Forests NSW Supplementary Sustainability Indicator Data 2011–12

Forests NSW is a public trading enterprise within NSW Department of Primary Industries

Social indicators

INDICATOR 1 – SOCIAL RESPONSIBILITY
OBJECTIVE: Maintain voluntary activities in non-operational business areas
PERFORMANCE:

	2008–09	2009–10	2010–11	2011–12
Sponsorships and donations	$57 485	$29 250	$38 258	$35 900

Note the decrease since 2008–09 reflects a smaller budgeted amount corporately and a move to target sponsorship more effectively as per our sponsorship guidelines.

The main programs sponsored included the FIEA ForestTech, AUStimber and Global Eco Tourism conferences along with the Kendall National Violin Competition and the Walcha Timber Expo.

Community volunteering programs	2008–09	2009–10	2010–11	2011–12
Days	372	464	724	1028
Participants	175	101	228	286
Programs	9	5	4	17
Expenditure on volunteer programs	n/r	n/r	n/r	$66 716

The major volunteer programs included the Cumberland and Strickland State Forest bush regeneration program and the 'Communities in Forests' program with Conservation Volunteers Australia (CVA). During the year, CVA volunteers weeded a total of 6000 m^2, repaired nearly six kilometres and constructed over three kilometres of walking track across five different sites:

- Bruxner Park Flora Reserve in Orara East State Forest, Coffs Harbour – improved the walking track to the rejuvenated Sealy Lookout;
- Burrawan State Forest, near Wauchope - upgraded the walking track to a magnificent bloodwood tree, given the nickname 'Old Bottlebutt', that features on the National Register of Big Trees;
- Nalbaugh and Bondi State Forests, near Bombala – repaired and maintained the recreation facilities at Nalburgh and Rockton Falls;
- Nullica State Forest, far south coast - restored the walking track and improved the recreation facilities at Nethercote Falls; and
- Newnes State Forest, Lithgow – removed exotic pine wildings from the Newnes Plateau Swamp, an endangered ecological community.

Volunteers continued to digitise and catalogue Forests NSW photographic collection with well over 5000 images digitised so far.

This year saw an increase in local volunteer programs being undertaken at a regional level.

INDICATOR 2A – PUBLIC PARTICIPATION

OBJECTIVE: Maintain opportunities for stakeholder participation in planning. Actively engage and involve our neighbours in management of the community's forests

PERFORMANCE: 

Meeting/Forum subject categories	2010–11		2011–12	
	Hours of staff time associated with engagements initiated by others	Hours of staff time associated with engagements initiated by Forests NSW	Hours of staff time associated with engagements initiated by others	Hours of staff time associated with engagements initiated by Forests NSW
Bushfire / hazard reduction burning management	268	33	628	146
Business and joint venture partner	72	10	32	89
Catchment management	30	14	30	9
Cultural heritage management	51	34	72	42
Education	60	60	36	6
Employment conditions and terms	2	5	11	6
Strategic & supplementary planning	24	0	0	16
External audit	9	56	17	5
Flora and fauna management/ conservation/ environmental	74	31	98	29
Forestry / forest practices	51	9	44	14
Local emergency management	4	7	7	0
Local government	30	0	111	16
Occupational health & safety	5	9	12	52
Other	290	199	240	273
Pest animal / weed / disease management	151	72	248	19
Plantation establishment	2	14	0	1
Recreation / tourism	62	23	144	31
Regional planning / Regional Forest Agreement	23	35	10	54
Supply management (incl. haulage and processes)	111	141	66	87
Timber harvesting/ road construction/ maintenance	5	33	17	40
	1321	**783**	**1819**	**932**

INDICATOR 2B – PUBLIC PARTICIPATION

OBJECTIVE: Be responsive to neighbours' and stakeholder concerns and professionally conciliate any issues

PERFORMANCE: 

Community liaison	2008–09	2009–10	2010–11	2011–12
Ministerial correspondence handled[1]	383	411	214	416
Registered complaints[2]	8	17	26	54
Official complaints[3]	n/r	2	1	3

[1] *All items of correspondence to the Minister for Primary Industries handled by Forests NSW.*

[2] *Complaints registered in the Forests NSW Non-Conformance & Improvement Reporting system.*

[3] *Complaints handled through the NSW Trade & Investment complaint handling procedure.*

The increase in Ministerial correspondence handled could be partly attributed to several new issues generating a high volume of correspondence and an increased use of email correspondence.

The increase in the number of registered complaints was likely due to more staff entering complaints into the corporate system following staff training. Of the total 54 complaints, 10 complaints related specifically to alleged breeches of legislation, codes, licences, standards or operational plans.

INDICATOR 3 – RECREATION AND TOURISM

OBJECTIVE: Maintain opportunities for events and partnerships

PERFORMANCE: ●

Information about significant events held in State forests in 2011–12 is provided on page 23 of the annual report.

Permits for organised recreational activities	1998–99	2009–10	2010–11	2011–12
Bow hunting/archery	60	2	10	4
Bushwalking	23	8	7	4
Car and bike rallies/events	44	40	48	17
Eco tourism/4x4 tours	54	7	14	8
Education/outdoor education schools	27	11	9	7
Fossicking	n/r	152	320	275
Horse, trail and endurance rides	32	24	28	9
Mountain bike rallies	30	38	42	22
Orienteering/mountain runs/triathlon	37	26	24	9
Other	22	126	10	17
Training/exercises	152	34	56	34
Total number of permits	**481**	**468**	**568**	**406**
Area zoned primarily for recreation (ha)[1]	n/d	6090	4741	4696
Area zoned primarily for visual aesthetics (ha)[1]	n/d	31 109	40 233	39 957
Expenditure on recreation ('000)	n/r	$2547	$2408	$2537

[1] *A data error was corrected for 2010–11.*

Note that more information on recreation in NSW State forests is available at www.forests.nsw.gov.au

OBJECTIVE: Provide safe, professional and efficient forest-based recreation and tourism services for the people of NSW

Facilities provided at designated 102 recreational sites	2009–10	2010–11	2011–12
Camping area	93	45	49
Caravan site	16	16	19
Fireplace/BBQ	84	61	59
Picnic area	103	65	67
Rubbish collection	48	32	27
Toilets	62	58	60
Water (not for drinking)	87	40	41
Wheelchair accessible toilets	11	8	6

This year was the first time this data was collated from Forests NSW corporate data warehouse and it corresponded well to last year's regionally collected data.

INDICATOR 4A - RESEARCH AND EDUCATION

OBJECTIVE: Cost-effective research services from NSW DPI and within Forests NSW

PERFORMANCE: ○

	Research[1] (million)	Education (million)
1998–99	$7.20	n/d
2005–06	$6.90	$4.21
2006–07	$7.05	$4.18
2007–08	$5.20	$2.90
2008–09	$6.03	$2.56
2009–10	$5.37	$2.47
2010–11	$3.46	$2.40
2011–12	$1.35	$1.46

[1] *From 2011–12, includes expenditure on community service obligations and water quality monitoring. Expenditure on the tree improvement program is no longer included.*

The reduction in research expenditure is related to the change in methodology outlined in the footnote.

The expenditure on education has likely decreased due to a number of factors including changes in staffing and program arrangements and expenditure possibly not being costed correctly following the introduction of a new corporate chart of accounts this financial year.

INDICATOR 4B – NUMBER OF PEOPLE PARTICIPATING IN PROGRAMS AND RECEIVING INFORMATION THROUGH CUMBERLAND STATE FOREST

OBJECTIVE: Provide a strategic education program

PERFORMANCE: ○

Activity participants	1998–99	2009–10	2010–11	2011–12
School – lower primary	1197	539	641	1412
School – upper primary	1585	3016	2901	625
School – secondary	753	352	648	650
School holiday activities	1008	404	441	462
Total	**4543**	**4311**	**4631**	**3149**

In addition staff from Cumberland State Forest participated in six events that were attended by 9050 students: Science in the Suburbs, Science in the City, Science in the Bush, the Strickland Expo and two local council Enviro Days. Regional staff facilitated a small number of school and university groups to inform students on forest management. The decrease in school participants in the school education program was a result of a number of cancellations due to wet weather. A state wide indicator of Forests NSW commitment to education is shown through the education category in indicator 2.

INDICATOR 5 – REGIONAL EMPLOYMENT

OBJECTIVE: Provide opportunities for employment in forests-dependent industries

PERFORMANCE: ●

State forests-dependent sector	1997–98	2008–09
Apiary	302	354
Eco-tourism	88	39
Forest management	1566	888
Grazing	165	489
Harvesting & haulage	1132	1131
Other[1]	136	54
Primary processing[2]	4328	4325
Total	**7717**	**7280**

[1] *Includes plantation establishment contractors, gravel extraction and other forest product removal.*

[2] *Processing undertaken at a site where the input is raw material supplied by Forests NSW.*

Note that employment numbers for the State forests-dependant sectors are no longer collected.

NSW forestry employment[1]	Individuals
Distribution	1446
Forest management & harvesting	5124
Primary processing	5343
Support	831
Total	**12 744**

[1] *Derived from 2006 Census data. The 2011 Census data was not yet available.*

INDICATOR 6A – OTHER FOREST PRODUCTS

OBJECTIVE: Maintain access to State forests for apiary, grazing and other products appropriate to forests

PERFORMANCE:

Forest product	1997–98	2009–10	2010–11	2011–12
Advanced plants sold to public (number)[1]	5491	65 980	58 026	55 000
Apiculture (sites)	3843	3804	2723	2891
Bark (tonnes)	1109	52	0	0
Broombush (tonnes)	1977	3198	2653	2332
Charcoal (tonnes)	119	1731	1647	1624
Communication sites	126	171	144	144
Craft timber (m^3)	33	7	0	0
Didgeridoos (number)	n/r	n/r	100	80
Fencing material (m^3)	n/r	n/r	845	279
Film/documentary (permits)	3	8	0	1
Firewood - non-commercial (tonnes)[2]	75 615	27 691	28 475	8001
Forest maps sold to the public[3]	5491	5887	3920	4990
Gravel/sand/rock (tonnes)[4]	69 495	84 767	91 166	63 289
Grazing (hectares)	768 946	529 712	426 258	307 468
Misc native plants & parts (number)	1219	1991	6571	478
Nursery seedlings to public (number)[5]	1 148 000	762 870	519 945	570 000
Other structures (permits)	227	137	92	120
Research (permits)	215	135	41	14
Seed (kg)	969	93	58	35
Skimming poles	n/r	n/r	8000	2000
Wood blocks (number)	0	500	0	200
Total revenue ('000)	**n/r**	**$5802**	**$5037**	**$4863**

[1] *The figure for 2011–12 is an estimate.*

[2] *Additional firewood sales are reported as part of commercial timber sales in Indicator 22.*

[3] *Includes maps sold to the public and wholesalers. Includes maps sold via www.shop.nsw.gov.au .*

[4] *The 2008–09 figure may underreport gravel sales as some were made in cubic meters and not converted. The 2009–10 figure has been updated.*

[5] *Does not include plantation stock sold to external plantation owners. The figure for 2011–12 is an estimate.*

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

Although the figure for firewood sales dropped, this was largely due to commercial firewood sales being more comprehensively reported in Indicator 22. In previous years, it is possible that some commercial firewood sales were included in Indicator 6a. Indicator 22 showed a significant increase in commercial firewood sales in 2011–12.

INDICATOR 6B – OTHER FOREST PRODUCTS

OBJECTIVE: Cost-effectively provide sufficiently stock for Forests NSW plantation planting program

PERFORMANCE:

Commercial nursery sales (Number in millions)	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Forests NSW seedlings	4.2	5.3	4.8	6.6	5.3	6.2	10.5	12.2	12.0	9.12
Forests NSW cuttings	0.8	0.5	1.3	0.9	1.3	0.8	0.7	1.2	0.1	0.13
Private seedlings	1.4	0.8	0.5	2.1	2.4	2.2	1.3	0.5	0.4	0.00
Private cuttings	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
Total	**6.6**	**6.7**	**6.6**	**9.6**	**9.0**	**9.2**	**12.5**	**13.9**	**12.52**	**9.25**

INDICATOR 7 – QUALITY OF MANAGEMENT

OBJECTIVE: Maintain staff levels for effective and efficient operations

PERFORMANCE: ○

Information associated with this indicator (i.e. equal employment opportunity and human resources) is found in the statutory appendicies in the annual report.

INDICATOR 8 – TRAINING

OBJECTIVE: Operations implemented safely and effectively by appropriately trained staff and contractors

PERFORMANCE: ●

Training categories	2010–11		2011–12	
	Staff	Contractors[1]	Staff	Contractors[1]
Assessors	1	0	3	0
Authorised officer	108	0	0	0
Business skills	112	3	38	6
Computer skills	35	0	9	0
Contractors	0	0	0	0
Environmental and cultural	0	382	61	244
Fire medical and fitness	83	0	329	0
Fire resources protection	514	0	233	6
Forest management	35	13	16	71
Health and safety awareness	334	335	37	143
Health and safety compliance	340	163	351	234
Management and leadership	15	0	13	1
Plant and animal management	7	0	0	0
Plant skills	26	238	38	0
Plantation establishment	0	0	0	0
Safe driving and licensing	84	68	503	11
Technical skills	89	153	224	456
Tertiary and trade certificates	0	0	8	0
Workshops	13	0	7	0
Total	**1796**	**1355**	**1870**	**1172**
Expenditure on training (million)	$2.68		$1.89	

[1] *The data for contractors reflects the number of competencies achieved through training rather than the total number of training courses undertaken. A number of competencies can be achieved from one training course.*

During 2011–12 focus for staff training has been on:

- fire training;
- health and safety compliance;
- safe driving; and
- community engagement.

INDICATOR 9 – HEALTH AND SAFETY

OBJECTIVE: Achieve a 35% reduction in the recordable incident rate year on year

PERFORMANCE: ●

Information associated with the indicator 'health and safety' is found on page 25 of the annual report.

INDICATOR 10 – MANAGEMENT OF CULTURAL HERITAGE				
OBJECTIVE: Identify and protect all significant cultural heritage sites				
PERFORMANCE: 				

	2001–02	2009–10	2010–11	2011–12
			Number	
Agreements for co-management of land[1]	3	3	3	5
Partnerships	19	9	6	7
			Hectares	
Area managed for Aboriginal cultural heritage	176	2768	1385	1377
Area managed for non Aboriginal cultural heritage	n/r	3619	3612	3583
Land with recognised Native Title	0	30 782	30 782	30 782

			Number	
Gazetted Aboriginal places[2]	n/r	1	1	1
Aboriginal sites[3]	n/r	2768	3029	3332

[1] *Co-management refers to informal management processes and structures that provide Aboriginal people with varying degrees of input into the management of an area of land. There is no transfer of title, no rent is paid and no legal rights are provided to Aboriginal people involved in the process.*

[2] *Under section 90 of the National Parks and Wildlife Act 1974 and recorded in the Aboriginal Heritage Information Management System.*

[3] *This figure is taken from the Aboriginal Heritage Information Management System maintained by NPWS and to which Forests NSW contributes.*

Note the number of Aboriginal sites was incorrectly published as 5004 for 2009–10 in last year's annual report instead of 2768. This has been corrected.

The number of Aboriginal sites increased largely as a result of an extended coverage of the AHIMS data being available for Western Region this year.

Environmental indicators

INDICATOR 11A – Extent of forest type

OBJECTIVE: Maintain area of native forest for the sustainable supply of timber

PERFORMANCE: ○

During the year, a total of 549.5 hectares for a land purchase in Western Region were added to Forests NSW legal estate and 641 hectares were transferred to other tenures.

A table providing a breakdown of Forests NSW forest estate can be found on page 15 of the annual report as part of a series of tables. Native forest types are included and are defined in *New South Wales Research Note No. 17*.

INDICATOR 12 – Native forest structure

OBJECTIVE: Ecosystems maintained over a range of successional growth stages

PERFORMANCE: ●

Forest structure refers to the physical features of a forest which reflect the natural environment and management history of the forest. 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 given area.

An objective of Forests NSW forest management is to preserve habitat that is critical for the survival of native species in NSW forests, particularly for threatened species. Protection and enhancement of critical fauna habitat requires management for a range of forest types and structure classes across the native forest estate. To protect critical habitat, Forests NSW must ensure that the appropriate mix of forest types and structure classes is maintained across the landscape.

Growth modelling and harvest schedules, along with harvest prescriptions documented within harvest plans, ensure that specific areas are harvested at the optimal time, while keeping a range of younger growth stages distributed across the estate within harvested zones and more mature growth stages and rainforest within harvest exclusion areas.

INDICATOR 13 – Sightings of surveyed species
OBJECTIVE: Threatened species at risk from forestry operations identified and adaptive management applied
PERFORMANCE:

Threatened fauna species sightings	1997–97	2007–08	2008–09	2010–11	2011–12
Arboreal mammals	268	989	601	696	1100
Bats	93	183	1065	125	225
Frogs	204	324	175	88	245
Ground mammals	195	22	117	79	54
Birds	196	535	1143	802	1391
Reptiles	n/r	0	4	1	3
Total	**956**	**2053**	**3105**	**1791**	**3018**
Threatened flora species reported	n/r	8	6	24	33
Number of flora surveys	n/r	n/r	n/r	n/r	48
Threatened fauna species reported	n/r	n/r	n/r	47	53
Number of fauna surveys	n/r	2754	1591	1182	2603
Number of compartment traverses	n/r	n/r	431	529	845
Fauna sightings per survey	n/r	1	2	2	1
Expenditure on surveys ('000)	n/r	$621	$1764	$2109	$2333

Kingdom	Species group	Status			
		Introduced	Protected	Vulnerable	Endangered
Fauna	Arboreal mammals	0	992	1100	0
	Bats	0	625	225	0
	Frogs	0	4147	107	138
	Ground mammals	56	1595	39	15
	Birds	0	10 067	1360	31
	Reptiles	0	98	3	0
Flora		1219	197	2903	2318

Note that vulnerable and endangered species are refered to as threatened species under the 'Threatened Species Conservation Act 1995' and are summarised in the above table. If these threatened species are sighted, the presence of these species 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 14 – Pest animal and weed control
OBJECTIVE: Manage weeds and animal pests though active coordinated and cooperative programs
PERFORMANCE:

Treatment categories	1997–98	2009–10	2010–11	2011–12
Weeds	$1 325 000	$1125 258	$1 018 984	$638 964
Pest animals	$328 000	$591 459	$1 379 227	$873 208
Total	**$1 653 000**	**$1 716 718**	**$2 398 211**	**$1 512 172**

Forests NSW continues to be a major contributor to a range of control programs including those targeting foxes, wild dogs, feral goats, feral pigs, blackberries, willow, serrated tussock, horehound, lantana and patersons curse.

The expenditure on pest animals was revised for 2010–11 to more accurately account for wild dog and fox control undertaken based on regional estimates.

INDICATOR 14 – Pest animal and weed control cont.				
2011–12	Associated with plantation establishment		General pest and weed control	
Treatment categories	Area (ha)	Expenditure	Area (ha)	Expenditure
Blackberry treatment	8040	$884 491	144 098	$242 437
Other weed treatment	12 800	$1 672 155	86 569	$396 527
Rabbit control	8099	$63 846	0	$0
Wild dog control	0	$0	669 809	$792 945
Other pest animal control	0	$0	86 569	$80 263
Total	**28 939**	**$2 620 492**	**987 045**	**$1 512 172**

Species removed by licensed hunters	2007–08	2009–10	2010–11	2011–12
Feral cats	136	219	167	265
Feral goats	1037	2130	2646	4956
Feral pigs	1081	1924	2278	3091
Foxes	724	1256	1320	1638
Hares	242	630	520	545
Rabbits	4076	8335	6606	7312
Wild deer	410	654	499	588
Wild dogs	55	84	69	90

Game Council NSW is the statutory body responsible for implementing the objectives of the *Game and Feral Animal Control Act 2002*. Game Council NSW provides a licensing system that enables game hunting licence holders to remove game and feral animals from declared State forests in New South Wales.

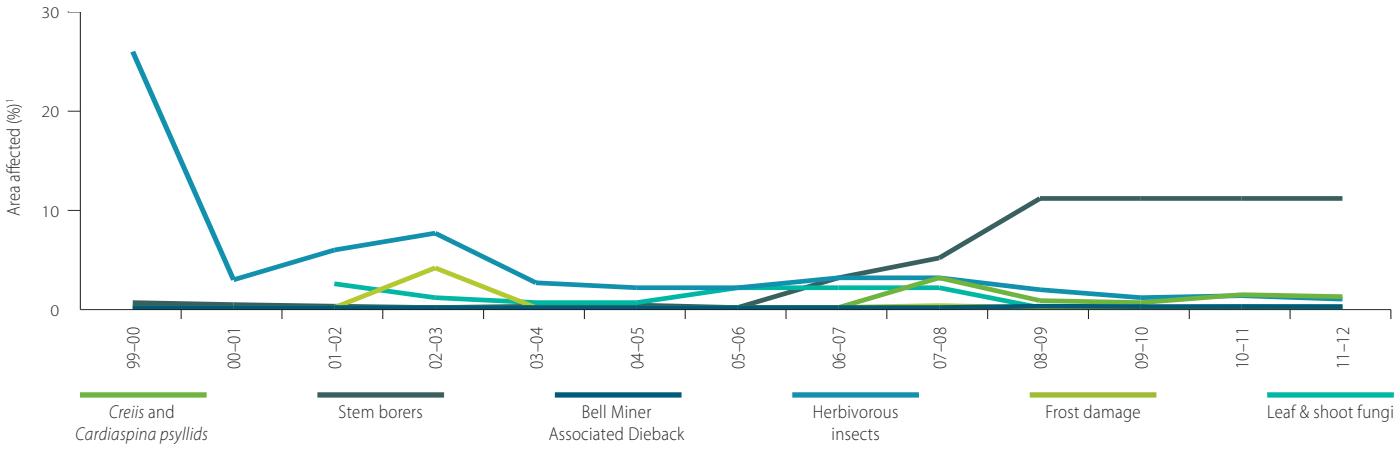
Removing game and feral animals from public land areas helps to contain existing game animal populations and exert downward pressure on feral animal populations in these locations.

INDICATOR 15 – Plantation health

OBJECTIVE: Monitor and address plantation health issues: minimise impact of health issues on plantations

PERFORMANCE:

Hardwood plantation health trends

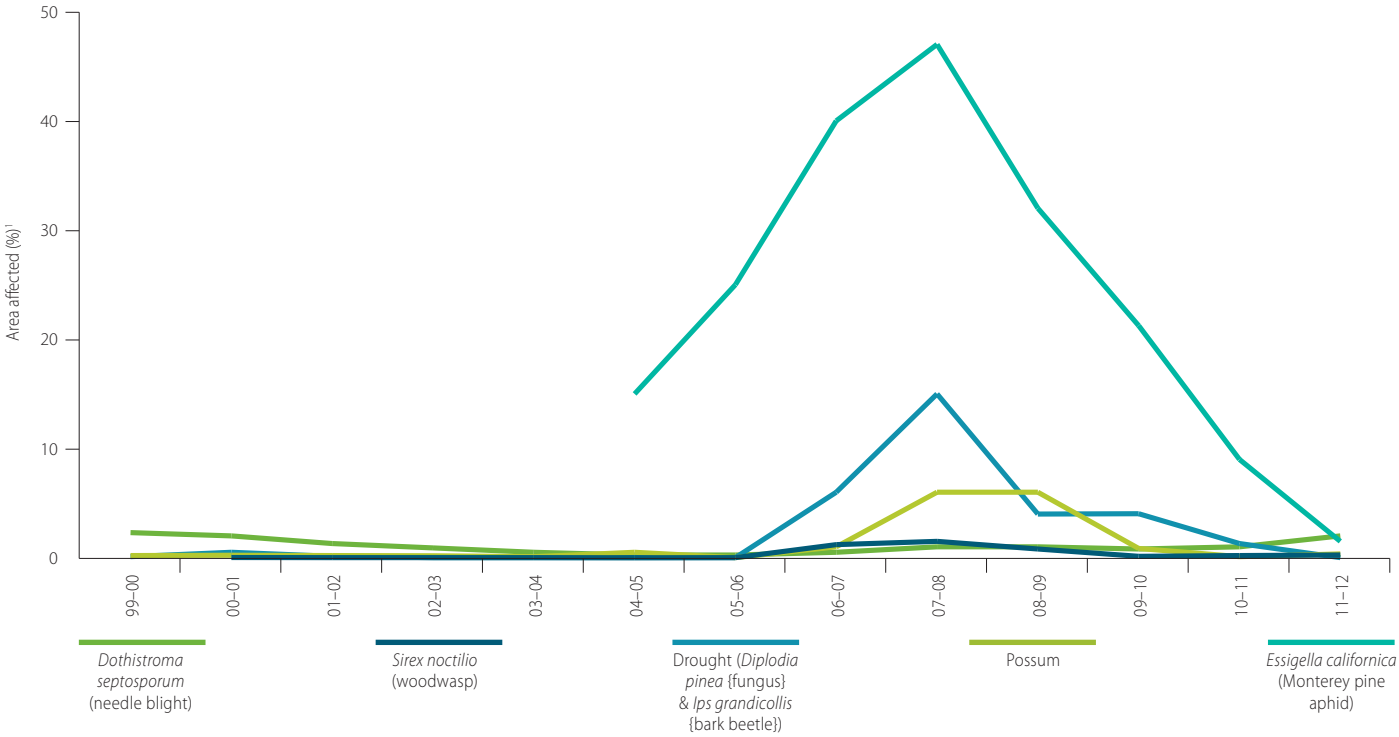


Hardwood plantation[1]	99–00	00–01	01–02	02–03	03–04	04–05	05–06	06–07	07–08	08–09	09–10	10–11	11–12
Agent	Percentage of area affected												
Bell Miner Associated Dieback (BMAD)	n/d	n/d	n/d	n/d	n/d	n/d	n/d	n/d	n/d	0.14	0.10	0.10	0.10
Creiis and *Cardiaspina psyllids*	n/d	n/d	n/d	n/d	n/d	n/d	n/d	n/d	3.00	0.70	0.50	1.30	1.10
Frost damage	n/d	n/d	n/d	4.00	-	-	-	0.02	0.20	-	-	-	0.05
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
Leaf & shoot fungi	n/d	n/d	2.40	1.00	0.50	0.50	2.00	2.00	2.00	-	-	0.10	0.05
Stem borers	0.50	0.30	0.14	-	0.14	0.25	-	3.00	5.00	11.00	11.00	11.00	11.00

[1] *Post 1994 hardwood plantations*

Damage from *Cardiaspina* and *Creiis psyllids* was slightly lower than last year and still only restricted to several plantations. Frost damage occurred to several *Corymbia* plantations. Damage from herbivorous insects was lower but spread over more plantations and there were only small areas of damage from leaf and shoot fungi. The area affected by bell-miner associated dieback (BMAD) and stem borers remained static. A new emerging canker disease in spotted gum (*Corymbia*) plantations has recently been detected, with significant damage (including tree death) in numerous plantations. Winter bronzing bug affected 1.3% of the estate, only in *Corymbia* plantations.

Softwood plantation health trends



Softwood plantation[1]	99–00	00–01	01–02	02–03	03–04	04–05	05–06	06–07	07–08	08–09	09–10	10–11	11–12
Agent	Percentage 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
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
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
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
Sirex noctilio (woodwasp)	-	0.02	0.01	0.01	0.01	0.00	0.01	1.20	1.50	0.80	0.13	0.20	0.25

[1] *Based on the planted area of the softwood plantation estate*

Sirex woodwasp continued to cause tree mortality in several areas in Hume and Macquarie Regions, with slightly more damage than last year. Damage from *Essigella* pine aphid was substantially lower in all regions, due mainly to improved rainfall, but also because surveys were not undertaken during the optimum time of year to fully detect *Essigella* damage. Significant levels of *Cyclaneusma* needle cast was also observed this year (in Macquarie Region), due in part to surveys being delayed until spring. Similarly due to good rainfall, tree mortality associated with drought was restricted to localised areas across the estate. Hail storms caused localised damage in Monaro Region and wind damage occurred in several areas, especially in Macquarie Region. *Dothistroma* needle blight increased significantly, due mainly to large areas of damage in Hume Region, but there was also *Dothistroma* in Macquarie and Monaro Regions (levels in Northern Region remained static). Significant nutrient deficiencies were observed in approximately 0.5% of the estate. Management intervention included chemical control of *Dothistroma* needle blight, biological control for sirex woodwasp and essigella pine aphid and salvage logging of wind-throw.

Softwood planted forest area affected by processes and conditions impacting on forest health and vitality		
Processes and conditions	2010–11	2011–12
	Area (hectares)	
Drought	0	0
Frost	135	20
Hail	681	200
Salinity	0	0
Snow	210	0
Wind	2294	75

INDICATOR 16 – Fire fighting and prevention

OBJECTIVE: Manage through integrated and cooperative fire hazard management and wildfire suppression programs, resulting in 98% of fires in plantations kept to one hectare or less

PERFORMANCE: 

Wildfire	2001–02	2007–08	2008–09	2009–10	2010–11	2011–12
Percent of total State forest estate	3.50%	0.30%	0.06%	1.60%	0.03%	0.10%
Expenditure (million)	$2.7	$1.8	$1.0	$2.4	$0.1	$0.3

Fuel management	2001–02	2007–08	2008–09	2009–10	2010–11	2011–12
Hazard reduction (ha)[1]	58 893	32 474	24 988	35 069	36 931	28 451
Grazing (ha)	644 966	528 933	498 718	529 712	426 258	307 468
Expenditure (million)	$6.1	$9.8	$9.6	$8.3	$5.7	$6.2

[1] *Includes pre and post-harvest, broad area and establishment burns.*

Forests NSW did not meet the target of 98% of fires in plantations kept to one hectare or less in 2011–12. Of the nine wildfires in plantations, seven (78%) were one hectare or less.

Again, increased soil/fuel moisture levels had an effect on both bushfires and Forests NSW hazard reduction burning program. Of the 28 451 ha of hazard reduction burning undertaken, 8106 ha were broad area burns, 3160 ha were establishment burns, 1520 ha were pre-harvest burns and 15 755 ha were post-harvest burns.

Each region maintains a Fuel Management Plan which guides fire management in that region.

INDICATOR 17A – Soil and water management

OBJECTIVE: Maintain ecological processes associated with soil and water. Assess all areas to be harvested for risks to soil and water quality

PERFORMANCE: 

	1999–00	2007–08	2008–09	2009–10	2010–11	2011–12
Expenditure on harvesting supervision and environmental compliance in native forests ('000)	n/r	$ 5164	$ 5561	$ 5454	$ 5184	$ 5750
Expenditure on harvest planning and pre harvest surveys ('000)	n/r	n/r	$ 3997	$ 4755	$ 5022	$ 5729
Area of native forest harvest operations (ha)	56 900	55 153	31 252	38 784	27 864	22 921
Area of softwood plantation harvest and thinning operations (ha)	14 000	14 659	13 342	13 491	14 068	14 024
Area of hardwood plantation harvest and thinning operations[1] (ha)	n/r	n/r	n/r	n/r	875	908
Total area harvested[2] (ha)	**73 000**	**64 261**	**38 305**	**46 819**	**36 174**	**30 729**
	2.4%	**2.7%**	**1.6%**	**1.93%**	**1.64%**	**1.4%**
Soil and water non-compliance incidents self reported	1255	318	28	143	135	175
Fines received in relation to soil and water	3	2	0	0	11	5

[1] *Relates to all hardwood plantations. Prior to 2010–11 pre 1994 hardwood plantation areas harvested were incorporated into the native forest figure.*

[2] *Excludes thinning operations in plantations.*

For 2011–12, the total area of State forest harvested was 37 853 ha (including thinning operations) representing 1.7% of the total estate (see chart on page 38 of the Annual Report).

INDICATOR 17b – Soil and water management

OBJECTIVE: Protect water catchment values in socially strategic or environmentally sensitive locations.

PERFORMANCE: 

	1999–00	2007–08	2008–09	2009–10	2010–11	2011–12
Fully protected land (ha)[1]	290 700	183 752	183 752	177 635	178 366	178 356
Partly protected land (ha)[2]	30 200	60 295	76 709	75 191	79 846	83 256
Total[3]	**320 900**	**244 047**	**260 461**	**252 826**	**258 212**	**261 612**

[1] *Includes wetlands, filter strips reserved from harvesting and areas with extreme risk of erosion or water pollution hazard.*

[2] *Includes forest management zone "catchment" and filter strips protected in areas where modified harvesting methods are permitted.*

[3] *Excludes substantial tracts of land otherwise zoned primarily for natural and cultural protection which also provide a catchment protective function.*

Indicator 18a – Regulatory compliance						
Objective: Achieve a 100% external regulatory compliance rate with zero penalty infringement notices and prosecutions						
PERFORMANCE:						
Compliance items	**1999–00**	**2007–08**	**2008–09**	**2009–10**	**2010–11**	**2011–12**
Number of compliance check sheets conducted by Forests NSW supervisors						
1st tier supervision checks	5428	4013	3512	3287	2935	2515
2nd tier supervision checks	420	643	463	449	436	354
3rd tier supervision checks	n/r	58	21	28	33	38
4th tier supervision checks	n/r	6	2	0	3	2
Number of non-compliance incidents (NCI) recorded by Forests NSW supervisors for corrective action relating to:[1]						
Soil erosion and water quality	1255	318	28	143	135	175
Flora and fauna	469	89	93	93	103	32
Fish habitat and passage	1	0	0	38	67	28
other NCI issues (e.g. safety)	314	689	434	319	72	150
Total	**2039**	**1096**	**555**	**593**	**377**	**385**
Number of audits undertaken by regulators						
OEH/EPA audits	n/r	n/r	n/r	16	22	39
DPI – Fisheries audits	n/r	n/r	n/r	2	2	0
DPI – Plantation Assessment Unit audits	n/r	n/r	n/r	7	13	5
Number of Clean Up Notices issued to Forests NSW						
Clean up notices	n/r	n/r	n/r	n/r	n/r	2
Number of fines (Penalty Infringement Notices) issued to Forests NSW by regulators relating to:						
National Parks and Wildlife Act 1974	0	2	1	5	1	5
Protection of the Environment Operations Act 1997	3	2	0	0	0	5
Fisheries Management Act 1994	0	0	0	0	11	0
Plantations and Reafforestation Act 1999	0	0	0	0	0	0
Total	**3**	**4**	**1**	**5**	**12**	**10**
Number of prosecutions recorded against Forests NSW under the:						
Threatened Species Conservation Act 1995	1	0	0	0	1	0
Protection of the Environment Operations Act 1997	0	0	0	0	0	0
Fisheries Management Act 1994	0	0	0	0	0	0
Plantations and Reafforestation Act 1999	0	0	0	0	0	0
Total	**1**	**0**	**0**	**0**	**1**	**0**

[1] *The guidelines for internal reporting non-conformance incidents have changed over the last three years. A non-conformance incident that can be resolved within 24 hours and is not related to systematic failures is no longer recorded in the Non-Compliance Incident Reporting system. Similarly, minor incidents with low consequence or harm are no longer recorded. In 2011–2012, the compliance system underwent a major modification to reduce four tiers of checks to three tiers and to focus more on corrective and preventative action rather than on reporting minor issues.*

Indicator 18b: Ensure use of State forests occurs within the relevant rules, licences, regulations and the *Forestry Act 1916*		
Number of notices issued by Forests NSW under the Forestry Act 1916	**2010–11**	**2011–12**
Penalty Infringement Notices (PINs)	16	14
Warning letters	20	42
Other	34	4
Total	**70**	**60**

In this period 321, staff were authorised under the *Foresry Act 1916* to enforce regulations under the Act including littering and dangerous behaviours.

INDICATOR 19 – Carbon sequestration in planted forests

OBJECTIVE: Maintain a positive contribution to Australia's net emission reduction program for carbon dioxide

PERFORMANCE: ●

Planted forest type	2006–07	2007–08	2008–09	2009–10	2010–11	2011–12
Softwood (CO_2-e megatonnes sequestered)	3.63	3.41	3.56	3.73	3.75	3.48
Hardwood[1] (CO_2-e megatonnes sequestered)	0.56	0.62	0.56	0.55	0.54	0.41

[1] *Post 1994 hardwood plantation estate.*

Assumptions:

CO_2 sequestered (tonnes CO_2-e) = net plantation area x MTBI x CP x CCF where:
MTBI = SBI + CBI + RBI where:
SBI (Stem Biomass Increment) = TSVI x BD where:

TSVI (Total Stem Volume Increment) - softwood = 15.2m³/ha/year and hardwood = 13.3m³/ha/yr
BD (Basic Density) - softwood = 0.42 t/m³ and hardwood = 0.55t/m³ (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 27)

INDICATOR 19 (Cont.) – Carbon balance in native forests

OBJECTIVE: Maintain a positive contribution to Australia's net emission reduction program for carbon dioxide

PERFORMANCE: ●

Native forest[1] carbon balance

Measured in millions of tonnes (megatonnes)	2006–07	2007–08	2008–09	2009–10	2010–11	2011–12
Total standing volume CO_2	970	967	977	1007	842	842
Annual CO_2-e sequestered forest growth	16.80	16.75	16.92	17.45	16.09	16.10
Annual CO_2-e harvest storage in hardwood products	0.90	0.98	0.94	0.87	0.79	0.84
Annual CO_2-e harvest emissions	0.74	0.80	0.79	0.69	0.76	0.68
Annual CO_2-e fire emissions	6.83	0.98	0.51	3.43	0.82	0.76
Annual non CO_2 fire emissions	0.32	0.05	0.02	0.16	0.04	0.04

Annual Sequestration (megatonnes)	2006–07	2007–08	2008–09	2009–10	2009–10	2011–12
Net CO_2-e	8.34	13.99	14.69	12.46	13.71	13.81

[1] *The pre 1994 hardwood plantation estate included from 2011–12.*

This indicator provides an estimate for the amount of carbon stored in State forests, forest products derived from State forests and emissions associated with harvesting and fire.

In previous years, two models (model A and B) were applied and the mean figure used to calculate the carbon balance in native forests. No adjustment was made for age class. Model A, outlined below, was developed specifically for NSW production forests. Model B was based on weighted average growth rates in the AGO methodology 2006 (refer to table A1) for the estimation of GHG emissions and sinks for the broad forest types within State forests. As model A more accurately reflects the Forests NSW native forest estate, it was soley applied this year and retrospectively applied for previous reporting years. Model B is now no longer used for this indicator.

As a result of using model A only, there has been an overall increase in the annual sequestration of CO_2 recorded. The increase in 2011–12 compared to last year reflected the reduction in prescribed burning undertaken as a result of wet conditions as well as the inclusion of the net stocked area of the pre 1994 hardwood plantation estate in the model this year (clearfall and other non productive areas have been excluded). As no MAI is currently available for the pre 1994 hardwood estate, these plantations were included in this model rather than in the 'carbon sequestration in planted forests' model above.

Note the large amount of emissions associated with fire in 2006–07. This acknowledges the sensitivity of forest carbon balances to fire. The net carbon emissions from bushfires are believed to be reduced through undertaking prescribed burns at intervals, as these burn less intensively.

Assumptions:

Model A

CO_2 sequestered (tonnes CO_2-e) = production area x MTBI x CP x CCF where:
MTBI = SBI + CBI + RBI where:
SBI (Stem Biomass Increment) = TSVI x BD where:

TSVI (Total Stem Volume Increment) native forest ave = 5m³/ha/yr
BD (Basic Density) = 0.65t/m³

CBI (Canopy Biomass Increment) = SBI x 0.1765
RBI (Root Biomass Increment) = (SBI + CBI) x 0.2
CP (Carbon Proportion) = 0.5
CCF (Carbon to Carbon dioxide factor) = 3.667

INDICATOR 20 – Energy consumption
OBJECTIVE: Reduce greenhouse gas emissions and increase energy sourced from green power
PERFORMANCE: ◯

		2011–12				
Energy use	Units	Totals	Total energy	CO_2-e emissions (tonnes)		% change from 2010–11[1]
			GJ	Scope 1	Scope 2	Scope 3	
Auto distillate (diesel)	Litres	2 365 766	94 495	6605	0	501	9%
Aviation gasoline	Litres	0	0	0	0	0	-100%
E-10 petrol ethanol blend	Litres	50 546	1674	117	0	9	-49%
Electricity	kWh	2 082 435	7497	0	1859	360	-8%
Green electricity	kWh	(60 204)	217	0	(54)	(10)	-4%
Liquid petroleum gas	kg	24 503	630	38	0	3	-16%
Natural gas	MJ	517 276	517	27	0	7	77%
Petrol	Litres	80 157	3073	215	0	16	-51%
Total			**108 158**	**7006**	**1805**	**886**	**1.8%**

[1] *The energy use data for 2010–11 has been corrected from that reported in the 2010–11 annual report to rectify a data calculation error.*

Scope 1: Direct greenhouse gas emissions

Scope 2: Indirect emissions from the generation of purchased electricity

Scope 3: Indirect emissions from the extraction, production and transport of the specified fuel

Note that these figures do not include fuel used by contractors (reported under the National Greenhouse and Energy Reporting Act 2007 as 10.9 million litres of diesel in 2009–10).

The increase in natural gas usage was due to colder winter conditions and a gas leak identified at a workshop which was rectified by the installation of a new valve. Forests NSW helicopter was disposed of in August 2011 and as a result, Forests NSW did not purchase reportable aviation gasoline during 2011–2012.

INDICATOR 20 (Cont.) – Fleet
OBJECTIVE: Optimising fleet composition to meet business needs in a cost-effective and environmentally responsible manner
PERFORMANCE: ◯

		2000–01	2008–09	2009–10	2010–11	2011–12
Fleet	Fuel type	Number				
Light vehicles	Diesel	573	374	392	406	368
	Petrol	239	66	60	55	45
	LPG	n/r	1	0	0	0
	Hybrid	n/r	1	0	0	0
	Total	**812**	**442**	**452**	**461**	**413**
Trucks and light plant	Diesel	139	172	92	92	91
	Petrol	11.00	0	0	0	0
	Total	**150**	**172**	**92**	**92**	**91**
Heavy plant	Diesel	86	52	47	43	41
	Petrol	0	0	0	0	0
	Total	**86**	**52**	**47**	**43**	**41**

This indicator reports the number of fleet in three categories by fuel type all owned by Forests NSW:

- Light vehicles(e.g. sedans, wagons, utes)
- Trucks and light plant NSW (e.g. trucks, tankers)
- Heavy plant (e.g. dozers, graders)

INDICATOR 21 – Material consumption and recycling

OBJECTIVE: Reducing the overall waste volume generated and the volume of waste disposed to landfill. Recycle appropriate wastes and use recycled content materials.

PERFORMANCE: 

Percentage recycled or reused	2008–09[1]	2009–10	2010–11	2011–12
	%	%	%	%
Cardboard	83	75	90	95
Co-mingled containers	30	64	50	55
Computer components	96	94	96	95
Copy paper	81	81	87	87
Printer cartridges	59	76	81	85

[1] *Percentages have been amended in line with WRAPP Report.*

This data is reported in more detail in our Waste Reduction and Purchasing Policy (WRAPP) Report as part of our commitments under the NSW Sustainability Policy.

As well as office based material, Forests NSW also used a range of other materials, such as fertilisers and herbicides. Planted forests have undertaken a number of initiatives to reduce reliance on these chemicals.

Potable water usage	2008–09	2009–10	2010–11	2011–12
	kL	kL	kL	kL
Nurseries	85 849	32 558	34 560	29 802
Depots & offices	16 682	8773	6105	3469

The reduction in office water consumption was largely attributable to savings in Macquarie Region from watering being excluded from contract gardening, wetter weather conditions in the past 2 years and automatic garden sprinklers being turned off.

Economic indicators

INDICATOR 22 – Volume of timber harvested

OBJECTIVE: Meeting contractual obligations to customers

PERFORMANCE:

Product	1999–00	2008–09	2009–10	2010–11	2011–12
Sawlogs and veneer logs (m^3)					
Native forest hardwood sawlogs	786 774	556 244	524 931	430 347	507 347
Hardwood plantation sawlogs	55 466	114 382	109 136	94 394	59 241
Cypress pine sawlogs	101 881	55 175	58 785	51 915	45 006
Plantation softwood sawlogs	1 648 790	1 894 454	2 073 461	2 079 573	1 945 080
Plantation softwood veneer logs	70 919	26 237	27 316	35 843	36 988
Native forest hardwood veneer logs	10 600	7513	8856	5842	10 037
Hardwood plantation veneer logs	2819	9196	6251	5403	3409
Total sawlogs and veneer logs	**2 677 249**	**2 663 202**	**2 808 736**	**2 703 317**	**2 607 107**
Poles, piles and girders (m^3)					
Native forest hardwood	28 432	28 136	30 015	32 058	38 089
Plantation hardwood	5479	10 116	6971	10 896	11 876
Total poles, piles and girders	**33 911**	**38 252**	**36 986**	**42 954**	**49 965**
Round timber (m^3)					
Preservation plantation softwood	**56 422**	**87 054**	**98 458**	**106 099**	**92 858**
Pulpwood (tonne)					
Native forest hardwood pulpwood	503 546	427 871	488 353	524 911	505 907
Plantation hardwood pulpwood	82 660	83 777	83 553	68 009	37 684
Plantation softwood pulpwood	636 058	1 081 236	1 223 691	1 562 079	1 480 622
Total pulpwood	**1 222 264**	**1 592 884**	**1 795 597**	**2 154 999**	**2 024 213**
Other (m^3)					
Commercial firewood[1]	7575	65 213	97 436	30 450	94 306
Fencing/landscape/sleepers		7798	11 777	27 536	62 310
Total other	**7575**	**73 010**	**109 213**	**57 986**	**156 616**

[1] *The balance of firewood sales is reported as part of Indicator 6 - Other forest products.*

Plantation softwood sawlog and pulpwood volumes were down as a result of a number of negative external factors including the ongoing slump in the domestic housing construction market, uncertainty in overseas economies and the appreciating Australian dollar.

Wet weather early in the year hampered delivery of native forest hardwood sawlogs. The high Australian dollar, international market conditions and competition from South East Asia affected native forest hardwood pulpwood volumes.

This year saw an increase in commercial firewood production compared to 2010–11. In Western Region, firewood production increased following flood events in the red gum forests along the Murray River, which restricted accessibly. Southern Region recorded an increase in firewood sales as a result of increased demand. This was largely driven by an increase in local suppliers selling into the Canberra and Sydney markets.

INDICATOR 23 – Product mix of timber harvested			
OBJECTIVE: Increase the percentage of wood harvested going to high value products			
PERFORMANCE: ○			
Sawlog product mix from hardwood forests (native and plantation)			
Product	**1995–96**	**2008–09**	**2011–12**
	%	%	%
Dry structural	21	7	5
Floorboards	22	48	47
Joinery/furniture	1	6	7
Decking & panelling	4	6	8
House framing	30	14	12
Pallets	12	9	10
High strength structural	2	2	2
Fencing/landscape	8	8	9
Sawlog product mix from softwood plantation			
Product	**1995–96**	**2008–09**	**2011–12**
	%	%	%
House framing	71	73	70
Joinery/furniture	2	1	2
Decking/panelling	1	6	7
Floorboards/bearers/joists	3	3	2
Fencing/landscape	7	6	5
Other preservation	1	4	6
Unseasoned	14	7	8

2011–12 data sourced from the URS Forestry Timber Market Survey 2012.

INDICATOR 24 – Carbon accounting[1]						
OBJECTIVE: Create maximum number of National Greenhouse Abatement Certificates from compliant plantations						
PERFORMANCE: ●						
	2004–05	**2007–08**	**2008–09**	**2009–10**	**2010–11**	**2011–12**
Number of certificates created[2]	166 005	694 935	660 382	622 567	604 696	0
Area of plantation accredited for carbon trading	n/r	26 864	26 756	27 467	32 429	31 864

[1] *Note this indicator is not related to Indicator 19, which reports estimates of net atmospheric carbon sequestration, carbon storage and emissions associated with State forests.*

[2] *Each certificate accredited represents one tonne of carbon dioxide removed from the atmosphere.*

The New South Wales Greenhouse Gas Reduction Scheme was closed on 30 June 2012 to make way for the Commonwealth's carbon pricing mechanism on 1 July 2012. This decision affected the New South Wales Greenhouse Gas Abatement Certificates (NGAC) market, resulting in no NGAC sales for Forests NSW during the year. At the time of writing this report it is uncertain whether Forests NSW will continue with its carbon trading business.

Sustainability indicators

INDICATOR 25 – Forest management intent

OBJECTIVE: Maintain net area available for timber production, while conserving large areas for significant values and managing ecological functions

PERFORMANCE: ◯

	Land not available for harvesting (hectares)			Land available for harvesting (hectares)		
Forest management intent	1999–00	2010–11	2011–12	1999–00	2010–11	2011–12
FMZ 1 Dedicated reserve	33 500	19 625	19 642	0	0	0
FMZ 2 Informal reserve – special management	322 500	151 461	169 603	0	0	0
FMZ 3a Informal reserve – harvest exclusion	199 000	220 245	223 254	0	0	0
FMZ 3b Special prescription	54 500	3416	3446	13 500	82 906	82 896
FMZ 4 General management native forest	387 500	84 915	112 557	1 368 000	1 073 047	1 140 502
FMZ 5 Hardwood planted forest[1]	0	17 676	18 072	46 000	33 109	34 271
FMZ 6 Softwood planted forest[1]	102 600	161 602	155 192	201 720	226 997	232 853
FMZ 7 Non forestry use	8000	4167	4428	0	0	0
FMZ 8 Land for further assessment	0	0	0	326 500	122 632	4993
Total forest estate	1 107 600	713 673	706 195	1 965 720	1 488 125	1 495 514

[1] *Includes all State forest plantations and joint venture.*

This estimate 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 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.

This year significant areas of FMZ 8 were assessed and allocated to appropriate FMZ categories. Subsequent to the development of the FMZ classification system, legislative provision has been made to declare Special Management Zones across any areas of State forest that were not Flora Reserves (FMZ 1), but that have special conservation value. The increase in FMZ 2 or FMZ 3a reported for 2011–12 reflects the addition of Special Management Zone areas previously maintained in a separate GIS dataset to these reserve zones, while the rest of the reduction in land for further assessment (FMZ 8) is accounted for through a reallocation to general management native forests (FMZ 4).

INDICATOR 26 – Plantation harvesting, establishment and survival
OBJECTIVE: Plantations, which maintain the timber supply strategy, effectively established
PERFORMANCE: ◯

	New plantation establishment (ha)		Re-establishment of plantations (ha)		Cost of all plantation establishment[1]		Percent requiring restocking after one year	
Year	Softwood plantation	Hardwood plantation	Softwood plantation	Hardwood plantation	Softwood plantation	Hardwood plantation	Softwood plantation	Hardwood plantation
1995	2548	770	4279	824	n/r	n/r	n/r	n/r
2006	1064	286	6196	603	$13 281 847	$2 470 358	63%	n/r
2007	249	121	5788	341	$12 282 774	$1 460 113	26%	n/r
2008	1513	83	8361	862	$16 853 542	$3 972 210	26%	n/r
2009	472	0	10 109	1979	$17 691 334	$3 193 278	29%	87%
2010	352	0	9590	1104	$14 452 421	$2 781 995	22%	9%
2011	206	0	8763	592	$12 889 324	$1 637 067	12%	30%

[1] *Cost associated with site preperation, planting, post planting fertilising and competition control.*

Note that third party investor plantings, joint ventures and fee for service areas included.

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

The area requiring restocking after one year means that too many seedlings (>20%) have not survived and replanting is undertaken to ensure the plantation is sufficiently stocked.

Planted forests harvested and thinned areas					
		2010–11		2011–12	
Category	Species	Harvested	Thinned	Harvested	Thinned
Softwood	Southern pine	146	487	330	181
	Pinus radiata	7474	5545	6582	6545
	Softwood other	417	0	386	0
Hardwood	*Eucalyptus grandis* (flooded gum)	332	0	225	168
	Eucalyptus pilularis (blackbutt)	247	221	328	99
	Eucalyptus saligna (Sydney blue gum)	62	0	0	2
	Hardwood other	13	0	57	29
	Grand total	**8690**	**6253**	**7908**	**7024**

INDICATOR 27 – Mean annual growth and stocking in planted forests
OBJECTIVE: Plantation growth rates are at acceptable levels to achieve future productivity
PERFORMANCE:

Softwood plantation	2011–12
Annual increment[1] (m^3)	3 197 302
Net stocked area[2] (ha)	210 349
Mean annual increment[3] (m^3/ha/yr)	15.2

Hardwood plantation[4]	2011–12
Annual increment[1] (m^3)	285 083
Net stocked area[2] (ha)	21 435
Mean annual increment[3] (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 the estate 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.*

[3] *Mean annual increment (MAI) is an indication of the productive potential of an average hectare within the estate. The figures were calculated as part of the discounted cash flow valuation process. This indicator is under review.*

[4] *Relates to post 1994 hardwood plantations only.*

Net stocked area by age-class groups as at June 30 2012				
Species	1–10	11–20	21–30	31–40+
Pinus radiata	32%	20%	32%	16%
Other softwood planation species	40%	17%	23%	20%
Corymbia maculata (spotted gum)	0%	100%	0%	0%
Eucalyptus grandis (flooded gum)	3%	35%	4%	58%
Eucalyptus pilularis (blackbutt)	31%	28%	3%	39%
Other hardwood plantation species	26%	53%	2%	18%
Total	**31%**	**23%**	**27%**	**18%**

Standing commercial volumes by major species as at 30 April 2012		
Category	Species	m^3 ('000)
Softwood plantations	*Pinus radiata*	41 158
	Southern pine	740
	Other softwood plantation species	157
Hardwood plantation	*Eucalyptus dunni* (Dunn's white gum)	800
	Corymbia maculata (spotted gum)	408
	Eucalyptus pilularis (blackbutt)	737
	Eucalyptus grandis (flooded gum)	371
	Eucalyptus cloeziana (Gympie messmate)	134
	Other hardwood plantion species	93

Data and methodology has changed to align with valuation process compared with 2010

INDICATOR 28 – Forest harvested and regenerated

OBJECTIVE: 100% of surveyed native forests harvest area effectively regenerated

PERFORMANCE:

Native forest harvested	2007–08	2008–09	2009–10	2010–11	2011–12
	Estimated area in hectares				
Alternate coupe	1366	1162	1118	2147	1213
Commercial thinning	7719	8861	4 772	3873	3006
Cypress release	15 000	1800	7650	4212	6311
Group selection	1959	2207	1226	10	0
Single tree selection	24 438	13 922	23 733	17 242	12 291
Non-commercial thinning	4671	3300	285	380	100
Total	**55 153**	**31 252**	**38 784**	**27 864**	**22 921**
Regeneration[1] (%)	64	94	95	92	77
Expenditure on silviculture and inventory ('000)[2]	$ 4342	$ 4321	$ 4249	$ 5255	$ 1993

[1] *Proportion effectively regenerated with commercial species.*

[2] *To ensure consistency across the organisation a revised data collection methodology was employed with expenditure data obtained from the corporate finance system.*

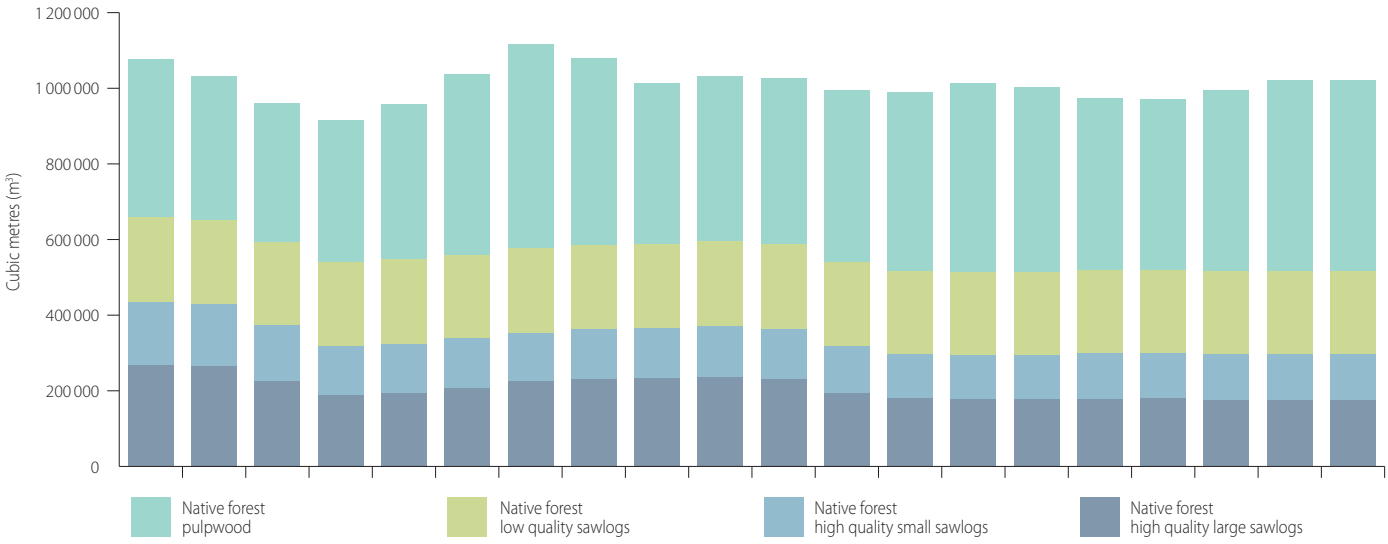
While natural regeneration of commercial species is usually achieved, in a small minority of cases regeneration of commercial species may be insufficient. This is due to a number of factors including poor seed bank, unfavourable weather conditions and competition from weeds. Follow up treatments such as hazard reduction burning, mechanical disturbance or enrichment planting are employed to regenerate these areas successfully. Note that cypress forests of Western Region are generally regenerated before harvesting.

INDICATOR 29 – Sustainable yield

OBJECTIVE: Harvesting of wood products is within sustainable levels

PERFORMANCE:

Future forests NSW combined woodflow statistics by timber quality class



Published in the Forests NSW yield estimates for native forest regions, November 2010.

Percentage of annually commited timber harvested						
	1999–00	2007–08	2008–09	2009–10	2010–11	2011–12
Forest type	Percentages (%)					
Hardwood high quality sawlog	98	90	91	79	68	83
Hardwood native and plantation pulpwood	100	80	75	76	79	60
Native cypress forest	97	96	93	100	91	76
Softwood preservation and sawlog	95	92	72	93	91	90
Softwood planted pulpwood	104	85	77	80	107	88

This table takes the Wood Supply Agreement commitments and compares it to actual harvested amounts. These commitments are based on predicted sustainable yield models, but take into consideration the operational implementation requirements of government and industry.

INDICATOR 30 – Forest Certification

OBJECTIVE: Maintain ISO 14001 & Australian Forestry Standard

PERFORMANCE: 

Certification to the Australian Forest Standard (AS4708:2007) and accreditation to Environmental Management System (ISO 14001:2004) was maintained by passing scheduled external surveillance audits in November 2011. Southern Region, Hume Region and Corporate systems were audited to ensure Forests NSW continued to meet and exceed the environmental, social, economic and sustainability requirements of these standards.

INDICATOR 31 – Operating profit (before tax)

OBJECTIVE: Meeting profitability and dividend targets as agreed with NSW Treasury and increasing management efficiency

PERFORMANCE: 

Year	1999–00	2007–08	2008–09	2009–10	2010–11	2011–12
Value ('000)[1]	$ 29 541	$ 14 499	-$ 16 389	$ 19 738	$ 33 746	$14 000
$'000 per employee	$24.25	$8.30	-$18.50	$23.53	$42.02	$19.10

[1] *Exclusive of forest revaluation, asset impairments, superannuation fund interest and significant items.*

ABBREVIATIONS AND ACRONYMS	
AFS	Australia Forestry Standard (AS 4708:2007)
CO_2-e	'Carbon dioxide equivalent', the internationally recognised measure of greenhouse emissions
DPI	Department of Primary Industries, part of the Department of Trade and Investment, Regional Infrastructure and Services
E-10	Petrol fuel mix with 10% ethanol
EPA	NSW Environment Protection Authority
FMZ	Forest Management Zone
GJ	Giga Joules
GRI	Global Reporting Initiative
IFOA	Integrated Forestry Operations Approval
kL	Kilolitre
LPG	Liquefied Petroleum Gas
M	Million
m^3	Cubic metre
Mega Tonnes	Million tonnes
MDF	Medium density fibreboard
n/a	Not applicable
n/d	Not determined
n/r	Not reported as an indicator
No.	Number
NPWS	National Parks and Wildlife Service, part of Office of Environment and Heritage
NSW	State of New South Wales
NSW Trade & Investment	Department of Trade and Investment, Regional Infrastructure and Services
OEH	Office of Environment and Heritage
OHS	Operational Health and Safety
REERM	Racial, Ethnic and Ethno/Religious Minority Groups
RFA	Regional Forest Agreements
yr	Year