

Annual Report on Native Vegetation 2009



1. Overview

The forests, woodlands, grasslands and other vegetated landscapes of New South Wales (NSW) are important for a healthy environment and society. Native vegetation controls erosion, land degradation and discharge of salinity into rivers, and provides habitat for a wealth of unique flora and fauna. In addition, the vast amount of carbon stored in native vegetation makes a significant contribution to mitigating carbon dioxide emissions into the atmosphere.

The NSW Government delivers significant programs to restore degraded vegetation across the state. Over \$120 million has been provided in incentives to help restore native vegetation on private property. The regionally-based catchment management authorities (CMAs) provide land managers with advice and incentive funding to manage, conserve and protect native vegetation on their properties. Each CMA, in partnership with local governments and other agencies, works with local community groups, Aboriginal communities and industry to ensure that regional communities have a major voice in land management. The Department of Environment, Climate Change and Water NSW (DECCW) collaborates with CMAs through the provision of expert advice and support.

The NSW Government is committed to ending the broadscale clearing of native vegetation unless it improves or maintains environmental outcomes, while allowing for day-to-day farm management activities, bush fire hazard reduction and emergency management. The CMA and landholder can negotiate a Property Vegetation Plan (PVP), which involves exploring innovative solutions that may enable additional clearing if environmental impacts are avoided or offset. The CMA may also deliver incentives.

DECCW is responsible for implementing a credible compliance and enforcement framework for native vegetation to protect the environmental values of native vegetation and to ensure that landholders who comply with the law are not disadvantaged. DECCW undertakes this role through stakeholder engagement, strategic investigations, appropriate enforcement actions and targeted compliance campaigns.

DECCW is also responsible for monitoring and reporting on the status of native vegetation across the landscape, landholder actions to manage native vegetation, and compliance and enforcement actions. The *NSW Annual Report on Native Vegetation 2009* consolidates the reporting of these results. This report provides useful information for those interested in the conservation, management and restoration of native vegetation along with regulations relating to the clearing of native vegetation.

The NSW Government is committed to identifying areas of innovation in the management and regulation of native vegetation as well as ensuring that the most robust science informs decision making. In doing this, DECCW consults widely with the community and stakeholders to ensure practical outcomes. Recent examples include allowing clearing for the development of essential public infrastructure and exemptions for clearing carried out under the State Environmental Planning Policy (Housing for Seniors or People with a Disability).

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2. Summary data

This document combines three reports related to native vegetation in NSW. *The Native Vegetation Report Card* and the *Woody Vegetation Change Report* provide a comprehensive picture of native vegetation in NSW. *The Compliance and Enforcement Report Card* provides the latest information on DECCW's native vegetation compliance and enforcement activities. Together, these reports demonstrate that extensive areas of native vegetation are being actively managed and conserved, and that the commitment to bring broadscale native vegetation clearing to an end is being actively pursued.

The *Native Vegetation Report Card* demonstrates the significant achievements made in the conservation and rehabilitation of native vegetation under the *Native Vegetation Act 2003* (NV Act) in 2009.

As shown in section 3 of this report, over 456,000 hectares of native vegetation were conserved or improved across the state. In contrast, only 1,870 hectares were approved to be legally cleared where environmental values were maintained or improved through mechanisms such as the use of offsets.

The *Woody Vegetation Change Report 2008–2009* shows the annual changes in woody vegetation (i.e. woody communities with 20 per cent crown cover or more) across NSW. These changes were identified by comparisons of Landsat satellite imagery collected between September 2007 to March 2008 and September 2008 to March 2009.

The method used does not include all vegetation change because the ability to detect woody vegetation change is influenced by the 30 metre resolution of the Landsat imagery and the pattern of vegetation on the ground. These factors combine to reduce the ability to detect woody vegetation change in landscapes such as open woodlands with scattered trees, grasslands and highly modified areas. This report covers losses in woody vegetation due to clearing for agriculture, forestry and infrastructure activities. It also reports losses in woody vegetation resulting from bushfires. The report does not identify gains in woody vegetation due to planting and natural regrowth.

Section 4 of this report shows a total reduction in the area of woody vegetation in NSW of 64,200 hectares (0.08 per cent of the area of the state). These major changes occurred as a result of forestry; cropping, pasture and thinning; fire scars; and rural and major infrastructure.

The *Compliance and Enforcement Report Card* (in section 5 of this report) provides information on native vegetation compliance and enforcement activities of DECCW.

Native vegetation clearing in NSW is undertaken for a number of reasons, including agriculture, forestry and infrastructure activities. Reports to DECCW's Environment Line and information gathered by remote sensing (such as aerial photographs and satellite imagery) are analysed based on risk of harm to the environment and ongoing deliberate contravention to identify trends and patterns of clearing, as well as geographic areas or issues where compliance activities should be focussed.

In 2009, 533 reports of clearing were received by the Environment Line, all of which underwent a risk assessment to determine the appropriate regulatory response. Following assessment of the clearing reports, many were identified as lawful activities such as routine agricultural management or clearing of regrowth.

When illegal clearing is identified, DECCW selects the most appropriate regulatory response from a range of tools, such as prosecutions, penalty notices, stop work orders, remedial directions, notices to produce information, and warning and advisory letters.

During 2009, DECCW commenced 11 prosecutions under native vegetation legislation and secured eight convictions. DECCW also issued 22 penalty notices, 26 remedial directions, 28 other legal directions, and 192 formal warning and advisory letters throughout 2009.

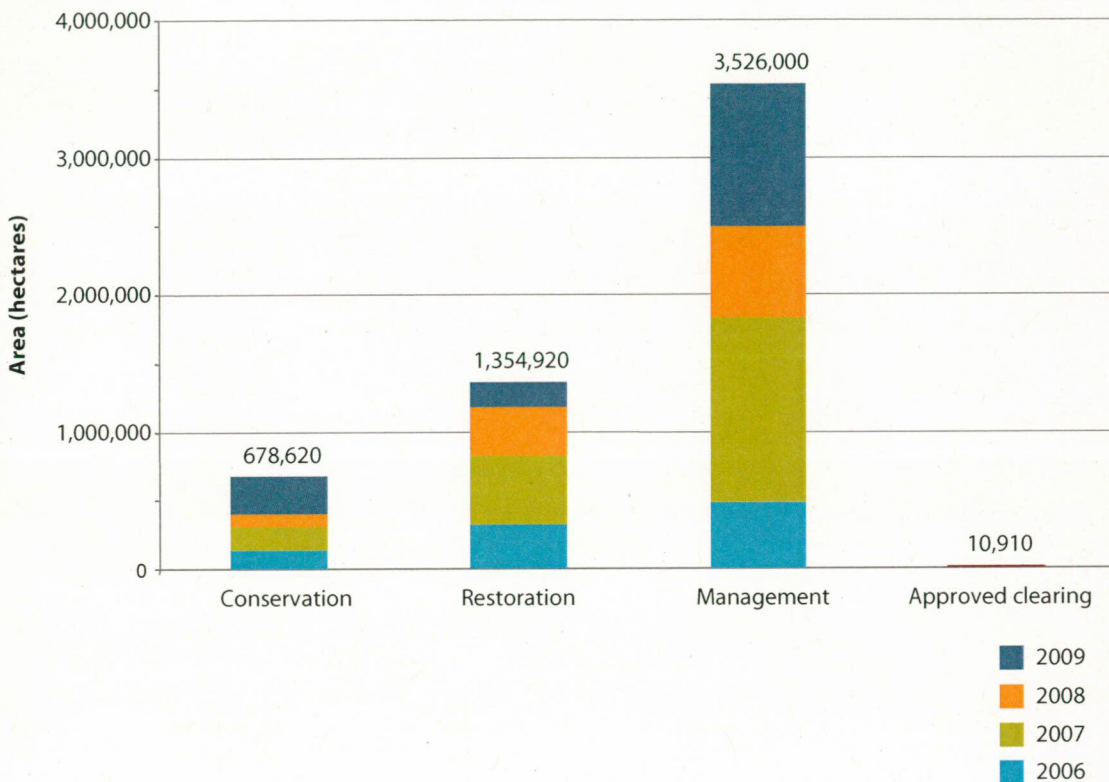
The *Compliance and Enforcement Report Card* details activity that occurred in the 2009 calendar year, but may also include responses to clearing activity that occurred in previous years.

3. Native Vegetation Report Card

The *Native Vegetation Report Card* provides the latest information on the conservation, restoration, management and approvals for clearing native vegetation. Data from the 2006, 2007 and 2008 periods are also shown for comparison (Figures 3.1 and 3.2).

The native vegetation statistics have been gathered through a collaborative effort between NSW natural resource agencies such as DECCW, CMAs, Industry & Investment (I&I NSW), the Land & Property Management Authority (LPMA) and Forests NSW.

Figure 3.1 Cumulative area of native vegetation that has been conserved, restored, managed or approved for clearing between 2006 and 2009.



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Table 3.1 Area of native vegetation that has been conserved, restored, managed or approved for clearing between 2006 and 2009.

New conservation areas	Area (hectares)			
	2006	2007	2008	2009
Public reserve system – national park estate	52,160	164,780	36,830	45,360
Public reserve system – flora reserves	0	2,730	0	0
Private conservation areas – voluntary conservation agreements	6,790	850	1,560	29,810
Private conservation areas – conservation covenants	5,110	7,390	51,650	193,190
Private conservation areas – wildlife refuges	69,880	290	200	310
Private conservation areas – PVPs in perpetuity (includes conservation PVPs and some incentive PVPs)	Not available	1,230*	2010*	6,480
Private conservation areas – BioBanking Agreements	-	-	-	0
Total	133,940	177,260*	92,250*	275,170

New restoration/revegetation of native vegetation	Area (hectares)			
	2006	2007	2008	2009
Incentive PVPs	33,790*	135,240*	83,440*	126,370
PVP offsets	3,870*	9,350*	5,000*	7,390
Native plantations	8,300	19,570	32,630	4,360
Revegetation through other incentives (non-PVP)	135,710	308,960	218,270	42,120
Retained as a condition of approval to clear – <i>Plantation & Reforestation Act 1999 & Native Vegetation Conservation Act 1997</i>	6,420	9,160	9,400	650
Wildlife refuges – habitat restored	127,980	3,940	20	40
Natural regeneration – excluding invasive native scrub	1,500	16,880	4,560	0
Total	317,570*	503,100*	353,320*	180,930

New management of native vegetation	Area (hectares)			
	2006	2007	2008	2009
Invasive native scrub PVPs	148,150*	790,370*	390,980*	544,070
Thinning to benchmark PVPs	590	510*	410	910
Public forest estate	390	-14,400	-6,530	2,570
Private native forestry on state protected land	17,140	12,580	0	0
Private native forestry PVPs	-	31,300*	124,900*	108,870
Improved rangeland management	286,730	119,870	109,080	312,750
Weed removal programs	29,210	402,900	42,550	70,100
Total	482,210*	1,343,130*	661,390*	1,039,270

New clearing of native vegetation	Area (hectares)			
	2006	2007	2008	2009
Clearing PVPs approved where environmental outcomes maintained or improved	370*	3,420*	1,613*	1,840
Clearing under <i>Native Vegetation Conservation Act 1997</i>	2,510	10	0	0
Clearing under <i>Plantation & Reforestation Act 1999</i>	250	430	410	30
Clearing under local government RAMAs	-	0	1	0
Total	3,130*	3,860*	2,050*	1,870

Note: * denotes that this figure has been modified since the previous report card (mostly due to a data cleanse within PADACS (PVPs, Agreements, Data and Customer Service)). The figures have been rounded up or down to the nearest 10 hectares. PVP = Property Vegetation Plan; RAMAs = Routine Agricultural Management Activities.

Category descriptions

All data from DECCW sources unless otherwise stated

New conservation areas

- **Public reserve system – national park estate.** New national parks, nature reserves and state conservation areas, or additions to national parks, nature reserves and state conservation areas.
- **Public reserve system – flora reserves.** Data from Forests NSW.
- **Private conservation areas – voluntary conservation agreements.** Areas of new voluntary conservation agreements under the *National Parks and Wildlife Act 1974*.
- **Private conservation areas – conservation covenants.** Areas of new conservation agreements imposed during the conversion of leasehold land to freehold land in the Central and Eastern Division and managed by the LPMA.
- **Private conservation areas – wildlife refuges – habitat retained.** Areas of new wildlife refuges under the *National Parks and Wildlife Act 1974*. These areas are managed exclusively for conservation of wildlife habitat.
- **Private conservation areas – PVPs in perpetuity.** PVPs protecting areas of native vegetation in perpetuity, including Conservation PVPs and some Incentive PVPs.
- **Private conservation areas – BioBanking agreements.** The Biodiversity Banking and Offsets Scheme (BioBanking) protects and improves biodiversity and, after landowners have sold their biodiversity credits, provides annual management payments in perpetuity.

New restoration/revegetation of native vegetation

- **Incentive PVPs.** Area of revegetation or restoration of native vegetation as set out in an incentive PVP (excluding Incentive PVPs in perpetuity).
- **PVP offsets.** Area of offsets negotiated in a PVP. Offsets are actions that a landholder agrees to in order to balance negative impacts of clearing.
- **Native plantations.** Plantable area includes plantations of native species only. Sourced from I&I NSW.
- **Revegetation through other incentives.** Revegetation activities conducted by CMAs through funding sources other than PVPs. Sourced from CMAs.
- **Retained as a condition of approval to clear – *Plantations and Reafforestation Act 1999* and *Native Vegetation Conservation Act 1997*.** Area of land retained as a condition of clearing consent, includes vegetation clearing approvals and plantation authorisations. Sourced from DECCW and I&I NSW.
- **Wildlife refuges – habitat restored.** Areas integrating conservation into other land use activities, which also provides wildlife habitat; e.g. grazing on native unimproved grasslands/rangelands/woodlands.
- **Natural regeneration – excluding invasive native species.** Sourced from CMAs.

New management of native vegetation

- **Invasive native scrub PVPs.** Area authorised under a PVP to manage invasive native scrub, the term used to describe native plant species that have spread rapidly within their natural range.
- **Thinning to benchmark PVPs.** Area of land to be cleared to improve the quality of the vegetation using thinning provisions of the Environmental Outcomes Assessment Methodology.
- **Public forest estate.** Area of new state forest, or the reduction of state forest through the conversion to national park estate. Data supplied by Forests NSW.
- **Private native forestry on state-protected land.** Areas of native forest on state-protected land approved for timber harvesting and silviculture that does not significantly degrade native forests.
- **Private native forestry PVPs.** Area under a PVP for timber harvesting and often silviculture within a native forest. Private Native Forestry (PNF) Code of Practice commenced operation in August 2007.
- **Improved rangeland management.** Improvement of native vegetation through management and incentive projects involving the control of grazing pressure by feral goats and domestic stock through fencing or controlling access to water. Sourced from CMAs.
- **Weed removal programs.** Area of land to be cleared of exotic weeds for environmental improvement. Sourced from DECCW and CMAs.

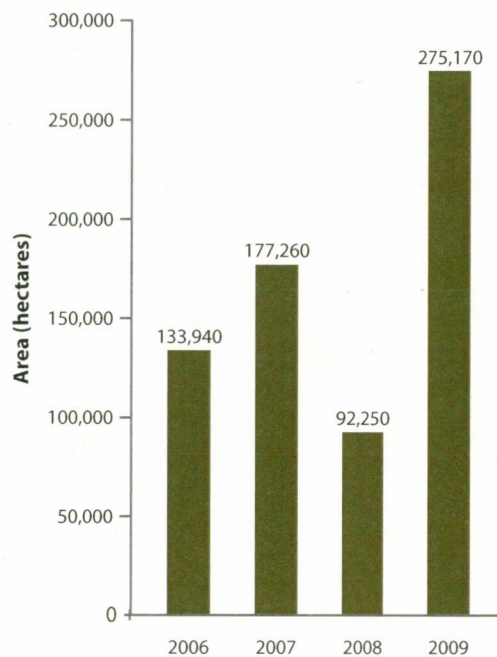
New clearing of native vegetation

- **Clearing PVPs approved where environmental outcomes maintained or improved, includes isolated paddock trees.** Area of land where clearing approved under a PVP will 'improve or maintain' environmental outcomes. The impact of clearing is measured against four environmental values: water quality, soils, salinity and biodiversity (including threatened species).
- **Clearing under *Native Vegetation Conservation Act 1997*.** Area approved for clearing under the *Native Vegetation Conservation Act 1997*.
- **Clearing under *Plantations and Reafforestation Act 1999*.** Area of land approved for clearing under the *Plantations and Reafforestation Act 1999*. Sourced from I&I NSW.
- **Clearing under local government Routine Agricultural Management Activities.** Area of land permitted for clearing under the *Native Vegetation Act 2003* for essential local government infrastructure.

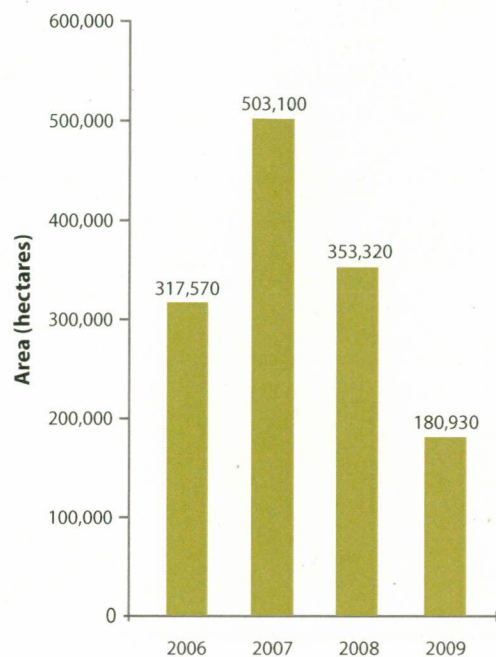
Figure 3.2 Area of native vegetation that has been conserved, restored, managed or approved for clearing between 2006 and 2009.

Note: The graphs have **different scales**. For a detailed breakdown of the figures contributing to the cumulative data, refer to Table 3.1.

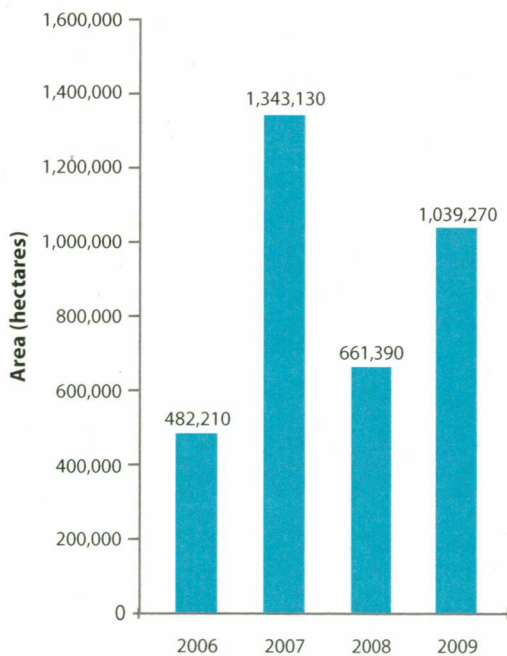
New conservation



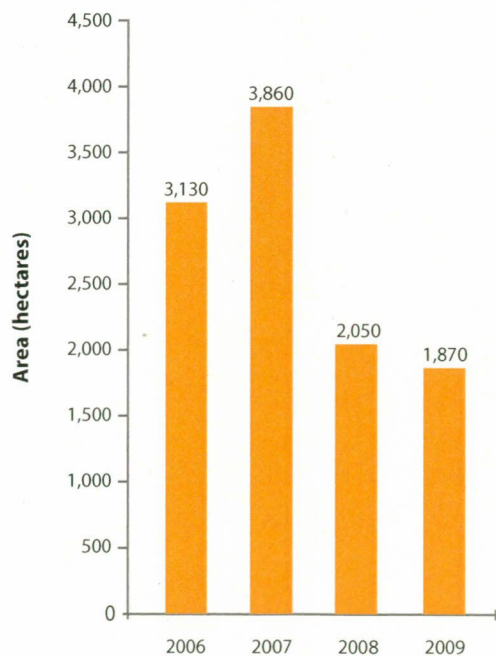
New restoration



New management



New clearing



4. Woody Vegetation Change Report

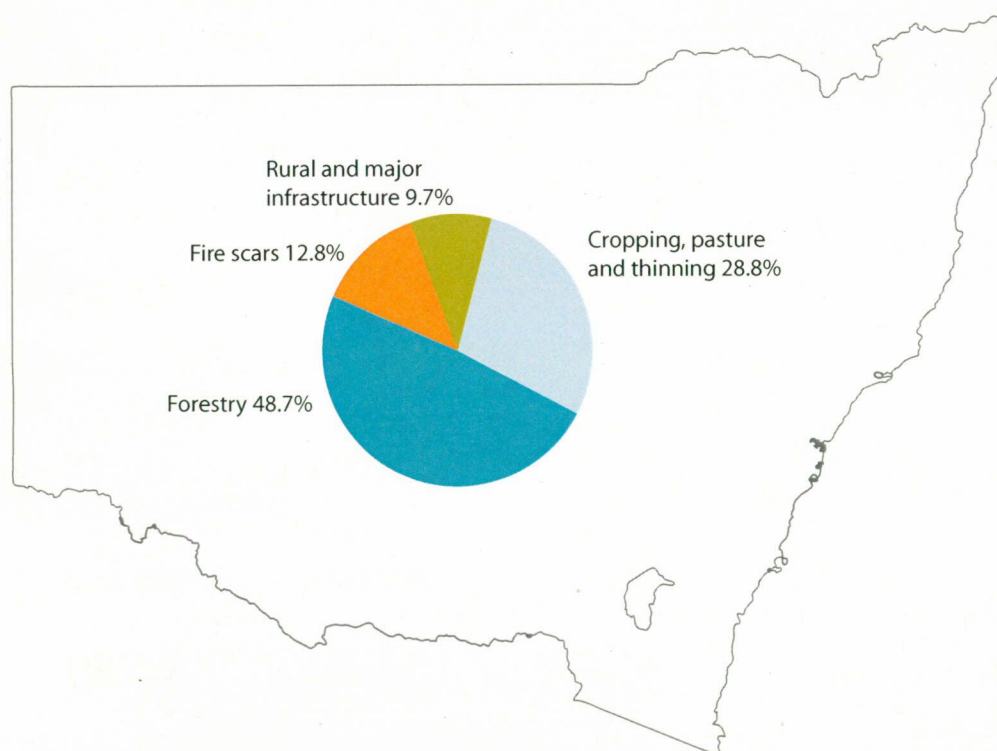
This is the fourth period of reporting on annualised change in woody vegetation in NSW since the implementation of the NV Act. A comparison of satellite imagery collected during September 2007 to March 2008 and September 2008 to March 2009 provides information on the total reduction in the area of woody vegetation in NSW. Since the release of the last report containing the 2007–2008 woody vegetation change rates, additional historical change analysis has been completed for 1988–2004. These new figures, along with the previously reported annualised woody vegetation change rates (2004–2006, 2006–2007 and 2007–2008), have been included in this report for comparison. In some cases the figures in this report differ from those previously published. The differences in the figures for total woody change are small. However, there has been some refinement in the interpretation of the type of change, for example some increases and decreases have occurred between the categories of ‘crop, pasture, thinning’ and ‘forestry’. These changes are the result of additional imagery analysis and the continuous improvement of methods.

This report covers losses in woody vegetation due to clearing for agriculture, forestry and infrastructure activities. It also reports losses in woody vegetation resulting from bushfires. The report does not identify gains in woody vegetation due to planting and natural regrowth.

Woody vegetation for the purpose of this report is defined as woody communities with 20 per cent crown cover or more (e.g. woodlands, open and closed forests), which are taller than about 2 metres. It includes native and exotic species. This definition aligns with the Montreal Protocols for woody vegetation.

The total reduction in the area of woody vegetation in NSW for the 2008–2009 report was 64,200 hectares or 0.08 per cent of the area of NSW. Figure 4.1 shows the proportion of clearing by land-use and fire categories. The measured woody vegetation change rates for all periods are shown in Table 4.1 and Figure 4.2.

Figure 4.1 Relative proportion of woody vegetation clearing by land-use category and fire detected during the September 2008 to March 2009 satellite monitoring period.



Patterns of change

Changes in woody vegetation continue to occur across NSW, with the major changes in the following categories.

Table 4.1 Rate of woody vegetation change annualised by land-use category and fire between 1988 and 2009 (hectare/year).

	1988-90	1990-92	1992-94	1994-96	1996-98	1998-00	2000-02	2002-04	2004-06	2006-07	2007-08	2008-09
Crop, pasture, thinning	30,900	21,000	15,800	21,800	21,200	13,700	20,100	27,500	16,100	17,700	16,100	18,500
Forestry	8,800	7,000	10,400	6,900	15,700	13,000	19,400	17,200	9,600	19,200	24,000	31,300
Infrastructure	2,900	2,900	2,700	2,200	5,100	3,800	4,500	3,500	1,900	3,800	4,000	6,200
Fire	1,300	6,500	4,900	6,200	7,600	19,700	33,600	102,800	3,700	202,400	4,200	8,200

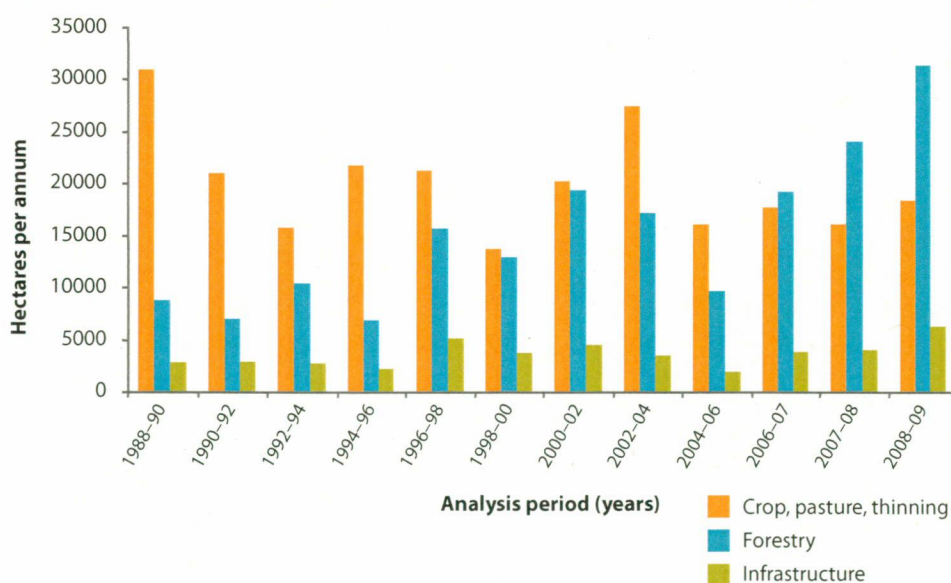
Note: The periods of analysis for the figures listed in Table 4.1 and Figure 4.2 cover a one- or two-year timeframe. The figures shown are the annualised rates to enable relative 'annual' comparisons to be made between all periods. Rates are rounded to nearest 100 hectares.

Cropping, pasture and thinning

This class includes areas where the woody canopy cover has changed as a result of clearing for cropping, pasture or thinning.

- The rate of clearing across NSW increased by 15 per cent in the 2008-2009 period compared to the 2007-2008 period, however, this rate was similar to the 2006-2007 rate. The 2008-2009 rate of clearing is 10 per cent less than the time-weighted average rate for the periods covering 1988-2008.

Figure 4.2 Annual loss of woody vegetation between 1988 and 2009 by land-use categories.



Note: The information shown in Figure 4.2 reflects the predominant land-use changes as a result of human activity. Changes due to fire have not been included in the graph because fire affected vegetation usually re-establishes quickly and the very large size of the fire scars can dominate the graph to a degree which makes it difficult to display land-use changes in a meaningful way.

Forestry

This class includes areas where the woody canopy has been removed due to forest harvesting activities. This includes private native forestry, harvesting within state forests and harvesting within plantations.

- The forestry activity continues to increase generally across the state, with the Northern Rivers Region showing the greatest increase in area compared to 2007–2008 figures.
- The rate of forestry harvesting shows a statistically significant increasing trend over the 1988–2009 period.

It should be noted that forest re-establishment usually occurs in areas subjected to forest harvesting.

Rural and major infrastructure

This class includes all activities where the woody canopy has been changed due to rural infrastructure including fence lines and firebreaks, as well as major infrastructure such as powerlines, water pipelines, highways, roads and major works. This class includes mine extensions and related mining activities.

- Major changes due to rural and major infrastructure were 56 per cent higher than the 2007–2008 period.
- The largest increases since 2007–2008 occurred in the central west and western regions.

Fire scars

This class includes areas where the woody canopy cover has changed due to fire-related effects. However, this class does not capture all historic fire scars, only those that had substantial leaf reduction at the time of image acquisition. In most cases the reduction in woody vegetation cover in areas identified as fire scars is temporary and does not result in a permanent reduction in woody vegetation cover.

- The area of burnt woody vegetation detected has increased compared to the 2007–2008 period but is less than the time-weighted average over the 1988–2008 periods. The largest areas of fire scar were in the south west of the state.

Methodology

The Woody Vegetation Change Report 2008–2009 is the result of applying satellite imagery analysis techniques to NSW data to calculate woody vegetation change across NSW. The methodology was developed over many years by the Queensland Department of Environment and Resource Management as a scientific approach to report change in woody vegetation and is known as the Statewide Landcover and Trees Study (SLATS; www.derm.qld.gov.au/slats).

The methodology used provides data on woody vegetation change in the landscape for vegetation with greater than 20 per cent canopy cover, however, it does not include all woody vegetation change. The ability to detect woody vegetation change is influenced by the 30 metre resolution of the Landsat imagery and the pattern of vegetation on the ground. These factors combine to reduce the ability to detect woody vegetation change in landscapes such as open woodlands with scattered trees, grasslands and highly modified areas.

High-resolution SPOT5 imagery was acquired for 2007–2008 and 2008–2009. This imagery was used in the validation of the Landsat 2008–2009 woody change process and is also being analysed to provide information on woody vegetation with less than 20 per cent canopy cover.

The current methodology only measures decrease in woody vegetation cover. It is recognised that there are areas where the woody vegetation cover is increasing, in particular within forestry areas. The increase in woody vegetation cover is more difficult to quantify over a short time-frame such as the 12-month annualised period covered by this report. Consequently, additional imagery has been acquired by DECCW to create a longer time-series of Landsat imagery spanning the period 1988–2008, which will be analysed to map and report in the future on areas of increasing woody vegetation cover.

5. Compliance and Enforcement Report

DECCW is responsible for implementing a credible compliance and enforcement framework for native vegetation in NSW. This role is undertaken in accordance with the Native Vegetation Compliance and Enforcement Strategy. Stakeholder engagement, strategic investigations, appropriate enforcement actions, and targeted compliance campaigns are all key components of DECCW's regulation of native vegetation.

DECCW contributes to delivering improvements in native vegetation through a range of activities aimed at promoting compliance with the NV Act. In particular, DECCW is committed to working with the community to achieve better outcomes for native vegetation while recognising the benefits of ecologically sustainable development in accordance with the legislation and state plan objectives.

Instances of potentially illegal vegetation clearing are reported by the public or identified through satellite monitoring. DECCW has implemented a risk management strategy to identify and assess the environmental and regulatory risks associated with cases of unexplained vegetation change. This strategy aims to ensure DECCW's regulatory response to each case is effective, adaptive and proportional.

DECCW has made practical and positive efforts to understand and respond to the information needs of the regulated community in regard to native vegetation legislation. This approach allows the development and implementation of targeted compliance and enforcement programs that promote the benefits of achieving sustainable outcomes in natural resource management.

Most importantly, during 2009 DECCW continued to disseminate information to the regulation community, general public, landholders and local government, through a range of education and awareness-raising campaigns.

Identifying vegetation change

The Environment Line is DECCW's main enquiries and advice line, and takes calls from business, industry and the public on a wide range of environment and natural resource related issues. In 2009, Environment Line received 533 reports related to native vegetation clearing.

Vegetation change is also identified by DECCW's annual state-wide satellite monitoring program. This compares satellite images taken over consecutive years and identifies changes in woody vegetation cover.

Additional information obtained from the latest spatial databases and digital imagery allows DECCW to further examine unexplained vegetation change and identify instances where the change may be legitimate. Examples of legitimate clearing may include clearing on land excluded from the NV Act, clearing for certain agricultural maintenance activities, clearing non-native vegetation, or whether the activity has been undertaken with the relevant consent or approval. DECCW also examines the level of risk by using a range of environmental factors including the importance of vegetation to ecological, soil and hydrological systems.

This approach enables DECCW to manage cases of unexplained vegetation change more effectively and allows for a more efficient, transparent and credible investigative process while also providing the basis for the most appropriate regulatory response.

Compliance and enforcement activities

DECCW uses a suite of tools to respond to specific instances of native vegetation clearing. These include prosecution, penalty notices, stop work orders, remedial directions, notices to provide information, and warning and advisory letters.

For 2009, almost all of DECCW's compliance and enforcement indicators increased. For example, investigations into reports of clearing led to 26 remedial directions being issued to landowners. This was a considerable increase from 2008 (see Table 5.1) and signifies the priority DECCW places on remediating land following illegal clearing.

DECCW continues to refine systems and processes to produce clear, appropriate, and enforceable orders that will deliver successful environmental outcomes.

Investigations throughout 2009 required the issue of 28 notices to produce information, as well as sending 192 formal warning and advisory letters to landholders to inform them of legislative requirements.

DECCW also served 22 penalty notices carrying fines of between \$1,100 and \$5,500. During the year, 11 prosecutions were commenced with eight convictions recorded. This included the successful prosecution of a landholder who cleared more than 450 hectares of vegetation in the Gwydir wetlands, an important waterbird breeding habitat in the north west of the state, resulting in a record \$400,000 fine.

Table 5.1 Compliance and enforcement actions

	2008	2009
Legal directions		
Stop work orders served	2	0
Remedial directions served	4	26
Notices to produce information served	51	28
Advisory and warning letters		
Numbers sent	103	192
Prosecutions *		
Commenced	10	11
Convictions	4	8
Penalty notices		
Numbers issued	8	22

* Prosecutions completed in 2009 did not all commence in 2009.

River red gum clearing results in fines for corporate landowners

Three corporate defendants, including a land-clearing contractor, pleaded guilty to clearing more than 20 hectares of river red gum forest on the banks of the Murray river, near Tocumwal, resulting in \$139,000 in fines and court fees.

The clearing was identified through DECCW's satellite monitoring program and assessed as being of high environmental risk. Investigations determined culpability of the landholders and led to the successful court action.

A remedial direction has also been served on the landowners, which sets aside 47 hectares of land, preserving the existing native vegetation and allowing vegetation in the illegally cleared area to re-establish.



Vegetation before clearing



Vegetation after clearing

Source: Includes material © CNES 2004 & 2009, Distribution SPOT Image S.A., France, all rights reserved.

Illegal clearing in the Coonamble local government area

In August 2009 a landholder was convicted and fined \$160,000 for clearing native vegetation on a property near Coonamble, in the central west of NSW.

Following a report by a member of the public, an investigation revealed that the landholder had used bulldozers to clear over 200 hectares of native vegetation.

The judge found that the clearing was done deliberately, for financial gain and that the landholder knew the clearing of native vegetation required approval but proceeded to clear without applying for consent.

Remediation of the cleared area will involve planting over 3,000 trees to re-establish vegetation connectivity over the next 15 years.

Effective stakeholder engagement

DECCW engages with a broad range of stakeholders including farmers, landowners and the wider community, to provide information on legislative requirements and responsibilities under the NV Act.

DECCW is currently undertaking social research aimed at better understanding the issues that impact farmers, and to determine the best way to address their information needs on native vegetation legislation. The results of this research will be used in future DECCW education and awareness raising programs and compliance campaigns.

Compliance and education campaigns

In 2009 DECCW delivered campaigns aimed at improving the wider community's awareness of legislative obligations under the NV Act. In particular, the focus was to provide information to those involved in land subdivision and development, and the sale of rural land.

Real estate agents, solicitors and conveyancers

The process of buying and selling property provides an opportunity to raise the awareness of new landowners to legislation protecting native vegetation in NSW.

One way to reach this audience is via professionals involved in the purchase and transfer of property. DECCW contacted real estate agents, solicitors and conveyancers and provided them with information regarding obligations and responsibilities under the NV Act, as well as details of how the community can find out more about managing and conserving native vegetation in NSW.

Property developers

Organisations and individuals clearing land for the purposes of subdivision and urban development were also provided with information regarding native vegetation legislation. DECCW also ran a series of advertisements in regional newspapers across the state reminding potential land developers to consider the NV Act before undertaking clearing.

The long-term goal of these education campaigns is for all those involved in land management to have a better understanding of the obligations and responsibilities required under the NV Act. This will ultimately be demonstrated through an increase in compliance with native vegetation legislation.

Compliance campaigns

Remedial directions are statutory notices which require a landholder to undertake specific actions to repair and/or rehabilitate illegally cleared land.

In 2009, a series of inspections of properties subject to remedial directions was undertaken in the Hunter region of NSW. The majority of landholders had undertaken the works required by the remedial directions and all remediation areas showed positive signs of rehabilitation. DECCW is now working with landholders to ensure that remediation continues and that areas of non-compliance are addressed.

A campaign also commenced in 2009 involving on-site consultation with landowners in the Hawkesbury region regarding their obligations to protect riparian vegetation mapped as state protected land.

The campaign will ultimately provide information on native vegetation management requirements to approximately 800 landowners along 50 kilometres of waterways with properties fronting the MacDonal and Hawkesbury rivers.

6. Data sources, limitations and exclusions

Native Vegetation Report Card

Data sources

All data are from DECCW sources unless otherwise stated. Forests NSW provided data on 8 July 2009 and 11 January 2010, I&I NSW provided information on plantations on 10 July 2009 and 4 January 2010, and information was collected from the public reserve system on 12 August 2009 and 2 February 2010, private conservation areas (voluntary conservation agreements and wildlife refuges) on 12 August 2009 and 4 February 2010, and PNF PVPs on 4 February 2010. The LPMA provided information on conservation covenants on 13 August 2009 and 11 January 2010. Data was taken from the *Native Vegetation Conservation Act 1997* application databases 'VegNet2' on 10 August 2009 and 16 February 2010 and the application database PADACS (PVPs, Agreements, Data and Customer Service) on 16 February 2010. CMAs provided data from 21 July to 27 August 2009 and 14 January to 10 February 2010.

Data limitations and exclusions

The statistics do not include clearing carried out under exemptions or alleged illegal clearing. The statistics only include DECCW, I&I NSW, CMA, LPMA and Forests NSW data. They do not include data from other agencies or external organisations.

Woody Vegetation Change Report

Data sources

The Landsat 5 TM and Landsat 7 EM+ imagery used in this analysis were acquired from the Australian Centre for Remote Sensing for the periods from September 2007 to March 2008 and September 2008 to March 2009.

Data limitations and exclusions

The 44 Landsat TM scenes covering NSW were analysed using the SLATS automated processing methods. Following this, woody vegetation data from the automated process was visually edited to ensure a high level of accuracy and consistency. This interpretation of the analysis of changes in vegetation was done by 11 regionally based interpreters with local expertise. During the validation stage, the majority of interpretation was cross-checked with higher resolution SPOT5 imagery acquired during the 2008–2009 period. Digital aerial photography was also used in the editing process in some parts of NSW.

Analysis and interpretation of the change in woody vegetation has enabled this output to be classified according to land use (agriculture, forestry, and infrastructure) and fire. However, the analysis does not allow a relationship to be determined between the change in vegetation extent and the conservation/approved clearing activities of CMAs and other agencies.

A small percentage (approximately 3 per cent) of the total area of NSW was not interpreted in the 2008–2009 period because of cloud cover in the 2009 imagery.

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