4 Conserving and managing natural and cultural values across the landscape

Contributing to State Plan priorities

DECC is the lead agency for:

- E3: Cleaner air and progress on greenhouse gas emissions
- E4: Better environmental outcomes for native vegetation, biodiversity, land, rivers and coastal waterways

DECC is a partner agency for:

- E1: A secure and sustainable water supply for all users
- E8: More people using parks, sporting and recreational facilities and participating in the arts and cultural activities

Planned DECC corporate outcomes

- Native vegetation and soils sustainably used, conserved and improved
- Biodiversity protected and restored
- National parks, marine parks, reserves and botanic gardens managed for conservation, education and public enjoyment
- Health of wetlands, waterways and rivers improved
- Coastal environments protected and restored
- Aboriginal culture and heritage protected and revitalised

In this chapter

Photo: G Chapman, DECC

4.1 Conserving and improving native vegetation and soils

When native vegetation is protected, negative impacts on biodiversity, salinity, threatened species, soils, riverbanks and water quality are much reduced. Minimising the clearing of native vegetation is also essential for helping to reduce the affects of climate change.

DECC, Catchment Management Authorities (CMAs) and the Natural Resources Commission are the main agencies responsible for maintaining native vegetation in NSW. DECC's roles include:

- policy and legal advice and reform
- guideline development
- auditing, enforcement and compliance
- science input and reform
- conservation assessment and planning
- support for the PVP (Property Vegetation Plan) Developer software (see page 61)
- monitoring and reporting.

CMAs work with landowners to develop property vegetation plans (PVPs), assess clearing approvals, implement private land conservation initiatives, deliver incentives for restoration and provide community education.

To protect native vegetation, DECC implements incentive programs which are delivered in collaboration with CMAs. Since December 2005, these programs have provided $120 million to help restore native vegetation on private property across NSW, resulting in more than 78,500 hectares of native vegetation being conserved or managed in 2006–07 through Incentive PVPs.

Many projects relating to native vegetation in this section were implemented by the former Department of Natural Resources until 27 April 2007, and are now administered by DECC. In April 2007, the Department of Primary Industries became responsible for administering the *Plantations and Reafforestation Act 1999* and completing the review of the Act and Code.

4.1.1 Establishing rules for land resources and native vegetation

The *Native Vegetation Act 2003* (NV Act) and the Native Vegetation Regulation 2005 (NV Regulation) establish the legal framework for managing native vegetation in NSW. Under this legislation:

- broadscale clearing is prohibited unless it improves or maintains environmental outcomes
- landholders are encouraged, through the provision of incentives, to revegetate and rehabilitate land with native vegetation.

Property vegetation plans are the central feature of native vegetation regulation.

The NV Act commenced in December 2005, repealing the previous *Native Vegetation Conservation Act 1997* (NVC Act). The NVC Act still regulates clearing of exotic trees, dead native trees and live native vegetation in the Sydney metropolitan and Newcastle local government areas, and clearing on State Protected Land, which is land declared as such by the Minister and which is sloped over 18 degrees, or is riparian land or sensitive land.

Property vegetation plans

Property vegetation plans (PVPs) are voluntary agreements for native vegetation clearing and management negotiated between a landholder or a group of landholders and the local Catchment Management Authority (CMA) on behalf of the Minister. DECC provides technical and policy support to CMAs in relation to PVPs.

There are different sorts of PVPs such as Thinning PVPs, Incentive PVPs, Invasive Native Scrub PVPs and Clearing PVPs. These PVPs are valid for varying amounts of time. For example, Clearing PVPs are valid for up to 15 years, giving farmers the security they need to make long-term farming decisions. PVPs can include offsets and incentives. Offsets enable landholders to clear native vegetation by counteracting the negative impacts of clearing, for example by allowing for regeneration of another area, while incentives provide funding to enable native vegetation

to be restored on degraded land. PVPs provide a popular alternative to development applications (DAs) for landholders seeking to clear native vegetation, although landholders must still submit a DA when clearing certain vegetation on State Protected Land.

The PVP Developer is a computer program that provides landholders, Landcare groups, local CMA staff and interested members of the public with access to the best available science and information on native vegetation in their district. The PVP Developer has separate modules for salinity, water quality, biodiversity (including threatened species), land and soil capability and invasive native species.

Since the introduction of the NV Act in December 2005 until the end of June 2007, there have been 2570 enquiries regarding vegetation management and 1680 site visits by CMA staff to discuss options available to landholders. In addition, 351 PVPs have been prepared, of which 195 involved providing grants to landholders to manage native vegetation.

Under these PVPs, over 415 hectares of land have been approved for clearing with approximately 6000 hectares of associated offsets, and approximately 78,500 hectares of native vegetation being set aside for conservation. In addition, over 523,500 hectares have been approved for the treatment of invasive native scrub. Thinning of native vegetation has been approved on 1027 hectares.

Details of approved PVPs are available on a Public Register at www.nativevegetation.nsw.gov.au.

Legislative reform

In October 2006, the Government announced changes to the NV Act and NV Regulation which were based on recommendations from an independent Ministerial Review Committee. Changes relating to invasive native scrub and the location of local government infrastructure have been implemented and are described below.

Review of PVP Developer Invasive Native Scrub Tool

In November 2006, the Environmental Outcomes Assessment Methodology was amended to improve the definition and assessment of invasive native scrub (INS). Invasive native scrub, which is commonly referred to as 'woody weeds', is dense thickets of native shrubs such as budda, turpentine and cassia that have encroached onto pastoral lands since 1788. INS can reduce habitat for some native animals and can lead to soil erosion as it reduces ground cover. It also results in reduced pastoral production and difficulties in mustering livestock.

The improvements address the concerns of farmers and CMAs that the original assessment processes using the PVP Developer INS Tool were too prescriptive and prevented effective management of INS.

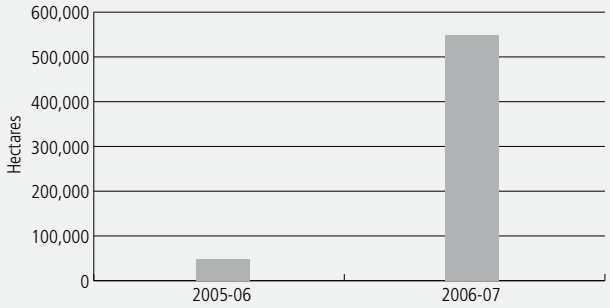
The amendments apply to additional INS species and allow some flexibility to treat INS in threatened ecological communities. The amended assessment processes have benefited farmers by providing access to incentive funding through the CMAs, and allowing retained INS vegetation to be kept in clumps rather than spread across the paddock.

■ PERFORMANCE INDICATOR

Area of land maintained or improved by property vegetation plans

Definition: This indicator measures the area of land maintained or improved each year by property vegetation plans. A property vegetation plan (PVP) is a voluntary agreement under the *Native Vegetation Act 2003*, negotiated between a landholder, or a group of landholders, and the local Catchment Management Authority. This annual data includes offset arrangements, incentive areas, Invasive Native Scrub PVPs, and Thinning PVPs. It does not include clearing statistics.

Area of land maintained or improved by property vegetation plans



Interpretation: The *Native Vegetation Act* did not commence until December 2005, so the 2005–06 figure only incorporated seven months of data. Initially, PVPs were taken up slowly by landholders as they were a new concept. There has been a significant increase in the area of native vegetation maintained or improved through the use of PVPs between 2005–06 and 2006–07, an increase of 498,743 hectares (from 48,770 to 547,513 hectares). This is mainly due to the area covered by approved Invasive Native Scrub PVPs, which increased from 28,372 to 482,441 hectares.

The amendments also help to prevent soil erosion and land degradation, as INS PVPs must maintain or improve native vegetation.

Local government infrastructure RAMA

In February 2007, the NSW Government amended the NV Regulation to enable Routine Agricultural Management Activities (RAMAs) to include certain essential local government infrastructure: sewage treatment works, waste disposal landfills, waste management facilities, water supply works, gravel pits, and cemeteries.

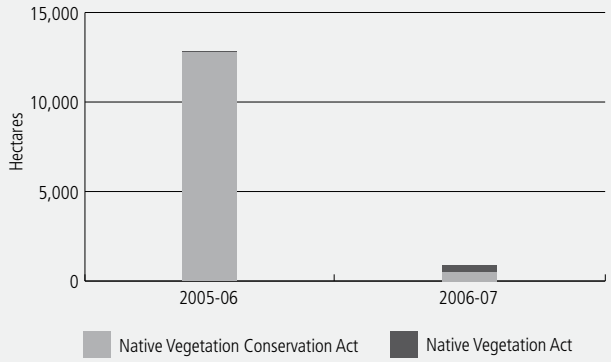
This amendment authorises the clearing of up to two hectares of native vegetation on a single area of land for the construction of the listed local government infrastructure, provided that the clearing does not comprise, or is not likely to compromise, a threatened species or threatened ecological community under the *Threatened Species Conservation Act 1995*; the habitat of threatened species, populations or ecological communities of fish; or an over-cleared vegetation type. CMAs must also be satisfied that arrangements have been put in place to ensure that the native vegetation on managed areas set aside by the council in connection with the RAMA will be protected in perpetuity. Larger areas of clearing require a PVP to be prepared.

■ PERFORMANCE INDICATOR

Area of native vegetation approved for clearing

Definition: This indicator measures the area of native vegetation approved for clearing each year. Data is from Clearing PVPs which are issued under the *Native Vegetation Act 2003* (NV Act), which commenced in December 2005. Data also includes development applications which were issued under the previous *Native Vegetation Conservation Act 1997* (NVC Act).

Area of native vegetation approved for clearing



Interpretation: The success of the NV Act in ending broadscale clearing is apparent in the significant decrease in the area of native vegetation cleared, from 12,815 hectares in 2005–06 to 882 hectares in 2006–07. In 2005–06, 12,778 hectares was cleared under the earlier NVC Act, and only 36 hectares under the NV Act, which requires landholders to maintain or improve environmental outcomes if clearing is to be approved. In 2006–07, 504 hectares of the area cleared was under the previous NVC Act, with 378 hectares cleared under the NV Act.

Details of clearing are provided on the Native Vegetation Public Register at www.nativevegetation.nsw.gov.au.

Special exemptions are available for sites identified or purchased for infrastructure on or before 31 August 2006. For new infrastructure, councils must consult with CMAs regarding site selection, sensitive native vegetation and the location of the managed area set aside by council for the purpose of protecting native vegetation.

Benefits of the new classification include streamlined and faster approvals for services to rural communities, the location of new local government infrastructure in areas that avoid sensitive native vegetation, and the requirement for councils to identify areas of native vegetation which will be protected.

Photo: DECC

DECC inspects a site affected by salinity for cultural values and to assess whether the site can be rehabilitated, under the Footprint Program.

4.1.2 Working with Catchment Management Authorities

Catchment Management Authorities (CMAs) deliver programs to manage natural resources – including those on native vegetation and sustainable soil use – to land managers on private lands, including Aboriginal communities. CMAs are the frontline government organisations investing in natural resource management in NSW. CMAs develop catchment action plans and associated investment strategies in which the Commonwealth and state governments invest. Strategies include the National Action Plan for Salinity and Water Quality and Natural Heritage Trust Phase 2.

DECC provides the 13 CMAs in NSW with state-level administration and grant funding from the joint state/Commonwealth investment program. NSW provides funding through the State Sustainability Fund and the NSW Land and Water Management Plan. Commonwealth funding is provided through the Natural Heritage Trust and National Landcare programs. Both NSW and the Commonwealth contribute to the National Action Plan for Salinity and Water Quality program. In 2006–07, $131.5 million of joint state/Commonwealth funding was provided to the CMAs to implement natural resource programs. In addition, over $37 million of state funds was directed to CMAs for the administration of these programs.

DECC also provides strategic support through reviewing catchment action plans and associated investment strategies which identify priorities for investment.

Salinity remains a serious land and water management issue in NSW, affecting water quality and large areas of agricultural land and urban infrastructure. DECC manages the NSW Salinity Strategy Enhancement (SSE) Program that supports CMAs with funding and technical assistance. SEE projects supported in 2006–07 include:

- the Footprint Program in the central-west, to determine priority areas for salinity investment in the Cudgegong catchment
- advice to the Lachlan CMA so it can define areas for investment in the Belabula River catchment under the Lachlan Salinity Action Plan
- the $378,000 Central West Urban Salinity Project, in the central west and Lachlan areas, to demonstrate water management as a means of controlling salinity in Dubbo's Victoria Park and in Forbes
- an independent review of the Groundwater Flow Systems Projects in the northern rivers, Hawkesbury–Nepean, southern rivers and Sydney metropolitan areas.

To manage salinity effectively, it is important to understand the way that groundwater moves. DECC's Groundwater Flow Systems Program is at the forefront of salinity knowledge and innovation in Australia. It is being undertaken in collaboration with the Central West CMA, Geoscience Australia, the Cooperative Research Centre for Landscape Environments and Mineral Exploration, and the University of Canberra.

DECC also provides expertise in soils mapping and trains CMA staff to identify and manage soils, including salinity hazard landscapes.

In 2006–07, DECC upgraded the datasets used in the biodiversity component of the Environmental Outcomes Assessment Methodology. These datasets are being incorporated into BioMetric and the threatened species tools to improve the accuracy of biodiversity assessments and to ensure that the best available scientific information is used for PVP assessments.

4.1.3 Monitoring soils and native vegetation

DECC's native vegetation and soil monitoring programs support natural resource management activities, including catchment planning, state-level and catchment reporting, and enforcement and compliance programs.

The NSW Government adopted the **NSW Natural Resources Monitoring, Evaluation and Reporting Strategy (MER Strategy)** in August 2006 to improve the monitoring of progress towards the 13 statewide targets adopted under State Plan Priority E4: Better environmental outcomes for native vegetation, biodiversity, land, rivers and coastal waterways. DECC is leading the implementation of the MER Strategy in partnership with CMAs and other agencies.

See page 75 for more information.

Funds of $5.79 million were approved from the Natural Heritage Trust Strategic Reserve to help agencies develop collection methods; finalise indicators, protocols and data management systems; and gather initial baseline data.

Soils

Monitoring, evaluation and reporting land and soil condition

Priority E4 of the State Plan includes targets to improve soil condition and to increase the area of land that is managed within its capability by 2015. To measure progress toward these targets, DECC is leading a program for monitoring, evaluating and reporting on the condition of land and soil under the MER Strategy.

In 2006–07, DECC undertook a series of land and soil MER pilot projects with Border Rivers–Gwydir, Northern Rivers, Murray, Lower Murray Darling and Central West CMAs. DECC also participated in national trials being conducted in NSW by the National Land and Water Resources Audit. These trials will be used to develop national approaches to land and soil monitoring, and will measure and report on:

- the status of and change in a range of land and soil indicators, including soil pH, amount of carbon in soil, and water and wind erosion
- regionally significant soil properties such as acid sulfate soils and soil structure decline.

Supporting information is also being developed, including land use and land management data and land and soils capability cover for NSW. By interpreting and modelling this information, the MER program will provide a measure of current and future trends in land and soil condition which will inform strategies, including those for mitigating greenhouse gas emissions through increases in soil carbon.

Methods, data storage and reporting systems for the statewide land and soil MER program will be developed during 2007–08, and a scientific baseline will be established for ongoing monitoring of change in the health of land and soil.

Soil landscape mapping provides essential information about the distribution, characteristics and capabilities of soils, and constraints regarding their use. DECC has mapped soils in around 90% of NSW. Detailed soil landscape mapping has been undertaken in 27% of NSW, including the entire western division, and soil landscape maps and records have been provided for many areas of the central and eastern divisions. DECC also has 61,411 detailed soil profiles, of which 33,665 are available to the public on www.naturalresources.nsw.gov.au/soils/data.shtml.

The mapping information assists decision making about natural resource management to help mitigate land and water degradation. It also provides a baseline against which to evaluate and monitor the condition of soil in NSW. DECC is progressively converting soil landscape information which is contained in hard copy maps and reports into digital data on its **Soil and Land Information System (SALIS)** so it is more accessible and interactive. Digital soil landscape information covering the 21,900 square kilometres of Hawkesbury–Nepean Catchment is in the final stages of production (see case study on the next page).

Ultimately, users will be able access the state's most current soils information online through SALIS, which will help land use planners, land managers, consultants and the public make informed decisions more quickly and easily.

DECC had previously identified the distribution of **acid sulfate soils** (ASS) along the coastline, and in cooperation with the Department of Planning, developed ASS planning maps. These maps provide coastal councils with critical information to control development so it avoids or manages these soils. In 2006, DECC integrated ASS and soil landscape data with other natural resources information on the landscape, to produce land zoning maps. These were provided in July 2006 to the Department of Planning for their Comprehensive Coastal Assessment Toolkit which was released in 2007. This information will further assist with the sustainable development of NSW's coastline.

Native vegetation

In January 2007, the former Department of Natural Resources released ***NSW woody vegetation change: 2004–2006 report***. Woody vegetation in the report is defined as 20% crown cover or more, and over two metres tall; for example woodlands, open forests and closed forests. The reduction in the area of woody native vegetation between 2004–06 was 0.04% of the area of NSW, or an area of 31,394 hectares per annum, a significant reduction from the estimated 150,000 hectares per annum cleared in the early 1990s. In 2004–06, woody vegetation was cleared for agriculture, infrastructure, fires and forestry. In the same period, no regrowth features could be identified due to the short time interval and the prevailing drought conditions across most of NSW. The changes were identified using Landsat Satellite images and methodology known as SLATS developed by the Queensland Department of Natural Resources and Water, who assisted the former Department of Natural Resources with this work. The report is available at www.nativevegetation.nsw.gov.au/p/woody_veg_change_2004_2006.pdf.

DECC is continuing this type of analysis and intends to produce annual reports. The 2006–07 report is expected to be produced in early 2008.

Native Vegetation Report Card

DECC produces Native Vegetation Report Cards every six months to inform the public about conservation, revegetation, and management and clearing of native vegetation. DECC collects and analyses data from databases held by DECC, Forests NSW and the CMAs.

In 2006–07, DECC produced two reports, one covering the period July–December 2006 and one for January–June 2007. The most recent report, for January–June 2007, shows that the native vegetation reforms are working, with only 357 hectares of native vegetation approved for clearing, and almost 468,000 hectares of native vegetation conserved or improved.

■ CASE STUDY

Better planning in the Hawkesbury–Nepean Catchment

The Hawkesbury–Nepean catchment provides most of the water supply for greater Sydney, conserves large areas of native vegetation and contains many different ecosystems. However, it is under intense urban, rural and industrial development pressure. While the major problems with land, soil and water degradation are known, identifying the extent and severity of the problems will assist the Hawkesbury–Nepean CMA to accurately target investment and remediation strategies to areas of most need.

As a result, DECC worked closely with the CMA to combine soil landscape data covering an area of 21,900 km^2 into a database. The mapping that has been undertaken in the catchment identifies soil and landscape features such as geology, topography, native vegetation and soil type. It also identifies the capabilities and constraints that the soils and landscapes have for rural and urban land uses.

DECC is compiling an interactive DVD for the catchment. The DVD includes maps and a report for each soil and landscape which describes its characteristics, qualities and limitations. A spatial viewer allows users to zoom in on their area of interest using underlying Spot5 satellite imagery.

The information will also be available online through the Soil and Land Information System (SALIS) which DECC is developing for NSW. It will also be incorporated into the Commonwealth Government's Australian Soil Resource Information System (ASRIS), run by the CSIRO.

Photo: C. Murphy, DECC

Soil mapping in the Hawkesbury–Nepean Catchment.

Native Vegetation Report Card Results

Category	January–June 2007
Conservation – area added to the NSW reserve system or to private lands managed for conservation	129,930 hectares, with 99% of this area added to the public reserve system
Restoration or revegetation – area on which vegetation condition was improved through incentive funding for PVPs and native plantations, or National Heritage Trust (NHT) and National Action Plan (NAP) funding	337,916 hectares, most of the area being funded by NHT and NAP (185,629 hectares) and Incentive PVPs (44,942 hectares)
Management – sustainable management, including management of invasive native scrub, private native forestry and rangeland, and weed removal programs on State Protected Land	727,862 hectares, much of the area being for management of invasive native scrub (446,365 hectares)
Approved clearing – clearing approved under PVPs or development applications where environmental outcomes are maintained or improved, or under other legislation (*Plantations and Reafforestation Act 1999* and outstanding applications under the NVC Act)	357 hectares, with most of the area approved under the *Plantations and Reafforestation Act 1999*

The reports are available at www.nativevegetation.nsw.gov.au/reports.

4.1.4 Native vegetation assistance package

In early 2006, DECC developed a Native Vegetation Assistance Package (NVAP) to help farmers who experience financial hardship as a result of the native vegetation laws introduced with the NV Act in 2005. This $37 million package, which is administered by DECC in partnership with CMAs, the Nature Conservation Trust and the Rural Assistance Authority (RAA), has been available since July 2006 and continues until 1 July 2009. The package includes:

- Farmer Exit Assistance ($12 million) for the Nature Conservation Trust to purchase properties from farmers who can demonstrate loss of commercial viability under the new legislation
- Sustainable Farming Grants ($15 million) to help farmers develop sustainable farming systems that benefit the environment and generate more income
- Offset Pools ($10 million) to help farmers 'offset' clearing actions on their properties by planting or protecting native vegetation on other land.

The initial phase of the NVAP has been the implementation of the Farmer Exit Assistance program. The first property, purchased in February 2007 near Casino, supports substantial areas of remnant floodplain vegetation and threatened species and is considered a **biodiversity hotspot** (a site containing the state's biologically richest and most threatened ecosystems). Negotiations were positive, and the landholder stayed on the property to assist in its management while arrangements for its acquisition were made. Three other applications are currently being assessed by the RAA. Proceeds from the subsequent sale of properties purchased under the program will be deposited back into the Farmer Exit Assistance Fund.

As at June 2007 there had been little interest in the Sustainable Farming Grants and the Offset Pools. In 2007–08, DECC will review the program and examine eligibility criteria to facilitate greater uptake by farmers.

4.1.5 Enforcing compliance with native vegetation legislation

DECC is committed to protecting native vegetation and ending illegal broadscale clearing. To this end, DECC is implementing a compliance and enforcement approach incorporating:

- community education and engagement programs to promote voluntary compliance by explaining to landholders their rights and responsibilities under native vegetation legislation
- monitoring programs, including satellite monitoring, to detect clearing activities across the state
- auditing of clearing consents to verify compliance
- investigating alleged breaches of legislation, and taking appropriate action when a breach occurs, including where possible requiring remediation of environmental damage.

DECC's compliance actions include stop work orders, remediation orders, penalty notices and prosecution. Fines also apply for offences such as failing to comply with a stop work order or remediation notice, obstructing authorised officers from lawfully inspecting an alleged breach, and providing false or misleading information. The courts can impose fines of up to $1.1 million for unauthorised clearing of native vegetation.

In 2006–07, DECC completed 61 compliance investigations under the *Native Vegetation Act 2003* (NV Act), the *Native Vegetation Conservation Act 1997* (NVC Act), and the Soil Conservation Act. As a result, DECC issued five penalty notices, and seven notices to remediate native vegetation on land.

Remediation of native vegetation in different landscapes, soils and seedbanks, and in areas with different rainfall patterns, is complex. As a consequence, remediation notices are based on careful analysis to ensure that acceptable environmental outcomes are achieved. DECC has established an audit and monitoring program to measure the effectiveness of remediation notices and to improve their terms and conditions.

A program to **audit** and measure the effectiveness of property agreements (natural resource and environmental incentive agreements between DECC and landholders) was undertaken in 2006–07. The landholders taking up these agreements are usually progressive and seeking financial support from the Government to implement positive environmental works on their land, including fencing stock out of waterways and replanting native vegetation.

Over 80% of landholders showed a high level of compliance and had achieved or exceeded the objectives of the agreements. Reasons for not complying included delays due to physical issues such as drought, or waiting for the best season before undertaking the work.

During 2006–07, three **prosecutions** were completed under the NVC Act resulting in one acquittal and two convictions, which were:

- Gregory Santin was fined $1500 and ordered to pay the prosecutor's costs of $2000 by Lismore Local Court on 15 May 2007 for illegally clearing vulnerable land on State Protected Land without a relevant development consent
- Lawrence Weismantel was fined $1800 and ordered to pay costs of $4500 by Port Macquarie Local Court on 23 April 2007 for illegally clearing 6.7 hectares of land

For further information on DECC prosecutions, see Appendix 8.

Private native forestry

Private native forestry is the sustainable logging of native vegetation on private property. Approximately 20% of private native forestry activities (those occurring on State Protected Land) require consent under the *Native Vegetation Conservation Act 1997*, while the remaining 80% of activities operate under an exemption to the *Native Vegetation Act 2003*. In 2006–2007, DECC approved 106 applications for private native forestry on State Protected Land over 16,583 hectares, located mainly in the Hunter and north coast regions. Private native forestry operations only remove a small percentage of vegetation over the approved areas.

A draft Code of Practice was developed to ensure that forest operations will improve or maintain environmental outcomes, and to encourage sustainable management of forests. The draft was publicly exhibited in July–August 2006 with over 1700 submissions received. Following public exhibition, the Government referred the code to the Natural Resources Advisory Council (NRAC) to seek agreement between stakeholders on issues of contention. The NRAC provided a report to the Government in February 2007.

The Private Native Forestry Code of Practice will come into effect on 1 August 2007 under the Native Vegetation Amendment (Private Native Forestry – Transitional) Regulation 2007. With the introduction of the new code, all harvesting of native timber for the purposes of private native forestry will require approval through a property vegetation plan, or a development consent granted in accordance with the *Native Vegetation Act 2003*.

Photo: DECC

DECC is developing a species management plan for the southern brown bandicoot with Forests NSW. This endangered bandicoot only lives in two areas of NSW: on the south coast and just north of Sydney.

Forestry regulation on public land

DECC regulates forestry on public land in NSW to protect threatened species and water quality from forestry operations. The regulation is provided through Integrated Forestry Operations Approvals (IFOAs) for each region, and achieved through setting best practice conditions within licences issued under the *Threatened Species Conservation Act 1995* and the *Protection of the Environment Operations Act 1997*. During 2006–07, DECC licensed or set approval conditions for forestry operations in the upper north-east, lower north-east, southern, Eden, Pilliga (western) and Riverina regions.

DECC regularly audits the activities of Forests NSW in native forests. In 2006–07, DECC issued a number of warning letters to Forests NSW and requested that it undertake remediation action. The range of non-compliances included not retaining adequate hollow-bearing and recruitment trees; incorrect marking of, and incursions into, harvesting exclusion zones; not draining forest roads on the approaches to stream crossings; exceeding the required distances between drainage structures on roads and snig tracks; and not retaining streamside filter strips.

Significant achievements in 2006-07 included:

- progress being made on the five-year review of the IFOAs with agreement reached on measures to improve protection for threatened woodland bird species and drainage lines, and to develop a long-term monitoring program for threatened bat species
- developing a species management plan for the threatened southern brown bandicoot in the Eden IFOA region with Forests NSW
- drafting a revised audit and enforcement strategy, and refining procedures
- developing a framework and trial audits for auditing compliance with the *National Parks and Wildlife Act 1974* in relation to Aboriginal sites and objects in state forests.

Photo: N. Williams

4.2 Protecting and conserving biodiversity across the landscape

Protection of biodiversity requires action across the entire landscape. DECC is responsible for protecting, maintaining and improving biodiversity in the 8.3% of the area of NSW it manages through its national parks and reserves. DECC also enters into agreements with landholders to manage parts of their land for conservation. In addition, DECC works with local councils and the Department of Planning on regional plans to offset the impacts of new developments, and protect threatened species and endangered ecological communities.

4.2.1 Regional conservation planning

Regional conservation plans

DECC has been working with the Department of Planning on regional strategies, which identify areas for development over the next 25 years on the north, central and south coast, and in the Lower Hunter region. DECC's role is to incorporate, as much as possible, environmental targets into the regional strategies, to minimise impacts on biodiversity from development and to offset these impacts.

■ CASE STUDY

The Lower Hunter Regional Conservation Plan

The draft Lower Hunter Regional Conservation Plan was exhibited in late 2006. It proposes including more than 32,000 hectares of land in NSW reserves, and sets out the area's nature conservation priorities for the next 25 years. A final version of the plan is scheduled for release later in 2007.

The Government has already implemented Stage 1 of the plan by transferring approximately 20,000 hectares of Government land into reserves under the *National Parks and Wildlife Act 1974*, effective from 1 July 2007. New conservation corridors to link reserves have also been created. Around 12,000 hectares of private land of high conservation value will also form new and extend existing reserves, to be implemented under staged agreements with landowners over the next three years.

The new reserves will include:

- a new 'green corridor' from Watagans Ranges through Hexham Swamp to Port Stephens (approximately 14,600 hectares)
- a green buffer on the South Wallarah Peninsula to separate Newcastle from the Central Coast (1250 hectares)
- areas around Port Stephens in the Karuah area (3000 hectares)
- a large addition to Werakata National Park near Cessnock (2200 hectares)

Photo: G. Woods

The Minister has signed agreements which provide for large areas of high value conservation land to be conserved under the Lower Hunter Regional Conservation Plan.

- two new parks containing under-reserved endangered ecological communities in the Hunter Valley near Branxton and at Elderslie (1330 hectares)
- a new park encompassing Ellalong Lagoon, which contains important freshwater communities (530 hectares)
- other large additions to Wollemi and Yengo national parks (6000 hectares).

These reserves will protect endangered ecological forest communities and other threatened native plants and animals. They will also contribute to the region's nature-based tourism industry, as they will contain new walking and cycling trails, camping areas, bird watching facilities and holiday cabins.

The plan, which includes a map, can be viewed on www.environment.nsw.gov.au/resources/20060541lhreservesa4.pdf

DECC is also developing regional conservation plans for each region. These plans locate development away from areas of high biodiversity. The plans have enabled DECC to take a landscape approach rather than assessing each site individually for its biodiversity impacts, and to protect areas of regional conservation priority. Where biodiversity impacts are justified on social and economic grounds, the plans enable these impacts to be offset by protecting areas of high conservation value.

Other regional conservation plans

DECC has prepared a draft **South Coast Regional Conservation Plan** which is expected to be released for public comment later in 2007. The plan provides data, support and direction to the three south coast councils to enable their local environmental plans to ban new development in areas of high conservation value and meet biodiversity certification requirements.

DECC is working with the Department of Planning on the development of the **Central Coast Regional Conservation Plan** to ensure that the biodiversity impacts of future development are minimised. The plan is expected to be completed in early 2008.

In developing the **Mid North Coast Regional Conservation Plan,** DECC has worked with the Department of Planning and councils to refine the location of development areas and protect significant biodiversity values. Once these development areas are formally approved, work will commence on the final stage of the plan, which covers offsetting. The plan is expected to be completed in early 2008.

DECC has also prepared a draft **Far North Coast Regional Conservation Plan** which is expected to be released for public comment later in 2007.

See pages 74–75 for information on biodiversity certification and biodiversity conservation lands.

Biodiversity management plans

DECC has been developing several biodiversity management plans (BMPs) in 2006–07, in consultation with the Aboriginal community, the broader community, expert stakeholders, and government and non-government organisations. BMPs integrate actions to conserve biodiversity in areas where these actions will have the greatest benefit, and address threats at a landscape scale where possible so a single action will benefit more than one species. The plans also include actions to mitigate the potential impacts of climate change on biodiversity.

■ CASE STUDY

Lord Howe Island Biodiversity Management Plan

Lord Howe Island is a biodiversity hotspot (see page 65 for definition of 'biodiversity hotspot') with more than 2000 native species, half of which are found nowhere else. DECC and the Lord Howe Island Board prepared a draft Lord Howe Island Biodiversity Management Plan (BMP), which was exhibited in December 2006. It is a multi-species, threat-based, landscape-level recovery plan, providing efficiency and cost-effectiveness by not having one plan for each species.

The BMP sets priorities for action to conserve and recover biodiversity across the island for the next 10 years, and will help over 330 threatened, endemic and native animals, plants and communities. The plan also meets recovery planning requirements for 30 threatened species.

Major actions include pest plant and animal control and eradication. A non-toxic dye-laced bait trial has provided valuable information on which species could be affected by a baiting program, as the dye stains the mouths and scats of animals. Pest rats and mice have a major impact on biodiversity, and through the BMP, it is planned that they will be eradicated in the next few years. The BMP also includes ongoing weed control and eradication, with the one millionth cherry guava plant removed in early 2007.

Other actions identified in the BMP are revegetation, research and monitoring, and improvements in quarantine procedures.

Photo: D. Brown, DECC

Little shearwater chicks have benefited from the elimination of feral cats from Lord Howe Island as part of the biodiversity management plan.

The BMP, which is expected to be finalised later in 2007, pioneers innovative techniques, including GIS-based biodiversity forecasting.

The BMPs contribute to investment strategies identified in the catchment action plans developed by Catchment Management Authorities (CMAs), and will be adopted as statutory recovery plans under the *Threatened Species Conservation Act 1995* and *Environment Protection and Biodiversity Conservation Act 1989* (Commonwealth).

The Northern Rivers CMA, Queensland Environment Protection Authority, South East Queensland Catchments and DECC are preparing a BMP for **Border Ranges rainforest** in NSW and south-east Queensland which is a biodiversity hotspot (see page 65 for definition of 'biodiversity hotspot'). The draft BMP is expected to be completed by September 2007.

In the **Northern Rivers** CMA area, a BMP is expected to be completed by December 2008. The development of the BMP will be the national pilot for indigenous engagement in regional threatened species recovery planning.

The Hunter–Central Rivers CMA and DECC are preparing a pilot BMP for the **Central Coast Region**, expected to be completed by June 2008. Following completion of the pilot, a similar process will be undertaken for the whole Hunter–Central Rivers CMA region.

4.2.2 Assessing and acquiring lands for conservation

Acquisition program

DECC acquires new land for reserves to build a comprehensive, adequate and representative public reserve system under the *National Parks and Wildlife Act 1974*. DECC is finalising its **Reserve Establishment Plan**, which outlines future directions for building the public reserve system, sets out long-term goals, and outlines priorities for the next decade.

Under the 2006–07 Acquisition Program, funded from Treasury capital allocations and grants from the Environmental Trust, DECC acquired the following lands:

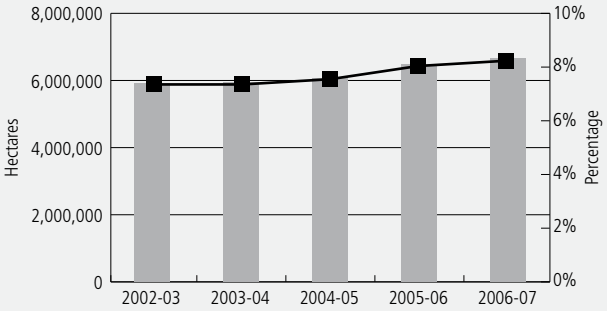
- **World Heritage park additions** – Blue Mountains and Nattai national parks additions (738 and 41 hectares respectively) were acquired to consolidate park boundaries and enhance the Blue Mountains National Park's World Heritage status.
- **Brigalow/Nandewar leases** – the *Brigalow and Nandewar Community Conservation Area Act 2005* vested 37 Crown leasehold lands in the Minister for the Environment. At 30 June 2007, four properties totalling 1825 hectares have been acquired, including land adjacent to the Pilliga West Community Conservation Area, Durridgere Community Conservation Area and Goulburn River National Park.
- **Land zoned 8(b) future national park** – land was purchased for addition to Myall Lakes and Jervis Bay national parks. The Myall Lakes purchase (4 hectares) consolidates protection of the lake foreshore. The Jervis Bay land (226 hectares) is core habitat for the endangered bristlebird, and protects heathland on the higher slopes west of the Bay.

■ PERFORMANCE INDICATOR

Area of land managed by DECC for conservation

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

Land and percentage of NSW managed by DECC for conservation



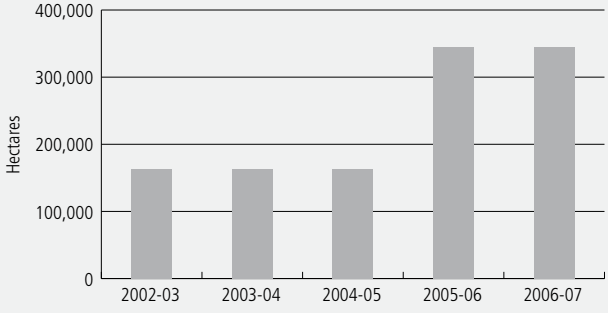
Proportion of NSW bioregions protected in the NSW reserve system

NSW IBRA Bioregion	% reserved
Australian Alps	81.8
Brigalow Belt South	8.3
Broken Hill Complex	2.0
Channel Country	9.4
Cobar Peneplain	2.4
Darling Riverine Plains	1.7
Mulga Lands	3.4
Murray–Darling Depression	5.6
Nandewar	3.6
New England Tableland	9.0
NSW North Coast	24.3
NSW South Western Slopes	1.8
Riverina	1.8
Simpson Strzelecki Dunefields	11.1
South East Corner	42.7
South Eastern Highlands	14.7
South Eastern Queensland	13.4
Sydney Basin	38.0
Total NSW landscape	**8.4**

Interpretation: During 2006–07, over 162,000 hectares of land were formally added to the reserve system. DECC now manages over six and a half million hectares of land in NSW, which represents 8.3% of the state's total area.

At 30 June 2007, approximately 345,100 hectares (34%) of NSW waters were in the marine park system, including approximately 64,900 hectares (6.5%) in sanctuary zones.

Marine parks managed by DECC



Other significant acquisitions included:

- Morton National Park (1845 hectares) – this property at Sassafras at the headwaters of the Ettrema Gorge on the plateau of Pigeon House Mountain Range was purchased by the Foundation for National Parks and Wildlife and transferred to DECC.
- Darawank National Park (54 hectares) – this is part of a continuing joint project with the Great Lakes Shire Council to improve the water quality and habitat of Frogalla Swamp and Wallis Lake by undertaking rehabilitation works to mitigate the discharge of acid sulphate pollution into the swamp. The purchase was funded by a capital allocation from the Treasury and a grant from the Environmental Trust.

Stage 1 of the **Lower Hunter Regional Conservation Plan** delivers significant additions to national parks and reserves (see the case study on page 67).

Lands reserved in 2006–07

In 2006–07, 84 areas of land comprising 154,201 hectares were added to the reserve system. Twenty-three of these areas established new reserves and 61 were additions to existing reserves.

Much of the land protects vulnerable wetland habitat including:

- Yanga National Park (31,190 hectares) and Yanga State Conservation Area (33,890 hectares)
- Kalyarr State Conservation Area (6700 hectares)
- Tuggerah Nature Reserve (132 hectares) and Tuggerah State Conservation Area (126 hectares)
- Colongra Swamp Nature Reserve (112 hectares)
- Everlasting Swamp State Conservation Area (460 hectares)
- Georges River National Park (175 hectares).

Photo: K McClelland, DECC

A 16-hectare addition to Yatteyattah Nature Reserve on the south coast will provide more protection for threatened grey-headed flying foxes.

Significant additions to existing reserves include:

- Ledknapper Nature Reserve (14,265 hectares) – this addition more than doubles the size of the existing reserve and enhances its conservation value.
- Yatteyattah Nature Reserve (16 hectares) west of Conjola Lake on the South Coast – this addition almost doubles the size of the reserve, conserves subtropical and dry rainforest and enhances protection of the maternity and roosting site of the threatened grey-headed flying-fox.
- Warrumbungle National Park (113 hectares) – this addition provides more protection for a small colony of the brush-tailed rock-wallabies that inhabit Square Top Mountain.
- Upper Nepean State Conservation Area (25,237 hectares) – this addition forms part of an important corridor of relatively continuous bushland that surrounds the greater metropolitan area of Sydney and the Cumberland Plain, and links with an almost continuous chain of conservation reserves along the southern highlands and ranges that extend to the border with Victoria.

Land disposal

In June 2007, four portions of land on the edges of Yanga, which were used for cropping, were sold at public aution. This did not affect the conservation values of the property. For more information, see DECC's non-audited financial statements on CD.

Wild rivers

Section 61 of the *National Parks and Wildlife Act 1974* (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, and some will be managed for recreation. Five wild rivers have been declared. There were no new wild river declarations in 2006–07.

In 2005–06, assessments were completed for four wild rivers – the Colo, Grose, MacDonald and Maria rivers. Reports were prepared in 2006–07 so a panel of experts can determine whether these rivers meet the biological, hydrological and geomorphological conditions required for declaration under the NPW Act. The process is still being finalised.

Wilderness

Wilderness is a large natural area of land which, with its native plant and animal communities, is in a relatively natural state, and has either not been substantially modified by human activity or can be restored. Under section 7 of the *Wilderness Act 1987,* anyone may nominate an area to be considered as wilderness. DECC can also assess an area for wilderness values independently of any proposal.

In 2006, DECC received wilderness nominations for an area centred on Myall Lakes National Park near Bulahdelah and parts of Yuraygir National Park near Grafton. DECC is completing wilderness assessments for areas near Yengo

Photo: H. Creamer, DECC

Mummel Gulf is a pristine wilderness region protected under NSW legislation administered by DECC.

and Murruin in the Blue Mountains region; Pilliga, Bebo and Mount Kaputar in the central west; and Giro and Tuggolo in north-east NSW.

In early 2007, two **new wilderness areas** covering 20,600 hectares were declared. The 11,700-hectare Mummel Gulf wilderness lies west of Wauchope and contains steep gorges and valleys, cliffs and ridges. The 8900-hectare Ettrema (northern addition) wilderness area lies south of Moss Vale, and protects the northern banks of Lake Yarrunga. This lake provides water for local communities and supplements the water supplies for Sydney and Illawarra during times of drought.

These additions bring the total area of declared wilderness to 1,907,233 hectares, which represents 29% of the total DECC estate and 2.4% of NSW.

The Government provided over $11 million between 1996 and 2006 to the **Dunphy Wilderness Fund** (DWF) to purchase land within or adjoining wilderness. In total, the DWF purchased 60 properties covering some 77,000 hectares. In 2006–07, DECC purchased 157 hectares of freehold land on the boundaries of Yengo National Park, which resolved the problem of cattle straying into the park. The DWF has now concluded.

Marine parks and aquatic reserves

The *Marine Parks Act* was introduced in 1997. The primary objects of the Act are:

- to conserve marine biological diversity and marine habitats by declaring and managing a comprehensive system of marine parks
- to maintain ecological processes in marine parks
- where consistent with the preceding objects, to provide for ecologically sustainable use of fish, including commercial and recreational fishing, and marine vegetation; and provide opportunities for public appreciation, understanding and enjoyment of marine parks.

The Marine Parks Authority comprises the Director-General of the Department of Premier and Cabinet as the Chair, the Director General of DECC and the Director-General of the Department of Primary Industries. Since 27 April 2007, DECC has managed and administered the marine parks.

Marine parks seek to conserve the full range of marine ecosystems in NSW, including drowned river valley estuaries, coastal lakes, ocean waters and islands. These ecosystems contain many habitats such as beaches, rocky reefs, sandy seafloor, mudflats and mangrove forests, which support a wide variety of species from plankton, seaweeds, bristle worms, molluscs, crustaceans, fish, sharks and rays, to dolphins, whales, turtles and seabirds.

There are six marine parks. No new marine parks were declared in 2006–07. At 30 June 2007, approximately 345,100 hectares (34%) of NSW waters were in the marine parks, including approximately 64,900 hectares (6.5%) in sanctuary zones.

An aquatic reserve is a protected area under part 7 of the *Fisheries Management Act 1994*. The administration and management of aquatic reserves was transferred from the Department of Primary Industries to DECC in April 2007. There are currently 12 aquatic reserves in NSW marine and estuarine waters protecting various habitats over 1987 hectares.

See Appendix 9 for details of all marine parks and aquatic reserves.

Karst reserves

In July 2006, responsibility for Abercrombie, Borenore and Wombeyan karst conservation reserves, and the conservation management zone of the Jenolan Karst Conservation Reserve, was transferred from the Jenolan Caves Reserve Trust to DECC. Under the *National Parks and Wildlife Amendment (Jenolan Caves Reserve) Act 2005*, DECC now manages all the state's significant karst reserves.

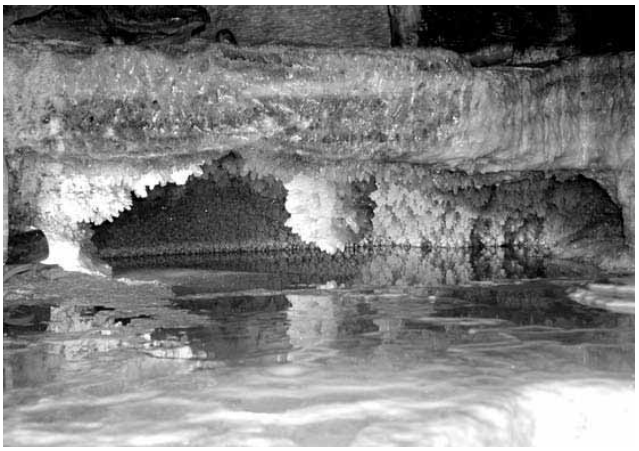


Photo: M. Lees, DECC

DECC manages the state's karst reserves, including the Yarrangobilly Caves in Kosciuszko National Park.

The transfer of the remaining area of the Jenolan Karst Conservation Reserve (the visitor use and services zone) to DECC is expected to take place following the Minister's endorsement of the management plan. See page 85 for more information.

Assessing Crown leases for conservation values

DECC has been involved in the Crown Lease Assessment Inter Department Committee which is managing the Government's offer to 10,716 perpetual leaseholders in central and eastern regions to convert to freehold. To ensure conservation values are maintained or improved, DECC undertook a desktop assessment of the perpetual leases eligible for conversion to freehold and helped to develop a transparent and equitable program to protect these values. DECC also worked on a covenanting framework and targeted conservation program to protect leases with very high conservation values. This work included:

- acquiring high conservation value leases with $13 million over four years through the NSW City and Country Environment Restoration Program
- under section 69 of the *National Parks and Wildlife Act 1974,* negotiating conservation agreements with leaseholders who have land of high conservation value.

4.2.3 Managing private and public lands for biodiversity and conservation

Protected areas on private land and public lands outside the reserve system are important for conservation, particularly when ecosystems are unrepresented or poorly represented in national parks and reserves. These other lands can also provide corridors connecting wildlife habitats to facilitate species' movement and survival, and buffers to enhance species' resilience to threats, including the potential impacts of climate change.

Conservation Partners Program

Through the Conservation Partners Program, DECC establishes voluntary conservation agreements or wildlife refuges on private and other public lands. The program also coordinates landholder involvement in conservation through non-statutory property registration schemes, which include Land for Wildlife.

In 2005, the Conservation Partners Program was reviewed and throughout 2006–07 the recommendations of this review were implemented. These included identifying priority areas for engaging landholders in conservation, reviewing the conservation agreement establishment process, auditing the delivery of the program, assisting regions with operational planning, and updating policy and guidelines.

DECC published two *Bush Matters* newsletters for more than 1500 conservation partners.

Conservation agreements and wildlife refuges

Under section 69 of the *National Parks and Wildlife Act 1974*, DECC can negotiate **conservation agreements** with landholders to protect and conserve private and other non-reserved public lands in perpetuity. The conservation agreement is registered on the land title and legally binding on current and successive landowners. In 2006–07, 18 new conservation agreements were established over 3823 hectares.

The involvement of industry continued to increase with the establishment of the Westside Mine Conservation Agreement (see case study on the next page). This agreement was one of five established in the Hunter region over an area of approximately 3096 hectares.

Four conservation agreements were established on properties in the Hawkesbury region covering approximately 178 hectares. These conservation agreements protect wetlands adjacent to the Hawkesbury River, an ecologically endangered community (shale sandstone transition forest) and habitat for threatened fauna including the powerful owl, rose robin, red-crowned toadlet and yellow-bellied glider.

Wildlife refuges protect and conserve significant wildlife and its habitats on private and public lands outside the reserve system on a long-term basis. The fact the land is a wildlife refuge is noted on the land title and is legally binding on current and successive landowners. In 2006–07, seven new wildlife refuges were established over 4111 hectares.

One wildlife refuge established during the past year covers over 3800 hectares of land east of Condobolin and includes riparian areas along Goobang Creek. The property contains 125 hectares of retained habitat for the turquoise parrot, swift parrot and glossy black cockatoo; includes Myall woodland, an ecologically endangered community; and contains reintroduced threatened fish species.

Through an Environmental Trust grant to review conservation values on properties with wildlife refuges or conservation agreements in high priority areas of NSW, DECC visited landholders and assisted 17 of them with weed and pest management and fencing.

Community conservation corridors

A major initiative which commenced during 2006–07 is to encourage private landholders to enter into conservation agreements and wildlife refuges so corridors can be developed to help wildlife move and survive the potential impacts of climate change. The first stage of the project involved identifying priority altitudinal and latitudinal wildlife corridors. In 2007–08, the project will encourage landholder involvement. This project was funded by the NSW Greenhouse Office, and links with the Alps to Atherton Initiative. This latter initiative includes a voluntary scheme which provides incentives to private landowners to enter into conservation agreements, create wildlife refuges or engage in property registration schemes to conserve biodiversity. The Alps to Atherton Initiative is described in more detail on page 21.

Conservation and Biodiversity Inventory Project

Stage 2 of the voluntary Conservation and Biodiversity Inventory Project, funded by the NSW Environmental Trust, targeted the south-west slopes. Landholders with longstanding wildlife refuges and conservation agreements are being supported with advice and assistance to update their conservation management in response to updated assessments of the conservation values of their land. DECC visited more than 50 properties in 2006–07.

Nature Conservation Trust of NSW

The Nature Conservation Trust was established by the Government to administer a revolving fund to acquire and sell lands of conservation significance so landholders interested in conservation could work with a non-government organisation. Throughout 2006–07, DECC led a statutory review of the *Nature Conservation Trust Act 2001*. This review, conducted with key stakeholders, recommended continuing the Trust. However, it found that the Trust could only continue if it were provided with secure and adequate funding. As a result, the Government announced it will provide an annual grant of $500,000 for four years to support the Trust's core operations.

Biodiversity planning

BioBanking Scheme

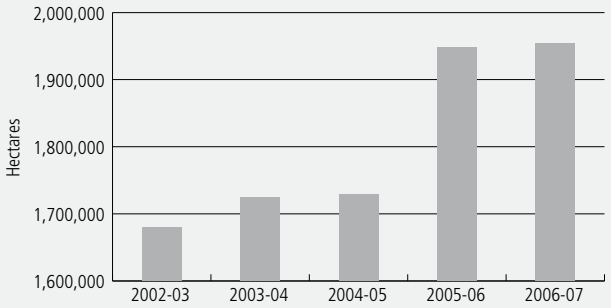
The Biodiversity Banking and Offsets Scheme (BioBanking Scheme) creates an effective process for securing, managing and trading biodiversity offsets, to provide new opportunities for conservation management on privately-owned land.

■ PERFORMANCE INDICATOR

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

Definition: This measure indicates 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 and wildlife refuges.

Hectares of private land managed for conservation outcomes



Interpretation: In 2006–07, 22 new conservation agreements were established over a total area of 3823 hectares. At 30 June 2007, there were 222 conservation agreements over a total area of 20,872 hectares being managed solely for conservation. In 2006–07, 12 new wildlife refuges were established over a total area of 2414 hectares. At 30 June 2007, there were 636 wildlife refuges over a total area of 1,933,299 hectares, about 80% of which are managed for conservation of wildlife and its habitats integrated with other compatible land uses, about 10% solely for conservation, and about 10% for property, houses and infrastructure. In total, an additional 6237 hectares was managed by landholders for conservation in 2006–07. In total there were 1,954,171 hectares of land outside the reserve system being managed by landholders for conservation at 30 June 2007, representing 2.43% of the land in NSW.

■ CASE STUDY

Westside Mine Conservation Agreement

The Westside Mine Conservation Agreement, which covers 33 hectares of land on the western side of Lake Macquarie, was signed on 28 July 2006 between the Minister for the Environment and Macquarie Coal Joint Venture.

The conservation area protects:

- subpopulations of *Tetratheca juncea*, commonly called black-eyed Susan, listed as vulnerable in the *Threatened Species Conservation Act 1995*
- the endangered ecological community swamp sclerophyll forest on coastal floodplains
- threatened species including *Melaleuca biconvexa*, *Darwinia procera* and *Eucalyptus robusta*.

The biggest challenge for management is to control access to the site, especially the swamp forest. The site has been freely accessed by walkers and driven over by motorbikes and vehicles, and rubbish has been dumped. Barriers and fences to control access will be constructed.

Photo: D. Watts, DECC

Habitat for the nationally-endangered swift parrot will be protected through the Westside Mine Conservation Agreement. Other threatened animals and birds to be protected include the Australasian bittern, large footed myotis, grey-headed flying fox and nationally-endangered regent honeyeater.

Management will also ensure weeds and pest animals do not damage the site, and monitor fire frequency and intensity to ensure that native vegetation is not lost through inappropriate fire regimes.

The legislative framework to establish the BioBanking Scheme was passed in December 2006 under Part 7A of the *Threatened Species Conservation Act 1995*. This framework enables:

- biobank sites to be established on private land through an agreement between the Minister and landowners
- biodiversity credits to be created for actions that improve biodiversity on a biobank site
- biodiversity credits to be traded once they are created and registered
- credits to be used to offset the impacts of development on biodiversity
- the Minister to create a BioBanking assessment methodology to determine the number and class of credits that can be created on a biobank site, and the number and class of credits that must be obtained to offset the impact of a development on biodiversity.

A Ministerial Reference Group of key stakeholder representatives was established early in 2007 to finalise rules for an effective assessment methodology and to agree on regulations under which the scheme would operate.

Between 2006 and 2008, DECC will field test the draft assessment methodology on 17 pilot sites across NSW to ensure it will be practical and simple to use, and can work in different situations and locations across NSW. The method and regulations will be publicly exhibited before they are adopted.

For more information, visit www.environment.nsw.gov.au/threatspec/biobankscheme.htm

NSW biodiversity strategy

The NSW Government is developing a new biodiversity strategy for NSW. A discussion paper is under development, which recommends supporting the contributions of Catchment Management Authorities (CMAs), landholders, conservation groups and industry groups to protecting biodiversity, and coordinating conservation efforts to optimise the use of resources. The paper will be available for public comment during 2007–08.

Photo: J. Stace, DECC

Assessing a proposed biobank site for its ability to regenerate.

NSW threatened species priorities action statement

The NSW threatened species priorities action statement (PAS) was developed because the NSW Government recognised the need for a new approach to replace the preparation of recovery plans for individual threatened species, populations and ecological communities, and threat abatement plans for each key threatening process. As the numbers of threatened species and threats facing them grew, the old approach became unworkable.

The PAS outlines strategies to recover each threatened species, population and ecological community, and provides actions that government and non-government organisations can undertake to help recover these species. There are also strategies to manage each key threatening process. Actions are prioritised in order of importance for conservation and can be viewed by geographic region or by species on www.threatenedspecies.environment.nsw.gov.au.

The draft PAS was publicly exhibited from May to August 2006. DECC incorporated material received from submissions into the PAS, including adding further actions and refining the quality of existing actions. DECC also identified actions it will commit to between 2007–2010, and enhanced the database to report on actions it and other stakeholders agree to implement.

As part of the data gathering process for the PAS, DECC staff analysed the status of approximately 880 threatened species in the north-east of NSW and identified over 1700 recovery actions it can undertake in that region over the next three years.

Recovery planning

Twelve **recovery plans** were approved in 2006–07, covering 15 threatened species. These species comprised moonee quassia, peach myrtle, green-leaved rose walnut, rusty rose walnut, Crystal Creek walnut, spiny gardenia, small-leaved tamarind, smooth Davidson's plum, the southern brown bandicoot, the Hastings River mouse and the large forest owls (powerful owl, sooty owl and masked owl). The recovery plans contain scientific information on the environmental condition of, and requirements for, the species, including threats facing them, management issues, and actions needed for their recovery.

In January 2007, the threat abatement plan, *Invasion of native plant communities by* Chrysanthemoides monilifera *(bitou bush and boneseed)*, was gazetted.

DECC, in consultation with the Kurri Sand Swamp Woodland Recovery Team, worked on a recovery plan for the endangered ecological community **Kurri sand swamp woodland** (KSSW). The plan contains information on the floristics, distribution and regional significance of KSSW and other significant vegetation. Vegetation was identified, classified and mapped on nearly 70,000 hectares of land. The area supports nearly 800 native plant taxa across 33 vegetation communities. Twenty-three of these taxa are considered regionally significant, and ten are listed in the *Threatened Species Conservation Act 1995* or the *Environment Protection and Biodiversity Conservation Act 1989* (Commonwealth).

DECC also commenced preparation of **state and national recovery plans** for *Eucalyptus parramattensis subsp. decadens, Acacia bynoeana, Persoonia pauciflora*, and Hunter Valley weeping Myall woodland. These recovery plans are being prepared with financial support from the Australian Government Natural Heritage Trust and under the guidance of the Hunter Valley Threatened Flora Recovery Team.

See page 68 for the draft Lord Howe Island Biodiversity Management Plan.

Biocertification of environmental planning instruments

Biodiversity certification enables local councils in areas with high development pressure to protect biodiversity, including threatened species, at the strategic planning stage. The *Threatened Species Conservation Act 1995* enables the Minister for Climate Change, Environment and Water to certify local environmental planning instruments if satisfied that they improve or maintain biodiversity.

Certification can switch off the need for threatened species assessment under the *Environmental Planning and Assessment Act 1979*, providing more certainty for local government, development applicants and other stakeholders. However, biodiversity must be maintained or improved for certification to be granted.

Biocertification may be granted for part of a local environment plan (LEP) or individual species within the LEP. Biodiversity certification lasts for up to ten years and can be extended. The Minister must consider other matters such as the social and economic context, and may revoke or suspend certification if the plan fails to adequately conserve threatened species.

DECC has worked with external stakeholders such as the Local Government and Shires Association to develop *Guidelines for the biodiversity certification of environmental planning instruments*, which were exhibited for public comment on www.environment.nsw.gov.au/ threatspec/ biocertiepis.htm during 2007. DECC will develop a public register of certified environmental planning instruments in 2007–08.

Biodiversity Conservation Lands

Biodiversity Conservation Lands is a set of biodiversity data which DECC compiled, in an approach agreed to by the Department of Planning, as part of developing regional strategies and regional conservation plans for the coastal areas from the Hawkesbury River to the Queensland border (see page 67). All existing biodiversity data was ranked as representing features of state, regional or local conservation significance, then combined into one map representing biodiversity significance across the region.

Initially, the mapping was used in regional planning strategies to identify where development should not occur, and to identify steep and floodprone land and valuable agricultural land. The mapping is now being provided to the 20 councils in the region to help them prepare new revised local environmental plans.

4.2.4 Researching and monitoring biodiversity

Research and monitoring play an important role in arresting the decline of biodiversity across NSW. Throughout 2006–07, flora and fauna surveys and monitoring programs were conducted in national parks and reserves, many with the assistance of volunteers.

Under the MER Strategy (see page 63), DECC is leading inter-agency teams that are monitoring progress towards targets identified in Priority E4 of the State Plan. These targets relate to native vegetation, native fauna, threatened species, wetlands, estuaries and coastal lakes, soils, land capability and community capacity. The Natural Resources Commission has been working with DECC to pilot the monitoring programs for the native vegetation, and estuaries and coastal lakes, themes. Report cards on these two programs are nearly complete, and will serve as a model for the other programs.

Work on the program to implement the long-term MER Strategy began in March 2007.

To support research and monitoring activities, a new **accreditation scheme** for individuals undertaking threatened species and biodiversity surveys has been proposed, to ensure that unbiased and objective information is available for use in biodiversity certification, assessments of significance and species impact statements. Public consultation on a draft scheme closed in 2006. The scheme is being reviewed in the light of the feedback and will be released later in 2007.

Wildlife surveys

In mid 2006 DECC undertook a **statewide wildlife survey** by sending questionnaires to 214,000 rural households seeking information about the distribution of koalas and nine other animal species. There was a good response with 17,000 questionnaires returned. These indicated that koalas remain widespread with some good, although patchy, populations on private lands.

Photo: E. Slater, DECC

DECC's long-term surveys build understanding of the habitat needs of threatened species such as the Hastings River mouse.

A **small mammal survey** was conducted in the Border Ranges National Park in May 2007. This long-term monitoring project commenced in 1999 following the discovery in the park of the Hastings River mouse, previously thought to be extinct. The surveys have also confirmed the presence of the threatened eastern chestnut mouse, the common dunnart and other small mammals. DECC is building a better understanding of habitat needs by monitoring vegetation and fire incidence.

DECC and the University of NSW coordinate an annual aerial survey of **wetlands and waterbirds** throughout eastern Australia, covering NSW, Queensland, Victoria and South Australia. The waterbird numbers in 2006 were the second lowest in the 24-year history of the survey, and ten species recorded their lowest numbers in 24 years. Low waterbird numbers correlate with the wetland area index, which was the lowest on record. This is associated with the current drought together with water regulation. The breeding index was the lowest on record, with breeding concentrated outside NSW. These record low numbers are consistent with those of the past several years on many significant wetlands in NSW, including the Macquarie Marshes. There are now concerns about the longevity of waterbird populations in these locations.

Threatened species were also surveyed to assess the effectiveness of DECC's fox control programs (see pages 90–91).

Vegetation surveys

An annual scotch broom weed control program was conducted in Barrington Tops National Park and State Conservation Area. DECC also monitored the impacts of biocontrols on native plant communities, to check the annihilation of the weeds was not affecting the health of native flora.

During the year, DECC mapped the location and condition of, and threats to, the endangered population of **river red gums** in the Hunter Catchment, and released a technical report in June 2007. DECC is also coordinating a project with the Hunter–Central Rivers Catchment Management Authority to protect other populations of river red gums. Incentive funding of $50,000 has been made available for landowners. In addition, DECC is working with mining companies in the Hunter Valley to conserve these gums.

Photo: M. Cufer, DECC

Surveys have revealed increasingly low numbers of waterbirds on wetlands.

Woodland research

Since 1788, woodlands in NSW have been heavily cleared and fragmented, and their fire and grazing regimes altered. These processes have resulted in the loss of large hollow-bearing eucalypts and over-dense regeneration of cypress pine, and a growing number of threatened or extinct fauna, including woodland-dependent birds.

Over the past four years, DECC has been studying woodlands in central-western NSW, with funding from Land and Water Australia, to gain more knowledge of tree and fauna populations so management decisions about woodlands can be better informed. This research has led to a partnership between DECC and Charles Sturt University, under an Australian Research Council grant for 2006–09, to develop predictive models which can compare different management approaches.

Highlights of this project to date include:

- a study of historical clearing which showed that while clearing patterns are related to annual rainfall and types of vegetation, they are mostly driven by whether there is clearing nearby
- a simulation model which predicted the density of regrowth following different thinning treatments – the projections showed that unless the existing canopy cover is carefully manipulated, trees can grow to pre-thinning densities within short periods of time
- analyses of the response of fauna species to various offset schemes to demonstrate methods for assessing development proposals
- a behaviour-based model which studied ways in which woodland structure affected animals' movement and survival
- field surveys in conjunction with the Australian Catholic University to determine ways in which landscape configuration affects bird occupancy rates in remnant woodlands and to validate existing predictive models – results show varied results for different species, for example, treecreepers are restricted to major river channels and yellow robins are found in larger and denser remnants.

Research in marine parks

Research and monitoring in NSW marine parks identifies the best places for new marine parks, the best arrangement of zones within them and the most appropriate management practices.

Research projects conducted in marine parks during 2006–07 included:

- detailed seabed habitat acoustic mapping in Solitary Islands, Port Stephens–Great Lakes and Batemans marine parks for over 300 km^2 – the mapping revealed areas of rocky reef on the continental shelf that had previously not been identified
- monitoring rocky reef species, marine pests, soft-sediment macrofauna and mud crab populations to evaluate the effectiveness of marine park zoning and management

- examining impacts of recreational activities such as visitation, fishing and scuba diving on the marine parks.

Scientific permits issued by Department of Primary Industries (DPI) for activities in aquatic reserves were assessed by DECC staff. A collaborative research program between DPI and DECC was progressed to study the range and distribution of blue groper in the Bronte–Coogee Aquatic Reserve.

Research in estuaries

DECC's research on estuaries, published in 2006–07, found that measuring water quality, particularly nutrients, was not a good indicator for assessing the ecological status of NSW coastal lagoons. Nutrient concentrations were not influenced by the amount of catchment disturbance affecting the estuaries. More reliable indicators were the amount of algae in the water and the water clarity, which were both affected by catchment disturbance. The results of this research have been incorporated into the state's Monitoring Evaluation and Reporting Strategy for estuaries.

See page 102 for more information on estuary management.

4.2.5 Managing wildlife

Wildlife management on land

DECC is responsible for protecting wildlife in NSW. DECC also manages human–wildlife interactions, undertakes wildlife licensing and regulates the sustainable use of wildlife resources.

In early 2007, DECC, Clarence Valley Council, the Wildlife Information and Rescue Service (WIRES) and the Iluka community promoted responsible pet ownership to protect threatened squirrel gliders, when cats were thought to have been responsible for the death of 16 gliders in 2006. Letters were sent to all residents encouraging cat owners to follow a few simple rules to reduce the chance of their cat killing wildlife. Free collar bells were also provided. Early results are promising with good uptake of collar bells.

■ CASE STUDY

Effects of development on estuaries

Construction activities can affect estuaries by depositing soil and sediments in the water. DECC worked on a project with Great Lakes Council, funded by the Commonwealth Coastal Catchments Initiative, to derive models for the Wallis, Smiths and Myall lakes estuaries which would predict the effects of land use change on estuarine ecological health.

A test of the models found that Coomba Bay, on the western shore of Wallis Lake, was experiencing poor ecological condition. Detailed studies in 2006–07 found that the fragile soils around Coomba Bay were eroded and deposited in the shallows, smothering an estimated 2.5 hectares of seagrass.

In addition, waves kept the sediments suspended in the water, making the water murky and reducing light for photosynthesis processes necessary for viable seagrass. Therefore, seagrass could only survive in water that was shallower than two metres in depth, rather than the expected two-and-a-half to three metres because of the reduced penetration of light to the lake floor in the deeper water. This process has caused the loss of a large area of seagrass, which is a valuable habitat for marine life.

Nutrients from the sediments also stimulated algal growth in the waters of the bay, which caused chlorophyll concentrations which were two times greater than in other parts of the lake. Chlorophyll is an indicator of nutrient pollution and can lead to the growth of pest plants like algae that develop into algal blooms. Fortunately, these concentrations are not great enough to cause impacts but they do provide a warning for the future.

Photo: D. Harasti, courtesy Department of Primary Industries

*Scientific surveys in the Great Lakes region found that impacts of construction activities were smothering seagrass (*Zostera capricorni*), a valuable habitat for marine life.*

Future use of the models will allow the Great Lakes Council to anticipate and prevent negative situations before they develop, and findings will form part of a Water Quality Improvement Plan for the Great Lakes.

Throughout 2006–07, 3435 primary school students in the north coast participated in DECC's Living with Kangaroos educational program, which taught students how to respond if threatened by eastern grey kangaroos. Other Living with Wildlife programs provided information for 1500 students on flying foxes and magpies, and ways to protect koalas.

The colony of grey-headed flying foxes at Kooloonbung Creek in Port Macquarie grew to around 60,000 in the autumn of 2007, due to the abundance of food sources on the nearby coast and coastal hinterland. Some community members were concerned about noise and smell. DECC involved the local council, residents and wildlife carers in making reliable information available about the valuable role flying-foxes play in propagating native plant species, and their need to roost where food is available.

A Dingo Management Strategy is currently being prepared that will include a risk assessment of dingo populations in high visitation areas in Myall Lakes and Booti Booti national parks. To better understand dingo behaviour, a research program is being conducted in Myall Lakes National Park, which includes scat collection and analysis, the ear tagging of all animals to monitor their behaviour, the collection of DNA and the GPS collaring of three animals to record their movements.

Translocating locally extinct wildlife

Translocation involves taking animals from other regions or captive-bred animals and reintroducing them to areas where their species once thrived. Translocation and reintroduction has been recommended in the recovery plans for 63% of Australia's threatened mammals.

In partnership with the Australian Wildlife Conservancy and the University of Sydney, in late 2006 DECC restored self-sustaining wild populations of four locally extinct mammals to NSW – the bilby (*Macrotis lagotis)*, burrowing bettong (*Bettongia lesueur)*, brush-tailed bettong (*B. penicillata)* and bridled nail-tail wallaby (*Onychogalea fraenata).* More than 500 captive-bred animals were released into the 4000-hectare Scotia Sanctuary in western NSW, one of the largest pest-free areas in mainland Australia. The sanctuary is protected by a fence to keep out feral predators, such as foxes.

DECC studied the ongoing condition, habitat use and den site selection, dispersal, movements, diet and fecundity of the animals and found that there has been a high survival rate and a good rate of breeding. Project findings will be used to develop best-practice procedures to re-establish locally extinct mammals in other areas where introduced predators have been removed.

British naturalist Sir David Attenborough commended this project as being vitally important for conservation, Australia, and the planet.

Managing whales, dolphins and seals

In its role as wildlife manager, DECC trains staff to care for marine mammals. In 2007, staff refreshed their skills in supporting and rescuing beached whales using an inflatable whale, judging distances on the water to enforce regulations for safe approach distances for whale-watching vessels, and freeing whales which become entangled in boating or fishing gear.

■ CASE STUDY

Reintroducing spotted tree frogs to the wild

DECC is celebrating the return of spotted tree frogs to Kosciuszko National Park. The last individual in NSW was rescued in 1998 after a spectacular population crash which saw the colony, which was once healthy, dwindle to a lone male named Dirk Diggler. Research since then indicates that the amphibian *chytrid* fungus, responsible for the demise of many frog species worldwide, was also the culprit in this case.

DECC and the Victorian-based Amphibian Research Centre mated Dirk Diggler with females from a nearby Victorian colony. The offspring, which were released back into the wild, have survived in numbers far exceeding expectations. Two releases of 200 one-year-old frogs have been conducted over the past two years. Monitoring has shown that as many as 40 (20%) of the frogs released in the first year have survived, exceeding the 5% of frogs that have survived previous amphibian reintroduction efforts.

More frogs will be released later in 2007. DECC will look for signs of breeding over the summer of 2007–08, as this will lead to a self-sustaining population. While *chytrid* fungus still exists on the site, a lower density population could persist and co-evolve with the pathogen.

There is much international interest in this project because the captive breeding and reintroduction of frogs is being advocated to combat the increasing rate of extinctions worldwide.

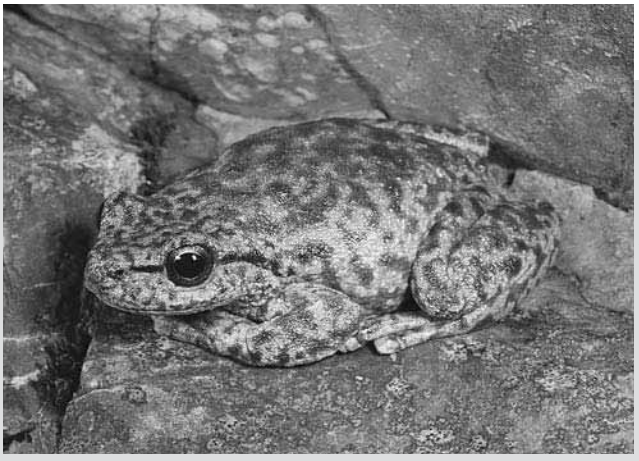


Photo: D. Hunter, DECC

International scientists are interested in DECC's reintroduction of spotted tree frogs to Kosciuszko National Park. Should the population become self-sustaining, there is hope for other threatened frogs around the world.

In 2006–07, DECC responded to a number of stranding events involving whales and dolphins, including:

- freeing a humpback calf tangled in a trap rope near Coffs Harbour
- with Seaworld, Australian Seabird Rescue, NSW Police, Southern Cross University and NSW Fisheries, guiding a dolphin that had been trapped in Prospect Lake near Ballina for at least nine days back out to the Richmond River
- returning a stranded pygmy sperm whale at Twofold Bay in Eden to the sea.

In Royal National Park, a rarely-seen Blainville's beaked whale beached itself in April 2007 near Bonnie Vale in Port Hacking. Unfortunately, the whale had to be euthanised.

In mid-2006 DECC undertook a campaign to enforce the minimum distances that vessels can approach whales. In 2006–07, DECC successfully prosecuted several individuals for approaching too close to whales.

In May 2007, the Manly Local Court fined Mr Ned O'Neil $10,000 for two offences, on two different days, of approaching within 100 metres of two adult humpback whales in a speedboat near North Head. On both occasions, the defendant drove the speedboat to within 100 metres of the whales and zigzagged across their path. Witnesses on nearby whale-watching boats took photographs and video footage of the speedboat, and reported the incidents to DECC's Environment Line.

Wildlife licensing

In 2006–07, 23,213 wildlife licences were issued across a range of categories (see table below).

Licence	2004–05	2005–06	2006–07
Interstate import	1181	1297	1480
Interstate export	854	710	887
Scientific research	750	706	1439
Reptile keepers	10,073	11,000	13,154
Amphibian keepers	604	723	812
Mammal keepers	51	58	40
Bird keepers	4647	4842	4759
Bird dealers	35	27	17
Miscellaneous	550	482	625
Total	**18,745**	**19,845**	**23,213**

In 2006–07, the number of projects covered by scientific research licences doubled due to new activities, such as bush regeneration, being licensed, and due to the growth in projects related to educational activities such as keeping protected fauna in schools. The significant growth in the number of applications for reptile keeper licences and interstate import licences continued, increasing by almost 25% over the past two years, rising from 11,189 in 2004–05 to 14,634 in 2006–07.

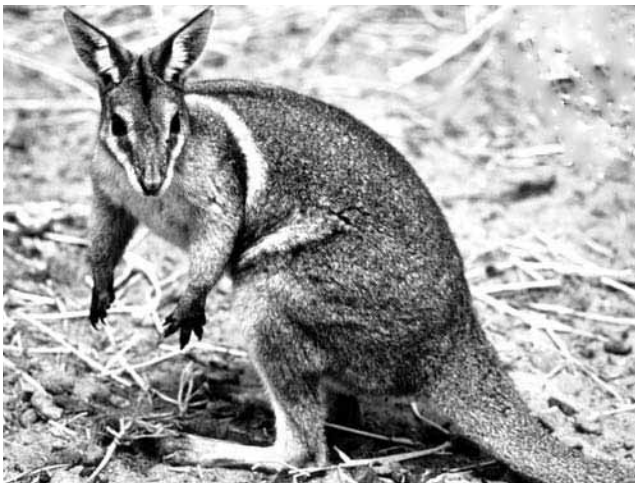


Photo: G. Robertson, DECC

Thanks to DECC, Australian Wildlife Conservancy and the University of Sydney, bridled nail-tail wallabies have been reintroduced in western NSW, and are thriving in Scotia Sanctuary.

Development of wildlife management policies and procedures continued in consultation with external stakeholders. Documents being finalised at 30 June included:

- protocols for the identification, management and communication of wildlife disease outbreaks
- guidelines on the seizure and management of reptiles from individuals who are thought to be in breach of the *National Parks and Wildlife Act 1974*.

In 2006–07, DECC participated in the roll out of the Government Licensing System (GLS), a whole-of-government initiative to simplify the management of licences in NSW. Twenty-one thousand licences comprising native animal keeper and import and export licences have been transferred onto the GLS. Scientific research licences will be transferred onto the GLS in 2007–08.

4.2.6 Conservation projects

Pest animals and weeds are among the greatest threats to biodiversity in Australia. Many pests are so widely established that eradication will not be possible. The most significant control efforts on lands DECC manages therefore take place where impacts on biodiversity are greatest. Priorities for pest management are identified in the threatened species priorities action statement (see page 74) and threat abatement plans. See pages 89–92 for more details on pest animal and weed control.

Various threatened species conservation projects have been undertaken as part of implementing the **Border Ranges multi-species recovery plan**. Projects to restore habitat on private property for endangered rainforest plants have included those for the red-fruited ebony, coast fontainea, Davidson's plum, hairy quandong and small-leaved tamarind.

Other projects included surveying Fleay's barred-frog, monitoring the habitat of the eastern bristlebird, surveying and controlling cane toads, and investigating the cultural significance of three threatened rainforest plant species in consultation with indigenous communities.

DECC commenced a project to **restore rabbit-infested rangelands** in the semi-arid woodlands of Yathong Nature Reserve near Cobar. DECC's long-term research had shown that soil disturbance by rabbits reduces levels of carbon and nitrogen, which are essential for healthy soils, and threatens the health of plants growing over rabbit warrens. The results also demonstrated that mechanical ripping of warrens helps to reduce long-term rabbit populations and prevent rabbits returning to the warrens. However, the effects of rabbits on soils and vegetation are likely to be long-lived, and restoration of the original woodland vegetation will be slow.

Arid and semi-arid environments function best when the landscape contains scattered patches of nutrient-rich soils. While foraging for invertebrates and roots, some native animals such as the greater bilby and burrowing bettong create pits and scrapings which trap water, nutrients, organic matter and seed. These pits ultimately become resource-rich hotspots in degraded environments. Ongoing research aims to determine how **reintroduced native animals** can help to restore these soils. To date, most locally-extinct animals have been reintroduced into predator-proof enclosures. DECC is giving landholders information to encourage them to protect animal populations outside formally-managed areas, benefiting the environment and ultimately enhancing animal populations.

Another DECC project involves **experimental revegetation and rehabilitation of threatened ecological communities**. The Lower Hunter supports many threatened ecological communities, some of which occur primarily only in one area, for example the Kurri sand swamp woodland and Quorrobolong scribbly gum woodland, and the Lower Hunter spotted gum ironbark. The objectives of the project are to:

- identify priority sites for rehabilitation and revegetation
- conduct experimental rehabilitation and revegetation trials
- disseminate outcomes through demonstration sites and rehabilitation guidelines.

Several sites for the trials have been identified. DECC is also considering using recycled organics to rehabilitate a large disused quarry in Werakata National Park.

Blackberry and willow control in southern catchments

In November 2006, DECC commenced work with agencies in NSW and Victoria, private landholders, CSIRO and industry to tackle massive infestations of blackberry and willow in the Genoa River, Wallagaraugh River and Mallacoota Lakes catchments over the next three years. The Genoa River Interstate Liaison Committee secured $582,000 in funding to clear 10,500 hectares of land of blackberries and 6200 hectares of land of willows. The NSW Government provided $135,000 towards the project.

■ CASE STUDY

Rehabilitation of Khancoban Creek

DECC commenced rehabilitating a former Snowy Mountains hydro electric scheme construction site on Khancoban Creek in Kosciuszko National Park. The site includes a spoil dump, former sand blasting area and former landfill. The site was greatly disturbed during the construction of Khancoban Dam and other infrastructure.

Hundreds of willow trees and blackberry bushes have been removed and 15,000 native shrubs and trees have been planted. Plants were grown by local nurseries from the locally collected seed stock of 15 local species such as cassinia, kunzea, eucalypts, acacias and leptospermum.

The project is part of a park-wide $32-million program to rehabilitate around 400 sites that were used during the construction of the Snowy Mountains hydro electric scheme almost half a century ago. All funds for the project have been provided by Snowy Hydro.

Photo: D. Hipwell, DECC

DECC is revegetating Khancoban Creek.

Controlling and removing these noxious weeds will improve water quality in rivers and rehabilitate river banks. The program will target heavily infested sites at Nungatta to protect sites further downstream in NSW's South East Forests National Park and Victoria's Coopracambra National Park. Control included chemical spraying, and biological control via the release of new leaf-rust fungus strains supplied by the CSIRO.

Aerial surveying of the blackberry infestations using GPS data was undertaken to provide strategic maps. Education and community programs are being conducted to encourage landholders to participate and to ensure that they are aware of their land management responsibilities.

4.2.7 Threatened species, parks and wildlife prosecutions

DECC can prosecute threatened species, and parks and wildlife offences under the *National Parks and Wildlife Act 1974*. Significant prosecutions are outlined below, and all prosecutions are listed in Appendix 8.

In December 2006, the NSW Land and Environment Court fined Mangerton local, **Dennis Charles Williams**, $180,000 and ordered him to pay DECC's costs, for 'picking' plants that were part of an endangered ecological community. Mr Williams pleaded guilty to arranging for trees on his land to be cut down on two separate occasions, between November 2003–June 2004 and on 28 December 2004, knowing they were protected by legislation. The trees were one of the few large remnants of the endangered southern highlands shale woodland left.

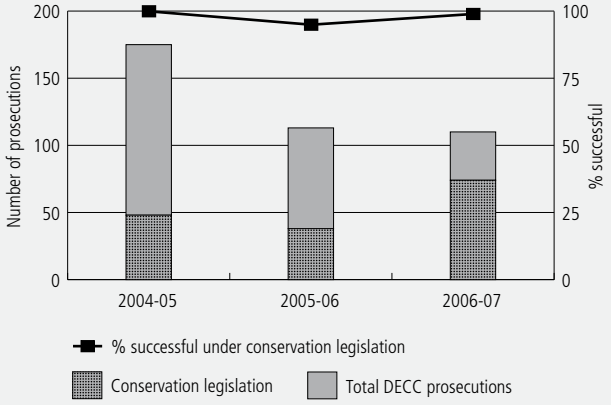
In February 2007 **Paul Douglas Williams**, a director of Serenity Cove Management Pty Ltd, was fined $330,000 by the Land and Environment court, ordered to pay costs of $85,000 and ordered to complete 400 hours of community service for removing nearly three hectares of endangered native vegetation on the former Serenity Cove site at Kurnell, in Sydney's south. In January 2004, Mr Williams contracted a Melbourne-based company to remove and mulch native vegetation from the site, which he proposed to subdivide. Over the next several days, the clearing and mulching works destroyed and damaged plants from endangered ecological communities, namely Kurnell dune forest, Sydney freshwater wetlands and Sydney coastal estuary swamp forest. Mr Williams had the plants cleared despite knowing they were endangered, and pleaded guilty to three offences of 'picking' plants that form part of the three endangered ecological communities.

■ PERFORMANCE INDICATOR

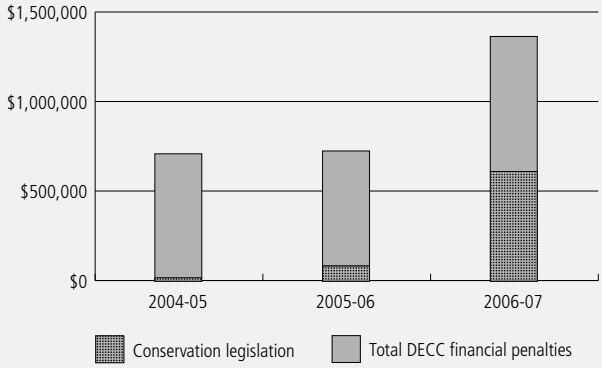
DECC prosecutions completed and prosecutions under threatened species, and parks and wildlife and Aboriginal heritage legislation

Definition: This indicator measures the number of prosecutions completed under conservation legislation (for threatened species, parks, wildlife and Aboriginal heritage), the proportion that were successful and the resulting value of fines awarded by the Land and Environment or local courts. 'Successful' refers to prosecution cases that DECC won. Offences under the *National Parks and Wildlife Act 1974* and the *Threatened Species Conservation Act 1995* cover activities that are both on and off reserves. See Appendix 8 for details on all completed DECC prosecutions.

DECC prosecutions completed under conservation legislation



Value of financial penalties



Interpretation: DECC maintained a high success rate in 2006–07, winning 99% of completed prosecutions for conserving threatened species, parks, wildlife and Aboriginal heritage. Total fines of $612,662 were imposed for these prosecutions, a seven-fold increase from fines imposed in 2005–06. In the same period the number of completed prosecutions almost doubled from 38 last year to 74 in 2006–07.

See the performance indicator on page 37 for information on other DECC prosecutions.