

# Conserving natural and cultural values across the landscape

Strategic focus area	Outcomes
Biodiversity protected and restored	Improvement in the conservation of biodiversity, including threatened species, on public and private lands
Aboriginal cultural heritage protected	Conservation of Aboriginal objects, places and landscapes of cultural value
Reserve system managed and improved	Improved conservation of natural, heritage and cultural values in terrestrial and marine reserves
Public use of reserve system sustainable	Visitors enjoy the reserve system with minimal impact on its conservation value

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## 3.1 Protecting and restoring biodiversity

### 3.1.1 Corporate plan priorities 2004–06

#### Reforming threatened species conservation

*Lead the process of reforming NSW threatened species conservation laws, systems and approaches*

The *Threatened Species Conservation Act 1995* was amended in 2004, with changes commencing in October 2005. These changes included granting biodiversity certification to new native vegetation management plans on private land, and enabling the Minister to certify local environmental planning instruments which improve or maintain biodiversity (pages 43–44).

Other changes included the preparation of the Threatened Species Priorities Action Statement to recover threatened species and mitigate threats (page 49); simplifying the 8-point test which assesses impacts of developments on threatened species; and introducing an accreditation system for those undertaking threatened species assessments (page 45).

Clear requirements for nominating threatened species for listing and for the Minister and the Natural Resources Commission to advise the Scientific Committee about listing priorities have been added, along with improvements to compliance measures.

During 2005–06, DEC negotiated further offsets to minimise impacts of development on biodiversity (page 45), and began developing a Biodiversity Banking and Offsets Scheme to conserve biodiversity and simplify development assessment. The scheme is being designed with extensive input from stakeholders, scientists and future participants (page 44).

#### NSW Biodiversity Strategy

*Review, develop and lead implementation of the next stage of the NSW Biodiversity Strategy, 'Living NSW'*

DEC has continued developing the second NSW Biodiversity Strategy during the past year, to reflect the Government's legislative reforms over the past three years that deal with natural resource management and threatened species. The strategy is being developed in consultation with other agencies, particularly the Department of Primary Industries, which has a joint role in preparing the strategy in accordance with the *NSW Fisheries Management Act 1994*.

#### Supporting catchment management authorities and councils

*Provide tools and knowledge to support catchment management authorities and councils in their protection of the natural and cultural values of biodiversity*

During 2005–06, DEC provided staff and assistance to the 13 catchment management authorities (CMAs), to assist with catchment action plan preparation and other biodiversity, water quality and cultural heritage programs (page 52).

DEC continued work on biodiversity aspects of native vegetation and property vegetation planning tools and on Coastal Lakes Sustainability Assessments (page 50). DEC also trained approximately 120 CMA staff on using Biometric (page 53).

DEC published guidelines to help CMAs and local councils to use water quality objectives in decision making (page 26) and to incorporate Aboriginal cultural values in natural resource management (page 52).

## Addressing climate change

### *Work to address the impacts of climate change on biodiversity*

Some impacts on NSW biodiversity from climate change are already being observed and adaptation planning is vital to reduce the vulnerability of biodiversity to the likely impacts. In early 2006, DEC commenced research that will examine the impacts of climate change on bushfires, biodiversity, invasive species and aquatic ecosystems. DEC is also updating conservation planning tools to accommodate climate change projections.

## Off-reserve conservation

### *Develop and implement off-reserve programs and initiatives for conservation as part of building a comprehensive, adequate and representative protected area system*

By June 2006, there were 624 Wildlife Refuges gazetted and 200 Voluntary Conservation Agreements signed, giving formal protection to areas of private and unreserved land containing natural and cultural heritage of high conservation value. This has brought the total area of private and unreserved land in NSW managed for conservation purposes to 1,947,934 hectares (page 45).

DEC also began a number of regional conservation plans, which identify regional conservation priorities and provide strategies to conserve biodiversity. These strategies include reserving land, BioBanking and rezoning (page 44).

## Improving wetland system protection

### *Develop and implement a strategy for improved protection of NSW wetland systems*

In August 2004 DEC finalised its Wetland Initiative, a five-year strategy to deal with the significant challenges of protecting wetlands, focusing initially on the Macquarie Marshes and the Gwydir Wetlands. During 2005–06, DEC began to implement the strategy by purchasing water licences from willing sellers in these water markets, drafting environmental management plans and undertaking a number of ecological character assessments of NSW Ramsar sites (pages 50–51).

During the year, DEC worked with the Yarrahapinni Wetlands Group and Great Lakes Council to acquire significant areas of coastal wetlands for rehabilitation (page 51), and with the Baakandji and Budjiti groups to nominate the Paroo River wetlands for recognition under the Ramsar Convention (page 50).



*Brush-tailed rock wallaby in Oxley Wild Rivers National Park.*

P. Thomas, DEC

## 3.1.2 Threatened species reform and management

DEC has achieved much over the past two years in developing and implementing **threatened species reforms** and new approaches for protecting biodiversity. Achievements in 2005–06 included implementing new legislative requirements, negotiating on the final stages of the Native Vegetation Regulation, consulting on the Priorities Action Statement and BioBanking scheme, and solving problems relating to major development proposals.

One milestone was the first major overhaul in 10 years of the state's threatened species laws. Most of the *Threatened Species Legislation Amendment Act 2004* and remaining parts of the *Threatened Species Conservation Amendment Act 2002* commenced in October 2005 and instituted a range of reforms.

These reforms better integrate threatened species conservation with rural and land use planning, natural resource management and development assessment.



They are designed to ease pressure on conservation values on land being cleared in urban and coastal areas, and to provide incentives for landholders to retain and protect threatened species so they become a valuable asset, not an impediment. The reforms signal an end to ad hoc, site-by-site assessment in the late stages of planning by creating strategies that consider planning, development and threatened species conservation before development commences, and that protect threatened species in areas of most need. Key actions arising from the reforms include:

- assessing new land-use plans for biodiversity certification
- introducing new laws that make it easier for farmers in rural areas to ensure they protect native plants and animals while running productive farms
- better protecting ecological communities such as rare forests and heaths which are facing extinction
- developing a Threatened Species Priorities Action Statement (see page 49)
- developing a BioBanking scheme.

On Threatened Species Day, 5 September 2005, the Minister for the Environment unveiled a new DEC **threatened species website** providing detailed ecological information, maps, drawings and photos of 962 of the state's most vulnerable native plants, animals and ecological communities. The website drew on the knowledge of more than 60 scientists and experts from DEC, and includes profiles of aquatic species and communities (listed as threatened under the *Fisheries Management Act 1994*) provided by the Department of Primary Industries. There are also links to the NSW Native Vegetation Map and the BioNet website where users can search and map wildlife data collected by other NSW agencies. The new website is at [www.threatenedspecies.environment.nsw.gov.au](http://www.threatenedspecies.environment.nsw.gov.au).

## BioBanking scheme

DEC is developing a **Biodiversity Banking and Offsets Scheme** (BioBanking scheme) to protect biodiversity while simplifying development assessment. In June 2006, a Bill on the scheme was introduced in Parliament.

## ■ CASE STUDY

### Regional conservation plans to protect biodiversity

During 2005–06, DEC began preparing regional conservation plans (RCPs) to complement the regional planning strategies for coastal areas (see page 75). RCPs will focus on maintaining or improving biodiversity in new development areas.

DEC is preparing draft RCPs for the Lower Hunter and the Far North Coast (which cover the area from the Queensland border to Evans Head). Both RCPs:

- identify priority regional conservation areas and propose actions to conserve these areas, such as identifying land that could be incorporated into DEC reserves or private conservation agreements, BioBanking, or rezoning land for environment protection
- provide a framework for biodiversity investment to offset the impacts on biodiversity and loss of threatened species habitat resulting from proposed development
- guide councils on areas which should be zoned for environment protection and help councils seeking biodiversity certification of their new local environmental plans (LEPs).

In the Illawarra, the biodiversity conservation actions in the draft regional strategy do not rely on the preparation of a regional conservation plan, but build on the work DEC has already carried out in preparing the Illawarra Escarpment Management Plan. Councils in the Illawarra will review their LEPs in the next few years, to plan to maintain and enhance biodiversity, Aboriginal heritage, and environment protection.



Kurri sand swamp woodland, which will be protected under the Lower Hunter Regional Conservation Plan

T. Hogbin, DEC

The Bill proposes to:

- establish 'biobank sites' on land through an agreement between the Minister for the Environment and landowners
- create biodiversity credits for actions that improve or maintain biodiversity on biobank sites
- trade credits once they are created and registered
- enable the credits to be used to offset the impacts of development on biodiversity
- determine the number and class of credits that are needed to offset the impact of a development and ensure that it improves or maintains biodiversity.

For more information visit [www.environment.nsw.gov.au/threatspec/biobankscheme.htm](http://www.environment.nsw.gov.au/threatspec/biobankscheme.htm).

### 3.1.3 Protecting biodiversity

Biodiversity conservation is becoming more important as population growth and resource consumption escalate, increasing pressure on the natural environment. DEC has worked on important measures to protect biodiversity in 2005–06, including developing the BioBanking scheme, continuing work on the NSW Biodiversity Strategy, monitoring wildlife abundance, encouraging conservation on private land, working with developers on biodiversity offsets, caring for and managing wildlife, and controlling pests and weeds.

In April 2006, DEC publicly exhibited a **draft accreditation scheme** to establish a professional standard for ecological assessment. The scheme will give planning authorities greater certainty by improving the quality of unbiased and objective information used in biodiversity certification, assessments of significance and species impact statements. The scheme, due to be finalised in late 2006, will be voluntary.

### Biodiversity offsets

DEC negotiates with landholders and developers to minimise the impact of development on biodiversity. During recent development on the Wallarah Peninsula, the developer recognised that biodiversity was an asset to the area and worked with DEC to establish an environmentally sensitive residential development, setting aside high conservation land for a nature reserve.

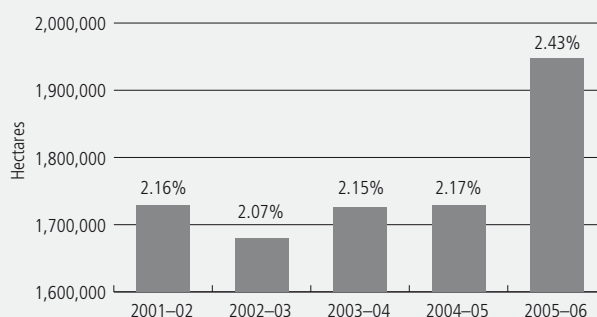
If impacts are unavoidable, **biodiversity offsets** can be implemented. A biodiversity offset is one or more actions that are put in place to counterbalance the impacts of development on biodiversity. In the case of the Karuah Bypass, the Roads and Traffic Authority (RTA) acknowledged that it could not avoid impacts on biodiversity on-site. The RTA therefore purchased 89 hectares of compensatory habitat from private owners to add to Karuah Nature Reserve to offset the loss. In the Federal Highway upgrade project, the RTA purchased land with a population of striped legless lizards and protected it from development, to offset impacts on a smaller population at another location. (See BioBanking on page 44.)

#### ■ PERFORMANCE INDICATOR

#### Private and unreserved land in NSW managed for conservation under DEC-managed programs

**Definition:** This measure indicates the percentage of the total land area of NSW protected and managed by landholders of private and unreserved public land for conservation outcomes under the *National Parks and Wildlife Act 1974*, through Voluntary Conservation Agreements (VCAs) and Wildlife Refuges, and the total number of hectares this land covers.

#### Hectares (percentage) of private land managed for conservation outcomes



**Interpretation:** In 2005–2006, the total area of private and unreserved public land managed for conservation increased by more than 200,000 hectares to almost 2 million hectares or 2.43% of private land managed by landholders for conservation purposes. Twenty-two new VCAs were signed, protecting 3446 hectares of high natural and cultural heritage significance. A highlight in March 2006 was the signing of the 200th VCA, which covers a significant area of land in northern NSW. In addition, 14 new Wildlife Refuges were created covering 216,267 hectares, and 1.27 hectares were added to an existing wildlife refuge. A highlight has been the proclamation of seven wildlife refuges through the West 2000 Plus Program undertaken in partnership with the Western Lands Commission, Department of Primary Industries and the Department of Natural Resources. These refuges cover more than 200,000 hectares, with more than 50,000 hectares to be managed solely for conservation. This sizeable increase is not expected to be repeated in future years.

### Conservation on private lands

Through the **Conservation Partners Program**, DEC establishes long-term partnerships for protecting and conserving private and other public lands under the *National Parks and Wildlife Act 1974* (NPW Act). Conservation is achieved by landholders entering into legally-binding agreements with DEC to conserve land in perpetuity under a Voluntary Conservation Agreement or as a Wildlife Refuge. The program also coordinates non-statutory property registration schemes, including Land for Wildlife.

Throughout the year, landholders were supported in maintaining and improving natural and cultural heritage values identified in their agreements. A regional landholder gathering was held at Chakola Wildlife Refuge on the south coast; two *Bush Matters* newsletters were published for more than 1500 conservation partners; and the Conservation Partners Program web pages were updated to include more information and new technical management notes.

A comprehensive review of DEC's programs for conservation on private land was completed in December 2005. The review examined the efficiency and effectiveness of DEC programs, particularly the Conservation Partners Program. The review recommended reinvigorating the Conservation Partners Program and targeting areas for priority investment to use limited resources more efficiently.

## Research and monitoring

DEC and the University of NSW coordinate an annual **aerial survey of wetlands and waterbirds throughout eastern Australia**, covering Queensland, NSW, Victoria and South Australia. Results of the 2005 aerial survey found waterbird numbers in wetland areas were below average across eastern Australia. This disturbing trend is ongoing, with total waterbird numbers on Macquarie Marshes the lowest ever recorded for the second year running. Waterbirds averaged 30,000 in the 1980s, and were never below 100, but this year less than 10 birds were counted. Severe drought in northern NSW and Queensland, together with river regulation, continues to affect the health of waterbird populations in key wetlands.

In the **third annual shorebird survey**, DEC staff and Hunter Bird Observers counted and identified migratory and non-migratory shorebird habitats in Port Stephens. A total of 3000 waterbirds was recorded including 1403 migratory waders and 124 domestic waders.

**Fauna surveys** were conducted, many with volunteers, for threatened species such as the osprey, sooty owl, powerful owl, Hastings River mouse and brush-tailed rock wallaby. A survey undertaken in Werrikimbe National Park showed that there has been an increase in the number of rufous scrub birds, probably due to better fire management initiatives.

## Cultural resource use

DEC coordinates an inter-agency working group which during 2005–06 developed a draft **Whole-of-Government Framework for Aboriginal Cultural Resource Use**. The draft framework sets out principles for Aboriginal people's cultural use of natural resources on public lands and waters, and policy statements to implement these principles. Each agency will develop operational and plain English guidelines for cultural resource use on lands they manage.

## Wildlife management on land

DEC is responsible for caring for and **protecting wildlife** in NSW by providing custodianship, managing wildlife populations and human–wildlife conflict, and ensuring sustainable use of wildlife resources. In 2005–06, DEC worked on policies relating to protecting marine turtle nests, reducing harm to flying foxes by inappropriate netting, and managing a sustainable native flora industry.

DEC also continued to support councils and other land managers in implementing policies on managing aggressive native birds, possums, snakes and other wildlife. Advice, fact sheets and sign templates were provided to local councils, schools and the general public. In northern NSW, a Dingo Management Strategy is being developed to reduce the risk of attacks on humans around high visitation areas of Myall Lakes and Booti Booti national parks.

Wildlife disease is a growing area of concern. DEC has recently developed a policy and protocol for identifying and managing wildlife disease outbreaks.

In its role as wildlife custodian, DEC responds to incidents such as marine mammal strandings, oil spills, wildlife disease outbreaks, and dealing with sick and injured wildlife, aggressive birds and snakes. DEC trains staff in specialised tasks such as treating oil-affected birds. DEC acknowledges the considerable efforts of volunteer wildlife carer groups, and the important role they have in assisting with injured and orphaned wildlife.

There is an increasing interest in pets such as reptiles and amphibians and in learning more about our environment and wildlife. In 2005–06, 19,845 licences were issued by DEC for keeping, breeding and trading native animals; research into wildlife; wildlife rehabilitation; taxidermy; pest bird control; damage mitigation; kangaroo management; and the commercial use of plants and flowers.

For the first time, in 2005–06 DEC provided financial support (\$15,000) to the recently-formed NSW Wildlife Council, which represents parties involved in wildlife rehabilitation in NSW. The council coordinates and helps to set standards for licensed voluntary individuals and groups representing wildlife carers.

## Managing whales, dolphins and seals

In October 2005, the Natural Resource Management Ministerial Council (NRMMC) approved the **Australian National Guidelines for Whale and Dolphin Watching 2005**. The NRMMC also agreed that the guidelines would be adopted by all jurisdictions. On 2 June 2006, the national standards were adopted in NSW through the introduction of the **National Parks and Wildlife Amendment (Marine Mammals) Regulation 2006**. The Regulation provides more stringent measures to protect marine mammals while allowing people to appreciate them in the wild. To introduce the Regulation, a fact sheet and sticker were printed and distributed to commercial boat operators. Over May and June 2006, training on the Regulation and on enforcement procedures was provided to staff from DEC, NSW Maritime, NSW Water Police, Marine Parks Authority and Department of Primary Industries.



In June 2006, working with the Commonwealth Department of the Environment and Heritage, DEC staff demonstrated techniques for disentangling whales from nets to the Federal and New Zealand ministers of the environment at a public display in Sydney's Darling Harbour.

In 2005–06, DEC responded to at least 12 stranding events involving whales or dolphins including helping to successfully disentangle a humpback whale calf off the coast of Coffs Harbour in October 2005.

Over 100 people participated in the sixth annual **Port Stephens Community Dolphin Census**, including DEC staff, the general public (some of whom have been involved since 2001), and commercial operators. Approximately 60 dolphins were recorded in 120 locations around the port, which is consistent with records from previous years and with usage patterns identified through Macquarie University's research over the past seven years.

DEC manages **visits by seals** such as New Zealand and Australian fur seals to Sydney's beaches and rock platforms in winter. DEC staff work with vets from Taronga Zoo to continually monitor the seals' condition. The community also constantly check on the seals, armed with educational leaflets from DEC.



W Reynolds

DEC helps to protect marine mammals through advising government and the community on issues such as disentangling whales from nets.

## ■ CASE STUDY

### Saving the southern corroboree frog

The strikingly-coloured yellow and black southern corroboree frog is one of Australia's best known frogs, and also one of its most endangered. This species has experienced a 99% decline over the past 25 years and without intervention is likely to become extinct in the wild within five years.

DEC's recovery program is mitigating the impact of amphibian *chytrid fungus*, which kills many frogs and is their main threat. DEC is taking eggs from the wild, hatching and rearing the young in captivity and, in 2006 for the first time, releasing the fully-grown three-year-old frogs back into the wild. DEC is also trialling hormone stimulation and climate-controlled artificial bogs to breed the frogs in captivity. In 2006, a new captive facility was opened at Taronga Zoo.

This is one of the most comprehensive amphibian recovery programs in the world and is at the cutting edge of techniques for captive rearing and release. With the support of dedicated staff and program partners including Murray Catchment Management Authority, the Amphibian Research Centre, Taronga Zoo, CSIRO, Snowy Hydro and the Foundation for National Parks and Wildlife, DEC is striving to ensure this species will be secure in Kosciuszko National Park in the future.



M McFadden and J Alcock, Taronga Zoo.



This tiny frog does not have webbed feet so moves like a lizard. It is severely threatened by drought conditions that prevent its tadpoles from hatching.

## Kangaroo Management Program

The goal of the **Kangaroo Management Program** is to ensure that viable populations of kangaroos are maintained throughout their range. The program includes monitoring and research to ensure this goal is being met. The commercial harvest of kangaroos is limited by an annual quota, based on population estimates.

In 2005, only 69% of the available statewide quota was harvested. More kangaroos were taken in the east and north than in the far west of NSW. This is related to market forces as well as seasonal conditions.

As a result of drought impacts on kangaroo populations, quotas were reduced for the 2006 calendar year. Strong demand for kangaroo products combined with lower quotas means that the harvest will be closer to the approved quota in 2006.

In 2005–06, DEC commenced seven charges in local courts for offences involving illegally harming, selling and possessing kangaroos. In one case, Mr Andrew Neville Smith was fined \$2200 by Tamworth Local Court after pleading guilty to unlawfully harming and selling 11 eastern grey kangaroos. At the time of the offences, Mr Smith's trapper's licence had expired and he had not renewed it.

## Pest animal and weed control

Pest animals and weeds are among the greatest threats to biodiversity in Australia. DEC spends approximately \$18 million per year on **pest animal and weed control**. As many pests are widely established across Australia, eradication is not possible in all reserves. DEC therefore focuses on areas where impacts on biodiversity are greatest. Priorities for pest management are identified in the draft Priorities Action Statement (see page 49), threat abatement plans (TAPs) and regional pest management strategies.

Prevention, early detection and eradication are the most cost-effective ways of reducing new and potential pests. A program of systematic monitoring to measure the effectiveness of control has been undertaken in some areas. In 2005–06, over 40 staff were trained to identify pest and native animal tracks in sand plots.

The **Fox TAP** identifies the 34 threatened species which are most endangered by fox predation and the 73 sites at which fox control is most critical. Under the TAP, in 2005–06 DEC undertook intensive fox control in 59 reserves.

The **yellow crazy ant** (*Anoplolepis gracilipes*) is one of the world's worst 100 invasive species. DEC has worked with the Department of Primary Industries, Clarence Valley Council and the NSW Maritime Authority since 2004 to eradicate yellow crazy ants on Goodwood Island off the north coast. A detailed survey of the island in February 2006 did not detect any ants. Monitoring of this site will continue for several years to ensure that this outbreak has been eradicated.

In north-western NSW during early 2006, DEC worked with the Narrabri, Moree and Northern Slopes rural lands protection boards to cull more than 680 **feral pigs** and 1950 **feral goats**. This multi-agency program protects agricultural lands and DEC reserves such as Mt Kaputar National Park, which is an important refuge for the threatened brush-tailed rock wallaby. On the Queensland border, DEC worked with the Northern Slopes and Moree rural lands protection boards in June 2006 to cull over 3000 feral pigs.

During 2005–06, DEC continued to **control wild dogs** to reduce their impacts on farmland bordering parks and reserves, working with surrounding farmers and land managers. DEC also continued to research the effectiveness of wild dog control. Recent studies using satellite and GPS tracking technology have yielded important information on wild dog behaviour and movements, and the effectiveness of new control techniques.

In other research, aerial baiting with 1080 to control foxes and dogs has had little impact on the spotted-tailed quoll (*Dasyurus maculatus*). It was feared that this native animal would eat the baits but this has largely not happened. In response to this research, DEC has expanded the use of 1080 in some areas.

The **pandanus planthopper** (*Pandanus tectorius*) is an insect pest which causes dieback in the coastal pandanus palm. Dieback in pandanus trees in NSW was first detected in March 2004. A working group was formed at that time, including members from DEC. During 2005–06, the working group acted to control this threat. A recent survey of treated areas found that almost all infestations had been removed. Those that remained were treated immediately.

In far north-western NSW, DEC is working with the Department of Primary Industries and **weed control** authorities to eradicate infestations of the woody weed, *Parkinsonia aculeata*, one of 20 weeds of national significance. An outbreak along a 20-km section of the Narran River, upstream from Narran Lake, was detected in 2004 and an eradication program was implemented. A survey of Narran Lake Nature Reserve in November 2005 by DEC and local control authorities did not find any parkinsonia.

The *Coastal weeds strategy for Moonee Beach Nature Reserve and Coffs Coast Regional Park* was implemented during 2005–06 by DEC, Coffs Harbour City Council, contractors and 12 community groups. Actions included bush regeneration, aerial and ground-based spraying, and planting of local native species. These actions are helping to protect nine threatened species, four endangered ecological communities, sites of highly significant Aboriginal cultural heritage and important social assets.



DEC staff from the Nowra office controlled weeds in the Yalwal area of Morton National Park in 2006. Staff camped in the national park for extended periods so they could weed intensively. The staff treated 70 hectares of weeds including blackberry, moth vine, briar and black locust. The Yalwal area was burnt in a bushfire in 2002 so weed control is helping regenerate native vegetation in burnt areas as well as in areas that used to be grazed by cattle.

During 2005–06, DEC contracted the Forster Local Aboriginal Land Council to undertake bush regeneration and weed control around Seal Rocks. The project developed the Council's capacity to take on future works.

### 3.1.4 Restoring biodiversity

DEC has acted to restore biodiversity in NSW in 2005–06 by acquiring, maintaining and enhancing wetlands; increasing river flows; and developing the Priorities Action Statement and recovery plans for threatened species, populations and ecological communities.

#### ■ CASE STUDY

#### Regenerating montane peatlands and swamps in Kosciuszko National Park

Montane peatlands and swamps in Kosciuszko National Park are an endangered ecological community, and are important for maintaining water quality and flow in the alps. Some 2200 ha, or 80%, of these areas were burnt by the 2003 bushfires. About 400 ha of land were completely burned, and recovery will depend on natural re-establishment and accumulation of organic matter over hundreds of years. In 2005–06, rehabilitation commenced at 25 of the remaining 72 bogs that are most likely to recover. These included Pengilley's bog, Prussian Creek, Guthrie's Creek, Wragges Creek, and other sites near Mt Tate and Mt Jagungal: the Cup and Saucer, and Valentine's Creek. Workers have:

- reduced the possibility of erosion causing runoff by placing logs across slopes
- resaturated the peat by placing sterilised hay bales in the stream channels that formed after the fire, to slow water flow
- hand planted sphagnum and empodisma sods to initiate regeneration – planting was necessary as the natural recovery of sphagnum is extremely slow.

Further works are scheduled for the summer of 2006–07.

### Priorities Action Statement

Consolidating individual recovery plans (see page 52), threatened species are now managed through the **Threatened Species Priorities Action Statement (PAS)**.

The PAS specifies conservation strategies and actions to recover all threatened species and reduce the threats they face. The PAS contains approximately 10,000 actions, including those previously included in recovery plans, with some actions targeting specific species or geographic areas. Strategies and actions are prioritised. There are also performance indicators to determine the PAS's effectiveness in recovering threatened species.

The draft PAS was placed on public exhibition in May 2006, and submissions will be received until August 2006. Once the PAS is finalised, DEC will work with councils, catchment management authorities, landholders, and environment and community groups to implement the strategies and actions. For more information, visit [www.threatenedspecies.environment.nsw.gov.au](http://www.threatenedspecies.environment.nsw.gov.au).



Photo: K McDougall, DEC.

*Eyebright (Euphrasia sp.) grows among sphagnum moss (Sphagnum cristatum) in a pristine alpine bog.*



G Wright, DEC

*Coconut coir fibre materials are being used in swamps and bogs in Kosciuszko National Park to stabilise soils.*

## Wetlands

In May 2005, the NSW Government announced a five-year \$13.4 million **NSW Wetland Recovery Plan**. The first stage of the plan will fund water recovery and efficiency projects to deliver long-term benefits to the Macquarie Marshes and Gwydir Wetlands, and NSW has sought funding from the Australian Water Fund to support this work.

DEC has continued to work on its **Wetland Initiative** which covers inland and coastal wetlands. The objectives are to maintain and enhance wetlands, improve environmental flow, manage DEC water licences, influence planning decisions affecting wetlands, and improve information on NSW wetlands' ecological character and cultural significance. In 2005–06, the initiative began with projects to increase efficient water use, purchase water and improve knowledge of wetlands. In the Macquarie Marshes and the Gwydir Wetlands, water licences have been purchased from willing sellers to increase water flows into the wetlands. Environmental management plans are being drafted and ecological character assessments are progressing.

A review of the draft **Macquarie Marshes Nature Reserve Plan of Management** was undertaken during 2005–06.

A public consultation meeting was held so the public could find out more about the issues to be addressed in the plan, and the public and other stakeholders could discuss what they expected the plan to achieve.

Ecological assessments have been undertaken of Ramsar sites including Macquarie Marshes, Paroo, Wollumbulla, Broadwater, Lake Pinaroo, Blue Lake, Kooragang and Myall Lakes. Other scientific studies on inland wetlands in 2005–06 have included those on the effects of disturbance on wetland plant communities; waterbirds on the Bulloo, Paroo and Warrego rivers; and the effects of climate change on inland aquatic ecosystems.

During 2005–06, DEC contributed to the **Coastal Lakes Sustainability Assessments** being managed by the NSW Department of Natural Resources. DEC commenced work on related projects to assess the risk of eutrophication (enrichment of an ecosystem with chemical nutrients, typically compounds containing nitrogen and phosphorus) invading NSW estuaries and coastal lakes. The projects, which build on previous work by DEC, involve:

- measuring selected lakes and estuaries
- laboratory studies
- developing mathematical models to simulate coastal catchments and estuaries
- estimating the nitrogen and phosphorus loads likely to be delivered from a particular catchment
- discovering how estuaries and coastal lakes react to variable loads of nutrients
- developing suitable monitoring methods for tracking the eutrophic status of estuaries
- integrating this work into a computer-based system that will allow non-specialists to test development scenarios in coastal catchments.

DEC collected data on the **economic worth of the natural values of Merimbula Lake and Back Lagoon** and their catchments in southern NSW. The highest economic value for Merimbula Lake was from recreational fishing, and for Back Lagoon from urban amenity by increasing property values. Local government planners and other natural resource managers will use this information to assess the potential ecological, economic and social impacts of different coastal developments on the two lakes. The methods developed in these projects can be applied to assessments of other coastal lakes in NSW.

### ■ CASE STUDY

#### Ramsar Convention nomination for Paroo

In November 2005, DEC officer Alison Curtin and three Aboriginal Elders from the Baakandji and Budjiti groups of the Paroo in western NSW attended the Convention on Wetlands of International Importance (Ramsar Convention) in Uganda. They presented a case study on the Aboriginal values of the Paroo River Wetlands, which highlighted DEC's role in Ramsar management and its process in engaging traditional owners of Country.

A consistent message ran through all the presentations from Australia and around the world – 'culture is an integral part of wetlands, and wetlands of culture'. The outcomes were that there would be an increased focus on wetlands and their cultural values, which will be incorporated into fields 21–29 of the Ramsar information sheets and into Ramsar management plans.



Talking about Country on the Paroo River – Phillip Eulo, Ruby Eulo, Katie Eulo and Lorna McNiven.

A proposal to nominate the Paroo wetlands for Ramsar status has been supported by the NSW Government and forwarded to the Australian Government for consideration.

The **Tomago Wetland Rehabilitation Project** aims to reinstate tidal flows to restore shorebird habitat and enhance fish nursery habitat by using rainwater drainage off neighbouring properties. Environmental assessment and site preparation were completed in 2005–06. The site incorporates Kooragang Nature Reserve and contains one of the most important coastal shorebird habitats in NSW.

In late 2005, DEC conducted preliminary **cultural value assessments** of the Macquarie Marshes Nature Reserve and a wetland near Dandaloo in central western NSW. The preliminary assessments identified Aboriginal values and provided recommendations for further work to be done.

## Wetland acquisitions

Wetland areas were added to the reserve system in 2005–06 with the purchase of Everlasting Swamp on the north coast, and the settlement of the Yanga Station acquisition. In addition, in September 2005, the Tuggerah and Colongra Swamp nature reserves were established. The Tuggerah Reserve consists of 350 hectares on the western side of Tuggerah Lake. Colongra Swamp consists of 125 hectares on the western shore of Lake Munmorah, part of which was donated by Delta Electricity. Both reserves will provide important habitat for many birds, including threatened species such as the regent honeyeater and swift parrot.

Significant areas of coastal wetlands were also acquired at Yarrahapinni and Frogalla Swamp under the **Coastal Wetlands Land Acquisition Program**. DEC is working with the Yarrahapinni Wetlands Group and Great Lakes Council on rehabilitating these important wetlands.

During 2005–06, the wetland conservation area in Narran Lake Nature Reserve was increased from 5538 hectares to 14,614 hectares. This reserve is a Ramsar-listed wetland located at the end of the Narran River in north-west NSW.

## RiverBank

**NSW RiverBank** is a new \$105 million program managed by DEC, set up to buy water for our most stressed and valued rivers and wetlands over the next five years. The program is part of the broader NSW City and Country Environment Restoration program (see page 6) and will be funded through the Environmental Trust.

Many of the state's rivers and wetlands are suffering the effects of too much water being taken from them. RiverBank will work with catchment management authorities, landholders and others groups to reverse unsustainable levels of extraction over time without compromising the rights of water users. RiverBank will buy water licences from willing sellers within the existing water sharing and water management framework, to restore water flows in river systems for the benefit of wetlands that depend on them. Such wetlands include the Macquarie Marshes, the Lowbidgee and Gwydir wetlands, and the Narran Lakes, all of which are declining in area and health. In June 2006, the first water licence was purchased in the Lachlan Valley and other licences are being negotiated for purchase early in 2006–07.



*The Macquarie Marshes.*

A special Environmental Water Subcommittee, chaired by DEC's Director General, was established to advise the Trust on the development and implementation of a RiverBank Business Plan and Charter. The subcommittee includes experts in ecology, water markets and environmental water management. During 2005–06, the Business Plan was prepared, which:

- outlines how RiverBank will be managed
- establishes the vision, objectives and expected outputs of the program
- sets out investment targets for particular valleys
- outlines activities that will be undertaken in 2006–07
- identifies wetlands for which RiverBank will purchase and manage water licences over the next five years.

The plan has been approved by the Environmental Trust and the program is ready to commence from 1 July 2006.



## Recovery of species and communities

DEC uses a number of actions to protect biodiversity (see pages 45–49). Many of these actions also assist in recovering threatened species, populations and ecological communities. Recommended actions to recover threatened species are primarily coordinated through the PAS (see page 49), but recovery and threat abatement plans are still being prepared when necessary.

Twelve **recovery plans** were approved during 2005–06 for:

- the bush stone curlew
- *Persoonia nutans*
- *Pimelea spicata*
- Gould's petrel
- *Diploglottis campbellii*
- *Elaeocarpus williamsianus*
- *Endiandra floydii*
- *Endiandra muelleri* subsp. *Bracteata* and *Endiandra hayesii*
- the Hastings River mouse
- *Quassia species B*
- *Randia moorei*
- *Uromyrtus australis*.

Draft recovery plans were placed on public exhibition during 2005–06 for three plant species: *Prostanthera askania*, *Zieria involucreta* and Wollemi pine. A draft recovery plan was also placed on public exhibition for the brush-tailed rock wallaby.

The total number of recovery plans prepared as at June 2006 is 73, covering 84 threatened species, populations and ecological communities. Threat abatement plans covering two key threatening processes, the red fox and the plague minnow, have been finalised. The draft threat abatement plan for bitou bush will be finalised in 2006.

The **bush stone curlew** has declined precipitously over the last few decades due to fox predation and loss of favoured habitat. DEC prepared a recovery plan in consultation with committed landholders, particularly in the Riverina, to ensure the bird's continued survival by protecting breeding pairs on private property. The plan was published in February 2006. DEC staff received an award from the National Trust in recognition of their work in recovery planning.

Results from the annual **Gould's petrel survey** reveal that breeding has increased on Cabbage Tree and Boondelbah islands. DEC staff banded 245 chicks and 50 adult birds on three separate trips to the islands throughout the year, and counted 825 nesting pairs and 420 fledglings. Following the previous translocation of 100 fledglings to Boondelbah Island from Cabbage Tree Island, 13 birds have now returned as adults to breed on Boondelbah Island.

The threatened **pied oystercatchers** on South Ballina beach completed their breeding season with ten birds between South Ballina and Bundjalung National Park successfully reaching fledgling stage. Baiting has reduced fox numbers, giving the birds a chance to breed successfully. This baiting is conducted annually by DEC in conjunction with the Tweed–Lismore Rural Lands Protection Board and the Department of Lands.

**Rainforest rehabilitation programs** costing \$25,000 were undertaken at 14 sites in Myall Lakes, Booti Booti, Woko and Barrington Tops national parks; Snapper Island Nature Reserve; and Glenrock State Conservation Area. All the sites contain either an endangered ecological community or threatened plant species. On some sites, community volunteer groups, including the Friends of Booti Booti National Park and the Bush Ticks Community Group, assisted with control works.

## 3.1.5 Support for catchment management authorities and local government

Support for catchment management authorities (CMAs) and councils continued in 2005–06 with DEC developing BioMetric (see page 53) to help CMAs manage natural resources on private land.

DEC continued to second one staff member to each of the 13 CMAs. The secondees worked on biodiversity, water quality and cultural heritage programs, and some assisted the CMAs with preparing catchment action plans. DEC staff also worked on projects that drew on their specific skills and knowledge, such as threatened species management, stormwater management and GIS modelling.

DEC continued its program of allocating a senior liaison or contact officer to each CMA. These officers coordinate the relationship between DEC and the CMA, liaising with the CMA Chair and General Manager and advising them on DEC matters.

During 2005–06, DEC developed guidelines for CMAs on **incorporating Aboriginal cultural values into natural resource management**. The guidelines drew on the newly released Natural Resource Commission's *Standard for quality natural resource management*, and were distributed to CMAs with other advice from DEC on biodiversity certification and threatened species, water quality and wetlands.

## 3.1.6 Addressing climate change

Impacts on biodiversity from climate change are already being observed. DEC is working to address, and find out more about, the effects of climate change, such as the effects of rising temperatures and water levels on threatened species, pests and the incidence of fire. A pilot to model climate change impacts in two coastal reserves (Kooragang Nature Reserve and Bundjalung National Park) commenced in 2006. Results of this research will be available in early 2006–07.

The **NSW Greenhouse Plan** (see page 25) has provided \$2 million for a Climate Change Impacts and Adaptation Research Program. DEC scientists are leading five projects under this program that commenced in early 2006 and will run for the next three years. Four of these projects examine the impacts of climate change on bushfires, biodiversity, invasive species and aquatic ecosystems. The fifth project aims to develop effective conservation planning tools. DEC is also coordinating the NSW strategy to manage the impact of climate change on biodiversity, as part of the National Biodiversity and Climate Change Action Program.

Because of DEC's skills in grants administration, the NSW Greenhouse Office asked DEC to manage the **Climate Action Grants Program** on behalf of the NSW Government. Nineteen grants were awarded by the program, on time, during 2005–06.

Under the NSW City and Country Environment Restoration Program (see page 6), NSW RiverBank (see page 51) and the development of two new marine parks (see page 63) will help to protect rivers, wetlands and marine environments against projected climate change.

### ■ CASE STUDY

#### BioMetric boosts action for the environment

Under the *Native Vegetation Act 2003*, landowners can only clear native vegetation on their properties if they can show that their other property management activities will improve or maintain the environment.

DEC has developed BioMetric to help CMAs assess whether landowners' overall activities are improving the environment. BioMetric, which went into operation in December 2005, is a computer-based tool for assessing biodiversity in patches, paddocks or on an entire property.

An assessor can stand in a paddock with a laptop and identify the types of native vegetation on a property. After some field data collection, they can use BioMetric to calculate the property's biodiversity values, and its importance for the neighbouring landscape and region. This gives a good measure of the impact of the proposed land clearing. It also allows the assessor and the landowner to negotiate actions for long-term biodiversity gains, such as planting trees, or fencing off an area of bushland to protect it from grazing.

BioMetric is based on exhaustive ecological research. It was developed by DEC scientists and other government agencies around NSW. For more information, visit [www.nationalparks.nsw.gov.au/npws.nsf/content/biometric\\_tool](http://www.nationalparks.nsw.gov.au/npws.nsf/content/biometric_tool).



DEC staff member takes part in a BioMetric training session



## 3.2 Protecting Aboriginal cultural heritage

### 3.2.1 Corporate plan priorities 2004–06

#### Building effective relationships

*Lead other government agencies in building effective relationships with Aboriginal peoples and communities to protect cultural heritage and to deliver the Government's Culture and Heritage Cluster Action Plan*

Two Ways Together is the NSW Government's 10-year Aboriginal Affairs Plan to improve the lives of Aboriginal people and their communities, across seven priority areas: health, housing, education, justice, economic development, families and young people, and culture and heritage. As the lead agency for culture and heritage, during 2005–06 DEC began to implement a new Culture and Heritage Cluster Action Plan (page 38).

DEC also provided leadership for other government agencies by establishing the Aboriginal Cultural Heritage Advisory Committee (page 55), which will have a crucial and innovative role in DEC's relationship with Aboriginal peoples and communities.

#### Reviewing approaches to protection

*Review legislation and approaches for the protection of Aboriginal cultural heritage*

During 2005–06 DEC continued to investigate ways of improving and updating the provisions of the *National Parks and Wildlife Act 1974* (NPW Act) that regulate and protect Aboriginal cultural heritage.

DEC consulted other state government agencies involved in Aboriginal heritage and planning, Aboriginal peak stakeholder bodies and Aboriginal communities, to review ways in which these provisions, largely unchanged since 1974, can be brought more into line with the major changes that have occurred in the planning system (see also page 36).

#### Returning Aboriginal cultural heritage

*Progress the return to Aboriginal communities of ancestral remains, cultural materials and knowledge, including working with Aboriginal communities and the Australian Museum*

In June 2006 DEC established the Keeping Place, in its Hurstville office, for the viewing, preparation, cataloguing and temporary safekeeping of Aboriginal cultural material and ancestral remains in transit to Country for repatriation.

During 2005–06 DEC coordinated the return and reburial of over 20 NSW Aboriginal ancestral remains (the majority previously held by the University of Sydney) to the Metropolitan, La Perouse and Ulladulla Aboriginal communities, as part of the NSW Repatriation Program (page 55).

To better enable valuable information and knowledge to be progressively returned and shared with local Aboriginal communities, DEC scanned the complete collection of 47,000 Aboriginal site recording cards held in the Aboriginal Heritage Information Management System (page 57).

#### Protecting places of significance

*Identify, assess and protect places of significance to Aboriginal people in NSW*

Seven more Aboriginal Places were declared during 2005–06, all protecting burials of Aboriginal ancestral remains repatriated from Australian and overseas museums. In addition 12 Aboriginal communities were assisted with Aboriginal Place nomination investigations (page 57).

In 2005, DEC also assessed the cultural heritage values of other areas across NSW for declaration as Aboriginal Places, including Mount Yengo in the Hunter Valley and Bagnalls Beach and Soldiers Point at Port Stephens.



## 3.2.2 Improving approaches to Aboriginal cultural heritage

During 2005–06, DEC continued to investigate ways of improving and updating its processes for protecting Aboriginal heritage. The NPW Act requires people who are undertaking activities that might impact on Aboriginal objects and declared Aboriginal Places to seek the consent of the Director General of DEC. DEC has been looking at ways in which its approach can be brought more into line with the major changes that have occurred in the planning system. This has involved consulting with other state government agencies involved in Aboriginal heritage and planning, Aboriginal peak stakeholder bodies and Aboriginal communities.

In March 2006, the Minister for the Environment appointed 11 members to the **Aboriginal Cultural Heritage Advisory Committee**. The members, who come from across NSW, are listed in Appendix 5. The Minister, supported by DEC, hosted a two-day induction workshop at Parliament House, Sydney, on 11 and 12 May 2006. The workshop provided committee members with an opportunity to learn about the role and function of DEC and the Minister's expectations of the committee. DEC regards the committee as its principal advisory body on Aboriginal cultural heritage in NSW. The committee will contribute to the development of statewide policies, programs and approaches to Aboriginal cultural heritage management.

## 3.2.3 Return of Aboriginal cultural heritage

During 2005–06, DEC built on existing work to establish a **NSW Repatriation Program** in partnership with the Department of Aboriginal Affairs, the Australian Museum and the Ministry for the Arts. The program coordinates the return to Aboriginal communities of ancestral remains and cultural materials that are held by NSW institutions.

In 2005–06, DEC helped to return over 20 NSW Aboriginal ancestral remains to the Metropolitan, La Perouse and Ulladulla Aboriginal communities. Most of these had been held by the University of Sydney. Representatives from Ulladulla Local Aboriginal Land Council travelled to the University of Sydney in May 2006 for an informal handover ceremony in which the remains of eight people, formerly held by the Australian Museum under the NPW Act, and the University of Sydney, were transferred to the community. With the assistance of a DEC Aboriginal Cadet Ranger, the repatriation resulted in a reburial ceremony for the eight individuals in Narrawallee Nature Reserve.

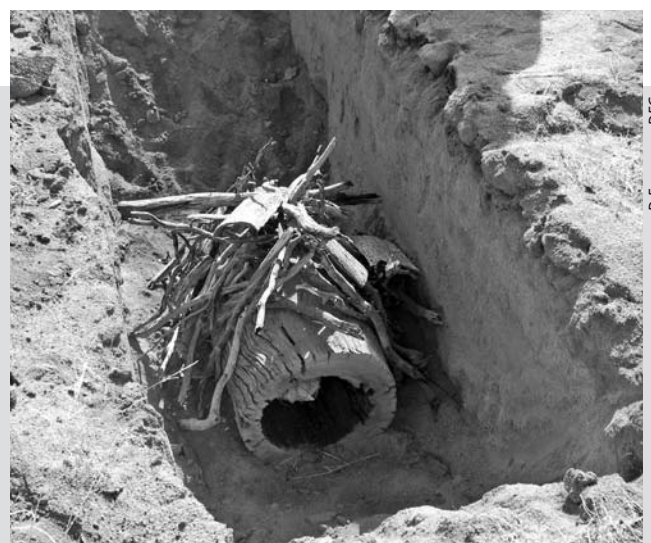
## 3.2.4 Protecting Aboriginal cultural heritage

DEC protects Aboriginal cultural heritage under the Aboriginal Heritage Conservation Program, records cultural heritage items and sites in its Aboriginal Heritage Information Management System, and works with Aboriginal communities to protect cultural heritage in parks and on private land.

### ■ CASE STUDY

#### Reburial of Aboriginal ancestral remains

Ancestral remains, which were discovered eroding at 'Yeronga', a property near Young, were reburied on the property on 22 June 2006. The remains had been temporarily stored by the National Museum of Australia until reburial could occur. The ceremony was attended by the local Aboriginal community, the property owner and DEC staff, and involved several speakers, including the property owner who supported the reburial occurring on his land. The Young Local Aboriginal Land Council thanked all involved.



The grave site at 'Yeronga' near Young

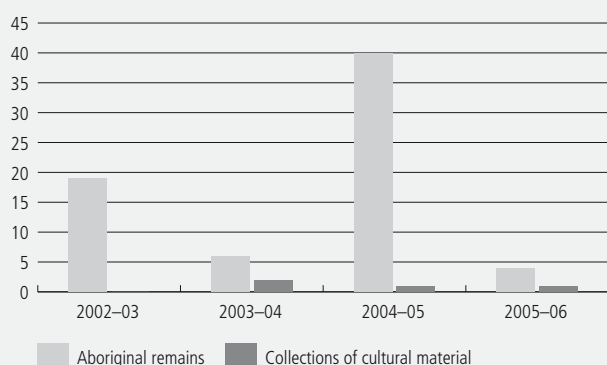
## ■ PERFORMANCE INDICATOR

### Number of Aboriginal remains and collections of cultural material held under the *National Parks and Wildlife Act 1974* repatriated to Aboriginal communities

**Definition:** This indicator measures the number of Aboriginal ancestral remains and collections of cultural material held under the NPW Act repatriated by DEC to NSW Aboriginal communities. DEC 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 cultural property is returned appropriately and according to Aboriginal community protocols.

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



**Interpretation:** DEC has made it a priority to return Aboriginal remains and collections to Aboriginal communities. In 2005–06, DEC repatriated fewer remains held under the NPW Act than the previous year. Instead, DEC focused on assisting the return of almost 20 remains held by the University of Sydney, but not held under the NPW Act, to three Aboriginal communities across the state.

## Aboriginal Heritage Conservation Program

The **Aboriginal Heritage Conservation Program** (AHCP) is one of DEC's key tools for the delivery of Aboriginal heritage conservation outcomes, including its obligations under the NSW Government's Two Ways Together Action Plan.

The priorities for AHCP are:

- assessing and documenting cultural heritage objects and places to improve understanding of their nature and distribution
- conserving, protecting and restoring culturally significant objects and places
- returning Aboriginal remains, cultural materials and knowledge to Aboriginal people and communities
- declaring Aboriginal Places
- promoting Aboriginal management of Country
- cultural renewal, focusing on working with Aboriginal communities to conserve their cultural heritage.

In 2005–06, the AHCP comprised 55 projects that targeted the above priorities and included:

- seven ongoing repatriation projects across NSW
- a Traditional Indigenous Games Day (see page 40)
- Aboriginal Place assessments at Mount Yengo, Soldiers Point and Bagnalls Beach
- the Northern Rock Art Project involving a three-day field survey of escarpments in the Wombat and Punchbowl Creek areas of the NSW north coast
- training community members and DEC staff in rock art conservation (see case study below)

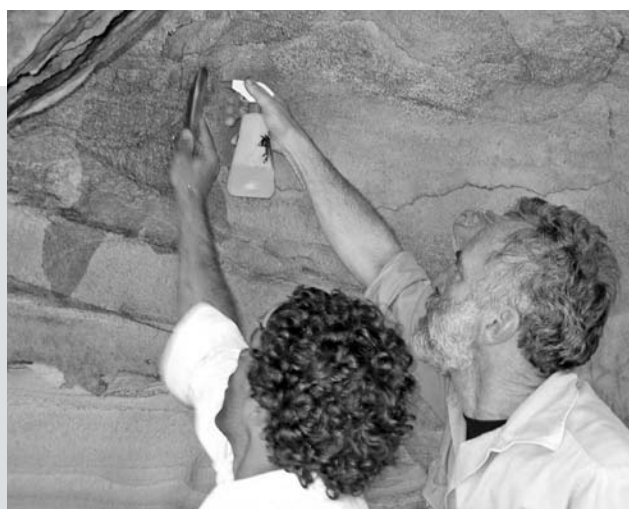
## ■ CASE STUDY

### Rock art conservation

During 2005–06, eight community members and seven DEC staff participated in training and experience in **rock art conservation** and management. The training was developed by DEC's Rock Art Conservator and supported by the AHCP. Training included:

- finding out about pigment types, how they break down, and the effect of weathering
- site monitoring at Dunn's Swamp
- removing graffiti from and managing visitors at the Livery Stable site in Wollemi National Park
- removing graffiti from three painting sites in the Blue Mountains near Lithgow.

During the year, graffiti was also removed from the Devil's Hand site west of Nowra by DEC and Nowra Local Aboriginal Land Council, and as part of this project an education program was developed for rock climbers who use the site.



DEC staff Mark Simon and Dave Lambert remove graffiti from the Livery Stable site in Wollemi National Park.

C Pavich, DEC

- the Boobera Lagoon Aboriginal Place Fencing Project, which fenced off part of an Aboriginal Place to rehabilitate local plants of cultural significance and an area of the lagoon's foreshore that was under threat from livestock. The Aboriginal Place is managed by the Boobera Lagoon Trust Board, and the project also involved members of the local Toomelah Aboriginal community who were employed under the Community Development Employment Projects scheme
- the Terry Hie Hie Tree Protection Project, which involved constructing a shelter to protect a rare Aboriginal carved tree.

## Assessing and recording cultural heritage

DEC is developing a range of tools for **Aboriginal heritage regional assessment** in NSW. During 2005–06, DEC conducted an extensive review of previous studies relating to regional assessment and condensed current methodologies into a publication, *Aboriginal cultural heritage regional studies: an illustrative approach*, which will be available in the second half of 2006.

DEC's **Aboriginal Heritage Information Management System** (AHIMS) contains archaeological reports and site records that are unique and, in many cases, irreplaceable. AHIMS has operated for more than 30 years, and 48,228 items and locations are now registered. The register is used by government, industry and heritage professionals who need the information 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 2005–06, 2459 new items and locations were registered, and 2770 searches of the AHIMS were undertaken for external users.

In June 2006, DEC completed a major project to audit and digitise 47,000 AHIMS site cards and 8000 archaeological reports. The new digitised service will ensure the AHIMS collection is protected, whilst providing a consistent and more streamlined approach for external clients accessing digitised AHIMS documents.

In a partnership between Northern Rivers CMA and DEC, seven local Aboriginal people were employed for six months to be trained in natural resource management and cultural heritage assessment. The skills learned in this training program were then used to survey sites on Dorrigo Plateau and update site records in the AHIMS.

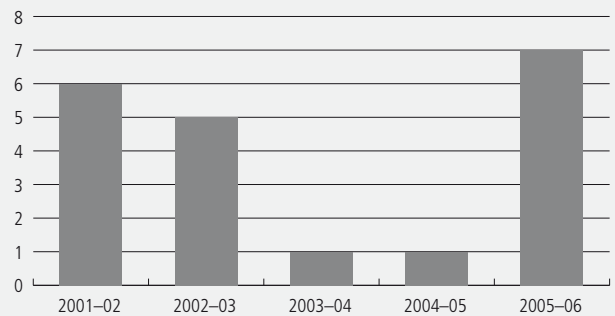
In 2005, DEC also assessed the cultural heritage values of other areas across NSW for declaration as Aboriginal Places, including Mount Yengo in the Hunter Valley and Bagnalls Beach and Soldiers Point at Port Stephens.

### ■ PERFORMANCE INDICATOR

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

**Definition:** This indicator measures the number of sites 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:** Seven Aboriginal Places were declared in September 2005, all protecting burials of Aboriginal ancestral remains repatriated from Australian and overseas museums. The return of the remains and the Aboriginal Place declarations were the result of collaboration between the NSW Government and the La Perouse and Metropolitan Local Aboriginal Land Councils. The declarations recognise the significance of those resting places, in parks and reserves in the Sydney region, to the Dharawal and Guringai Aboriginal communities.

As at June 2006, a total of 50 Aboriginal Places has been declared and 14 Aboriginal Place nominations are being investigated. 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 investigators may find that a nominated place does not meet legislative requirements for declaration.

Six positions with the titles of **Aboriginal Community Partnership Facilitator, Heritage Information Officer and Aboriginal Heritage Conservation Officer** have been established as part of the creation of the Brigalow/Nandewar Community Conservation Area (see page 60). These positions establish and maintain links with landowners, CMAs and Aboriginal communities to encourage conservation of cultural heritage on private and other publicly-owned lands. For example, in the Baradine area adjacent to the Pilliga Nature Reserve, an Aboriginal Heritage Conservation Officer successfully negotiated with a private landowner to allow DEC staff and local Aboriginal women to access the property to record a site significant for women's heritage.

During 2005–06, DEC Aboriginal rangers taught trainee Aboriginal site surveyors map reading, use of GPS, and identification and recording of Aboriginal sites. DEC then employed three of the trainees to survey Aboriginal sites in Pilliga Nature Reserve, which contains marked trees, grinding grooves, rock engravings, art sites and bush tucker.



Around 50 sites were formally recorded as a result of the survey. The work increased DEC's knowledge of, and enabled DEC to better protect and manage, these important cultural sites.

The **Mapping Cultural Landscapes – Bundjalung Country Project** was a pilot project undertaken in partnership with a local Elder, which recorded sites and places of significance in Bundjalung country, building a picture of the cultural landscape and the manner in which the Aboriginal community used natural resources. The project provided valuable insight into managing Aboriginal heritage as part of a broad cultural landscape.

In April 2006, around 70 people attended the opening of a new information display that reflects the long **Aboriginal history of Iluka Bluff in Bundjalung National Park** and contemporary links to the local Yaegl People. The panels were funded through a World Heritage grant, and involved members of the Yaegl Aboriginal community, Iluka Land and Dune Care group, students of Iluka Primary School and DEC staff.

During the year, interpretative signage about the **Mt McKenzie Massacre** was installed in the Gloucester River camping area in Barrington Tops National Park.

Site protection was completed on three sites along the Northern Rivers in response to concerns raised by the Aboriginal community about the sites' condition. DEC was invited by the Mungindi Aboriginal Community to visit the **Boomi Midden**. The Midden is a rarity as it is on the river whereas most inland middens are on lakes. DEC staff advised on erosion problems, helping Namoi River Catchment officers to conserve the Midden.

An Aboriginal burial protection project was carried out at **Thegoa Lagoon** in south-western NSW. Aboriginal remains which had been exposed in a pit that was being used for sand extraction were permanently protected by shade cloth, sand bagging and fencing. The works were undertaken by DEC and Aboriginal community representatives from the Wimbadjia/Mulindjii Cultural Centre and Keeping Place.

The remote **Mossgiel Cemetery** in the central part of far western NSW, which contains the shared history of Aboriginal and non-Aboriginal people, was fenced and enhanced. These conservation works were strongly supported by private landholders, the Central Darling Shire Council, staff from the Mungo Joint Management Area and local Aboriginal people. The works involved Aboriginal staff from the Mungo Joint Management Area who will now regularly maintain the cemetery, supported by the Ivanhoe Correctional Centre.

A management plan for **Jubullum Flat Camp Aboriginal Area** was gazetted in June 2006. This area holds great significance for the various family groups and Elders living in Tabulam, as it was managed independently by the local Aboriginal people as a cemetery until the mid-1900s. Local Bundjalung Elders have had valuable input into the management plan, which will protect the area's cultural values and identify a teaching place for local Aboriginal children to learn about their heritage.

## Recording oral histories

DEC completed **Aboriginal women's heritage: Walgett and Collarenebri** and **Aboriginal men's heritage: Walgett and Collarenebri** in April 2006. These collections of oral history were gathered in partnership with the Walgett Aboriginal Medical Service as part of their 20-year celebration. Under this project, Aboriginal community members were given oral history training based on DEC's publication *Talk to print*, so they could record the oral histories of the 30 interviewees.

The collected stories detail the working lives of Aboriginal people around Walgett. They refer to the big pastoral station camps at Dungaleer, Bangate and Tucki and the stock routes that stretched up to Queensland.

The latest booklet in the Aboriginal women's heritage series features **Aboriginal women's stories from the Wagga Wagga area** on the south-western slopes of NSW. The stories describe Aboriginal people's lives when there were very few opportunities for Aboriginal people. The Aboriginal Elders who contributed to the booklet are members of the Wagga Wagga Ashmont Resource Centre, where they talk to schoolchildren and the wider community about their lives and the knowledge they have gained.

During 2005–06, a group of Githabul women and girls met at Toonumbar Dam to plan the **Githabul Aboriginal Women's Heritage Project**, documenting local women's histories and stories. The Githabul people's country is in the north-western part of the Northern Rivers Region. Local DEC officers assisted the group to collect oral histories.

## Aboriginal Discovery Program

The **Aboriginal Discovery Program** aims to enhance community appreciation and understanding of Aboriginal cultural heritage. The program employs Aboriginal people, who share their stories through guided walks, talks and tours.

In 2005–06, 63 Aboriginal Discovery Rangers delivered 879 guided activities state-wide and 26 Aboriginal volunteers were involved with training and assistance. In addition, DEC worked with school students on curriculum-based Aboriginal cultural activities. Students visited parks and Aboriginal Discovery Rangers visited schools.

In the Hunter Region, a new partnership was built between DEC and the Department of Education and Training Awabakal Environmental Education Centre, whereby Aboriginal Discovery Rangers assisted with school education programs at the centre. This included NAIDOC celebrations, delivered to 400 students over two days.

In the Northern Rivers region, Aboriginal Discovery activities included a school program connected with the Bundjalung Art Exhibition at the Lismore Regional Gallery. Children participated in workshops with Aboriginal artists over four days.



## 3.3 Managing and improving the reserve system

### 3.3.1 Corporate plan priorities 2004–06

#### Planning to build the reserve system

*Develop and implement a strategy to build and finance the reserve system, with emphasis on under-represented areas such as central and western NSW and marine environments*

DEC acquires land to conserve and protect natural and cultural heritage values under the provisions of the *National Parks and Wildlife Act 1974* (NPW Act). In 2005–06, there were 149 additions to the reserve system comprising 420,000 hectares in 82 new reserves and 67 additions to existing reserves. These included 53 new reserves and six additions to existing reserves in the under-represented Brigalow Belt and Nandewar bioregions (page 60). DEC also settled the acquisition of Yanga Station near Balranald. Yanga is expected to be gazetted into the reserve system in 2006–07 (pages 61–62).

During 2005–06, the area of reserves managed by the Marine Parks Authority, of which DEC is a member, more than doubled, due to the addition of the Batemans and Great Lakes–Port Stephens marine parks (page 63).

#### Assessing the reserve system

*Systematically assess the natural and cultural values of the reserve system*

In December 2005, 200 km of the Brogo, Forbes, Hastings and Kowmung rivers and Washpool Creek were gazetted as the state's first wild rivers (page 62). DEC also completed assessments of the values of four rivers as the first stage towards declaring them as wild rivers in national parks (page 62).

DEC completed broadscale biodiversity assessments for NSW's two new marine parks. These assessments included mapping and assessing marine biodiversity and identifying areas with important biodiversity values (page 63).

Other work on assessment of natural and cultural values included regional assessments of Aboriginal heritage (page 68), ecological characteristics of Ramsar wetlands (page 50), biodiversity values in regional conservation plans (page 44) and wilderness (page 62).

#### Improving management of the reserve system

*Develop and implement an approach that promotes excellence in management of the reserve system, including the State of Parks program and plan of management review*

DEC uses plans of management for each park and reserve to contribute to better planning and decision-making. By June 2006, 339 national parks, historic sites and nature reserves were covered by an adopted or exhibited plan of management (page 65). Specific management strategies are adopted for particular issues, including fire management (pages 66–67), pest animals and weeds (pages 48–49), cultural heritage and visitors. During 2005–06 DEC also spent time reviewing this planning framework to identify opportunities for improvement, including consistency between plans.

The National Parks and Wildlife Advisory Council, regional advisory committees, and the new Aboriginal Cultural Heritage Advisory Committee all provide essential advice and assistance to DEC in managing the reserve system.

## Managing cultural heritage within the reserve system

### *Develop and implement a strategic framework for cultural heritage management and interpretation within the reserve system*

DEC works closely with Aboriginal people to manage and interpret Aboriginal heritage in national parks and reserves, often as part of co-management arrangements (see page 40).

During 2005–06, DEC continued to target historic heritage maintenance and conservation work, worth about \$2 million, through the Historic Assets Maintenance Program (pages 67–68).

As part of its obligations under section 170 of the *Heritage Act 1977*, in December 2005 DEC prepared a Heritage Asset Management Strategy. This strategy sets out general directions for the management of DEC's historic heritage assets within a total asset management framework. The strategy commits the agency to reviewing its register of heritage assets and producing a revised register by 2009. As part of these requirements, DEC has commenced the drafting of a history of its heritage collection which is designed to put those assets and their management needs in a broad context. This history should be completed in 2006–07.

## 3.3.2 Building the reserve system

DEC acquires new land for reserves to build a comprehensive, adequate and representative system. In 2005–06, DEC acquired significant new reserves in bioregions which were under-represented in the reserve system, and two new marine parks (see page 63).

During 2005–06, DEC prepared submissions on behalf of the NSW Government to respond to the Commonwealth Senate's inquiries into Australia's national parks, conservation reserves and marine protected areas, and into the national reserve system. Significant points raised in the NSW Government's submission included:

- the important role reserves play in the long-term conservation of biodiversity and cultural heritage, noting that the NSW Government's commitment to developing a world-class public reserve system is complemented by conservation efforts on private and other public lands
- the range of benefits reserves can provide in addition to conservation, such as environmental services, recreational opportunities and economic benefits
- the need for national and state governments to work together to create and manage a comprehensive protected area system.



S Garland

*Intricately-shaped tree trunk in the newly reserved Brigalow Belt/ Nandewar Community Conservation Area*

## Additions to the reserve system

In 2005–06, there were 149 additions to the reserve system comprising 420,402 hectares of land. This meant 82 new reserves were established, and there were 67 additions to existing reserves.

The ***Brigalow and Nandewar Community Conservation Area Act 2005***, which commenced on 1 July 2005, established 53 of these new reserves. This Act created a Community Conservation Area with four management zones to protect the largest woodland and forested remnants in the Brigalow Belt South and Nandewar bioregions of northern and central NSW, which contain highly fragmented and under-reserved landscapes.

On 1 December 2005, 328,372 hectares were reserved under three of the four management zones:

- Zone 1 (121,302 hectares comprising 27 reserves) was gazetted as 'national park' for conservation and recreation
- Zone 2 (21,618 hectares comprising 5 reserves) was gazetted as 'Aboriginal area' for conservation and Aboriginal culture
- Zone 3 (185,452 hectares comprising 19 reserves) was gazetted as 'state conservation area' for conservation, recreation and mineral extraction.



An additional 2,833 hectares in two nature reserves, Dthinna Dthinnawan and Taringa, were reserved under the Act. Zone 4 (274,113 hectares) remains reserved as 'State Forest' under the *Forestry Act 1916* and Regulations for the purposes of forestry, recreation and mineral extraction.

Twenty-one new reserves were established in **north-east NSW** under stage 3 of the Regional Forest Agreement. These included Scone Mountain and Bridal Veil Falls national parks, Fladbury and Bulahdelah state conservation areas and Watchimbark, Alma and Woolooma nature reserves.

Land was also added to link disparate reserves. Examples include **additions** to Severn River (1452 hectares), Brimbin (12 hectares), Dangelong (464 hectares), Bogandyera (425 hectares) and Bees Nest (1032 hectares) nature reserves; Barakee (1669 hectares) and Maryland (1392 hectares) national parks; and Illawarra Escarpment State Conservation Area (172 hectares).

**Wetland ecosystems** were also enhanced with the addition of 688 hectares to Macquarie Marshes Nature Reserve, 6230 hectares to Narran Lake Nature Reserve, 66 hectares to Seven Mile Beach National Park and 2.1 hectares to Eurobodalla National Park.

In **Sydney** metropolitan area, remnant bushland was protected with the addition of 16 hectares to Agnes Banks Nature Reserve and the establishment of the Maroota Ridge National Park (260 hectares).

Two new **Aboriginal Areas** were declared. They were Jubulum Flat Camp Aboriginal Area, a seven-hectare area in the Clarence Valley protecting an important Aboriginal graveyard; and Snake Rock Aboriginal Area, a 60-hectare area west of Peak Hill, in the traditional lands of the Wiradjuri people, which features rock art.

The **National Parks and Wildlife Amendment (Jenolan Caves Reserves) Act 2005** was proclaimed on 17 March 2006. This Act transfers the care, control and management of four **Karst Conservation Reserves** from the Jenolan Caves Reserve Trust to DEC, in two stages. In stage one, commencing on 1 July 2006, the Borenore, Wombeyan, and Abercrombie reserves, and the non-commercial area of the Jenolan reserve will be transferred to DEC. The remaining area will transfer to DEC once a revised leasing and licensing package is implemented and a new plan of management is adopted by the Minister.

A draft plan of management has been prepared for the Jenolan Caves Karst Conservation Reserve in consultation with the National Parks Association and the Australian Speleologist Federation.

## Future additions to the reserve system

In 2005–06, 24 areas totalling 96,259 hectares were acquired under Part 11 of the NPW Act for future additions to existing reserves, and three areas were acquired for new reserves.

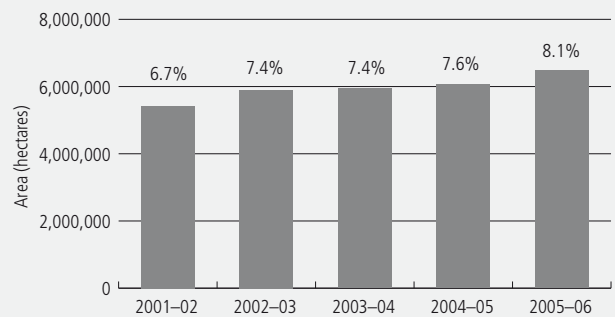
**Yanga Station** near Balranald in south-western NSW was acquired because of its significance values. This acquisition was settled in November 2005. The property has extensive Murrumbidgee River frontage and holds a rich array of natural, European and Aboriginal cultural heritage.

### ■ PERFORMANCE INDICATOR

#### Area of land managed by DEC for conservation outcomes

**Definition:** This indicator measures the area of reserves managed by DEC to achieve conservation outcomes (shown in hectares and as a percentage of NSW), the area in hectares of marine parks jointly managed by DEC as part of the Marine Parks Authority and the percentage of each NSW Interim Biogeographic Regionalisation of Australia (IBRA) bioregion managed by DEC.

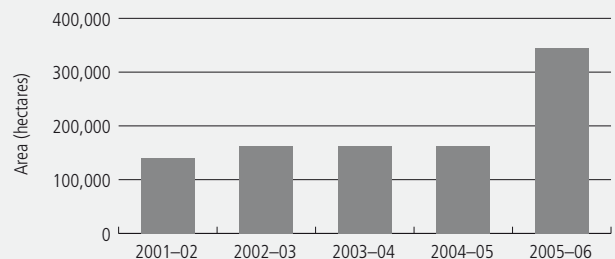
##### Land and percentage of NSW managed by DEC



##### Proportion of NSW bioregions protected in the NSW reserve system

NSW IBRA Bioregion	% protected
Australian Alps	81.8
Brigalow Belt South	8.2
Broken Hill Complex	2.0
Channel Country	9.3
Cobar Peneplain	2.4
Darling Riverine Plains	1.7
Mulga Lands	3.2
Murray–Darling Depression	5.6
NSW North Coast	23.7
NSW South Western Slopes	1.9
Nandewar	3.6
New England Tableland	8.9
Riverina	0.8
Simpson Strzelecki Dunefields	11.1
South East Corner	42.7
South Eastern Highlands	14.6
Sydney Basin	37.1
<b>Total NSW landscape</b>	<b>8.1</b>

##### Marine areas jointly managed by DEC as part of the Marine Parks Authority



**Interpretation:** During 2005–06, over 420,000 hectares of land was formally added to the reserve system. DEC now manages almost 6.5 million hectares of land in NSW, which represents 8.1% of the state's total area. DEC also jointly manages 345,000 hectares in marine parks as part of the Marine Parks Authority. The area of marine park has more than doubled in the past 12 months due to the addition of Batemans and Great Lakes–Port Stephens marine parks.

Being located on the Sturt Highway between Adelaide and Sydney, as well as being readily accessible from Melbourne, it is anticipated that Yanga will become a major tourism attraction in south-western NSW.

Yanga will be managed to protect one of the largest areas of river redgum ecosystems in NSW and other floodplain ecosystems. In 2005–06, a new DEC Area Office was established at Hay to manage Yanga and another recent addition, Kalyarr National Park.

Two new **wetland reserves** will also be established. North of Kempsey, 157 hectares of important coastal wetland were purchased for a major new reserve to protect the Yarrahappini Wetlands. Near Forster, 125 hectares was acquired at Minimbar for a major new reserve to protect the Wallis Lake Tributary Wetlands.

Significant acquisitions in 2005–06 which will be **added to existing reserves** included:

- 11,503 hectares to be added to the western side of Culgoa National Park to protect saltbush and bristolow communities, and Aboriginal sites associated with the Nebine Creek; and to link the national park with Culgoa Floodplain National Park in Queensland
- three wilderness properties totalling 3600 hectares, to be added to Guy Fawkes National Park
- a wilderness property totalling 1568 hectares, to be added to Oxley Wild Rivers National Park
- 660 hectares to be added to the Greater Blue Mountains World Heritage Parks
- two rainforest and wilderness areas totalling about 1300 hectares, to be added to the Central Eastern Rainforest World Heritage Parks in Washpool and Goonengary national parks.

## Declaration of wild rivers

Section 61 of the NPW Act provides for the declaration of **wild rivers** in national parks. Wild rivers are in a near-pristine condition in terms of animal and plant life and water flow, and free of unnatural rates of siltation or bank erosion that affect many of Australia's waterways. All the wild rivers can be used as benchmarks for environmental monitoring and scientific study. Recreation will be managed in some wild rivers.

In November 2005, the Minister for the Environment announced 200 km of wild rivers comprising:

- Washpool Creek (east of Glen Innes), where it flows through Washpool National Park
- the Upper Brogo River (east of Cooma), where it flows through Wadbilliga National Park
- the Kowmung River (south-east of Oberon), where it flows through Kanangra–Boyd National Park
- the Upper Hastings and Forbes rivers (west of Wauchope), where they flow through Werrikimbe National Park.

Washpool Creek and the Upper Hastings and Forbes rivers are located in World Heritage areas. Kowmung River has been popular with bushwalkers for more than 100 years. The Upper Brogo River forms part of the rugged mountainous upper reaches of the Great Dividing Range, which still contain original geomorphic features and freshwater plants and animals.

Further assessments were completed for four more rivers – the Colo, Grose, MacDonald and Maria rivers. Reports are currently being finalised so a panel of experts can determine whether these rivers meet the biological, hydrological and geomorphological conditions required for declaration under the NPW Act.

## Wilderness

**Wilderness** is a large natural area of land which, together with its native plant and animal communities, is in a relatively natural state, and has not been substantially modified by human activity or can be restored.

Under section 7 of the *Wilderness Act 1987* anyone may nominate an area of land to be considered as wilderness. DEC can also assess an area for wilderness values independently of any proposal. In 2005–06, one new wilderness area covering 10,883 hectares was declared in Chaelundi National Park. This brings the total area of declared wilderness to almost 1,900,000 hectares, which represents 29.5% of the total DEC estate and 2.39% of the total land area of NSW.

During 2005–06, approximately 193,000 hectares in the Yengo area were assessed with 134,900 hectares identified as containing wilderness values. The Yengo wilderness assessment report was publicly exhibited and a recommendation on Yengo wilderness is being finalised for consideration.

The assessment of the Murruin wilderness was completed in 2005–06 and an assessment report has been prepared. This report will be publicly exhibited in 2006–07.

The **Dunphy Wilderness Fund** (DWF) acquires and protects private and leased land with identified wilderness values. As at June 2006, \$10.6 million has been spent since the inception of the fund on buying 56 properties containing over 75,000 hectares of land. The DWF is overseen by the DWF Reference Group which includes representatives from DEC, the Nature Conservation Council, Colong Foundation for Wilderness and the National Parks and Wildlife Foundation (NPW Foundation). In late 2005, the NPW Foundation helped fund the acquisition of a 1800-hectare property adjoining Morton National Park. There have also been significant acquisitions at Guy Fawkes River and Yengo national parks that will protect wilderness, old growth forest and rainforest.

## Marine parks

The Marine Parks Authority, comprising representatives from DEC, the Premier's Department and Department of Primary Industries, conserves marine biodiversity by establishing a representative system of marine parks in NSW.

In November 2005, two new marine parks were announced – Batemans and Port Stephens–Great Lakes marine parks. These parks have been established through the NSW Government's City and Country Environment Restoration Program (see page 6). The addition of these parks more than doubles the total area of NSW marine parks from 162,000 hectares to 346,000 hectares. There are now six marine parks in NSW.

**Port Stephens–Great Lakes Marine Park** was declared on 1 December 2005. It includes approximately 98,700 hectares of oceanic and estuarine waters from Forster to Port Stephens in the Manning Shelf bioregion. A draft zoning plan was released in May 2006 for public comment over three months. The draft plan proposes that 20.6% of the marine park will be fully protected in sanctuary zones, and \$10 million has been allocated to buy back commercial fishing licences so the plan can be implemented. A final zoning plan is expected in late 2006.

**Batemans Marine Park** was declared on 7 April 2006, and covers an area of approximately 85,000 hectares between Brush Island and Wallaga Lake in the Batemans Shelf bioregion. The park includes:

- important breeding sites for birds along the Murramarang coastline
- many coastal lagoons typical of the NSW south coast, including Durras and Brou lakes



*Great Lakes–Port Stephens Marine Park.*

- key sites for grey nurse shark protection including the Tollgate Islands, areas of Montague Island and other important areas around Batemans Bay
- the largely undeveloped Clyde River.

A draft zoning plan is due for release on 15 July 2006 for public comment over three months. The draft plan states that 19% of the marine park will be fully protected in sanctuary zones, and \$8.5 million has been allocated to buy back commercial fishing licences in the park so the plan can be implemented. A final zoning plan is expected in late 2006.

During the assessment processes for the new marine parks, DEC led a major socio-economic analysis on their likely economic impact. The analysis showed that no adverse impact was to be expected from declaring these parks.

### ■ CASE STUDY

#### Sonar mapping in marine parks

The state's marine parks are divided into zones that permit different activities and provide different levels of environment protection. But how are these zones decided on, to ensure that all types of marine habitat are properly conserved?

This was a dilemma for the newly created Port Stephens–Great Lakes and Batemans marine park staff. Scientific knowledge of the park's marine environments was limited, particularly in deeper waters. Detailed habitat maps were needed so accurate draft zoning plans could be prepared.

DEC scientists used state-of-the-art swath sonar technology, which bounces ultrasonic energy off the sea floor. By analysing the 'acoustic signature' of the sea bed, the researchers generated a 3D map of the underwater landscape.

They also took underwater video footage, to see what types of marine habitats – such as seagrass beds, kelp forests and sponge gardens – were found on different types of sea floors. This allowed them to turn their



*DEC staff map underwater habitat in Batemans Marine Park off Montague Island, in the good ship Glaucus.*

3D map into a detailed picture of the underwater environments found in the new marine parks.

This habitat mapping greatly assisted the marine park's planners in developing a draft zoning plan with the broader community. It will also provide vital information for future monitoring of protected marine ecosystems.



The **Cape Byron Marine Park zoning plan** was finalised on 1 May 2006. The marine park covers approximately 22,700 hectares in the Tweed–Moreton bioregion, with 6105 hectares (27.5%) protected in sanctuary zones. Approximately \$4.4 million is currently being spent to buy back commercial fishing licences to implement the zoning plan.

Studies at **Jervis Bay Marine Park** included comparing rocky reef communities in zones with different levels of environment protection, investigating the impacts of recreational fishing and scuba diving, looking at changes in estuarine wetlands, examining the newly established Steamers Head seal colony, and researching the acoustic behaviour and effects of noise on bottlenose dolphins.

Research projects undertaken in **Lord Howe Island Marine Park** included habitat mapping, hydrodynamic modelling, studies on reef fish, marine pest studies, and examining the life history and ecology of the bluefish.

Research projects in the **Solitary Islands Marine Park** included mapping and classifying seabed habitats; assessing the condition of reef habitats; investigating the status and representation of reef fish and benthic organisms; and studying human activity patterns, mud crab abundance and the impacts of recreational fishing competitions on the marine environment.

### 3.3.3 Managing the reserve system

To effectively manage its network of reserves, DEC uses the assistance and advice of statutory councils, committees and volunteers, the strategies in plans of management and fire control techniques. DEC also controls pest animals and weeds to protect the values and biodiversity of the reserve system and neighbouring agricultural lands. A separate report on pests and weeds has been completed for release in 2006. DEC's pest animal and weed control activities are addressed on pages 48–49.

## National Parks and Wildlife Advisory Council

The **National Parks and Wildlife Advisory Council** is constituted under the NPW Act to advise the Minister on issues such as park management, wildlife protection, conservation agreements and declaration of wilderness areas. The 18 members of the council during 2005–06 are listed in Appendix 5.

The council met four times in 2005–06 and also worked through its three subcommittees: Management Planning, Research and Policy, and Reservation and Conservation Planning.

Significant work performed by the council over the past year included:

- raising with the Minister for the Environment concerns over reduced water flows to wetlands and, in particular, the plight of the Macquarie Marshes
- commenting on *Future directions for protected areas and wildlife management*
- commenting on the wild dogs and wild rivers draft policies.

Under the Act, the council must advise the Minister on plans of management and any submissions received from the public on these plans. During 2005–06, the council reported on 16 plans of management for 21 DEC-managed areas including Kosciuszko National Park.

## Regional advisory committees

There are 19 **regional advisory committees** across NSW. Members are appointed on a voluntary basis for a four-year term, with members' current term expiring on 30 June 2008. Regional advisory committees provide recommendations to the National Parks and Wildlife Advisory Council and to DEC on measures to improve the care, control and management of DEC-managed parks and reserves. To keep abreast of issues affecting park management, committee members regularly visit parks and reserves in their region, and meet regularly with DEC staff.

Advisory committees ensure ongoing community and neighbourhood involvement in the management of parks and reserves. As representatives of the local community, committee members maintain contact with other groups and organisations such as local government, Aboriginal communities, tourism associations, conservation groups, neighbours and outdoor recreation groups.

Each year, a statewide advisory committee conference is conducted so members can network, discuss issues affecting all NSW and talk with DEC management and staff. The 2006 conference was held in Griffith on 17–19 March, the theme being 'Connectivity: landscape, people and park management for the future'. Delegates visited the old homestead in Oolambeyan National Park and learnt about the habitat of the endangered plains-wanderer.

Branch conferences are also regularly held to examine issues of local significance. In August 2005, the Northern Rivers Community Advisory Committee hosted a conference at Byron Bay for community representatives from northern NSW, which focused on tourism in national parks and wilderness, and planning for the future.

As part of Seniors Week 2006, the Chair of the National Parks and Wildlife North Coast Region Advisory Committee, Barbara Fahey, was presented with an Education/ Lifelong Learning Achievement Award by the NSW Minister for Ageing, John Della Bosca. Mrs Fahey was nominated by DEC in recognition of her contribution to regional advisory committees, and her role in raising awareness of and respect for the natural and cultural heritage of the Clarence Valley.

## Volunteers in parks

**Volunteers** work for many hours each year on conservation activities across NSW, both in and outside parks. During 2005–06, DEC and Conservation Volunteers Australia worked together to engage the community in practical and educational conservation projects in 19 national parks and nature reserves. Over 1046 days, volunteers:

- planted 3166 trees
- propagated 500 plants
- repaired 2210 metres of tracks
- removed 3500 metres of fences
- removed exotic weeds from 27 hectares of land.

In 2005–06, DEC staff embarked on a project involving Aboriginal Elders, Shoalhaven Heads Primary and Shoalhaven High schools, Shoalhaven Heads Landcare Group and Progress Association, Aboriginal mentoring students and a shorebird conservation group. Shoalhaven City Council contributed funding. The project aimed to protect the Shoalhaven Crookhaven Estuary that is recognised as a wetland of national importance for its mangroves, seagrass and saltmarsh that provide habitat for migratory birds. Work included planting, landscaping, building pathways, constructing interpretive signs for Coolangatta Mountain and creating shorebird protection zones. A mural of the area's birds was built by students and the Aboriginal Elders' hands were imprinted in clay to depict birds' wings. This project won the Australian Government Regional Landcare Award.

A dune planting day with the Tuncurry Dune Care volunteers and Green Corps was conducted at Yagon in Myall Lakes National Park, while the Friends of Booti were rewarded with a Keep Australia Beautiful award for dune rehabilitation at Shelly Beach in Booti Booti National Park.

Ten young people from Green Corps completed six months conservation work in the Gloucester area, supported by local organisations including the Gloucester Soldiers Hospital, Landcare, the Jilli Gubrang Aboriginal organisation and Gloucester Shire Council. Work included a \$23,000 upgrade to Mountain Maid Walking Track in Copeland Tops State Conservation Area which involved clearing the track and laying down 220 metres of steps and handrails. The group also removed cape ivy from Woko National Park, and revegetated DEC's depot in Gloucester to provide additional habitat for the threatened grey-crowned babbler.

## Plans of management

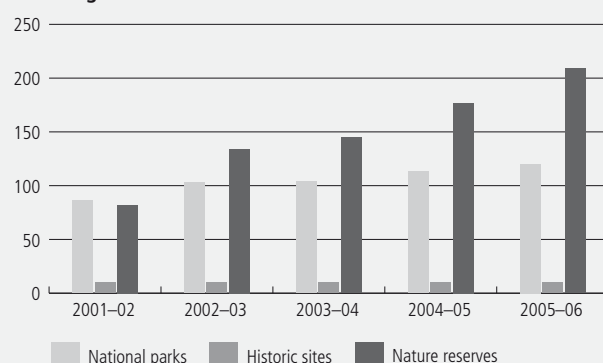
DEC is required by the NPW Act to prepare a plan of management for each park and reserve. Plans of management lead to better understanding of important natural and cultural values, and incorporate strategies for planning and decision-making, including management of fire and visitor impacts and consultation with Aboriginal groups and the community. At the end of June 2006, 387 reserves, covering over 5 million hectares and representing 79% of the reserve system, were covered by an adopted or draft plan of management.

### ■ PERFORMANCE INDICATOR

#### Number of national parks, historic sites and nature reserves covered by a plan of management or where a draft plan has been on exhibition

**Definition:** This indicator measures the cumulative total of national parks, nature reserves and historic sites with adopted or exhibited plans of management.

#### Parks and reserves with adopted or exhibited plans of management



**Interpretation:** In 2005–06, 39 plans of management for national parks and nature reserves were either adopted or exhibited, showing a continuing steady increase in the reserves covered by plans of management. In addition to the categories of reserve in this indicator, plans of management covering 11 state conservation areas were also adopted or drafted in the year. The numbers of historic sites, Aboriginal areas and regional parks covered by plans of management have not increased.

Plans of management which were adopted in 2005–06 include those for:

- Werrikimbe National Park
- Oxley Wild Rivers National Park and State Conservation Area
- Abercrombie River National Park
- Mount Kaputar National Park (replacement plan)
- Kosciuszko National Park (replacement plan).

In late 2001, DEC commenced a review of the 1982 plan of management for **Kosciuszko National Park**. At 673,542 hectares, this is the largest national park in NSW and one of the most complex reserves in Australia.

The comprehensive consultation process included:

- an independent scientific committee which advised on the condition of and threats to the natural, cultural, recreational, economic and social values of the park
- a community forum with 21 members representing local government, Aboriginal communities, the alpine resorts, Snowy Hydro Limited, recreational user groups, conservation groups, tourism authorities, local communities, NSW Farmers Association, Kosciuszko Huts Association and DEC regional advisory committees, which met 16 times over two years to discuss key management issues and solutions

- an Aboriginal working group consisting of members and Elders who have connections with the mountains, which met nine times during the plan preparation period to resolve Aboriginal heritage issues.

Following many written submissions, an amended plan was adopted by the Minister for the Environment in June 2006. The new plan:

- provides for greater recognition of the cultural values of the park, community involvement in park management, and environment protection
- introduces a simple zoning scheme and management strategies that ensure sustainable use
- acknowledges the importance of the park's cultural and social values and the need to protect these from key threats such as inappropriate fire regimes, climate change, introduced plants and animals, and inappropriate development.

See page 71 for information on the Towards Centenary upgrade of the park.

## Fire management

DEC manages some of the most rugged and remote bushfire-prone country in the world. Under the NPW Act and the *Rural Fires Act 1997*, DEC is responsible for protecting human life, property, and natural and cultural heritage values from bushfires on lands that it manages.

DEC has approximately 900 trained firefighters, hundreds of trained incident management staff, and a full range of vehicles, plant, equipment and aircraft for fire management operations, particularly in remote areas. DEC cooperates, and coordinates its firefighting operations, with the NSW Fire Brigades, NSW Rural Fire Service, Forests NSW and the Sydney Catchment Authority. DEC is a member of the NSW Bush Fire Coordinating Committee and its various sub-committees, and the Australasian Fire Authorities Council. DEC is represented on nearly all the bush fire management committees in NSW.

DEC's task-based assessment program, which all firefighters must pass before the beginning of each fire season, is based on national and international standards and consists of an annual medical assessment and fitness test. The objectives of the program are to improve employee safety and performance and ensure firefighters are only assigned tasks they can medically and physically carry out. During 2005–06, 1069 staff attempted the assessment, with a success rate of over 97%.

DEC is a Registered Training Organisation (RTO) for delivering fire and incident management training under the Public Safety Training Package. As an RTO, DEC also assesses competencies of firefighters and incident managers in DEC. These programs ensure that firefighters remain highly skilled and meet national competency standards. In 2005–06, 860 front line firefighters, plus over 150 other staff in management and support roles, undertook fire management training.

DEC develops **reserve fire management strategies** and uses these as the basis for fire suppression schedules and maps.

During 2005–06, the amount of **hazard reduction burning** undertaken by DEC was limited by the prevailing weather conditions. Many scheduled burns were seriously hampered by:

- very dry weather conditions across NSW until June 2006
- heavy rainfall in June across central and southern NSW, with cooler winter temperatures.

Over the past year DEC undertook hazard reduction burning on over 27,000 hectares of parks and reserves, and approximately 1700 hectares of lands next to parks. In addition, hazard reduction through means such as slashing was carried out on over 1000 hectares in parks, making the total area treated over 30,000 hectares. Over 8600 km of DEC fire trails were regularly maintained.

### Hazard reduction burns over five years conducted by DEC

Fire year	Number of burns conducted by DEC staff	Total hectares of treated area burnt
2001–02	103	31,703
2002–03	173	42,827
2003–04	340	65,451
2004–05	148	41,037
2005–06	162	27,400

During the 2005–06 fire season, there were approximately 6,753 **wildfire incidents** statewide, of which 202 (approximately 3%) affected DEC parks and reserves. Almost 27,000 hectares (0.4%) of DEC land was burnt as a result of wildfires. DEC firefighters also assisted with 67 fires outside reserves, including interstate fires.

### Origin and movement of wildfires affecting parks and reserves in 2005–06

Fire origin	Fire movement	Number of fires	Percentage of NSW fire
On-park	Controlled on-park	138	2.0%
On-park	Moved off-park	15	0.2%
Off-park	Moved on-park	49	0.7%
Off-park	Burned entirely off-park	6,551	97.0%



M Lauder, DEC

Hazard reduction burning in Bouddi National Park.



DEC is committed to **recovering and rehabilitating its lands** after fire. Appropriate measures are undertaken as early as possible, often commencing before a fire has been fully extinguished and generally during the 'mop-up' phase. Rehabilitation strategies can be included in the Incident Action Plan, which details the objectives and strategies for controlling a fire. Following the fire, rehabilitation strategies are used to continue to implement and monitor recovery actions.

During 2005–06, DEC continued to employ measures to ensure that disturbed areas were given enough support to recover. Measures included:

- using fire suppression strategies with minimum environmental impact
- rescuing wildlife with the assistance of volunteer groups such as WIRES (Wildlife Information and Rescue Service)
- rehabilitating temporary fire control lines (temporary bulldozer trails and hand constructed trails and fire breaks)
- removing dangerous tree limbs and trees from visitation areas
- controlling weeds.

### 3.3.4 Managing and presenting cultural heritage

DEC works closely with Aboriginal people to manage and interpret Aboriginal heritage in national parks and reserves, often as part of co-management arrangements (see page 40).

DEC also manages one of the largest holdings of historic heritage sites in NSW. Each year, DEC manages major planning, works and maintenance projects to ensure that significant historic heritage is conserved.

Much of this work is funded through the **Heritage Assets Maintenance Program (HAMP)**. The priorities for the allocation of HAMP funding include the heritage significance of the place or landscape, the ability of the place to contribute to regional and rural economies and communities, and the potential use of the place.

In 2005–06, over \$2 million was allocated to 59 projects at 44 locations. These projects included:

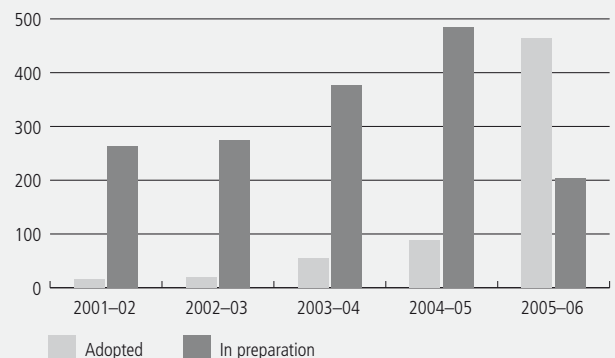
- preparing conservation management plans and heritage action statements for historic places including Youdales Hut, Oxley Wild Rivers National Park, Walcha; Mount Maid Goldmine, Copeland Tops State Conservation Area, Gloucester; and Nielsen Park, Sydney Harbour National Park
- undertaking major conservation works in places such as Hartley Historic Site; Hill End Historic Site; and Sugarloaf Point Lighthouse, in Myall Lakes National Park, at Seal Rocks

#### ■ PERFORMANCE INDICATOR

##### Number of reserves covered by a fire management strategy (adopted or in preparation)

**Definition:** This indicator measures the number of reserves covered by a fire management strategy that have been adopted under the NPW Act, or were in preparation (either out for public comment, awaiting formal adoption or in preparation) at 30 June 2006.

##### Reserves covered by fire management strategies



**Interpretation:** DEC works with District Bushfire Management Committees across the state to ensure that strategies are compatible with each district's bushfire management plans. DEC has prioritised the development of fire management strategies across the reserve system, resulting in a significant increase in the number of reserves covered by an adopted fire management strategy since 2004. During 2005–06, fire management strategies covering 375 reserves were adopted, and those covering a further 203 reserves were being finalised (either out for public comment or awaiting formal adoption). Already, 464 reserves covering more than 4.5 million hectares have an adapted strategy.

- undertaking emergency stabilisation and maintenance works at places such as Mungo Woolshed, Mungo National Park; the Old Great North Road, Dharug National Park; and the National Pass Walking Track, Blue Mountains National Park
- assessing the Ninia Homestead for its historical significance as one of the original settlers' homesteads in the Macquarie Marshes Nature Reserve.

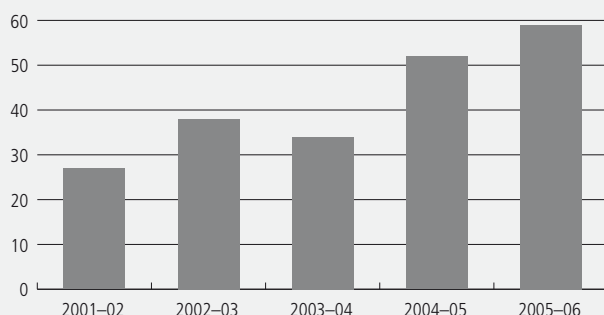
HAMP also funded stage 2 of a project to identify and help prioritise management of major moveable heritage collections. This project involved conducting workshops around NSW to gather information and raise staff awareness of management issues associated with such collections.

## ■ PERFORMANCE INDICATOR

### Number of historic heritage projects undertaken as part of the Heritage Assets Maintenance Program

**Definition:** This indicator measures the number of historic heritage conservation projects undertaken on DEC parks and reserves under its Heritage Assets Maintenance Program (HAMP).

Historic heritage conservation projects undertaken as part of HAMP



**Interpretation:** Fifty-nine projects worth more than \$2 million were completed in 2005–06, an increase of seven projects from 2004–05.

The widespread bushfires in 2003 damaged or destroyed 19 high country huts in **Kosciuszko National Park**. As a result, park managers prepared a strategy to manage these iconic sites, which involved six meetings with stakeholders, a web-based survey to determine community attitudes to hut management, and public exhibition of the proposed actions. The final strategy, completed in 2005–06, recommends rebuilding seven huts and provides practical guidelines for managing huts in the high country.

A related project focused on the historic homestead at Currango in the north of Kosciuszko National Park. The development of the Currango Conservation Management and Interpretation Plan was a three-year project involving stakeholder meetings, recording of oral history, archaeological surveys, and review of 60 submissions from the public exhibition of the draft plan. The final plan provides a practical works program and guidelines for the future management of Currango Homestead.

A buried cannon and carronade at **Bare Island** in Botany Bay National Park were restored in 2005–06 and this restoration was celebrated as part of Heritage Week on 17 April 2006.

**Dalmorton Camping Area** in Guy Fawkes River State Conservation Area was officially opened in August 2005 and enables visitors to explore the rich cultural history of the Dalmorton district. Once a favoured campsite of the local Gumbainggirr People, Dalmorton became a flourishing township of 800 people during the gold rush of the 1860s. Interpretive panels at the village site and in the camping area tell the stories of the Aboriginal people, the gold miners, graziers and townspeople who lived along the historic Grafton–Glen Innes Road.

DEC has delegated authority under the *Heritage Act 1977* to determine certain applications under the Act and to endorse conservation management plans (CMPs) for State Heritage Register (SHR) listed items under the Act. These delegations relate to land managed under the NPW Act and by the Botanic Gardens Trust. The delegations under sections 57 and 60 relate to exemptions and approvals for works on SHR-listed items. Delegations under sections 137 and 140 relate to exceptions and approvals for excavation of non-Aboriginal heritage. The following table summarises all permits issued under delegation and CMPs endorsed by DEC during 2005–06:

#### Decisions made under delegation

Section 60 applications approved	4
Section 140 applications approved	4
Section 57 exemptions approved	4
Section 137 exceptions approved	4
<b>TOTAL</b>	<b>16</b>
<b>Conservation management plans endorsed under delegation</b>	<b>1</b>

In 2005–06, two areas of reserved land were added to the National Heritage List, a Commonwealth list established under the *Environment Protection and Biodiversity Conservation Act 1999*. Kurnell Peninsula Headland was listed in recognition of its place in Australia's history, with 400 hectares of Kurnell Peninsula on the southern shores of Botany Bay, including Captain Cook's Landing Place, being included in the list. The Quarantine Station in Sydney Harbour National Park was listed for values associated with its use since colonial times, and the fact that it is the oldest quarantine station in Australia.

## Cultural landscapes: connecting history, heritage and reserve management

A current research project entitled *Cultural landscapes: connecting history, heritage and reserve management* aims to improve the management of cultural heritage at a landscape level in NSW reserves.

Over the last 40 years, cultural heritage sites have been conserved as individual entities. A landscape approach to heritage conservation will recognise the connectivity between sites and the importance of old fences, pathways, stockyards and culturally modified land such as plantations, grazing areas and timber harvesting areas. Many of these features have left physical traces in the reserves and shaped today's reserve environments.

The new approach aims to integrate the management and conservation of natural and cultural values in reserves. By understanding the historical, present day and ecological connections between objects, places and landscapes, DEC can better manage the unique cultural landscape of each reserve and better interpret its heritage.



## 3.4 Sustainable public use of the reserve system

### 3.4.1 Corporate plan priorities 2004–06

#### Sustainable and appropriate use of national parks

*Develop a policy and strategic planning framework for sustainable and culturally appropriate use of national parks*

In March 2006, DEC released the Living Parks Sustainable Visitation Strategy, following extensive consultation with key stakeholders, and has begun to implement the strategy through branch visitation management plans across NSW.

In 2005–06, DEC commenced a review of commercial tour operators' licensing arrangements, to ensure that community, visitor and operator expectations are better met while continuing to focus on the conservation of natural and cultural heritage values in reserves. This work will continue in 2006–07 and lead to services that are more effective and that build on the cooperative relationships between DEC and commercial tour operators.

#### Total asset management

*Put in place a total asset management approach for reserves*

As part of its total asset management plan, DEC continued to develop the asset maintenance system for reserves. During 2005–06, DEC reviewed the outcomes of total asset maintenance system pilots in four areas, and from 2007 will begin to roll out the system to all areas, building in the improvements identified, including standardising business rules across the state and better integrating the system with the other corporate information systems.

### 3.4.2 Living Parks strategy

In March 2006, DEC launched **Living Parks** which is the state's first visitation strategy for all lands reserved under the NPW Act. The strategy aims to:

- encourage visitors to national parks while ensuring native plants, animals and lands are conserved
- enhance the experience of park visitors and improve their awareness of parks' natural and cultural heritage values
- improve visitor management, facilities and services
- encourage new partnerships between DEC, the private and public sectors, Aboriginal communities and the general community
- provide a framework for sustainable investment in NSW parks, to benefit local and regional economies and involve Aboriginal people in visitor management.

*Living Parks* outlines 34 priority actions which DEC will implement in coming years, including through development of branch visitation management plans.

### 3.4.3 Enhancing visitor experiences

#### National Parks Discovery Program

The National Parks Discovery Program provides educational experiences through walks, talks and tours in parks and through outreach activities. It fosters understanding and appreciation of the diversity of natural, Aboriginal cultural heritage and historic heritage values in reserves, and encourages behaviour that helps sustain the environment. DEC employs local people with appropriate backgrounds as Discovery coordinators and rangers to deliver programs to local communities, visitors and schools.

About 4386 Discovery programs were conducted across NSW in 2005–06 and, for the first time, the number of participants exceeded 117,000. Community interest and participation continued throughout the year, with many popular activities held during school holidays, including spooky night tours, lighthouse tours, bush tucker and bush art workshops, and various junior ranger kids' activities.

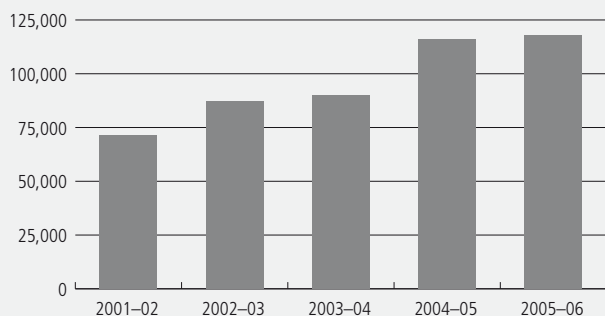


## ■ PERFORMANCE INDICATOR

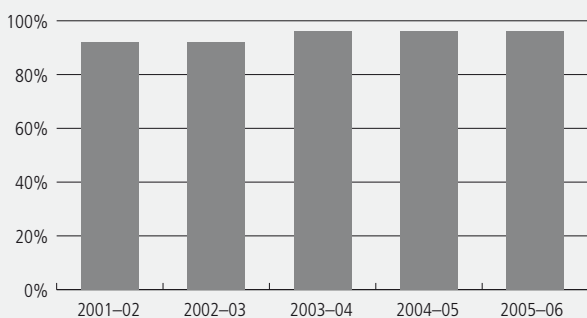
### Number of participants in Discovery education programs and percentage satisfied

**Definition:** This measure indicates the number of participants taking part in all activities of the Discovery program. It also indicates the percentage of a surveyed sample of participants satisfied with their experience. DEC 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 in school programs. The level of satisfaction of surveyed participants remains high, demonstrating that the program remains engaging and enjoyable.

In addition, guided tours and activities were aligned with key community events including Heritage Week, World Environment Day and other regional festivals.

Involvement in the **Discovery for Schools** program remained strong and more programs were developed during the year. A new 'In-School Program' was launched in the Hunter Region in 2006 incorporating themes such as Aboriginal cultural heritage, state and national parks, rainforest and biodiversity. This program promotes learning through fun and first-hand experiences that are linked to the school syllabus.

During 2005–06, partnerships were developed with other environmental education providers to combine resources and coordinate the delivery of environmental education programs. Programs were conducted with the Department of Education's environment education centres, catchment management authorities, Taronga Zoo and local councils.

A favoured activity was the 'Backyard to Bush' program presented with Taronga Zoo, which travelled around NSW allowing participants to interact with native wildlife. These joint education programs will continue in 2006–07.

## The Botanist's Way

**The Botanist's Way**, which was opened at the Mt Tomah Botanic Garden in June 2006, is Australia's newest heritage-themed tourist drive. This 88-km journey, across the Greater Blue Mountains World Heritage Area along the scenic Bells Line of Road, links Windsor in north-western Sydney to Lithgow on the western side of the Great Dividing Range. This project was an initiative of Tourism Hawksbury Inc and involves DEC, Lithgow and Blue Mountains City councils, Tourism NSW and Blue Mountains Tourism. DEC provided almost \$50,00 in funding for the project.

DEC established interpretive signs at each end of The Botanist's Way to:

- promote more understanding of the values of the 1,026,044-hectare Greater Blue Mountains World Heritage Area by presenting human stories associated with the area's diverse and unique plant life
- explain the role that botanical, geological, geographic and scientific discovery played in protecting the environment, and revealing its history
- promote an understanding of Aboriginal communities' ongoing connections to Country (links to the World Heritage Living Country Project), understanding and use of plant life, and contributions to the early colony
- integrate and add value to heritage tourist attractions along The Botanist's Way
- create new marketing opportunities for the Hawkesbury/Blue Mountains precinct, the wider region and individual botanical attractions.

A highlight of the project was the support provided by four traditional tribal Aboriginal groups – Darug, Wiradjuri, Darkinjung and Gundungurra – who shared their indigenous language and greetings by allowing DEC to use them on the spectacular interpretive gateway signage.

## Muttonbird by Moonlight

Muttonbird Island Nature Reserve is the largest, most accessible wedge-tailed shearwater rookery in NSW. It is much visited by tourists, and is significant to the Gumbaynggirr Aboriginal community. In 2005–06, DEC developed an innovative wildlife tourism program for the island in partnership with Gumbaynggirr people, volunteer groups and local businesses. **Muttonbird by Moonlight** is a series of tours that showcase the lifecycle and behaviour of the shearwaters and the links between Aboriginal culture, the landscape and the plants and animals. The tours encourage a wider appreciation of the Island at night when the rookery comes to life. The program also includes an education kit with a marketing plan and information on developing other events that create economic opportunities for local businesses. Approximately 1500 visitors participated in these tours during the past year.

## Tumut visitor centre

In August 2005, the **Tumut Visitor Centre** made the NSW Tourism finals after gaining a prize in the Rhodium Canberra and Capital Region Tourism Award 2005 for General Tourism Services. The Centre is jointly operated by the Tumut Shire Council and DEC. It received the award for maintaining high standards of customer service, information provision and quality facilities that deliver a unique visitor experience.

## 3.4.4 Providing and managing park facilities

DEC's **park use fees** provide funds for maintaining and improving visitor facilities and services, conserving threatened species and their habitats, protecting cultural and heritage sites, and carrying out pest and weed control programs. Fees include day entry, annual pass and camping fees. Day entry fees apply to only 44 of over 670 parks and reserves across the state.

In 2005–06, DEC raised about \$17.2 million from these fees, including \$11.5 million in day entry and annual pass fees and \$5.7 million in camping and cabin letting fees.

## Towards Centenary

In November 2005, the NSW Government announced the biggest upgrade to infrastructure and tourism facilities in Kosciuszko National Park since its creation in 1944.

**Towards Centenary** involves investing more than \$250 million in the national park over the next 30 years. The announcement followed a lengthy investigation by the Independent Pricing and Regulatory Tribunal into the cost to NSW taxpayers of funding essential skiing infrastructure in the Perisher Range Resorts.

Upgrades will be funded by:

- a developer levy on the number of new beds for visitors in ski resorts
- a change in the rating structure for resorts and lessees
- an \$11 winter surcharge for entry to the NSW ski fields
- a \$105 surcharge for an annual pass to enter the park.

More than \$12 million will be provided for major improvements in the park. Projects currently underway are:

- the construction of a visitor entry station that will improve access to the Perisher Blue Ski Resort during the ski season
- the paving with stone of 400 metres of the Main Range Walking Track, linking Rawsons Pass to Charlotte Pass, and the construction of stone stairs using recycled stone from Jindabyne Dam.

Future projects will include undertaking a major conservation program to rehabilitate Mt Kosciuszko and Australia's other mountains, enhancing feral animal control and rebuilding essential infrastructure for water, sewage, roads, and waste at the Perisher range resorts.

## Revitalising Sydney's parks

The NSW Government has provided more than \$38 million over four years to improve Sydney's national park visitor facilities.

In 2005–06, DEC commenced the Resolute Visitor Area upgrade in **Ku-ring-gai Chase National Park**, with a detailed site survey, a landscape design and work on the Koolewong Track and lookout. When completed, the upgrade will include a new interpretive facility, construction of new 'EcoMax' toilets, new signs around the Resolute/West Head area and changes to West Head Road.

DEC is developing a conservation management plan for Bobbin Head and Appletree Bay before major upgrades begin. In drafting the plan now on public exhibition, DEC held public open days, passed out community questionnaires and consulted widely.

## ■ CASE STUDY

### Paddling with the Platypus

In September 2005, DEC received an award from the Bombala and District Development Association for the Paddling with the Platypus tourist program. Visitors and local residents taking part in this program travel up the river in canoes to see a platypus in the wild, accompanied by a ranger who gives detailed information on the lives of these reclusive animals.

The program built on the cooperative work undertaken by the Bombala Shire Council, the Platypus Conservancy and DEC in developing the Platypus Reserve 3 km south of Bombala. The award highlighted that Paddling with the Platypus successfully combined both physical activity and environmental education in a fun way that can be enjoyed by all.



*Paddling up-river to see a platypus.*

DEC has made improvements for vehicles visiting Morgans Creek, Burrawang Reach, Cattle Duffers and Fitzpatrick Park in **Georges River National Park**, including:

- improved traffic safety, sightlines and queuing at Henry Lawson Drive, and improved vehicle management
- use of efficient parking strategies and directional flow, including overflow options
- improved surface treatments.

Surveys and preliminary designs have been reviewed by the community and key stakeholders. Research is being undertaken to better understand ways in which water users, picnickers and children use the four sites. Research into visitors from non-English speaking backgrounds is being also undertaken and incorporated into the visitation plan.

During 2005–06, a plan for improvements to facilities and landscaping was prepared for Bonnie Vale in **Royal National Park**. The survey, architectural design and documentation, archaeological permits, environmental assessments and site decontamination report were completed during 2005–06. DEC has begun to build new shower and toilet facilities. Work to renew the Garie Beach precinct included upgrading and sealing the visitors' car park, creek stabilisation and stormwater works, and building demolition.

## Upgrades to visitor facilities

During 2005–06, a new viewing platform was constructed at **Kattang Nature Reserve** near Laurieton. The platform is located away from the car park to encourage visitors to get out of their cars and walk.

Miners Beach Walking Track in **Sea Acres Nature Reserve** was also upgraded, with staircases and boardwalks enabling visitors to walk safely in the coastal environment of Port Macquarie. The walk also provides an important link from Town Beach to Lighthouse Beach.

In 2005–06, work commenced on upgrades in the **Blue Mountains National Park** to the National Pass, Link Track, Queens Cascades Track (Stage 1), Fairfax Heritage Track and Coal Seam Track. Planning has commenced for upgrades to visitor facilities in the Blue Labyrinth Precinct. A conservation management plan, Tracks Into History, has been completed for the state heritage-listed walking tracks in the Blue Mountains.

An Environmental Learning Centre was upgraded in 2005–06 with the assistance of the Department of Education and various volunteer groups at **Wingham Brush Nature Reserve** near Taree. The facility promotes cooperative ventures between DEC and the Department of Education and enhances schoolchildren's appreciation of the reserve. A key outcome has been community education and acceptance of the resident grey-headed flying fox population.

## Leasing and property management

DEC has an extensive commercial property and leasing portfolio which helps to enhance facilities and services for park visitors. This portfolio generated \$12.6 million in revenue during 2005–06. Key achievements included:

- renewing the licence for the Scenic Skyway over Blue Mountains National Park
- negotiation of a new lease for Fort Denison Café which operates in conjunction with DEC's day tours of the island and evening functions
- continuation of DEC's conservation lease program at Hill End Historic Site with a number of historic cottages being successfully restored by lessees in accordance with approved conservation management plans
- selection of a new commercial operator for the accommodation at Smoky Cape Lighthouse
- leasing a number of cafes and restaurants including the cafe in the Jindabyne Visitor Centre and the Berowra Waters Tea House.

In 2005–06, DEC began a review of the administration and management of its commercial tour operators' licensing arrangements to make these services more effective and build on the cooperative relationships with commercial tour operators. The review aims to ensure community, visitor and operator expectations are better met, while continuing to focus on conservation.