the water quality and health of Sydney Harbour and its catchment.

3.2 Vegetation communities and native plants

Since European settlement, the majority of bushland in the surrounding area of Hunters Hill and Gladesville has been cleared for urban development (Benson quoted in Hunters Hill Council 2009). Most of the remaining vegetation on park has also altered significantly due to past clearing, weed invasion, increased nutrients, changed hydrology, botanical plantings and construction of the oval and sea walls.

The vegetation communities that originally existed on park probably included rocky foreshore vegetation dominated by Port Jackson fig (*Ficus rubiginosa*) and coast banksia (*Banksia integrifolia*) which is now considered locally significant (Hunters Hill Council 2009). The park still contains mature Port Jackson figs west of the oval. Other former vegetation may have included open woodland and tall open forest, heath and shrubland communities on Hawkesbury sandstone (Chapman & Murphy 1989, Hunters Hill Council 2009).

There have been no flora surveys or vegetation surveys of the park to determine the existence of threatened flora species or to confirm the extent of threatened ecological communities. However, broad-scale studies of vegetation along the Parramatta River and across the area of the former Sydney Metropolitan Catchment Management Authority provide information on the vegetation communities that currently occur within the park.

Vegetation mapping in the *Draft Native Vegetation of the Sydney Metropolitan Catchment Management Authority Area* (DECCW & SMCMA 2009) identifies two native vegetation communities within the park:

- Coastal Tea-tree–Banksia scrub which forms the majority of the area of native vegetation within the park
- a small pocket of estuarine swamp oak forest which occurs between the oval and the bathing beach where the lookout is situated (see Map 1).

Estuarine swamp oak forest is a sub-type of Swamp-oak Floodplain Forest of the NSW North Coast, Sydney Basin and South East Corner Bioregions, which is listed as an endangered ecological community under the TSC Act. This pocket of vegetation is heavily infested with weeds and is dominated by sweet pittosporum (*Pittosporum undulatum*) in the understorey. Further investigation is needed to determine whether it meets the definition of the endangered ecological community.

An individual grey mangrove (*Avicennia marina*) grows on the former bathing beach outside of the park. It is a single representative of the species typical of the estuarine mangrove forest communities in the Sydney, region which the most widespread component of estuarine vegetation within the Parramatta River (DECCW & SMCMA 2009; AECOM 2010). Mangroves are protected under the *Fisheries Management Act 1994*.

In addition to the two native vegetation communities listed above, a bird survey for the River to River Corridors Project has suggested that the park contains isolated patches of Sydney Turpentine–Ironbark Forest (InSight Ecology 2011), which is listed as an endangered ecological community under TSC Act and as a critically endangered ecological community under the EPBC Act. Detailed investigation is required to determine whether this threatened ecological community occurs within the park, in order to determine appropriate management responses.

In the north-west and south-east of the park, two areas have been mapped as urban exotic/native and as weeds (DECCW & SMCMA 2009).

Although bush regeneration and revegetation with indigenous species has occurred at the western entrance to the park off Punt Road and along walking tracks, the western portion of the park is subject to heavy weed infestation. Native plant species in the western entrance to the

park and the rocky foreshore west of the oval include a canopy of blackbutt (*Eucalyptus pilularis*) and sweet pittosporum. The dominant native species in the middle and understorey are blueberry ash (*Elaeocarpus reticulatus*), black she-oak (*Allocasuarina littoralis*), cheese tree (*Glochidion ferdinandi*), coast myall (*Acacia binervia*), hickory wattle (*A. implexa*), coast banksia, spiny-headed mat-rush (*Lomandra longifolia*), coffee bush (*Breynia oblongifolia*), weeping grass (*Microlaena stipoides*) and *Dianella* spp. There are also several mature brush box (*Lophostemon confertus*) which, although native to New South Wales, is not a local indigenous species and was planted as part of past landscaping works.

The remainder of the park primarily comprises weeds and landscape plantings as part of the former gardens of the hospital, although a number of mature Port Jackson figs are scattered throughout the park. Some revegetation with native species including spiny-headed mat-rush and water vine (*Cissus antarctica*) has occurred along designated pathways within the park. Selected landscape plantings may have heritage significance and are discussed in more detail in Sections 3.5 and 4.1 of this plan.

Although no records for threatened plant species have been identified for the park, Table 1 indicates the threatened species and locally significant plant and fungi species known to exist within 5 kilometres of the park since the 1980s. These species have the potential to occur within the park.

Table 1. Threatened native plant and fungi species with potential to exist in the park

Common name	Scientific name	Status*
Vascular plants		
	Darwinia biflora	Vulnerable
	Epacris purpurascens var. *purpurascens*	Vulnerable
Bauer's midge orchid	*Genoplesium baueri*	Vulnerable
	Pimelea curviflora var. *curviflora*	Vulnerable
Magenta lilly pilly	*Syzygium paniculatum*	Vulnerable
Narrow-leafed wilsonia	*Wilsonia backhousei* (unlikely to occur within the park)	Vulnerable
Fungi		
	Camarophyllopsis kearneyi	Endangered
	Hygrocybe anomala var. *ianthina marginata*	Vulnerable
	Hygrocybe aurantipes	Vulnerable
	Hygrocybe austropratensis	Endangered
	Hygrocybe lanecovensis	Endangered
	Hygrocybe reesiae	Vulnerable
	Hygrocybe rubronivea	Vulnerable

* Status under the TSC Act.
Source: Hunters Hill Council 2009 and NSW Wildlife Atlas accessed September 2012 (OEH 2012a)

Strategies for the recovery of threatened species, populations and ecological communities have been set out in a statewide *Threatened Species Priorities Action Statement* (DECC 2007a). These actions are currently prioritised and implemented through the Saving our Species program which aims to maximise the number of threatened species that can be secured in the

wild in New South Wales for 100 years (OEH 2013a). Individual recovery plans may also be prepared for threatened species to consider management needs in more detail.

Remnant vegetation on park is significant at a regional scale because of the extent of suburban development in the Sydney Basin. The park provides a vegetated link for biodiversity to nearby reserves and other vegetation corridors, including Banjo Paterson Park and Looking Glass Bay Park to the west and Gladesville Reserve to the east. Collectively, these comprise landscaped open parkland and bushland along the river's foreshore. It should be noted that in such an altered landscape, any vegetation, whether native or exotic, is likely to make a positive contribution towards biodiversity as a food source, shelter and a habitat corridor.

The park is also situated within a vegetation corridor between the Parramatta River and Lane Cove River. This corridor has been enhanced as part of the River to River Corridors Project 2010–13. The corridor extends from Parramatta River Regional Park, in a north-easterly direction towards Riverglade Reserve, Gladesville Reserve and Tarban Creek Reserve. It enhances habitats for birds and other native animals, and reconnects and rehabilitates fragmented bushland (Ryde City Council 2012). A study of native habitat recovery in the Parramatta River catchment is planned by local councils during 2014–15 under an Environmental Trust grant.

Issues

- The bushland within the park is only capable of limited recovery due to disturbance over the last 150 years. There is extensive weed infestation in the park (see Section 4.1).
- No systematic flora surveys, targeted surveys for threatened plants or on-site assessments of threatened ecological communities have been conducted in the park. These studies are required in order to appropriately prioritise weed and other management responses in the park's remnant native vegetation.
- All plans for revegetation, weed management and landscape conservation works in the park will need to be prepared in the context of the larger landscape planning framework of the River to River Corridors Project, in consultation with Hunters Hill and Ryde City councils and the Greater Sydney Local Land Services, and the need to enhance the structural complexity of the vegetation to improve fauna habitat.
- The Bedlam Bay community bush regeneration group will require a level of ongoing support from suitably trained and experienced supervisors.
- Trampling of native vegetation by off-track walking is impacting on the ability of the bush to regenerate in some areas and on the success of supplementary planting.

Desired outcomes

- The habitat and populations of native plants, and in particular any threatened plant species and/or ecological communities, are protected, maintained and enhanced.
- Biodiversity restoration works improve native vegetation linkages along the foreshore and between the Parramatta and Lane Cove rivers as part of the River to River Corridors Project.
- The recreation values, cultural landscape and view corridors are considered and retained where suitable when revegetating and weeding.

Management response

3.2.1 Confirm the presence and location of threatened species and ecological communities in the park.

3.2.2 Identify all plantings within the park that have historic and or cultural significance.

3.2.3 Implement relevant recovery actions and strategies for any threatened species and ecological communities present in the park.

3.2.4 Continue to support opportunities to research vegetation and monitor biodiversity in partnership with educational institutions.

3.2.5 Manage visitor impacts on bushland and regenerating areas.

3.2.6 Support and promote restoration of degraded areas by local Bushcare groups.

3.2.7 Support any multi-agency initiatives such as the River to River Corridors Project to improve the condition and corridor values of the park's vegetation.

3.3 Native animals

Habitat isolation and fragmentation, as well as urban and industrial development along the length of the Parramatta River, have had a severe impact on the number and diversity of native animals. Habitat loss, predation by feral and domestic animals, and weed infestation have meant that previously common species are now rarely seen within and along the river.

However, the park provides habitat along the banks of the Parramatta River for native animals and complements other land reserved for nature conservation in the Sydney metropolitan area. Potential terrestrial habitats include rocky foreshore, open grassed areas, dense locally non-indigenous vegetation and remnant native vegetation of coastal sandstone communities that are inhabited by birds, insects, frogs, reptiles and small mammals. The small regenerating mangrove community potentially provides habitat for fish and sea birds whilst the beaches, rock platform and pools, sea walls and jetty pylons provide surfaces for colonisation by benthic organisms (Wiecek 2009; AECOM 2010).

Ryde City Council commissioned bird surveys in 2010, 2011 and 2012 for the River to River Corridors Project. Fifty-six bird species were recorded between the two rivers in the Ryde and Hunters Hill local government areas. The study demonstrated the importance of bushland remnants whereby 44 of the 56 bird species recorded in the survey were found in bushland (InSight Ecology 2011).

During the surveys, a variety of small birds that are rare in the urban environment and more open landscapes were found within the park, particularly within the dense weedy areas. These small birds are generally not found in the adjoining Banjo Paterson Park or the former Gladesville Hospital site as they are too open to provide protection and habitat. Small native birds are of conservation significance in the urban environment due to population declines in urban areas. Within the park, breeding groups of white-browed scrubwrens (*Sericornis frontalis*), variegated fairy-wrens (*Malurus lamberti*) and superb fairy-wrens (*Malurus cyaneus*) were found foraging along with rufous fantails (*Rhipidura rufifrons*) (InSight Ecology 2011). Local bird watchers have also identified red-browed finches (*Neochmia temporalis*) and silvereyes (*Zosterops lateralis*) within the weedy areas (Debrincat 2011).

Records for the surrounding area inform what could exist within the park. More common birds found in the local urban environment that are likely to exist within the park include the following native species: galah (*Eolophus roseicapillus*), sulphur-crested cockatoo (*Cacatua galerita*), long-billed corella (*Cacatua tenuirostris*), willie wagtail (*Rhipidura leucophrys*), masked lapwing (*Vanellus miles*), Australian raven (*Corvus coronoides*), Australian white ibis (*Threskiornis molucca*), silver gull (*Chroicocephalus novaehollandiae*), pied currawong (*Strepera graculina*), laughing kookaburra (*Dacelo novaeguineae*), grey butcherbird (*Cracticus torquatus*), welcome swallow (*Hirundo neoxena*), crested pigeon (*Ocyphaps lophotes*), magpie-lark (*Grallina cyanoleuca*), Australian magpie (*Cracticus tibicen*), noisy miner (*Manorina melanocephala*), rainbow lorikeet (*Trichoglossus haematodus*) (InSight Ecology 2011).

Bedlam Bay, along with other foreshore parks, also provides habitat and functions as a corridor for the movement of migratory and nomadic birds such as flycatchers, gerygones, cuckoos and honeyeaters (InSight Ecology 2011). Twenty-one species listed under international conservation agreements — China–Australia Migratory Bird Agreement (CAMBA), Japan–Australia Migratory Bird Agreement (JAMBA) and Republic of Korea–Australia Migratory Bird Agreement (ROKAMBA) — have been recorded in the Hunters Hill local government area over the past 27 years and may occasionally frequent the park. These include intercontinental migratory waders that arrive in spring in Australia and depart in autumn for their northern Asian breeding grounds. They also include white-throated needletail (*Hirundapus caudacutus*), fork-tailed swift (*Apus pacificus*), white-bellied sea-eagle (*Haliaeetus leucogaster*), cattle egret (*Ardea ibis*), eastern great egret (*A. modesta*), crested tern (*Thalasseus bergii*), common tern (*Sterna hirundo*) and oriental cuckoo (*Cuculus optatus*) (InSight Ecology 2010). No threatened animal species have been recorded in the park. The species listed in Table 2 below have been previously recorded within a 5-kilometre radius of the park.

Table 2. Threatened native animal species recorded near Bedlam Bay

Common name	Scientific name	Status under TSC Act
Red-crowned toadlet	*Pseudophryne australis*	Vulnerable
Broad-headed snake*	*Hoplocephalus bungaroides*	Endangered [V]
Regent honeyeater	*Anthochaera phrygia*	Critically Endangered [E]
Bush stone-curlew*	*Burhinus grallarius*	Endangered
Varied sittella	*Daphoenositta chrysoptera*	Vulnerable
Little lorikeet	*Glossopsitta pusilla*	Vulnerable
Pied oystercatcher	*Haematopus longirostris*	Endangered
Black bittern	*Ixobrychus flavicollis*	Vulnerable
Black-tailed godwit	*Limosa limosa*	Vulnerable
Barking owl	*Ninox connivens*	Vulnerable
Powerful owl	*Ninox strenua*	Vulnerable
Eastern osprey	*Pandion cristatus*	Vulnerable
Superb fruit-dove*	*Ptilinopus superbus*	Vulnerable
Little tern	*Sternula albifrons*	Endangered
Eastern pygmy-possum	*Cercartetus nanus*	Vulnerable
Long-nosed bandicoot	*Perameles nasuta*	Endangered Population
Little bentwing-bat	*Miniopterus australis*	Vulnerable
Eastern bentwing-bat	*Miniopterus schreibersii oceanensis*	Vulnerable
Grey-headed flying-fox	*Pteropus poliocephalus*	Vulnerable [V]
Yellow-bellied sheathtail-bat	*Saccolaimus flaviventris*	Vulnerable

* likely to be locally extinct
[E, V] Denotes species listed as endangered or vulnerable respectively under the EPBC Act
Source: InSight Ecology 2011, NSW Wildlife Atlas accessed September 2012 (OEH 2012a).

Other species observed within the park include the eastern blue-tongue (*Tiliqua scincoides*), red-bellied black snake (*Pseudechis porphyriacus*), a variety of skinks, common ringtail

possums (*Pseudocheirus peregrinus*) and common brushtail possums (*Trichosurus vulpecula*). Perkins (1998) noted the sighting of water-rats (*Hydromys chrysogaster*) on the nearby foreshores of the Parramatta River.

The animal groups most seriously affected by land clearing and urban development in the area are terrestrial mammals, large reptiles and frogs. Terrestrial mammals (such as native rodents, bandicoots and wombats) are likely to have completely disappeared. Large reptiles have also been extensively eliminated. This includes goannas, large snakes and dragons such as bearded dragons (*Pogona barbata*). The eastern snake-necked turtle (*Chelodina longicollis*) and the short-beaked echidna (*Tachyglossus aculeatus*) are also locally rare (Hunters Hill Council 2009). Frogs have suffered a significant decline whereby most reserves have just one or two species. This is partly due to loss of habitat, poor water quality and predation (Biosphere Environmental Consultants 2008).

Issues

- Limited fauna surveys have been conducted in the park and as such there is a lack of detailed fauna data for the park.
- In the Ryde-Hunters Hill area, birds such as spotted quail-thrush (*Cinclosoma punctatum*), eastern bristlebird (*Dasyornis brachypterus*), speckled warbler (*Chthonicola sagittata*), superb lyrebird (*Menura novaehollandiae*), rockwarbler (*Origma solitaria*) and white-fronted chat (*Epthianura albifrons*) have become extinct. Other bushland bird species, particularly small birds, appear to be currently in population decline, placing them at risk of local extinction.
- Dense, weed-dominated vegetation within the park provides movement corridors as well as feeding, roosting and breeding habitat for small birds that are locally rare. Weeding activities may compromise small bird habitat. Sensitive weeding strategies which take a staged approach and promote dense native vegetation adjacent to weeded areas will be needed if extinction of small birds in the local area is to be avoided.
- Predation by exotic animals such as foxes, cats and dogs has been a major cause for the widespread loss of terrestrial mammals in the area. Visitors can also impact native animals through disturbance and the presence of dogs.
- Optimum fauna biodiversity in the park is dependent on managing pests, habitat fragmentation and habitat degradation.

Desired outcomes

- The habitat and populations of native animals in the park are identified and conserved.
- Negative impacts on the habitat of threatened species and locally rare or significant species within the park are minimised.

Management response

3.3.1 Implement relevant strategies in the Priorities Action Statement, recovery plans and best practice guidelines for any threatened species recorded in the park.

3.3.2 Protect habitats of all native animals, including threatened or regionally significant species from visitor impacts, effects of introduced species or aggressive native species, inappropriate fire and weed removal regimes and other adverse impacts.

3.3.3 Contribute to any multi-agency initiatives to improve habitat corridor linkages within and immediately surrounding the park, including the River to River Corridors Project.

3.3.4 Improve the small bird habitat movement corridor along the foreshore edge to the oval with appropriate plantings that do not impact upon viewscapes to and from the water.

3.3.5 Investigate undertaking a baseline fauna survey that targets all taxa.

3.3.6 Work collaboratively with neighbouring councils to promote responsible pet ownership and management through signage and education programs.

3.3.7 Support opportunities for research and monitoring of native animals in partnership with educational institutions.

3.4 Aboriginal heritage

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.

The NSW Government has legal responsibility for the protection of Aboriginal sites and places under the NPW Act and 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 in the promotion and presentation of Aboriginal culture and history.

The region in which Parramatta River Regional Park is situated has a long history of Aboriginal occupation as groups were drawn to the area because of its proximity to the Parramatta River and the plentiful supply of food and water.

The park is situated within the area of the Metropolitan Local Aboriginal Land Council (LALC) and lies within the traditional country of the Wallumedegal or Wallumattagal Clan. Their territory was bounded by *the Parramatta River from 'Turrumburra* (Lane Cove River) in the east to *Burramatta* at the head of the river to the west', with the northern boundary 'logically' being the Lane Cove River (Smith 2005).

The name Wallumedegal or Wallumattagal was likely to have 'derived from *wallumai* the snapper fish, combined with *matta*, a word used to describe a place, usually a water place' (Smith 2005). It is also likely that the snapper fish was the clan's totem (Smith 2005). The Wallumedegal people were fisher hunter-gatherers in a rich environment of river flats, mangrove swamps and creeks:

> *The first encounters between the foreigners in boats and the river people in February 1788 were friendly, with laughter and mimicry on both sides. … Then in April 1789 came the smallpox epidemic, which Bennelong said killed half the Indigenous population.* (Smith 2005)

Smallpox might account for the fact that there is little historical information on the Wallumedegal (Smith 2005). By around 1834 Samuel Marsden, the senior Anglican minister in the colony of NSW, wrote that:

> *… from Sydney to Parramatta all along the north side of the river, there is but one original Native, the rest are all dead; thou they were very numerous in these districts.* (Smith 2005)

The park contains evidence of Aboriginal custodianship including two archaeological sites (Koettig 1995; Context Landscape Design et al. 2001) comprising an open midden and a shelter midden.

In the *Archaeological and Cultural Landscape Management Plan Bedlam Bay – Parramatta River Regional Park* (Context Landscape Design et al. 2001), it is determined that the heritage significance of the open midden site is limited due to damage that has occurred from exposure

and close proximity to the water's edge and to the dumping of waste and construction of the Bedlam Bay Wharf. This type of midden also occurs at a number of locations along the River (Brooks 1998; Context Landscape Design et al. 2001).

The shelter midden, although disturbed to some degree, is likely to contain intact archaeological deposits and has the potential to provide information about early occupation of the area. While full significance can only be assessed by detailed recording and examination of sub-surface deposits — something which is yet to occur — it is believed this site has the potential for high significance as such sites are rare on the Parramatta River (Context Landscape Design et al. 2001). A rock platform, covered in shallow soil near the Punt Road car park was identified as having the potential to contain rock engravings (Context Landscape Design et al. 2001).

Issues

- The Aboriginal archaeological resource of the park is not fully known.
- The open midden site has been damaged by erosion, being in close proximity to the water's edge as well as an informal walking track. It is also highly susceptible to erosion and inundation from sea level rise.
- Refuse not associated with Aboriginal occupation is found at the two midden sites.

Desired outcomes

- All Aboriginal sites and places are identified, recorded and protected.
- Aboriginal sites are regularly monitored and condition assessments made.
- Aboriginal people are involved in management and interpretation of the park's Aboriginal cultural values.
- Understanding of the park's cultural values is improved.

Management response

3.4.1 Conserve and manage Aboriginal sites in the park in consultation with the Metropolitan LALC and other relevant Aboriginal community organisations and individuals.

3.4.2 Support research into the Aboriginal heritage values of the park with the involvement of the Metropolitan LALC and other interested Aboriginal community organisations and individuals.

3.4.3 Involve the Metropolitan LALC and other interested Aboriginal community organisations and individuals in any development of material and programs for interpretation of Aboriginal culture.

3.4.4 Close the informal walking track that passes on top of the open midden site to prevent further damage.

3.5 Historic heritage

Heritage places and landscapes are made up of living stories as well as connections to the past. These places and landscapes can include natural resources, objects, customs and traditions that individuals and communities have inherited from the past and wish to conserve for current and future generations. Cultural heritage comprises places and items that may have historic, scientific, cultural, social, architectural, archaeological, natural or aesthetic significance. NPWS conserves the significant heritage features of all parks under its management.

Before Parramatta River Regional Park was transferred to NPWS in 1998, it formed the southern section of the former Gladesville Hospital site that was formally established in 1837 as

Tarban Creek Lunatic Asylum to care for the mentally ill (Heritage Office 2012). Mortimer Lewis, who was Colonial Architect between 1835 and 1849, designed the original sandstone complex of the Asylum. The Asylum was the first purpose built asylum in New South Wales.

In 1869 it became Gladesville Hospital for the Insane and in 1915 became Gladesville Mental Hospital. From the 1950s onwards, much of the grounds were opened up for recreational use including the construction of the oval. During the 1970s, changes in the manner of mental health patient care occurred. There was an increasing emphasis on community services and decentralisation of specialist services which reduced the number of patients in large institutionalised care (Heritage Office 2012). In 1993, the hospital was amalgamated with Macquarie Hospital to form the Gladesville Macquarie Hospital. In 1997, inpatient services were consolidated at Macquarie Hospital at North Ryde and now only one building is used at Gladesville for patient care.

In 1832, the Bedlam Point Wharf, also known as Punt Road Wharf, was constructed. It was constructed by convict labour and formed part of the Great North Road. Only the stone footings of this wharf remain and they are located outside the park boundary, below the mean high water mark. The Punt was an important transport facility prior to the completion of bridges over the Parramatta River at Gladesville in 1881 and the Lane Cove River at Fig Tree in 1885. It carried livestock, carts, drays and other vehicles across the river (Context Landscape Design et al. 2001). Travellers heading north to Newcastle from Sydney would take the Punt from Abbotsford to Bedlam Point, then the Punt Road towards Pennant Hills and onwards (Davies 2005 & OEH 2012b). Remnants of the punt house have not yet been identified but historic records indicate that it was situated within the park in an area that was cultivated, closer to the existing pedestrian entry off Punt Road (Context Landscape Design et al. 2001). A rock cutting on the northern side of the path to the wharf is a remnant of the alignment of the Great North Road.

During 1866, the substantial stone enclosing walls of the hospital grounds were constructed. These walls allowed for greater freedom of movement for patients and now form the northern boundary of the park (Tanner & Associates 2001) however they may be wholly within NSW Ministry of Health land.

Also during 1866, the bathing place at the small beach at the eastern end of the park was created for patients. Known as the bathing beach, it included board walks, dressing sheds and timber pylons to support a shark net. The baths were demolished when the pool was built above the oval in 1956 (Context Landscape Design et al. 2001).

At around the same time as the construction of the bathing beach infrastructure, substantial landscaping of the grounds occurred, including paths, drives, cultivated areas such as kitchen garden beds, lawn and terracing (Tanner & Associates 2001) in areas that now form part of the park. The work also included the creation of a vineyard, established in 1868 and situated where the oval now lies. Around 1872, the Royal Botanic Gardens also provided trees and minor improvements to the grounds (Tanner & Associates 2001). An area allocated for poultry was situated above the bathing beach and records from the 1930s indicate that an access road (that no longer exists) was located to the west of the bathing beach. This linked the asylum with the suburb of Henley (refer to Figure 6 in the *Archaeological and Cultural Landscape Management Plan Bedlam Bay – Parramatta River Regional Park* by Context Landscape Design et al. 2001 for the location of historic items). Most of the landscaping work seems to have used labour provided by the patients.

In 1898, the existing boat shed was constructed, replacing an earlier (pre 1885) configuration of two sheds and a slipway. The existing building shows repairs and additions to the 1898 timber structure. The timber waiting room adjacent to the boat shed was built in 1957, replacing a timber shed shown on an 1885 plan (Context Landscape Design et al. 2001). The footings of the earlier configuration are still visible. The jetty was rebuilt in 2006 along with the sea wall between the jetty and the boat shed.

In 1964, a new toilet block was constructed at the same location as the current toilet block (Heritage Office 2012).

An archaeological and cultural landscape management plan has been prepared for the park (Context Landscape Design et al. 2001). This has identified that the cultural landscape is of high quality and of state significance due to the length of the natural and built foreshore along the Sydney harbour, rare remnant ecology, evidence of Aboriginal culture and the historical association of the site with the former Gladesville Hospital. According to the *Gladesville Hospital Site Conservation Management Plan* (Tanner & Associates 2001):

> *Bedlam Bay Regional Park …remains a significant element of the existing setting and of the historical development of the Gladesville Hospital site.*

The conservation management plan states that the former Gladesville Hospital site (including the section that now comprises the park) is of *exceptional significance* at a national, state, regional and local level because:

- it survives as the first purpose built government institution for the care of the insane and the oldest surviving former lunatic asylum in Australia
- the buildings provide remarkable physical evidence of more than 150 years of continuous government institutional use in the area of health
- it has a strong and direct connection with many prominent individuals whose involvement contributed to its location, siting, layout, form and manner of use
- it presents an outstanding contribution to the local townscape on account of its visual prominence, scenic quality and designed relationship to the Parramatta River and Bedlam Bay
- it contains areas of indigenous vegetation similar to and maintaining continuity with, that experienced by the earliest Europeans in the locality (Tanner & Associates 2001). Vegetation composition however has since changed.

Many items within the park have been identified in the archaeological and cultural landscape management plan (Context Landscape Design et al. 2001) and the conservation management plan (Tanner & Associates 2001) as having significance and are listed below. These relate to two distinct uses, the hospital and the Great North Road, and are as follows:

The hospital

- the bathing beach precinct (above mean high water mark) where it is likely that important evidence of the 1860s bathing structures remains (*high significance*)
- fig plantings within remnants of the former rock gardens between the bathing beach and the oval (*high significance*)
- various old plantings around the 1860s walls, near the toilet block and poultry yards including hoop pine (*Araucaria cunninghamii*), cook pine (*A. columnaris*), Port Jackson fig, kauri pine (*Agathis robusta*) and giant bamboo (*Dendrocalamus giganteus*). These plantings demonstrate the development of attitudes towards landscape within the broader society and reflect the historical development of the site. They also provide wildlife habitat and some form landmarks visible from a distance (*high or medium significance depending on the species and its location and the period in which it was planted*)
- remnant indigenous vegetation along the western foreshore between Bedlam Point and the boat shed and around the edge of the former bathing beach (*high significance*)
- the oval and grassed terraces built between 1950–56 (*high significance*)

- five settling tanks, constructed progressively between 1900 and the 1940s, that were decommissioned in the 1950s when the hospital was connected to the Metropolitan Water, Sewerage and Drainage Board sewerage system (*medium significance*)
- sandstone boundary wall and garden terraces of stone (*high significance*)
- stoneware stormwater / sewerage pipe running north-south to the river (*medium significance*)
- former kitchen gardens replaced by the oval (*high significance*)
- seawall, boat shed (circa 1898), cut in rock behind the boat shed and original foundations of the waiting room pre 1885. The boat shed is associated with the designer George Oakshott and Government Architect W.L. Vernon who designed boat sheds in the Federation period and is a reminder of the original transport means to the site (*high significance*)
- waiting room and jetty (circa 1957, footings much earlier) (*medium significance*) (Context Landscape Design et al. 2001) (The jetty was rebuilt in 2006 along with the sea wall between the jetty and the boat shed)
- seawall along edge of the oval (circa 1955–57) (*medium significance*)
- path from jetty to the hospital, circa 1845, was the earliest way to access the asylum (*high significance*)

The Great North Road (above mean high water mark)

- the former early 1830s punt house area, Bedlam Point wharf/punt remnants and the rock cutting for the alignment of the Great North Road (*high significance*).

Despite these significance assessments, the former Gladesville Hospital complex, including the park, is not listed on any national or state statutory heritage lists besides the NSW Ministry of Health's section 170 Heritage and Conservation Register and schedule 5 of the *Hunters Hill Local Environmental Plan 2012*. In 2002, the NSW Heritage Office invited the nomination of the hospital site for listing on the State Heritage Register. As the site's heritage significance is well recognised, it may be listed on the State Heritage Register in the future. This may include an amendment to the *Old Great North Road Conservation Management Plan* that addresses sections of the road outside of Dharug National Park and consultation with the Roads and Maritime Services (RMS) in relation to the remnants of the punt below high water mark. Heritage items within the park have not yet been listed on the NPWS historic heritage database (section 170 Heritage and Conservation Register).

Tarban Creek Lunatic Asylum (Gladesville Mental Hospital) 1836 is listed on two non-statutory heritage databases: the former Register of the National Estate, now known as the Australian Heritage Database (Heritage Office 2012); and the National Trust Register (National Trust 2012).

The ruins of Bedlam Point Wharf are more widely acknowledged on statutory heritage listings. This wharf is listed as a heritage item under schedule 4 of the *Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005*; schedule 5 of *Ryde Local Environmental Plan 2010*; schedule 5 of *Hunters Hill Local Environmental Plan 2012*; and under the NSW Ministry of Health's section 170 Heritage and Conservation Register. The wharf is also listed on the National Trust Register (National Trust 2012).

The Great North Road is a nationally significant example of major public infrastructure and was included in the National Heritage List in 2007 (DSEWPC 2012). Eleven of Australia's convict sites were awarded world heritage listing in July 2010 including the remains of the Great North Road in Dharug National Park (OEH 2012c). The former NSW Heritage Office (now Heritage

Division of OEH) recommends that remnants of the Great North Road between Bedlam Point to Eastwood:

> *…. should be retained and conserved and … a Heritage Assessment is required prior to any substantial work or provision of new services*. (OEH 2012b)

The park provides context for a cottage known as Rockend, a former residence of the poet Banjo Paterson between the 1870s and 1880s and located outside of the park near the western entrance on Punt Road. It was built circa 1850 and is still preserved and open to the public as a restaurant. The cottage and the adjoining Banjo Paterson Park are listed under *Ryde Local Environmental Plan 2010* as heritage items. The cottage is listed on the Register of the National Estate as well as on a state government section 170 Heritage and Conservation Register.

Cultural heritage features and values should be managed in accordance with the Burra Charter, best practice heritage management principles and guidelines issued by the Heritage Council, relevant statutory documents including the *Heritage Act 1977* and *Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005* as well as the landscape management plan, conservation management plan and masterplan (in preparation) for the former Gladesville Hospital Site.

Relevant policy and management recommendations made in the conservation management plan (Tanner & Associates 2001) and the landscape management plan (Context Landscape Design et al. 2001) have been reviewed and are included in the management responses below.

Issues

- Increased recreation and visitor facilities have the potential to impact on the conservation of historic sites and cultural landscape values.
- Proposals for any developments or landscaping within the park should be sympathetic to preservation of the historic cultural landscape, views and vistas of the former Gladesville Hospital precinct. This includes both views from the Parramatta River and views from the hospital site to the River.
- Repairs to the boat shed are makeshift and have not respected the original 1898 structure according to the archaeological and cultural landscape management plan (Context Landscape Design et al. 2001) and following a detailed assessment of the built fabric. Reconstruction or partial reconstruction of the 1898 boat shed design is acceptable.
- The park should be managed in accordance with the objectives and planning principles of the *Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005*.
- Investigation of the potential for listing of the remains of the Great North Road and the cultural landscape of the park on the State Heritage Register is required.
- Listing of the historic elements within the park on the NPWS historic heritage database is required.
- The park potentially contains archaeological remains, moveable relics and structures that are exposed to visitor impacts including potential theft and vandalism. Heritage items on the hospital site are vulnerable to impacts from people entering via the park.
- Heritage items may deteriorate as a result of natural processes.
- The integrity of the sandstone walls that form part of the western boundary of the park, and other sandstone structures within the park including sandstone culverts near the toilets, are being compromised by vegetation, particularly species such as giant bamboo.
- Some historic items including part of the remains associated with the Great North Road, one third of the boat shed, the jetty, the waiting room and the sea walls are located on

land that is below the mean high water mark and are therefore outside the park boundary. Liaison with RMS is required for any activity that impacts on these items to ensure that statutory and policy requirements are followed.

Desired outcomes

- The cultural heritage and visual landscape values of the park are identified, recorded, protected, managed and interpreted, including recognition of the historical context of the park as a precinct of the former Gladesville Hospital site.
- Community knowledge and appreciation of the park's historic values are increased through public education and interpretation.
- Negative impacts on historic heritage values are minimised.

Management response

3.5.1 Seek State Heritage Register listing of those park elements identified in the archaeological and cultural landscape management plan as being of state heritage significance, including remains associated with the Great North Road and the cultural landscape of the park.

3.5.2 Ensure that any development within the park is sympathetic to preserving the historic cultural landscape including views to and from the former Hospital. Manage vegetation along the oval foreshore (planted as a habitat linkage for small birds) so it remains low to maintain heritage vistas.

3.5.3 Assess remnant plantings within the park for heritage significance and determine a strategic approach for management that takes into account impacts on native plants and animals, and heritage structures, views and vistas.

3.5.4 Prepare a cyclical maintenance schedule for built heritage items within the park.

3.5.5 Manage cultural heritage values in accordance with the cultural landscape plan.

3.5.6 In consultation with RMS, survey the boundary of the park in the vicinity of the former punt house location to determine which areas are within the park boundary and determine conservation and interpretation requirements.

3.5.7 Ensure that the park's historic elements are appropriately recorded.

3.6 Visitor use, information and education

NPWS parks and reserves provide a range of recreation opportunities. NPWS aims to ensure that visitors enjoy, experience and appreciate these parks and reserves while their core values are conserved and protected. Regional parks are reserved under the NPW Act to protect and conserve areas in a natural or modified landscape that are suitable for public recreation and enjoyment.

Parramatta River Regional Park is a short-stay destination park. It comprises a mix of active and passive open space areas in a culturally rich, harbour side setting. These include regional walking track linkages, access to boating and fishing activities on the Parramatta River, and an oval to facilitate sports, special events and general recreation in an historically significant setting. The park has scenic and aesthetic qualities valued by the community. These include the rocky foreshores, two small sandy beaches, cultural plantings including the remnant historic botanical plantings, grassed clearings, an oval, amphitheatre, jetty and other historic structures.

The park is promoted by local and state government on websites, maps and brochures that inform the public about the local and regional walking trails along Sydney Harbour's foreshore. A location map and a list of facilities are included on the OEH website.

Water-related facilities and vehicle access

The park provides an enjoyable destination for boating enthusiasts and kayakers who can access the park via the Bedlam Bay jetty and boat ramp or the nearby jetty in Banjo Paterson Park. Trailer boat access is not provided. Dinghy storage racks adjacent to the boat shed are currently provided on park for members of the Bedlam Bay Boat Club who also use and maintain the boat shed (refer to Section 5 for further discussion about the boat shed). The wharf and the rock platform near the ruins of the convict-built road provide enjoyable locations for fishing.

There is currently limited vehicle access to the oval; pedestrian access is via the park entrance off the Punt Road car park or via the hospital site. Vehicle access is discussed in Section 5.1. Dedicated car parking spaces are restricted to three car parking spaces adjacent to the toilet facilities. Car parking is also possible on the narrow access road that surrounds the edge of the oval.

Walking

According to a survey undertaken to inform the *Hunters Hill Council Outdoor Sport & Recreation Plan* (Montemare 2011 & Hunters Hill Council 2013), walking, including bushwalking, is by far the most popular recreation activity in the local government area with a participation rate of 87 per cent. This level of participation is well above the NSW average (Standing Committee on Recreation and Sport 2011) and nearly four times greater than the next most popular activity in Hunters Hill. As a result, open space and parklands are the most used and highly rated facilities in the municipality. It is anticipated that the popularity of walking may drop slightly in years to come due to the aging of the population (Montemare 2011).

Hunters Hill Council and Ryde City Council, along with the state and federal governments, other authorities and the Walking Volunteers, have created a series of local and regional walks that include Parramatta River Regional Park. New and improved walks are constantly being created to facilitate linkages and public access along the Sydney Harbour foreshore parks and recreation spaces. The walks that currently circulate through the park include:

- Parramatta River Walk that commences at Woolwich Wharf and traverses the northern side of the Harbour, through Bedlam Bay to Parramatta and further afield via a network of open spaces
- Gladesville Bridge to Ryde Bridge Walk, traversing the northern and southern river foreshores. It links with the Harbour Circle Walk to the east and Ryde Bridge to Parramatta River Walk to the west
- Gladesville Hospital Walk that traverses the historic hospital site and the park, Punt Road and Banjo Paterson Cottage
- the 10-kilometre Tarban Creek to River Walk that loops from Huntleys Point Wharf, west through the park and then to Tarban Creek valley and Riverglade Reserve via the Victoria Road pedestrian underpass, finishing at Gladesville Bridge
- the 1.2-kilometre walk from the Gladesville Hospital that traverses the park to Punt Road, through Banjo Paterson Park and Looking Glass Bay Park and ends at the Ann Maria Aged Care facility in Ashburn Place, Gladesville
- the park's Bedlam Bay interpretative walk, constructed in 2001. This comprises a series of stairways and walkways to traverse the steep gradients and rocky foreshore between the Punt Road entrance and the oval. Facilities include two formal and numerous informal lookouts to appreciate views of the Parramatta River, informal picnic

opportunities located throughout the park and comprehensive interpretation signage of the Aboriginal and European history of the park and asylum.

Tracks within the park facilitate self-reliant, nature-based recreation activities including bird watching.

On-leash dog walking is also permitted along designated walking tracks within the park and in the nearby foreshore parks to the east and west.

Use of the oval

The park's oval was originally designed as a cricket oval and was built in the 1950s for the hospital patients and staff of the former Gladesville Hospital complex. The oval is now used by groups external to the hospital for a range of sporting activities. Cricket and soccer clubs use the oval regularly for training and competitions on weekends and on evenings through the working week. The terrain around the oval creates a grassed amphitheatre that can seat many people and is suitable for spectator events.

The oval is also used by the general public, non-commercial charitable organisations and local sports clubs for social events such as club gatherings and presentations. Bookings are currently made through the NPWS bookings system. On-leash dog walking is also permitted on the oval. Modern toilet facilities are located nearby, including for those who are mobility impaired.

Hunters Hill Council has prepared an *Outdoor Sport & Recreation Plan* (Hunters Hill Council 2013) which identifies the oval in the park as an existing sports facility within the council area. The NSW Government is considering future land use options for the former Gladesville Hospital site. Increased use of the park may arise from future arrangements.

Organisations external to NPWS have expressed an interest in leasing and managing the oval. NPWS is willing to enter into a lease agreement consistent with the NPW Act, for the operation of elements of the park such as the oval. If a lease is entered into, improvements within the park in relation to sporting use including low-spill flood lighting may be pursued. Other facilities for sports may include change rooms, storage and canteen facilities and barbeque areas with shelter and seating. The area with the best potential for recreation facility improvements is located near the existing toilet facilities and boat shed, adjacent to the oval.

Low-spill flood lighting and minor structures associated with improving sporting facilities around the oval are currently possible under the regional park category under section 30H of the NPW Act subject to environmental assessment and a heritage impact statement. See Section 5.1 (Management facilities and operations) for more discussion regarding the oval.

Cycling

In accordance with NPWS policy and the NPWS *Sustainable Mountain Biking Strategy* (OEH 2011a), cycling is permitted on park roads and management trails. Parramatta Regional Park does not contain any management trails or on-park roads, such that no cycling opportunities are provided within the park.

Horse riding

Horse riding is a popular recreational activity that has cultural associations for many Australians. The NPWS *Strategic Directions for Horse Riding in NSW National Parks* (OEH 2012d) provides a framework to improve riding opportunities in eight priority regions in New South Wales, including the NPWS Metro North East Region. Horse riding opportunities in numerous national parks in the region are being progressed in accordance with the Metro North East Region Horse Riding Work Plan 2013 (OEH 2013b). However, the park is not considered suitable for horse riding due to its small size and the potential for the activity to disturb other users.

Education, interpretation and community involvement

The park's location within close proximity to a number of schools and tertiary institutions places it in a position to be utilised as an educational resource for a variety of studies including archaeology, history and natural science.

On-park interpretation is limited to a network of signage that informs visitors of heritage assets. Signage also includes copies of historical documentation, providing visitors with information on the heritage context of the park. There are currently no formal walk, talk or tour programs delivered through the NPWS *Discovery* program in the park.

The Bedlam Bay Bushcare Group carries out important work in managing weeds and restoring habitat within the park. Community groups can play an important role in education, park promotion and capacity building through conservation partnerships.

Issues

- Planning for the former Gladesville Hospital site (external to the park) may influence future options for development of recreation and visitor facilities within the park, particularly in relation to access arrangements.
- The absence of night lighting on the oval limits the possible hours of use.
- Provision of night lighting has the potential to impact on neighbours and wildlife in the adjacent habitat corridor.
- There are no changing room facilities, nor club house, sheltered seating or barbecue facilities around the oval.
- There may potentially be competing requirements between sporting clubs stemming from differences in requirements applicable to their respective sporting needs.
- The future use of the boat shed and its structural integrity is undetermined at the time of writing this plan. Adaptive re-use may be possible to facilitate use for a variety of recreational or other pursuits provided it is structurally sound and proposals meet heritage requirements.
- Disabled access is provided to the oval area of the park but is limited on walking tracks due to stairways in steeper sections.
- Interpretation is limited to park signage about historical values. It could be augmented to include signage about Bushcare activities and the value of the area as small bird habitat.

Desired outcomes

- A safe and enjoyable environment is provided for park visitors.
- A high-quality visitor experience is provided for passive and active recreation.
- Local and regional provision of walking trails is supported.
- Sustainable use of the oval for sporting purposes is supported.
- Public appreciation and awareness of the park's natural and cultural values is increased through community engagement, education and interpretation by various methods.
- Visitor opportunities in the park respond to current and expected recreational demand in a regional context and encourage a diversity of park visitors.
- Impacts of visitor use on neighbours and environmental values are minimised.
- Ongoing liaison with the NSW Ministry of Health enables the development of complementary management actions for the two sites.

Management response

3.6.1 Work with interested parties to manage and improve recreational facility provision within the oval precinct.

3.6.2 Participate as a stakeholder on any collaborative projects that traverse the park as a part of broader Sydney-wide walking networks including the *Sydney Harbour and Coastal Walking Network.*

3.6.3 Continue to support community involvement in the park, particularly involvement in bush regeneration programs, guided walks, educational activities and catchment management programs.

3.6.4 Increase interpretation opportunities through the *Discovery* program.

3.6.5 Review and improve information signage where appropriate to inform users of permitted activities within the park, natural and community values and local and regional walking trail networks.

3.6.6 Continue to permit on-leash dog walking throughout the park as per regional park provisions.

3.6.7 Update information regarding Parramatta River Regional Park - Bedlam Bay on the NPWS website including the park's historic and landscape values.

3.6.8 When undertaking environmental assessments of proposed developments, take into particular account environmental impacts to the habitat corridor through the park and include appropriate consultation to investigate potential social impacts.

3.6.9 Engage in ongoing discussions with the NSW Ministry of Health over future use of the NSW Ministry of Health site and implications for park management.

4. Threats

4.1 Pests and pathogens

Pest species are organisms that have negative health, 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. In this plan, the term pest is used collectively for vertebrate pest animals, invertebrates, weeds and pathogens.

NPWS prepares regional pest management strategies which identify pest species across that region's parks and priorities for control, including actions listed in the Priorities Action Statement (see Sections 3.2 and 3.3), threat abatement plans, and other strategies such as the *NSW Biodiversity Priorities for Widespread Weeds* (DPI & OEH 2011).

The NPWS *Regional Pest Management Strategy 2012–17, Metropolitan North East Region: a new approach for reducing impacts on native species and park neighbours* (OEH 2012e) identifies pest species and priority programs for this park. The overriding objective of the pest management strategy is to minimise adverse impacts of introduced species on biodiversity and other park and community values while complying with legislative responsibilities. The strategy also identifies where other site- or pest-specific plans or strategies need to be developed to provide a more detailed approach.

Identified priorities will be included in NPWS regional operations plans and their implementation tracked through the NPWS Asset Maintenance System. Spatial data on pest distribution and treatment will be maintained in the NPWS Pest and Weed Information System.

Currently there is limited information in the NPWS regional pest management strategy concerning the park, as field inspection and condition mapping need to be conducted before pest and weed priorities can be comprehensively identified.

Pest animals

Due to the close proximity of the park to urban areas, there are a number of domestic and feral animals that may be present in the park and surrounding areas. These species include predators such as the cat (*Felis catus*), domesticated dog (*Canis familiaris*) and European red fox (*Vulpes vulpes*). Predators such as these have the ability to severely affect populations of native animals, particularly medium-sized, ground-dwelling and semi-arboreal mammals, ground-nesting birds and freshwater turtles. Foxes have also been implicated in the spread of a number of weed species such as blackberry (*Rubus fruticosus* agg.). Predation by the European red fox and predation by the feral cat have been listed as key threatening processes under the TSC Act.

Control of foxes in NPWS parks and reserves is directed by the *NSW Threat abatement plan for predation by the red fox* (OEH 2011b) which prioritises sites for control to ensure the best effect for biodiversity conservation. Parramatta River Regional Park has not been identified as a priority site. Similarly, strategic cat control is unlikely to be implemented in the park unless direct population level impact to a specific threatened species is identified.

Domestic dogs are currently permitted in the park but must be leashed and under control at all times to limit their potential impact on native animals, particularly small birds. On-leash dogs are also less likely to disrupt the amenity and recreation experience of other park visitors.

Other introduced species in the park include the rabbit (*Oryctolagus cuniculus*), spotted turtle-dove (*Streptopelia chinensis*), the rock dove (*Columba livia*), the common starling (*Sturnus vulgaris*) and the common myna (*Sturnus tristis*). These species are able to affect native

species via competition for food, shelter and other resources. Pest birds, if numerous, may also have a negative effect on the amenity of public open space, particularly in public areas where food scraps are available.

Rabbits can have a significant impact on native vegetation including threatened species. Competition and grazing by the feral European rabbit (*Oryctolagus cuniculus*) is listed as key threatening process under the TSC Act. Rabbits have the potential to also cause significant impact to Aboriginal and historic cultural heritage through site disturbance and destabilisation from digging. At the time of writing this plan, the rabbits within the park were at low densities and were having little impact. Rabbit density and impact can be expected to fluctuate over time. Control will be considered if impact to priority park values, such as threatened plants or cultural heritage of state or regional significance, becomes evident or damage to the sports fields and impact to recreational opportunities is evident.

NPWS is responsible for the control of feral animals within the park. Where landscape-wide feral animal management is required, management and control should be undertaken in cooperation with Hunters Hill Council, Ryde City Council and the NSW Ministry of Health in relation to the adjoining state and council-owned land and in accordance with set priorities predominantly determined by the NPWS regional pest management strategy and relevant threat abatement plans. This may be, in part, facilitated via the Urban Feral Animal Action Group – Sydney North, a multi-agency group including NPWS and local government representatives that coordinates collaborative vertebrate pest control in northern Sydney.

Weeds

A suite of weed species are widespread in the park as a result of long-term disturbance associated with the former hospital. Activities that have promoted weed growth include clearing; landscaping; farming; dumping of clay fill, building rubble and garden waste; alteration of the topography and hydrology; nutrient enriched runoff and sewerage overflows from the associated hospital sewerage infrastructure located in the park; and changes to the drainage and microclimate. Much of this disturbance has resulted in the loss of soil structure and the native seed bank and limits the potential for successful regeneration of native species without intervention. Consequently, remediation and restoration techniques like landscaping and planting will be considered.

Weeds have encroached into the park from surrounding gardens, the former hospital site and residential areas to the east of the park as well as from seed dispersal via wind, birds and other animals. Some historic plantings in the park have also become invasive and require controlled management to avoid their spread. ‘Loss and degradation of native plant and animal habitat by invasion of escaped garden plants’ is listed as a key threatening process under the TSC Act. Invasion by canopy vines is also a key threatening process. Invasive canopy vines negatively impact the foraging and roosting behaviour of microbats and birds including threatened species, such as the grey-headed flying-fox.

The absence of substantially intact, structurally diverse native vegetation in the park has resulted in the combination of indigenous plants and exotic weeds providing fauna habitat especially for native birds, reptiles and possibly bats. The loss of habitat needs to be considered when planning for the progressive removal of weeds and regeneration or restoration with locally indigenous species.

Context Landscape Design et al. (2001) identified 18 weed species occurring within the park. A number of other weeds have been identified during the preparation of this plan and are included in Table 3. The list is not exhaustive but reflects the most significant species by density and distribution.

Table 3. Weeds recorded in Parramatta River Regional Park (Bedlam Bay)

Common name	Scientific name	Distribution
Woody weeds		
Tree of heaven	*Ailanthus altissima*	Scattered infestation throughout park
Camphor laurel	*Cinnamomum camphora*	Isolated infestation restricted to small area of park
Large-leaved privet	*Ligustrum lucidum*	Dominant around the eastern end of park and near bathing beach
Small-leaved privet	*Ligustrum sinense*	Scattered infestation throughout park
African olive and European olive	*Olea europaea* subspp.	Scattered infestation throughout park
Exotic perennial grasses and herbs		
Farmers friend/ Cobblers peg	*Bidens pilosa*	Scattered infestation throughout park
Couch	*Cynodon dactylon*	Isolated infestation restricted to small area of park
Panic veldt grass	*Ehrharta erecta*	Scattered infestation throughout park
Creeping oxalis	*Oxalis corniculata*	Scattered infestation throughout park
Pellitory/ Asthma weed	*Parietaria judaica*	Scattered infestation throughout park
Kikuyu	*Pennisetum clandestinum*	Scattered infestation throughout park
Buffalo grass	*Stenotaphrum secundatum*	Scattered infestation throughout park
Black-eyed Susan	*Thunbergia alata*	Scattered infestation throughout park
Exotic shrubs, groundcovers and bulbous weeds		
Agapanthus	*Agapanthus* spp.	Isolated infestations restricted to certain areas of park
Butterfly bush	*Buddleja* sp.	Scattered infestation throughout park
Green cestrum	*Cestrum parqui*	Isolated infestations restricted to certain areas of park
Fishbone fern	*Nephrolepis cordifolia*	Scattered infestation throughout park
Ochna	*Ochna serrulata*	Scattered infestation throughout park
Cassia/ Winter senna	*Senna pendula* var. *glabrata*	Scattered infestation throughout park
Trad	*Tradescantia albiflora*	Scattered infestation throughout park
Exotic vines and scramblers		
Madeira vine	*Anredera cordifolia*	Scattered infestation throughout park but particularly thick in eastern and western sections
Balloon vine	*Cardiospermum grandiflorum*	Scattered infestation throughout park
Blue morning glory	*Ipomoea indica*	Scattered infestation throughout park particularly in eastern and western sections
Lantana	*Lantana camara*	Scattered infestation throughout park.
Japanese honeysuckle	*Lonicera japonica*	Scattered infestation throughout park
Ground asparagus	*Protasparagus aethiopicus*	Scattered infestation throughout park
Climbing asparagus	*Protasparagus plumosus*	Scattered infestation throughout park
Blackberry	*Rubus fruticosus* agg.	Present around bathing beach & eastern section.

At least four weeds of national significance have been identified in the park including lantana, blackberry, asparagus weeds and madeira vine (Weeds Australia 2012). African olive (*Olea europaea* subsp. *africana*) and European olive (*Olea europaea* subsp. *europa* vars.) are considered significant weeds in the Sydney basin (SWC 2009).

A management priority in the NPWS regional pest management strategy is to manage weed infestations in order to protect cultural and natural values. Some species within the park contribute to key threatening processes listed under the TSC Act that pose a significant threat to the conservation of biodiversity, cultural heritage, recreational and landscape values in the northern and eastern regions of Sydney (OEH 2012e). These include invasion, establishment and spread of African olive and lantana, and invasion of native plant communities by exotic perennial grasses and exotic vines and scramblers. Blackberry, identified within Parramatta Regional Park, is a target species in the cross-tenure *Sydney-wide Vines and Scramblers Management Plan* (SWC 2010). A biological control, Madeira vine beetle (*Plectonycha correntina*), has been released on a dense patch of Madeira vine at the eastern end of the park and its efficacy is being monitored by NPWS and the University of Wollongong.

Priority assets in the park at risk from weeds would potentially include the Swamp-oak Floodplain Forest endangered ecological community and the Sydney Turpentine–Ironbark Forest endangered ecological community if they are confirmed to exist in the park (see Section 3.2). The priority and control measures in the NPWS regional pest management strategy to manage weeds will depend on the viability of the remnants and the level of threat posed by the weeds.

A number of environmental weeds, including at least 12 noxious weeds under the *Noxious Weeds Act 1993* for Hunters Hill Local Government Area, also exist within the park. Class 3 noxious weeds, such as green cestrum, pose a serious threat to primary production or the environment and are not widely distributed in the area but are likely to spread. Class 4 noxious weeds such as pellitory, ochna, blackberry, lantana and privet, pose a threat to primary production, the environment or human health. They are widely distributed in the area and are likely to continue to spread. Under the Noxious Weeds Act, NPWS has the responsibility to manage and reduce the numbers of all noxious weed classes within the park, to inhibit their reproduction and spread.

NPWS liaises with local control authorities (local government representatives), the Department of Primary Industries, Greater Sydney Local Land Services and other land management agencies regarding the control of environmental and noxious weeds via the Regional Weeds Committee – Sydney North. A statewide assessment of biodiversity priorities for the management of widespread weeds has been completed on a catchment by catchment basis (DPI & OEH 2011). The priorities established by the *Biodiversity Priorities for Widespread Weeds* project are one of the sources used to inform the NPWS regional pest management strategy, which in turn will be used to define priorities for pest management in Parramatta River Regional Park. The park was not nominated as a site during the initial *Biodiversity Priorities for Widespread Weeds* process but it could be added and ranked and then included as a priority in the NPWS regional pest management strategy if threatened ecological communities are confirmed to be present and viable.

The well-established Bedlam Bay Bushcare Group regularly undertakes weeding and replanting activities within the park and complements weeding and revegetation works undertaken by NPWS.

Pathogens and diseases

Although no pathogens or plant diseases have been detected within the park, there is a likelihood that serious pathogens and diseases could exist, as they are present in other reserves in the Sydney basin. Myrtle rust is a plant disease caused by the exotic fungus *Uredo*

rangelii and was first detected in Australia in 2010. *Introduction and establishment of exotic rust fungi of the order Pucciniales pathogenic on plants of the family Myrtaceae* is listed as a key threatening process under the TSC Act. It is likely to spread rapidly to the extent of its biological range, as the spores are readily dispersed by wind. Eradication is not feasible. Myrtle rust affects many species in the family Myrtaceae including species in the *Eucalyptus*, *Angophora*, *Callistemon* and *Melaleuca* genera. The likely impacts of myrtle rust on biodiversity in Australia are not known, however it may contribute to the decline and extinction of species and may severely impact the structure and function of natural ecosystems. The *Management Plan for Myrtle Rust on National Parks* outlines how the disease will be managed on national park estate in NSW (OEH 2012e).

Phytophthora cinnamomi is a plant pathogen that is thought to have been introduced in Australia before 1900. It is present in reserves across the NPWS Metro North East Region. It is a microscopic soil-borne organism that causes root rot in a wide range of plant species. Infection often results in plant death. Spores can be dispersed by surface and subsurface water flows and by humans through the movement of contaminated soil, water or plant material. Infection of native plants by *Phytophthora cinnamomi* is listed as a key threatening process under both the TSC Act and EPBC Act, resulting in a statement of intent for New South Wales (DECC 2008) and a national threat abatement plan (Department of the Environment 2014). Only laboratory analysis of soil from the park can determine if the pathogen is present.

Issues

- The park is relatively small with long edges that encourage weed spread into the park.
- The park is located within the urban area close to weed sources from neighbouring properties.
- Historical use of the park and the wider hospital site has encouraged non-native plantings and modification of the natural soils to accommodate exotic plantings.
- The park is accessed by many users which may facilitate the spread of weeds and pathogens.

Desired outcomes

- The spread of new pest species is eliminated or prevented through timely detection and response.
- The impact of widespread weeds and pests on the park's natural and cultural values/assets is reduced through strategic control.
- Pest pathogens and diseases are identified and managed.
- Weed removal is sensitive to maintaining small bird habitat and cultural heritage.
- Pests, weeds and pathogens are managed in a strategic and collaborative way with adjoining land managers and the community.
- Users and neighbours of the park practise responsible pet ownership.

Management response

4.1.1 Manage pest species, pathogens and plant diseases in accordance with the NPWS regional pest management strategy.

4.1.2 Work cooperatively with local councils, land management authorities and neighbours to implement complementary weed control programs in adjacent bushland or in areas that are identified as park weed sources.

4.1.3 Maintain cultural plantings and prevent the spread of the plantings away from their culturally important sites. Prevent the invasion of cultural plantings by other plants, especially weeds.

4.1.4 Encourage volunteer bush regeneration programs within the park. Facilitate the coordination of activities where needed with surrounding park neighbours, Landcare and Bushcare groups and investigate volunteering opportunities for business and industry, corporate groups, schools and university students.

4.1.5 Reduce the incidence of garden refuse dumping within the park through signage, ranger patrols and liaison with adjoining landholders.

4.1.6 Remove weeds in a mosaic pattern ensuring dense cover is not removed over large areas in a single point in time.

4.1.7 Work with Hunters Hill Council to promote responsible pet ownership and consider installing appropriate signage within the park.

4.1.8 When cats are regularly observed within the park, liaise with park neighbours to inform them of the impacts of cats and to motivate them to control their cats.

4.2 Fire

The primary objectives of NPWS fire management are to protect life, property, community assets and cultural heritage from the adverse impacts of fire, while also managing fire regimes in parks to maintain and enhance biodiversity. NPWS also assists in developing fire management practices that contribute to conserving biodiversity and cultural heritage across the landscape, and implements cooperative and coordinated fire management arrangements with other fire authorities, neighbours and the community (OEH 2013c).

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 fire has been listed as a key threatening process under the TSC Act.

A fire management strategy exists for the park, which is periodically renewed in accordance with NPWS policy. The park lies within the Hunters Hill, Ryde, Lane Cove, Willoughby Bush Fire Management Committee area and is managed in accordance with the area's bush fire risk management plan (Hunters Hill, Ryde, Lane Cove, Willoughby Bush Fire Management Committee 2010). The park is also located within the Fire and Rescue NSW Zone West management area.

The fire history in what is now the park is not well documented, however it has not been subject to frequent fire. No fire events have been recorded in the park since its reservation as a regional park in 2001. One fire was verbally reported as starting in the eastern portion of the park more than 20 years ago.

Built assets subject to the effects of fire within the park are limited to seating and picnic facilities, the toilet block, the boat shed, jetty and waiting room, steel walkways, boat storage racks, the lookout, signage, historic walls and other historic structures related to the former Gladesville Hospital including the sewerage infrastructure. As these structures are located on the foreshore of the Parramatta River, their vulnerability to fire is mostly from arson. With the prolific presence of weed and exotic species, particularly large stands of giant bamboo near the boat storage racks, jetty and waiting room, boat shed and toilet block, any fire in the park could pose a risk to these structures.

Natural assets vulnerable to fire include remnant botanical plantings, potential habitat for threatened plants and animals, threatened ecological communities, and locally rare and significant species.

One of the known Aboriginal midden sites is less vulnerable to fire as it is located on the foreshore. The other known Aboriginal site (a midden in a shelter further upslope) is more vulnerable to the impacts of fire.

Extreme fire conditions within the park may pose a threat to the built assets of neighbouring landowners. Potentially vulnerable assets adjacent to the park include the historic former Gladesville Hospital site and its associated buildings and structures including the Figtree cottages on Campbell Drive, Banjo Paterson Cottage on the western boundary of the park and nearby residential dwellings, particularly those adjoining the park to the east.

Access to the park for fire fighting purposes is limited in the western portion of the park due to difficult topography and restricted access points off Punt Road. All categories of fire fighting appliances can enter the eastern portion of the park via the former Gladesville Hospital site where road access exists to the toilet facilities, boat shed, jetty, waiting room, boat storage racks and lookout. Limited access is available along the boundary of the former Gladesville Hospital site and the park due to an historic stone wall that varies in height.

The park has not been designated a fire hazard classification in the bush fire risk management plan. However, it has been assessed by NPWS as a Land Management Zone (LMZ) for fire management planning purposes according to the park's *Type 1 Reserve Fire Management Strategy*. The primary fire management objectives for the LMZ are to prevent the extinction of all native species that are known to occur naturally within the park and to protect culturally significant sites. The park has been designated as a LMZ because it does not contain significant on-park built assets that would be exposed to a high level of bushfire risk. The LMZ does not require intensive management and focuses on those actions appropriate to conserve biodiversity and cultural heritage including exclusion of fire from the park.

NPWS maintains cooperative arrangements with surrounding councils, landowners and Fire and Rescue NSW. Cooperative arrangements include fire planning, fuel management and information sharing.

Desired outcomes

- Negative impacts of fire on life, property and the environment are minimised.
- The potential for spread of bushfires within, from, or into the park is minimised.
- Fire regimes are appropriate for conservation of native plant and animal communities.

Management response

4.2.1 Implement a fire management strategy for Parramatta River Regional Park.

4.2.2 Develop and implement a program of hazard reduction works.

4.2.3 When planning mitigation measures for at risk areas within the park, consider increased bushfire threat over time due to the effects of climate change.

4.2.4 Continue to maintain cooperative arrangements with Fire and Rescue NSW Zone West and surrounding landowners in regard to fuel management and fire suppression.

4.2.5 Promote fire safety and fire protection procedures to park neighbours and visitors.

4.2.6 Ensure that any revegetation projects on park are designed in consideration of the need to protect infrastructure and assets from the risk of fire.

4.3 Climate change

Human-induced climate change has been listed as a key threatening process under the TSC Act and EPBC Act, and a statement of intent has been produced for New South Wales (State of NSW & DECC 2010). Climate change may significantly affect biodiversity by changing population size and distribution of species, modifying species composition and altering the geographical extent of habitats and ecosystems. 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 feral animals. Species most at risk are those unable to migrate or adapt, particularly those with small population sizes or with slow growth rates.

Programs to reduce the pressures arising from other threats, such as habitat fragmentation, invasive species, bushfires, pollution and urban expansion, will help reduce the severity of the effects of climate change.

If climate change results in wetter summers and warmer winters, it may lead to a greater virulence of *Phytophthora cinnamomi* and potential expansion of its current range (DECC 2007b). As discussed in Section 4.1, *Phytophthora cinnamomi* root rot fungus has the potential to have an adverse impact on biodiversity resulting in species decline. Monitoring to determine distribution and measures to prevent its spread need to be put in place, given the potential for climate change to exacerbate its impact (Suddaby & Lieu 2008).

Projections for sea level rise along the NSW coast are for a rise relative to 1990 mean sea levels of up to 40 centimetres by 2050 and 90 centimetres by 2100 (DECCW 2009). Sea level rise is a gradual process and will have medium to long-term impacts. It will impact on coastal land and foreshore land around estuaries, bays and harbours, increasing the tidal inundation of land and structures (DECCW 2010). Low-lying areas along Parramatta River Estuary and similar sites will be most at risk, especially threatened ecological communities such as saltmarsh and swamp-oak floodplain forests. Visitor and recreation sites and Aboriginal and historic heritage sites close to the water's edge in Bedlam Bay are at most risk.

Desired outcome

- The impacts of climate change on natural systems are understood, minimised and managed.
- The impacts of climate change on the public use of the park are minimised and managed.

Management Response

4.3.1 Continue existing fire, pest and weed management programs to increase the ability of native plants and animals to cope with future disturbances, including climate change.

4.3.2 Investigate the potential impact that climate change is likely to have on the distribution and virulence of the *Phytophthora cinnamomi* pathogen, and incorporate these into future operations and management programs.

4.3.3 Assess the likely impacts of sea level rise on the park's values and infrastructure using regional climate change projections and implement strategies to minimise impacts.

4.3.4 Manage visitor facilities and infrastructure in the park for the potential impact of climate change, especially those at risk from sea level rise near the Parramatta River foreshore.

5. Management operations and other uses

5.1 Management facilities and operations

Trail and facility improvements

In 2001–02, significant improvements were made to the park including construction of the Bedlam Bay interpretative walk. This was constructed from steel, sandstone and timber. The sea wall was also reconstructed and the toilet block renovated. Landscaping included the construction of stairs around the boat shed and sandstone flagging on the concrete slab between the toilet block and the oval that was the foundation of a former shed, since demolished. Eleven timber and stone seats were also installed at this time as was entry and directional signage, fixed and demountable bollards on the road to the boat shed, a viewing platform on the edge of the oval near the bathing beach and three vertical dinghy storage facilities (these replaced an earlier inadequate storage system) (Phillips Marler 2001).

Vehicle access and parking

There is no direct vehicle access to the park. Vehicle access is from Victoria Road and Punt Road (along Campbell Drive) across the former Gladesville Hospital site. The access route passes through several gates and is restricted to the opening hours of the former hospital site (currently 6 am to 7 pm for the gates off Victoria Road and near the Police Station and 6 am to 11 pm for the gate near Banjo Paterson Restaurant on Campbell Drive).

A letter from the then NSW Department of Health to NPWS dated 17 January 2001 (Stokes 2001) authorises limited vehicle access to the park through the former Gladesville Hospital site road network. The access is authorised only for NPWS service vehicles, vehicles transporting disabled visitors and boat owners requiring access for delivery of goods to their boats. At the time of writing this plan, access along Campbell Drive had been closed for an extended period to allow repair of the stone wall along Punt Road.

There are currently only three designated parking places within the park, adjacent to the toilet facilities. Visitors also park outside the park boundaries, along the narrow road abutting the edge of the oval. With the exception of a section of the road between the toilets and the boat shed, this road is owned by the NSW Ministry of Health. It is not an authorised parking zone. Parking is available in the Punt Road car park owned by the NSW Ministry of Health and licensed for use to Ryde City Council. The licence will expire upon completion of a masterplan for the NSW Ministry of Health site. There is no formal agreement between NPWS and local government for park visitors to use the car park.

Two sets of moveable bollards prevent cars from entering the oval and boat shed area. These bollards are located on the road between the oval, boat shed and toilet block. Access to the oval and boat shed is allowed only for maintenance purposes and for members of the Bedlam Bay Boat Club for delivery of supplies.

Services

Water, sewer and electricity services to the park are currently provided via the former hospital site to the toilet block, boat shed and jetty. All sewerage is pumped by the former hospital system to pipes along Victoria Road. There will be a need for a discussion of options with the NSW Ministry of Health during their masterplanning process for the former Gladesville Hospital site to ensure the continued provision of services to the park.

The current agreement with the Bedlam Bay Boat Club does not account for water and electricity consumption (See Section 5.2 for current use of the boat shed).

The jetty, waiting room, boat ramp and boat shed precinct

NPWS holds a licence (from the Roads and Maritime Services (RMS)) for use of the sea wall abutting the oval, the jetty, waiting room, boat ramp and one third of the boat shed that is built on piers below the high water mark. The other two thirds of the boat shed are located within the park.

In 2006, NPWS invested in replacement of the jetty and new pylons, the replacement of the roof of the waiting room and repairs to the sea wall near the jetty. Despite these works, the boat shed and the waiting room are dilapidated.

A maintenance inspection conducted in January 2013 found that *the quality of maintenance is poor and age related deterioration is plainly evident in the buildings* (Tyrells 2013). Stabilisation works will be necessary to upgrade the condition of these buildings to a point where planned maintenance can be implemented.

Boundaries

The park is bounded to the north, north-east and north-west by NSW Ministry of Health land. While there is a boundary wall separating the two tenures to the north-west, there are no physical boundaries or boundary delineation to the north or north-east to prevent park visitors from accessing NSW Ministry of Health land. Definition of boundaries is also important to allow delineation of maintenance responsibilities between NPWS and the NSW Ministry of Health.

In the western part of the park, the stone wall between the park and the former hospital has been maintained by OEH in the past. The face of the wall on the park side appears to form the boundary (NPWS 1997).

Issues

Vehicle access and parking

- In accordance with a 2001 letter of agreement between NPWS and the NSW Ministry of Health, there is no vehicle access to the park for the general public, with the exception of resupply of boats by boat owners and disabled access. The access agreement between NPWS and the NSW Ministry of Health needs to be formalised.

Services

- Options for continued provision of electricity, water and sewerage services to the park need to be discussed with the NSW Ministry of Health.

Licence arrangement with RMS for use of part of the boat shed, jetty, waiting room and boat ramp area

- Some clauses in the existing licence are inappropriate for a regional park as they are based on terms relating to private residential use and do not facilitate consent for sub-licensing, adaptive re-use of the shed or public use of the wharf and boat launching facilities.
- The future use of the boat shed and its structural integrity are undetermined at the time of writing this plan. Adaptive re-use may be possible to facilitate a variety of recreation or other pursuits, provided it is structurally sound and proposals meet heritage requirements and the requirements of the NPW Act. Refer to earlier parts of Section 5 for more detailed discussion about this issue.

Management/maintenance of the jetty, waiting room, boat ramp and boat shed

- The boat shed and waiting room are in a dilapidated condition. According to a dilapidation report (PCBI 2000) …. *there are extensive areas* [of the boat shed] *which*

require attention and upgrading for safety. In particular, it was recommended that the electrical wiring be upgraded, fire safety measures be implemented and that an 'investigative' inspection be carried out (PBCI 2000). These actions are yet to be implemented.

- Repairs to date have not respected the original structure of the boat shed (Tanner & Associates 2001).
- The archaeological and cultural landscape management plan (Context Landscape Design et al. 2001) recommends that reconstruction or partial reconstruction in accordance with the1898 boat shed design is acceptable.
- In accordance with clause 43 of the licence agreement with the RMS, OEH may be required to reconstruct structures in disrepair …*in accordance with full and proper plans and specifications which shall have received the written approval (of the RMS) prior to the commencement of any work*.

Boundaries

- Delineation of boundaries between NPWS and NSW Ministry of Health land is required to inform visitors about the physical relationship between the two tenures and to ensure that they remain within the park. Boundary delineation also will assist demarcation of maintenance responsibilities.

Desired outcomes

- The principles of ecologically sustainable development guide management operations.
- Management agreements within the park for vehicle access and services adequately serve park management requirements.
- A new licence agreement is made with the RMS for the boat shed, jetty, waiting room and boat ramp area that meets the requirements of a regional park and adaptive re-use.
- The boat shed is restored and associated structures (jetty and waiting room) are maintained to satisfy the terms of a licence agreement with RMS.
- The boundaries between NPWS and NSW Ministry of Health lands are surveyed and delineated. Liaise with NSW Ministry of Health ensures that boundary delineation is appropriate and sympathetic to the nature of both parties' lands and management requirements.

Management response

Vehicle access and parking

5.1.1 Liaise with the NSW Ministry of Health to formalise the 2001 access agreement for NPWS park management purposes.

Services

5.1.2 Discuss options for continued provision of services with the NSW Ministry of Health during their masterplanning process for the former Gladesville Hospital site to ensure continued access for the park to sewer, water and electricity services in the long term.

Licence arrangement with RMS for use of part of the boat shed, jetty, waiting room and boat ramp

5.1.3 Negotiate a new licence with RMS to reflect uses associated with a regional park including consent for sub-licensing and adaptive re-use of the boat shed and public use of the jetty, waiting room and boat ramp.

Management/maintenance of the jetty, waiting room, boat ramp and boat shed

5.1.4 Prepare a building inspection and risk assessment for the boat shed and waiting room that determines what works are required so that the buildings are safe and comply with the Building Code of Australia, statutory requirements and the terms of the licence agreement with RMS.

5.1.5 As funding allows, undertake works to the boat shed that are sympathetic to its heritage values.

5.1.6 Monitor the wharf, boat shed, waiting room and boat ramp and associated facilities for safety and integrity and seek funding to maintain in accordance with best practice.

5.1.7 Formalise the future use of the boat shed and waiting room.

Boundaries

5.1.8 Establish boundary markings in the eastern part of the park and resolve boundary definition and associated maintenance responsibilities in the western part of the park.

5.2 Non-NPWS uses/operations

Existing non-NPWS infrastructure

There are no records of non-NPWS infrastructure within the park registered on the certificate of title, and the extent and location of such infrastructure is unknown. There are no formal leases, licences or easements over the park for non-NPWS infrastructure at the time of writing this plan. It is most likely that any non-NPWS related infrastructure relates to former or existing sewerage and drainage infrastructure of the former hospital. Several pipes including a large diameter pipe outlet near the boat shed and smaller pipes at the two beaches have been constructed within the park and drain to the Parramatta River (refer to Section 3.1). The actual source of the water for the various pipes is yet to be determined.

Lease of the park to a future land manager

Provisions in the NPW Act permit leasing within a park and establishment of a trust for management of a regional park or parts of a regional park.

NPWS is willing to enter into a lease agreement with any interested parties for elements of the park or a trust arrangement for management of the park or parts of the park. Any lease agreement or trust arrangement will require that the lessee manage these elements in accordance with this plan of management and the NPW Act and its Regulations.

Sub-licensing the boat shed and dinghy storage area

The Bedlam Bay Boat Club has occupied the boat shed for many years under a short-term consent agreement issued by NPWS under the NPW (Land Management) Regulation 1995 whereby a fee to occupy the premises is paid regularly. The terms of the licence include their obligation to provide safe, all-hours access to the wharf for the general public, care of the boat shed and hold appropriate public liability insurance.

Members of the boat club store their dinghies in the storage racks located on park, adjacent to the boat ramp. The boat club does not pay for use of the dinghy racks. There are currently more dinghies in the park than the storage racks can accommodate.

Issues

- Future development implications of the former Gladesville Hospital site are presently unknown and may have an impact on future operation of the park.

- The existing license with RMS, in relation to the boat shed, does not address sub-licensing opportunities (see *Issues* in Section 5.1).
- Dinghy storage may pose safety issues for park users and liability issues for NPWS. Improvement to the management of dinghy and vessel storage is required.

Desired outcomes

- If appropriate, elements of the park are leased to an appropriate land manager, or a trust is established to manage the park or parts of the park, and management is in accordance with this plan and the NPW Act and Regulations.
- Sub-licensing arrangements for the boat shed conform to RMS requirements and the NPW Act and use of the dinghy storage racks is formalised with appropriate formal agreements with each boat owner.

Management response

5.2.1 Undertake negotiations with any interested parties to enter into a lease agreement for the operation of parts of the park or a trust arrangement for the park or parts of the park. Any lease agreement or trust arrangement will require that the park is managed in accordance with this plan of management, the NPW Act and Regulations and NPWS/OEH policies.

5.2.2 Risk assess the storage of dinghies, carry out works to ensure compliance with safety and liability and formalise appropriate agreements with boat owners.

6. Implementation

This plan of management establishes a scheme of operations for Parramatta River Regional Park. Implementation of this plan will be undertaken within the annual programs of the NPWS Metro North East Region and other relevant OEH sections.

Identified activities for implementation are listed in Table 4. Relative priorities are allocated against each activity as follows:

- **High** priority activities are imperative to achieve the objectives and desired outcomes of this plan. They must be undertaken in the near future to avoid significant deterioration in natural, cultural or management resources.
- **Medium** priority activities are those that are necessary to achieve the objectives and desired outcomes but are not urgent.
- **Low** priority activities are desirable to achieve management objectives and desired outcomes but can wait until resources become available.
- **Ongoing** is for activities that are undertaken on an annual basis or statements of management intent that will direct the management response if an issue arises.

This plan of management does not have a specific term and will stay in force until amended or replaced in accordance with the NPW Act.

Table 4. Summary of management responses

Management response	Priority
3.1 Geology, landscape and hydrology	
3.1.1 Prepare an acid sulfate soils management plan for all major works on the oval in accordance with the NSW Acid Sulfate Soils Manual.	Ongoing
3.1.2 Assess the park for risks relating to the land stability and presence of contaminants, and implement recommendations as required.	High
3.1.3 Contribute to any multi-agency initiatives to improve the water quality and health of Sydney Harbour and its catchment.	Medium
3.2 Vegetation communities and native plants	
3.2.1 Confirm the presence and location of threatened species and ecological communities in the park.	High
3.2.2 Identify all plantings within the park that have historic and or cultural significance.	Medium
3.2.3 Implement relevant recovery actions and strategies for any threatened species and ecological communities present in the park.	Ongoing
3.2.4 Continue to support opportunities to research vegetation and monitor biodiversity in partnership with educational institutions.	Ongoing
3.2.5 Manage visitor impacts on bushland and regenerating areas.	Ongoing
3.2.6 Support and promote restoration of degraded areas by local Bushcare groups.	Ongoing
3.2.7 Support any multi-agency initiatives such as the River to River Corridors Project to improve the condition and corridor values of the park's vegetation.	Ongoing
3.3 Native animals	
3.3.1 Implement relevant strategies in the PAS, recovery plans and best practice guidelines for any threatened species recorded in the park.	Ongoing

Management response	Priority
3.3.2 Protect habitats of all native animals, including threatened or regionally significant species from visitor impacts, effects of introduced species or aggressive native species, inappropriate fire and weed removal regimes and other adverse impacts.	Ongoing
3.3.3 Contribute to any multi-agency initiatives to improve habitat corridor linkages within and immediately surrounding the park, including the River to River Corridors Project.	Ongoing
3.3.4 Improve the small bird habitat movement corridor along the foreshore edge to the oval with appropriate plantings that do not impact upon viewscapes to and from the water.	Ongoing
3.3.5 Investigate undertaking a baseline fauna survey that targets all taxa.	Low
3.3.6 Work collaboratively with neighbouring councils to promote responsible pet ownership and management through signage and education programs.	Low
3.3.7 Support opportunities for research and monitoring of native animals in partnership with educational institutions.	Ongoing
3.4 Aboriginal heritage	
3.4.1 Conserve and manage Aboriginal sites in the park in consultation with the Metropolitan LALC and other relevant Aboriginal community organisations and individuals.	Ongoing
3.4.2 Support research into the Aboriginal heritage values of the park with the involvement of the Metropolitan LALC and other interested Aboriginal community organisations and individuals.	Ongoing
3.4.3 Involve the Metropolitan LALC and other interested Aboriginal community organisations and individuals in any development of material and programs for interpretation of Aboriginal culture.	Ongoing
3.4.4 Close the informal walking track that passes on top of the open midden site to prevent further damage.	High
3.5 Historic heritage	
3.5.1 Seek State Heritage Register listing of those park elements identified in the archaeological and cultural landscape management plan as being of state heritage significance, including remains associated with the Great North Road and the cultural landscape of the park.	Medium
3.5.2 Ensure that any development within the park is sympathetic to preserving the historic cultural landscape including views to and from the former Hospital. Manage vegetation along the oval foreshore (planted as a habitat linkage for small birds) so it remains low to maintain heritage vistas.	Ongoing
3.5.3 Assess remnant plantings within the park for heritage significance and determine a strategic approach for management that takes into account impacts on native plants and animals, and heritage structures, views and vistas.	Medium
3.5.4 Prepare a cyclical maintenance schedule for built heritage items within the park.	High
3.5.5 Manage cultural heritage values in accordance with the cultural landscape plan.	Ongoing
3.5.6 In consultation with RMS, survey the boundary of the park in the vicinity of the former punt house location to determine which areas are within the park boundary and determine conservation and interpretation requirements.	Medium
3.5.7 Ensure that the park's historic elements are appropriately recorded.	High

Management response	Priority
3.6 Visitor use, information and education	
3.6.1 Work with interested parties to manage and improve recreational facility provision within the oval precinct.	Ongoing
3.6.2 Participate as a stakeholder on any collaborative projects that traverse the park as a part of broader Sydney-wide walking networks including the *Sydney Harbour and Coastal Walking Network.*	Ongoing
3.6.3 Continue to support community involvement in the park, particularly involvement in bush regeneration programs, guided walks, educational activities and catchment management programs.	Ongoing
3.6.4 Increase interpretation opportunities through the *Discovery* program.	Ongoing
3.6.5 Review and improve information signage where appropriate to inform users of permitted activities within the park, natural and community values and local and regional walking trail networks.	Medium
3.6.6 Continue to permit on-leash dog walking throughout the park as per regional park provisions.	Ongoing
3.6.7 Update information regarding Parramatta River Regional Park - Bedlam Bay on the NPWS website including the park's historic and landscape values.	Medium
3.6.8 When undertaking environmental assessments of proposed developments, take into particular account environmental impacts to the habitat corridor through the park and include appropriate consultation to investigate potential social impacts.	Ongoing
3.6.9 Engage in ongoing discussions with the NSW Ministry of Health over future use of the NSW Ministry of Health site and implications for park management.	High
4.1 Pests and pathogens	
4.1.1 Manage pest species, pathogens and plant diseases in accordance with the NPWS regional pest management strategy.	Ongoing
4.1.2 Work cooperatively with local councils, land management authorities and neighbours to implement complementary weed control programs in adjacent bushland or in areas that are identified as park weed sources.	Ongoing
4.1.3 Maintain cultural plantings and prevent the spread of the plantings away from their culturally important sites. Prevent the invasion of cultural plantings by other plants, especially weeds.	Ongoing
4.1.4 Encourage volunteer bush regeneration programs within the park. Facilitate the coordination of activities where needed with surrounding park neighbours, Landcare and Bushcare groups and investigate volunteering opportunities for business and industry, corporate groups, schools and university students.	Ongoing
4.1.5 Reduce the incidence of garden refuse dumping within the park through signage, ranger patrols and liaison with adjoining landholders.	Ongoing
4.1.6 Remove weeds in a mosaic pattern ensuring dense cover is not removed over large areas in a single point in time.	Ongoing
4.1.7 Work with Hunters Hill Council to promote responsible pet ownership and consider installing appropriate signage within the park.	Ongoing
4.1.8 When cats are regularly observed within the park, liaise with park neighbours to inform them of the impacts of cats and to motivate them to control their cats.	Ongoing
4.2 Fire	
4.2.1 Implement a fire management strategy for Parramatta River Regional Park.	High

Management response	Priority
4.2.2 Develop and implement a program of hazard reduction works.	Medium
4.2.3 When planning mitigation measures for at risk areas within the park, consider increased bushfire threat over time due to the effects of climate change.	Ongoing
4.2.4 Continue to maintain cooperative arrangements with Fire and Rescue NSW Zone West and surrounding landowners in regard to fuel management and fire suppression.	Ongoing
4.2.5 Promote fire safety and fire protection procedures to park neighbours and visitors.	Ongoing
4.2.6 Ensure that any revegetation projects on park are designed in consideration of the need to protect infrastructure and assets from the risk of fire.	Ongoing
4.3 Climate change	
4.3.1 Continue existing fire, pest and weed management programs to increase the ability of native plants and animals to cope with future disturbances, including climate change.	Ongoing
4.3.2 Investigate the potential impact that climate change is likely to have on the distribution and virulence of the *Phytophthora cinnamomi* pathogen, and incorporate these into future operations and management programs.	Medium
4.3.3 Assess the likely impacts of sea level rise on the park's values and infrastructure using regional climate change projections and implement strategies to minimise impacts.	Medium
4.3.4 Manage visitor facilities and infrastructure in the park for the potential impact of climate change, especially those at risk from sea level rise near the Parramatta River foreshore.	Medium
5.1 Management facilities and operations	
5.1.1 Liaise with the NSW Ministry of Health to formalise the 2001 access agreement for NPWS park management purposes.	High
5.1.2 Discuss options for continued provision of services with the NSW Ministry of Health during their masterplanning process for the former Gladesville Hospital site to ensure continued access for the park to sewer, water and electricity services in the long term.	High
5.1.3 Negotiate a new licence with RMS to reflect uses associated with a regional park including consent for sub-licensing and adaptive re-use of the boat shed and public use of the jetty, waiting room and boat ramp.	High
5.1.4 Prepare a building inspection and risk assessment for the boat shed and waiting room that determines what works are required so that the buildings are safe and comply with the Building Code of Australia, statutory requirements and the terms of the licence agreement with RMS.	High
5.1.5 As funding allows, undertake works to the boat shed that are sympathetic to its heritage values.	Medium
5.1.6 Monitor the wharf, boat shed, waiting room and boat ramp and associated facilities for safety and integrity and seek funding to maintain in accordance with best practice.	Ongoing
5.1.7 Formalise the future use of the boat shed and waiting room.	High
5.1.8 Establish boundary markings in the eastern part of the park and resolve boundary definition and associated maintenance responsibilities in the western part of the park.	High

Management response	Priority
5.2 Non-NPWS uses/operations	
5.2.1 Undertake negotiations with any interested parties to enter into a lease agreement for the operation of parts of the park or a trust arrangement for the park or parts of the park. Any lease agreement or trust arrangement will require that the park is managed in accordance with this plan of management, the NPW Act and Regulations and NPWS/OEH policies.	High
5.2.2 Risk assess the storage of dinghies, carry out works to ensure compliance with safety and liability and formalise appropriate agreements with boat owners.	High

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