



SydneyOlympicPark

State of Environment Report 2006–07

Sydney Olympic Park Authority



Letter to the Minister

April 2008

The Hon. Frank Sartor MP

Minister for Planning
Minister for the Arts and
Minister for Redfern/Waterloo
Level 34, Governor Macquarie Tower
1 Farrer Place
SYDNEY NSW 2000

Dear Minister

We have great pleasure in presenting the annual State of Environment Report on Sydney Olympic Park for the year to 30 June 2007.

The report has been prepared in accordance with the provisions of Section 50 of the *Sydney Olympic Park Authority Act 2001*. The report addresses the state of the environment in Sydney Olympic Park and in doing so gives particular attention to a number of specified environmental sectors, as well as relevant management plans; special projects; and the environmental impacts of operations and activities at Sydney Olympic Park.

Yours sincerely



Michael Knight, AO

Chairman

Sydney Olympic Park Authority



Alan Marsh

Chief Executive Officer

Sydney Olympic Park Authority

Executive Summary

As visitation to Sydney Olympic Park continues to rise each year there is the potential for increased environmental impact. Visitation, in addition to a modest day population of workers, reached 8.2 million people in 2006–07 including over 1.8 million visiting the Parklands. The main growth area in the future is expected to be associated with the gradual growth in commercial and residential development within and adjoining the precinct.

Sydney Olympic Park Authority (the Authority) is well aware of these risks and is operating and developing the precinct under terms consistent with the principles of ecologically sustainable development. This applies equally to Sydney Olympic Park's established role as Australia's premier major events precinct and world class regional parklands, and to its emerging additional role as a modern new township in metropolitan Sydney.

Sydney Olympic Park Authority's environmental performance is consistent with the three goals of the *Environment for Living* area of activity within the NSW Government's *State Plan: A New Direction for NSW*.

In the reporting period, the following highlight the key achievements of environmental performance:

- There were no statutory environmental non compliances by Sydney Olympic Park Authority nor environmental incidents within the Authority's control that caused any significant harm to the environment.
- The integrity of the remediated land waste containment systems and liquid waste collection and treatment processes was maintained.
- The biological diversity of the remnant and constructed landscapes of Sydney Olympic Park continued to be protected and enhanced through sustainable practices applied to visitation, operational management and development activities.
- The *Sydney Olympic Park Draft Master Plan 2030* was progressed, and will ultimately provide the blueprint for the ecologically sustainable development of the Sydney Olympic Park township.
- Energy conservation initiatives resulted in a reduction of the amount of electricity used by the Authority for standard operations, street lighting and facilities.
- The proportion of total waste material that was recycled and hence not taken to landfill increased substantially.
- Water conservation initiatives resulted in less total water consumption and less potable water consumption.
- Almost 20,000 people engaged with the place through education and volunteer-based environmental programs.
- Vegetation and landscape management plans were prepared for 11 precincts identified as having significant environmental values or threatened species habitats.
- The water bird refuge tidal gate was completed to improve the water quality of the 25-hectare saltwater wetlands in Badu Mangroves and strengthen ecological diversity, particularly for migratory birds protected by Commonwealth laws and international treaties.

Contents

Letter to the Minister.....	IFC
Executive Summary.....	1
Introduction.....	3

Environmental Sustainability	4
---	----------

Environmental Performance.....	8
---------------------------------------	----------

1 Biodiversity	10
Species and Ecosystems.....	11
Brickpit Weed Management and Habitat Replacement	12
Waterbird Refuge Tidal Management	16

2 Resource Conservation.....	18
Water	19
Energy and Transport	21
Public Transport Improvements for Sydney Olympic Park.....	23
Sustainable Materials	26
Parklands and Open Spaces	27
Blaxland Riverside Park.....	28
Aboriginal Heritage	30
Parklands Visitor Experience.....	30

3 Site Impacts	32
Air, Noise, Light and Water Quality	33
Remediation.....	34
Waste Management.....	35
Environmental Compliance.....	36

4 Involving people.....	38
Raising Environmental Awareness.....	39
Parklands Foundation at Sydney Olympic Park.....	41
Education	42

5 2005–07 Parklands Plan of Management Compliance Report.....	44
--	-----------

Accessing Sydney Olympic Park Authority.....	IBC
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Introduction

Sydney Olympic Park Authority was established by the *Sydney Olympic Park Authority Act* on 1 July 2001. The Authority is the NSW Government agency responsible for the care, control, management and development of Sydney Olympic Park.

In the environmental context, the Authority's charter includes the requirement that:

1. any new development accords with best practice environmental standards, and
2. the protection and enhancement of the natural heritage of the parklands.

Notwithstanding these obligations, parts of Sydney Olympic Park are also subject to a range of other legislative provisions, statutory plans and licences, and international treaties which guide or limit the Authority's activities.

Under the *Sydney Olympic Park Authority Act 2001*, the Authority is required to produce an annual report on the state of the environment in Sydney Olympic Park and in that report address matters associated with: the land, air, water, biodiversity, waste, noise, and the Park's Aboriginal and non-Aboriginal heritage; and give particular attention to relevant management plans, special projects, and the environmental impacts of operations and activities at Sydney Olympic Park.

The 2006–07 State of Environment Report has been prepared to present four key environmental performance areas as follows:

- **Biodiversity**
- **Resource Conservation**
- **Site Impacts**
- **Involving People.**

The report also includes the annual *Parklands Plan of Management Compliance Report* for the period 2005 to 2007.





Environmental Sustainability

Sydney Olympic Park Authority strives to balance economic, environmental and social factors in a way that will support maximum biodiversity, conserve resources and protect the environment, now and into the future.





Sustainability

Making It Happen

The Framework

The achievement of sustainable outcomes at Sydney Olympic Park is underpinned by legislative requirements that place a high value on the Authority's commitment to the principles of ecologically sustainable development, and the Authority's corporate environmental policies, plans and strategies.



Environmental Guidelines

Developed in 1993, the *Environmental Guidelines for the Summer Olympic Games* were an integral part of Sydney's successful bid to host the Sydney 2000 Olympic Games and have formed the basis of all environmental programs conducted by the Authority.

The Authority has updated these Environmental Guidelines and expects to release them in 2008 as new *Environmental Guidelines for Sydney Olympic Park*.

Sustainability Policy and Strategy

The new Environmental Guidelines outline the broad sustainability principles for the organisation and build more specific objectives, actions and performance outcomes.

Sydney Olympic Park Draft Master Plan 2030

The *Sydney Olympic Park Draft Master Plan 2030* (Master Plan 2030), when finalised, will present a vision for the sustainable development of Sydney Olympic Park. It will complement the NSW Government's *Metropolitan Strategy* for Sydney released in 2005 and will be consistent with the aims and objectives of *Sydney Regional Environmental Plan No. 24 Homebush Bay Area*.

Master Plan 2030 will establish guidelines and controls for the future development of Sydney Olympic Park. Master Plan 2030 will build on Sydney Olympic Park's uniqueness as an outstanding sports, entertainment and recreation precinct, and provide for a variety of land uses and facilities including commercial, residential, retail, education, community, venues and mixed use.

A detailed Infrastructure Contributions Plan is being prepared in conjunction with Master Plan 2030. It will identify funding sources for the new infrastructure required to support the population permitted under Master Plan 2030.

Master Plan 2030 is being supported by extensive research and analysis of traffic and noise management, social planning requirements, engineering, environmental management, equitable access and the interface of major-event operations with the day-to-day workings of the emerging township.

Social Sustainability

Connecting Sydney Olympic Park to its surrounding local communities is key to ensuring the successful evolution of the Park into a future township. Sydney Olympic Park Authority has a strong commitment to social sustainability and will prepare a community facility strategy to guide development of the future township.

Sustainability Focus

The Sydney 2000 Olympic Games set a benchmark for innovative environmental design. Sustainability continues to be at the forefront of all decision making affecting building design and construction at Sydney Olympic Park. Environmental sustainability will be integrated into the town's development by:

- ensuring that the town is nationally and internationally recognised for excellence and innovation in urban design, building design and sustainability
- requiring that all development embodies a best practice approach to environmental sustainability principles
- satisfying the Authority's *Environmental Guidelines for Sydney Olympic Park*, including:
 - minimising both the resources used and the production of waste and toxic materials
 - promoting biological diversity
 - maximising renewable energy used and efficient energy practices
 - maximising sustainable resources and materials used
 - designing for flexibility over time
 - using construction methods and operational management processes with the least possible environmental impact
 - promoting public transport, walking and cycling for both commuters and leisure visitors

- maintaining and extending the existing stormwater system that recycles water, promotes infiltration to sub soil, filters pollutants and sediments, and minimises loads on adjoining waterways
- maintaining the system of leachate drains associated with remediated lands.

Other specific initiatives include:

- engaging an ecologically sustainable design consultant as a core member of a project team preparing a development application under the Master Plan 2030
- prioritising sustainable materials selection as follows:
 - all Australian hardwood timber must be from certified sustainably managed plantation sources
 - all fibreboard must be low-emission medium density
 - fibreboard chlorine-based products (including PVC) must be minimised
 - copper chromium arsenic treated timber or imported native rainforest timber must not be used in any application (including formwork)
- requiring all residential development to comply with the Building Sustainability Index (BASIX)
- requiring office buildings to achieve a 5 Star plus Green Building Council Australia Rating and 4.5 Star Australian Building Greenhouse Rating
- requiring other non-residential buildings (eg healthcare and educational facilities and public building design) to achieve a 4 Star plus Green Building Council Australia Rating.



Connecting Sydney Olympic Park to its surrounding local communities is key to ensuring the successful evolution of the Park into a future township.

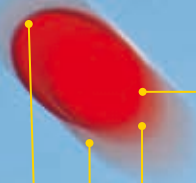


Environmental Performance



Sydney Olympic Park Authority's corporate framework for environmental management provides practical guidance to its managers and other users in applying an evidence-based approach to sustainability in all activities at Sydney Olympic Park. The following summary of activities progressed in 2006–07 covers the four key environmental performance areas of the Authority's Sustainability Strategy: Biodiversity, Resource Conservation, Site Impacts and Involving People.





• **Biodiversity**

• **Resource Conservation**

• **Site Impacts**

• **Involving People**



Biodiversity

Sydney Olympic Park has a rich biodiversity that includes three endangered ecological communities, over 180 native bird species and seven frog species, including one endangered species.



Species and Ecosystems

Sustainable Outcomes

The biological diversity of the remnant and constructed landscapes of Sydney Olympic Park is protected and enhanced through sustainable practices applied to visitation, operational management and development activities. The Parklands are recognised and appreciated as a place that contains high species diversity and abundance including species of local, regional, national and international conservation significance.

Biodiversity and Conservation Management

Sydney Olympic Park has a rich biodiversity that includes:

- three endangered ecological communities
- over 400 native plant species
- over 180 native bird species
- seven frog species, including one endangered species
- 10 bat species
- 10 reptile species
- many fish species
- many thousands of invertebrate species.

This high species richness in the geographic centre of a large and modern city contributes to the Park's high ecological, aesthetic and educational values.

Many of the species and ecological communities dependent upon the Park's habitats were once widespread in Sydney but are now uncommon in urban areas. Nearly half (300 hectares) of the Park provides habitat for threatened species, marine vegetation and endangered ecological communities that are protected under State or Commonwealth legislation.

The Authority applies an ongoing program of active management to conserve and enhance biodiversity generally, with particular reference to priority species and communities that are of special conservation significance.

Management activities undertaken in 2006–07 for each of these priority species and communities are as follows:

Sydney Turpentine Ironbark Forest

The area of this endangered ecological community was expanded in 2006–07 through promotion of natural regeneration in the Newington Nature Reserve buffer zone.

The condition of the community was maintained through an ongoing program of weed control, which has been successfully implemented over several years.

As a result, the scope of weed control in 2006–07 was much reduced in many respects compared to that of past years. Plans are underway to create a demonstration garden from seed collected from this community over 2006–07.

Green and Golden Bell Frog

Habitat of the endangered Green and Golden Bell Frog was managed in 2006–07 through:

- ongoing weed control and habitat replacement programs (see case study on page 12)
- continuation of a cyclic pond draining program in Narawang Wetland to control the introduced predatory fish *Gambusia holbrooki*
- maintenance of water levels in constructed ponds throughout the summer frog activity season
- incorporating best practice techniques into Parklands development, including the construction of new frog habitat ponds and associated grassy habitat at Blaxland Riverside Park.

The results of the 2006–07 Green and Golden Bell Frog monitoring program indicate that the overall population at the Park remains stable, and that the Brickpit continues to be the best performing area of primary habitat. In contrast, recruitment in the other primary habitat areas (Kronos Hill, Wentworth Common and Narawang Wetland) appeared to be relatively low in 2006–07 compared to previous years.

This could affect the stability of the overall Green and Golden Bell Frog population in the long-term and will be investigated further during the 2007–08 monitoring program.

CASE STUDY

Brickpit Weed Management and Habitat Replacement

A long-term program for the removal and replacement of the dominant weeds within the Brickpit was commenced in early 2007. The program plans for the staged removal of large stands of Pampas Grass, *Juncus acutus* and Lantana, while at the same time creating replacement habitat by installing suitable native plants. The program promotes an adaptive approach with commencement of each stage following an assessment of the success of previous stages, particularly with regard to the development of replacement plantings into viable fauna habitat.

The Brickpit is core primary habitat for the endangered Green and Golden Bell Frog and also provides important habitat for birds, bats, reptiles and other frog species. Brickpit habitats have largely developed naturally since quarrying ceased in 1992, and are supplemented by constructed ponds and planted grasslands that were installed to replace habitat lost due to

the creation of a stormwater reservoir and construction of the Brickpit Ring Walk.

The dominant vegetation within the Brickpit comprises noxious and environmental weeds, particularly Pampas Grass, *Juncus acutus* and Lantana. Although they are weeds, Pampas Grass and *Juncus acutus* provide ideal habitat for the Green and Golden Bell Frog and various other species, while large stands of Lantana similarly provide habitat for many small bird species.

Stage 1 of the long-term program commenced in February 2007, when Pampas Grass and *Juncus acutus* were removed from all management units of the Brickpit except units in which they provide a large amount of habitat. In these management units, a percentage of the plants were removed.

All treated plants were left on site, away from water bodies and drainage lines, to assist in the establishment

of replacement plantings by providing a mulch layer to retain moisture within the soil and add organic matter to it, as well as to retain habitat for frogs and other ground-dwelling fauna.

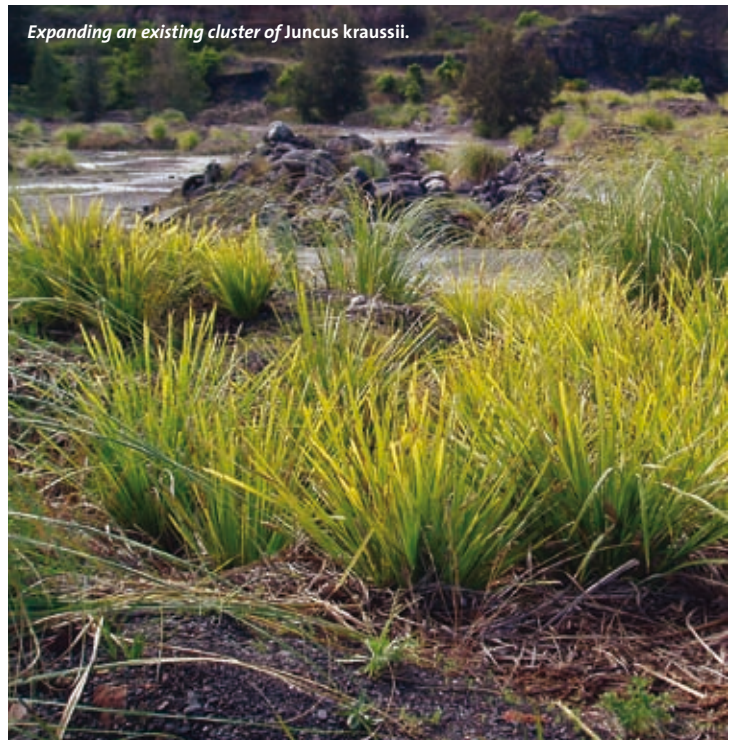
5,100 plants comprising various native species were installed to provide similar habitat to that removed. Terrestrial plants were installed in autumn/ winter 2007 to allow time for establishment before the harsh conditions of summer. *Juncus acutus* replacement planting took place after rain while ponds were full. Plants were generally installed in same-species clusters or added to existing clusters to expand the area of coverage.

Based on the success of previous plantings within the Brickpit, plants installed during 2007 are likely to provide similar habitat to that removed within two to three years, and survival rates are expected to be approximately 80–85 per cent.

Pampas Grass material used as mulch to assist in establishment of plantings.



Expanding an existing cluster of *Juncus kraussii*.



Coastal Saltmarsh and *Wilsonia backhousei*

Management activities undertaken during 2006–07 in relation to this endangered ecological community and threatened species were ongoing programs of mangrove seedling and *Juncus acutus* removal, both of which encroach on and displace saltmarsh species. Monitoring indicates that this has resulted in improved saltmarsh condition and extent. Tidal flows in Newington Nature Reserve were mechanically adjusted to maintain a balance between saltmarsh and mudflat habitats, and altered tidal flows in the Waterbird Refuge are resulting in the expansion of saltmarsh species including *Wilsonia backhousei*.

Mangrove Forest

Mangrove forest dominated by the Grey Mangrove covers an area of approximately 60 hectares at Sydney Olympic Park and is expanding in many areas. This necessitated the removal of mangrove seedlings from some saltmarsh areas in 2006–07 and the installation and maintenance of weirs and litter booms to minimise spread of mangrove propagules. River Mangroves previously propagated and planted within the Fishway at Bicentennial Park continued to do well during 2006–07 and additional propagation and planting is planned to expand the distribution of this species in other parts of the Park.

Swamp Oak Floodplain Forest

The area and condition of Swamp Oak Floodplain Forest at Sydney Olympic Park was confirmed during 2006–07 in consultation with an estuarine vegetation specialist, and the condition of this endangered ecological community was managed through an ongoing program of weed control.

Latham's Snipe

Annual survey results for the migratory Latham's Snipe indicated that around 10 individuals were present in the Parklands in 2006–07. This is similar to the results of recent years, but much less than the 60–100 individuals that were regularly present during the 1990s (prior to site remediation) in what is now Narawang Wetland. Infill planting of grasses and sedges was undertaken in some parts of the wetland during 2006–07 and it is expected that this, along with natural regeneration that is taking place in other parts of the wetland, will, over time, increase the area and quality of habitat for this species.

White-fronted Chat

The White-fronted Chat population at Sydney Olympic Park is one of only two remaining in the Sydney region. Annual survey results in autumn 2007 indicated that only 11 individuals remain within the Park. This is a significant reduction from the 1996 population of 60–100 individuals, and the population may not be recoverable from its current low size. Reasons for its decline are likely to include predation of eggs and nests by avian predators, such as the Australian Raven, which are regularly recorded in chat habitat. A raven culling program has been planned to address this threat.

Migratory Shorebirds

Numerous migratory shorebirds utilise the intertidal habitats of Sydney Olympic Park. The restoration of tidal flushing to the Waterbird Refuge at Badu Mangroves in 2006–07 (see case study page 16) appears to have substantially increased the area and improved the condition of habitat for these species. Monitoring over the 2007–08 season will provide an indication of the impact of these works on migratory shorebird diversity and abundance. Likewise, monitoring will determine the response of these species to adjustments

that were made to tidal flows within the Newington Nature Reserve wetland in 2006–07.

Microchiropteran Bats

A total of nine microchiropteran bat species have been recorded at Sydney Olympic Park including two threatened species and a regionally significant breeding colony of the White-striped Freetailed Bat. The latter is the only colony known to occur within the Sydney region, and is the only known colony of this species that roosts within a building. A building management plan was prepared in 2006–07 for this and all other buildings known or with potential to be used as roosts by bats. The White-striped Freetailed Bat colony was also monitored by video on a monthly basis throughout 2006–07 to determine its population and the extent of recruitment over the breeding season. Data analysis is yet to be completed but is expected to provide important information to guide the ongoing management and conservation of this species.

Bush Birds

Bush bird species at Sydney Olympic Park are mainly associated with the remnant forest of Newington Nature Reserve and stands of the weed *lantana* in the Brickpit.

The diversity and abundance of these species, at least 50 of which have been recorded in recent years within the Park, was determined in 2006–07 through the annual program of spring bird surveys that is undertaken with assistance from community volunteers. Surveys were also undertaken to determine the occurrence and extent of bush bird breeding across the Parklands. In addition, shrubs were planted in the Brickpit in 2006–07 to provide replacement habitat in anticipation of future *lantana* removal (see case study page 12).

Other Species and Ecosystems

Other activities undertaken in 2006–07 relating to the conservation of biodiversity in general include the following:

- revision and implementation of annual Vegetation Management Plans for all Parkland precincts containing threatened species habitat
- inclusion of measures to protect flora and fauna in approvals issued under the *Parklands Plan of Management* for Parklands operations, capital works, events and site hires
- development of a *Wetlands Management Action Plan*
- development of a *Biodiversity Management Plan*, due for completion in 2007–08
- appointment of a Habitat Management Officer responsible for planning and overseeing habitat management activities
- various monitoring programs involving volunteers from community groups including the Cumberland Bird Observers Club, the Frog and Tadpole Society, and the Australian Herpetological Society.

Wetlands

Sydney Olympic Park has 175 hectares of freshwater and saltwater wetlands including the largest remaining estuarine wetland system on the Parramatta River. They perform a range of important natural environmental functions and conserve the biodiversity and ecology of important species and ecosystems in the Park.

The wetlands:

- provide habitat for a variety of important and ecologically significant species including migratory birds from China and Japan
- help to conserve regionally significant species such as the saltmarsh *Wilsonia backhousei*
- mitigate flood waters
- naturally treat urban stormwater runoff by removing nutrients and solids
- provide breeding habitat for many commercial fish species such as bream and a nursery ground for crabs and prawns
- stabilising the embankments of rivers and creeks.

Wetlands are not only functional, they are also central to Sydney Olympic Park

Authority's education program in which school children from around New South Wales participate in field-based environmental education programs centred on the importance of conserving wetlands.

A *Wetlands Management Action Plan* has been developed and implemented for effectively managing the wetlands within the Park. In preparing the *Wetlands Management Action Plan*, emphasis was placed on a format that satisfies the Ramsar International Convention guidelines for wetlands management, as well as guiding the protection and conservation of Sydney Olympic Park's wetlands.

Integrated Pest Management

Sydney Olympic Park Authority implements an integrated management program to control pest animals. Actions undertaken as part of this program in 2006–07 include:

- The treatment of major breeding habitats of the saltmarsh mosquito *Aedes vigilax*. The Authority treats the Newington Nature Reserve wetland and the saltmarsh of Badu Mangroves at Bicentennial Park by applying a biorational control agent (*Bacillus thuringiensis var. israelensis*) through aerial and ground applications. Eight mosquito treatments in 2006–07 resulted in a significant reduction of mosquito larvae and hence adult populations.
- Contractors were engaged in 2006–07 to control the European Red Fox population in the Parklands, which poses a threat to frogs, reptiles and ground-dwelling birds. Eleven foxes were removed from the Brickpit and Newington Armory, which significantly reduced the population.
- An annual cyclic pond draining program was continued in Narawang Wetland during 2006–07 to control the introduced predatory fish *Gambusia holbrooki*, which preys on frog eggs and tadpoles.
- The Authority hosted a workshop in 2006–07 regarding the management of the native Australian White Ibis, which has become a pest in many urban areas, but has declined in inland areas due to drought. Conservation of urban populations may be important to the survival of the species, but at the same time these populations need to be managed to avoid conflicts with public amenity. The importance of a regionally-coordinated management approach was highlighted, and an Ibis management strategy was accordingly developed for the Parklands.

Sydney Olympic Park has 175 hectares of freshwater and saltwater wetlands including the largest remaining estuarine wetland system on the Parramatta River.



Cotton harlequin bug
Tectocoris diophthalmus



Seasonal algal cover on the Waterbird Refuge.

CASE STUDY

Waterbird Refuge Tidal Management

A new solar-powered tidal gate was installed at the Waterbird Refuge in January 2007 to allow daily exchange of tides between the wetland and the Parramatta River estuary. This was required to restore the health of the wetland and conserve and enhance its ecological values.

The Waterbird Refuge was created in the 1950s as a result of unfinished works to reclaim land from estuarine mudflats, and developed into an important habitat for migratory shorebirds and the endangered Coastal Saltmarsh community.

As part of the Badu Mangroves wetland system, the Waterbird Refuge is identified on the Register of the National Estate as a *Wetland of Ecological Significance*, as an *Environmental Conservation Area* under *Sydney Regional Environmental Plan 24*, and as a *Wetland of National Importance* by Environment Australia.

The Waterbird Refuge initially received some tidal exchange through the bunds that enclose it, but this exchange was cut off over time as the bunds silted up. As a result, the wetland

became subject to increasing water depths, excessive nutrient build-up, unsightly algal mats and associated odours, poor water quality, low benthic fauna species diversity, and reduced bird species diversity and abundance.

To address this situation, Sydney Olympic Park Authority commissioned detailed investigations to restore tidal exchange at the Waterbird Refuge. These investigations recommended the installation of a tidal gate to:



Migratory Bar-tailed Godwits feeding on large invertebrates in the Waterbird Refuge. Prior to installation of the tidal gate, this species was not regularly recorded at the Waterbird Refuge.

- improve water quality and thereby reduce the potential for the growth of algae and associated odours and unsightliness
- enhance feeding and roosting habitat for shorebirds, particularly migratory species
- conserve and enhance the endangered Coastal Saltmarsh community (including the threatened saltmarsh species *Wilsonia backhousei*)
- conserve and enhance the biodiversity of the wetland generally, including benthic fauna and fish.

The tidal gate was installed in January 2007. The gate allows the extent of tidal exchange to be controlled, and this is done according to a contour map of elevations in the wetland and the estimated water volume and area at different elevations.

Since the gate was installed, increased tidal exchange has improved water quality and reduced the opportunities for nutrient build-up and algal growth. The increased area of intertidal mudflats has encouraged increased benthic species diversity and improved foraging opportunities for shorebirds, and has provided additional areas for saltmarsh

colonisation. Extra bird roost sites have also been made available through creation of islands from the material dredged during the installation of the tidal gate. The diversity and abundance of ducks and resident shorebirds appears to have increased in response to the improved habitat, and it is hoped that similar results will be obtained for migratory shorebirds over the 2007–08 summer. A monitoring program will continue to evaluate the success of the tidal gate.

Resource Conservation

Total Water Usage by the Authority
2004-05 to 2006-07 (excluding the
Aquatic and Athletic centres)

610 ML
2004-05

602 ML
2005-06

490 ML
2006-07

- Harvested Stormwater
- Potable Water
- WRAMS Water



Water

Sustainable Outcomes

All new developments and activities (including venues, events, landscaping and asset management) at Sydney Olympic Park minimise potable water demand from Sydney mains supply, utilising best practice environmental design principles, technology and management practices to conserve water. All future developments within Sydney Olympic Park will connect to both recycled water and potable water supplies.

Water Reclamation and Management Scheme

Since the initial development of Sydney Olympic Park, an integrated approach to water management grew out of the need to protect valuable drinking water resources. Sydney Olympic Park took a holistic approach to managing stormwater, sewage, drinking water and recycled water as an integrated urban water cycle.

Sydney Olympic Park's water reclamation scheme has achieved significant environmental, social and economic benefits, and helped to change public perception of urban water reuse over the seven years of its operation.

In terms of water conservation, waste minimisation and pollution control, the scheme has contributed to a dramatic increase in the knowledge and understanding of many complex and interdependent issues.

In the last seven years, Sydney Olympic Park has produced over 4,600 megalitres of recycled water for non-drinking uses for sporting venues, residential and commercial premises, as well as irrigation for playing fields and landscape areas.

Sydney Olympic Park's water reclamation scheme incorporates advanced biological and filtration technologies to ensure a high quality, reliable and safe recycled water supply. With expected increases in worker and resident populations at Sydney Olympic Park and the surrounding area in future years, there will be a need to provide for an increased demand for recycled water.

To help meet expected future demand for recycled water, the Sydney Olympic Park Authority is currently working with other NSW Government agencies, looking at ways to integrate Sydney Olympic Park's water reclamation scheme with the new Sydney Recycled Water Grid as a greatly increased source of recycled water.

In the last seven years, Sydney Olympic Park has produced over 4,600 megalitres of recycled water for non-drinking uses for sporting venues, residential and commercial premises, as well as irrigation for playing fields and landscape areas.



Water Conservation

Mandatory water restrictions and Sydney Olympic Park Authority's commitment to responsible resource conservation across the Park require ongoing review of the Authority's water management practices.

Three different types of water are supplied to Sydney Olympic Park. These are drinking water from the Sydney Water supply system, stormwater harvested directly from freshwater wetlands, and recycled water from sewage and stormwater supplied by the Water Reclamation and Management Scheme (WRAMS).

Sydney Olympic Park Authority relies on WRAMS water and harvested stormwater for non-drinking purposes such as irrigation and toilet flushing. The Authority does not rely heavily on the Sydney Water system.

Since the development of the Authority's *Water Usage Operational Policy* in 2003 to comply with the NSW Government's mandatory water restrictions, there has been a significant reduction in overall water usage at the Park.

Actions taken to reduce water use include:

- reprogramming irrigation times to reduce recycled water demand
- connecting water features to the recycled water system
- reducing operating times to lower water losses through evaporation
- connecting the Concord West area of Bicentennial Park to the recycled water supply
- connecting the Ferry Wharf to harvested stormwater.

Total water usage by the Authority including the Public Domain, and excluding the Aquatic and Athletic centres, has been reduced from 602 megalitres in 2005–06 to 490 megalitres in 2006–07.

Of this total water consumption less than 2 per cent has involved water from the Sydney Water supply. Demand for water in 2006–07 at Sydney Olympic Park was reduced mainly due to higher than average rainfall, particularly in February, April and June 2007.

Sydney Water Grant – 'Every Drop Counts'

In 2005, the Sydney Olympic Park Authority joined the NSW Government's water conservation program – 'Every Drop Counts'. Partnered with Sydney Water, the Authority received a subsidy of \$600,000 and made a further contribution of \$400,000, to upgrade its recycled water infrastructure to reduce potable water consumption at many Sydney Olympic Park venues and facilities.

The project involved a partial upgrade and expansion of the existing Water Reclamation Plant to increase production of recycled water. The Authority also installed an additional recycled water distribution network, thereby permitting existing buildings in the Australia Centre, Sydney Olympic Park Hockey Centre and the Sydney Olympic Park Aquatic and Athletics centres to connect to the recycled water supply.

The project, which was completed in early 2007, is expected to save approximately 260 megalitres of potable water annually.

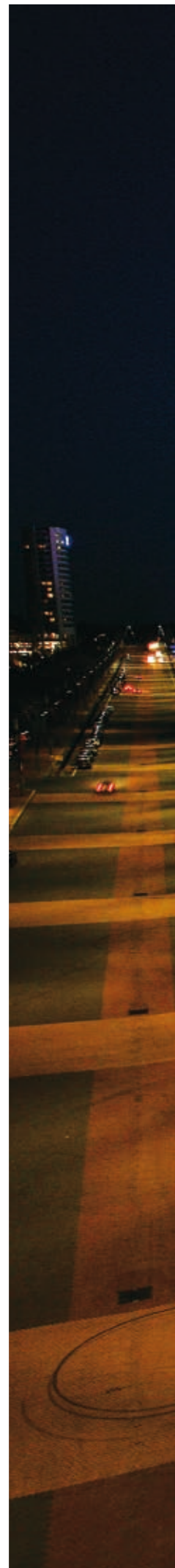
Sydney Olympic Park Aquatic and Athletic Centres

On 1 July 2006 the Authority took over operations for the Aquatic and Athletic centres. During 2006–07 the facilities were connected to recycled water for toilet flushing and irrigation thereby achieving reductions in potable water use.

Table 1 Sydney Olympic Park Aquatic and Athletics Centres Potable Water Usage

	Potable Water
Aquatic Centre	
2005–06	115
2006–07	94
Athletics Centre	
2005–06	3
2006–07	1.5

Figures in megalitres



Energy and Transport

reduction of
3,910
tonnes of greenhouse
gas emissions



Energy and Transport

Sustainable Outcomes

All new developments and activities (including events and asset management) within Sydney Olympic Park use the best available environmental design principles, technology and management practices to maximise the use of renewable energy sources, reduce energy consumption and minimise greenhouse gas emissions.

Energy Usage

Sydney Olympic Park Authority's total energy consumption during 2006–07 increased by 5.5 per cent of 2005–06. Electricity used in standard operations by Authority owned facilities (excluding the Aquatic and Athletic centres) and public street lighting was reduced by 299 megawatt-hours. Electricity used by the public carparks increased by 312 megawatt-hours over 2005–06. It appears the increase in total energy consumption may largely be attributed to an increase in visitation numbers.

Sydney Olympic Park Aquatic and Athletic Centres

On 1 July 2006 the Authority took over operations for the Aquatic and Athletic centres. In 2006–07 electricity and gas use was reduced against previous years. Savings comprising 352 tonnes of CO₂ emissions were achieved by the Aquatic Centre while the Athletics Centre reduced its CO₂ emissions by 258 tonnes – the equivalent of taking 135 vehicles off Sydney's roads for one year.

Reducing the Environmental Impact of Electricity Usage

Electricity generation represents 43 per cent of total greenhouse gas emissions produced in NSW. With over 90 per cent of our energy produced from burning coal, organisations, businesses and consumers are now turning to renewable energy sources and energy efficiency to reduce these emissions into the atmosphere.

Rising greenhouse gas emissions in NSW contribute to the threat of climate change.

In an effort to reduce the environmental impact of the energy consumed in the Park, the Authority has implemented a number of initiatives to combat climate change and its impacts.

Green Power

Twenty-five per cent of energy purchased by the Authority is Green Power – government-accredited, clean renewable energy sourced from wind, solar, biomass (organic matter or landfill gas) or micro-hydro.

Green Power purchased by the Authority, including the Aquatic and Athletics centres, has resulted in the reduction of 3,910 tonnes of greenhouse gas emissions – the equivalent of taking 869 vehicles off Sydney's roads for one year.

Solar

Sydney Olympic Park Authority has installed photovoltaic systems throughout the Park.

The solar photovoltaic systems at Sydney Olympic Park generated approximately 145 megawatt-hours of electricity in 2006–07, resulting in the reduction of 143 tonnes of greenhouse gas emissions – the equivalent to taking 32 vehicles off Sydney roads for one year.

Events and Public Transport

The town centre at Sydney Olympic Park is purpose designed to efficiently move large crowds into and out of the site during major events and to encourage the use of public transport.

During 2006–07, 11 major sporting and cultural events were held at the Park, attracting approximately 1.5 million visitors. Sixty-seven per cent of major event visitors commuted to and from the site by public transport (trains and buses). A further 2 per cent travelled by private bus coach.

The considerable investment in public transport infrastructure at the Park significantly reduces the environmental impact of hosting major events through reductions in private vehicle use and the resultant reduction in greenhouse gas emissions and air pollution.

In 2006–07, Sydney Olympic Park Authority negotiated successfully with the NSW Ministry of Transport to introduce bus services to Sydney Olympic Park running from Chatswood and Hurstville in peak periods, and increase the frequency of bus services from Parramatta and Lidcombe. These improved services are supporting Sydney Olympic Park's growing working, residential and student populations.



Sydney Olympic Park Railway Station

CASE STUDY

Public Transport Improvements for Sydney Olympic Park

Sydney Olympic Park will, over the next three years, become the workplace for approximately 3,500 Commonwealth Bank of Australia staff. When complete, this move will almost double the size of the existing workforce, with the Commonwealth Bank of Australia staff accommodated in three new high quality commercial buildings.

The Authority, in concert with the Commonwealth Bank of Australia and the NSW Ministry of Transport, initiated a suite of public transport improvements to support the bank's relocation to the precinct and improve public transport services to Sydney Olympic Park. The public transport improvements for Monday to Friday peak hour services comprise:

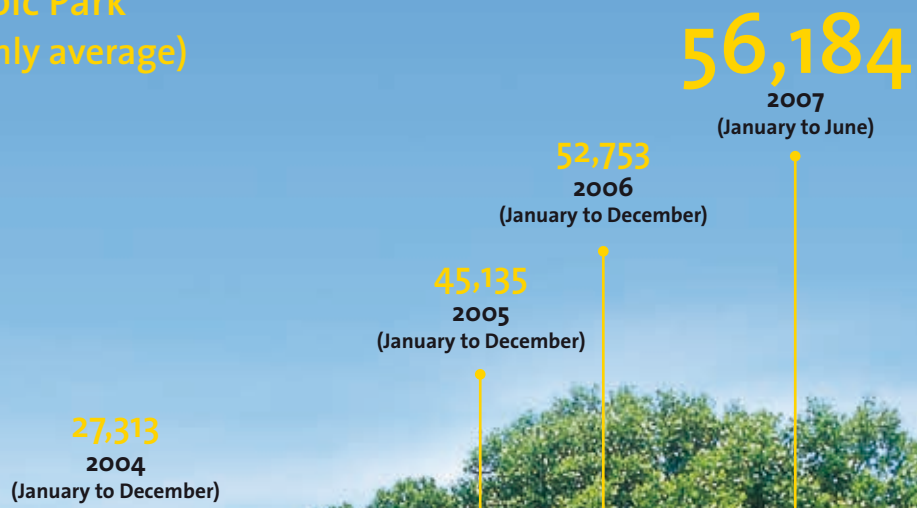
- increased frequency (ie 10 minutes) of bus services operating between Strathfield and Sydney Olympic Park
- new 15 minute bus services operating between Hurstville and Sydney Olympic Park via Beverly Hills, Wiley Park and Strathfield
- new 15 minute bus services operating between Sydney Olympic Park and Chatswood via Rhodes and North Ryde
- increased frequency (ie 20 minutes) of bus services operating between Lidcombe Station and Sydney Olympic Park.

The cost of these improved public transport services will be met by Sydney Olympic Park Authority and the Commonwealth Bank of Australia for three years.

In addition, the NSW Ministry of Transport also approved the use of State Transit bus stops by the Commonwealth Bank of Australia's private charter bus services from Bondi and Dee Why to Sydney Olympic Park.

These new bus services provide significant benefits for both existing workers at Sydney Olympic Park, as well as future workers, students and residents that will be attracted to the precinct, and will assist in delivering the Authority's planning target of 25 per cent of workers using public transport to access the precinct.

Cyclists at Sydney Olympic Park (monthly average)





Cycling

Energy reduction is not limited to traditional lighting and power requirements across the Park. In our aim to reduce greenhouse gases and to support the health and wellbeing of staff, workers and visitors, Sydney Olympic Park aims to be the pre-eminent cycling destination in Sydney. The average number of people visiting Sydney Olympic Park for cycling continues to grow, with an 11 per cent increase from 2005–06 to 2006–07.

Sydney Olympic Park comprises over 35 kilometres of cycleways. These include an extensive network of quality on-road cycle lanes, shared pathways through the Parklands and areas where inexperienced cyclists can use off-road pathways. Three cycling circuits, named Olympic, Parklands and River Heritage respectively, have been established for cycling enthusiasts. Sydney Olympic Park also offers mountain, hybrid and children's bikes for hire, making this energy efficient form of transport available to the broader community.

Following the success of the inaugural event in 2005, the Festival of Cycling was again held in October 2006. The Festival of Cycling is a key event in Sydney Olympic Park's annual program of festivals. The event was expanded in 2006 to include mountain bike events held at the new Monster Mountain X track.

Sustainable Materials

Sustainable Outcomes

Materials for new and existing developments and the upgrading, maintenance and/or refurbishment of existing facilities across Sydney Olympic Park are carefully selected and monitored under the Park's environmental strategy to reduce harmful toxic materials and impacts on the environment. Events and management practices undertaken at the Park minimise the use of these harmful materials that deplete natural resources or create toxic pollution.

Selection of Sustainable Materials

Sydney Olympic Park Authority specifies the selection of sustainable, recycled and recyclable materials in the Authority's *Urban Elements Design Manual* and asset management plans, and includes specific clauses in all contracts requiring contractors to use sustainable materials for building, cleaning, waste, landscape and pest control.

Timber

At Sydney Olympic Park, all works projects involving the use of Australian hardwood timber must specify the plantation source with a clear certification requirement.

The World Health Organisation's International Agency for Research on Cancer determined in June 2004 that formaldehyde is a human carcinogen. The Authority prioritises the use of low-emission MDF (medium density fibre-board) due to the health impacts associated with formaldehyde emissions commonly found in composite wood products.

Copper-chromium arsenic (CCA) treated timber is prohibited at Sydney Olympic Park and is currently banned in the United States.

Since 2006, CCA is being progressively phased out in Australia, as the Australian Pesticide and Veterinary Medicines Authority found that chemicals in CCA treated wood are linked to childhood cancers.

In all development contracts, Sydney Olympic Park requires the use of alternative timber preservatives such as Copper Azole-type A. This new timber preservative contains copper, boric acid and tebuconazole, and when combined together the mixture protects against decay, fungus and insects.

Copper Azole contains no arsenic or chromate, has better disposal options and provides fewer occupational health and safety issues associated with the use of the product. In non-ground contact applications, Light Organic Solvent Preservative can also be used as an alternative timber preservative.

The intent is that alternative timber preservatives should provide the same benefits as conventionally treated wood, while reducing environmental impacts and occupational health and safety issues.

Materials for new and existing developments and the upgrading, maintenance and/or refurbishment of existing facilities across Sydney Olympic Park are carefully selected and monitored under the Park's environmental strategy to reduce harmful toxic materials and impacts on the environment.

Parklands and Open Spaces

Sustainable Outcomes

Further use, management and development activities at Sydney Olympic Park complement, protect and enhance the conservation of the Parklands and recognise its significance as an open space resource for current and future generations, an outcome consistent with the NSW Government's State Plan priority of *more people using parks, sporting facilities and participating in the arts and cultural activity*.

Parklands

The Parklands of Sydney Olympic Park are at a critical stage of their development and use. Open spaces are key to many people's sense of enjoyment of urban life. Increasingly, open space will be seen as critical to a community's health and wellbeing. The Parklands at Sydney Olympic Park will continue to play an increasingly important role as both a local park and as a significant regional park destination as Sydney grows.

Greater pressure will be placed in the future on existing open space. Future open space needs and demand will be met by a more strategic approach to sustainable urban park management and further Park capital investment programs.

The Parklands of Sydney Olympic Park comprise 425 hectares and are one of the largest and most diverse urban parks in Australia. The vision and opportunity for the Parklands at Sydney Olympic Park is to be recognised as one of the world's great urban parklands.

Located in the geographic centre of Sydney and surrounded by the metropolitan area of the largest city in Australia, the Parklands serve one of the fastest growing residential areas of Sydney.

In January 2003, a *Plan of Management for the Parklands at Sydney Olympic Park* was approved by the Minister for the Environment. The NSW Treasury in the same year approved an initial investment of \$24 million over four years to continue the development of the Parklands in ways that

supported the legislative obligations and requirements of the Plan of Management. This program has focused on delivery of priority projects in the following strategic areas of:

- Environment
- Access, connectivity and integration
- Visitor experience, amenity and services
- Heritage – Newington Armory

These strategic areas are critical to the success of the future management, development and use of the Parklands.

Significant progress has been made in transforming and activating the Parklands, with this initial investment including:

- provision of new and unique public leisure facilities including:
 - the Brickpit Ring Walk
 - Stage 1 – Blaxland Riverside Park (see case study page 28)
 - new regional playgrounds in Bicentennial Park and Wentworth Common
 - development of a BMX track and Mountain X track facilities
 - an additional 5.2 kilometres of pedestrian and cycle pathways
- adaptive reuse of heritage buildings at Newington Armory for:
 - 190-seat theatre

- artist studios and gallery
- 86-bed student lodge-style accommodation
- education facility comprising classrooms and laboratories with capacity for 90 students
- completion of visitor enhancements including way-finding signage, park furniture, shade structures and public amenities
- completion of many environmental and heritage enhancement and compliance works, including sea wall restoration, water bird refuge tidal gate, planting and habitat works.

The results of this planning and investment into Parklands enhancements have realised:

- an additional 94 hectares of Parklands opened to the public, which was previously closed or which had limited public access
- increased visitation from 701,000 visits in 2002 up to 1.82 million visits in 2006
- visitation to newly developed park areas is relieving visitation pressure from Bicentennial Park, which is currently at capacity on most weekends; more than 590,000 people visited the Parklands, excluding Bicentennial Park, for the period of January to June 2007
- high visitor satisfaction rating amongst Parklands users.



Blaxland Riverside Park

CASE STUDY

Blaxland Riverside Park

The Parklands at Sydney Olympic Park are one of Australia's largest urban parklands and are in the early stages of development and use.

As part of the continuing transformation and activation of the Parklands at Sydney Olympic Park, a \$24 million program of enhancements has been delivered over the last four years.

Blaxland Riverside Park is the newest park enhancement project, opened by the Hon. Sandra Nori, NSW Minister for Sport, Recreation and Tourism, in March 2007.

Blaxland Riverside Park is a 20-hectare park on the Parramatta River, adjoining the heritage precinct of Newington Armory. The Park is named after the colonial settler and entrepreneur John Blaxland, who immigrated to the Colony of New South Wales in 1806. Blaxland and his extended family settled on a land grant of 522 hectares overlooking the Parramatta River and developed a range of industries in the area including cattle and sheep, salt and fabric manufacture.

The park redevelopment is a \$15 million project and is being developed in distinct stages.

Stage 1 of the project has realised the creation of landscaped picnic terraces, the development of a river-front promenade and a new public entrance at the wharf to the Newington Armory. Water play features, barbeques and picnic shelters, new parking spaces for 170 cars, and public amenities including a public accessible pontoon allowing visitors to arrive by boat and moor at the wharf have also been provided.



As part of Stage 1 bike hire is available, as is the opportunity to go on a tour with a Ranger or ride the heritage railway and learn the history of the site.

Stage 2 is envisioned as adding playground facilities, extensive additional landscaping, a children's cycle track, public artworks and an innovative aerial boardwalk affording a sensational view out over the Parramatta River. It will also include additional picnic shelters, public amenities and further car parking spaces. Funding for Stage 2 has been sought from Government.

The completion of the \$7 million first stage of Blaxland Riverside Park was formally marked with a full program of free events, including live music, children's rides, family activities, coaching clinics and tours of the historic Armory precinct. The Armory's military heritage as an armament depot was commemorated by the participation of the Royal Australian Navy, including concerts by the renowned Navy Band. However, the true celebration has been the speed with which the public has embraced its newest park. Already visitor numbers in the new precinct are significantly higher than anticipated.

The NSW Government's *State Plan – A New Direction for NSW* identified developing an 'Environment for Living' as a priority for the people of NSW, in particular encouraging greater availability and use of parks, sporting and recreational facilities. Blaxland Riverside Park is a tangible example of this initiative being delivered to the people of Sydney.

Sydney Olympic Park's central location means that more than 1 million people live within 14 kilometres of the Park, with more than 8 million people visiting in 2006–07. 1.82 million of those visitors came to use the Parklands, including more than half a million cyclists.

Aboriginal Heritage

In recent decades, Australia has witnessed a remarkable surge of interest in Aboriginal and Islander arts and cultural practices. In 2006–07, the Authority presented an exhibition of Aboriginal art in the Armory Gallery. The exhibition, titled 'ORIGINS: A Folio of Prints by Contemporary Indigenous Australian Artists' was originally commissioned for the Sydney 2000 Olympic Games.

Produced in 1997, the project was a collaboration between Studio One National Print Workshop (Australia's premier printmaking workshop at that time) and The Festival of Dreaming (the first of four Olympic Arts Festivals in the lead-up to the Sydney 2000 Olympic Games).

The ORIGINS prints comprise a mix of traditional and contemporary imagery made in a variety of locations.

The portfolio acknowledges the remoteness of many Aboriginal printmakers, and the

diversity of training situations from which current indigenous printmakers have evolved. The stylistic differences in each artist's work vary according to cultural and personal experiences, yet all stem from a heritage that is ancient in its association with the land.

The ORIGINS portfolio provided an insight into indigenous art and culture.



Marrnyula Mununggurr Untitled, Screenprint. Printer: Shaun Poustie

Parklands Visitor Experience

Since 2003, the Authority has conducted a Visitor Movement Monitoring program throughout Sydney Olympic Park. This program counts the number of visits of pedestrians, cyclists and vehicles at visitor entry locations. The results assist in estimating the number of visitors while comparing previous trends and assist the Authority in evaluating the impact or benefit of upgraded facilities.

From March to May 2007, the Authority conducted the annual 'Park User Satisfaction Survey Program' of 739 visitors. The survey results help to determine and prioritise maintenance procedures and specifications to satisfy visitor requirements, and inform recreational and strategic asset planning management and Park planning teams of future requirements.

Ten Government council and agency areas participate annually and comparisons with regard to visitor satisfaction with facilities, amenities, services and ambience can be made. In 2007, visitors rated Sydney Olympic Park first out of the 10 parkland precincts in Sydney.

Park User Monitoring and Research Results

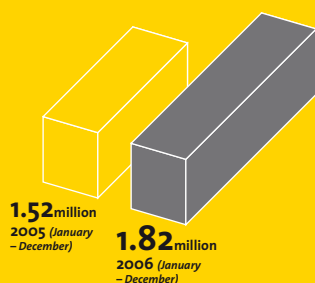
Satisfaction with Level of Maintenance in the Park



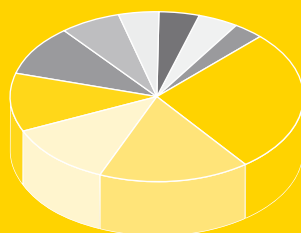
The overall score given by survey participants with Sydney Olympic Park was 8.1 out of 10.

Out of all the authorities participating in this survey, Sydney Olympic Park was ranked number one.

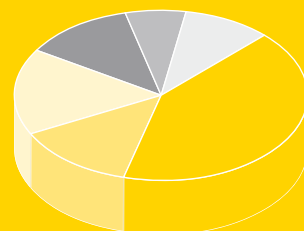
Visitors to Parklands



The Most Popular Features or Facilities at Sydney Olympic Park



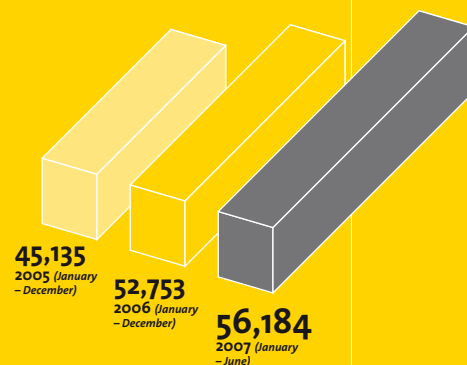
Frequency of Visitation



Reasons for Visiting



Cyclists in Parklands Monthly Average



Site Impacts

Actions taken to control noise emissions included ensuring appropriate configuration of infrastructure such as stages at outdoor events to avoid direct emissions to noise-sensitive receptors.



Air, Noise, Light and Water Quality

Sustainable Outcomes

All new developments and activities at Sydney Olympic Park are required to minimise negative impacts on Sydney's air quality, noise, light, and water quality and usage. The use of ozone depleting or high greenhouse gas producing products is to be minimised and the use of public transport, stormwater collection and recycling is strongly promoted.

In 2006–07, Sydney Olympic Park Authority maintained its strong focus on environmental awareness and due diligence to minimise any environmental impacts associated with air, noise, light and water related to all ongoing projects.

Air

The NSW Department of Environment and Climate Change (DECC) has a number of air quality monitoring stations located throughout the Sydney region. The nearest monitoring station to Sydney Olympic Park is at Chullora, about three kilometres southwest of the Park, and is part of the Eastern Sydney Air Quality Region.

Each day the DECC measures concentrations of ozone, nitrogen dioxide and a measure of visibility. These measurements are compared against national and state air pollution standards and goals and used to calculate the 'Regional Pollution Index' (RPI). Using the RPI, each day is categorised as a low, medium or high air pollution day. If, for example, the RPI is reported as high, it indicates that air pollutant levels have reached or exceeded the relevant standard or goal.

Table 2 Number of Low, Medium and High Air Pollution Days for Eastern Sydney Air Quality Region

	Low	Medium	High
2006–07	283	74	5
2005–06	250	108	7
2004–05	266	88	3

Generally, air pollution for the region was better in the reporting period against previous years.

Daily RPI data is available from the DECC's website www.environment.nsw.gov.au

Noise

There were no significant issues related to noise emissions from the Park during 2006–07.

Actions taken to control noise emissions included:

- limiting the operating hours of open-air concerts
- restricting the scale of outdoor concerts, for example by limiting the number of outdoor stages to minimise overall noise emissions
- ensuring appropriate configuration of infrastructure such as stages at outdoor events to avoid direct emissions to noise-sensitive receptors
- monitoring noise levels at residential boundaries and in ecologically-sensitive areas during outdoor events.

Light

Sources of artificial lighting include sky glow, lighted structures (buildings, communication towers, bridges), streetlights, security lights, vehicle lights, decorative lights, and temporary event lights. These have the potential to impact on ecologically-sensitive and residential areas across a range of spatial and temporal scales. Artificial lighting at Sydney Olympic Park, however, has been designed to minimise light spill into such areas, and the Authority did not receive any complaints in relation to issues associated with light spill in 2006–07.

Actions taken to control light emissions included:

- ensuring appropriate configuration of lighting at outdoor events such that light spill into ecologically-sensitive or residential areas was avoided or minimised
- limiting the operating hours of night-time events adjacent to or with potential to impact on ecologically-sensitive or residential areas.

Water Quality

The majority of Sydney Olympic Park is located in the lower reaches of the Haslams and Powells Creek stormwater catchments, within the Parramatta River system.

Long-term monitoring of water quality within these creeks has identified that high levels of faecal coliforms, phosphorus and nitrogen occur on a regular basis, such that creek waters regularly fail to meet water quality guidelines for primary or secondary human contact. This is attributable to the Park's location downstream of an urban catchment, and also

predisposes the Park's estuarine habitats to the impacts of upstream pollution incidents.

The stormwater system at Sydney Olympic Park incorporates the use of numerous constructed wetlands to collect stormwater that is then filtered for reuse at the Park. These wetlands are designed to remove 70–90 per cent of suspended solids and 70–90 per cent of phosphorous from the stormwater.

In addition, the Park's stormwater drains have been fitted with 40 pollution traps that filter out gross pollutants.

In 2006–07, approximately 180 tonnes of litter, vegetation and sediment that would otherwise have entered the wetlands or waterways were removed from these traps.

Floating pollution booms have been installed on Powells and Haslams Creeks to capture litter that originates from the catchment upstream of Sydney Olympic Park. In 2006–07, approximately 23 tonnes of litter were recovered from these pollution booms, thereby preventing this material from entering Homebush Bay and the Parramatta River.

Remediation

Sustainable Outcomes

Remediated sites at Sydney Olympic Park continue to be maintained, monitored and managed so as to protect human health and the surrounding environment.

Sydney Olympic Park Authority has ongoing responsibility for the day-to-day and long-term management of 10 engineered remediated landfills, covering about 105 hectares (nearly 20 per cent) of Sydney Olympic Park.

Most remediation works occurred in the 10 years leading up to the Sydney 2000 Olympic Games, at a cost of more than \$137 million. The project is regarded internationally as an inspiring example of how industrial wastelands can be rehabilitated using science, engineering and the shared commitment of government, business, environmental organisations and the community.

Various remediation techniques were applied, depending on the type of waste present at a particular location.

Most commonly, waste was consolidated into containment mounds and clay capping and subsurface leachate collection drains were installed. The majority of collected leachate is pumped to a commercial liquid waste treatment facility close to Sydney Olympic Park for treatment. The volume of leachate produced by a containment mound may vary according to rainfall levels. Bioremediation techniques are used at the site of a former gas works facility at Wilson Park to treat hydrocarbon-impacted groundwater and soil.

In 2006–07:

- Some 35 megalitres of leachate were collected, transferred to the commercial liquid waste treatment facility and treated.

- Contaminated groundwater containing approximately 750 kg of total hydrocarbons, including 430 kg of benzene, was successfully degraded by micro-organisms in the Wilson Park bioremediation ponds.

The transfer of leachate is controlled and monitored by a Supervisory Control and Data Acquisition (SCADA) system. Implementation of the SCADA system has improved the operational efficiency of the leachate transfer system and reduced the risk of potential environmental incidents by monitoring the pump pit levels and triggering alarms when these levels are high or there has been a pump breakdown.

Landfills are managed in accordance with long-term remediated land operational maintenance and monitoring plans and developed in

consultation with the Department of Environment and Climate Change. Regular landfill operational activities include inspection, testing, programmed and breakdown maintenance, system performance monitoring and reporting, based on the individual requirements of each of the 10 landfills.

The Authority will be reviewing and revising these plans during 2007–08.

Various minor repair and maintenance works were performed throughout the reporting period, to maintain the landfills and the leachate collection and transfer systems. Additionally, the underground 'tar cut-off drain' located in the

Woo-La-Ra area was reconstructed to address tar seepage. Tar from the landfill flows via this drain into collection pits for periodic removal. The new design incorporates a self-cleaning mechanism as a safety mechanism against blockage, and is expected to effectively control tar in the landfill so that seeps will not recur.

Table 3 Annual Volume of Leachate Generated at Sydney Olympic Park and Annual Rainfall Measured between 2004–05 and 2006–07

	2004–05	2005–06	2006–07
Leachate Treated (kilolitres)	34,753	31,987	35,000
Rainfall (mm)	849	667	1,166

Waste Management

Sustainable Outcomes

Sydney Olympic Park Authority's waste management strategy minimises waste generation through our Waste Reduction and Purchasing Plan, which aims to minimise waste from all new developments and activities and maximise the use of recycled materials.

Sydney Olympic Park Authority continued to implement its Waste Reduction and Purchasing Plan (WRAPP) in 2006–07. The plan sets strategies and guidelines on waste management for the Park to reduce the amount of solid waste going to landfill and to maximise recycling. The NSW Government requires each of its agencies to provide biannual reports to the Department of Environment and Climate Change on the implementation of its WRAPP, the Authority submitted its report in September 2007.

Some of our achievements in 2006–07 include:

Landscapes

Landscaping activities produced 375 tonnes of vegetation waste of which 62 per cent was recycled. The remaining 38 per cent could not be recycled, as it contained weeds.

Construction and Demolition

Demolition works recycled 367 tonnes of concrete (100%) and 3 tonnes (100%) of steel. Almost all of the excavated natural material from construction, equating to 9,000 tonnes (97%), was reused on-site.

Offices

The Authority used 213 toner cartridges during the year and sold all used cartridges to a toner recycling company and then donated the proceeds to charity.

All obsolete computer equipment was sold at auction and 35.8 tonnes of paper and cardboard were recycled.

Visitor Centre

The Authority has been investigating ways of incorporating recycled content into merchandise sold in the Visitor Centre.

In 2006–07, unbleached brown paper bags with recycled content and vegetable inks were introduced. Further investigation is taking place to increase the range of recycled products.

Events and Parklands

Visitors and events across the Park produced 192 tonnes of recycled waste from a total of 383 tonnes.

From December 2006, all waste from Authority offices and the public domain was sent to a different facility offering better waste sorting technology, resulting in a substantially increased recycled component. In the period July to December 2006, 24 per cent of waste was recycled whereas for the period December 2006 to June 2007, 64 per cent of waste was recycled. This percentage is expected to increase over the next year to 80 per cent and above.

Environmental Compliance

This section contains a summary of the environmental regulatory licences held by Sydney Olympic Park Authority and any compliance issues that may have arisen in 2006–07.

Licences, Certificates and Permits

National Parks and Wildlife Act 1974

Sydney Olympic Park Authority holds a licence under the *National Parks and Wildlife Act 1974* that authorises regular operational management activities within threatened species habitat. All activities were undertaken in compliance with this licence in 2006–07.

The Authority also holds a licence issued under the *National Parks and Wildlife Act 1974* for environmental education activities within Narawang Wetland, which is habitat for the endangered Green and Golden Bell Frog.

Threatened Species Conservation Act 1995

Sydney Olympic Park Authority holds two certificates issued by the Department of Environment and Climate Change under the *Threatened Species Conservation Act 1995*. These are for conservation and management of the endangered Green and Golden Bell Frog, and conservation and management of the endangered Coastal Saltmarsh community and the threatened saltmarsh plant *Wilsonia backhousei*.

These certificates allow operational, development and visitational activities to be conducted within threatened species habitat, in accordance with the provisions of management plans prepared by the Authority.

In 2006–07, all activities complied with relevant permit and licence conditions.

Fisheries Management Act 1994

Sydney Olympic Park Authority holds a permit issued by the Department of Primary Industries under the *Fisheries Management Act 1994* for the pruning and removal of mangroves for the purposes of:

- conservation and management of estuarine vegetation across the park to achieve a balance between mangrove, saltmarsh and mudflat habitats
- conservation and enhancement of foraging and roosting habitat for migratory shorebirds
- protection of existing infrastructure including tidal flushing channels.

In 2006–07, approximately 800 mangrove seedlings were removed from saltmarsh and mudflat habitats in accordance with permit conditions.

A new permit was obtained in 2006–07 to replace the existing permit. The new permit authorises expansion of the scope of mangrove management across the site to include:

- provision for the progressive repair/rebuilding of the Parramatta river seawall
- expansion of the local distribution of the river mangrove
- provision for environmental education and interpretation activities.

Activities authorised under this permit are yet to be conducted.

Environment Protection Licences

The Authority holds two Environment Protection Licences issued under the *Protection of the Environment Operations Act 1997*. The licences are for the operation of the Water Reclamation and Management Scheme and the Wilson Park bioremediation ponds.

There were no instances of non-compliance with the Authority's Environment Protection Licences during 2006–07. No new notices were issued by the Department of Environment and Climate Change.

Management of Remediated Sites

Remediated sites at Sydney Olympic Park continue to be maintained, monitored and managed to protect human health and the surrounding environment in accordance with Notices issued under the *Contaminated Lands Management Act 1997* and the *Environmentally Hazardous Chemicals Act 1985*.



Environmental Incidents

There were no environmental incidents resulting from Sydney Olympic Park Authority's program of work in 2006–07, however, there were two incidents caused by external factors as follows:

- In January 2007, an oil spill was recorded in a Powells Creek tributary. NSW Fire Brigades attended and contained this spill. No environmental harm was identified.

- In February 2007, a major fish kill was recorded in Haslams Creek. Officers of the Department of Environment and Climate Change collected water and fish samples for analysis; however, the pollutant and its source could not be identified.

Furthermore, during the reporting period a section of the Louise Sauvage Pathway was temporarily closed to enable reconstruction of a tar collection drain on the northern side of the Woo-La-Ra landfill area. The tar was dumped in this location in the early 1970s by the operators of the former gas

works plant, which was located at the present Wilson Park site.

As part of the pre-Olympic Newington remediation works, a subsurface tar collection drain was installed along the northern base of Woo-La-Ra to capture the tar and prevent it from moving out of the landfill.

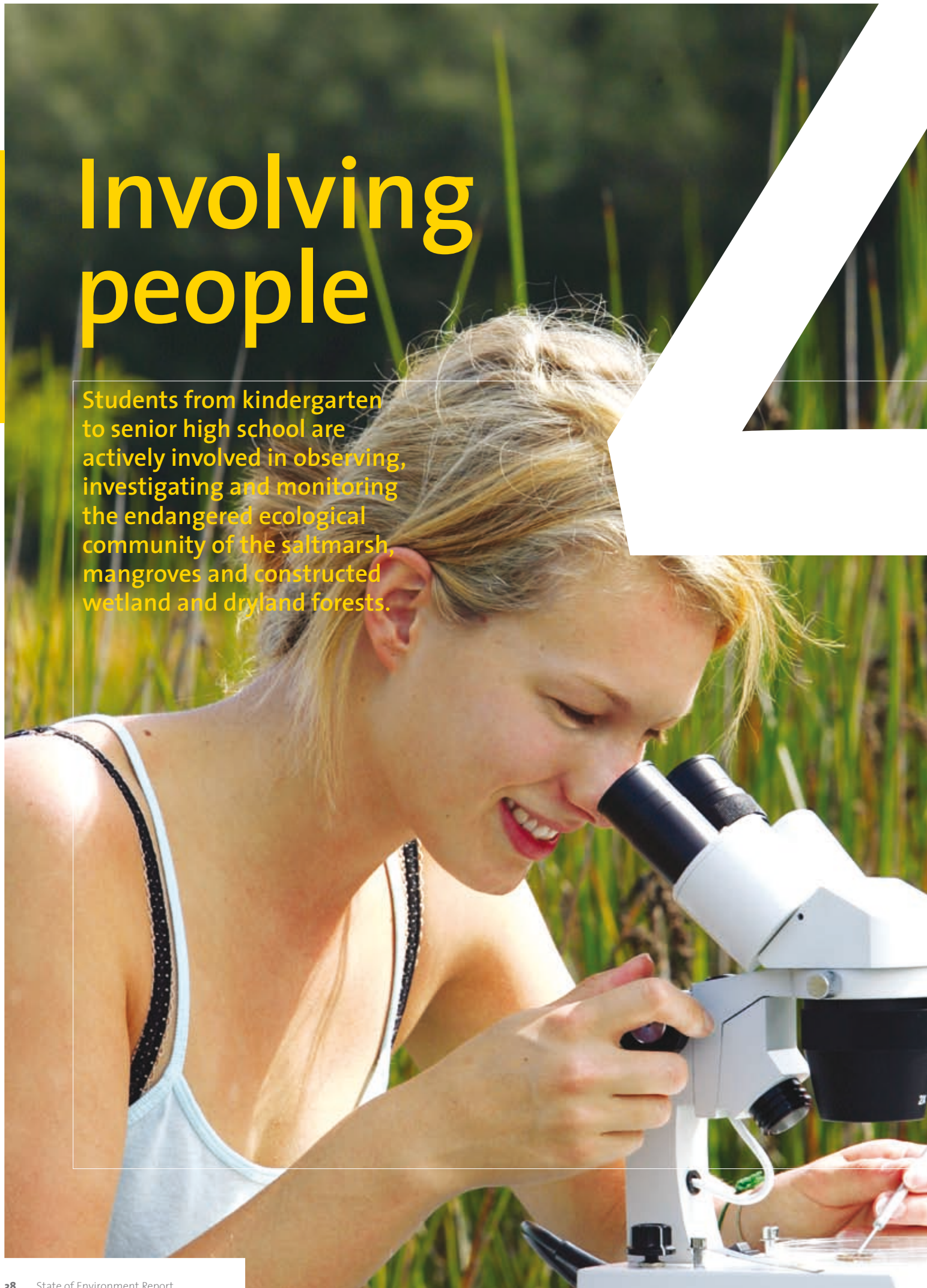
Due to blockages in this subsurface drain, the tar had built up, causing the material to come to the surface in the vicinity of the Louise Sauvage Pathway. The area was fenced off to prevent public access to the affected area while engineering advice was obtained and the drain reconstructed.

Bay Marker at Wentworth Common



Involving people

Students from kindergarten to senior high school are actively involved in observing, investigating and monitoring the endangered ecological community of the saltmarsh, mangroves and constructed wetland and dryland forests.



Raising Environmental Awareness

Sustainable Outcomes

Sydney Olympic Park offers a high quality, enriching experience to those who live, work or visit the site. Sydney Olympic Park is recognised as a highly desirable recreational, environmental, educational and cultural destination.

In 2006–07, 8.2 million visitors attended the Park to attend an event, conference, exhibition, tour or school excursion, or to play sport or simply relax. In addition to these visitors, over 4,500 employees and students, and our local surrounding community make use of the world class leisure facilities on a daily basis. Connecting to our on-site workers, surrounding local communities and visitors is integral to the success of achieving the Authority's vision for the Park.

Sydney Olympic Park Authority continues to build on its partnerships with surrounding councils, government agencies, local communities, business and national and international sporting and cultural organisations.

Park User Satisfaction Surveys

Sydney Olympic Park Authority participates in the annual Park User Satisfaction Survey Program, which allows Park management to measure user satisfaction with Park maintenance and the implementation of new program initiatives. The survey involves conducting Park user interviews and provides:

- information about Park users and Park usage
- a measure of the Park user's satisfaction with the Park
- a comparison with other Parklands
- information about user needs and expectations for facility/service provision.

From March to May 2007, over 730 Park users were interviewed in the Urban Core, Bicentennial Park, Parklands North, Woo-La-Ra, Haslams Creek Flats and Parklands Central zones of Sydney Olympic Park. 87 per cent of interviews were undertaken outside school holidays and 13 per cent were conducted during school holidays. Fifty nine per cent of interviews took place on a weekend, with 41 per cent completed on a weekday.

The results of this survey are included on page 31.

Parklands Advisory Committee

The Sydney Olympic Park Authority Act 2001 requires at Part 5, Section 62, that the Board of the Authority establish an Advisory Committee that may make recommendations to the Board with respect to the care, control and management of the Millennium Parklands (Parklands).

The first meeting of the Advisory Committee was held on 13 February 2002 after its membership was recommended by the Sydney Olympic Park Authority Board and confirmed by the Hon. Michael Egan, the then NSW Treasurer and Minister for State Development.

In January 2003, the *Parklands Plan of Management* was approved by the then Minister for the Environment, the Hon. Bob Debus.

The Advisory Committee has a non-executive role. Its role includes the following tasks:

- providing advice on the strategy and contents of the Plan of Management for the Parklands
- commenting on the strategic implementation of the *Parklands Plan of Management* and the future development of the Parklands
- providing ongoing advice on current trends in parklands management
- providing advice on Parklands policy issues
- convening technical working groups on Parklands-related issues.

The Committee meets quarterly and has provided valuable technical and professional support and advice for the many and varied successful Parklands developments and program initiatives over the past two years.



Cumberland Bird Observers Club

The Authority has a partnership with the Cumberland Bird Observers Club to conduct an annual census of the birds of Sydney Olympic Park.

Thirty-two volunteers participated in the 2007 spring program, surveying 49 sites across the Park over an eight-week period. All of the Parklands, precincts were sampled, including a variety of habitats. One hundred and twenty three different species were recorded over the whole of Sydney Olympic Park, with a total of 17,240 birds seen.

The data provides the average numbers of species present and changes to the status of these species in certain habitats over time. The data is essential in establishing parkland habitats for bird conservation and provides an opportunity for the community to become involved in Park conservation programs.

Evening Wetland Bird Survey

The Authority coordinated an evening survey of wetland birds in the Parramatta River estuary in January 2007. Over 20 participants (including Authority staff, community volunteers and officers of surrounding local councils) concurrently surveyed wetlands spanning from Hen and Chicken Bay in the east to Newington Nature Reserve wetland in the west. This was the first evening bird survey ever conducted in the estuary. Results show that the abundance and diversity of birds in these wetland habitats can differ significantly between day and night.

Large numbers of migratory shorebirds listed under international agreements (including Bar-tailed Godwits and Sharp-tailed Sandpipers) were recorded flying into the Waterbird Refuge at Badu Mangroves after dark, suggesting that this wetland is even more ecologically significant than previously thought.

Other Partnerships

The Authority also has partnerships with the NSW Frog and Tadpole Study Group and the Australian Herpetological Society; members of both groups participate in frog and reptile surveys each spring and summer.

Frog surveys were conducted in over 60 ponds, and provided strong information on species distribution that supplemented data from specialist surveys. Reptile surveys were conducted at 25 sites; this data, together with data from 2005–06, has built a base dataset of reptile distribution across the parklands.

Workshops and Tours

Sydney Olympic Park Authority managed and participated in a variety of workshops and tours in 2006–07 to support best practice at the Park. These included:

- ‘Grass Identification’ two-day technical workshop in November 2006, with the Ecological Consultants Association, attended by 25 people

- ‘Australian White Ibis’ workshop in February 2007 involving the Department of Environment and Climate Change, local councils and other land managers to discuss management issues, including the possibility of developing regional and national strategies for ibis management, attended by approximately 25 people
- Technical tour for the April 2007 Royal Zoological Society/Australasian Bat Society Symposium on the biology and conservation of Australasian bats; from the rail cutting outside Building 42 in Newington Armory, 40 visitors viewed White-striped Freetailed Bats as they flew out of the maternity roost within this building, and used thermal imaging equipment to view the bats after dark
- Wetland Education and Training Program, two separate two-day workshops in September 2006 and March 2007 for the management of wetlands ecosystems, attended by 100 people
- Heritage Week guided tours of the Brickpit and Newington Armory in April 2007 for the National Trust of Australia, attended by approximately 30 people.

Parklands Foundation at Sydney Olympic Park

Parklands Foundation

Sydney Olympic Park

The Parklands Foundation (the Foundation) began formal operations in March 2006. The Foundation is a subsidiary corporation under the *Sydney Olympic Park Authority Act 2001*.

The Parklands Foundation Limited (the Foundation Limited) is a subsidiary corporation under the *Sydney Olympic Park Authority Act 2001*. It is a not-for-profit company limited by guarantee registered under the *Corporations Act 2001*. The role of the Foundation is as a not-for-profit partner of Sydney Olympic Park Authority.

It was established to add value to the future of the Park through its support of educational, environmental, cultural, scientific and recreational projects and programs, involving both the parklands and within the greater Park.

As a newly-established not-for-profit organisation, the Foundation is also committed to enhancing the parklands at Sydney Olympic Park by helping to foster learning, discovery, recreation and wellbeing, and by providing a place for the community to enjoy in future generations.

During the first 15 months of operation, the Foundation experienced growth associated with its absorption of programs from the Authority during September 2006. This included the prototype phase of an online environmental education program, 'The Geography Challenge' (formerly known as the 'Geography Learning Sequence' and the 'Parklands Learning Model'), infrastructure for a Geographic Information System (GIS) and an archival electronic library referred to as the 'Databank'.

A significant result in January 2007 was the creation of a new Parklands Foundation organisational structure, directly linked to the needs of the Foundation's organisational objectives and Business Plan. The Plan and structure were approved by the Foundation Board and supported by Sydney Olympic Park Authority.

Achievements and Milestone Developments

In 2006–07, the Parklands Foundation achieved the following major milestones:

- attracted \$84,000 value of in-kind support from ESRI Australia and ESRI Inc (USA) of educational GIS Software licences for The Geography Challenge and the Authority's Education Unit (November 2006)
- secured strategic partnership alliances with: NSW Department of Education and Training (DET), DET – Centre for Learning Innovation (CLI), ESRI Inc (USA) and ESRI Australia (November 2006)

- a research grant of \$10,000 value in-kind was secured from the University of Western Sydney for targeted education research (May 2007)
- launched the Geography Challenge – an online education program that allows students to link their classroom learning about Information and Communications Technology with real-life field work undertaken during excursions at Sydney Olympic Park.

Future Directions

The Parklands Foundation looks forward to launching a number of new programs in 2007–08 including friends and supporters, corporate and capital partnerships, community and environment partnerships, public events; research development; enhanced Geography Information Systems (GIS); and other initiatives that will enhance the Parklands at Sydney Olympic Park.

Education

A three-year strategic plan for education was finalised in November 2006. The vision for education at Sydney Olympic Park is to create a world class precinct for education in sport, health, arts and environmental management.

With respect to environmental management, 18,600 school students participated in Sydney Olympic Park curriculum-based environmental education programs in 2006–07. Hands-on excursions are delivered throughout the Parklands in key learning areas such as geography, science, biology and human society and its environment.

Students from kindergarten to senior high school are actively involved in observing, investigating and monitoring the endangered ecological community of the saltmarsh, mangroves and constructed wetland and dryland forests.

Students use a range of scientific equipment to monitor abiotic factors, and to investigate the distribution and abundance of organisms to better understand how these environments function. Drawing field sketches from a viewing tower gives the children a 'birds' eye perspective of the environments being studied.

Through interactive activities students gain a better understanding of the importance of threatened habitats and other natural environments. They learn how as individuals they and the community can assist in the long-term protection of these environments.

Ongoing professional development is provided for teachers to keep up to

date with the latest research in environmental issues and refine their delivery of environmental education.

A suite of environmental education programs for adults is also on offer, with a range of specialised technical tours having been developed to provide higher-level information about the Park's sustainability initiatives. These programs are being increasingly delivered to domestic and international professional delegations and interest groups. Opportunities for community and corporate education regarding key issues such as water, energy and waste were a planned legacy of the Sydney 2000 Olympic Games.

Wetland Education and Training Program

The reporting period's program of Wetland Education and Training (WET) workshops at Sydney Olympic Park, the sixth year of these programs, was very successful. Two separate two-day workshops were held and attended by 100 people. The workshops combined experiential learning with formal skills development in wetland ecology management.

Each workshop was highly rated by the participants due to its hands-on nature, high relevance and professionalism. A Technical Advisory Panel has been formed to design and further value-add to future courses, with membership sourced from professional associations, academia and industry.

As a national partner, the WET program also liaised with wetlands.edu, a national partnership program focusing on capacity building of wetlands professionals, to deliver wetlands training.

Contractor Liaison, Training and Education

Comprehensive programs are in place to ensure staff and contractors working at Sydney Olympic Park are aware of the ecological values, legal provisions and best practices that affect their activities. Elements of these programs in 2006–07 included:

- ecological induction training for more than 260 staff and contractors
- regular habitat inspections conducted jointly by Authority staff and landscape contractors; these inspections were used to identify current and emerging issues and to provide a forum for discussion of landscape management practices and requirements
- production of *Assets with Eyes*, a monthly newsletter that provides regular updates and information to all staff and contractors regarding the ecology of the Park.

Earthwatch Staff Fellowship

Sydney Olympic Park Authority, in partnership with the Earthwatch Institute, offers staff the chance to participate in an Earthwatch field research project. The program provides staff with the opportunity for active participation with a community-based organisation, personal and professional development through active-learning, and improved environmental and cultural understanding.

The Authority offered one place on the Earthwatch Fellowship Program in 2006–07. The successful participant took part in a study of koala ecology on St Bees Island, Queensland.

Science and Innovation

Sydney Olympic Park Authority continues its involvement and active participation with a number of university research programs dedicated to advancing Water Reclamation and Management Scheme treatment technologies and enhancing its recycled water system operations.

In 2006–07, the Authority identified the following collaborative research projects:

- *'Integration of sponge based technology and membrane bioreactors (IS-MBR): a sustainable treatment system for water reuse'*, University of Technology, Sydney, Faculty of Engineering. The Sydney Olympic Park Authority will provide a cash contribution of \$30,000 and in-kind contribution of \$60,000 per year for three years.

- *'Fluidised granular activated carbon pre-treatment for membrane filtration system in domestic wastewater reuse'*, University of Technology, Sydney, Faculty of Engineering. The Sydney Olympic Park Authority will provide a cash contribution of \$12,000 and in-kind contribution of \$25,000 per year for three years.
- *'Fluorescence as a tool for sensitive detection of failures in recycled water treatment and distribution systems'*, University of New South Wales Centre for Water and Waste Technology. The Sydney Olympic Park Authority will provide a cash contribution of \$20,000 and in-kind contribution of \$20,000 per year for three years.

Each of these projects has been successful in securing supplementary research funding from the Australian

Research Council. This additional funding totals \$755,000.

Accessibility

Sydney Olympic Park Authority seeks to ensure that all people can participate in activities with dignity and equity. Access is a basic human right and a fundamental pillar of social justice. The NSW Government endorses people's rights to access and, through Sydney Olympic Park Authority, provides accessible developments at Sydney Olympic Park.

The Authority updated its *Disability Action Plan* to identify actions in a range of areas considered to have the greatest potential to improve access in the provision of public services at the Park. It recognises the need for an organisation-wide approach to effectively working towards achieving an accessible environment for visitors, residents and workers at Sydney Olympic Park.



Water Treatment Plant



Equitable access at Sydney Olympic Park



2005–07 Parklands Plan of Management Compliance Report

The Parklands Plan of Management, adopted in January 2003, is the predominant statutory instrument controlling the use, development and management of the Sydney Olympic Parklands.

The Parklands Plan of Management requires that the Authority report on progress and performance in relation to the objectives associated with the assigned categories of land in the Parklands.

2005–07 Parklands Plan of Management Compliance Report

There are six categorisations of land assigned to the Parklands as outlined in the *Parklands Plan of Management*:

- nature reserve
- natural area
- parkland
- cultural land
- sports land
- general community land.

The assessment of the Authority's performance will be based on a qualitative and/or quantitative assessment of the extent to which implementation of any strategic actions have assisted the Authority in meeting the general objectives outlined in the *Parklands Plan of Management*.

There are eight general objectives for the Parklands. These objectives include and expand on legislative obligations assigned to the Authority in the *Sydney Olympic Park Authority Act 2001* in its capacity as owner and manager of the Parklands (Millennium Parklands).

The General Objectives for the Parklands are:

- to recognise and enhance the Parklands' unique character, setting and values
- to generate programs which provide recreational, historical, scientific, educational and cultural activities
- to encourage public use and experience of program activities
- to provide places for unprogrammed public use and enjoyment
- to conserve the natural and cultural heritage

- to ensure the protection of the Parklands environment
- to support the achievement of the purposes of the Newington Nature Reserve
- to properly manage, maintain and improve the Parklands.

The strategic actions/outcomes performance in the reporting period that have assisted the Authority in meeting the General Objectives outlined in the *Parklands Plan of Management* are outlined as follows:

- Total visitation to the Parklands has increased from 1.18 million in the calendar year 2004 to 1.82 million in the calendar year 2006.
- Visitation to the Parklands in Park precincts other than in Bicentennial Park has increased from 607,133 in calendar year 2005 to 748,555 in calendar year 2006.
- Average monthly visitation by cyclists in the Parklands increased from 27,313 at the end of calendar year 2004 to 52,753 by the end of calendar year 2006.
- Education programs in the Parklands were delivered to approximately 18,600 students, who undertook hands-on environmental education in the Parklands. This represents a 17 per cent increase in environmental education participation since 2005–06.
- Nature tours in the Parklands were delivered to 1,924 people in calendar year 2006.
- Wetland Education and Training workshops were delivered to 150 people.

- Fifty-five artists from England, the USA, Holland, Japan, Indonesia, Spain, Thailand and throughout Australia have participated in the disciplines of painting, sculpture, printmaking, ceramics, photography, new media, textile design, writing and film making through the *Artists at the Armory* program held at the Newington Armory.

- The Sydney Olympic Park Lodge at the Newington Armory catered to 3,465 patrons, predominantly secondary school children participating in sports and curriculum-based programs at the Park.

- Annual Visitor Satisfaction Surveys identify an 83 per cent satisfaction level with the provision of maintenance services in the Parklands.

Parkland development and enhancements:

- The fit-out of Building 24 at the Newington Armory for use as artist workshops for the *Artists at the Armory* program was completed in October 2005. The fit-out comprises 19 studios.
- The Sydney Olympic Park Lodge at Newington Armory was opened in February 2006.
- The provision of leisure enhancements continued, including:
 - completion and opening of the Brickpit Ring Walk in December 2005
 - completion and opening of the Haslams Reach Mountain X track in October 2006

- completion and opening of the Blaxland Riverside Park Stage 1 development in March 2007
- commencement of construction of a BMX track at Parklands Junction in June 2007 (due for completion October 2007).
- A tidal gate was installed in the Waterbird Refuge of Badu Mangroves to restore tidal flushing and improve wetland condition and habitat quality.

Strategic planning actions included:

- completed the *Parklands 10-year Capital Investment Strategic Plan*
- completed the *Wetlands Management Action Plan*
- completed vegetation management plans for all Parklands precincts containing threatened species habitats
- commenced development of an Interpretation Strategy for the Newington Armory precinct
- commenced design and management strategy for the Newington Armory Buffer Zone
- completed a Community Sports Field strategy
- completed a moveable heritage audit and valuation of items owned by the Navy in care, control and management of the Authority at the Newington Armory.

Environmental studies undertaken included:

- implementation of a comprehensive monitoring program to identify ecological response to restoration of tidal flushing in the Waterbird Refuge of Badu Mangroves
- coordination of an evening survey for wetland birds in the Parramatta River estuary (involving Authority staff, community volunteers and officers of surrounding local councils) to concurrently survey wetlands spanning from Hen and Chicken Bay in the east to Newington Nature Reserve wetland in the west; this was the first evening bird survey conducted in the estuary
- continuation of an annual cyclic drainage program in frog habitat ponds to control the introduced fish *Gambusia holbrooki*, a predator of Green and Golden Bell Frog tadpoles
- support of a study by the University of Newcastle to investigate the levels of the amphibian chytrid fungus (*Batrachochytrium dendrobatidis*) in the Green and Golden Bell Frog and other frog species
- monitoring of the impacts of mangrove seedling removal on the health of the Coastal Saltmarsh community
- continuation in annual monitoring of the Green and Golden Bell Frog population.

During the reporting period, the Authority:

- continued with the mosquito control program, utilising a biological larvicide

- hosted two Australia Day Citizenship Ceremonies and Celebrations (2006 and 2007), co-hosted with Auburn Council, in Bicentennial Park, attracting over 5,000 people each year
- hosted two The Great Escape Music and Arts Festivals (2006 and 2007) at Newington Armory, attracting over 20,000 people each year
- hosted Sydney's largest Art Express, attracting over 4,000 visitors.

Parklands strategic asset maintenance included the following:

- Maintaining the health and quality presentation of the Parklands involved some 69,693 landscape maintenance hours, including the planting of 16,507 trees, shrubs and native grasses (note this figure does not include vegetation planted during capital works projects)
- 383 tonnes of public waste were collected, of which 24 per cent was recycled; and, in December 2006 a new waste collection and disposal contractor was appointed, with recycling rates now averaging 80 per cent and above.
- Sydney Olympic Park ranked first out of 10 participating park agencies assessing visitor satisfaction with regard to the extent and standards of maintenance services in the Parklands. Sydney Olympic Park achieved an 81 per cent satisfaction rating.
- a new leachate transfer system maintenance contract was awarded and commenced in November 2006

- a new unit paving maintenance contract was awarded and commenced in December 2006
- a new stormwater system maintenance contract (grated drains, pits and pump stations) was awarded and commenced in December 2006
- a new irrigation and urban elements maintenance contracts were awarded and commenced in January 2007
- a new stormwater system maintenance contract (gross pollutant traps and containment booms) was awarded and commenced in January 2007
- a new tree maintenance contract was awarded and commenced in June 2007

Conditional approvals were issued for 66 activities classified as 'restricted activities' under the Plan of Management, each with numerous conditions; these included capital works projects, regular parkland operational activities, site hires, events, education activities and scientific research.

While there were some approval conditions not fully complied with (eg parking in the wrong areas), breaches did not result in significant environmental harm or safety problems. All reported issues were addressed, and measures to improve compliance were progressively implemented throughout the year.

There were 312 licenses entered into in the Parklands in the reporting period which included:

- site hire
- capital works
- arts and culture
- film shoots
- environmental monitoring and research
- tree maintenance.



Superb Fairy-wren

Sydney Olympic Park Development Activity 2006-07



Accessing Sydney Olympic Park Authority

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