

Australian Government

Department of Agriculture, Fisheries and Forestry Bureau of Rural Sciences

Executive summary

Australia's State of the Forests Report

Five-yearly report 2008

Prepared by the Montreal Process Implementation Group for Australia on behalf of the Australian, state and territory governments



Executive summary

Australia's State of the Forests Report 2008 (SOFR 2008) is the third five-yearly report on Australia's forests. It presents data obtained from a wide range of sources, including the public and private sectors. Previous reports were published in 1998 and 2003.

In this report, 7 criteria and 44 indicators provide a framework and methodology for describing and evaluating progress towards forest sustainability at the national level. The criteria are:

- 1. conservation of biological diversity
- 2. maintenance of productive capacity of forest ecosystems
- 3. maintenance of ecosystem health and vitality
- 4. conservation and maintenance of soil and water resources
- 5. maintenance of forest contribution to global carbon cycles
- 6. maintenance and enhancement of long-term multiple socioeconomic benefits to meet the needs of societies
- 7. legal, institutional and economic framework for forest conservation and sustainable management.

These criteria are the same as those developed by the international-level Montreal Process Working Group on Criteria and Indicators for the Conservation and Sustainable Management of Temperate and Boreal Forests, which comprises representatives of 12 governments, including the Australian Government. The national-level Montreal Process Implementation Group for Australia, which comprises representatives of the Australian, state and territory governments, devised the 44 indicators used to track progress across these criteria. The remainder of this summary synthesises major trends for the period from 2001–02 to 2005–06.

Australia's forests



149 million hectares of forest Australia-wide

Australia's ability to estimate its forest extent continues to improve with the increasing availability of high-resolution, remotely sensed data and improvements in methods for identifying forest types. This largely explains the revision of estimated total forest area from 164 million hectares reported in 2003 to 149 million hectares reported here; little of the change is due to real forest loss. Of the new total, 147 million hectares is native forest, dominated by eucalypt (79%) and acacia (7%) forest types. There is 1.82 million hectares of softwood and hardwood plantations.



The tall eucalypts in Tasmania's Styx Valley are a significant tourist attraction.



The forest-growing and wood-processing industries are important employers in Turnut, New South Wales.



Old-growth eucalypt forest, Tasmania.

An increased representation of forests in nature conservation reserves, continued high levels of old-growth forest reservation and a significant but declining rate of native forest clearing for agriculture and urban development

Since the 2003 report, the area of Australia's native forest in formal nature conservation reserves has increased by about 1.5 million hectares to 23 million hectares, from 13% to 16%. The area of multiple-use public forests, in which wood production is an objective, declined from 11.4 million hectares in 2000–01 to 9.4 million hectares in 2005–06. Seventy per cent of the total forest estate is privately managed, including private freehold, leasehold and Indigenous-managed lands.

Of the 23 million hectares of forest assessed for old-growth values, just over five million hectares (22%) is classified as old-growth. This is 200,000 hectares less than that reported in 2003, due mainly to the impact of severe fires, with younger forests replacing some old-growth forest, and also to some remapping. Over 70% of known old-growth forests are within nature conservation reserves.

Representation in formal nature conservation reserves increased for most forest types over the reporting period, with notable increases in some types, including rainforest (from 33% to 55%) and mangroves (from 13% to 18%). There has also been an increase in the area of privately managed forest (including private freehold, leasehold and Indigenous-managed lands) managed for conservation objectives through a variety of national and jurisdictional programs, although the extent of that increase is not well documented.

The net loss of woody vegetation (mostly forest) estimated by the Australian Greenhouse Office was 260,000 hectares (0.25%) per year between 2000 and 2004, due mainly to clearing for agriculture and urban development. The longterm rate of loss of woody vegetation is declining in response to changed land management practices and increased legislative controls. Legislation is in place in all states and territories to protect native plant and animal species.

As much as one-third of Australia's native vegetation in the intensively managed agricultural and urban zones has been cleared or substantially modified over more than 200 years of European settlement. As a result, those areas exhibit a relatively high level of fragmentation. A review of fragmentation in two regions between 1972 and 2002 suggests that recent fragmentation can be dynamic, even in nature conservation reserves, with changing patch sizes and spatial arrangements of different forest types. The cessation of broadscale clearing in much of Australia and increased forest protection have been critical in reducing forest fragmentation in recent times.

Some improvement in information on forest biodiversity, but substantial gaps remain

The number of known forest-dwelling species increased from 1998 to 2006, reflecting improved information. Comprehensive ecological information is available on at least 10% of mammal, bird and amphibian species, and partial ecological information is available on around 60% of known forest-dwelling vertebrate and vascular plant species. However, very limited information is available on forest-dwelling invertebrates, fungi, algae and lichens. A total of 1,287 forest-dwelling species are listed as vulnerable, endangered or threatened under the *Environment Protection and Biodiversity Conservation Act 1999* (Cwlth). Thirty-nine species or subspecies were removed from this list during the reporting period, and 67 were added.

The number of forest-dwelling species for which data on genetic variation are available has increased since the 2003 report but is still very small. Several studies have documented genetic variation and distribution patterns within existing populations of a relatively small number of forest-dwelling species. Conservation measures focus on increasing connectivity between isolated patches of native vegetation, increasing the area of forest contained in public and private nature conservation reserves, managing threats to native species, and assisting the recovery of threatened species.



Crimson rosella (Platycercus elegans)

Genetic resource conservation plans exist for more than 40 native timber and oil-producing species, a 70% increase on the number reported in 2003. The increase includes species used in farm forestry in drier environments. Treebreeding and genetic improvement programs are expanding the scope for conserving native forest genetic resources, including of non-commercial endangered species.

Processes in place to maintain water quality and supply from forests

Over 30 million hectares of public forests (20% of the total forest area) is managed primarily for protection, including of soil and water values; most is in nature conservation reserves. In most jurisdictions, codes of practice or other instruments are applied to a wide range of activities that cause disturbances in forests, specifying measures to be taken to mitigate the contributions of such activities to soil erosion and their impacts on soil physical properties, and to maintain water quantity and quality.



Water reserve. Sign reads 'This is your drinking water. Swimming or any potential pollution activities within water reserves is strictly prohibited. Persons apprehended will be prosecuted.'

Difficulties in managing the effects of fire, drought and climate change in forested landscapes

Large areas of Australia were affected by severe drought over the reporting period, with significant regional impacts on tree health. Predicted changes in climate could have profound effects on forests, forest production and the incidence and severity of fire, pests and diseases. Several exotic organisms that pose a threat to Australian forests moved closer to Australia's shores during the reporting period, increasing the importance of effective quarantine. Fire, including some very intense fires in southern Australia, burnt an estimated 24.7 million hectares of forest in the period from 2001–02 to 2005–06. Of that total, an estimated 20 million hectares was burnt by unplanned fire (wildfire) and 4.7 million hectares by planned fire (e.g. prescribed burning).



The Australian Capital Territory's Corin Dam during the drought. A wildfire in the catchment in 2003 caused significant erosion, affecting water quality.

Major wildfires during the period led to soil erosion and affected water quality across forest tenures, increasing the challenges faced by managers of forest lands. The resulting natural regrowth is expected to reduce water yields in affected catchments for decades.

A 12% increase in the nation's plantation estate

The area of plantations increased from 1.63 million hectares to 1.82 million hectares over the reporting period. Nearly all the increase was in hardwoods (mostly for pulpwood), which grew from 503,000 hectares in 2000 to 807,000 hectares in 2006. Plantations now produce two-thirds of the country's log supply; that share is likely to grow due to the expansion of the plantation estate coupled with a long-term decline in the volume of timber harvested from native forests. The growing plantation estate is providing improved employment opportunities in some regions. Public concern has been raised about water consumption. Water use by plantations can have positive environmental effects by lowering saline watertables but can also affect water availability for other uses, such as irrigated agriculture, in some cases.



Second-rotation plantation of blue gums (Eucalyptus globulus).



Total plantation area, Australia, 2000 to 2006

An increased contribution by forests and forest industries to offsetting Australia's greenhouse gas emissions

Australia's forests sequester more greenhouse gases from the atmosphere than they emit and therefore help to offset Australia's contribution to global greenhouse gas emissions. Plantations offset about 3.5% and managed native forests about 5.5% of total national greenhouse gas emissions in 2005. Additional storage in wood products offset a further 1% of emissions. The net amount of carbon sequestered by managed native forests in 2005 was 43.5 million tonnes (carbon dioxide equivalent). Greenhouse gas emissions from deforestation, mainly for agriculture but also for urban development, declined from about 70 million tonnes carbon dioxide equivalent in 2002 to an estimated 53.3 million tonnes in 2005, which was about 9% of total national greenhouse gas emissions. The removal of carbon from native forests by timber harvesting stayed relatively constant and was compensated about three times over by sequestration. Extensive wildfires in native forests during the period released large amounts of greenhouse gases to the atmosphere. Over time, those emissions are expected to be offset by new forest growth. Several states passed legislation during the period to provide property rights for carbon sequestered in forests and other vegetation.

Sustainable levels of timber harvested in native public forests

In Tasmania, the sustainable sawlog yield from multiple-use public native forest fluctuated slightly in line with forest management strategies in the short term, but without adversely affecting long-term sawlog availability.

The volume of sawlogs harvested from multiple-use public native forests over the period from 1992–93 to 2005–06 was less than the prescribed sustainable level in New South Wales, Victoria and Western Australia.

In a number of jurisdictions, the total harvest volume declined over the period because of reductions in the area available for harvesting, increased forest restrictions, and revised downward estimates of sustainable yield. Harvesting in native multiple-use public forests is subject to substantial requirements to maintain non-wood values. The success rate in regenerating such forests after harvesting was high (above 85%) in those states for which data were available; remedial action was taken in areas where standards were not achieved.

Despite increased timber production, a continuing significant trade deficit in timber products

In the five years to 2006–07, the volume of logs harvested from native forests declined by 14% while the volume of logs harvested from plantations increased by 28%; the gross value of logs harvested from native forests and plantations both increased by 11%. Turnover of Australia's forest product industries increased in real terms by about 10% to more than \$19 billion between 2000–01 and 2005–06. The trade deficit in timber products increased from \$1.7 billion in 2001–02 to \$1.9 billion in 2006–07. Tariffs on imported forest products are set in the range from zero to 5%; goods from all least-developed countries became tariff and quotafree from 1 July 2003.

Discarded paper and timber products contribute approximately 6.5 million tonnes to the waste stream annually. Recycling rates for paper and timber products are an estimated 53% and 30%, respectively. The volume of recovered paper exported increased by 250% to nearly 1.1 million tonnes, due mainly to increased demand from China.



Domestic sawn timber supplies have increased, reducing the need for imports.

Increased attention to the services provided by forests, including establishing a national carbon emissions trading scheme

Most jurisdictions are paying increased attention to forestbased services, implementing legislative and institutional reforms and establishing programs to support financial incentives for such services. Initiatives have been launched to establish a national carbon emissions trading scheme in Australia; such a scheme is likely to have a significant effect on Australian forestry.

Involvement of Indigenous people in forest management

Indigenous-managed land includes more than 21 million hectares of forest, which is 13% of Australia's total forest area. Australia has an Indigenous Forestry Strategy. Most state and territory land management agencies have targets for Indigenous employment, helping to build capacity in Indigenous communities. Legislative arrangements in all jurisdictions aim to ensure the identification and protection of Indigenous sites and places of significance. Mechanisms are being maintained to facilitate Indigenous participation in the forest sector and to provide economic benefits to Indigenous communities. The number of Indigenous people employed in government agencies responsible for nature conservation and commercial timber production increased over the period, and there was also a greater presence of Indigenous people in natural resource management committees and other forest stakeholder forums. Indigenous Australians continue to rely heavily on the use of non-wood forest products for customary purposes (such as food and medicine) and commercial uses (such as arts and crafts). The recognition of native title through mechanisms such as Indigenous land-use agreements strengthened the potential value of forests for Indigenous people and the resilience of Indigenous communities.



Indigenous people manage about 21 million hectares of forests, using them for a wide range of customary and commercial activities.

Investments in plantations, wood product manufacturing facilities and research

Investment in plantation expansion increased from 2002 to 2006, totalling an estimated \$902 million, while investment in new or improved wood and wood product manufacturing facilities amounted to several billion dollars. Reported annual expenditure on national forest-related research and development decreased by \$17.5 million to \$198.5 million between 2000–01 and 2004–05; of this total, annual investment in manufacturing-related research increased from \$79 million to \$108 million. Investment in nationally reported research on forest growing for wood production and forest-related environmental research declined.



Export woodchip mill, Burnie, northeast Tasmania.

To improve overall collaboration and the coordination of forest research, Australian, state and territory agencies developed the following set of nationally critical research priorities: the impact of climate change on forest management; the role of forests in managing Australia's water resources; managing Australia's forests for multiple objectives; forest health and biosecurity; and forest products.

State and territory policies, such as disincentives for landclearing, incentives for improving management practices in private native forests, and carbon-credit schemes, have encouraged investment in forest conservation and the forest growing and timber processing industries. Governments have also developed market-based mechanisms and incentives to promote reforestation and improved forest management as a way of protecting catchment values, particularly in agricultural landscapes. Six environmental assets are accounted for in national and sector balance sheets, including plantation timber and standing native timber available for harvesting. The values of those two assets grew at average annual rates of 5.6% and 3.8%, respectively, over the period from 1997 to 2005.

Forests are the subject of considerable community debate in Australia. The expansion of the plantation estate and the proposed development of new wood processing infrastructure, including pulp mills, have potentially significant employment benefits but are also accompanied by community concerns about their perceived social and environmental consequences.

Strategies in place to actively manage forest areas for recreation

Forest management agencies have strategies in place to actively manage forest areas of high recreation and tourism use. Most publicly owned multiple-use and nature conservation reserve forests are available to the general public for recreation and tourism, and many facilities such as visitor recreation centres and tree-top walks were established or improved during the period. For those forests for which data were available, the number of areas, tracks and sites available for recreation and tourism activities increased or remained the same over the reporting period.

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Facilities like this boardwalk are available in many forest areas to assist ecotourism, recreation and nature education.

Regional changes in employment and improvements in safety in the wood and wood product sector

Total direct employment in wood and wood product industries increased marginally between 2001–02 and 2006–07. Total national employment in businesses dependent on growing and using timber in 2006 was estimated to be about 120,000 people. Total annual wages and salaries in the wood and wood product industries increased from \$2 billion to \$3 billion between 2000–01 and 2004–05. The rate of injuries and fatalities in wood and wood product manufacturing declined between 2000–01 and 2002–03, from 48.9 to 37.2 injuries or fatalities per 1,000 employees. Wood and non-wood forest product industries and forest contact industries (tourism, park management, etc.) generated considerable direct and indirect employment in some regional communities.

Dependence on the forestry industry as the primary source of employment declined in some regions (but not in areas of South Australia, East Gippsland and Tasmania). Populations in many forest-dependent regions were static or declining in line with a general trend in rural Australia, with the exceptions of Mount Gambier, Orbost, Oberon and Tumut, where populations increased marginally. The number of working-age people also declined in many regions.



Saw-doctoring is one of the specialist skills required by forest industries.

Strengthened regulation of forest management

The legal framework for achieving the conservation and sustainable management of forests was strengthened during the period through the continued implementation of regional forest agreements and new measures governing vegetation clearing and the allocation of water to land uses such as forestry. In most jurisdictions, codes of forest practice or other instruments underwent continuous improvement during the period and were applied to a wide range of activities that cause disturbances in forests.

Rapid expansion of third-party forest certification and auditing of forest management

The use of forest certification to demonstrate good forest management and maintain access to markets has grown rapidly to cover over nine million hectares of native forests and plantations by September 2007. Most multipleuse public forests and some private native forests are now managed in accordance with externally accredited environmental management systems, which provide a structured approach to the planning and implementation of forest management.





Improved data availability and quality for multiple-use public forests and some public nature conservation reserves, but less so for leasehold and private forests

The capacity to report trends, while still variable, has generally improved since 2003. The best information is available for multiple-use public forests and some public nature conservation reserves. The biggest data gaps remain for leasehold and private native forests. Prepared by the Montreal Process Implementation Group for Australia on behalf of the Australian, state and territory governments.

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