



Photo: S. Allender, DECC

## 4.3 Managing national parks and reserves

### 4.3.1 Increasing volunteer participation in, and community support for, conservation

Volunteers work for many hours each year on conservation activities across NSW, both in and outside parks. In 2006–07, volunteers contributed approximately 172,000 hours to conservation activities, an increase of 1700 (1%) since 2005–06. Under the State Plan, DECC is committed to increasing the proportion of the community involved in group activities and volunteering.

The National Parks–Conservation Volunteers Program is a partnership between DECC and Conservation Volunteers Australia. During 2006–07, through this program, over 848 volunteer days were spent in national parks and reserves on:

- planting 4920 trees
- repairing 16,200 metres of tracks
- repairing 370 metres of fence
- removing weeds from 318 hectares of land
- collecting 141 kilograms of rubbish.

Other volunteer projects in 2006–07 included:

- the **Clarence Valley coastal emu survey** of the endangered population found between Red Rock and Evans Head on the north coast, the results of which estimated the population to be around 149 birds. This was more than expected based on the last three annual surveys.
- the **Cape Byron Friends program**, where eight volunteers acted as museum and whale information guides in Cape Byron State Conservation Area.
- the fourth annual **Port Stephens boat-based shorebird survey** in February 2007. Migratory and non-migratory shorebirds were counted and 3801 waterbirds were recorded, including 108 pied oystercatchers, a significantly large proportion of the NSW population.
- the seventh annual **Port Stephens community dolphin census** in 2007. More than 80 volunteers spotted 96 dolphins, consistent with previous counts.

- volunteers camping with scientists in Tinkrameanah National Park in September 2006 and identifying 18 mammal species including the threatened squirrel glider and eastern pygmy possum, 14 reptile species and 35 bird species.
- Culburra Beach residents working for 650 volunteer hours in March 2007 to monitor **Lake Wollumboola** in Jervis Bay National Park. The lake is an important wetland. Monitoring actions included maintaining an 'odour log', recording the conditions under which hydrogen sulphide is released from the lake, measuring changes in the sand spit at the north-east corner of the lake and monitoring foreshore vegetation.
- DECC and **Burrill Lake residents** cleaning up a firebreak and bushland next to Meroo National Park on the south coast in April 2007. They removed over four tonnes of illegally dumped commercial and domestic waste, and weeds and garden waste.
- over 500 volunteers sighting a record 1608 **humpback whales** off Cape Solander in Botany Bay National Park from May to August 2006, 200 more than in 2005–06.

In March 2006, DECC began a **review of volunteering**. DECC engaged a consultant to hold focus groups with volunteers and to audit how the program was managed internally. The review will continue into 2008.

### 4.3.2 Increasing Aboriginal participation in reserve management

DECC jointly manages parks and reserves with Aboriginal communities through a range of co-management agreements, partnerships and cooperative projects.

#### Co-management

Co-management arrangements enable Aboriginal people to manage parks or advise DECC on its management of parks. Formal co-management options include:

- DECC returning a protected area to its Aboriginal owners and leasing it back to be jointly managed under Part 4A of the *National Parks and Wildlife Act 1974*

- Indigenous Land Use Agreements (ILUAs) with native title holders under the *Native Title Act 1993*
- memoranda of understanding (MOU) between DECC and Aboriginal communities.

DECC also enters into less formal partnerships with Aboriginal people to protect and manage their culture, heritage and land.

In 2006–07 significant achievements for co-management were made with Aboriginal communities. In December 2006, two new ILUAs were signed by the NSW Government and the Bundjalung People of Byron Bay–Arakwal. The **Byron Bay ILUA** was an agreement to add land with high environmental values to Arakwal National Park, Cumbebin Swamp Nature Reserve and Broken Head Nature Reserve. The **Ti Tree Lake ILUA** will create a new reserve, the Ti Tree Lake Aboriginal Area, which encompasses forests and lakes sacred to Bundjalung women, and will be managed with the women.

In February 2007, the Government finalised an ILUA with the **Githabul** native title claimants in northern NSW. The ILUA establishes a co-management arrangement covering ten parks near Kyogle in north-eastern NSW near the Queensland border, the largest area ever included in an ILUA in NSW. The Government and the Githabul people will seek consent determination orders from the Federal Court that the claimants hold native title rights over those parks and other public lands, to enable the Githabul People to practise their traditional laws and customs including the right to access and camp in the areas, hunt, fish and gather plants for personal use. This is the first time that such a determination of native title has been sought.

On 10 February 2007, the Government returned lands at Stockton Bight near Newcastle to the traditional owners, the Worimi people, for three new Aboriginal-owned parks to be known as the **Worimi Conservation Lands** (Worimi Regional Park, Worimi State Conservation Area and Worimi National Park). This result followed two years of formal negotiations and almost a decade of discussion to resolve land claims under the NSW Aboriginal Land Rights Act. The Aboriginal community has consented to give the land to the general community for recreational enjoyment. The reserves will be jointly managed by the Worimi people and DECC.

In March 2007, DECC and the **Darug people** signed a memorandum of understanding (MOU) covering 34 parks in southern and south-western Sydney, to enable the Darug people to be involved in managing parks and reserves, and to protect Darug objects and places.

In late 2006, the second term of a MOU between DECC and the **Pilliga Nature Reserve Aboriginal Consultative Committee** was signed. The committee, which was established in 2001, includes three community members from each of the Narrabri, Coonabarabran, Gunnedah and Baradine Aboriginal communities.

Other negotiations included DECC and the Terry Hie Hie Co-op working towards facilitating the Co-op's involvement in managing the Terry Hie Hie Aboriginal Area south-east of Moree, and the creation of a new Aboriginal-owned and jointly managed park at **Warrell Creek** near Nambucca Heads.

A statewide Aboriginal Co-Management Conference was held in April 2006, followed by a written report and DVD so information on co-management arrangements around the state could be shared.

## ■ CASE STUDY

### Historic agreement with Central Coast Aboriginal groups

In March 2007, DECC signed an agreement to recognise the role of Aboriginal groups from the Central Coast and Hunter regions in managing the area's parks and reserves. Through the agreement, local Aboriginal communities and DECC are jointly managing the region's thousands of Aboriginal cultural sites.

The Central Coast Hunter Range Aboriginal Co-management Committee, consisting of representatives from 12 local Aboriginal groups, are working with DECC on a study identifying areas and items of Aboriginal cultural value in and outside the reserves. Agreements will also be developed on use of parks and reserves, education and tourism, and employment and training opportunities for Aboriginal community members will be promoted.

The twelve groups represented on the committee are:

- Awabakal, Bahtabah, Darkinjung, Koopahtoo, Metropolitan, Mindaribba and Wanaruah local Aboriginal land councils
- the Mirring Women's Group
- Potorminbee Elders
- Wonnarua Tribal Council Combined
- Worimi Traditional Owners
- Ungoороo Aboriginal Corporation.



Aboriginal rangers mount displays about the natural and cultural values of Central Coast national parks.

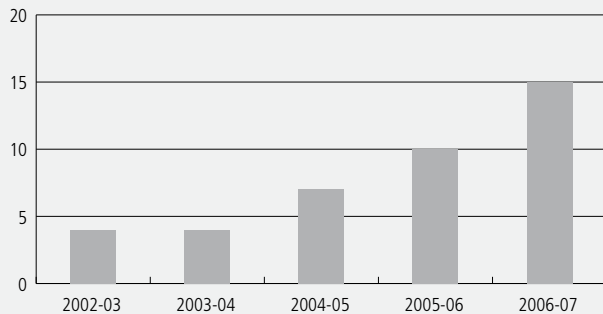
## ■ PERFORMANCE INDICATOR

### Number of formal agreements with Aboriginal communities for co-management of protected areas

**Definition:** DECC works with Aboriginal communities to incorporate cultural practices into the management of parks and reserves under co-management arrangements. These agreements are guided and formalised under the *National Parks and Wildlife Act 1974*. This indicator shows the number of formal co-management agreements in place with Aboriginal communities, including Indigenous Land Use Agreements and memoranda of understanding.

DECC also engages in informal joint management arrangements. However, given the localised nature of many of these, they are difficult to measure accurately and have not been included in this indicator.

#### Formal agreements with Aboriginal communities for co-management of protected areas



**Interpretation:** During 2006–07, five new co-management arrangements between DECC and Aboriginal communities were finalised. These include the return of lands to the Woromi people at Stockton Bight; three new Indigenous Land Use Agreements (ILUAs) – Byron Bay ILUA and Ti Tree Lake ILUA with the Bundjalung People of Byron Bay, and an ILUA covering ten parks in Kyogle with Githabul native title claimants; and a memorandum of understanding with the Darug people covering more than 35 parks in the Sydney metropolitan area.

As at 30 June 2007, there were a total of 15 formal co-management arrangements in place with Aboriginal communities covering 97 areas across more than 1.5 million hectares (or 23% of the reserve system).

In July 2006, the Minister adopted the Mungo National Park Plan of Management which was developed with the Mungo National Park Joint Management Advisory Committee. This was followed in February 2007 by the adoption of the Arakwal National Park Plan of Management, developed in collaboration with the Arakwal National Park Management Committee.

## Partnerships and cooperative projects with Aboriginal communities

During 2006–07, DECC worked with traditional Aboriginal landowners in park management through a range of agreements and cooperative projects.

Two Aboriginal Working Group meetings were held in 2006–07 as part of the 'Towards Centenary' upgrade of Kosciuszko National Park. The Aboriginal traditional owners provide a vital link between indigenous culture and park management.

The Mooka project, which commenced in early 2007, is an archaeological sites survey supported by Northern Rivers Catchment Management Authority in cooperation with the Purfleet Local Aboriginal Lands Council, and covers the area from Camden Haven River to Hallidays Point and along the Manning River. The survey is expected to be completed by December 2007.

A new sign at the base of Wollumbin (Mount Warning) was erected in late 2006 as a result of consultation with the Aboriginal community. The sign asks people to consider not climbing to the summit as a mark of respect for Aboriginal traditional law and customs. DECC will continue to involve the Aboriginal community in the management of this significant cultural site.

In June 2007, a Gamillaroi joint language interpretive sign was erected at Sandstone Caves in the Pilliga Nature Reserve. The sign, *Working Together to Protect Pilliga Nature Reserve*, includes a small story from each of the members of the Pilliga Nature Reserve Aboriginal Consultative Committee, and describes why their involvement in the committee is important for themselves and local Aboriginal people.

Ngiyampaa Aboriginal community members from around Cobar in the central west are participating in the development of an oral history, *Working on Yathong*. Stage 1 of the project for the Mt Grenfell Historic Site Board of Management was completed in June 2007. A further two stages will be undertaken to complete the project, and the recorded oral history will be presented in a book and DVD. A Statement of Joint Intent was signed in February 2007 with the Yathong Culture Camps Steering Committee to formally acknowledge DECC's commitment to work cooperatively with the Ngiyampaa Aboriginal community in using Yathong Nature Reserve for cultural purposes.

## 4.3.3 Managing terrestrial and marine reserves for conservation

### Park Management Program

DECC is integrating all of its policy and guidelines for national park management into a Park Management Program. The new program will:

- provide clearer, more consistent management objectives and operational procedures
- assist in achieving consistent standards in park management and improve DECC's ability to demonstrate and report on performance
- provide improved, coordinated management systems across DECC's national parks and reserves so managers can easily access information.

Under this program, the **Park Management Policy Manual**, developed over 2006–07, provides a comprehensive and user friendly guide to current policies used to manage the national parks and reserves in NSW,

and outlines DECC's position on and objectives for all aspects of park management. DECC is developing other guides to complement the manual, which is expected to be available to the public by mid-2008.

As part of its total asset management plan, DECC continued to develop the **asset maintenance system** for reserves. During 2006–07, DECC completed internal business rules, scenario testing, and configuration of the data model and dictionary. The system will be tested over 2007–08 before it is rolled out.

## State of the Parks

As part of the State of the Parks program, a report entitled *Protecting our national parks from pests and weeds* was released in October 2006. This report provided the latest evaluation of management performance, and information on feral animal and weed control programs in national parks and reserves.

DECC's State of the Parks has been recognised internationally through the International Union for the Conservation of Nature using the 2004 report as a best practice case study in a publication released in 2007. A further State of the Parks survey of all reserves will be undertaken in late 2007 with another public report planned for release in 2008.

## Plans of management

Under the *National Parks and Wildlife Act 1974*, DECC must prepare a plan of management for each park and reserve. Plans of management lead to better understanding of natural and cultural features that must be protected, including threatened species or cultural heritage sites. The plans also incorporate strategies for management of issues such as fire and pests, and outline any facilities proposed to be developed. Plans of management enable DECC to plan ahead and make the best use of resources.

As part of the Park Management Program, in 2006–07 DECC reviewed the way it develops, presents and audits plans of management for its parks and reserves.

Plans of management which were adopted in 2006–07 include those for:

- Lennox Head Aboriginal Area
- Mungo National Park
- Jingellic, Clarkes Hill and Bogandyerra Nature Reserves
- Dharawal Nature Reserve and State Conservation Area
- Blue Gum Hills Regional Park
- Kosciuszko National Park.

### Jenolan Caves Reserve draft plan of management

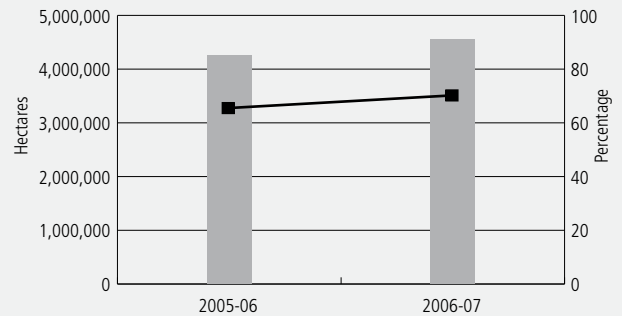
Following the transfer of the Jenolan Caves Reserve to DECC in July 2006, a plan of management was prepared in consultation with stakeholders. This plan will be implemented over five years and include a staged transfer of the management of the reserve from the Jenolan Caves Reserve Trust to DECC. In June 2007, the draft plan was

#### ■ PERFORMANCE INDICATOR

### Area and percentage of reserve system covered by an adopted plan of management

**Definition:** This indicator measures the area and percentage of the reserve system managed by DECC which is covered by an adopted plan of management.

#### Area and percentage of reserve system covered by an adopted plan of management



**Interpretation:** This indicator has not been reported on before so long-term data is not available. During 2006–07, 13 plans of management were adopted by the Minister. These plans cover 18 parks and reserves, an area of more than 300,000 hectares. In addition, 17 draft plans for 28 parks and reserves were placed on public exhibition. As at the end of June 2007, there were 217 adopted plans of management covering 307 parks and reserves, an area of more than 4.5 million hectares representing almost 70% of the reserve system.

Parks with no adopted plan of management are managed under draft plans if available, or in accordance with DECC's policy for park management prior to adoption of a plan of management.

submitted to the recently established Karst Management Advisory Committee for comment.

In March 2007, DECC convened a karst managers forum to identify and discuss issues relevant to the management of karst environments.

## Marine park and aquatic reserve planning

On 2 March 2007 the Marine Parks Amendment (Batemans) Regulation 2007 and Marine Parks Amendment (Port Stephens – Great Lakes) Regulation 2007 were made. These Regulations provide **zoning plans** for the two most recently declared **marine parks**. The Port Stephens Regulation commenced on 21 April 2007 and the Batemans Regulation on 30 June 2007.

Both these zoning plans protect marine biodiversity in sanctuary zones and habitat protection zones, while providing for ecologically sustainable use of the parks. The zoning plans were developed with extensive public consultation and detailed advice from the Port Stephens–Great Lakes and Batemans marine park advisory committees. Buy-outs of commercial fishing licences were undertaken in both marine parks.

All six NSW marine parks now have zoning plans, which can be viewed on [www.mpa.nsw.gov.au](http://www.mpa.nsw.gov.au)



Management of **aquatic reserves** was transferred from the Department of Primary Industries to DECC in May 2007 (see page 71). DECC intends to review the aquatic reserve program in 2007–08.

## Advisory bodies

In managing its parks and reserves, DECC greatly values the advice and support given by statutory councils and committees.

### National Parks and Wildlife Advisory Council

The National Parks and Wildlife Advisory Council is constituted under the *National Parks and Wildlife Act 1974* (NPW Act). The Council has 19 members (see Appendix 5) who advise the Minister and DECC on issues such as park management, wildlife protection, conservation agreements and declaration of wilderness areas. Appointments to the Council are made by the Minister with Cabinet endorsement.

In 2006–07, the Council met four times and also worked through its three subcommittees. Significant issues for which the Council provided advice included a wildlife management review, bushfire management, the Park Management Policy Manual and Thredbo Head Lease.

Under the NPW Act, the Council must advise the Minister on plans of management and any submissions received from the public on them. During 2006–07, the Council reported on 30 plans of management for 43 DECC-managed areas.

### Regional advisory committees

Regional advisory committees are constituted under the NPW Act to advise the National Parks and Wildlife Advisory Council and DECC on measures to improve the management of DECC-managed parks and reserves. There are 18 regional advisory committees across NSW (see Appendix 5). Members are appointed by the Minister.

Regional advisory committees provide an important link between the community and DECC. Committee members maintain contact with other groups and organisations such as local government, Aboriginal communities, tourism

associations, conservation groups, people living near reserves and outdoor recreation groups.

The 2007 National Parks and Wildlife Regional Advisory Committees' Conference was held in Armidale on 27–29 April. This conference brought together representatives from regional advisory committees, the National Parks and Wildlife Advisory Council and other advisory bodies to discuss culture and heritage, the theme of the conference. A record of proceedings will be available later in 2007 on [www.environment.nsw.gov.au](http://www.environment.nsw.gov.au).

### Karst Management Advisory Committee

A statewide Karst Management Advisory Committee was established in September 2006 to advise the National Parks and Wildlife Advisory Council on the conservation and management of karst environments.

The Committee's inaugural meeting took place in February 2007, followed by a second meeting in May 2007. The initial focus has been on developing a cave access policy and karst research prospectus. In June 2007, the Committee commenced its review of the draft plan of management for the Jenolan Karst Conservation Reserve.

## 4.3.4 Managing cultural heritage in reserves

### Maintaining cultural heritage

In January 2007, DECC released a **Cultural Heritage Strategic Policy**, *Conserving heritage connecting cultures*, to guide DECC staff, consultants and contractors in managing DECC's cultural heritage responsibilities. A separate implementation plan was finalised in May 2007.

During 2006–07, a draft archaeological management plan, the **Mungo National Park Footprints Conservation Plan**, was prepared to initiate long-term conservation of the Garngang human fossil trackway through Mungo National Park in western NSW. The trackway is between 19,000 and



*The National Parks and Wildlife Advisory Council. Back row, left to right: Diana Hoffman, Geoff Cary, Patrick Sutcliffe, Anne Reeves, Norma Shankie-Williams, Bruce Hayllar (sitting), Ian McKenzie, Glenda Chalker (sitting), Ken Prendergast, Jean Rice (sitting on cupboard). Front row (seated at table), left to right: Nicholas Jacomias, Ronnie Harding, Kent Williams, George McKay (Chair), Jane Judd (Deputy-Chair). Absent: James Ingram and Christine Ferguson.*

23,000-years-old, and preserves the largest examples of fossilised human footprints in the world. Researchers and conservation experts from Bond University, the Australian National University, the University of Melbourne, Getty Conservation Institute and the Australian Museum visited the site and advised on its significance.

### Conserving significant heritage assets

DECC has one of the largest holdings of historic heritage sites in NSW. Each year, DECC manages major planning, works and maintenance projects to ensure that significant heritage is conserved. Much of this work is funded through the **Heritage Assets Maintenance Program (HAMP)**. In 2006–07, over \$2.06 million was allocated to 50 projects at 42 locations, comprising 22 heritage planning projects and 28 heritage works projects.

The 22 heritage planning projects included conservation management plans for the former pastoral properties Oolambeyan and Yathong in the west; an archaeological landscape management plan for Lake Innes Ruins in the north; heritage action statements for the Kosciuszko Huts in the south; and, around Sydney, the commencement of heritage conservation planning for Scheyville, La Perouse and South Head.

HAMP funds were also used to fund DECC's contribution to a multi-agency study of the Sydney Coastal Fortifications.

The 28 heritage works projects included conservation to allow adaptive reuse of maritime heritage at Cape Byron and Sugarloaf Point lighthouses; conservation of rural heritage at Seaton's Farm, Hill End and Currango Homestead; works projects involving colonial and convict heritage on the Old Great North Road and at Throsby Park; and conservation of industrial heritage at Mt Maid Goldmine.

DECC also drafted a **HAMP Strategic Plan**, which sets out key priorities over the next five years for funding allocation, administration and improving historic heritage conservation management.

Under the *Heritage Act 1977*, DECC has delegated authority, for land managed under the NPW Act and by the Botanic Gardens Trust, to make decisions on certain applications, and endorse conservation management plans for State Heritage Register-listed items.

The DECC decisions made under delegation during 2006–07 were:

Section 60 applications for State Heritage Register-listed items approved	8
Section 140 applications for excavation of non-Aboriginal heritage approved	3
Section 57 exemptions for State Heritage Register-listed items approved	5
Section 137 exceptions for excavation of non-Aboriginal heritage approved	10
<b>Total</b>	<b>26</b>

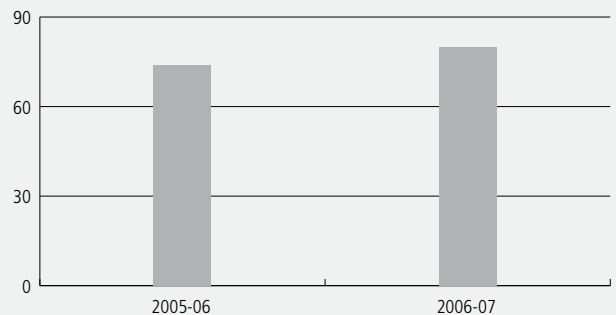
DECC endorsed two conservation management plans for State Heritage Register-listed items on lands it manages in 2006–07.

#### ■ PERFORMANCE INDICATOR

### Places managed or declared by DECC that are primarily for the conservation of Aboriginal heritage

**Definition:** This indicator measures the number of places across NSW that were declared or are managed by DECC to conserve Aboriginal heritage. These include Aboriginal Places and Aboriginal Areas that are declared under the *National Parks and Wildlife Act 1974*, specified in conservation agreements or located on historic sites.

#### Places managed or declared by DECC that are primarily for the conservation of Aboriginal heritage



**Interpretation:** This is a new indicator and long-term data is not available. In 2006–07, DECC managed 14 Aboriginal Areas and eight historic sites primarily for their Aboriginal heritage values. There are also 55 Aboriginal Places, and three voluntary conservation agreements established primarily to conserve Aboriginal heritage, making a total of 80 sites.

### National parks added to the National Heritage List

The National Heritage List is Australia's list of places or groups of places with outstanding heritage value in terms of their natural, indigenous or historic heritage. The list is established under the *Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth).

In 2006–07, three nominations involving land in the NSW reserve system were added to the National Heritage List. These included:

- Warrumbungle National Park
- Royal National Park and Garawarra State Conservation Area



Photo: D. Brown, DECC

As well as being a World Heritage site, Lord Howe Island has now been added to the National Heritage List for its conservation of valuable natural heritage.

- Ku-ring-gai Chase National Park; and Lion Island, Long Island and Spectacle Island nature reserves.

These sites joined Kurnell Peninsula (Botany Bay National Park) and the North Head's Quarantine Station on the list.

In May 2007, the Commonwealth Government also added all the existing World Heritage places in NSW to the National Heritage List. These are Lord Howe Island Group, the Willandra Lakes Region (Mungo National Park), the Greater Blue Mountains Area and the Gondwana Rainforests of Australia (until recently called the Central Eastern Rainforest Reserves of Australia).

In January 2007, the Commonwealth Government announced the preparation of a nomination for World Heritage listing of 11 of Australia's convict sites. One of the four sites nominated in NSW is Devine's Hill Precinct on the Old Great North Road in Dharug National Park near Wiseman's Ferry, which was constructed in 1832 using convict labour.

## Maintaining historic heritage

During 2006–07, the historic **Quarantine Station** at North Head on Sydney Harbour was renovated to repair damage caused by fire. The buildings, known as H1 and P22, were used as a hospital and for accommodation and were rebuilt as closely as possible to their original design using traditional building techniques and materials salvaged from the fire. The \$3.4 million project was completed in June 2007.

In April 2007, DECC began further work to repair the **Cape Byron Lighthouse Keepers' Cottages** and their outbuildings, to conserve the heritage values of the 100-year-old buildings and improve facilities for visitors. The works, including 18 months of planning undertaken by DECC in collaboration with the Cape Byron Trust, cost approximately \$600,000 and include replacing guttering and downpipes, repairing features, and upgrading plumbing to connect the cottages to the sewerage system. Electricity services have been upgraded and safety fencing around the perimeter of the Lighthouse Precinct has been completed.

Conservation and reuse works were also completed in 2007 on **Sugarloaf Point Lighthouse Cottages** in Myall Lakes National Park. Works were designed to conserve the 1875 buildings in the long-term, and to enable their reuse as short-term holiday accommodation. The cost of these works was approximately \$1 million.

In late 2006, a 100-year-old **farmhouse cottage** in Myall Lakes National Park was restored, to enable its reuse as short-term holiday accommodation. A new sewerage system was installed and an access road on the western shore of Two Mile Lake was upgraded. The cost of these works was approximately \$100,000.

In late 2006, the first stage of the project to redevelop the **Mountain Maid Mine Tourist Facility** in Copeland Tops State Conservation Area was completed. A replica of the original bridge that once gave access to the main mine shaft was installed. Historic structures were stabilised and refurbished, and contemporary structures were removed.

In early 2007, a conservation management plan, including a contextual history and contemporary oral history, was finalised for the **Karamea homestead** in Curracabundi National Park.

## National Trust Awards

In April 2007, a DECC project to restore the 1880s Guardhouse at Middle Head in Sydney Harbour National Park won the Conservation Built Heritage Award for projects under \$1 million. It was made safe, functional and visually identical to the original structure through using old photographs and records.

In addition, the plan to restore the Bobbin Head and Apple Tree Bay area in Ku-ring-gai Chase National Park won the Conservation Management Plans Award. The jury was impressed with the extensive community consultation that took place.

## Integrating historic heritage conservation into park management

DECC continued its **Cultural landscapes: connecting history, heritage and reserve management project** in 2006–07, which aims to improve the management of cultural heritage at a landscape level in NSW reserves. DECC completed a contextual history of **Yuraygir National Park** which focuses on the working and recreational relationships that people developed with the park landscape. An inventory was also produced which records objects, places and cultural landscapes in the park.

Preparation of **geographic information system** atlases of historic heritage in Yuraygir and Culgoa national parks commenced in 2006–07 and are nearing completion. These will help park managers integrate the conservation of historic heritage with day-to-day park management. The atlases include site recordings, photographs, historical maps and plans for each historic heritage place.

In December 2006, a DECC publication on the **heritage of the NSW pastoral industry** was recognised through an award made by the Australian Archaeological Association. *Shared landscapes: Archaeologies of attachment and the pastoral industry in New South Wales* details the results of a major DECC research program and involved input from the community.

## 4.3.5 Managing key pressures on reserves

Under State Plan Priority E4, the NSW Government is committed to better outcomes for native vegetation, biodiversity, land, rivers and coastal waterways. To achieve these outcomes, DECC undertakes programs to manage fire, pest animals and weeds across NSW reserves and neighbouring lands; manages natural resources; and protects the state's unique biodiversity from current and future pressures.





Photo: DECC

*Rising temperatures and increased greenhouse gas emissions could lead to more extreme weather, which could in turn lead to increased weed and pest species throughout national parks and reserves.*

## Addressing climate change

Climate change has significant implications for park management, including:

- potential impacts on the resilience of the reserve system and its ecosystems, especially Alpine areas, wetlands and coastal dunes
- increases in weed and pest species, such as exotic vegetation from tropical areas
- increased intensity and frequency of fire
- potential loss of habitat for species with a restricted range of habitat or that have very special habitat needs, such as the mountain pygmy possum in the Australian Alps.

DECC is implementing projects that allow species to move altitudinally and longitudinally through the landscape to access new habitats that can meet their needs (see pages 21 and 72).

Future pest control techniques will need to reflect changes in the distribution, abundance or impacts of weeds and pest animals that may occur in response to climate change. DECC is working with Macquarie University to understand the interaction between climate change, pests and biodiversity.

DECC has also begun to enlist local residents in, and visitors to, the Snowy region in monitoring changes in the local environment due to global warming. The volunteers will report each year on the time wildflowers appear above the treeline and when bogong moths arrive, to see if there is any pattern of change.

## Pest animal and weed control

DECC spends approximately \$18 million per year on pest animal and weed control, focusing on areas where impacts on biodiversity are greatest, or where weeds and pest animals are likely to impact on neighbouring lands.

In national parks and reserves, pest management is coordinated through the NSW Threatened Species Priorities Action Statement (PAS), threat abatement plans (TAPs) and regional pest management strategies. Regional strategies are being revised in line with the PAS, and should be finalised by December 2007.

Additional funding of \$2.4 million over three years by the Australian Government has allowed pest management programs to be expanded onto surrounding private land or implemented on more sites. Projects have been run collaboratively with Catchment Management Authorities and other government agencies, local control authorities, landowners and the community. For example, in Congewai Valley near Broke in the Lower Hunter, farmers are controlling foxes on 11 properties surrounding important habitat for the brush-tailed rock wallaby, complementing the control program in the nearby reserve being conducted by DECC staff.

DECC is a key player in the development of AusBIOSEC, a framework for enhancing Australia's biosecurity system for primary production and the environment. AusBIOSEC is enabling primary industry to establish more formal biosecurity measures for invasive species that have predominantly environmental impacts.

The **NSW Invasive Species Plan** aims to deliver a whole-of-government approach for preventing, containing and managing invasive species. A draft plan will be released later in 2007 for public comment. The plan will assist the Natural Resource Commission to deliver targets and indicators for invasive species for the next State of the Environment Report in 2009.

As part of the Sustainable Schools Program (see page 25), DECC is working with the NSW Department of Education and Training to develop interactive, web-based learning on weeds of national significance for primary and high school students. Students will learn about the impacts of weeds on biodiversity in their local area, and the scientific principles of managing weeds.

In October 2006, DECC released its latest **State of the Parks report on pest and weed management**, *Protecting our national parks from pests and weeds*. The report shows that DECC is effectively reducing or containing the impacts of pests in more than 90% of the area it manages. The report also presents examples and case studies that illustrate the complexity of pest management. This report is available at [www.nationalparks.nsw.gov.au/npws.nsf/Content/sop\\_pest\\_management](http://www.nationalparks.nsw.gov.au/npws.nsf/Content/sop_pest_management).

DECC uses various pest control techniques in its reserves, including biological control, spraying and baiting. For information on DECC's use of pesticides, see page 49.

## Willandra Lakes World Heritage Area pest control project

In 2006–07, DECC, with private landholders and the Sunraysia Institute of TAFE, worked to control weeds and rabbits in the Willandra Lakes World Heritage Area (WLWHA). The project also included mapping the distribution of, and controlling, weeds and rabbits on private lands.

The project has helped protect the native biodiversity of the WLWHA, and was conducted concurrently with pest control works DECC carried out in the adjacent Mungo National Park. Natural Heritage Trust funding of \$322,000 was provided through the Lower Murray Darling Catchment Management Authority.



## Pest animal control

### Wild dog control

Throughout 2006–07, DECC controlled wild dogs in many locations to reduce their impacts on livestock on farms. Cooperative wild dog management plans are being developed in the south-east of NSW where DECC is now spending nearly \$1m each year on wild dog control.

Recent studies have yielded important information on wild dog behaviour and movements (see case study below), control methods, and the potential effects of poison baiting on native species. Aerial baiting has been reintroduced in some areas to trial a new poison delivery device known as the M-44 ejector, which will allow 1080 poison baits to be delivered to wild dogs and foxes for longer periods of time with fewer risks of them being ingested by native animals such as the spotted-tailed quoll. Other developments include trialling new synthetic wild dog lures and using llamas as guard animals for livestock.

### Cooperative fox control to protect key threatened species

Throughout NSW, fox baiting programs have been established to expand fox control onto private lands near sites where threatened species are present. These programs are carried out in accordance with the *NSW threat abatement plan: Predation by the red fox (Vulpes vulpes)* (Fox TAP) which is available on [www.nationalparks.nsw.gov.au/PDFs/redfox\\_approved.pdf](http://www.nationalparks.nsw.gov.au/PDFs/redfox_approved.pdf), and is supported through National Heritage Trust funding.

In May 2007, DECC worked with the Central Tablelands Rural Lands Protection Board and interested landholders on a fox and wild dog control program using 1080 baits. The program aimed to protect native species such as the bush stone-curlew as well as livestock on surrounding properties. Areas baited included the Mullion Range State Conservation Area north of Orange, Winburndale Nature Reserve and surrounding land north of Bathurst, and the Weddin Ranges near Grenfell. Baiting was also carried out in the Tollingo and Woggoon nature reserves near Condobolin to protect native species such as the mallee fowl.

Annual baiting is carried out from Ballina to Evans Head along the north coast of NSW, to reduce the threat foxes pose to threatened pied oystercatchers, in conjunction with the Rural Lands Protection Board, Department of Lands, Department of Defence and private landholders. Since the program began in 1997, the number of fledgling chicks has increased from one to more than 89.

In the **central coast** Hunter Range region, DECC staff and volunteers have been monitoring brush-tailed rock wallaby populations and establishing fox control programs in Yengo, Wollemi and Watagans national parks. Efforts by DECC staff, the community and park visitors have led to the discovery of other previously unknown populations of brush-tailed rock wallabies in these parks.

On the **south coast**, DECC has managed local brush-tailed rock-wallaby colonies since 1995 with assistance from Friends of the Brush-tailed Rock-wallaby and local landholders. Additional monitoring is continuing to provide comparison with pre-fox control population levels.

## ■ CASE STUDY

### Dogs in Space Program

Some of the long hidden secrets on where wild dogs live and travel have been unmasked in the two-and-a-half year long Dogs in Space Program. Commencing in late 2004, the research program has resulted in almost 30 wild dogs being collared with satellite tracking devices that monitored their every move for up to 18 months.

The wild dogs were tracked in the 200,000-hectare Morton National Park west of Nowra; Kosciuszko National Park; Namadgi National Park which covers two-thirds of the Australian Capital Territory; the South East Forests and Coopracambra national parks which straddle the NSW– Victorian border; and two areas in Victoria's Alpine National Park.

The study revealed that most wild dogs have large home ranges, some of which are entirely within a park boundary. They travel constantly within these areas but do not tend to stray too far from them. Significantly, not many wild dogs live in the centres of national parks, but are more likely to be found on the



Area in Kosciuszko National Park where wild dogs were caught and tracked. The animals had large home ranges within this part of the park.

Photo: A. Claridge, DECC

fringes, especially in forests adjoining open country which contains more food for them. The challenge is to protect farms in these areas using control methods such as aerial and ground baiting and trapping, in partnership with the Rural Lands Protection Board and landholders.

The program was funded by DECC with support from the Australian Alps Liaison Committee, Parks Victoria and Environment ACT.

The success of fox control has also been monitored in the Brigalow and Claremont nature reserves in **western NSW**. DECC staff completed nocturnal surveys in spring 2006 and autumn 2007, using spotlights to record the presence and abundance of the endangered **black-striped wallaby**. Sixty wallabies were observed on average each night and up to 90 on some nights, consistent with surveys since 2003 and indicating that the population remains stable.

On the **far south coast**, DECC sought the help of local landholders in March 2007 to reduce the impact foxes have on endangered shorebirds such as the little tern and the hooded plover, which nest on local beaches. DECC is baiting and trapping foxes on national park land as well as supporting landholders who are baiting on private property to create extended fox-free areas for the shorebirds. Park neighbours north of Wonboyn Lake, around Pambula Lake, and around Bournda and Mimosa Rocks national parks are involved.

### Management plans for wild horses

Horses establish trails that damage vegetation and sensitive habitats. They can also cause erosion, damaging streams and river banks, and can carry pathogens into the water supply which may affect human health.

A wild horse management plan for **Kosciuszko National Park** is being developed, under the new Kosciuszko National Park Plan of Management, to exclude wild horses from key areas such as alpine and karst environments. It builds on a plan to manage wild horses near Thredbo where contractors have trapped and removed 184 horses since May 2002. The Kosciuszko National Park Wild Horse Steering Committee was established in late 2006 to develop the plan. It includes representatives from horse groups, the RSPCA, Aboriginal groups, the National Parks Association and the community. The draft plan is expected to be placed on public exhibition later in 2007.

In northern NSW, the final version of the horse management plan for **Guy Fawkes River National Park** was published in July 2006. The plan includes strategies to free the park of horses, with their local heritage significance being conserved outside the park. DECC staff are humanely capturing, handling and removing horses from the park in accordance with the plan. By June 2007, 96 wild horses had been removed.

The **Warragamba Special Area** protects 45 threatened flora and fauna species and surrounds Lake Burragarang, the primary water source for 4.5 million Sydney residents. DECC is responsible for protecting the water quality of Lake Burragarang and threatened species, by minimising the impact of pest animals. DECC formed the Warragamba Wild Horse Management Steering Committee which developed a draft plan of management for wild horses in response to increasing numbers in Warragamba. In November 2006, DECC released the draft plan for public comment, and the plan is due to be finalised and adopted later in 2007.

### Deer and goat control program

Late in 2006, DECC commenced a three-year cull of feral goat and deer populations in the national parks around **Kangaroo Valley**. The cull will also involve private landholders and is being conducted with Upper Kangaroo River LandCare. Research into the impact of deer and goats on rare plants is also being conducted. In 2006–07, 105 goats and 18 rusa deer were culled by contract shooters, and DECC liaised extensively with landholders to engage them in the program.

### Cane toads

Cane toads have been found in northern NSW since the 1960s and are spreading slowly southwards. They have no natural predators or diseases threatening them nor has any biological agent, such as a virus, been found to control them. Their main limiting factor is that they need to live near water to survive.

In 2007, DECC and Hastings Landcare organised the annual cane toad muster around **Port Macquarie**. Even with the assistance of 170 local residents, Nifty the cane toad sniffer dog from Western Australia, the Port Macquarie–Hastings Council and LandCare, no cane toads were found, probably due to the number of cane toads removed in the previous six annual musters.

In the **far north of NSW**, past surveys had detected cane toads in the Border Ranges, Mebbin, Mooball, Billinudgel, Nightcap, Goonengerry and Mount Jerusalem national parks. Surveys conducted during 2006–07 identified new areas of infestation in Bungabbee, Mucklewee Mountain and Yaringully nature reserves. Funding is now being provided by the Northern Rivers Catchment Management Authority to trial new cane toad traps in areas of high conservation significance in the parks and reserves.

During 2006–07, a **cane toad education kit**, *Trap that toad*, was developed as a teacher resource for students from Years 3–6. Through the program, students will learn to distinguish native frogs that are commonly mistaken for cane toads from cane toads themselves, find out why native frogs need to be protected, and discover how to deal with a cane toad if they find one. The program is being delivered in primary schools throughout the Northern Rivers Region.

### Livestock fencing in community conservation areas

Over the past year, DECC has negotiated fencing agreements with neighbours of the new Brigalow Belt South and Nandewar Community Conservation Areas. Although park neighbours are responsible for fence maintenance on their properties, DECC rangers met with neighbours to help them set up effective stockproof boundary fencing. The progressive upgrade of boundary fencing will continue over several years, and requests for assistance are subject to environmental assessments and funding availability.

## Weed control

In September 2006, DECC and the Weeds Cooperative Research Centre published a report called *Impact of weeds on threatened biodiversity in NSW*. The report found that two-thirds of the weeds that affect NSW's threatened species began life as garden plants. Alarming, almost half of NSW's threatened species are at risk of extinction from weeds such as lantana, bitou bush, blackberry, honeysuckle, asparagus fern and glory lily which strangle, suffocate and steal habitat from native plants and animals. The impact of lantana and bitou bush is so great that they threaten almost 100 native species. The report also found Sydney to be the state's worst weed hotspot, as it contains 758 species or 55% of the 1380 weed species in NSW. Weeds are having the least impact on threatened species in the state's south-west.

The report can be viewed at [www.weeds.crc.org.au/documents/tech\\_series\\_11.pdf](http://www.weeds.crc.org.au/documents/tech_series_11.pdf)

### Lantana

Lantana is a widespread weed which threatens biodiversity, especially in coastal and eastern areas. DECC is working with the Department of Primary Industries to introduce biocontrol agents for lantana. During 2006–07, DECC continued to **prepare a national lantana plan** with the Queensland Government, that will identify priority conservation areas for control.

In the interim, lantana is being reduced in many reserves. For example, continuous control of lantana in **Guy Fawkes River National Park** since 1998 has reduced infestations along the Guy Fawkes and Boyd rivers by more than 95%.

In the north-east, a major control program for lantana and other weeds was undertaken over 2006–07 in the **Gondwana Rainforests of Australia** (until recently called the Central Eastern Rainforest Reserves of Australia). Commonwealth World Heritage funding totalling \$17,000 was supplied to tackle weeds in Mt Warning, Wollumbin, Mallanganee, Nightcap and Toonumbar national parks. Lantana was controlled at Terania Creek and Mt Nardi in Nightcap National Park, while at Mount Warning National Park, the lantana at the entrance to the park was treated to allow the surrounding rainforest to return. In Toonumbar National Park, lantana was treated in the Murray Scrub.

### Bitou bush

Bitou bush, an introduced weed from South Africa that was once deliberately planted in coastal areas to stabilise sand dunes, has now infested 900 kilometres of the NSW coastline.

In 2006–07, helicopter spot-spraying, a technique developed by DECC, was used to target infestations for the fourth year running. This technique can deal with infestations that are inaccessible from the ground or are too small or steep for large-scale aerial spraying.

In early 2007, permanent monitoring sites were established on the central coast, in **Wamberal Lagoon Nature Reserve** and **Munmorah State Conservation Area**, as part of a long-term program to measure the invasion of bitou bush, find out how quickly it spreads and grows, assess the impact it has on native vegetation and find out



Photo: A. Simpson, DECC

Controlling bitou bush on the south coast of NSW.

which control techniques are the most effective. Preliminary results indicate a high diversity but low density of native species in bitou-dominated monitoring sites at Wamberal Lagoon. Bitou bush was sprayed at the monitoring sites in Munmorah, and has decreased by 80% since the control program began. The sites will be monitored every three years.

The program is part of a statewide threat abatement plan that has been developed to reduce the impact of bitou bush on biodiversity.

The national **Boneseed Management Manual** was launched in Tasmania as part of Weedbuster Week from 8–15 October 2006. The manual was written by DECC with a grant from the Australian Department of Agriculture, Fisheries and Forestry and the Australian Department of Environment and Water Resources as part of the Weeds of National Significance Program.

Mapping data has shown that boneseed is more widely distributed in NSW than previously thought. It could invade southern NSW as far west as the South Australian border.

### African boxthorn in Yanga National Park

In October 2006, DECC began to remove African boxthorn from the newly-gazetted Yanga National Park. The Boxthorn Puller, shown on the ABC TV show *The New Inventors* in April 2006, is being used and has proved very effective. Pneumatic shears, adapted from horticultural pruning use, are also being used to cut smaller boxthorns before they are treated with a basal-bark herbicide. A field day was held in December 2006 to demonstrate these two new methods to local weeds officers. By June 2007, over 1000 hectares of land had been treated.

## Fire management

DECC manages some of the most rugged and remote bushfire-prone country in the world. Under the *National Parks and Wildlife Act 1974* and the *Rural Fires Act 1997*, DECC is responsible for protecting human life, property, nature and cultural heritage from bushfires on lands that it manages.

To ensure it is prepared for suppressing bushfires in national parks and adjacent lands, DECC conducts a **Fire Fighter Health and Fitness Program** each year for staff involved in fire fighting. As a Registered Training Authority, DECC also trains other staff in fire and incident management and

assesses fire fighters and incident management personnel for competency. All fires are suppressed in accordance with **fire management strategies** which have been developed for more than 85% of reserves.

### Prescribed burning

Each year DECC undertakes a program of prescribed burns to reduce fuel levels that could ignite and facilitate the spread of wildfires. During 2006–07, DECC undertook prescribed burning on over 23,700 hectares of parks and reserves, and approximately 2000 hectares on lands adjacent to parks. In addition, hazard reduction through other means such as slashing was carried out on over 2000 hectares of parks. Over 3300 kilometres of DECC fire trails were regularly maintained.

### Wildfires

During the 2006–07 fire season, 372 wildfire incidents across NSW affected DECC parks and reserves. Almost 255,000 hectares (3.8%) of DECC land was burnt as a result of these wildfires. DECC firefighters also assisted with 85 fires outside reserves, including interstate fires in Victoria.

#### Origin and movement of wildfires affecting parks and reserves in 2006-07

Fire origin	Fire movement	Number of fires	Percentage of NSW fire
On-park	Controlled on-park	278	75%
On-park	Moved off-park	31	8%
Off-park	Moved on-park	63	17%

During 2006–07, DECC continued to ensure that disturbed areas were given enough support to recover, including rescuing wildlife with the assistance of volunteer groups such as the Wildlife Information and Rescue Service, and implementing targeted weed and pest animal control programs following fires.

### ■ CASE STUDY

#### Controlled burning in Wadbilliga National Park

Over the past six years, DECC has burnt almost 20% of Wadbilliga National Park to protect neighbouring properties, in accordance with the Wadbilliga National Park Fire Management Strategy.

However, DECC must often extinguish fires that are caused naturally by summer lightning to prevent the fires from harming neighbouring properties. As a result, some parts of the park are not experiencing fire as often as they would naturally, and this is having an impact on the vegetation and natural processes.

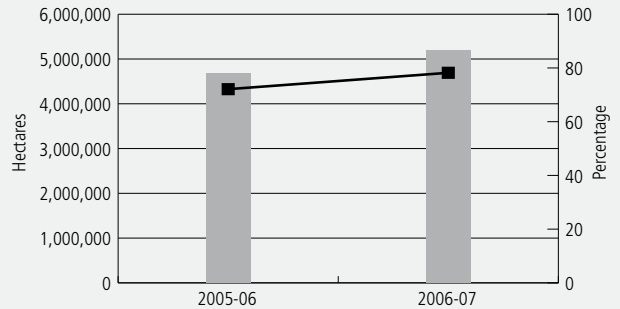
In April 2007, DECC conducted a burn in Wadbilliga National Park primarily for ecological reasons. The 7000-hectare burn, approved by the Bega Bushfire Management Committee, involved intensive planning and was conducted in two stages. The first stage involved a six-kilometre ground burning operation carried out by DECC and the NSW Rural Fire Service along the southern side of the Razorback Fire Trail

### ■ PERFORMANCE INDICATOR

#### Area and percentage of reserves covered by an adopted fire management strategy

**Definition:** This indicator measures the area and percentage of reserves covered by fire management strategies adopted under the *National Parks and Wildlife Act 1974*.

#### Area and percentage of reserve system covered by an adopted management strategy



**Interpretation:** This indicator has not been reported before and long-term data is not available. DECC works with District Bushfire Management Committees across the state to ensure that strategies are compatible with each district's bushfire management plan. DECC has prioritised the development of fire management strategies, resulting in a significant increase in the number of reserves covered by an adopted strategy since 2004.

At 30 June 2007, 609 reserves were covered by an adopted fire management strategy, representing 85% of reserves, and covering a further 554 reserves since June 2004 when only 55 were covered by an adopted strategy. These cover an area of over 5,200,000 hectares representing 78.2% of the reserve area.



DECC conducted a controlled burn in Wadbilliga National Park in 2006–07 for ecological purposes.

Photo: R. Constable, DECC

which runs east–west across the park. In the second stage, a DECC helicopter dropped aerial incendiaries into the unburnt bushland on the ridgetops south of the fire trail.

The park's fire management strategy will be revised to consider future strategic and environmental burning to be conducted to conserve plants and animals that benefit from fire.



## Bushfire research

The Centre for Environmental Risk Management of Bushfires at the University of Wollongong, opened in October 2006. This centre, a collaboration between the university, DECC and the NSW Rural Fire Service, will conduct scientific research to investigate ways in which bushfire risks to people and the environment can be managed, and to study global warming and its effects on bushfire intensity and frequency. Professor Ross Bradstock, seconded from DECC, has been appointed the Director.

The Centre will be supported by government agencies, competitive research grants and the Bushfire Cooperative Research Centre.

## 4.3.6 Providing opportunities for education in national parks and reserves

### National Parks *Discovery*

The *Discovery Walks, Talks and Tours* program aims to promote understanding and appreciation of the values and diversity of nature and of Aboriginal and historic heritage in DECC's reserves, and encourages behaviour that helps protect these values. The program also provides outreach activities for community groups and school students. Local people help develop programs and work as *Discovery* rangers.

In 2006–07, approximately 3485 *Discovery* activities were conducted across NSW and the number of participants exceeded 130,000. Many popular activities were held during school holidays including bush walks, historic site tours, night walks and children's activities.



Photo: R. Scott

Enjoying the Breakfast with the Birds *Discovery* activity in Warrumbungles National Park.

*Discovery* activities that interpret Aboriginal culture and heritage are also conducted – see page 114.

Some *Discovery* activities conducted across NSW during the past year were:

- in Warrumbungle National Park, early morning bird watching walks, flora identification studies and Tracks and Traces (a lesson in identifying animal signs)
- at Mt Kaputar National Park, spotlight walks to see greater gliders, and brush-tail and ring-tail possums
- on the north coast, full-day vehicle tours to view nature and heritage in remote parks
- on the south coast, snorkelling tours and canoeing, and tours for passengers on cruise ships which visit Eden
- on the central coast, wildflower walks and whale watching
- on the south coast, *Discovery* Rangers talked to people about the shorebird recovery program (see page 91) and worked with community bird experts to provide bird watching walks.

### *Discovery* for Schools

Over 60,000 students took part in cultural and environmental educational activities through *Discovery* for Schools during 2006–07, which included the following programs:

- in the north-west, 54 students explored practical ways of improving sustainability in their schools
- in the Hunter Region, *Discovery* Rangers conducted activities for more than 3500 children from over 70 schools, including walks to learn about rainforests and to find cultural heritage items
- on the south coast, the *Discovery* for Schools program increased by 21%, with a high demand for programs on Aboriginal culture, and DECC doubled the number of Aboriginal *Discovery* Rangers employed. Over 12,000 students attended programs at the Minnamurra Rainforest Centre
- in the Blue Mountains, students were led on guided tours to learn about tourism in national parks.

In Sydney's south, planning is under way for a *Discovery* pilot program for special needs students with an initial outing on the wheelchair-accessible Bungoona Path planned for later in 2007.

### *Discovery* partnerships

During 2006–07, *Discovery* partnerships were developed with other government agencies and environmental education providers, including city councils, Catchment Management Authorities, the Marine Parks Authority, environmental education centres, local tourism agencies, universities and Aboriginal corporations, to combine resources and coordinate the delivery of programs.

For example, DECC worked with the Cape Byron Education Service to develop a new environmental education program – *Cape Byron School Visits 2007*, with the assistance of an Environmental Trust grant. Forty-five activities were conducted in 2006–07 attracting 1137 participants.

Activities included a Whale Secrets session, the Dolphin Dreaming Aboriginal Program, and bush stories which included learning about bush tucker.

In the Hunter region, the popular 'Animals of the Dreaming' program was presented in conjunction with the Taronga Zoo mobile van.

### 4.3.7 Providing opportunities for visitors to enjoy national parks and reserves

Under the State Plan, DECC is working towards the state target to increase visits to parks and reserves by 20% by 2016, by developing programs that increase visitation, foster an appreciation of parks, and provide access to recreational opportunities.

#### Planning for visitors

In March 2006, DECC launched *Living Parks* which is the state's first visitation strategy for all lands reserved under the *National Parks and Wildlife Act 1974*. **Branch Visitation Management Plans** are being prepared which, when completed, will cover all parks and reserves. These plans, scheduled for completion in April 2008, will better coordinate visitor planning, provide a framework for management decisions on visitation, highlight opportunities and constraints, provide strategies to achieve sustainable visitation, and guide managers in adopting recreational activities that are suitable for their parks and which do not impact on nature or cultural heritage.

DECC commenced an **inventory of visitor sites** in 2006–07, using the Nature Tourism and Recreation Database to improve understanding of visitor opportunities across NSW. The inventory will enable DECC to analyse supply and demand to inform visitor planning and management. DECC is also developing a statewide visitor data system.

#### Park Facilities Manual

In January 2007, DECC completed the *Park Facilities Manual*, which provides consistent standards for visitor facilities to be provided across the NSW reserve system, creating an identifiable approach for DECC-managed parks that is contemporary, Australian and sustainable. The manual is being implemented progressively through normal DECC capital works and maintenance programs.

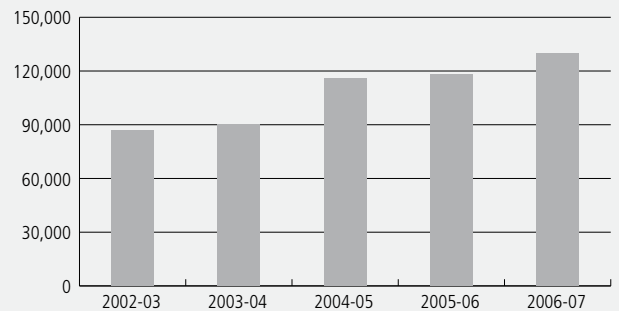
DECC is also developing a **levels of service framework** to establish categories of parks based on their contribution to nature conservation, cultural heritage conservation and visitor enjoyment. This will be used to guide visitors on which park to visit depending on their interests, and deliver services that meet both conservation and visitor needs.

#### ■ PERFORMANCE INDICATOR

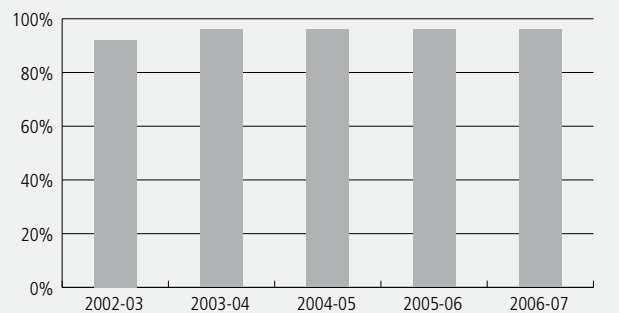
### Participants in *Discovery* education programs and percentage satisfied

**Definition:** This indicator measures the number of participants in all *Discovery* program activities. It also indicates the percentage of a surveyed sample of participants satisfied with their experience. DECC surveys at least 10% of participants in each regional program over the year.

#### Participants in *Discovery* education programs



#### Participants satisfied with *Discovery* education programs



**Interpretation:** The *Discovery* program continues to attract more participants across the state, particularly to school programs. In 2006–07, there was an increase of over 12,000 to 130,000 participants compared with 117,990 in 2005–06. The level of satisfaction of surveyed participants remains high at 96%, demonstrating that the program remains engaging and enjoyable.

### National parks regional economic impact assessment

National parks benefit surrounding regional economies. DECC's study of the economic impacts of parks and reserves on the regional economy of **north-east NSW**, covering the coast and tablelands from the Queensland border to Coffs Harbour, was launched in August 2006. The region encompasses 167 national parks and reserves, many of which have been created in the last decade. The study estimated that:

- each year, the parks in the area are visited by almost 6 million people

- DECC expenditure contributes \$17 million each year to the regional economy, and directly and indirectly generates around 265 jobs in the region
- visitors to parks and reserves contribute about \$107 million per year to the regional economy
- national parks in north-east NSW help to create more than 1900 jobs
- visitors were prepared to pay between \$25 and \$50 per year in travel costs to visit north-east parks and reserves, totalling at least \$188 million per year.

To read the report, visit [www.nationalparks.nsw.gov.au/npws.nsf/Content/northeast\\_economic\\_study](http://www.nationalparks.nsw.gov.au/npws.nsf/Content/northeast_economic_study)

## Enhancing visitor experiences

### Park information guides for visitors

In January 2007, a new guide was published to help Sydneysiders explore national parks. The *Walk in the park* brochure highlights specific walks and picnic spots in and around Sydney, the Blue Mountains and the Central Coast. At the same time, the updated 2007 *Guide to NSW national parks* was also released, providing visitor information on over 200 parks and reserves. These guides are described further on page 57.

### Revised 4WD agreement

A revised version of the memorandum of understanding (MOU) between DECC and 4WD NSW and ACT Inc was signed in May 2007. The revised MOU seeks to develop a more collaborative approach to conservation and park management with 4WD clubs.

### Recreational Horse Riding Policy

In July 2006, DECC released its revised Recreational Horse Riding Policy, which recognises that horse riding is a legitimate recreational activity in some parks, but that the impacts need to be managed using environmental assessment. Horse riding, where permitted, is identified in a park's plan of management.

## 4.3.8 Providing and managing park facilities

DECC's major programs to upgrade park facilities, encourage visitation and enhance visitors' experiences include the Towards Centenary Program in Kosciuszko National Park, Revitalising Sydney's National Parks, and the review of the commercial tour operators' licensing system.

## Awards

The quality of park facilities and services has been recognised in 2006–07 through the following awards.

In 2006–07, the **Lane Cove River Tourist Park** team won an Australian Business Award for environmental awareness, received a gold level in the Gumnut Award Scheme, and became the first tourist park in Australia to be awarded the Advanced Ecotourism Certification by Eco Tourism Australia in recognition of the park's environmentally sustainable accommodation. The park has reduced water and energy use, and built a habitat that guests can share with native plants and animals.

In November 2006, DECC and Conservation Volunteers Australia won first place in the eco-tourism category of the NSW Tourism Awards for the popular overnight tours to **Montague Island** on the far south coast, which allow visitors to sleep in the refurbished lighthouse quarters, see the scenery and wildlife, and participate in conservation efforts.

The **Tumut Visitors Centre** won first place in the General Tourism Category in the Canberra Capital Region Tourism Awards in November 2006. The Visitor Centre is a joint operation between DECC and Tumut Shire Council.

## Towards Centenary

In November 2005, the NSW Government announced a 30-year improvement program to upgrade infrastructure and tourism facilities in Kosciuszko National Park. Total funding for the program is \$250 million.

Projects undertaken in 2006–07 included:

- Reconstruction of seven huts destroyed in the 2003 fires. Following consultation with key stakeholders such as Kosciuszko Huts Association, a consultant has prepared guidelines for how the huts should be rebuilt. Detailed plans have been developed for Broken Dam Hut and on-site construction is expected to commence in October 2007. The plans for reconstruction of Opera House and the initial planning for Delaneys and Patons huts have been completed, and work is expected to commence in early 2008.
- Completion of a car park and turnaround area, lookout platform, ramp, concrete track and directional signage at Lobs Hole Ravine Rd Lookout which provides disabled access.
- Installation of snow fencing round areas used by cross country skiers around Perisher Valley, to assist with snow retention, particularly in windswept areas.
- Completion of Rawsons Pass toilet building, with the internal fitout to be completed in 2007–08. DECC rehabilitated the entire Rawsons Pass precinct over 2006–07.
- Completion of preliminary planning work on the Alpine Way Vehicle Entry Station. Construction is planned to commence by November 2007. The new Vehicle Entry Station on Kosciuszko Road is operating, and has helped to ease traffic congestion.

- A long-term strategic plan for water supply for Perisher Range Resorts was completed. Work on upgrading water supply mains and fire hydrants continued.
- Wild horse removal continued in the southern parts of the park (see page 91).

## Revitalising Sydney's National Parks

In 2005, the NSW Government committed \$38 million over four years to improve visitor facilities in Sydney's national parks and reserves through the Revitalising Sydney's National Parks program.

Works completed in 2006–07 included:

- In **Ku-ring-gai Chase National Park**, the first stages of implementing the Bobbin Head and Apple Tree Bay Conservation and Landscape Management Plan were commenced with the construction of a new foreshore facing on the embankment at Apple Tree Bay, and major upgrades to the seawalls and associated car parking facilities at Bobbin Head. This plan, which used the vision created by the community, was awarded an Energy Australia National Trust Heritage Award in 2007. Other construction works under way included new public amenities at Resolute Picnic Area and improved access to Barrenjoey Lighthouse.
- In **Botany Bay National Park**, DECC completed research and analysis of the history, location and community values of Meeting Place Precinct, which informed the design of new visitor facilities including an outdoor exhibition and walking track. New amenities buildings have been constructed at Commemoration Flats and Cricket Pitch, using water saving technology such as waterless urinals and low-flow taps.
- In **Blue Mountains National Park**, major upgrades to the State Heritage-listed National Pass Walking Track, and Princes Rock and Fairfax walking tracks were completed.
- In **Kanangra-Boyd National Park**, upgrades to the Kalang Falls and Coal Seam walking tracks were completed.
- In **Georges River National Park**, construction commenced on major upgrades to the boating and car parking facilities at Morgan Creek.
- In **Lane Cove National Park**, DECC completed the first stage of programmed upgrades to the Weir Precinct in June 2007. Restoration works at Jenkins Hall will continue in 2007–08 to provide community meeting rooms and improved food facilities for visitors.
- In **Royal National Park**, the new Garie Beach Surf Safety Centre opened in March 2007 (see page 124). The precinct plan for the Bonnie Vale Visitor Area was completed and new amenities buildings in the camping area were constructed using sustainable building design techniques.
- In **Sydney Harbour National Park**, the draft master plan for **Goat Island** was placed on public exhibition in March 2007. Urgent works to improve safety on and access to the island were undertaken throughout 2006–07, including the removal of hazardous wharves.

## Upgrades to visitor facilities

During 2006–07, upgrades to visitor facilities were undertaken in many other national parks and reserves. Some of the upgrades completed or in progress are as follows:

- Bindarray Picnic Area in Bindarri National Park, which was developed at a cost of \$70,000, was officially opened on 30 January 2007.
- Two bridges along the Mountain Maid Link Trail and an elevated boardwalk were constructed in Copeland Tops State Conservation Area near Gloucester.
- A further 300 metres of vehicle safety barriers were installed on Mt Kaputar Road, completing barrier construction. The barriers will improve road safety when accessing Mt Kapatur National Park.
- New visitor facilities at Mt Grenfell Historic Site, including a new car park, were constructed in June 2007.
- The new Koolewong Lookout in Ku-ring-gai Chase National Park was opened in September 2006, funded by the generous \$850,000 bequest of local environmentalist Dorrie Davis.
- In September 2006, DECC opened Doon Goonge camping area beside Chandler's Creek in Chaelundi National Park. The camping area is only accessible by 4WD vehicle and will require visitors to book in advance.
- A new canoe ramp costing \$32,000 was opened in February 2007 in Garigal National Park, and is part of a two-year \$240,000-project funded by DECC with support from NSW Waterways.
- On the central coast, waste recycling stations were installed at the Ruins Campground in Booti Booti National Park and at Yagon, Korsman's Landing and Neranie campgrounds in Myall Lakes National Park. Interpretive signage was also completed in Myall Lakes National Park.

## Leasing and property management

DECC has an extensive commercial property and leasing portfolio which generated \$13 million in revenue during 2006–07, marginally up from last year (\$12.6 million). This represents a strong result given the difficult trading conditions experienced during the 2006 ski season in Kosciuszko National Park when there was little snow.

Achievements over the past year include:

- the Thredbo Head lease was renewed for a further 50 years
- a new lease was granted for the Royal Hotel at Hill End Historic Site
- new leases for Athol Hall and Fort Denison in Sydney Harbour National Park were entered into
- commercial terms were finalised for a new lease of Beachcombers Caravan Park in Eurobodalla National Park



- recommendations from the Independent Pricing and Regulatory Tribunal regarding rentals and licensing conditions for telecommunication and broadcasting facilities in reserves were implemented
- a Head Deed covering TransGrid's easements to manage powerlines and their impacts on reserved lands was drawn up.

Negotiations are under way with d'Albora Marinas for a new lease over the marina at Akuna Bay in Ku-ring-gai Chase National Park, and with lessees in Kosciuszko National Park over the 520 beds in Perisher Range Resorts.

## Sydney Quarantine Station

In November 2006, a 21-year lease between DECC and ecotourism company Mawland for Sydney's historic Quarantine Station was signed. The adaptive reuse of some heritage buildings will inject at least \$4 million into the station to ensure its 67 historic buildings are properly maintained and restored.

The leasing proposal was scrutinised by a Commission of Inquiry, and was subject to environmental planning legislation. The lease agreement includes requirements for:

- regular environmental reports and five-yearly independent audits
- 17 site-wide plans to be reviewed by a Quarantine Station Community Committee
- detailed wildlife monitoring
- a cap on visitor numbers of 450 at a time.

Mawland began running tours on the site in November 2006. Accommodation is expected to be available in late 2007.



Photo: J. Charles

*Sydney's historic Quarantine Station is the subject of a 21-year lease between DECC and Mawland. The lease agreement incorporates 233 conditions of consent including wildlife monitoring and a cap on visitor numbers.*

## Cabins in Royal National Park

There are more than 230 cabins in four coastal areas of the Royal National Park. In February 2007, mediation between DECC and the occupiers of 120 of the cabins reached a conclusion, with the occupiers agreeing to new licence terms which will ultimately see some of the cabins available for public use. Subject to the Minister's approval, this negotiated licence arrangement will be available to all cabin occupants by late 2008.

## Commercial tour operators

Nature-based and cultural tourism is the fastest growing area of the Australian tourism market and is a major contributor to the NSW economy. Commercial operators can improve visitor experiences through using trained and experienced staff and delivering appropriate and educational programs. Such programs can promote more community interest in park conservation. Financial contributions from commercial activities help meet the cost of managing parks and reserves.

In 2005–06, DECC began reviewing its commercial tour operators licensing system to ensure community, visitor and operator expectations were better met, and to encourage higher operating standards while continuing to focus on conservation. In June 2007, DECC released a discussion paper for public comment.

## Park use fees

DECC's Park Use Fee Program includes day entry, annual pass and camping fees. Day entry fees apply to only 44 of over 776 terrestrial parks and reserves across the state. In addition, DECC maintains camping grounds in approximately 90 parks and reserves with fees being charged in 61 of these.

Fees collected under this program provide funds for:

- maintaining and improving visitor facilities and services
- conserving threatened species and their habitats
- protecting cultural and heritage sites
- carrying out pest and weed control programs.

In 2006–07, DECC raised approximately \$13.98 million from park use fees, including \$10.59 million in day entry and annual pass fees and \$3.38 million in camping fees.



Photo: G. Woods

## 4.4 Improving the health of wetlands, waterways and rivers

The State Plan includes targets to improve the health of rivers, wetlands and groundwater systems. In 2006–07, progress has been made in recovering water for priority wetlands and rivers. Further work is critical to protect important freshwater ecosystems in inland NSW, which have been stressed by prolonged drought and reduced water flows.

In April 2007, DECC became responsible for planning and managing environmental water recovery in the state's most valued rivers and wetlands. Added to existing responsibilities under NSW RiverBank are the NSW Wetland Recovery Program, the NSW contribution to The Living Murray Initiative, the NSW Rivers Environment Restoration Program, and management of planned environmental water under water sharing plans.

Wetlands provide habitat for thousands of birds, fish and other water-dependent creatures, and also improve water quality by filtering the water. Wetlands are also an important cultural landscape with links to traditional Aboriginal stories, beliefs and practices, and were used as places of employment or refuge.

See pages 42–44 for DECC's programs to reduce pollutants to waterways.

### NSW RiverBank

NSW RiverBank, set up to buy water for the state's most stressed and valued rivers and wetlands, commenced operating in 2006–07. Water access entitlements of 16,681 megalitres were purchased from willing sellers in the Macquarie, Lachlan and Murrumbidgee catchments, meeting targets set under the 2006–07 Business Plan. Against a background of considerable uncertainty, the approach taken by RiverBank has demonstrated that water licence purchase is possible without disrupting local economies. RiverBank operates primarily through issuing a public expression of interest followed by direct negotiations with water licence holders. Expressions of interest were issued in July 2006, and in April and May 2007.

The Department of Water and Energy has approved use of RiverBank water as adaptive environmental water in the Macquarie and Lachlan valleys. Approvals for water use in the Gwydir and Murrumbidgee valleys are expected to be progressed in 2007–08. These approvals identify the sites for application of water, nominate the works required to deliver the water, and describe the relationship between adaptive environmental and other water licences.

Work also progressed on understanding the features of target wetlands in the Lachlan Valley. Assessments to benchmark wetland condition were completed for Murrumbidgee Swamp, Burrawang West and Yarnel lagoons. These assessments will inform plans for monitoring the outcomes of water use by RiverBank.

During 2006–07, the Australian Government announced funding of \$71.77 million over three years for the NSW Rivers Environment Restoration Program, enhancing the NSW Government's investment in water purchase through RiverBank by over \$45 million. This program will also invest in water management science to find ways of maximising ecological conditions, improving delivery of environmental water and securing outcomes on private land.

### Living Murray Initiative

The Living Murray Initiative seeks to return an average of 500,000 megalitres of water annually to the Murray River through infrastructure projects, water use efficiencies on farms and water purchases. The NSW target for water recovery under the program is 249,000 megalitres. During 2006–07 NSW completed the construction of the Darling Anabranch pipeline and other projects which will allow 56,000 megalitres of water to be returned to the river. Further water recovery projects are expected to be completed during the next two years. The purchase of water licences from willing sellers is expected to be a significant component of water recovery under the program.

### NSW Wetland Recovery Program

The \$26.8 million NSW Wetland Recovery Program focuses on the Macquarie Marshes and Gwydir Wetlands. It is jointly funded by the NSW and Commonwealth governments, with the \$13.4 million announced by the NSW Government in 2005 being matched in August 2006 by the Commonwealth Government.

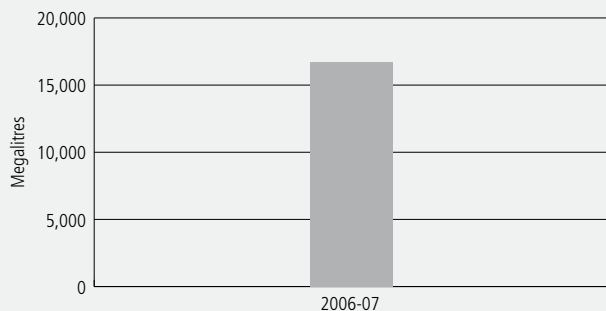
The program consists of various projects to restore water to the wetlands, to understand the impacts of grazing and other land management practices on wetland health, and to develop control measures for the invasive weed known as Lippia (*Phyla canescens*). The program is delivered by DECC, the Central West and Border Rivers–Gwydir Catchment Management Authorities, and the Commonwealth Government.

## ■ PERFORMANCE INDICATOR

### Water entitlement purchased by RiverBank

**Definition:** This indicator measures the amount of water entitlement, measured in megalitres (ML), acquired by RiverBank in the target regulated river valleys of NSW. (One megalitre equals one million litres, equivalent to the volume of an Olympic swimming pool.)

#### Water entitlement purchased by RiverBank



**Interpretation:** Water entitlements are a share of the water available in storage, and vary with seasonal water availability. General security (GS) is the most common entitlement available to water market operators such as irrigators. As an example, GS availability might be announced at around 50% of the total volume of entitlement. That would mean a holder with a 100ML licence could use 50ML of water in that year.

RiverBank targets GS water entitlement, but will also acquire small volumes of high security and supplementary access entitlement. RiverBank had acquired 16,681 ML of water entitlement by 30 June 2007.

Despite the purchase of water entitlements, due to the continuing drought, no water allocation has been available to RiverBank over 2006–07 under GS.

During 2006–07, Wetland Recovery Program funds were allocated to purchase more than 4200 megalitres of general security water entitlement for the Macquarie Marshes. This was in addition to 1137 megalitres of general security entitlement already acquired in 2005–06 under this program. Program funds were also allocated to purchase 726 megalitres of general security entitlement in the Gwydir River.

Mapping of the Macquarie Marshes' extent and flooding over the past 30 years was completed, environmental management plans for the Macquarie Marshes and the Gwydir Wetlands were progressed, and investigations into infrastructure projects to recover water continued. Further water purchases are being planned for both wetlands, with the acquisition of 5159 megalitres being negotiated.

Aboriginal cultural values are being assessed in a collaborative project between DECC and Aboriginal communities in the Macquarie Marshes and Gwydir Wetlands. The principal focus is on contemporary associations Aboriginal people have with the wetlands and ways in which these associations have changed over the last two centuries as people progressively lost access to the wetlands and their associated resources and cultural sites. Over 2006–07, archaeological surveys began to map the location and condition of Aboriginal heritage sites. Oral history recordings were conducted and will continue into 2007–08. Underpinning this activity is a review of relevant published and archival documentary historical material.

## Other DECC wetland initiatives

Among **other wetlands initiatives** undertaken by DECC in 2006–07 were several projects to describe the ecological character of Ramsar-listed wetlands including Kooragang Island in the Hunter estuary, Lake Pinaroo, Blue Lake and the Clarence Broadwater.

In 2006–07, a number of **new reserves to protect vulnerable wetland habitat** were established including:

- Yanga National Park and Yanga State Conservation Area, near Balranald in the Riverina, which stretch along the Murrumbidgee River for 150 km
- Kalyarr State Conservation Area, north-west of Hay, which contains 800 hectares of the Lachlan Swamp, one of Australia's important wetlands
- Tuggerah Nature Reserve and Tuggerah State Conservation Area, on the western edge of Tuggerah Lake, which protect one of the largest patches of wetland vegetation on the central coast
- Colongra Swamp Nature Reserve, which provides wetland habitat for birds such as the little crane and buff banded rail, and may provide habitat for species listed under the international migratory bird treaties
- Everlasting Swamp State Conservation Area, which comprises open-water wetlands used by thousands of water birds and is the largest known breeding habitat for black swans in north-eastern NSW
- Georges River National Park, which incorporates estuarine wetlands listed on the Register of the National Estate.

Under the **Coastal Wetlands Land Acquisition Program**, funded by the Environmental Trust, DECC acquires land to protect coastal wetlands and to restore or rehabilitate degraded coastal wetlands. In 2006–07, DECC acquired 54 hectares for future addition to Darawank Nature Reserve with funding from Great Lakes Shire Council. The acquisition is part of a continuing project with the council to improve the water quality and habitat of Frogalla Swamp and Wallis Lake (see page 77). The Environmental Trust has agreed to provide \$3.73 million over the next three years for this program.

DECC is also protecting wetlands through a new major project on **floodplain management**. Management of floodplains has become an urgent priority because of ongoing significant losses to their biodiversity and river health. In August 2006, the Floodplain Management Network Group met to progress the project, to improve the current assessment system, and to protect the investment that DECC and other agencies will make in water recovery over the next five years through NSW RiverBank and other programs.



Through the NSW Wetland Recovery Program, water entitlement is purchased for restoring the Gwydir Wetlands.



Photo: G. Woods

## 4.5 Protecting and restoring coastal environments

### 4.5.1 Improving coastal environments and reducing impacts from hazards

DECC works closely with Catchment Management Authorities (CMAs), local councils and communities to reduce threats from coastal hazards and flooding, and ensure the long-term protection, conservation and restoration of coastal and estuarine environments. In western NSW, DECC also manages designated rural floodplains.

The programs described in this section were implemented by the former Department of Natural Resources, and became the responsibility of DECC in April 2007. The expertise provided by DECC includes:

- assistance with preparing coastal and floodplain management plans
- preparing technical manuals, guidelines and presentations on coastal and floodplain management
- representing NSW on national and state peak advisory bodies
- collection, custodianship and dissemination of coastal data for NSW.

Under the *Coastal Protection Act 1979*, the *Environment Protection and Assessment Act 1979*, and *State Environmental Planning Policy No. 71 – Coastal Protection*, the Minister or DECC gives concurrence and advice to other determining authorities on development proposals located on the coast. DECC's work includes conducting detailed technical investigations to ensure that development proposals are sustainable, impacts on coastal environments are minimised, and potential losses due to coastal hazards are reduced.

In 2006, DECC helped develop the **National Cooperative Approach to Integrated Coastal Zone Management – Framework and Implementation Plan**, which was released by the Natural Resource Management Ministerial Council with the endorsement of all states and territories. The objectives of the plan are to conserve coastal biodiversity, improve coastal water quality and protect the economy of coastal areas.

As part of a Coastal Protection Package, the NSW Government proposed that a **new Coastal Zone**

**Management Manual** be prepared to support recent amendments to the *Coastal Protection Act 1979* and provide details on coastal processes, governance arrangements and management issues for local councils, CMAs and other agencies with coastal zone responsibilities. DECC is drafting the manual as two volumes. During 2006–07, a draft of volume 1 was prepared, which will be released for public comment later in 2007. Volume 1 covers the process for developing coastal zone management plans and relevant resource management information. Volume 2 will provide appendices to support coastal planning.

### 4.5.2 Coastal Management Program

DECC manages the NSW Government's Coastal Management Program, which aims to reduce the impact of coastal hazards while accommodating population growth and protecting the coastal environment.

Under the program, the NSW Government provides a 50% subsidy, on a dollar-for-dollar-basis, to local councils for:

- preparing coastal studies and coastal zone management plans for long-term management of the coastline
- measures to conserve or improve beaches
- investigating, designing and implementing measures to reduce the risk of damage from coastal hazards.

Coastal Zone Management Committees, established by local councils, have been working in partnership with DECC, CMAs and local communities to develop and implement **coastal zone management plans**, whose functions include:

- protecting and preserving coastal environments and beaches
- identifying coastal hazards and developing measures to reduce their risks and impacts
- identifying emergency actions to be taken during periods of beach erosion
- identifying and accommodating the impacts of climate change
- ensuring continued public access to beaches, headlands and waterways
- accommodating sustainable population growth.



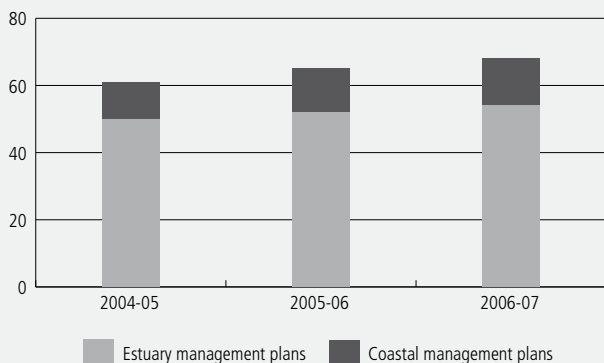
## ■ PERFORMANCE INDICATOR

### Coastal and estuary management plans completed

**Definition:** This indicator measures the cumulative number of coastal zone management plans (coastal and estuary) prepared by local governments for coastal areas of NSW in accordance with the NSW Coastal Policy and the Coastal Protection Act. A coastal zone management plan may cover a section of the coastline, a beach or an estuary.

DECC administers the coastal and estuary management programs and provides expert technical advice and assistance to local government for the preparation and implementation of management plans.

#### Coastal and estuary management plans completed



**Interpretation:** The number of completed plans gives an indication of the number of councils that have adopted and can implement the objectives of the NSW Coastal Policy and the Coastal Protection Act. Two new estuary management plans, and one new coastal management plan, were completed in 2006–07, bringing the cumulative total to 68 coastal zone management plans completed.

At 30 June 2007, over 75% of NSW's estuaries are covered by 84 estuary management committees and 37 coastal management committees cover most coastal council areas. The increasing number of management committees and plans reflects the high level of support and value placed on the programs by local government.

DECC provided technical and financial assistance to Port Macquarie–Hastings Council to prepare a long-term **Town Beach Coastal Zone Management Plan**. Town Beach is a focal point for tourism and recreation at Port Macquarie. Unfortunately, the beach and adjoining reserve suffer from beach erosion and inundation, both of which will be exacerbated by projected sea level rises due to climate change. The draft plan includes minor protection works at the northern end of the reserve, ongoing beach replenishment, dune maintenance, extensive upgrading of beach and reserve facilities, and improved car parking. A Sea Rescue and Coastal Patrol is also proposed. It is anticipated that the plan will be forwarded to the Minister in 2007–08 for approval.

During 2006–07, 25 **grants** totalling \$1.6 million were approved under the program in 13 coastal areas for projects such as hazard mitigation works, dune restoration and enhancement of coastal facilities. Examples of approved projects include:

- \$500,000 for Wollongong City Council to undertake foreshore works between Marine Drive and Stuart Park
- more than \$150,000 to restore the beach dune system at Town Beach, Port Macquarie
- almost \$100,000 for Batemans Bay and Lake Cathie councils to prepare coastal zone management plans.

## 4.5.3 Estuary Management Program

The Estuary Management Program, now administered by DECC, aims to improve or maintain the health of an estuary, and maintain its environmental, economic, recreational and aesthetic values. The program acknowledges that estuaries provide habitat and nursery areas for marine species, support commercial and recreational fishers and aquaculture industries, and are essential elements of NSW's coastal environment.

## ■ CASE STUDY

### Bate Bay Coastline Management Plan

In 2006–07, Sutherland Shire Council completed The Bate Bay Coastline Management Plan to protect its coastline. Prepared in partnership with DECC, the plan aims to improve understanding of the bay's ecological systems, and provide strategies to preserve and enhance its foreshores.

Key elements of the plan have already been implemented. A detailed strategy was prepared to improve Bate Bay's beaches in the short- and longer-term, and the short-term improvements are under way. The Port Hacking navigation channels are being dredged and the dredged sand is being placed on the Cronulla beaches. Upgrading of the foundations of the Prince Street seawall at North Cronulla will be completed in 2007–08.



The Prince Street seawall at Bate Bay is being upgraded to protect the bay's foreshore.

Photo: DECC

DECC works with local councils to establish **Estuary Management Committees**, which include representatives from the local community, industry, environmental interest groups, researchers, CMAs, state agencies and local government. The committees work together to identify problems in the estuary and to develop and implement a coastal zone management plan for the area (see previous section for information on these plans).

During 2006–07, 43 **grants** totalling \$2.9 million were approved under the program in 31 coastal areas. These funds have supported protection and improvement works, rehabilitation of degraded coastal wetlands and habitats, and environmental monitoring projects. Examples of projects include:

- \$382,000 to the Lake Macquarie Project Management Committee for ongoing environmental restoration work at Lake Macquarie
- \$500,000 for implementation of the Tweed River Estuary Management Plan
- \$25,000 to Bega Valley Council for erosion control works at Myrtle Cove, Wonboyn Lake
- \$50,000 to Kogarah Council for foreshore restoration works at Kyle Bay
- \$49,300 to Sutherland Shire Council for continuing environmental restoration works at Kareena Creek, Caringbah
- \$53,000 to Bellingen Shire Council to implement the Bellingen River Health Plan
- \$20,000 to Lismore Council for restoring tributaries of the Richmond River
- \$65,000 Richmond Valley Council for riparian rehabilitation on the Evans River.

In addition, major estuary environmental restoration works were undertaken at Lake Illawarra (\$962,000) and Kooragang Island Wetlands (\$130,000).

To ensure the long-term sustainable use and protection of the Shoalhaven River estuary, Shoalhaven City Council in 2006–07 prepared the **draft Shoalhaven River Estuary Management Plan** after thorough community consultation. The draft plan, which cost \$130,000, was funded by the council and DECC. The plan aims to counteract river bank erosion, protect sensitive ecological communities, promote recreational and commercial use of the estuary and its foreshores, and encourage environmental flows to the estuary. The draft plan, which also contains ways in which government agencies, the council and landholders can manage the estuary, is being publicly exhibited.

## 4.5.4 Floodplain Management Program

DECC manages the implementation of the **NSW Flood Prone Land Policy**, providing support through specialist advice, and funding programs for the development of flood risk strategies and plans for urban and rural floodplains. The plans aim to reduce the flood risk while enabling natural floods to be maintained to sustain floodplain ecosystems.

The 2005 **Floodplain Development Manual** helps councils manage flood risks in their area. DECC is working with the NSW Floodplain Management Authorities (FMAs) on educational initiatives to support industry professionals and councils.

A successful Introductory **Flood Risk Management Course** was provided in Lismore in 2006. This was followed up by workshops held in Gunnedah in 2007 with presentations by DECC, the State Emergency Service, the Bureau of Meteorology, local council representatives and consultants. The course and workshop were delivered to councillors, community members, engineers and planners.

**Floodplain risk management committees** oversee the floodplain risk management process. There are currently 90 urban and 12 rural committees, which include members from the local flood-affected community, state agencies and community groups.

## Urban Flood Risk Management Program

DECC provides technical and financial support for the development and implementation of floodplain risk management plans.

Floodways and spillways help to distribute floodwater around urban areas in a controlled manner whilst levees reduce the frequency of flooding. The **Lower Hunter Flood Mitigation Scheme**, developed after the 1955 flood which devastated the area leading to loss of life and property, involves major works including levees, control banks, spillways and floodways. New development has centred on areas of higher land exposed to lower flood risk. The floods in June 2007 demonstrated the effectiveness of this scheme.

During 2006–07, 410 **grants** totalling \$15.47 million were approved under the Urban Flood Risk Management Program, some in partnership with the Commonwealth Government which provided \$3.36 million and local government who provided \$9.46 million. These funds have supported over 234 investigations into effective strategies to reduce flood risk which have been incorporated into floodplain risk management plans.

Five **floodplain risk management plans** were completed in 2006–07, bringing the total number of plans in place across the state to 94. Funding was provided for 176 design and construction projects including:

- rehabilitation of Shoalhaven City Council's Terra Levee
- construction of Tweed Shire Council's East Murwillumbah and Dorothy St levees
- construction of Campbelltown City Council's Minto Detention Basin
- construction of the Upper Hunter Shire Council's Murrurundi Levee
- construction of the Tarro Levee in the lower Hunter by the Hunter–Central Rivers CMA
- mitigation works in Terrigal, East Gosford and Avoca Bowl by Gosford City Council
- Fairfield City Council's major ongoing projects in Lower Cabramatta and Prospect Creeks.

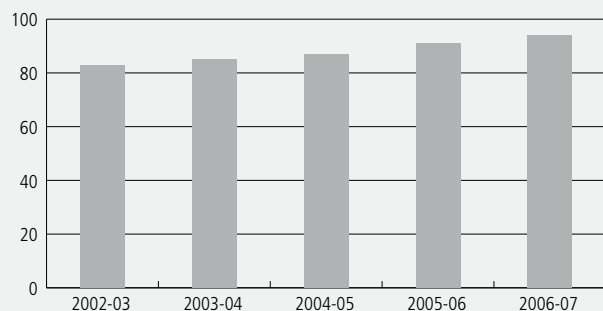
## ■ PERFORMANCE INDICATOR

### Floodplain risk management plans

**Definition:** This indicator measures the cumulative number of urban floodplain risk management plans prepared by local governments. Councils are responsible for preparing floodplain risk management plans in urban or closely-settled rural areas. Councils have statutory responsibility for land use planning and management under the *Environmental Planning and Assessment Act 1979* for their local government area and are responsible for managing floodprone land.

DECC administers floodplain management programs and provides expert technical advice and assistance to local government for the preparation and implementation of management plans.

#### Floodplain risk management plans



**Interpretation:** At 30 June 2007, there were 94 floodplain risk management committees in NSW, an increase of 15 since 2002–03. The increase in the number of completed plans, from 83 in 2002–03 to 94 in 2006–07, provides an indication of the number of councils that have completed and can implement the objectives of the NSW Flood Prone Land Policy.

Other major construction projects to receive significant funding during the year included Deniliquin Council's Deniliquin Levee, Bathurst City Council's Bathurst Flood Mitigation Scheme and Tamworth Regional Council's Taminda Levee. In addition, a number of councils, including Fairfield, Liverpool, Wollongong, Kempsey and Tweed, have voluntarily purchased properties under floodplain management schemes.

## Rural Flood Risk Management Program

DECC prepares strategic **floodplain management plans** in rural areas under Part 8 of the *Water Act 1912*.

The management plans are developed with floodplain management committees, and aim to coordinate floodplain development to minimise flood risk to the community while sustaining natural floodplains.

In 2006–07, DECC provided strategic direction for developing floodplain management plans for approximately 30,000 square kilometres of the Murray–Darling Basin. Three floodplain management plans were gazetted, two within the Liverpool Plains (Upper Yarraman and the Namoi River from Carroll to Boggabri) and one along Billabong Creek, a tributary of the Murray River system. This brings the total number of floodplain management plans gazetted to 11. In addition, two draft plans covering the Lachlan River upstream of Jemalong and the Macquarie River upstream of the Macquarie Marshes were publicly exhibited.

The Upper Yarraman Creek Catchment covers an area of 51,500 hectares and its rich soils make it one of the most productive areas for agriculture in NSW. In the lower floodplain, the creek breaks out and forms a series of braided channels, with flows ending in the wetland of Goran Lake. The plan recommends promoting best land management and farming practices to reduce concentration of flood flows that cause erosion and siltation.

## ■ CASE STUDY

### Floodplain management in the Liverpool Plains

A floodplain management plan for the Namoi River from Carroll to Boggabri in north-west NSW was gazetted during the year. Funding for the development of the plan was provided by the Commonwealth's Natural Heritage Trust Disaster Mitigation Program with matching contributions from the NSW government. The committee overseeing the plan included local landholders and community members representing Aboriginal and environmental interests.

The plan covers 70 kilometres of the main floodplain of the Namoi River, commencing at the village of Carroll, and extending west, past Gunnedah, to the town of Boggabri. The plan defines a network of floodways where earthworks are restricted so unimpeded flood flows and flood storage are maintained. The defined floodway will also assist in improving the productivity and biodiversity of lagoons and wetland areas by improving connectivity between



The floodplain at Gunnedah during the 1998 flood.

the floodplain and the river during floods. The plan also provides guidelines for development by defining arable land that can be protected from floods, and encourages landholders to keep flow paths that convey large floods open.

The plan also recommends a riparian buffer zone be established and maintained along the main water courses to help maintain the integrity of the banks and the health of the creeks and the adjacent floodplain.

DECC made significant progress on nine **floodplain risk management studies**: two along the Lachlan River, two within the Liverpool Plains (Lower Coxs Creek and Warah Creek), and one each along the Gwydir, Namoi, Macquarie, Murrumbidgee, and Murray rivers. DECC has also commenced two new flood studies for the Namoi and Barwon-Darling rivers.

## 4.5.5 Coastal and floodplain management projects

### Cooks River Project

The Cooks River catchment drains 100 square kilometres of inner south-western Sydney. It is among the most heavily urbanised and industrialised catchments in Australia, supporting over 400,000 people. From the 1930s to the mid 1970s the river underwent extensive modifications. From Hurlstone Park to Canterbury, most of its banks were lined with vertical steel sheet piling, which is now deteriorating. Some sections have collapsed and have become hazardous.

The NSW Government has committed \$2.9 million to systematically replace the sheet piling with a more environmentally sensitive alternative. DECC is overseeing this project which involves engineering, geotechnical, ecological and landscape design expertise. DECC is consulting with the community and undertaking environmental assessment. Consultants have been engaged to carry out the necessary investigation and design work. Construction at one of the worst affected areas at Earlwood will commence in early 2007–08.

### Lake Illawarra Authority

The Lake Illawarra Authority was established by the NSW Government in 1988 under the *Lake Illawarra Authority Act 1987* to improve the environment of Lake Illawarra, its foreshores and its immediate surroundings. DECC provides executive support to the Authority including project management and accounting, administration, and technical and policy advice.

In 2006–07, DECC assisted the Authority to successfully deliver \$4.5 million worth of projects including:

- stabilising the entrance to the lake, constructing twin breakwaters and removing 200,000 cubic metres of sand from the entrance channel (which was placed on Warilla Beach)
- removing 2500 tonnes of algae and decomposing seagrass from the lake
- designing a boat launching ramp at Yallah Bay
- foreshore improvements at Mount Warrigal
- developing an environmental report for installation of a major gross pollutant trap to treat stormwater runoff from Brooks Creek at Koonawarra

- additional modelling for the Lake Illawarra Floodplain Risk Management Study and Plan to assess the impacts of rising sea levels on flooding around the lake
- enhancing 2.5 kilometres of riparian vegetation between Koonawarra Bay and Yallah Bay.

The works will ensure the lake remains open for longer periods than in the past, resulting in improved tidal flushing, lower flood levels in low lying urban areas and added protection from ocean storms for 50 houses along Little Lake Crescent.

DECC also assisted with monitoring lake water quality and maintaining foreshore areas.

### The Lake Macquarie Improvement Project

The Lake Macquarie Improvement Project (LMIP), a partnership between State and local government and the community, is a program of works implemented by the Lake Macquarie Project Management Committee (LMPMC) to improve the environmental health of Lake Macquarie and its catchment.

In 2006–07, the LMIP received \$382,000 from the Government's Estuary Management Program, with a further \$218,000 provided by the Hunter–Central Rivers CMA. Works valued at \$2.1 million were undertaken, with Lake Macquarie City Council providing most of the funds. Works included wetland rehabilitation, creek stabilisation, foreshore rehabilitation, community education and scientific monitoring. The monitoring indicated that the health of the lake is improving, with substantial increases in seagrass coverage and stabilisation of nutrients. The community's perceptions of the environmental health of the lake have steadily improved since the commencement of the project.

### Coastal Lakes Strategy implementation

Coastal lakes are sensitive ecosystems easily degraded by development. The Healthy Rivers Commission (HRC) of New South Wales developed the Coastal Lakes Strategy in 2002, and identified eight priority coastal lakes: Cudgen, Myall, Wollumboola, Burrill, Narrawallee, Coila, Merimbula and Back lakes.

DECC and the Australian National University developed the Coastal Lake Assessment and Management (CLAM) tool to assess the sustainability of the lakes. The tool demonstrates the likely impact of various management scenarios on aspects and uses of a lake and its catchment, including seagrass and mangrove distribution, commercial fishing catch and sea level rise. The tool can be used to demonstrate the trade-offs necessary to balance the needs of a coastal lake, and could be developed further to apply to coastal river systems. Training in use of the CLAM tool has been provided to staff of NSW government agencies, CMAs and local councils.

Final draft management strategies were prepared in 2006–07 for seven of the coastal lakes, and in 2007 a review was undertaken by relevant state agencies, CMAs and local councils. Once the review is complete, DECC will report to the Government on options for applying the management strategies to other coastal lakes across NSW.



## 4.5.6 Supporting coastal and floodplain management

### Large scale study of coastal erosion and inundation

The NSW coastline experiences several severe storms each decade that seriously threaten beachfront development and infrastructure. In the next 100 years, it is estimated that over \$1 billion worth of beachfront properties will be at risk.

DECC is investigating the risk of coastal erosion and inundation caused by severe storms on beachfront development, by drawing on the expertise of scientists from University of Queensland and University of Sydney and international expert Professor Magnus Larson from Lund University in Sweden.

The study aims to develop a model that can accurately predict coastal erosion and inundation caused by severe storms. Once developed, the model will be applied to vulnerable sites along the NSW coastline. The results are expected to provide better scientific knowledge for coastal zone management plans, and enable more informed and effective coastal risk assessments and emergency management strategies to be developed.

The study, funded under the Commonwealth's Natural Disaster Mitigation Program, is expected to be completed by mid-2008.

### Study into climate change impacts

DECC is leading a study into the potential impacts of climate change on the NSW coast and estuaries, funded by the Climate Change Impacts and Adaptation Research Program (see page 20). The study aims to assess the environmental and economic impacts of potential coastal erosion, coastal inundation and degradation of estuaries that could occur as a result of climate change.



Photo: DECC

*DECC is ensuring the environmental and commercial uses of coastal lakes, such as Back Lake, are balanced so they continue to provide a valuable habitat for birds.*

DECC has enlisted scientists from the CSIRO to carry out the study. Field data analysis, sophisticated computer modelling and socioeconomic modelling are being used to measure climate change impacts on, and adaptation measures for, the Clyde River–Batemans Bay system and the Woolli Woolli River system.

The study is expected to be completed by the end of 2008.

### Survey of tidal and mangrove limits in NSW estuaries

In early 1996, it became apparent that there was no reliable information to accurately define the tidal limits of NSW estuaries. The former Department of Natural Resources decided to survey mangrove limits as well as tidal limits. The project, undertaken with the Department of Commerce's Manly Hydraulics Laboratory, has taken 10 years to complete, and involved the mapping of nearly 800 rivers, creeks and lakes. DECC released the report in September 2006.

The report will benefit CMAs, estuary management committees, coastal councils and agencies which manage the coastal zone, and will assist in better informed planning decisions and management plans.

### Shoalhaven River water flow modelling

Water from the Shoalhaven River is being considered to help augment Sydney's dwindling water supply. To understand the impacts on the Shoalhaven River of diverting its water, DECC provided coastal data to help stakeholders understand the impacts on environmental flows, and help develop management strategies. To compile the data, DECC:

- conducted detailed depth mapping of the whole river
- studied water levels and measured the full tidal cycle
- continually monitored salinity levels at four locations
- modelled river salinity levels under various environmental flow conditions.

### Saltwater Wetland Rehabilitation Manual

It is estimated that over 60% of NSW's coastal wetlands have been lost or severely degraded over the last 200 years. Saltwater wetlands have complex hydraulic, physical, chemical and ecological interactions which need to be understood and addressed before undertaking rehabilitation projects. DECC has developed a Saltwater Wetland Rehabilitation Manual to provide technical information and guidance to assist with the rehabilitation of degraded saltwater wetlands. The manual is scheduled for release later in 2007.



Photo: M. Cooper

## 4.6 Protecting and revitalising Aboriginal culture and heritage

### 4.6.1 Engaging Aboriginal communities in conserving cultural heritage

DECC acknowledges the needs of Aboriginal people to connect to Country. In July 2006, during NAIDOC Week, DECC launched **Aboriginal people, the environment and conservation principles**, which recognise Aboriginal peoples' custodial interests in Country, including their unique responsibility to care for the landscape of NSW, its biodiversity and places of particular cultural significance.

DECC is a member of an interagency working party which is developing an **Aboriginal Land Management Framework**. The framework aims to coordinate Aboriginal people's access to, use of, and co-management of public land, and also covers services provided to Aboriginal landowners. A discussion paper on the content of the framework is being drafted.

DECC is also developing an **Aboriginal Community Engagement Framework** containing guidance and case studies. The framework will be promoted as a model for other agencies when completed.

### Aboriginal Cultural Heritage Advisory Committee

The Aboriginal Cultural Heritage Advisory Committee held three meetings during 2006–07. To achieve their vision of 'Healthy Country cared for and respected by all people, to maintain Aboriginal peoples' spiritual and physical connection from the past to the present and into the future', the committee developed the following goals:

- to make Aboriginal culture and heritage front and centre in the development of policies to support the social and human development of Aboriginal people in NSW
- to contribute to DECC being a culturally aware and respectful, credible, efficient and effective organisation
- to provide sound advice based on the needs and aspirations of the Aboriginal people of NSW.

The committee also identified five priority areas on which it will provide advice to the Minister and the Director General:

- the protection of Aboriginal cultural heritage
- understanding Aboriginal cultural heritage and managing heritage information
- cultural identity and renewal
- managing lands, gardens, and terrestrial and marine parks
- building a working environment that affirms and respects Aboriginal culture.

During 2006–07, the committee considered and advised on a number of issues, including Aboriginal co-management of parks (see pages 82–85), Aboriginal policies and programs and Aboriginal heritage assessments.



Photo: R. Simon

*The Aboriginal Cultural Heritage Advisory Committee. Back row (left to right): Stephen Ryan, James Ingram, Glenda Chalker, Victor Perry (Deputy Chair), Jason Field. Front row (left to right): Maureen O'Donnell, Viola Brown, Mary Duroux, Lavinia Duroux.*

*Absent: Yvonne Stewart (Chair).*

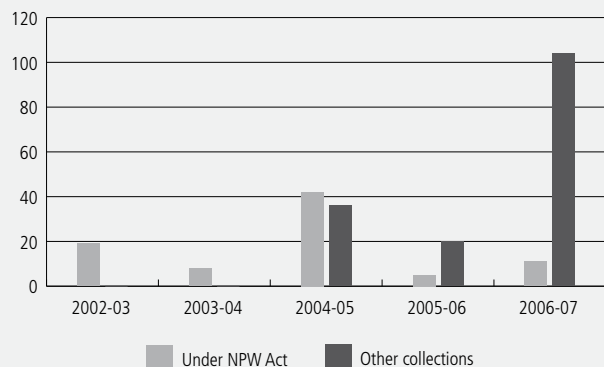
## ■ PERFORMANCE INDICATOR

### Aboriginal ancestral remains and collections of cultural material repatriated to Aboriginal communities

**Definition:** This indicator measures the number of Aboriginal ancestral remains and collections of cultural material held under the *National Parks and Wildlife Act 1974* (NPW Act) repatriated by DECC to NSW Aboriginal communities. DECC also works with the Australian Museum and community groups to facilitate repatriation under other Acts.

A 'collection' is more than two and up to 200 items. The repatriation process involves extensive consultation with Aboriginal communities to ensure items are returned appropriately and according to Aboriginal community protocols.

#### Aboriginal ancestral remains and collections of cultural material repatriated to Aboriginal communities



**Interpretation:** In 2006-07, DECC returned 11 remains and collections held under the NPW Act, and assisted in the return of 104 remains held by various museums and universities to Aboriginal communities. Information is not available before 2004-05 for items returned from collections which were not under the NPW Act.

## Return of Aboriginal cultural heritage

During 2006–07, DECC established a NSW Repatriation Program in partnership with the Department of Aboriginal Affairs, the Australian Museum and Arts NSW. The program coordinates the return to Aboriginal communities of ancestral remains and cultural materials that are held by NSW institutions. Aboriginal communities honour the remains in accordance with local custom, conducting smoking ceremonies for the journey from the institutions back to traditional lands for reburial at sites they select.

In 2006–07, DECC facilitated the repatriation of nine sets of ancestral remains from its own collections to the **Wamba Wamba Local Aboriginal Land Council and Aboriginal community** in south-western NSW.

Ancestral remains from other institutions were also returned to **Grafton Local Aboriginal Land Council** and to the **Metropolitan and La Perouse Local Aboriginal Land Councils** in Sydney. The Grafton, Metropolitan and La Perouse repatriations were joint projects undertaken in collaboration with the Australian Museum and the University of Sydney.

The repatriation of seven Aboriginal remains on the **Worimi Conservation Lands** took place in June 2007. DECC also repatriated the remains of other individuals that were uncovered by windblown sand movement.

**Blaxlands Flat** is located within the traditional country of the Gumbaingirr people of northern NSW. The Blaxlands Flat Aboriginal burial site, which was excavated in 1964, included the remains of approximately nine individuals and fragmented bones from other individuals. The collection was stored at the Australian Museum and the University of Sydney. The remains were returned to their original resting place on private property in November 2006 following consultation with the Australian Museum, Sydney University, the Aboriginal community and the landowner.

## ■ CASE STUDY

### Repatriations of ancestral remains to metropolitan Aboriginal communities

DECC worked in partnership with the Metropolitan and La Perouse Local Aboriginal Land Councils, the Australian Museum and the University of Sydney to return Aboriginal ancestral remains held by the museum and university since the late 1800s. Repatriations began in 2002, and the establishment of four Guringai and four Dharawal resting places followed. Under the provisions of Section 84 of the *National Parks and Wildlife Act 1974*, these resting places have been declared Aboriginal Places.

In July 2006, repatriations occurred at Little Bay, followed by Garie Beach and Costens Point in October 2006, Bujwa Bay and Towlers Bay in November 2006, Reef Beach in March 2007, the Quarantine Station in May 2007 and Towra Point in June 2007. In all, over 200 ancestral remains have been returned to their final resting places in and around Sydney.



Repatriation ceremony in La Perouse.

Photo: C. Bento, courtesy Australian Museum

The final two repatriations concluded the journey that began more than six years ago. On 30 May 2007, the Tribal Warrior and the Deerubbin vessels transported 36 ancestral remains from near Pymont across the harbour to Manly and their resting place. In La Perouse on 16 June 2007, 27 ancestral remains were returned to Country at Towra Point on the southern side of Botany Bay.



In July 2006, DECC facilitated the return of 16 stone axe heads, held in a private collection and believed to have originated from the Snowy River Valley, to the Aboriginal community in the **Browns Camp** area near Delegate.

## Protecting Aboriginal cultural heritage

### Aboriginal cultural heritage regulation

DECC administers the *National Parks and Wildlife Act 1974* (NPW Act) and the National Parks and Wildlife Regulation 2002 (NPW Regulation) which protect Aboriginal objects and Aboriginal Places in NSW. Permits and consents are required for actions including those that may damage or destroy objects or places.

Part 3A of the *Environmental Planning and Assessment Act 1979* was introduced in September 2005 which guides approvals for major developments or infrastructure projects of state or regional significance. Approvals under the NPW Act for Aboriginal heritage impacts are not required once a project is approved under Part 3A, but such impacts are still considered under Part 3A. DECC is consulted and may make recommendations to the Department of Planning on assessments and conditions of approval.

In 2006–07, DECC continued a major review project aimed at improving Aboriginal cultural heritage regulation by streamlining and promoting a consistent regulatory approach within the existing legislative framework.

### Aboriginal Places

Under the NPW Act, any area of land may be declared an Aboriginal Place by the Minister if, in the Minister's opinion, it is or was of special significance to Aboriginal culture. Five Aboriginal Places were declared in 2006–07, taking the total number to 55. These places are:

- Sandon Point near Wollongong which includes graves of Aboriginal people, the surviving remnant of an extensive coastal midden and a meeting place for Aboriginal groups
- Gooreengi in Port Stephens which contains ceremonial stone arrangements
- Ukerebagh Island on the Tweed River, which is the birthplace of Neville Bonner, Australia's first indigenous parliamentarian, and is a former Aboriginal reserve and living area
- Oak Hill near Yass, a former Aboriginal reserve and living area, and the site of several Aboriginal graves
- Birubi Point near Nelson Bay, a ceremonial site and part of a rich area used by Aboriginal people for fishing and collecting shellfish.

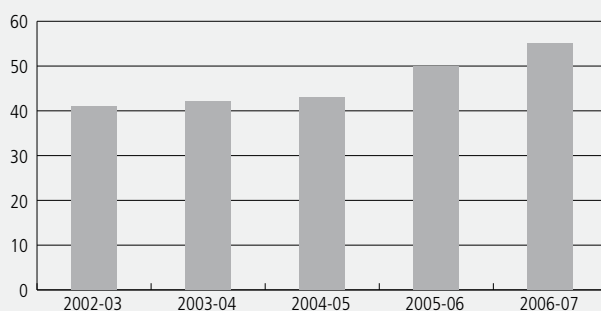
Celebrations were held in May and June 2007 with the Illawarra and Yass Aboriginal communities following the declarations of the Sandon Point and Oak Hill Aboriginal Places.

#### ■ PERFORMANCE INDICATOR

### Number of Aboriginal Place declarations (for sites of Aboriginal cultural significance) made under NSW *National Parks and Wildlife Act 1974*

**Definition:** This indicator measures the cumulative number of places across NSW that were declared as Aboriginal Places under the *National Parks and Wildlife Act 1974* following recognition of their special significance to Aboriginal culture.

#### Aboriginal Place declarations



**Interpretation:** Five Aboriginal Places were declared in 2006–07, protecting burial and ceremonial sites, former living and meeting places, and the birthplace of Neville Bonner, Australia's first Indigenous parliamentarian. As at June 2007, a total of 55 Aboriginal Places had been declared. The number of declarations does not always reflect the level of ongoing investigative work as investigations may not be completed in a single reporting year, or investigations may find that a nominated place does not meet legislative requirements for declaration.

DECC investigated several proposed Aboriginal Places in 2006–07, including Bermagui Waterhole, Kings Grave near Condobolin, Byrock Rockholes near Cobar, and the former Inglebah Aboriginal Reserve near Walcha. In accordance with the outcomes of the Githabul Indigenous Land Use Agreement (see page 83) investigations were begun for proposed Aboriginal Places at the Guruman and Yabbra sites near Kyogle in the Border Ranges.

DECC is reviewing its procedures for assessing Aboriginal Place nominations to streamline the process and provide better guidance to regional Aboriginal staff undertaking assessments. The review is expected to be completed later in 2007–08.

### Protecting Aboriginal burials in western NSW

During 2006–07, DECC carried out a major Aboriginal burial protection project throughout Kinchega and Mungo national parks in western NSW in partnership with the Paakantyi, Muthi Muthi and Nyiampaa traditional Aboriginal owners, who helped determine the conservation requirements of some 300 known burials.

Due to the high erodability of the landscape, the assessment and management of Aboriginal burials will be ongoing. DECC will continue to monitor and conserve any burials in close collaboration with the traditional owners.





Photo: L. Mitchell, DECC

DECC staff and Aboriginal community members using shade cloth and sand bags to cover exposed Aboriginal burials in Mungo National Park.

## Training about Aboriginal sites

During 2006–07, DECC developed a targeted **Site Awareness Training Package** in response to requests from DECC staff, other agencies and Aboriginal communities. Site awareness training assists communities and agencies to recognise possible places and objects of cultural significance, and provides information on DECC's regulatory requirements once sites have been identified.

Aboriginal communities wished to have Aboriginal site officers and groups who have entered into a memorandum of understanding or co-management arrangement participate in the training. DECC delivered four external training programs, three for the Roads and Traffic Authority and one for the Department of Primary Industries. Participation by Aboriginal community members helped ensure local values and aspirations were reflected in the program content.

In October 2006, at the request of the Walgett-based **Dharriwaa Elders Group**, DECC trained young Aboriginal people over four days on identifying and recording Aboriginal sites. The training included map reading and the use of a Global Positioning System. The young people were mentored by Elders to support Aboriginal community structures and strengthen the bonds between Elders and their community, and provide opportunities for knowledge of site significance to be passed down through oral history recording.

## Conservation tools and resources

DECC develops tools for identifying, protecting and managing Aboriginal heritage sites and values.

In December 2006, DECC published **Aboriginal cultural heritage regional studies: an illustrative approach** to provide technical advice to Catchment Management Authorities and other organisations which manage cultural heritage.

The **Aboriginal Heritage Information Management System (AHIMS)**, which has operated for more than 30 years, contains detailed information on 52,000 recorded sites and 8900 archaeological and other Aboriginal heritage reports. It is used by government agencies, industry and heritage professionals for land use planning, regulation and conservation management. It is also used by local Aboriginal communities to help them manage, conserve and protect local sites and heritage.

During 2006–07, DECC undertook training for Aboriginal communities around the state in the new AHIMS technology.

DECC also digitised hard copy site register cards and key sections of archaeological reports. In 2006–07, DECC digitised 10,902 slides, 1800 site cards (bringing the total digitised to 45,254), and 426 site reports (bringing the total digitised to 6907). Approximately 2300 new items and locations were registered, 300 new reports were entered, and 2800 searches of the system were undertaken for external users.

## Assessing and recording Aboriginal cultural heritage

### Personal digital assistants

An important step forward in 2006–07 has been the development of Global Positioning System-enabled personal digital assistants (PDAs). These enable DECC staff and Aboriginal communities to digitally record Aboriginal sites and other places of importance.

DECC staff trained the Aboriginal community in using PDAs during regional site assessment projects at Yanga National Park and in the Brigalow Belt South/Nandewar Community Conservation Areas. Information derived from the assessments was imported directly from the PDAs into AHIMS, greatly enhancing mobility and timeliness. The Aboriginal participants were positive about the training and the technology, which they would like extended so more Aboriginal communities can assess and conserve their heritage.

An Aboriginal heritage assessment of **Dorrigo National Park** was undertaken with the involvement of Dorriggo Plateau Local Aboriginal Land Council between mid 2006 and April 2007 with funding assistance from the Northern Rivers Catchment Management Authority. Eight Aboriginal field staff were employed to:

- identify and map places of cultural heritage value including those with pre-contact and historic significance, and places where natural resources were collected for food and medicinal purposes
- consider ways of managing and conserving significant Aboriginal sites
- investigate the interest of the Aboriginal community in the future management of the Serpentine Nature Reserve.

In April 2007, DECC, the Uambi Community Development Employment Program, TAFE and the Gilgandra Local Aboriginal Land Council recorded Aboriginal sites at the newly established **Biddon State Conservation Area**. TAFE students studying Indigenous Land Management, supported by an Aboriginal cultural mentor, recorded sites across 3350 hectares. Two weeks on-the-ground training and three weeks practical application of newly acquired skills (including site identification and recording, plant identification, map reading, survey methodologies and Global Positioning System operation) resulted in the recording of artefact scatters, scarred trees, ochre quarries and wild resource places, and their registration on AHIMS.

### Recording oral histories

In September 2006, DECC launched **Aboriginal Women's Heritage: Wagga Wagga**, which contained the stories of nine Aboriginal women who live in Wagga Wagga but have a long life history across western NSW. The women formed an Aboriginal women's Elder group to share stories, educate young people and pass on their knowledge and experiences from growing up in an era of harsh changes.

**Aboriginal Women's Heritage: Nepean** was launched in May 2007. The Nepean publication contains the life stories of seven Aboriginal women.

## Aboriginal heritage conservation projects

In 2006–07, DECC undertook 55 projects specifically protecting Aboriginal sites and places, including:

- assessing, documenting, conserving and restoring culturally significant objects and places
- returning Aboriginal remains, cultural materials and knowledge to Aboriginal people
- declaring Aboriginal Places
- promoting Aboriginal management of Country
- working with Aboriginal communities to promote and conserve their culture and heritage (see page 109).

Stage two of the **Severs Beach Midden Protection Project** was completed in 2006–07. DECC worked closely with the far south coast Aboriginal community and Elders to stabilise the midden, build a boardwalk to minimise impacts on the midden, and revegetate the site.

During the year DECC arranged information sessions and meetings with members of the Ballina and Cabbage Tree Island Aboriginal communities about the **Patches Beach Aboriginal Area**. Site protection works including fencing, signage and weed control were undertaken with Community Development Employment Program workers from Cabbage Tree Island. Local Aboriginal women played a major role in protecting the area, which holds the remains of women and children suspected to have been poisoned by early settlers. The area was gazetted in February 2007 and renamed 'Dubay Jarjum Wydarm', which means 'Women and Children Sleeping'.

### ■ CASE STUDY

#### Working with the Mutti Mutti to assess Aboriginal heritage in Yanga National Park

Yanga Station, on the banks of the Murrumbidgee River near Balranald in south-west NSW, has rich cultural heritage values entwined with a strong Aboriginal presence linking the past to the present. In 2006–07, DECC staff worked with the Mutti Mutti Aboriginal community to conduct Aboriginal and historic heritage surveys in, and assessments of, the new Yanga National Park.

DECC trained representatives from the community to use GPS-enabled personal digital assistants to identify and record Aboriginal sites, and trained them in site identification and management. The Mutti Mutti shared local knowledge about the sites, and related bush tucker and Dreamtime stories. This information was combined with the scientific data. Information is being recorded on the Aboriginal Heritage Information Management System.



Daniel Kelly Jr (left) and Damien Charles (right) of the Mutti Mutti community measure a scarred tree in Hill Paddock at the northern end of Yanga National Park.

A number of **rock art conservation projects** were undertaken during 2006–07, including:

- training and pigment monitoring at Wollemi National Park, which included monitoring two significant art sites near Kandos and Nullo Mountain
- preliminary post-fire rehabilitation work in Brisbane Water National Park following major fires in January 2007
- repairing two major engraving sites near Gosford after they had been damaged by a wildfire
- removing graffiti from several sites in Blue Mountains National Park near Lithgow
- preliminary work on removing graffiti from a scarred tree at Broulee near Bateman's Bay
- removing paint graffiti from the Devil's Hands site near Nowra
- repairing the Tingha Stone Woman site at Tingha after extensive vandalism occurred during February.

Subsidence from underground coal mining has had a major impact on engraving sites in the Illawarra and near Lithgow, as well as at Whale Cave near Mt Keira. A meeting was held with BHP Billiton near Port Kembla to discuss this issue and a management and monitoring plan is being developed.

In June 2007, DECC staff trained the Cobar Co-management Committee in rock art conservation and monitoring at Mt Grenfell Historic Site. Drip lines were installed and mud nests removed. Training in pigment monitoring was also provided so local community members can conserve artworks in the future.

In 2006–07, DECC developed a set of guidelines on rock art conservation techniques for community members and site managers who participate in site conservation work. The guidelines were completed in June 2007.

## Aboriginal heritage prosecutions and enforcement

In February 2007, **Craig Williams** was fined \$1400 by the Land and Environment Court and ordered to pay DECC's costs of \$85,000 for knowingly allowing the excavation of part of an Aboriginal Place and two traditional Aboriginal campsites, in an area known as the Pinnacles, during the building of a rail siding and exploration on his mining lease in 2004. In a first for the Land and Environment Court, at the suggestion of Chief Justice Preston, the offender entered into a restorative justice process before he was sentenced. This required him to meet with Aboriginal Elders in Broken Hill where Mr Williams apologised for his actions. Mr Williams is now working with the Wilykali people to ensure they are involved in any future salvage operations and the possible development of a Voluntary Conservation Agreement. Community Elders are also discussing cooperative tourism opportunities at the Pinnacles that would provide access for the wider community.

### ■ CASE STUDY

#### Towra Team takes care of traditional turf

Ten members of the La Perouse Aboriginal community are sharing their traditional knowledge with visitors while they help protect Botany Bay's reserves through an employment program led by DECC. As well as explaining the area's natural and cultural significance and helping run *Discovery* tours and events, the Towra Team patrol the area and remind visitors of the importance of protecting sensitive restricted areas like the tern nesting sites on Towra Island. They also help monitor breeding populations of endangered birds such as the little tern.

Towra Point Nature Reserve contains internationally significant wetlands and provides a vital refuge for endangered migratory birds. It is also an important part of the traditional lands of the Dharawal people. There are middens, rock shelters, engravings, burials and axe grinding grooves at Towra Point and in Botany Bay National Park.

The initiative is designed to boost local indigenous people's job prospects and reconnect them with their traditional lands. DECC is training the team in



Shaun Longbottom DECC Field Officer (left) with Darren Cooley (middle) and Wayne Simms (right) from the Towra Team.

Photo: DECC

bird and plant identification, bush regeneration, and national park legislation and tour guiding. NSW Maritime provided boat training. Team members have successfully obtained boat licences, first aid certificates and occupational health and safety qualifications.



## 4.6.2 Supporting Aboriginal people in the practice and promotion of their culture

The whole-of-government **Cultural Resource Use Framework** guides Aboriginal people in accessing cultural resources on public lands. DECC is developing policies to guide cultural activities in parks, including culture camps, cultural resource use, and burials. In 2006–07 work has continued on developing a **draft Aboriginal Partnerships Policy**. It is anticipated that the draft will be completed by the end of 2007.

### Wellbeing Project

The Wellbeing Project will continue over three years, and began by examining current government policy linking wellbeing, culture and heritage. During 2006–07, a survey, combining a questionnaire with group activities and in-depth interviews, was conducted with over 100 volunteers in Aboriginal communities around NSW. The survey investigated the quality of life benefits gained by Aboriginal communities from their participation in heritage conservation programs. Over the coming year, the survey will be expanded through further community input and will then provide a resource for inter-generational transfer of cultural knowledge.

### Indigenous Engagement Strategy

In 2006–07, DECC established an Indigenous Engagement Strategy with Aboriginal community groups in the Border Ranges region of northern NSW and south-east Queensland. As part of the strategy, DECC worked with Aboriginal communities to implement property management plans for their community-owned lands. Because this area is a biodiversity hotspot (see page 65 for definition of 'biodiversity hotspot'), the plans will focus on developing a best practice model for integrating indigenous knowledge into biodiversity management.

### Murdi Paaki COAG Trial

In 2006, DECC was nominated, together with the Commonwealth Department of the Environment and Water Resources, as Co-chair of the Environment, Culture and Heritage Sub-Group of the Murdi Paaki Council of Australian Governments Trial. The aim of this trial is to coordinate service delivery by Commonwealth, state and local governments to address the disadvantage of Aboriginal people in the Murdi Paaki region, which extends from Walgett to Wentworth in NSW's far west and north-west. The Sub-Group will work with the 16 Aboriginal Community Working Parties to coordinate local and regional environmental, cultural and heritage programs.

One of the Sub-Group's major activities is the development of a conservation management plan for the Brewarrina Fishtraps, which have been placed on the State and National Heritage Registers. The re-opening of the Brewarrina Cultural Museum for visitors is planned to showcase Aboriginal culture, the importance of the fishtraps, and Aboriginal connection to the Barwon/Darling River.

### Culture camps

A culture camp is an activity undertaken by Aboriginal people for traditional or ceremonial purposes, such as visiting a site significant to a community, handing down traditional knowledge from Elders in their communities, or gathering traditional foods. Non-Aboriginal people may also participate in some culture camps for educational purposes. Culture camps provide important opportunities for Aboriginal people to connect with Country and to pass on both practical and spiritual knowledge, and for non-Aboriginal people to learn about Aboriginal cultural heritage.

Culture camps are conducted in a number of national parks and reserves across NSW. Culture camps held during 2006–07 included:

- Ngilyampaa Cultural Camp, held on 6–8 October 2006 in Yathong Nature Reserve in the central west, which involved 24 people including 11 children. Events included searching for new Aboriginal sites, painting by the children, Ngilyampaa language lessons and the Elders sharing memories.
- two culture camps held in November 2006 in the south-west slopes area involving the Tumut and Brungle communities: a Women's Camp at Elms Grove and a Family Camp at Talbingo.
- two culture camps conducted on the far south coast in Ben Boyd National Park by the Eden Aboriginal Community and in Wadbilliga National Park by an Aboriginal Elder from the local community.
- two culture camps held in Pilliga Nature Reserve, one hosted by Coonabarabran Aboriginal Land Council in October 2006 with 45 community members, and one by Baradine Aboriginal Land Council in May 2007 with 30 community members. These culture camps allowed Elders from Narrabri, Baradine, Gunnedah and Coonabarabran communities to pass on their knowledge and skills, and provided younger members of the community with an understanding of their culture and connection to Country.

Three cultural campsites are located on the mid-north coast, in Limeburners Creek Nature Reserve, and Crowdy Bay and Saltwater national parks. Agreements between DECC and the Aboriginal community guide the operation of the camps which are used most during the summer months.

In May 2007, DECC and the far south coast Aboriginal community coordinated a cultural knowledge exchange through a culture camp held at Wadbilliga National Park. The camp provided an opportunity for Elders to practice living culture and to share knowledge with young Aboriginal men through recording men's sites and places of significance.



## Aboriginal Traditional Games Day

DECC assisted 40 Aboriginal and non-Aboriginal students from Narrabri West School to participate in an Aboriginal traditional games day at Goodooga Public School in August 2006. DECC provided transport for students and facilitated activities, based on traditional games played by Aboriginal children, to learn hunting and bushcraft skills. Originating from across Aboriginal groups, these activities, combined with instructions, make up a kit for use on other traditional games days planned for schools across the region.

Regional staff also talked to children about the cultural heritage of the region, and informed the children of DECC programs which help Aboriginal people to promote and renew their culture. The feedback received from parents, teachers and students was extremely positive.

## Living Places

'Living Places', placed on DECC's website in September 2006, chronicles the Bundjalung, Gumbayngirr and Dunghutti communities' memories of places across north-eastern NSW since 1788. The places are those in which they and their ancestors lived and worked, or which they visited. Places include farms, reserves and stations, fringe camps, temporary seasonal camps, fishing camps and towns. 'Living Places' can be viewed at [www.environment.nsw.gov.au/education/culturalheritage/index.htm](http://www.environment.nsw.gov.au/education/culturalheritage/index.htm).

## Aboriginal *Discovery* Program

Aboriginal *Discovery* is part of the *Discovery Walks, Talks and Tours* community education program which is discussed on page xx.

Established in 1998–99, Aboriginal *Discovery* enables DECC to work with local Aboriginal communities to educate the broader community about local Aboriginal culture and heritage through walks, talks, tours and school programs.

Before any Aboriginal *Discovery* Program is developed, authorisation is gained from the appropriate local Aboriginal Elders or Aboriginal community groups to develop and conduct activities on behalf of their community. Local Aboriginal people are employed and trained where possible to conduct *Discovery* activities.

In 2006–07, 46 Aboriginal *Discovery* Rangers delivered 1073 guided activities state-wide, including:

- In Sydney, a joint project conducted with the Metropolitan Local Aboriginal Land Council. This project involved Aboriginal trainees completing a TAFE Conservation and Land Management Certificate course. Near the end of their training, the trainees ran four three-hour tours interpreting the Aboriginal rock art of the West Head Peninsula, Ku-ring-gai Chase National Park. Two of the trainees have since been employed as casual interpretive guides at West Head.



Photo: M. Cooper

Aboriginal land management students conducted tours of West Head to interpret Aboriginal rock art for participants.

- Two Aboriginal *Discovery* guides being employed in Coonabarabran to conduct the Tara Cave walk and the Sun Dancing tour. Tara Cave, in Warrumbungle National Park, was occupied from at least 5000 years ago and participants imagine life as it was in the distant past. The Sun Dancing Tour takes people out to Burra Bee Dee Mission and cemetery near Coonabarabran and to Sandstone Caves in the Pilliga Nature Reserve. A rare insight into what life in a mission was like is told by local Aboriginal people who grew up there.
- An Aboriginal heritage talk given by an Aboriginal Elder on Easter Saturday at Dawson's Spring Campground in Mt Kaputar National Park. He discussed the Aboriginal heritage of the local Gamilaroi people and their ties to the Mt Kaputar area. He also brought food baskets, a didgeridoo and clap sticks to show participants.
- Aboriginal educational activities in Saltwater National Park (co-managed under an Indigenous Land Use Agreement), developed and provided by *Discovery* and Manning area staff plus local Aboriginal Elders.