Forestry Corporation

Sustainability Supplement 2014–15

This report is a supplement to reporting commitments as part of the Forestry Corporation of NSW Business Sustainability Framework.

Forestry Corporation has a number of reporting obligations to satisfy organisational, State, national and international requirements for sustainable forest management.

Our forest focused sustainability reporting is based on the international Montreal Process Criteria and Indicators. These indicators were agreed at the State, national and international level in 1998 and reviewed in 2008.

As part of our process for continual improvement, the Corporation reviewed the sustainability framework and indicators. Visit our website to find out more about our Business Sustainability Framework and how our business performed.

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Indicator 1 – Social responsibility

	2012–13	2013–14	2014–15
Sponsorships and donations	$16,500	$40,100	$46,265

The major sponsorships during 2014–15 included the Kendall National Violin Competition, NSW Tourism Awards, Port to Port Mountain Bike event and the Forest Tech Conference. Forestry Corporation also made significant in-kind contributions to events on State forests such as the World Rally Championships, Sydney 4WD and Adventure Show and the Koori Knockout. The corporation's sponsorship policy guides the assessment of sponsorship requests.

Community volunteering programs

Major volunteer programs included the Cumberland and Strickland State Forest bush regeneration programs and the Communities in Forests Program with Conservation Volunteers Australia (CVA).

During the year, nearly 300 CVA volunteers contributed over 1,700 hours in projects in nine State forests across NSW. The volunteers removed 15,100 square metres of exotic weeds, repaired/constructed 14.35 kilometres of walking tracks to improve visitor access and planted 350 native stems (trees, shrubs, grasses) to restore habitat for native species over an area of 5,200 square metres.

Volunteers committed 378.5 volunteer days through the Cumberland and Strickland State Forests volunteer programs. Cumberland State Forest volunteers removed large amounts of weeds from many sites in the forest, with one focus site being the removal of a large quantity of privet along a forest boundary line. Volunteers also completed a revamp of the Bush Tucker garden area planting new edible species.

During 2014–15, the Friends of Strickland State Forest achieved a significant milestone with the completion of the Ridge to Rainforest walking track, a project that took the Friends ten years to complete by hand. Hand built sandstone walls are a feature of the new walk. The Friends also targeted lantana and privet along riparian zones and upgraded degraded walking tracks in the arboretum area.

Indicator 2 – Recreation and tourism

Facilities provided at more than 130 designated recreational visitor sites

	2012–13	2013–14[1]	2014–15
Camping area	48	48	48
Caravan site	19	19	19
Fireplace/BBQ	61	56	57
Picnic area	69	64	65
Rubbish collection	30	26	26
Toilets	61	57	58
Water (not for drinking)	40	40	41
Wheelchair accessible toilets	7	6	6

Recreation indicators

	2012–13	2013–14	2014–15
Area zoned primarily for recreation (hectares)	4,744	4,799	4,789
Area zoned primarily for visual aesthetics (hectares)	40,187	40,900	40,885

More information on recreation and tourism in NSW State forests is available at www.forestrycorporation.com.au or join the conversation on Facebook (nsw state forests), Twitter (@visitnswforests), Pinterest (nswforests) or Instagram (visitnswforests)

Forestry Corporation undertakes visitation surveys during the year at popular destinations in State forests. Based on the surveys, the most popular sites were the visitor areas in State forests of the Watagan Mountains and Sealy and Korora Lookouts (featuring the Forest Sky Pier) in Orara East State Forest. It was estimated that these two areas attracted 600,000 and 135,000 visitors respectively during the year while Sydney's Cumberland State Forest attracted an estimated 100,000 visitors. State forests and visitor areas were recognised with awards at regional and state tourism awards during the year including a new destination, Old Bottlebutt in Burrawan State Forest, which won the Gold award for New Tourism Development at the 2014 NSW Tourism Awards. Forestry Corporation manages visitor site strategically to provide quality experiences within available resources. Forestry Corporation is currently undertaking assessment and planning for improvements to visitor areas in State forests of the South Coast, with an upgrade program planned for F16.[1]

1 *2013–14 recreation facilities data has been updated due to a data compilation error*

Indicator 3a – Research and education

The NSW DPI Forest Science group provides technical advice and research and development services to Forestry Corporation under a Memorandum of Understanding. This group has scientific and technical expertise within the core activities of: forest ecology and sustainability; forest health and resource assessment; carbon in forests, wood products and bioenergy and biometrical services. Information about recent research activities are included in the statutory information in the annual report.

Forestry Corporation is an active member of the Australian Forest Education Alliance (AFEA) – a network of forestry industry partners from across Australia which runs the ForestLearning education program. Through ForestLearning, Forestry Corporation contributes to the development and provision of curriculum aligned education resources for teachers using forestry and forest and wood products as a pathway for meeting education outcomes for students. ForestLearning launched a new website this year for teachers with a host of education resources mapped to the Australian Curriculum.

Forestry Corporation is a member of Forest and Wood Products Australia, which undertakes a range of research and education projects. For more information visit *www.fwpa.com.au*

Indicator 3b – Number of people participating in programs through Cumberland State Forest

Activity participants[1]

	2012–13	2013–14	2014–15
School – lower primary	1,450	1,402	1,684
School – upper primary	1,218	171	1,171
School – secondary	228	218	148
School holiday activities[2]	439	480	582
Total	**3,335**	**2,271**	**3,585**

Forestry Corporation conducts face-to-face curriculum aligned education excursions at Cumberland and Strickland State forests. In addition, staff from Cumberland State Forest participated in three events that were attended by approximately 6,000 students: Science in the City, Youth Eco Summit and Strickland Forest Expo. Regional staff also facilitated a small number of school and university groups to inform students on forest management.

1 *School participant numbers can fluctuate depending on the school curriculum cycle.*

2 *Number of people participating in school holiday activities was based on a 6 month average for 2013–14. A new online booking system for school holiday activities commenced in July 2014.*

Indicator 4 – Other forest products

Selected forest products

	2012–13	2013–14	2014–15
Apiculture (sites)	3,705	3,919	4,015
Broombush (tonnes)	1,955	2,396	4,582
Charcoal (tonnes)	1,690	1,763	1,124
Telecommunication sites	131	131	138
Firewood - non-commercial (tonnes)[1]	3,873	9,053	10,150
Gravel/Sand/Rock (tonnes)	70,051	66,232	37,696
Grazing (hectares)	290,817	288,176	284,748

Note that some values have been derived using conversion factors due to multiple units of measure used.

The range of products provided by the forest reflects the importance to rural and regional economies. Forestry Corporation recognises additional potential development of other products and services and has plans to explore these opportunities within the context of sustainable forest management. The corporation also has an agreement with the NSW Axemen's Association to provide timber blocks for woodchop competitions.

1 Additional sales are reported as part of commercial timber sales in Indicator 16 – Volume of timber harvested

Indicator 5 – Management of cultural heritage

	2014–15
	hectares
Area managed for Aboriginal cultural heritage	1,368
Area managed for non Aboriginal cultural heritage	3,647
Approximate land with recognised native title	60,000

	Number
Gazetted Aboriginal places[1]	6
Aboriginal sites[2]	3,336

Forestry Corporation aims to protect, nurture and manage Aboriginal cultural heritage and significant sites while creating sustainable partnerships with the Aboriginal community. A team of Aboriginal Partnership Liaison Officers work with Aboriginal communities throughout NSW. This group work to find, protect and manage Aboriginal cultural sites on State forest prior to harvesting and regeneration works. These liaison officers actively engage and encourage Aboriginal organisations to help with site survey and to contribute to the management of these sites and areas of significance.

Forestry Corporation also develops partnerships or arrangements with Aboriginal organisations to provide:

- access to areas of significance
- traditional resources and materials
- land for teaching and camping
- culture camps
- bark for traditional canoe making.

During the year, Forestry Corporation:

- had contracts with 15 Aboriginal community groups across NSW, to conduct traditional site identification and management pre and post-harvest
- issued 20 free fire wood collection permits for Aboriginal people and organisations across NSW
- supplied bark from various State forests for traditional canoe building projects including for a traditional canoe on display at the Australian National Maritime Museum
- supported numerous NAIDOC week events and the Freshwater/Saltwater Festival
- attended the 2015 Rugby League Aboriginal Knock out – the largest Aboriginal event in NSW
- supported the Durrunda Wajaarr green team carrying out environmental weed control in Tuckers Nob State Forest, Bellingen
- worked closely with the Coffs Harbour and District Aboriginal Land Council to develop joint funding proposals for environmental works on State forest
- provided a cultural teaching shelter, toilet and water facilities, installed fencing and a gate and removed dangerous trees and rubbish as part of the partnership with Keepa Keepa Incorporated, an affiliation of the Awabakal Land Council, in Heaton State Forest near Newcastle.

1 *Under section 90 of the National Parks and Wildlife Act 1974 and recorded in the Aboriginal Heritage Information Management System. In FY14, one gazetted Aboriginal place was reported. The increase in the number of gazetted areas is due to the inclusion of areas that fall partly within State forests, but have been attributed to other tenures.*

2 *This figure is taken from the Aboriginal Heritage Information Management System maintained by the Office of Environment and Heritage and to which Forestry Corporation contributes. The drop on the previous years figure is due to a consolidation of the site parcels.*

Indicator 6 – Extent of forest and tenure type

Forest type categories

	hectares
Alpine Ash forest	17,733
Blackbutt forest	112,989
Blue gum forest	126,202
Messmate forest	238,250
Mixed coastal eucalypt	214,336
Non eucalypt forest	10,939
Non forest	40,891
Other inland eucalypt types	154,170
Other inland types	142
Rainforest	93,347
River Red Gum forest	35,308
Snow Gum woodland	24,701
Spotted Gum forest	183,907
Stringybark forest	179,509
Un-classified	167,545
White Cypress Pine forest	160,734

A total 4,315 hectares of State forests were revoked in 2014–15. The largest revocation was 4,151 hectares, which was a revocation for a National park in Western Region. Other revocations included the revocation of an office site, revocation for road access including for the Pacific Highway upgrade and revocation of part of a Crown lease in Western Region.

Native forest types are defined in New South Wales Research Note No. 17.

Note that there are minor variations between the legal and operational tenure layers.

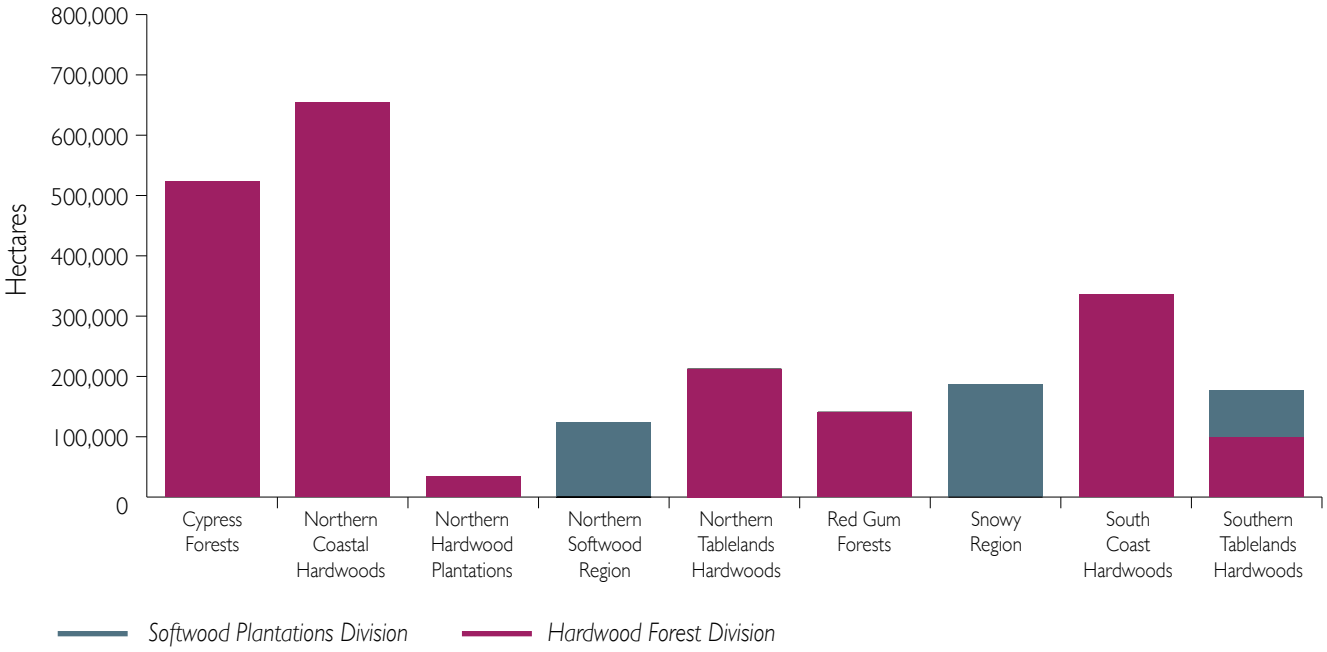
Defined Forest Area by operational divisions/tenures

Figures in hectares	State Forests	Private Land, Investment Partner	Timber Reserve	Total
Hardwood Forest Division	1,810,299	5	187,157	1,997,462
Softwood Plantations Division	385,801	2,576	0	388,377
Cumberland State Forest	40	0	0	40
Total	**2,196,132**	**2,581**	**187,157**	**2,385,879**

Note: Hardwood Forests Division State forests area includes 3348 hectares of joint ventures.

Indicator 6 *continued*

Defined Forest Area under the Australian Standard for Sustainable Forest Management (AS4708) by Forest Management Unit



Note: The Southern Tablelands Hardwoods Forest Management Unit contains areas managed by both operational divisions. Softwood Plantations Division area within this Forest Management Unit is non-harvestable area, usually native forest.

Indicator 7 – Native forest structure

Forest structure refers to the physical features of a forest that reflect its natural environment and management history. Largely determined by forest type, age and past disturbance such as timber harvesting and fire, forest structure is an important consideration when planning future management, including harvesting, of forests. The structure of the forest is reflected in the proportion of trees of different age and size over a given area.

Because the areas of forest growth stage categories do not change significantly over short periods, growth stages are not reported annually. Refer to the 2010 and 2013 Australian Government State of the Forests reports for additional growth stage information.

The sustainable wood supply modelling demonstrates that the forest estate is capable of providing for an ongoing sustainable yield at the current rate of production *(see FCNSW Sustainability Supplement 2013–14)*. This provides an indication that forest structure is also relatively stable in producing this yield from a set area.

Indicator 8 – Sightings of surveyed species

Individual threatened fauna species sightings[1,2]

	2012–13	2013–14	2014–15
Arboreal mammals	1,688	914	1,869
Bats	693	122	150
Frogs	327	678	200
Ground mammals	271	558	55
Birds	1,254	996	814
Raptors	42	25	33
Reptiles	2	4	1
Total	**4,277**	**3,297**	**3,122**
Threatened flora species reported	18	24	18
Number of flora surveys	25	40	1
Threatened fauna species reported	50	62	57
Number of fauna surveys	4,793	2,022	1,991
Number of compartment traverses	1,474	495	678
Incidental and other	660	245	230
Expenditure on surveys ('000)	$2,069	$2,002	$1,783

Individual fauna species sightings by status and group for 2014–15

Kingdom	Species group	Status[3]				
		Introduced	Protected	Vulnerable	Endangered	Critically endangered
Fauna	Arboreal mammals	0	675	1,869	0	0
	Bats	0	687	150	0	0
	Frogs	1	1,986	16	184	0
	Ground mammals	74	955	28	27	0
	Birds	4	11,194	810	2	2
	Raptors	0	193	33	0	0
	Reptiles	0	73	1	0	0
Flora		128	651	339	370	10

1 *Fluctuations in numbers of species sighted are reflective of differing forest habitats being sampled; interpretations of how surveys are recorded and undertaken; and some reliance of previous surveys undertaken.*

2 *The number of surveys undertaken may have declined due to several factors including the decrease in timber volumes being planned for harvest on the north coast; a reliance on previous reliable surveys; and the variation of individual work patterns whereby the same survey area may be targeted in a single or multiple survey event.*

3 *Note that vulnerable, endangered and critically endangered species are referred to as threatened species under the* Threatened Species Conservation Act 1995 *and are summarised in the above table. If these threatened species are sighted, their presence is taken into account in preparing the harvest plan. Protected refers to all Australian flora and fauna that are not threatened species. Introduced species are for example cats, goats, dogs, deer etc.*

Indicator 9 – Estimated expenditure on pest animal and weed control

Softwood Plantations Division

	2012–13	2013–14	2014–15
Treatment categories[1]			
Post establishment competition control[2]	$709,357	$379,224	$611,722
Weed control	$544,962	$426,959	$502,681
Pest animal control[3]	$175,781	$266,386	$295,055

Hardwood Forests Division

	2012–13	2013–14	2014–15
Treatment categories[1]			
Weed control	$166,312	$207,900	$152,816
Pest animal control[3]	$541,633	$427,800	$357,593

Expenditure on post establishment competition control is related to factors such as age class size, climate and its effect on weed growth, timing (e.g. program being delayed by weather) and suitable contractor availability. While all factors may have come into play across these years to some extent (treatment is usually 2 to 3 years after planting), the main reason for the increase in expenditure is likely to have been the age class size increasing over this period. Noxious weed control expenditure is also affected by these same factors, including budget constraints and priority works.

Recreational hunting in State forests was reinstated in January 2014. At this time the Expenditure Review Committee of Cabinet approved a funding package for NSW Department of Primary Industries to manage recreational hunting. The package included funding for Forestry Corporation of $425,375 in 2014-15 covering three pest control positions in Hardwood Forests Division and liaison functions in Hardwood Forests Division and Softwood Plantations Division of $160,000 split equally. Funding has been approved for the next two years.

1 *Includes weed and pest control financed from corporations operationally generated revenue and excluding control in protection forests using Community Service Obligation funding.*

2 *Excludes all other costs associated with establishment reported in indicator 26*

3 *Wild dog management is undertaken in line with the NSW Wild Dog Management Strategy 2011–16 . Excludes funding received to manage recreational hunting.*

Indicator 10a – Native forest health

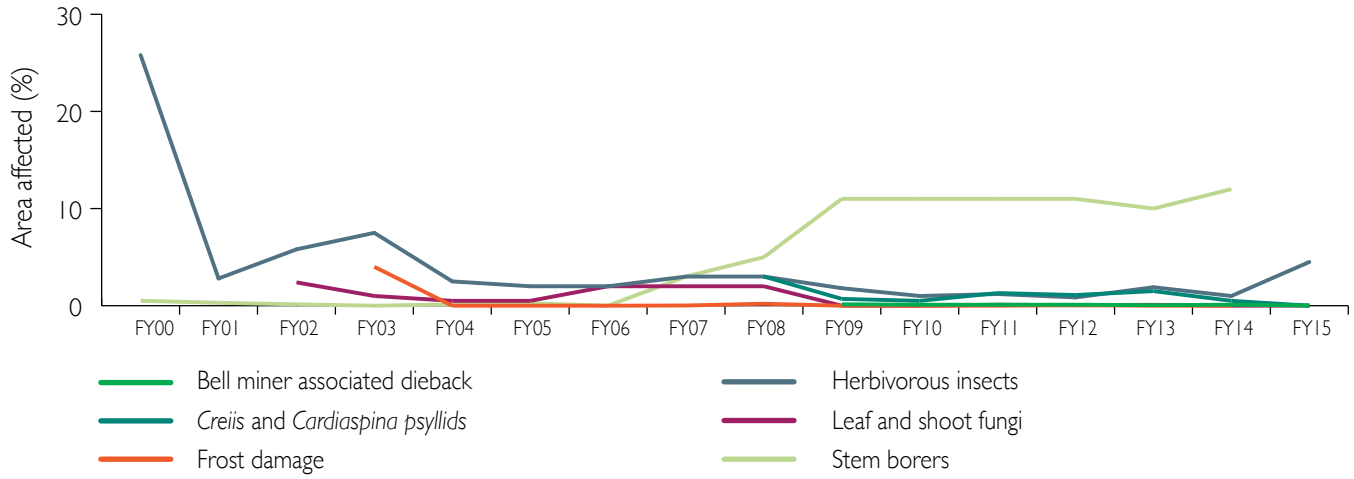
Forestry Corporation of NSW are working to identify and prioritise management activities associated with forest dieback. Forest health surveys are scheduled to be conducted on the NSW north coast in conjunction with NSW Department of Primary Industries Forest Research. The focus of the surveys will be to get a snapshot of the extent and severity over dieback over an area of approximately 70,000 ha of forest on State forest, National Park and private property.

At an operational level, decision support tools have been developed to assist Forestry Corporation staff to determine management options for dieback affected forests. Trial sites have been selected in an attempt to rehabilitate areas affected by die back through use of prescribed burning and direct planting of seedlings with weed control.

Indicator 10b – Plantation health

Hardwood plantation[1]

	FY00	FY01	FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15
Agent	Per cent (%) of area affected															
Bell Miner Associated Dieback (BMAD)	n/d	n/d	n/d	n/d	n/d	n/d	n/d	n/d	n/d	0.14	0.10	0.10	0.10	0.05	0.10	0.02
Creiis and *Cardiaspina psyllids*	n/d	n/d	n/d	n/d	n/d	n/d	n/d	n/d	3.00	0.70	0.50	1.30	1.10	1.50	0.50	0.00
Frost damage	n/d	n/d	n/d	4.00	0.00	0.00	0.00	0.02	0.20	0.00	0.00	0.00	0.05	0.00	0.00	n/a
Herbivorous insects	25.80	2.80	5.80	7.50	2.50	2.00	2.00	3.00	3.00	1.80	1.00	1.20	0.85	1.90	1.00	4.50
Leaf & shoot fungi[2]	n/d	n/d	2.40	1.00	0.50	0.50	2.00	2.00	2.00	0.00	0.00	0.10	0.05	0.09	0.00	0.01
Stem borers	0.50	0.30	0.14	0.00	0.14	0.25	0.00	3.00	5.00	11.00	11.00	11.00	11.00	10.00	12.00	n/d



The hardwood plantation area surveyed has changed significantly with the majority of the joint venture and annuity plantations no longer managed by Forestry Corporation. These areas had previously formed much of the area surveyed. Stem borer data was not available as much of the plantation estate that was affected by borer was joint venture and annuity plantations. The survey concentrated on the young second rotation plantations.

Significant changes in area affected by key damage agents can reflect changes in the susceptibility of the estate as it ages. In 2000, the post-1994 estate was young and highly susceptible to herbivorous insects (e.g. Christmas beetles), while in 2010, these same plantations were older and more susceptible to stem borers. Despite this a significant outbreak of Christmas beetle occurred in these older plantations in 2014–2015, causing almost complete defoliation. However, most plantations have now recovered.

Bell Miner Associated Dieback in plantations has remained relatively static since being first detected in the post-1994 plantations in 2009. The slight reduction reported this year reflects the change in estate surveyed, which now includes the pre-1994 estate and second rotation young plantations.

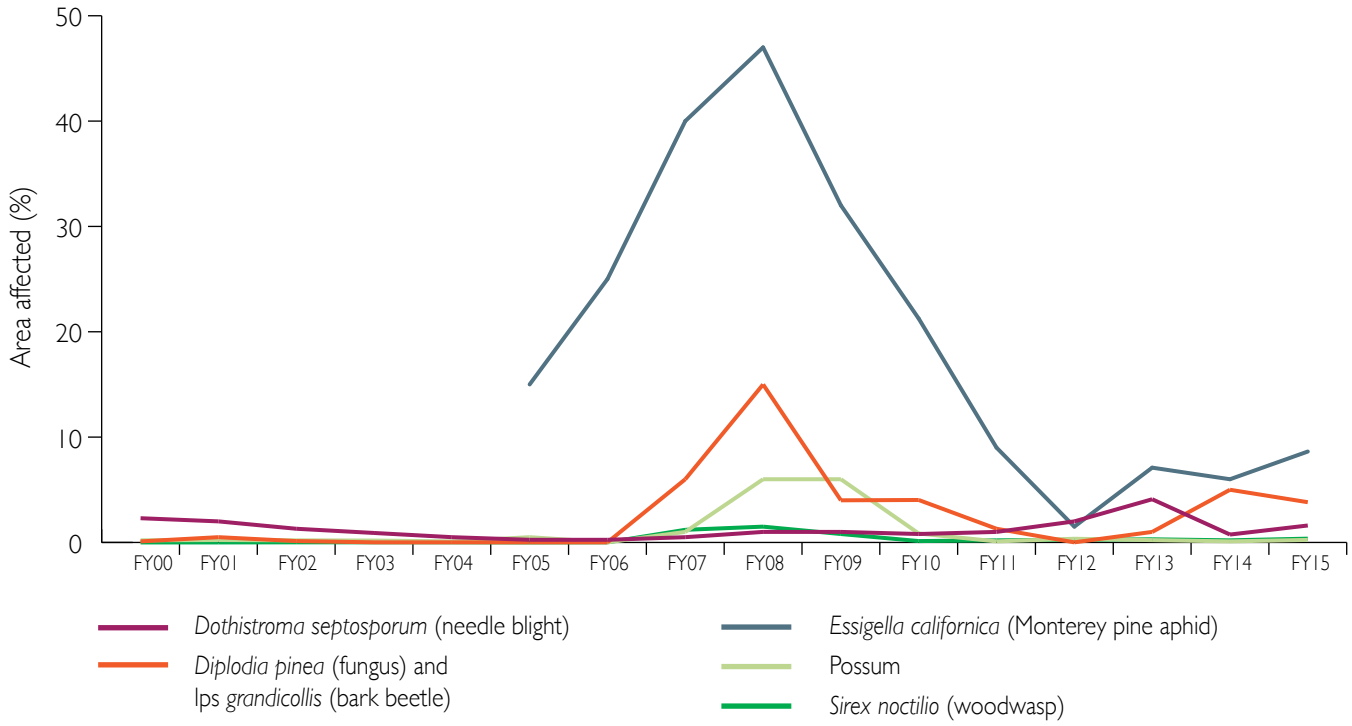
Areas previously susceptible to *psyllids* attack were not surveyed this past year. Myrtle rust was recorded in several young plantations, but not causing significant damage.

1 *Based on total hardwood plantation estate of which only a small proportion was surveyed.*
2 *From 2014–15 includes myrtle rust.*

Indicator 10b *continued*

Softwood plantation[1]

	FY00	FY01	FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15
Agent	Per cent (%) of area affected															
Dothistroma septosporum (needle blight)	2.30	2.00	1.30	0.90	0.50	0.25	0.25	0.50	1.00	1.00	0.80	1.00	2.00	4.10	0.75	1.61
Drought (*Diplodia pinea* {fungus} & *Ips grandicollis* {bark beetle})	0.10	0.50	0.13	0.01	0.01	0.01	0.01	6.00	15.00	4.00	4.03	1.30	0.01	1.00	5.00	3.82
Essigella californica (Monterey pine aphid)	n/d	n/d	n/d	n/d	n/d	15.00	25.00	40.00	47.00	32.00	21.25	9.00	1.50	7.10	6.00	8.63
Possum	0.20	0.23	0.20	0.18	0.10	0.50	0.01	1.00	6.00	6.00	0.85	0.10	0.35	0.22	0.10	0.24
Sirex noctilio (woodwasp)	0.00	0.02	0.01	0.01	0.01	0.00	0.01	1.20	1.50	0.80	0.13	0.20	0.25	0.30	0.20	0.36



Overall the *Pinus* plantation estate was healthy, with over 80 per cent with no significant health issues, 14 per cent with health issues at low severity and only 6 per cent with health issues at moderate to high severity. The area affected by drought-related tree mortality, historically the most significant health issue, was lower than the previous year. Thinning in historically high risk areas has substantially reduced the ongoing risk. The area affected by *Essigella* pine aphid was slightly greater this year. Surveys in 2014 identified that the *Essigella* biological control, *Diaeretus essigellae*, had established in several forests in each of Tumut, Bathurst, Bombala and Walcha Management Areas, with no evidence of establishment in Grafton. Often corresponding with *Essigella*-affected trees was an increase in *Cyclaneusma* needle cast. Only low levels of Sirex wood wasp attack were observed. Sirex has not established in Grafton Management Area. A slight increase in the area affected by *Dothistroma* needle cast was observed but chemical control was not required.

1 *Based on the total softwood plantation estate, of which most was surveyed.*

Indicator 11 – Fire fighting and prevention

Wild fire

	FY09	FY10	FY11	FY12	FY13	FY14	FY15
Per cent of total State forest estate	0.06%	1.60%	0.03%	0.10%	1.92%	2.20%	2.08%

Fuel management

	FY09	FY10	FY11	FY12	FY13	FY14	FY15
Hazard reduction (hectares)[1]	24,988	35,069	36,931	28,451	20,734	18,081	19,422
Grazing (hectares)	498,718	529,712	426,258	307,468	290,817	288,176	284,748

The 2014–15 fire season was a relatively quiet one for most fire agencies in NSW. After what looked like being a hot dry summer leading into November 2014, most of NSW east of the great dividing range received significant and constant rainfall across summer. Apart from relatively easily controlled fires that occurred on the north coast prior to November, the most significant event was three fires started by lightning in the Pilliga in March 2015 which involved significant resources being deployed from other Forestry Corporation areas as well as resources from the NSW Rural Fire Service and NSW National Parks and Wildlife Service.

1 *As of 2015 the area reported is consistent with Rural Fire Service reporting criteria and excludes some burns undertake for silvicultural reasons, such as establishment burns.*

Indicator 12a – Soil and water management

Area harvested

	2012–13	2013–14	2014–15
Hardwood and cypress forests (hectares)	31,221	23,807	19,386
Softwood plantation harvested (hectares)	8,379	8,223	7,556
Total area harvested (hectares)	39,599	32,030	26,942
Per cent of total estate[1]	1.62%	1.32%	1.13%

Indicator 12b – Catchment management

	2014–15
Fully protected land (hectares)[2]	181,849
Partly protected land (hectares)[3]	87,344
Total[4]	269,193

Hardwood Forests Division expenditure on harvest related planning and compliance

	2012–13	2013–14	2014–15
Compliance auditing post-harvest ($'000)	3,091	4,989	2,440
Compliance pre-harvest mark-up ($'000)	2,424	2,369	3,018
Harvest planning ($'000)	3,206	3,273	2,686
Pre-harvesting ecology surveys ($'000)	2,069	2,002	1,783
Regulation licence charges ($'000)	614	624	708

New functional structure and implementation of technology has improved efficiency and lowered costs. These costs are also linked to the land area harvested.

1 *The estate area used has been aligned to the Defined Forest Area*
2 *Includes wetlands, filter strips reserved from harvesting and areas with extreme risk of erosion or water pollution hazard*
3 *Includes forest management zone "catchment" and filter strips protected in areas where modified harvesting methods are permitted*
4 *Excludes substantial tracts of land otherwise zoned primarily for natural and cultural protection which also provide a catchment protective function*

Indicator 13 – Regulatory compliance

Compliance items[1]

	2012–13	2013–14	2014–15
Number of compliance check sheets conducted by Forestry Corporation supervisors			
2nd tier - compliance monitoring	392	284	668
3rd tier - systems implementation	24	20	45
Number of non-compliances recorded by staff for corrective action in moderate and above categories:[1]			
Extreme	na	na	0
Major	na	na	2
Moderate	na	na	30
Total	**232**	**171**	**32**
Number of clean up notices issued to Forestry Corporation			
Clean up notices	2	1	0
Number of fines (penalty infringement notices) issued to Forestry Corporation by regulators			
National Parks and Wildlife Act 1974	8	2	4
Protection of the Environment Operations Act 1997	3	0	2
Fisheries Management Act 1994	0	0	0
Plantations and Reafforestation Act 1999	0	0	0
Total	**11**	**2**	**6**
Number of prosecutions recorded against Forestry Corporation under the:			
Threatened Species Conservation Act 1995	0	0	0
National Parks and Wildlife Act 1974	0	0	0
Protection of the Environment Operations Act 1997	0	1	0
Fisheries Management Act 1994	0	0	0
Plantations and Reafforestation Act 1999	0	0	0
Total	**0**	**1**	**0**

1 *The guidelines for internal reporting non-conformance incidents have changed over the past year with the introduction of a new risk and incident management system. This new software system captures all hazards, incidents and risks, combining the broader forests management with workplace health and safety. The categorisation of incidents is now reported for the three more serious consequence ratings and remains specific to forest management, excluding workplace health and safety. Forestry Corproation workplace health and safety performance is reported in the Annual Report.*

Indicator 14a – Carbon sequestration in softwood planted forests

Softwood plantations

	2014–15
Net CO_2-e megatonnes sequestered	3.36

Volumes are calculated using the following assumptions:

CO_2 sequestered (tonnes CO_2-e) = net plantation area x MTBI x CP x CCDF where:

MTBI (Mean Timber Biomass Increment) = SBI + CBI + RBI where:

SBI (Stem Biomass Increment) = TSVI x BD where:

TSVI (Total Stem Volume Increment) - softwood = 13.3m^3/ha/yr
BD (Basic Density) - softwood = 0.42 t/m^3 and hardwood = 0.55t/m^3 (source AGO 2006)

CBI (Canopy Biomass Increment) = SBI x 0.1765
RBI (Root Biomass Increment) = (SBI + CBI) x 0.2
CP (Carbon Proportion) = 0.5
CCDF (Carbon to Carbon dioxide factor) = 3.667
Net plantation area = Net stocked area in State forest and joint venture plantations (refer Indicator 20)

Indicator 14b – Carbon balance in hardwood forests

Sustainably managed forests play an important role in mitigating climate change by taking carbon out of the atmosphere and storing it, as well as providing society with a natural and renewable resource. To better understand how forests perform in doing this Forestry Corporation uses formulas for calculating carbon storage, and understand that some carbon is lost during processing and manufacturing, while most is recovered and used, then stored for the life of wood products. The formulas used have been verified through peer reviewed research.

The annual sequestration or capturing of carbon is expressed in two parts, firstly that achieved through forest growth and secondly the amount stored for the long term in hardwood products, for example flooring or furniture.

In these calculations the estimated long-term carbon storage due to the annual production of timber products is calculated for the last twenty years of production. This reflects the fact that the carbon in these products has been taken out of the forest carbon cycle and transferred to long term storage through usage and eventually in landfill.

The annual carbon emissions reported estimate release of carbon through fuel usage in harvesting and transporting timber from the forests, as well as the emissions associated with prescribed burning and bushfires. The vehicle fuel emissions are negligible when compared to bushfire emissions. Much of the carbon lost through fires is however recovered later by the regrowth, in contrast to fossil fuel emissions which are permanent.

This year Forestry Corporation has estimated the annual energy and product substitution impact through the use of timber products, rather than what would be used if these timber products were unavailable. These figures are based on Forestry Corporation production and modelling undertaken by DPI Forest Science in a major national project that examined the greenhouse balance of native forest management in NSW (Ximenes et al 2015 - Carbon stocks and flows in native forests and harvested wood products in south east Australia. Report prepared for Forest and Wood Products Australia). A key finding of this analysis was the very significant product substitution impact that is associated with the production of pulpwood, due to high emissions associated with unsustainable practice for some of the alternative suppliers of pulp.

Hardwood forest carbon balance

	2014–15
Total standing volume CO_2 (Mt)	1,567
Annual carbon sequestration	
Annual CO_2-e sequestered forest growth (Mt)	6.734
Annual CO_2-e harvest storage in hardwood products (Mt)	0.192
Cumulative long-term CO_2-storage in solid wood over a twenty year period (Mt)	4.576
Annual carbon emissions	
Annual CO_2-e harvest and haulage emissions (Mt)	0.015
Annual CO_2-e fire emissions (Mt)	3.679
Annual non CO_2 fire emissions (Mt)	0.173
Annual energy and product substitution impact (MtC)	
Poles, piles and girders	0.011
Sawn hardwood	0.078
Pulp	1.133
Firewood & residue in boilers	0.110
Annual sequestration balance	
Net CO_2 (Mt)	4.392

Assumptions:

Model A

CO_2 sequestered (tonnes CO_2e) = production area x MTBI x CP x CCDF where:
MTBI (Mean Timber Biomass Increment) = SBI + CBI + RBI where:
SBI (Stem Biomass Increment) = TSVI x BD where:
TSVI (Total Stem Volume Increment) native forest ave = 5m^3/ha/yr
BD (Basic Density) = 0.65t/m^3
CBI (Canopy Biomass Increment) = SBI x 0.1765
RBI (Root Biomass Increment) = (SBI + CBI) x 0.2
CP (Carbon Proportion) = 0.5
CCDF (Carbon to Carbon dioxide factor) = 3.667

Indicator 15a – Energy consumption

Electricity (kilowatts)

	2012–13	2013–14	2014–15
Offices, nurseries, workshop, depots, etc	1,874,533	1,721,601	1,419,325

Gas

	2012–13	2013–14	2014–15
LPG gas (litres)	29,628	18,399	22,444
Natural gas (Megajoules) - nurseries, workshop, depots and other	262,608	261,499	317,781

Indicator 15b – Fleet

Activity data (litres)

		2012–13	2013–14	2014–15
Plant and machinery	Diesel oil transport	535,985	467,349	463,290
Other transport	Diesel oil transport	434,752	387,204	366,710
Other transport less than 3.5 tonnes	Diesel oil transport	1,217,493	1,128,832	1,075,285
Passenger vehicles	E-10 biofuel transport	33,967	24,422	16,484
	Diesel oil transport	40,152	22,525	11,839
	Gasoline (other than for use as fuel in aircraft) Transport	67,976	56,645	49,786

Business measures

		2012–13	2013–14	2014–15
Other transport	Distance travelled (km)	1,123,428	973,264	901,384
	Number of vehicles	91	88	83
Other transport less than 3.5 tonnes	Distance travelled (km)	10,569,126	9,673,392	9,162,972
	Number of vehicles	383	376	363
Passenger vehicles	Distance travelled (km)	1,255,261	1,041,561	903,244
	Number of vehicles	66	49	38

Energy consumption is reported under National Greenhouse and Energy Reporting and energy saving initiatives are reporting under the Australian Government's Energy Efficiency Opportunities program.

Indicator 16 – Volume of timber harvested

Hardwood Forests Division

	2011–12	2012–13	2013–14	2014–15
Sawlogs and veneer logs (m^3)				
Native forest hardwood sawlogs	507,347	474,980	470,540	460,644
Hardwood plantation sawlogs	59,241	70,345	53,758	37,822
Cypress pine sawlogs	45,006	51,624	51,636	44,730
Native forest hardwood veneer logs	10,037	12,523	11,288	6,444
Hardwood plantation veneer logs	3,409	3,517	2,631	724
Poles, piles and girders (m^3)				
Native forest hardwood	38,089	35,108	27,252	31,506
Plantation hardwood	11,876	10,832	3,976	1,801
Pulpwood (tonnes)				
Native forest hardwood pulpwood	505,907	362,754	258,744	324,942
Plantation hardwood pulpwood	37,684	22,039	529	138
Fencing/Landscape/Sleepers (m^3)	96,441	93,352	103,704	96,441

Softwood Plantations Division

	2011–12	2012–13	2013–14	2014–15
Product (tonnes)				
Sawlogs & other products	2,074,926	2,125,444	2,271,027	2,130,567
Pulp, chipwood & fuel	1,480,622	1,430,036	1,321,178	1,232,033

The sale of hardwood sawlogs was lower in FY15 than in previous years. While softer overall end-market conditions contributed to this, the reduction was largely as a result of Forestry Corporation's implementation of negotiated reductions in Wood Supply Agreement allocations with Boral Timber over the period.

Non-performance by one of the four major cypress sawmills as well as a major fire event at Forestry Corporation's only veneer log customer also impacted on total sales of these products over the period.

Residue/Pulpwood sales on the south coast increased as end-market conditions improved over the period, the different properties of similar products on the north coast as well as limitations at the Port of Newcastle for any export woodchip sales have resulted in lower activity since about 2012. This reduction in north coast sales has triggered Forestry Corporation to scale down its north coast hardwood plantation harvesting levels while it investigates alternative markets for residue by-products, necessary to improve the economics of its plantation re-planting operations.

While sales volumes were down the strong softwood market ensured strong revenue during FY15.

Indicator 17 – Forest management intent

	Estimate of land available for harvest	Estimate of land unavailable for harvest	Area (ha)
Formal reserves (flora reserves)[1]	0	29,089	29,089
Informal reserves[2]	0	299,235	299,235
Protected by prescription[3]	0	223,159	223,159
Zone 4 – General Management Zone[4]	925,257	378,544	1,303,801
Zone 5 – Hardwood Plantations Zone	36,124	15,814	51,938
Zone 6 – Softwood Plantations Zone	228,408	34,717	263,125
Zone 7 – Non Forestry Use Zone	0	7,329	7,329
Zone 8 – Areas for further assessment	0	18,461	18,461
Totals	**1,189,789**	**1,006,348**	**2,196,137**

The estimate for harvestable areas is derived by excluding all identified non-harvestable areas held on the corporate geo-database.

For coastal regions, a further percentage is then removed from the harvestable area based on the net harvest modifier models. These modifiers have been developed from intensive harvesting studies that determined the relationship between mapped exclusions and actual exclusions identified in harvesting operations. For the planted forests estate, net stocked area, clearfell and potential plantable areas are all categorised as harvestable. The bulk of non-harvestable area is made up of retained vegetation, usually native forest.

For planted forests estate the operation groups are used with net stocked area, clearfell and potential plantable areas all categorised as harvestable, while the bulk of non harvestable area is made up of retained vegetation, usually native forest.

1 *Formal reserves are in the form of national parks, nature reserves, and, on State forest, flora reserves. These areas are equivalent to International Union of Conservation and Nature (IUCN) Protected Area categories I, II or IV and on State forest are classified as Forest Management Zone (FMZ) 1 – Special Protection.*

2 *Informal reserves include Crown Reserves, State Recreation Areas and State Conservation Areas. On State forests they are FMZ 2 – Special Management areas that are greater than 40 hectares and have a minimum width of 200 metres or are adjacent to dedicated reserves. They also include special management zones where they have been created under Section 18 of the Forestry Act 2012. All are equivalent to IUCN Protected Area categories II, III, IV or VI.*

3 *Protected by prescription comprise those elements of habitat that are protected by regional prescription as detailed in the IFOA. They also include FMZ 3A - Harvesting Exclusion, FMZ 3B - Special Prescription where harvesting will be modified and FMZ 2 - Special Management that have not been included in the informal reserve system because of size, configuration or location. Areas are equivalent to IUCN category IV.*

4 *Includes joint ventures on State forests.*

Indicator 18a – Plantation harvesting, establishment and survival

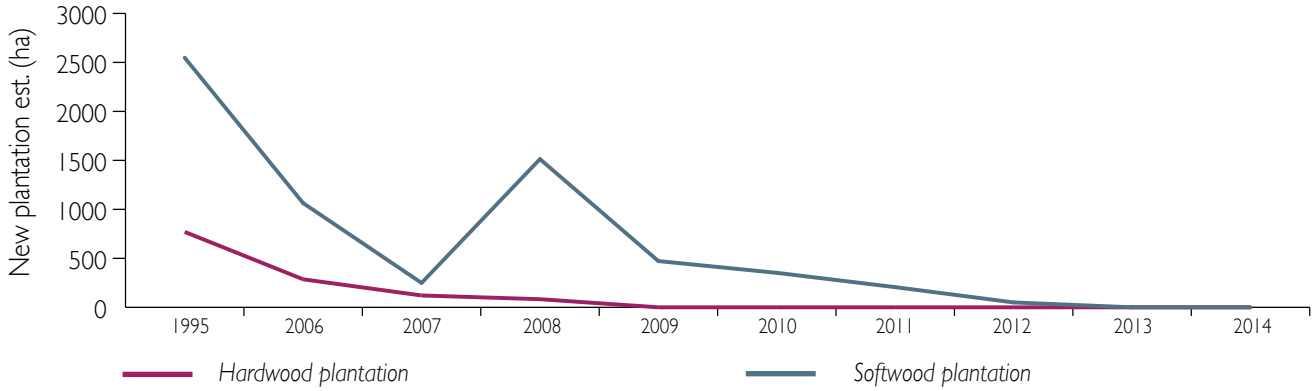
Age-class	2012	2013	2014
Softwood Plantations Division			
Re-establishment of plantations (ha)	7,763	7,138	9,285
Cost of all plantation establishment[1] ('000)	$12,608	$11,949	$15,904
Per cent requiring restocking after one year[2]	22%	24%	20%
Hardwood plantation (part of Hardwood Forests Division)			
Re-establishment of plantations (ha)[3]	469	724	132
Cost of all plantation establishment[1] ('000)	$1,313	$1,955	$356
Per cent requiring restocking after one year[2]	5%	12%	0%

Reported figures for costs of age-class will increase where additional costs have been incurred and decrease where costs such as seedlings are reallocated. For example, costs for the intended areas not planted with the 2007 age-class due to adverse conditions were transferred to the 2008 age-class.

An area requires restocking after one year if more than 20 per cent of seedlings have not survived. Replanting is undertaken to ensure the plantation is sufficiently stocked.

Per cent restocking required is reported as at 30 June and may be updated in the subsequent period to reflect restocking of the age class that occured after the end of the initial reporting period but within one year of planting.

New plantation establishment (ha)



Softwood plantations harvested and thinned areas

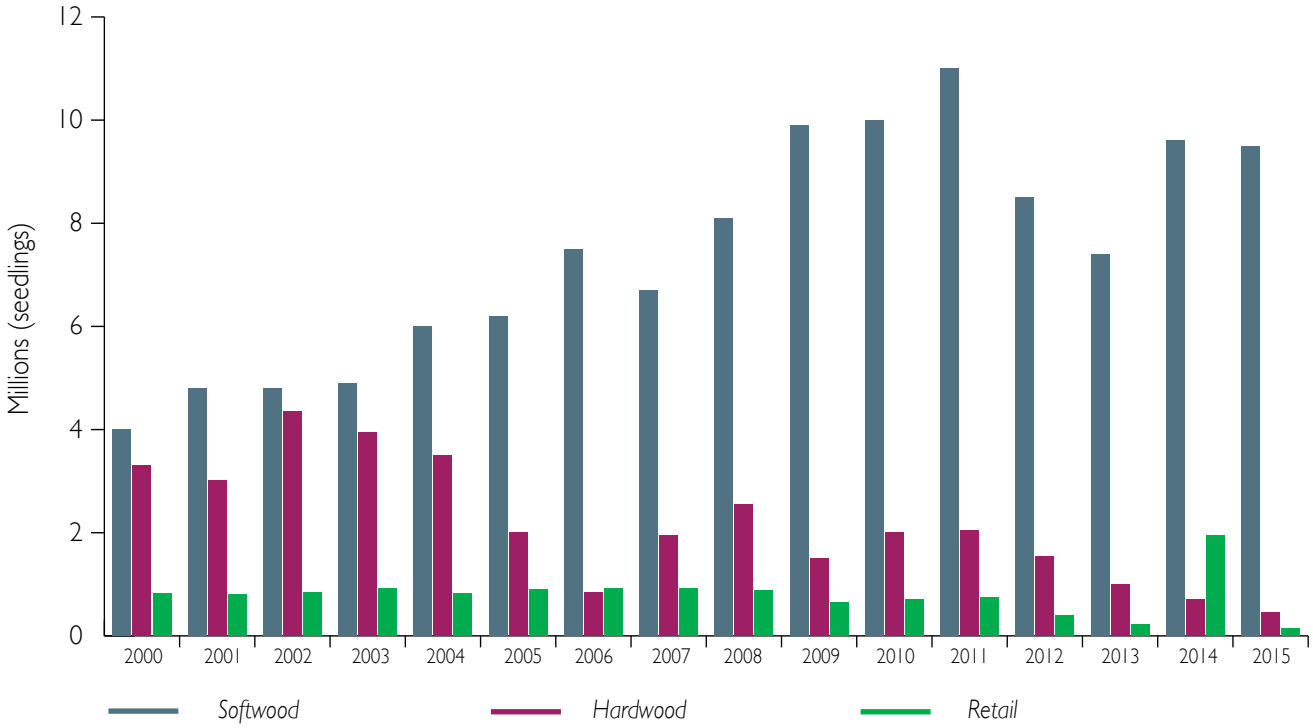
Species	2012–13		2013–14		2014–15	
	Harvested	Thinned	Harvested	Thinned	Harvested	Thinned
Southern pine	0	0	0	0	3	48
Pinus radiata	7,038	4,868	7,496	4,146	6,701	2,952
Softwood other	1,341	280	879	0	606	0
Total	8,379	5,148	8,375	4,146	7,310	3,001

1 *Plantation establishment includes the cumulative cost associated with site preparation, planting, post planting fertilising and competition control as at 30 June for that age class. Note that third party investor plantings, joint ventures and fee for service areas are included.*

2 *Due to a data miscalculation being identified, some percentages have been corrected in the FY 2014–15 report.*

3 *Adjustment to previously reported figures due to alignment of age class with calendar year.*

Indicator 18b – Nursery production for planting program



Indicator 19 – Mean annual growth and stocking in planted forests

Softwood plantation

	2014–15
Annual increment[1] (m^3)	3,055,840
Net stocked area[2] (hectares)	207,880
Mean annual increment[4] (m^3/ha/yr)	14.7

Hardwood plantation

	2014–15
Annual increment[1] (m^3)	427,363
Net stocked area[2] (hectares)	32,133
Mean annual increment[4] (m^3/ha/yr)	13.3

1 *Annual increment (AI) is the change in volume of the plantation net stocked area in one year (AI=NSAxMAI).*

2 *Net stocked area (NSA) is the area of State forests estate (including joint ventures) where trees are planted (i.e. does not include roads, environmental exclusion areas, area awaiting regeneration etc) as at the end of the financial year.*

4 *Mean annual increment (MAI) is an indication of the productive potential of an average hectare within the estate. The indicator was calculated as part of the discounted cash flow valuation process and is under review.*

Indicator 20 – Hardwood and cypress forest silviculture

	2012–13	2013–14	2014–15
	Estimated area harvested (hectares)		
Mixed hardwood native forests			
Alternate coupe	1,258	1,702	1,144
Thinning	4,898	1,630	1,119
Single tree selection	15,355	13,791	17,572
Australian group selection			41
Regeneration			1,068
Cypress forests			
Release thinning	9,710	6,684	2,410
Total	31,221	23,807	23,354
Regeneration[1] (%)	69	67	81

Natural regeneration of commercial species is usually achieved, in a minority of cases regeneration of commercial species may be insufficient. This is due to a number of factors including poor seed bank, unfavourable weather conditions and competition from weeds. Follow-up treatments such as hazard reduction burning, mechanical disturbance or enrichment planting are used to regenerate these areas successfully.

Note that cypress forests of Western Region are generally regenerated before harvesting.

1 *Proportion of area harvested effectively regenerated with commercial species*

Indicator 21 – Committed timber harvested

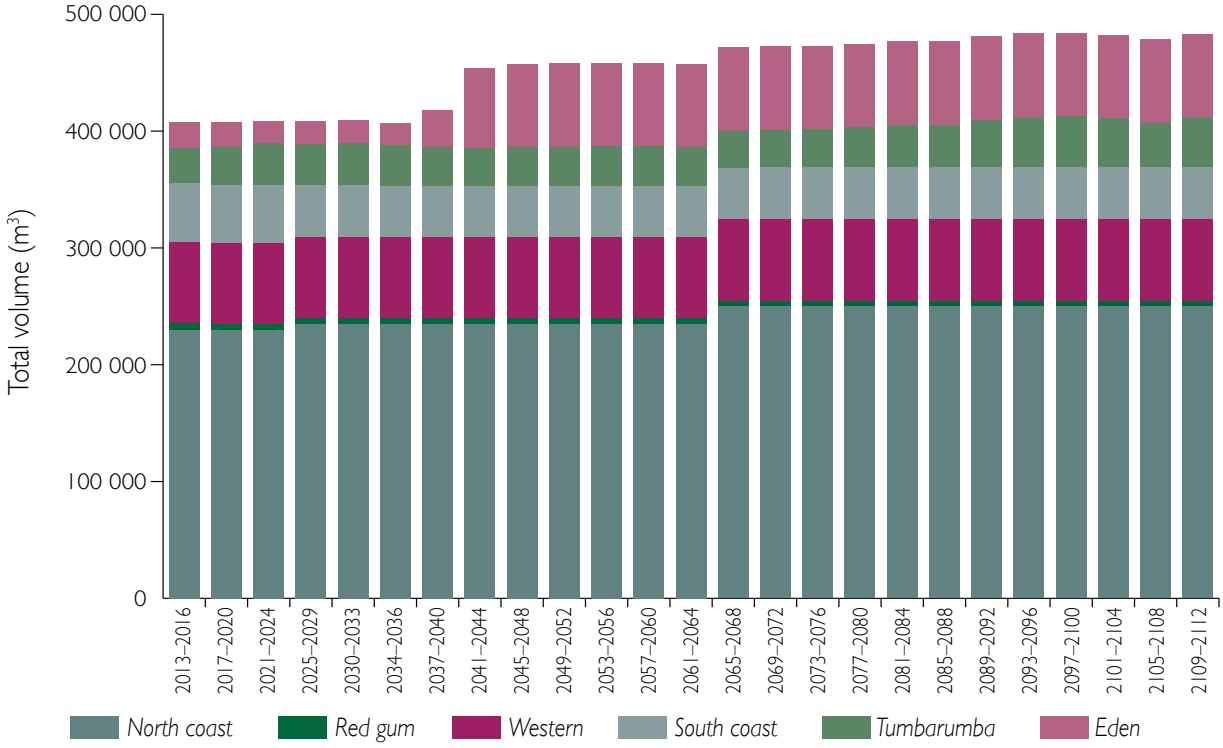
The chart below shows the combined outputs from Forestry Corporation's strategic wood supply models for high quality sawlogs. These models are informed by on-ground inventory plots. The data from these inventory plots are analysed and used in yield modelling software, which simulates future timber harvesting, growth and regeneration.

Each of the analysis regions represented is modelled separately using locally collected data. Reconciliations of these models and updates of the inventory data are completed regularly.

North coast yields include both plantation and native forest sources, which are modelled together to ensure harvesting operations can provide an even flow, or sustained yield, of high quality sawlogs.

A large increase in future yields predicted for the Eden area is derived from substantial areas of regrowth forest that are expected to reach commercial maturity from 2040.

Forestry Corporation's strategic wood supply models for high quality sawlogs



Per cent of actual harvest timber against multi-year commitments

	2012–13	2013–14	2014–15
Category	Per cent (%)		
Hardwood high quality sawlog	84%	82%	102%
Hardwood native and plantation pulpwood	50%	90%	88%
Native cypress forest	87%	87%	75%
Softwood planted preservation and sawlog	94%	105%	104%
Softwood planted pulpwood	88%	90%	102%

In Softwood Plantations Division additional annual contracts are entered into based on spot volumes that are available rather than a long term commitment.

Indicator 22 – Financial performance

Hardwood Forests Division

		2012–13	2013–14	2014–15
Revenue	$m	101.1	99.6	99.3
Earning before interest, tax and overheads	$m	(3.9)	.4	2.0
Operating profit after overheads before tax	$m	(15.0)	(11.8)	(0.6)

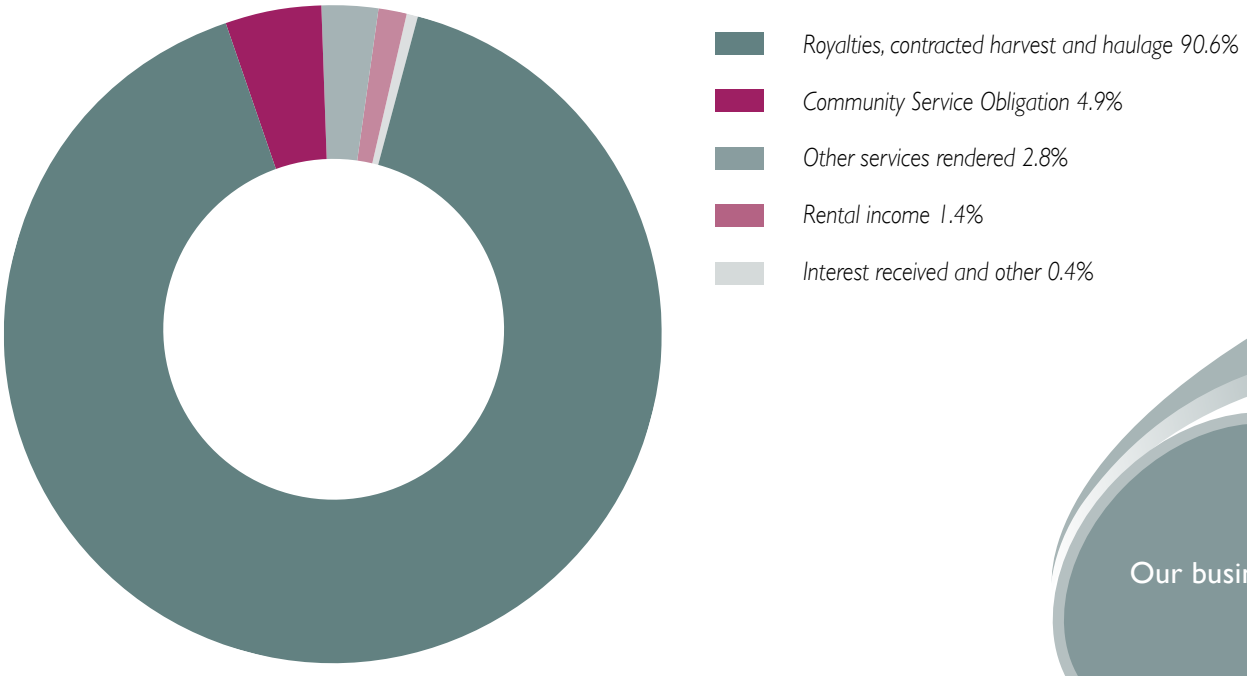
Softwood Plantation Division

		2012–13	2013–14	2014–15
Revenue	$m	203.6	220.6	214.5
Earning before interest, tax and overheads	$m	50.0	64.4	53.6
Operating profit after overheads before tax	$m	34.0	48.2	47.6

Forestry Corporation revenue for 2014–15

	$m
Sale and delivery of timber and other products	287.236
Community Service Obligation funding	15.589
Other services rendered	8.739
Rental income, interest received and other	5.516
Total revenue	**317.080**

Forestry Corporation generated $287 million from the sale and delivery of timber and other products, representing 90.6 per cent of the total revenue. Community Service Obligation funds represent 4.9 per cent of the total revenue and used to provide social and environmental services, which would not otherwise be undertaken by a forest management business. Services rendered included the provision of State forests for a range of purposes such as telecommunication sites, recreation and tourism activities, grazing and apiary. For further financial reporting from which this indicator was derived see the Forestry Corporation Annual Report.



Indicator 23 – Forest certification

Forestry Corporation was externally audited to check compliance with the Australian Forestry Standard (AS4708:2007) and Environmental Management System (ISO 14001:2004) in October 2014.

As with the previous assessment, this audit was structured to provide an independent assessment of the two operational Divisions, Hardwood Forests Division (HFD) and Softwood Plantations Division (SPD), as well as centrally-managed corporate governance processes. The HFD component of the audit focussed on forest management in the northern coastal hardwoods Forest Management Units (Maitland, Dungog and Casino) including management of joint venture hardwood plantations and planning processes for forest operations on private property. The SPD component focused on *Pinus radiata* plantations in Northern Softwoods' region (specifically Armidale State Forest and the State forests around Walcha).

The Australian Forestry Standard sets criteria that our forestry management must meet, including:

- forestry activities undertaken in a systematic manner that addresses a range of forest values
- provide for public participation and foster productive community relationships, particularly with neighbours
- protect and maintain the biological diversity of forests, including their successional stages across the regional landscape
- maintain the productive capacity of forests
- maintain forest ecosystem health and vitality
- protect soil and water resources
- maintain forests' contribution to carbon cycles
- protect and maintain the natural, cultural, social, religious and spiritual heritage values of Indigenous and non-Indigenous people
- maintain and enhance long-term social and economic benefits.

The externally audit identified no non complainces with the standard, with a number of observations noted, which Forestry Corrporation is addressing as part of the continual cycle of improvement.

A re-certification audit was undertaken in September and October 2015. Forestry Corporation is seeking to have each operation Division certified to both ISO 14001:2004 and the updated AS4708:2013 (Australian Standard® for Sustainable Forest Management).

Forestry Corporation Sustainability Supplement 2014–15

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