STATE OF THE FORESTS
TASMANIA
2012
This booklet summarises the State of the forests Tasmania 2012 report which is a detailed report to the Minister for Energy and Resources, to be laid before each house of parliament as required under section 4z of the Forest Practices Act 1985.

The State of the forests Tasmania 2012 report and booklet are produced by the Forest Practices Authority in cooperation with: the Department of Primary Industries, Parks, Water and Environment; Forestry Tasmania; the Department of Infrastructure, Energy and Resources; Private Forests Tasmania; and the Australian Government Department of Agriculture, Fisheries and Forestry.


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Tasmania’s forests are appreciated for their environmental, social and economic values.

The challenge for forest managers is to balance these values through sustainable forest management. Forest management in Tasmania aims to protect the forest for current generations to enjoy, while continuing to satisfy today’s demands for forest products and services.

Who manages the forest?

- the Department of Primary Industries, Parks, Water and Environment manages forest conservation reserves under the Nature Conservation Act 2002 and the Crown Lands Act 1976
- Forestry Tasmania manages State forest (including Forest Reserves) under the Forestry Act 1920
- the Commonwealth of Australia manages land for a range of purposes, the most notable forested area being the Buckland Military Training Area
- Hydro Tasmania manages areas of native forest around their dams and hydro-electric infrastructure
- private individuals and companies manage a wide range of native forest and plantation holdings within Tasmania for commercial and conservation purposes.

More information on forest management in Tasmania

State of the forests Tasmania 2012 report: www.fpa.tas.gov.au
Regional Forest Agreement: www.daff.gov.au/rfa
Implementation of the Regional Forest Agreement:
  www.dier.tas.gov.au/forests/tasmanian_regional_forest_agreement_rfa
State of the forests report Australia:
Tasmanian Community Forest Agreement: www.daff.gov.au/forestry/national/info
Department of Primary Industries, Parks, Water and Environment:
This *State of the forests Tasmania 2012* booklet summarises the detailed *State of the forests Tasmania 2012* report, which covers the period from July 2006 to June 2011. All information in this booklet relates to this period, unless otherwise specified. Readers are encouraged to download the full report from the Forest Practices Authority’s website for more details on Tasmanian forests.

The *State of the forests Tasmania 2012* report uses seven criteria, with 42 indicators, for assessing forest management. These are based on the Montreal Process Criteria and Indicators and were agreed on by the Tasmanian and Australian governments with stakeholder input.

The Montreal Process Criteria and Indicators were developed in 1995 by 12 countries which, together, manage 90 per cent of the world’s temperate and boreal forests. The criteria and indicators cover biodiversity, productive capacity, ecosystem health, soil and water resources, contribution to global carbon, socio-economic benefits and legal, institutional and economic frameworks.

The criteria and indicators are continually adapted to reflect new information, experience, greater capabilities and changing needs of societies. The next *State of the forests Tasmania* report will cover the period July 2011 to June 2016.

The criteria and indicators give information on trends in forest conditions and forest management, and drive the development of forest management policies.

Contributors to the *State of the forests Tasmania 2012* report:

- Forest Practices Authority
- Department of Infrastructure, Energy and Resources
- Department of Primary Industries, Parks, Water and Environment
- Forestry Tasmania
- Private Forests Tasmania
- Australian Government Department of Agriculture, Fisheries and Forestry.

More information on assessing Tasmanian forestry


Tasmania had an estimated 4,822,200 hectares of native forest in 1750, of which 64.5 per cent remained in 2006 and 63.8 per cent remained in 2011.
Half of Tasmania is forested.
WET EUCALYPT FOREST:
806 000 hectares

Dry eucalypt forests, also called dry sclerophyll forests, are typically less than 40 metres in height, with trees of different ages, because of fires that tend to occur at intervals of five to 25 years. Peppermints (e.g. Eucalyptus amygdalina, E. pulchella, E. tenuiramis) or ashes (e.g. E. obliqua, E. delegatensis, E. sieberi) are the usual dominants. Gums (e.g. E. globulus, E. viminalis, E. ovata) are often present and dominate some dry or poorly drained sites where forests grade into woodlands. The understorey is dominated by hard-leaved shrubs, sedges, grasses, herbs or bracken. Dry eucalypt forests occur most extensively in drier regions, but extend into higher rainfall areas on exposed or more fire-prone sites.

Wet eucalypt forests have a tall (> 40 metres) overstorey that is generally dominated by ashes (e.g. E. regnans, E. obliqua, E. delegatensis). The eucalypts often comprise even-aged cohorts that have regenerated following wildfire or other substantial disturbance, which removes the dense understorey and allows the light-requiring eucalypt seedlings to establish. Wet eucalypt forest is made up of two related forest types – mixed forest and wet sclerophyll forest. Rainforest species are prominent in mixed forest, while other broad-leaved shrubs and ferns dominate the understorey in wet sclerophyll forest.

Wet sclerophyll forest can develop into mixed forest in the absence of major disturbance.

Mixed forest can develop into rainforest as its eucalypts age and gradually die. Wet eucalypt forest is widespread in humid regions and also occurs in relatively moist environments in drier areas.

OTHER FOREST TYPES

Other forest types with a more restricted distribution in Tasmania include blackwood (Acacia melanoxylon) forest, paperbark (Melaleuca species) forest and tea-tree (Leptospermum species) forest, silver wattle (Acacia dealbata) forest, she-oak (Allocasuarina verticillata) forest and Oyster Bay pine (Callitris rhomboidea) forest.
SUB-ALPINE EUCALYPT FOREST: 65 000 hectares

Sub-alpine eucalypt forests occur mainly on the Central Plateau, from an altitude of about 1000 metres to the treeline. *Eucalyptus coccifera, E. gunnii* and *E. subcrenulata* usually dominate, with the trees becoming smaller and assuming a mallee form with increasing exposure to wind and ice damage. The understorey is usually diverse and may include rainforest species, soft-leaved shrubs, hard-leaved shrubs or grasses. Rock cover is often high. The vegetation is slow-growing and takes a long time to recover from fire.

RAINFOREST AND OTHER FOREST TYPES: 683 000 hectares

The structure and composition of rainforest is related to altitude, landform and soil fertility. Its dominant species can regenerate under a dense canopy and are sensitive to fire. They include myrtle (*Nothofagus cunninghamii*), sassafras (*Atherosperma moschatum*), leatherwood (*Eucryphia lucida*), celery-top pine (*Phyllocladus aspleniifolius*), Huon pine (*Lagarostrobos franklinii*), King Billy pine (*Athrotaxis selaginoides*) and deciduous beech (*Nothofagus gunnii*). Ferns, mosses, lichens and fungi are conspicuous on the forest floor, on logs and the trunks of trees. Rainforest is most extensive in Tasmania’s west and north-west, and in the north-east highlands. Elsewhere, rainforest mainly occurs as isolated stands in moist gullies that are protected from fire.

PLANTATIONS: 314 000 hectares

About 24 per cent of plantations are softwoods and about 76 per cent are hardwoods. *Pinus radiata* is the main softwood species in plantations, while *Eucalyptus globulus* and *E. nitens* are the main hardwood species. *Eucalyptus globulus*, a Tasmanian species, has good pulping and sawmilling qualities but the non-indigenous *E. nitens* is less susceptible to frosts and is more widely grown.

For other native forest types in the rainforest and other types category, see box on page 6.
Changes in the area of Tasmania’s forests are benchmarked against the area assessed in 1996 for the Regional Forest Agreement. Between 1996 and 2011:

- the total area of forest has increased by one per cent
- the native forest area has decreased by 4.2 per cent – this is within the Permanent Forest Estate Policy target of maintaining 95 per cent of the 1996 native forest area
- the area of wet eucalypt forest has decreased more than other forest types (-7.6 per cent)
- plantations have increased by 114.5 per cent
- the contribution of hardwoods to the plantation area has increased from 43 per cent to 76 per cent
- the contribution of plantations to State forest has increased from 3.4 per cent to 7.3 per cent and the contribution of plantations to forested private freehold land has increased from 11.2 per cent to 19 per cent.

The area of reserved native forest in 2011 was 1,513,000 hectares (49 per cent of Tasmania’s native forests), an increase of 48,000 hectares (3.3 per cent) since 2006 and of 535,000 hectares (55 per cent) since 1996.

<table>
<thead>
<tr>
<th>Forest type</th>
<th>Total (hectares) 2011</th>
<th>Area change since 2005 %</th>
<th>Area change since 1996 %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dry eucalypt forests</td>
<td>1,520,000</td>
<td>-1.6</td>
<td>-3.2</td>
</tr>
<tr>
<td>Wet eucalypt forests</td>
<td>806,000</td>
<td>-1.8</td>
<td>-7.6</td>
</tr>
<tr>
<td>Sub-alpine eucalypt forests</td>
<td>65,000</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Non-eucalypt forests</td>
<td>683,000</td>
<td>-0.5</td>
<td>-2.3</td>
</tr>
<tr>
<td>Native forest total</td>
<td>3,074,000</td>
<td>-1.4</td>
<td>-4.2</td>
</tr>
<tr>
<td>Plantation</td>
<td>314,000</td>
<td>+32.7</td>
<td>+114.5</td>
</tr>
<tr>
<td>TOTAL</td>
<td>3,388,000</td>
<td>+1.0</td>
<td>+1.0</td>
</tr>
</tbody>
</table>

Source: Table 1.1.a, State of the forests Tasmania 2012
Half of Tasmania’s native forest is reserved. Of these reserves, 77 per cent are formal reserves on public land, 17.5 per cent are informal reserves on public land and 5.5 per cent are private forest CAR reserves.

Forested land in Tasmania in 2011 was almost equally divided between formal conservation reserves on public and private land, other publicly managed land (including State forest and informal reserves) and private non-reserved freehold land.

**What kind of reserve?**

**Formal reserves:** publicly managed land tenures that can only be revoked with parliamentary approval.  
**Informal reserves:** land protected through administrative instruments by public authorities.  
**Private reserves:** private land managed under secure arrangements, including proclamation under legislation, contractual agreements such as management agreements and covenants, and reserves set aside under independently certified forest management systems.
The 1997 Regional Forest Agreement established the comprehensive, adequate and representative (CAR) reserve system, which includes formal, informal and private reserves. In 2011, the CAR reserve system was 1,513,000 hectares, an increase of 3.3 per cent since 2006 and 55 per cent since 1996. These reserves now include 49.2 per cent of Tasmania’s native forests.

In 2011, 97 per cent of high quality wilderness areas were protected within the CAR reserve system. This figure has changed very little since 2006 and is up from 86 per cent in 1996.

Policy agreed by the national and state governments recommends that at least 15 per cent of the pre-1750 distribution of each forest ecosystem should be reserved in the CAR reserve system.

By 2011, 37 of the 50 Tasmanian native forest communities had at least 15 per cent of their estimated pre-1750 extent reserved. This is an increase of two forest communities since 2006. These reserves included all sub-alpine eucalypt and most wet eucalypt and rainforest communities, such as the *Eucalyptus subcrenulata* forest shown below.

There are seven native forest communities, mostly from the dry eucalypt group, that have less than 7.5 per cent of their estimated pre-1750 extent reserved. Most of these communities are on private land, highlighting the continued importance of private reserve programs.
Between 2006 and 2011, there was a 73 per cent increase in the area of private forests in CAR reserves, from 48 000 to 83 000 hectares.

Although 94.5 per cent of the area of forest within CAR reserves is on public land, the 5.5 per cent, or 83 000 hectares, reserved by 2011 on private land is particularly important for the conservation of many of the rarer forest types. This is because the most significant gaps in the reserve estate are in dry eucalypt communities on private land.

The changes in the area of CAR reserves since 2006 are mainly the result of:
- increased area of voluntary conservation of forest on private land through the finalisation of the Private Forest Reserves Program and the Forest Conservation Fund
- increased reservation on Crown land following a state-wide assessment and land tenure reallocation process
- new formal reserves from the Tasmanian Community Forest Agreement signed in May 2005.
Old-growth forests have many special values. Environmentally, they provide structural diversity and a range of habitat features, such as nesting hollows and large rotting logs. Socially, many people appreciate their aesthetic values and perceive them as a window into pre-European Australia. Economically, they provide large logs of veneer and sawlog quality timbers and special species timber in demand by woodworkers.

The State of the forests Tasmania 2012 report uses the agreed national definition of old-growth as ecologically mature forest where the effects of disturbance are now negligible. In 2010, the 1996 RFA old-growth map was updated by reducing the mapped extent of old-growth stands to reflect harvesting and clearing operations.

The 2005 Tasmanian Community Forest Agreement set a target of reserving one million hectares of old-growth forest on public and private land.

- In 2010, there were 1 221 000 hectares of old-growth forest in Tasmania (a decrease of 0.7 per cent since 2006), of which 91 per cent was on public land and nine per cent was on private land.
- 982 000 hectares, or 80.4 per cent, of old-growth was in reserves in 2011, the majority of which is on public land. In 1996, 55 per cent of old-growth was reserved.
• Over the 14 years to June 2010, 25 300 hectares (two per cent) of old-growth forest was harvested. Most of this was in the wet eucalypt group of communities, which decreased by 14 500 hectares, or 5.7 per cent.

• Of the 42 forest communities that have old-growth, 32 have at least 60 per cent of their 1996 extent of old-growth reserved. With only a few exceptions, wet eucalypt, sub-alpine eucalypt or rainforest communities have high levels of old-growth reservation.

• Four forest communities, all of which are dry eucalypt, have less than 30 per cent of their extent of old-growth in reserves.

• Most of the remaining old-growth for all four of these communities is on private land. Progress is being made in protecting old-growth on private land. By 2011, 15 000 hectares had been reserved – an increase of 6000 hectares since 2006.

• Old-growth in 24 native forest communities decreased in area by more than one per cent since 2005: 15 of these are dry eucalypt forests, five are wet eucalypt forests, and four are non-eucalypt forest communities.

Old-growth *Eucalyptus sieberi* forest on granite, which is a priority for conservation on public and private land.

More information on Tasmanian old-growth forest

*State of the forests Tasmania 2012* report: www.fpa.tas.gov.au
Forest Education Foundation: www.forest-education.com/index.php/tasmania/C233/
Tasmanian Community Forest Agreement: www.daff.gov.au/forestry/national/info
Biodiversity is the name given to the variety of living things and the genes they contain.

About half (1034 species) of Tasmania’s vascular flora is found in forests. In 2011, the percentage of forest flora considered rare, vulnerable or endangered was 26 per cent and one per cent was presumed extinct.

Of the 138 forest-dwelling vertebrates in Tasmania, 20 per cent were considered rare, vulnerable or endangered in 2011.

The percentage of native forest-associated species with no information has decreased from 10 per cent to one per cent. The development of the Natural Values Atlas has made this information more accessible. There has also been an increase in the percentage of species with comprehensive information across all fauna and vascular plant taxa.

Representative species from diverse habitats are monitored to give an indication of species and ecosystem health. For example, six vertebrate fauna species are monitored, four of which show no decline in abundance. Tasmanian devils (pictured below) have been severely affected by the devil facial tumour disease (DFTD), and research is being carried out into the eastern quoll’s fluctuating population.

Tasmania has a complex legislative and policy framework that delivers a variety of mechanisms to conserve biodiversity. The mechanisms include the maintenance of a permanent native forest estate, establishment of an extensive reserve network and complementary management actions for biodiversity outside of reserves.

Many of the listed forest-dependent fauna species occur in forested habitats or in habitats subject to the provisions of the Tasmanian Forest Practices Act 1985 (and its associated regulations) and the Tasmanian Regional Forest Agreement. The habitat and known localities of threatened species are managed through legislation and agreements involving the Forest Practices Authority and the Tasmanian Department of Primary Industries, Parks, Water and Environment.
The Forest Practices Authority administers a system to ensure that threatened fauna requirements are taken into account by forest planners at both operational and landscape levels. The process relies on the accessibility of information about the species, their habitat and management requirements. A number of planning tools have been developed to deliver such information, including a management decision-support tool known as the Biodiversity Values Database. This planning tool is unique in Australia in that it takes into account all information on the management of habitat for threatened fauna and delivers agreed management recommendations to forest planners in an easy to use format. This tool was first released in 2001. A review of new information was completed in 2010 and a revised web-based version developed in 2011–12.

CASE STUDY: WEDGE-TAILED EAGLE
Tasmanian wedge-tailed eagles are a sub-species only found here. In 2005 there were an estimated 458 wedge-tailed eagle territories and 1200–1500 individuals, representing an estimated 86 per cent of the pre-settlement population.

Tasmanian wedge-tailed eagles generally nest in tall, old-growth trees in native forest. Their densities are highest in areas with a mosaic of forest, farmland, grassland, wetland and rivers. The Tasmanian wedge-tailed eagle is listed as endangered due to a low number of breeding pairs, loss and disturbance of breeding habitat and high persecution rates. It is also a priority species under the Tasmanian Regional Forest Agreement. A recovery plan is in place.

The eagles are sensitive to disturbance from, for example, forestry operations and clearing for agriculture. Measures to ensure their protection in production forests include searching for nests, as part of the forest practices planning process, implementing nest reserves and restrictions on forest operations during the July to January breeding season.

More information on Tasmanian forest species
State of the forests Tasmania 2012 report: www.fpa.tas.gov.au
Department of Primary Industries, Parks, Water and Environment:
Over 70 per cent of Tasmania has native vegetation cover and there is a high degree of connectivity across the landscape. There is a higher proportion of forest in larger patches in Tasmania than occurs nationally.

Over 47 per cent of Tasmania’s forests occur in patches larger than 50,000 hectares and over 72 per cent occurs in patches larger than 10,000 hectares.

Fragmented forest patches occur naturally, particularly in the south-west of Tasmania where forest patches occur among non-forest vegetation.

Open native grasslands in the midlands have persisted since European settlement. Afforestation of these grasslands would not necessarily have positive biodiversity outcomes.

The graph above does not include plantations.
Reserved forest covers 1 513 000 hectares, 77 per cent of which is in formal reserves on public land and 23 per cent of which is in informal reserves and private CAR reserves.

Public forests managed primarily for conservation cover 1 429 000 hectares, up from 1 417 000 hectares in 2006. Only activities compatible with conservation of the forest’s natural and cultural values are permitted in these forests. Public reserved forests include those in the Tasmanian Wilderness World Heritage Area, which covers approximately 20 per cent of Tasmania, and those in national parks, managed by the Parks and Wildlife Service in the Department of Primary Industries, Parks, Water and Environment. Most of the 264 000 hectares of informal reserves on public land are managed by Forestry Tasmania within State forest.

Private reserved forest covered 83 000 hectares in 2011, up from 48 000 in 2006. Progress is being made in extending private reserves because of the recognition that most of the least reserved forest communities are found primarily on private land.

In June 2011, 97 per cent of high quality wilderness areas were protected within the CAR reserve system.

The Tasmanian and Australian governments determine which areas of forest on public land should be managed primarily for conservation in national parks and nature reserves and which areas should be managed for multiple uses, including wood production.

More information on managing Tasmania’s conservation forests
State of the forests Tasmania 2012 report: www.fpa.tas.gov.au
Department of Primary Industries, Parks, Water and Environment:
Tasmanian Community Forest Agreement: www.daff.gov.au/forestry/national/info
Forestry Tasmania manages the 1.5 million hectares of State forest. Of this, only about one-third (563,000 hectares) of native forest is potentially available for timber production, a drop of seven per cent since 2006 and 30 per cent since 1996. This drop is predominantly the result of reclassification of State forest as both formal and informal reserves and increased Forest Practices Code restrictions.

Private forests cover 1,061,000 hectares, 856,000 hectares of which is native forest and 205,000 hectares of which is plantation. Forest ownership ranges from small landholders to large corporations. The Forest Practices Code also applies to private forests and so a proportion of this area is excluded from harvesting, as well as the 83,000 ha of private reserved forest.

Around two-thirds of State forest is not available for timber production because it is reserved or activities are restricted by the Forest Practices Code.

State forests are zoned and managed for multiple uses.
THE FOREST PRACTICES CODE

The Forest Practices Code provides a set of guidelines and standards to ensure protection of natural and cultural values of the forest. The guidelines and standards in the code cover:

- planning
- accessing the forest (roads, bridges, quarries)
- harvesting timber
- conservation of natural and cultural values (soil and water, geomorphology, visual landscape, flora, fauna and cultural heritage)
- establishing and maintaining forests.

The code was developed after extensive consultation and is reviewed periodically, incorporating suggestions from scientists, government, the forestry industry and the public. The code is legally enforceable under the Forest Practices Act 1985 for both public and private forests.
The Forest Practices Authority (FPA) is an independent Tasmanian Government regulatory authority. The FPA is responsible for ensuring that forest practices on both state and private land maintain natural and cultural values of the forest. The forest practices system is based on a co-regulatory approach, involving self-management by the industry, with monitoring and enforcement by the FPA.

The FPA trains and delegates authority to Forest Practices Officers. There were 234 Forest Practices Officers in 2011. Forest Practices Officers are engaged by forest landowners or managers to prepare forest practices plans, which apply the Forest Practices Code and are required for forest practices on both public and private land.

The FPA provides specialist advice on preparing forest practices plans, which must be certified by a Forest Practices Officer before being implemented.

Forest Practices Officers also supervise and monitor the implementation of the forest practices plans and lodge a certificate of compliance with the FPA that details the way in which the operation has complied with the forest practices plan. There has been a substantial increase in these reports being lodged, from 42% in 2006–07 to 93% in 2010–11. This improvement is due to enforcement by the FPA and increased support by Forest Practices Officers and forest managers. The few outstanding reports are completed following issuing of notices under the Forest Practices Act 1985. On average, 97 per cent of operations did not require corrective action between 2006 and 2011.

The FPA assesses and monitors forest practices to ensure that forest operations on both state and private land must comply with the forest practices system.
standards are being met. Possible breaches of the *Forest Practices Code* are also reported by Forest Practices Officers or forest industry supervisors, local government and members of the public. The FPA investigates all complaints relating to alleged breaches or poor practice. Corrective action is taken where required and penalties are imposed for serious breaches. The assessments for the years 2008–2011 reveal an average of 90 per cent of forest planning and operational practices across all tenures meeting or exceeding standards.

Formal legal investigations, which may involve consultation with the Police, are undertaken into all serious breaches. Penalties for breaches include financial penalties, suspensions and legal action.

Most breaches are attributable to human error or lack of knowledge about the forest practices system, particularly in the agricultural sector with regards to forest clearing. This highlights the importance of continuing education about the system.

Most breaches of the *Forest Practices Code* are dealt with by corrective action, and by reviewing and improving systems to ensure that similar situations do not recur.
CERTIFICATION OF FOREST MANAGEMENT

Certification systems are voluntary schemes which provide assurance to the public that certified organisations have met the required standards of management.

Most of Tasmania’s commercial forest managers are able to demonstrate their sustainable management credentials through independent certification under national and international standards such as the International Standards for Environment Management Systems (ISO 14001) and the Australian Forestry Standard (AFS).

The area under Australian Forestry Standard certification was 1 864 266 hectares in 2011, an increase of eight per cent since 2006. Two companies and one private landowner have gained Forest Stewardship Council certification since 2006 for a total of 33 481 hectares.

All of these certification schemes are subject to external assessment and all organisations have maintained their certification.

LEGISLATION AND POLICY CHANGES

During the five years to June 2011, the principal changes to the legislative and policy framework supporting forest management have been:

- A review of the regulations under the National Parks and Reserves Management Act 2002 and proclamation of updated regulations (National Parks and Reserved Land Regulations 2009). New provisions in the regulations include the ability to designate areas for particular recreational activities and provisions for fire risk and wildfire responses.

- Amendments to the Forest Practices Act 1985 to exempt the requirement for a forest practices plan for clearing associated with electricity and rail infrastructure, dam construction, mining and subdivisions, subject to these activities being assessed and where appropriate approved through alternative regulatory processes.

The Parks and Wildlife Service has developed an environment management system, the Reserve Activity Assessment (RAA) system, to meet the requirements of the Tasmanian Reserve Management Code of Practice. A process audit of the system in 2008–09 sampled 16 of the 56 RAAs and rated compliance at 82 per cent.
The harvest of native forest for both sawlog and pulpwood decreased between 2006 and 2011.

There is a legislative requirement for Forestry Tasmania to make available from State forests a minimum of 300,000 cubic metres of high quality eucalypt sawlogs and veneer logs each year. On public land, the cut of all native forest wood has decreased since 2006, mainly due to lower market demand. As a result, the total cut of eucalypt sawlogs was below the legislated sustainable volume.

There is no annual sustainable harvest set for wood products from private native forest, because of the diverse ownership of these forests. However, private native forest management must comply with the forest practices system which sets standards for sustainable forest management.

Native forest pulpwood is primarily harvested as a by-product of harvesting higher value forest products at a sustainable level. The volume of native forest pulpwood harvested from both public and private forests decreased between 2006 and 2011 by 32 per cent, from 3.4 million tonnes to 2.3 million tonnes.

Special species timber harvest, chiefly for blackwood, celery-top pine, myrtle, Huon pine and sassafras, has averaged 18,000 cubic metres each year from State forest since 1996, slightly less than the targeted annual supply of 18,500 cubic metres. Special species timber (other than Huon pine) is obtained from selective harvesting of Special Timber Management Units, harvesting blackwood swamps and salvaging logs from understorey species in eucalypt forest coupes.

Huon pine timber is sourced from previous harvesting events and stockpiles from harvesting prior to hydro dam construction.
PLANTATIONS

Softwood plantations on public and private land produced 531,000 cubic metres of sawlogs and veneer logs in 2010–11, down from 555,000 in 2005–06. Most of this came from public plantations. Hardwood plantations on State forest produced around 8,000 cubic metres of sawlogs annually from 2006 to 2009 and then none from 2009 to 2011. Sawlog production from private hardwood plantations declined from 12,000 cubic metres in 2006–07 to 5,000 cubic metres in 2010–11.

Pulpwood from public and private plantations of hardwood and softwood increased between 2006 and 2011, except for hardwood plantations on private land which decreased.

The net area of hardwood plantations in 2010 was 233,200 hectares, an increase of 47 per cent since 2006. Softwood plantations increased by six per cent to a net area of 75,600 hectares from 2006 to 2010.

Annual removal of wood from plantations on public and private land 1996–2011 (x1000)

Source: Table 2.1.c.1, *State of the forests Tasmania 2012* and Table 2.1.d *State of the Forests Report 2002*
Between 2006 and 2011, most of the area planned for clearfelling followed by regeneration to native forest by seeding was on State forest, whereas most of the area planned for clearfelling followed by plantation establishment was on private land. Harvesting of native forest for conversion to plantation on State forest ceased on 1 June 2007.

Regeneration and restocking rates are assessed as part of the certificate of compliance submitted to the Forest Practices Authority. The Forest Practices Authority may require further work to ensure that stocking rates comply with the standards set by the Forest Practices Code. An average of 93 per cent of native forest regenerated between 2006 and 2011 was reported as meeting the stocking standards.

The Forest Practices Code requires that native seed should be sourced from the site being reforested as native forest from specified seed zones.
There has been a 20 per cent reduction in the volume of wood produced between 2006 and 2011. However, there was nearly a 40 per cent variation between the largest and smallest volume produced in the period.

The only categories of wood production to increase over the period were softwood plantation pulp and hardwood native forest sawlogs, veneer and peeler logs. Veneer and peeler log production increased due to the demand of the two new rotary veneer mills, one in the north of the state and one in the south, which are operated by Ta Ann. Hardwood plantation sawlog production remained at very low levels.

The Australian Bureau of Statistics (ABS) changed the collection of information on forestry during the period, combining it with fisheries and agriculture to produce national statistics of little value to this report.

The final few years of these statistics showed that manufacturing based on the forest industry was continuing to contribute significantly to the economy.

However, in the period 2009 to 2011, the pulp and paper sector contracted significantly with closure of the Burnie and Wesley Vale mills, with only Norske Skog at Boyer continuing to operate. Likewise a wind-down of Gunns’ native forest operations and a significant realignment of softwood manufacturing from Scottsdale to Bell Bay has changed the nature of the industry from earlier in the decade.

![Value of Tasmanian wood and paper product manufacturing industry subdivision (ANZSIC code 23) 2000–07*](Image)

Source: Table 6.1.a.3, *State of the forests Tasmania 2012*

WOOD PRODUCTS EXPORTED FROM TASMANIA AND IMPORTED INTO TASMANIA

Only exports that leave directly from Tasmanian ports are recorded by the Australian Bureau of Statistics as being exported from Tasmania. Forest products that are exported via mainland ports as part of larger orders or following secondary processing are not recorded as Tasmanian in origin. Woodchips accounted for the highest export income, despite an almost 40 per cent decline since 2006 to $227.7 million in 2011. The second most valuable product exported was veneer, which increased in value by 228 per cent to $46 million between 2006 and 2011, due to the two new veneer mills. Exports of paper declined by 94 per cent in 2010–11 when the Wesley Vale paper mill closed.

Imports to Tasmania are only recorded for those entering Australia through Tasmania. The volume and value of wood and wood products imported directly into Tasmania is small in comparison to that exported.

RECYCLING

In 2009, 92.7 per cent of Tasmanian households were recycling paper and cardboard, resulting in around 75 per cent of newsprint being recycled.

There is increased evidence of recycling by the community due to greater access to recycling services.

GLOBAL CARBON CYCLES

Forests are large pools of natural carbon; estimates of their biomass are a measure of their contribution to global carbon cycles. The total estimated native forest biomass in 2006 was 1157 million tonnes, dropping slightly to 1124 million tonnes in 2010. This difference is not statistically significant.

Veneer has become the second most valuable export during the period, after woodchips.
Employment is an important measure of the contribution of forests in meeting community needs. The Australian Bureau of Statistics (ABS) does not publish information on forest industry employment.

The CRC for Forestry conducted four forestry employment surveys during the period, which estimated that by 2011, 3410 direct forestry jobs were lost from a high of 6910 in 2008.

Research indicates a multiplier of 1.8 to 2.3 should be applied in order to estimate indirect employment. If a multiplier of 2.0 is used, every job and dollar created by the forest sector would mean another job and dollar generated in indirect employment.

Wages for a representative range of positions in the forest sector rose between 12 and 30 per cent between 2006 and 2011, compared to an increase in the average Tasmanian wage of 30 per cent and an increase in the average national wage of 36 per cent.

Direct employment in reserved forest management includes 278 full-time equivalent Parks and Wildlife Service staff as well as those employed in the 190 businesses operating in reserves, an increase from 130 businesses in 2006.

Indirect employment includes staff of the many tourism businesses that rely on reserved forests to attract their clients as well as people working for suppliers of goods and services. Much of this employment is in rural and regional areas. A 2008 study estimated that Tasmania’s world heritage areas contributed 5372 direct and indirect jobs.

Around 70 per cent of all honey production is sourced from leatherwood forest. The most recent data on employment in the apiary industry is from 2004, when 153 people were employed – 60 of them full-time.

Surveys by the CRC for Forestry estimated job losses between 2008 and 2011 of 47 per cent in native forestry, 60 per cent in hardwood plantations and 42 per cent in softwood plantations.
Injury frequency rates have increased in the forestry and logging sector. This increase may be more a factor of a decrease in hours worked rather than an increase in the number of accidents. The injury frequency rates in the forest product processing sectors have remained fairly constant but then trended up towards the end of the period.

Fatalities in the forestry and logging sector decreased between 2006 and 2011, with four fatalities over the period. There was one fatality in the sawmilling and dressing sector in 2006–07 which was the only fatality in the processing sector in the last 15 years.

More information on managing Tasmania’s production forests

*State of the forests Tasmania 2012* report: www.fpa.tas.gov.au
Forestry Tasmania: www.forestrytas.com.au
Private Forests Tasmania: www.privateforests.tas.gov.au
Regional Forest Agreement: www.daff.gov.au/rfa
Tasmanian Community Forest Agreement: www.daff.gov.au/forestry/national/info
Forest Education Foundation: www.forest-education.com/
Non-wood forest products in Tasmania include treeferns, honey, tree seeds, game, water and minerals.

Treefern (*Dicksonia antarctica*) harvesting (pictured right) is regulated by the Forest Practices Authority. Harvesting of treeferns can only occur under a forest practices plan. Tags issued by the FPA must remain on the treeferns’ stems until bought by the customer.

Less than 0.04 per cent of the estimated number of treeferns in Tasmania is harvested annually. The annual harvest decreased by 75 per cent over the period due to the downturn in the European market.

Most honey producers use State forest as a resource; however 20 per cent of sites are in the Tasmanian Wilderness World Heritage Area. The industry was stable or slightly expanded over the period.

Forestry Tasmania harvested an average of 5018 kg of seed each year over the period, an increase of 46 per cent on the annual average for the previous period. Seed is collected for regenerating native forest, for commercially important species for plantations and, to a lesser extent, environmental plantings.

The number of wallabies processed for game meat increased slightly over the period, while the number of possums decreased. There is no information on whether these animals were taken from forested areas.

More information on non-wood forest products

*State of the forests Tasmania 2012* report: www.fpa.tas.gov.au
Forestry Tasmania: www.forestrytas.com.au
Regional Forest Agreement: www.daff.gov.au/rfa
Tasmanian Beekeeping Association: tasmanianbeekeepers.org.au/
**RECREATION AND TOURISM**

Recreation and tourism is specified as a management objective in 99 per cent of the forested land reserved under the *Nature Conservation Act 2002*. All State forests are available for recreation, although public access can be restricted for safety reasons, usually only on a short-term basis.

Reserved forests continue to be popular for a wide range of recreational activities including scenic driving, picnicking, day & overnight walking, camping, horse-riding and recreational driving. There are designated areas for recreational driving, using 4WDs or ATV/trail bikes, in State forest and certain reserve classes. Seasonal game hunting is also permitted in some reserve classes.

Many facilities, including visitor centres, picnic areas, toilets, interpretation signs, nature trails, walking tracks, mountain bike trails and camping areas are provided for public use throughout the state.

There have been no significant observed changes in recreational activities over the reporting period although mountain bike activity has increased in some areas.

The extent of visitor facilities has remained relatively constant, although one major tourism development has been opened by Forestry Tasmania, the Maydena Adventure Hub and ‘Eagles Eyrie’. Significant effort has gone into asset inventory, maintenance and upgrading existing facilities in national parks and reserves.

The basic visitor trend across the national park system has been a plateau throughout 2005–06 and 2008–09 with a decline from 2009–10 onwards. There have been declining visits across the whole reserve and State forest system in Tasmania, but the decline in visits has not significantly affected one destination more than others.

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More information on recreation and tourism in Tasmania’s forests

Tasmania introduced strict quarantine measures limiting the importation of Myrtaceae plants from mainland states after myrtle rust was discovered in New South Wales in 2010.

Several programs operate in native forested reserves which monitor: myrtle wilt spread; impacts of climate change on montane conifers; and phytophthora species in waterways.

In the only big insect outbreak in native forest during the period, several hundred hectares of peppermint forest fringing southern Hobart suffered near-complete defoliation by cup moth caterpillars (pictured right) in 2010.

Native production forest health is monitored by field staff in the course of their normal duties. Fire, drought, myrtle wilt and the introduced soil-borne fungus Phytophthora cinnamomi are the most common threats to native forest health. Coupes primarily managed for blackwood are protected from mammal browsing by fencing.

In hardwood plantations, mammal browsing produces most damage early in the rotation. Browsing control occurred in 92 per cent of the plantations established on State forest in 2008. Following the phase out of 1080 poison for browsing control, initially on State forest and increasingly on private forest, alternative control by shooting and trapping has been refined and is now effective.

Spring needle cast and barkstripping by wallabies and possums remain the major problems affecting softwood plantations.

Weed management on State forest keeps infestations to low levels, whereas weed management in reserved areas generally aims for localised eradication, such as the program to remove broom and Spanish heath from Maria Island National Park.

There is increasing evidence of foxes in Tasmania, putting a range of Tasmanian fauna at risk. A major project to eradicate foxes targets areas of optimal fox habitat with a baiting and monitoring program. At this stage, there is no evidence of foxes establishing in baited areas.

A new management plan aims to limit the spread of chytrid fungus, which is a global threat to amphibians and is already widespread across Tasmania.
Periodic wildfire is a natural feature of much of Tasmania’s forest but it can adversely affect some sensitive forest communities.

The forest area burnt by wildfire varies considerably from year to year, ranging from 500 hectares in 2010–11 to 63 000 hectares in 2006–07. The 55 year annual average is 26 000 hectares.

Planned fires include silvicultural regeneration burns and ecological and fuel reduction burns. The latter are conducted in both production forest and in reserves.

The area burnt by planned fires on both public and private land averaged 15 200 annually, less than 0.5% of the total forest area in Tasmania.

A coordinated smoke management strategy was established in 2008 to minimise the risk of high concentrations of smoke within individual airsheds. Under this system, restrictions were imposed upon the forest industry and PWS in order to limit or ban burning on days when weather forecasts predicted poor smoke dispersal.
SOIL AND WATER CONSERVATION

The total area of forest land excluded from timber harvesting across all tenures was 1,910,500 hectares in 2011. This was an increase since 2006 of 237,500 hectares (or 14.2 per cent) across all tenures, reducing the potential impacts of forestry on soil and water values. This increase includes 163,500 hectares (or 39 per cent) of the total area of forest excluded from timber harvesting in multi-purpose forest.

In production forests, forest practices plans apply the soil and water protection provisions of the Forest Practices Code. All Forest Practices Officers, who prepare forest practices plans, receive soils training.

During the process of preparing a forest practices plan, the Forest Practices Authority is notified when soils in a proposed operational area are considered to be highly erodible or when issues relating to soil and water conservation are noted. The FPA then provides specialist advice and prescriptions, designed to protect the soil and water values, to include in the forest practices plan.

Forestry activities potentially impacting on soil and water values are subject to internal and external assessments. In the FPA annual assessment of forest practices plans, acceptable standards were achieved on average across all tenures in all categories related to soil and water (see chart on opposite page).

Monitoring undertaken by the Department of Primary Industries, Parks, Water and Environment and in the State of the rivers reports indicates that streams within catchments with significant forestry operations were as healthy as those without such operations.

There has been a marked increase during the reporting period of reforestation of native species being undertaken by forest companies within streamside reserves on second rotation plantation sites, which are now subject to the Forest Practices Code, and on ex-pasture sites where the code restricts the establishment of plantation species adjoining streams (pictured right).

In reserved forests, the Tasmanian Reserve Management Code of Practice 2003 prescribes provisions for soils and water that are aimed at maintaining or restoring natural quality and processes. At least 98 per cent of the area of nature conservation reserves is not accessible for disturbance activities which impact on soil and water values. In reserves, walking and four-wheel drive tracks are the most likely areas to suffer soil erosion, especially those in alpine areas. Tracks are monitored and existing erosion problems are tackled. Future tracks will be planned to avoid or limit erosion.

Conservation forest, other crown lands and private forests are not externally assessed unless subject to a forest practices plan.
SOIL AND WATER CONSERVATION

Performance of operations in Forest Practices Authority assessment categories which impact on soil and water values 2005–06 to 2010–11

Source: Tables 4.1.b.5 and 4.1.b.6, State of the forests Tasmania 2012

The Forest Practices Authority’s assessment requires a performance rating of 3.0 (out of maximum rating of 4.0) as the minimum required to meet the objectives of the Forest Practices Act 1985 and the Forest Practices Code.

More information on soil and water conservation in Tasmania’s forests

State of the forests Tasmania 2012 report: www.fpa.tas.gov.au
Forestry Tasmania: www.forestrytas.com.au
Department of Primary Industries, Parks, Water and Environment: www.dpiw.tas.gov.au
ABORIGINAL HERITAGE

Aborigines have used Tasmania’s forests for thousands of years. Aboriginal heritage sites on all tenures are protected by law. Systems are in place, for example site assessments by heritage officers and trained professionals, to protect Aboriginal sites occurring in reserved areas and in both State and private wood production forests.

Between 2006 and 2011, 1330 new sites were recorded in the Tasmanian Aboriginal Site Index, 328 of which were located through the forest practices system.

HISTORIC HERITAGE

Three forested Tasmanian reserves were placed on the World Heritage Area list in 2010: Coal Mines Convict Site, Darlington Probation Site (pictured below); and Port Arthur Historic Site.

The National Heritage List includes six Tasmanian sites, four of which are forested (up from two in 2006).

The Tasmanian Heritage Register lists over 5000 sites, approximately 30 of which are in government owned or managed forests (an increase from four in 2006).

Historic sites in reserves under the Nature Conservation Act 2002 are managed in accordance with the Tasmanian Reserve Management Code of Practice.

The Forest Practices Code requires that sites with cultural values be reported to the Forest Practices Authority. In State forest in 2011, there were around 1500 special management zones for cultural heritage, covering 49,900 hectares when combined with indigenous areas, an increase of 900 hectares since 2006.

More information on the cultural values of Tasmania’s forests

State of the forests Tasmania 2012 report: www.fpa.tas.gov.au
Forestry Tasmania: www.forestrytas.com.au
Tasmanian Aboriginal Land and Sea Council: www.talsc.net.au/
Certification systems also require effective community engagement in order to achieve and maintain accreditation. Forestry Tasmania’s Community Liaison Officers are a public point of contact for State forests. Private Forests Tasmania engages with the community to promote the value of trees in the landscape. The Good neighbour charter is a commitment by the forestry industry to address the concerns of landowners bordering plantations. The Forest Practices Code requires neighbours to be notified of planned operations and information to be provided to them.

The public is actively involved in the management of reserved forest areas through a network of community consultation committees. Management plans developed with cross-sectoral involvement have been developed by Forestry Tasmania (1.5 million hectares), the Parks and Wildlife Service (1.7 million hectares) and private industrial forest owners (0.2 million hectares). All public land forest managers maintain a dialogue with the Tasmanian Aboriginal Land and Sea Council and consult on management of Aboriginal sites.

The Tasmania Together process, established in 2001 and reviewed in 2010, assesses progress against community-identified goals.

A number of formal programs facilitate public engagement and provide public education. These include the Forest Education Foundation (pictured below, demonstrating pitfall-trapping during a visit by a primary school), Wildcare, Landcare, Land for Wildlife, Conservation Volunteers Australia, Natural Resource Management groups and the Farm Forestry Toolbox.

Opportunities are available for the public to participate in forest management, ranging from contributing to forest policy development to involvement in practical tasks.

More information on community engagement in Tasmania’s forests

State of the forests Tasmania 2012 report: www.fpa.tas.gov.au
Tasmania Together: www.tasmaniatogether.tas.gov.au
Forestry Tasmania: www.forestrytas.com.au
Department of Primary Industries, Parks, Water and Environment: www.dpiw.tas.gov.au
Parks and Wildlife Service: www.parks.tas.gov.au
Wildcare: www.wildcaretas.org.au
Landcare: www.landcaretas.org.au/
Forest Education Foundation: www.forest-education.com
In 2010–11, there were 127 full-time equivalent positions engaged in forest-related research and development in Tasmania which involved an estimated expenditure of $15.2 million.

The following institutions contributed to this research agenda:
- Cooperative Research Centre for Forestry
- Bushfire Cooperative Research Centre
- CSIRO Sustainable Ecosystems
- Department of Primary Industries, Parks, Water and Environment
- Forest Practices Authority
- Forestry Tasmania
- Forests and Forest Industry Council
- Museums and herbaria
- University of Tasmania (and other universities).

A total of 852 research publications on forests and forestry were produced between 2006 and 2011. Most of these publications (93 per cent) were in five of nine priority areas for research: biodiversity conservation and management; pests; silvicultural techniques; social and economic; and soil and water conservation.

The Warra Long Term Ecological Research site, in Tasmania’s Southern Forests, is one of the very few in Australia where long-term multidisciplinary research on forest ecosystems is carried out. Over 180 research projects have been initiated at Warra since 1995. The log emergence research study, shown below, monitors the succession of invertebrates emerging from rotting logs.

More information on research in Tasmania’s forests
State of the forests Tasmania 2012 report: www.fpa.tas.gov.au
Forestry Tasmania: www.forestrytas.com.au
Warra Long Term Ecological Research site: www.warra.com
Department of Primary Industries, Parks, Water and Environment: www.dpiw.tas.gov.au
University of Tasmania: www.utas.edu.au/
Co-operative Research Centre for Forestry: www.crcforestry.com.au
Forest and Wood Products Australia: www.fwpa.com.au/)
SUMMARY OF THE FINDINGS OF THE STATE OF THE FORESTS TASMANIA 2012 REPORT

All figures are for June 2011, unless otherwise stated. Increases and decreases compare the period 2006 to 2011 with the period 2001 to 2006. The State of the Forests Tasmania 2012 report is available on the Forest Practices Authority’s website <www.fpa.tas.gov.au>

1: CONSERVATION OF BIOLOGICAL DIVERSITY

<table>
<thead>
<tr>
<th>INDICATOR</th>
<th>RESULTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1 Ecosystem diversity</td>
<td>3 388 000 ha of mapped forest (50% of Tasmania’s land area). Net increase of 1% since 2006 and 1% increase since 1996. Native forest communities have decreased by 42 000 ha (1.4%). Most loss is in the wet eucalypt communities (decreased by 15 000 ha) but conversion of native forest to plantations has largely been phased out. Conversion ceased on State forest in 2006.</td>
</tr>
<tr>
<td>1.1.a Area of forest by forest type and tenure</td>
<td>Most of the forest mapped for growth-stage is mature or overmature (73%). Higher proportion of regrowth and regeneration on multiple use State forest and private land than on conservation reserves, where mature forest predominates.</td>
</tr>
<tr>
<td>1.1.b Area of forest by growth stage</td>
<td>1 513 000 ha or 49% of Tasmania’s native forests in the CAR forest reserve system on both public and private land, an increase in reservation of 535 100 ha (55%) since 1996, and of 48 000 hectares (3.3%) since 2006. 37 of the 50 native forest communities (74%) are adequately reserved and the least reserved communities are primarily on private land in dry forest communities.</td>
</tr>
<tr>
<td>1.1.c Area of forest in protected area categories</td>
<td>Over 70% of Tasmania has native vegetation cover. Higher proportion of forest in larger patches in Tasmania (72%) than nationally.</td>
</tr>
<tr>
<td>1.1.d Fragmentation of forest cover</td>
<td>Total area 1 221 000 ha, decrease of 8 000 ha (0.7%) since 2006. 982 000 ha (80.4%) of old-growth forest protected in reserves, an increase of 9000 ha since 2006 or 300 100 ha since 1996. 25 300 ha (2%) old-growth forest logged 1996 to 2011, most in the wet eucalypt communities which decreased by 14 500 ha (5.7%).</td>
</tr>
</tbody>
</table>
### 1: Conservation of Biological Diversity

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.2 Species diversity</td>
<td></td>
</tr>
<tr>
<td>1.2.a Forest-dwelling species for which ecological information is available</td>
<td>Partial or comprehensive information available for nearly all vascular plants and vertebrate fauna, a substantial increase since 2006. 138 forest-dwelling vertebrates (13 fish, 8 amphibians, 15 reptiles, 69 birds, 33 mammals) 1034 higher plant taxa, including subspecies and varieties (54% of Tasmanian vascular flora).</td>
</tr>
<tr>
<td>1.2.b The status of forest-dwelling species at risk of not maintaining viable breeding populations, as determined by legislation or scientific assessment</td>
<td>Forest-dwelling vertebrates: 20% are considered threatened. Forest-associated flora: 26% are threatened and 1% is presumed extinct. Additional 6 species listed under the Tasmanian Threatened Species Protection Act 1995. 13 species de-listed and 1 rediscovered from extinct status.</td>
</tr>
<tr>
<td>1.2.c Representative species from a range of habitats monitored at scales relevant to regional forest management</td>
<td>For fauna, DPIPWE has carried out long-term monitoring of brushtail possums, Tasmanian pademelons, Bennetts wallaby, Tasmanian devils, common wombats and eastern quolls. All of these representative species monitored across their range appear to have stable populations, apart from Tasmanian devils and eastern quolls.</td>
</tr>
<tr>
<td>1.3 Genetic diversity</td>
<td></td>
</tr>
<tr>
<td>1.3.a Forest associated species at risk from isolation and the loss of genetic variation, and conservation efforts for those species</td>
<td>A total of 277 vertebrate species and vascular plants are potentially at risk of loss of genetic variation, ranging from high to moderate risk (128 species) to low risk (130 species) and unknown risk (19 species). Conservation efforts include recovery plans, habitat restoration and the ‘Seed Safe’ seed collecting program for the Tasmanian Seed Conservation Centre, in partnership with Kew Millennium Seed Bank.</td>
</tr>
<tr>
<td>1.3.b Native forest and plantations of indigenous species which have genetic resource conservation mechanisms in place</td>
<td>Genetic resource conservation of indigenous commercial timber species is primarily through implementation of the Permanent Native Forest Estate Policy, the CAR reserve system, the Forest Practices Code and the Southern Tree Breeding Association.</td>
</tr>
</tbody>
</table>

All figures are for June 2011, unless otherwise stated. Increases and decreases compare the period 2006 to 2011 with 2001 to 2006.
## 2: MAINTENANCE OF PRODUCTIVE CAPACITY OF FOREST ECOSYSTEMS

<table>
<thead>
<tr>
<th>INDICATOR</th>
<th>RESULTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1.a Native forest available for wood production, area harvested, and growing stock of merchantable and non-merchantable tree species</td>
<td>563 000 ha out of total public forest area of 2 218 000 ha potentially available for timber production (decreased by 7%). Reasons for the reduction are <em>Forest Practices Code</em> requirements and assessments that some forest cannot be physically or economically harvested.</td>
</tr>
<tr>
<td>2.1.b Age class and growing stock of plantations</td>
<td>Softwood plantation: 75 600 ha (increased by 5.8% or 4100 ha). Hardwood plantation: 233 200 ha (increased by 47% or 74 300 ha). Plantation establishment decreased dramatically in the second half of the period after the collapse of some MIS companies and the phase out of conversion of native forests to plantation.</td>
</tr>
<tr>
<td>2.1.c Annual removal of wood products compared to the volume determined to be sustainable for native forests and future yields for plantations</td>
<td>Hardwood sawlog was cut below the determined sustainable yield on public native forest. Public forest average eucalypt sawlog cut is below the determined sustainable yield of 320 000 cubic metres. On private land there is no sustainable sawlog cut determined; however, the annual harvest of all products is within the predicted woodflow estimate.</td>
</tr>
<tr>
<td>2.1.d Annual removal of non-wood products compared to the level determined to be sustainable</td>
<td>On State forest the number of hive sites increased to 422 but the number of hives decreased to 10 662. There were 87 sites and 5006 hives in national parks. The sale of treeferns is regulated under the <em>Forest Practices Act 1985</em> through a tagging system and is well within sustainable levels. There has been a 75% drop in the sale of treefern tags, due to the downturn in European markets. Private collectors and Forestry Tasmania collect seeds, principally for their own use. Harvesting of wallabies and brushtail possums for crop protection or recreational hunting have remained relatively stable in recent years but the sale of meat or skins fluctuates widely with market demand. The harvest of deer has steadily increased over the last 10 years.</td>
</tr>
<tr>
<td>2.1.e The area of native forest harvested and the proportion of that effectively regenerated, and the area of plantation clearfell harvested and the proportion of that effectively re-established</td>
<td>Forest Practices Authority annual assessments indicate that on average the regeneration of native forests or re-establishment to plantations has been achieved across tenures. The standards achieved on State forest were particularly good (88–98%).</td>
</tr>
</tbody>
</table>

All figures are for June 2011, unless otherwise stated. Increases and decreases compare the period 2006 to 2011 with 2001 to 2006.
## 3: MAINTENANCE OF ECOSYSTEM HEALTH AND VITALITY

### 3.1.a Scale and impact of agents and processes affecting forest health and vitality

Browsing control measures are normally required on over 90% of young hardwood plantations on State forest. Following the phase-out of 1080 poison, (initially on State forest in 2005 and increasingly on private forests), alternative control by shooting and trapping has been refined and is now effective.

A range of insects (including chrysomelids, scarabs, psyllids, sawflies, moths and weevils) invaded young eucalypt plantations, and were controlled by spraying when pre-determined damage thresholds were approached. There was mounting evidence of significant growth impacts from defoliation in older plantations.

Major problems in softwood plantations were spring needle cast and bark stripping by wallabies and brushtail possums.

There is increasing evidence that foxes exist in Tasmania which, unless eradicated, will impact severely on small vertebrate populations, particularly small mammals and ground dwelling birds. A major government project to eradicate foxes is underway.

Management prescriptions are in place to minimise the potential spread of root rot fungus (*Phytophthora cinnamomi*) as a result of forest operations and recreational activities.

Strict quarantine measures were introduced in Tasmania after myrtle rust was discovered in NSW in 2010.

Weed management on State forest keeps infestations to low levels, whereas weed management in reserved areas generally aims for local area eradication.

### 3.1.b Area of forest burnt by planned and unplanned fire

26% decrease in the area of planned fires burnt each year on State forest. Fires are mainly used for creating a suitable seed bed for regenerating native forest or establishing new plantations, the latter decreasing significantly after the cessation of conversion of native forest to plantation in 2006.

A coordinated smoke management strategy was established in 2008 to minimise the risk of high concentrations of smoke. This restricts the forest industry and the Parks and Wildlife Service to limit or suspend burning when weather forecasts predict poor smoke dispersal. With the exception of the 2006–07 season, the five wildfire seasons were relatively mild in comparison to previous seasons.

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All figures are for June 2011, unless otherwise stated. Increases and decreases compare the period 2006 to 2011 with 2001 to 2006.
### 4: CONSERVATION AND MAINTENANCE OF SOIL AND WATER RESOURCES

#### 5: MAINTENANCE OF FOREST CONTRIBUTION TO GLOBAL CARBON CYCLES

#### Indicator Results

**4.1.a Area of forest land managed primarily for protective function**

Soil and water values are protected on forest land in Tasmania primarily through the *Forest Practices Code 2000* and the *Tasmanian Reserve Management Code of Practice 2003*. Timber harvesting is excluded from 1,910,500 ha of forest (an increase of 237,500 ha or 14% across all tenures). Wellington Park and Mt Field National Park are two reserves explicitly recognised as drinking water catchments.

**4.1.b Management of the risks of soil erosion and the risks to soil physical properties, water quantity and water quality in forests**

Under the *Forest Practices Act 1985* all forest areas subject to forest practices must be assessed for soil erosion potential. Where soils have a high or very high erodibility and where landslip thresholds are exceeded, the Soil and Water Scientist at the Forest Practices Authority must be notified and advice sought. Assessments are also commonly undertaken in relation to roads and quarries. Forestry activities potentially impacting on soil and water values are generally subject to both internal and external assessment. High standards were achieved on average across all tenures in the FPA annual assessments of forest practices plans covering roading, bridge construction, quarries, harvesting, log landings, stream reserve integrity and site preparation. Conservation forest, other crown lands and private forests are not externally assessed unless subject to a forest practices plan. There has been a marked increase of forest companies establishing native species in streamside reserves on second rotation plantation sites, which are now subject to the *Forest Practices Code*, and on ex-pasture sites where the code restricts establishment of plantation species adjoining streams.

**5.1.a Total forest ecosystem biomass and carbon pool**

Forests are large natural pools of carbon, estimates of their biomass are a measure of their contribution to carbon cycles. The estimated total woody vegetation biomass is 1,124 million tonnes (2010), a decrease from 1,157 million tonnes (2006). This difference is minor and not statistically significant.

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*All figures are for June 2011, unless otherwise stated. Increases and decreases compare the period 2006 to 2011 with 2001 to 2006.*
## 6.1 Production and consumption

### 6.1.a Value and volume of wood and wood products

Due to the two Ta Ann rotary veneer mills, demand for native forest sawlog and veneer remained constant. The demand for plantation hardwood sawlogs dried up with the sale of the Bell Bay FEA mill to Gunns, which subsequently focussed on softwood. Timber production from softwood plantations remained fairly steady as did hardwood pulpwood from plantations. Closure of Tasmanian Paper Burnie and Wesley Vale processing facilities substantially reduced the production of paper products.

### 6.1.b Values, quantities and use of non-wood forest products

The apiary industry appears to be relatively stable. The sale of treeferns has dropped significantly due to the loss of major markets in Europe.

### 6.1.c Value of forest based services

The value of recreation and tourism, while estimated to be in the hundreds of millions of dollars, is not able to be quantified. There are emerging markets for carbon credits and other ecosystem services.

### 6.1.d Production and consumption and import/export of wood, wood products and non-wood products

Woodchips and lower valued products were the main wood products exported from Tasmania in terms of value (68%) and volume, despite a 40% drop in volume to $228 million in 2010–11. These products are predominately exported to Asian economies. The second most valuable product was veneer, totalling $46 million in 2010–11. This is a 227% increase. Plywood is the most significant (by value) wood product imported.

### 6.1.e Degree of recycling of forest products

White office paper, newsprint, cardboard and paperboard are all recycled within Tasmania although data on actual quantities consumed and recycled are limited. For example, ABS figures indicate that in 2009, 93% of Tasmanian households were recycling ‘paper and cardboard’ (up from 83% in 2003) and more than 75% of newsprint consumed was recycled.

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All figures are for June 2011, unless otherwise stated. Increases and decreases compare the period 2006 to 2011 with 2001 to 2006.
## 6.2 Investment in the forest sector

<table>
<thead>
<tr>
<th>INDICATOR</th>
<th>RESULTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2.a Investment and expenditure in forest management</td>
<td>A number of government bodies, publicly listed companies, private companies, associations and individuals have, wholly or as part of other activities, invested in forest management in Tasmania.</td>
</tr>
<tr>
<td>6.2.b Investment in extension and use of new and improved technologies</td>
<td>Forestry Tasmania has maintained a high level of expenditure and investment in forest management. There is no estimate available for private sector investment, although there has been considerable investment in gaining and maintaining certification. There has been a significant increase in investment in a range of new technologies to aid forest management, including LiDAR (airborne laser). The Parks and Wildlife Service continues to invest in managing forests in reserves, including investment in infrastructure. There has been a substantial increase in philanthropic donations as well as volunteer groups contributing to forest management in reserves.</td>
</tr>
</tbody>
</table>

## 6.3 Recreation and tourism

<table>
<thead>
<tr>
<th>INDICATOR</th>
<th>RESULTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.3.a Area of forest available for general recreation/tourism</td>
<td>Almost all public forested land in Tasmania, including wilderness, is available for recreation and tourism. 3,388,000 ha of forest across tenures is available for recreation and tourism. Recreation is not a management objective for nature reserves and on State forest recreation is restricted for limited periods in operational areas for safety reasons. 97% of high quality wilderness is reserved, unchanged from the previous period. Private forested land (whether or not reserved) is available for recreation at the owner’s discretion.</td>
</tr>
<tr>
<td>6.3.b Range and use of recreation/tourism activities available</td>
<td>The number and type of facilities available for recreation and tourism across tenures has remained steady. One new tourism location has been opened by Forestry Tasmania since 2006: the Eagle’s Eyrie and Maydena Adventure Hub. Significant effort has gone into asset inventory, maintenance and upgrading existing facilities in national parks and reserves. The basic visitor trend across the national park system has plateaued throughout 2005–06 and 2008–09 with declined from 2009–10 onwards.</td>
</tr>
</tbody>
</table>
## INDICATOR RESULTS

### 6.4 Cultural, social and spiritual needs and values

#### 6.4.a Area of forest to which Indigenous people have use rights that protect their special values and are recognised through formal and informal management regimes

1330 new Aboriginal heritage places across all land tenures were recorded in the Tasmanian Aboriginal Site Index. This included 328 new Aboriginal heritage places identified in the course of surveys required under the *Forest Practices Act 1985*. 49 900 ha of State forest is zoned for Indigenous and non-Indigenous cultural heritage special management, an increase of 900 ha. Management plans for 11 national parks and reserves approved in the reporting period recognise Aboriginal cultural heritage values and include strategies for management in consultation with the Aboriginal community. To date, 15 areas have been returned and title transferred to the Aboriginal Land Council of Tasmania. There is ongoing consideration of the transfer of more land.

#### 6.4.b Registered places of non-Indigenous cultural values in forests that are formally managed to protect those values

1500 historic sites (an increase of 100) have been identified and managed in wood production forests due to the *Forest Practices Code* requirement that all non-Indigenous cultural sites found in the preparation of a forest practices plan are reported. Under the *Nature Conservation Act 2002*, 29 places are designated Historic Sites covering a total area of 16,074 ha of which approximately 4320 ha are forested. This remains unchanged since 2006. Recognition of non-indigenous cultural heritage in forests has increased over the reporting period, with more sites included in international, national and state level heritage lists.

#### 6.4.c The extent to which Indigenous values are protected, maintained and enhanced through Indigenous participation in forest management

All public land forest managers maintain a dialogue with the Tasmanian Aboriginal Land and Sea Council and consult on management of Aboriginal sites. The FPA runs regular training workshops on Aboriginal heritage for all Forest Practices Officers and other forest planners. Forestry Tasmania has sought to recognise and integrate Aboriginal cultural activities at their tourist icons. Formal Aboriginal involvement in reserve management continued through dedicated Aboriginal community positions on three reserve advisory committees.

#### 6.4.d The importance of forests to people

Forests are important to people in Tasmania. This may be associated with biodiversity, clean air and water or simply the knowledge that Tasmania’s forests exist.

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All figures are for June 2011, unless otherwise stated. Increases and decreases compare the period 2006 to 2011 with 2001 to 2006.
### 6: MAINTENANCE AND ENHANCEMENT OF LONG-TERM MULTIPLE SOCIO-ECONOMIC BENEFITS TO MEET THE NEEDS OF SOCIETIES

<table>
<thead>
<tr>
<th>INDICATOR</th>
<th>RESULTS</th>
</tr>
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<tbody>
<tr>
<td>6.5 Employment and community needs</td>
<td></td>
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<tr>
<td>6.5.a Direct and indirect employment in the forest sector</td>
<td>3410 people directly employed in the forest industry (2010 Forestry CRC report). This is down from 2003 when the Forest and Forest Products Employment Skills Company report estimated 10 693 people were directly employed by the forest industry. Estimates for indirect employment use multipliers varying from 1.8 to 2.3. ABS forestry data are now aggregated with agriculture and fishing making it impossible to identify forestry-specific data.</td>
</tr>
<tr>
<td>6.5.b Wage rates and injury rates within the forest sector</td>
<td>Salary levels for a range of forest-related positions averaged an increase of 12–30%, compared with an average increase in the Tasmanian annual wage of 30% and a national increase of 36%. Annual fatalities in the forestry and logging sector decreased. Injury frequency rates have increased in the forestry and logging sector. This increase may be more a factor of a decrease in hours worked rather than an increase in the number of accidents.</td>
</tr>
<tr>
<td>6.5.c Resilience of forest dependent communities to changing social and economic conditions</td>
<td>The Cooperative Research Centre (CRC) for Forestry report <em>Tasmania’s forest industry 2010</em> indicates that between 2008 and 2010, there was a significant downturn in the forest industry, with employment falling by 33%. However, reliable data on the progress of meeting social and economic objectives have not been available to the same degree as those relating to environmental objectives.</td>
</tr>
<tr>
<td>6.5.d Resilience of forest dependent Indigenous communities to changing social and economic conditions</td>
<td>The Tasmanian Government, public agencies and private forest managers engage Aboriginal communities in management planning and operations where practical.</td>
</tr>
</tbody>
</table>

All figures are for June 2011, unless otherwise stated. Increases and decreases compare the period 2006 to 2011 with 2001 to 2006.
## 7: Legal, Institutional and Economic Framework for Forest Conservation and Sustainable Management

### 7.1 Extent to which the legal framework supports the conservation and sustainable management of forests

The Forestry Act 1920 and the National Parks and Reserves Management Act 2002 are the principal Acts that set out the management objectives of State forests and conservation reserves. The Forest Practices Act 1985 is the legislation under which forest practices are regulated across all tenures. During the five years to June 2011 the principal changes to the legislative and policy framework supporting forest management have been:

- New provisions in the regulations under the National Parks and Reserves Management Act 2002 which include the ability to designate areas for particular recreational activities and provisions for fire risk and actions in a wildfire situation.
- Amendments to the Forest Practices Act 1985 to exempt the requirement for a forest practices plan for clearing associated with electricity and rail infrastructure, dam construction, mining and subdivisions, subject to these activities being assessed through alternate regulatory processes.

### 7.2 Extent to which the institutional framework supports the conservation and sustainable management of forests

The institutional framework in Tasmania supporting sustainable forest management includes forest district, park and property management plans, operational plans, codes of practice, environment management systems and forest certification schemes. Monitoring and enforcement ensures high standards are maintained. Management plans covering about 70% of the area of Tasmanian parks and reserves have been completed and the Reserve Management Code of Practice implemented. Six organisations have environmental management systems certified to ISO 14001, five are certified by the Australian Forestry Standard and two private forest companies and one independent private forest landowner have gained Forest Stewardship Council certification.

### 7.3 Extent to which the economic framework supports the conservation and sustainable management of forests

There is a clear commitment from governments to support the sustainable management of forests by encouraging innovation and investment through the development of consistent and non-discriminatory economic policies.

### 7.4 Capacity to measure and monitor changes in the conservation and sustainable management of forests

Government agencies and private industrial forest companies have formal and informal systems in place which contribute to the level of knowledge necessary to measure, monitor and report on the sustainability of forests in Tasmania. LiDAR-based mapping and the Monitoring Vegetation Extent Project have been useful developments during the period.

### 7.5 Capacity to conduct and apply research and development aimed at improving forest management and delivery of forest goods and services

In 2010–11 there were 127 personnel engaged in forest-related research at a cost of $15.2 million. This research expenditure is spread across government agencies, the forest industry and academia. Of the 852 research publications produced, the majority (789 or 93%) are in five of the nine priority areas of research.
Maps created by Resource Management and Conservation Division, Department of Primary Industries, Parks, Water and Environment Base data DPIW and Forestry Tasmania. © State of Tasmania.

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Shannon Troy: 40 (quoll).
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