social, environmental and economic report 2001/02

STATE FORESTS OF NEW SOUTH WALES

STATE FORESTS

WHO IS STATE FORESTS OF NSW?

State Forests of New South Wales is responsible for managing almost 3 million hectares of native and plantation forest on behalf of the people of New South Wales and for the sustained supply of timber to the community. As a Government Trading Enterprise, State Forests is responsible not only for delivering a financial return to the State of New South Wales but also for sustainably managing forests for a range of environmental and social values.

An electronic version of this document is available from the State Forests of NSW website: http://www.forest.nsw.gov.au

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State Forests of NSW is a registered trading name of the Forestry Commision of NSW, a Government Trading Enterprise of the Government of NSW

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INTRODUCTION TO THE SEEING REPORT

This Report marks our fifth year of publicly reporting on the social, environmental and economic performance of State Forests of New South Wales and is State Forests' second Seeing (**S**ocial, **E**nvironmental and **E**conomic) Report. Since 1998 this report has evolved from having a focus on mainly environmental issues to one that examines our performance with respect to a wider range of issues, that reflect areas of interest or concern for all of our stakeholders.

The structure of the report reflects the 'triple bottom line' (TBL) approach that the organisation is taking towards accounting for and reporting on the sustainability of its management practices. This approach examines the outcomes of decision making in terms of the social, environmental and economic consequences. Coupled with the long-term planning horizon required in forestry and the embodiment of the principles of good governance and social responsibility, the Seeing Report is one way of communicating our overall performance and allows us to review management practices and policies in light of objective data.

Performance areas

The report is structured around the performance areas of:

Social – building partnerships and generating economic and social benefits within the community, especially for rural and regional communities; developing and valuing our staff.

Environmental – ecologically responsible management of native and planted forest to protect and enhance environmental and conservation values and expanding the plantation estate and environmental benefits and to help meet future market needs.

Economic – ensuring an adequate return from the marketing of a range of values from the State's native forest and plantations and also developing innovative products, services and mechanisms to facilitate investment in new planted forests.

Managing forests for future generations.

INTRODUCTION TO THE SEEING REPORT

Forest values

To monitor our overall performance a range of forest values are reported on each year. All forest values used in previous years' reports are included again this year. Each forest value is described, along with highlights and case studies to describe successes and lessons learnt in relation to State Forests' performance.

Indicators

For each forest value a number of indicators are used. The aim of the indicators is to help link management activities and operational practice to specific forest values and policy objectives. The cost of undertaking particular social and environmental management activities is also reported. State Forests will continue development of this to enhance our social and environmental accounting method in future reports. Inter-relationships between the indicators can be followed through the colours used or the symbols

for social, environmental, or economic, respectively.

Targets and benchmarks

The nature of forest management and information about forest and forest ecosystems makes it difficult to set realistic and meaningful numeric targets for some values. As the amount of information we collect continues to grow we will be able to establish management targets and benchmarks which can be used to examine our performance. This year our performance can be tracked through the arrows in the performance summary which indicate whether our performance improved, decreased or whether there was no change.

Research and development

For the first time in this report we combine performance information with details of the research projects that underpin future management practices. State Forests' Research and Development Division provides strategic research support and scientific leadership to the organisation's operational and policy Divisions. Its primary focus is on innovative scientific development in fields which can add value to the planted forests, investment services and native forests businesses of the organisation. The Division contributes to improved forest management on:

- tree improvement;
- new forests;
- silvicultural systems;
- forest health management; and
- forest biodiversity.

Where possible, throughout the report, research programs associated with specific indicators or forest values are briefly described. Further detail can be found on the State Forests' website at www.forest.nsw.gov.au under the reporting section.

Annual Report

The Seeing Report is a companion document to State Forests' Annual Report. The Annual Report provides details of the organisations' financial performance as required under the *Public Finance and Audit Act, 1983* and the *Annual Reports (Statutory Bodies) Act 1984*. The Corporate Plan with its general performance targets and key values is presented in more detail in the Annual Report. In 2002/03 it is State Forests' intention to bring together the Annual Report and the Seeing Report to present a combined performance summary of the social, environmental, economic and financial performance of the organisation.

CEO STATEMENT

State Forests has embraced the concept of 'triple bottom line' accounting and reporting to monitor its progress towards sustainable forest management.

This means measuring and reporting our performance in terms of social and environmental outcomes as well as our financial results.

We took our first steps in this direction with the publication of an Environmental and Social Values Report in 1998, developing into our first sustainability report last year, the Seeing Report. This year is the fifth year of reporting and the report has again undergone a number of important changes designed to bring it into line with international sustainability reporting guidelines and to reflect the wider application of the triple bottom line philosophy across State Forests' businesses.

We have made some major advances this year with the development of State Forests' social, environmental and economic data storage (SEEDs) system. The new SEEDs database has been developed to streamline the collection and collation of data required for this and other reports such as the State of the Forests Report, State of the Environment Report, Montreal Process Criteria and Indicator Reports and the Annual Reports required by the Forest Agreement process. This new database enhances data consistency, accuracy in data collation and provides our Regions with improved access to data about their performance. These improvements address some of the key findings of the independent verification undertaken for the Seeing Report 2000/01.

During the past year, State Forests has had many other noteworthy TBL achievements. These are highlighted on page 57 and include; hosting the second TBL NSW Forum, attaining a strong positive result in the Australia and New Zealand Sustainability and Environmental Reporters Benchmarking Program 2001/2002, having a TBL case study profile included in the publication Best Practice in Financial Management Volume 5, presentations at various TBL forums and recently being invited to be a member of the TBL Senior Officer's Group convened by NSW Premier's Department. These achievements reflect the leading role the organisation is taking in developing sustainable business solutions.

State Forests recognises that traditionally, commercial, environmental and social values associated with forestry have often been seen in conflict. However, State Forests makes a very significant contribution on all three fronts and seeks to demonstrate the trade-off involved in balancing TBL objectives for forestry.

I am pleased to present State Forests of New South Wales' sustainability report to you and I would value your feedback on the progress in achieving a balanced triple bottom line.

Bob Smith

Chief Executive

Bob Smith, Chief Executive

2001/2002 PERFORMANCE SUMMARY

	Forest Value	Target	Indicator	Page
SOCIAL	**Community Benefits**	Provide wide range of benefits that meet community needs and expectations.	1 Social responsibility 2 Regional opportunities for public participation 3 Recreation 4 Research and education 5 Indirect employment through forest dependent industries 6 Quantities of other forest products	11 11 13 14 15 16
	Staff	Provide a safe and forward thinking workplace with management that meets staff expectations.	7 Quality of management 8 Human resource management and staff training 9 Health and safety	18 19 19
	Cultural Heritage	Conserve and protect cultural heritage.	10 Protection of cultural heritage: – recorded places, artifacts, sites and other structures – number of staff and contractors with cultural heritage training	23
ENVIRONMENTAL	**Biodiversity**	Maintain the extent and distribution of native species of flora and fauna, across the estate.	11 Extent of forest type – Native forests – Planted forests 12 Extent of native forest structure 13 Record of surveyed species 14 Habitat level of representative species	28 30 31 32
	Forest Health	Manage healthy forests.	15 Expenditure on introduced predators, feral animals and weed control 16 Percent of forest affected by agents that may change ecosystem health and vitality 17 Fire fighting and prevention	34 35 36
	Soil and Water Quality	Clean healthy streams and stable soils.	18 Soil erosion assessment – area and percent of forest harvested 19 Area and percent of forest managed primarily for catchment protection	39 39
	Compliance	Compliance through effective harvest planning and operations.	20 Regulatory compliance 21 Efficient harvest planning and operational compliance in native forest	40 41
ECONOMIC	**Forests as Carbon Sinks**	Expanding our contribution to reducing the greenhouse effect.	22 Annual carbon sequestration in planted forest 23 Energy consumption 24 Material consumption and recycling	42 43 44
	Productivity	Ensure sustainable productivity in all managed forests.	25 Forest available for timber production 26 Plantation establishment 27 Percent of planted forest effectively stocked 28 Mean annual growth of planted softwood forest 29 Removal of sawlogs compared to allowable volume 30 Percent of native forest regenerated	47 48 49 49 50 51
	Marketing and Sales	Providing high-value products to meet customer demands.	31 Volume of timber harvested 32 Product mix of timber harvested	53 54

Results	Performance
Over $105,000 in corporate sponsorship; over $11,000 in staff donations.	↑
1,858 various regional community forums attended.	↑
338 recreational facilities and 283 formal events.	↓
$7.2 million spent on research and $3.9 million spent on education.	↔
7,237 people indirectly employed through State Forests' activities.	↔
Various quantities, including water, grazing, beekeeping, seedling sales, firewood.	↔
Around 1,100 people directly employed by State Forests. Aboriginal/Torres Strait Islander employees 2.6% of total staff.	↔
Almost $2.7 million on human resource management and over $2.6 million on staff training.	↓
83 OH&S meetings, lost time accident frequency rate of 16.4. New safety code adopted for State Forest and private forestry. 889 voluntary safety initiatives adopted.	↑
3,781 sites of cultural significance to the Aboriginal community protected and 554 non-Aboriginal heritage sites protected in State forests.	↔
239 State Forest's staff and forest workers trained in cultural heritage awareness.	↑
Total forest estate managed by State Forests approximately 2,843,000 hectares.	↓
2,400,000 hectares of native forest estate.	↓
443,000 hectares of planted forest estate.	↑
22.4% Regrowth, 24.6% Mature, 5.1% High Conservation Value Old Growth, 4.3% Rainforest and 43.6% yet to be assessed.	↔
59 targeted species surveyed prior to harvesting, with 3,500 sightings.	↑
293,000 hectares of Koala habitat, 84,000 hectares of Greater Glider habitat and 18,700 hectares of Squirrel Glider habitat.	↑
Over $1.2 million spent on feral animal and weed control.	↑
8.3% of new hardwood and 1.67% of all softwood plantations with significant levels of insect infestation, fungal attack or nutrient deficiency that could cause deleterious affects.	↓
3.5% of all State forests burnt by wildfire. $8.8 million spent on fire prevention and control.	↑
24% of all State forests treated by fuel management strategies.	new
121,000 hectares or 4% of forest assessed for soil erosion hazard.	↑
All State forest managed for catchment protection with 10.6% of State forest managed for special emphasis catchment protection.	↔
Over 3,500 internal compliance check sheets conducted; 2,242 recorded non-compliance incidents identified for corrective actions during harvesting; 3 fines issued.	↑
3,000 flora and fauna surveys and 189 soil and water surveys undertaken.	↔
Over $5.6 million spent on harvest planning and over $5.5 million spent on harvesting supervision and environmental compliance in native forests.	↑
Over 4.8 million tonnes of carbon dioxide (CO_2) equivalent sequestered by hardwood and softwood plantations.	↑
Over 10,000 tonnes of CO_2 emitted through electricity and fuel consumption; and 12.5% of electricity sourced from green power.	↔
12,000 reams of paper purchased; 79% recycled after use.	↓
1,720,885 hectares available for timber production on State forests.	↓
549,398 hectares in Dedicated and Informal Reserves on State forests.	↓
573,332 hectares of other areas estimated as protected from harvesting.	↑
5,951 hectares of new softwood plantations and 2,005 hectares of new hardwood plantation.	↑
95% of softwood plantation successfully established.	↓
Mean annual increment for softwood plantations of 16.7 m^3/ha/yr.	↔
Actual annual yield was 113% of allowable yield from native forests (due to undercuts in previous years) and 97% from softwood plantations.	↑
68% of surveyed harvested area successfully regenerated based on 4 regeneration surveys.	↓
2.66 million m^3 of mill logs and 1.46 million tonnes of pulpwood harvested in planted and native forest.	↑
Increase in the proportion of volume harvested going to high value products.	↑

WHO IS STATE FORESTS OF NEW SOUTH WALES?

State Forests of New South Wales is a State Government Trading Enterprise (GTE) responsible for managing almost 3 million hectares of native and plantation forest on behalf of the people of New South Wales. Under the *Forestry Act 1916* the organisation's primary objective is to provide a sustained supply of timber to the community in conjunction with a range of other values. As a GTE, State Forests is therefore responsible for not only delivering a financial return to the State of New South Wales but also for managing forests for a range of environmental, social and economic values for the long term.

Organisational profile

State forests are distributed widely across NSW. State Forests has 11 main Regional centres as well as a Head Office and a Research and Development centre in Sydney. We have four main operating businesses:

- Softwood Plantations;
- Native Forests;
- Future Forests; and
- Investment Services.

Growing and marketing wood products from the State's native forests and plantations, in accordance with ecologically sustainable forest management principles, is our primary business. State Forests harvests approximately four million cubic metres of sawlogs and pulpwood from the forest estate each year. Sales of these products generate in excess of $94 million dollars annually and maintain viable and economically sustainable timber industries.

In addition, State Forests is responsible for developing new business services related to our primary role as a forest manager. Exciting new commercial business opportunities are emerging in areas such as private forestry and plantation management services, carbon sequestration and trading, wood-based renewable energy products, eco-tourism, biodiversity and land repair.

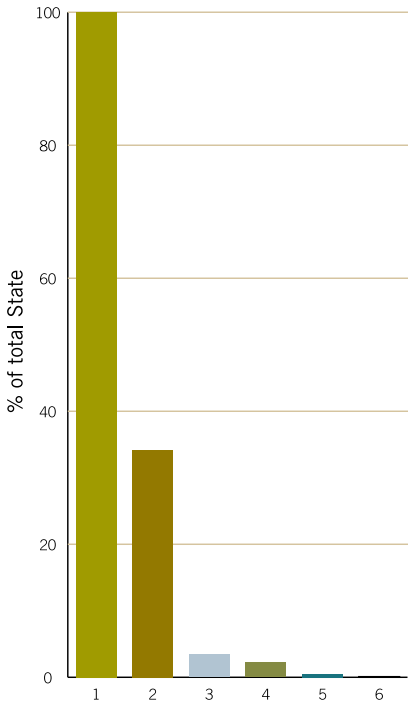
State forests in context

In NSW there are approximately 27 million hectares of native forests and woodland covering approximately 34% of the State. Of this, approximately 2.7 million hectares (3.4% of the State) are managed by State Forests of New South Wales as multiple use forest (Figure 1).

The forests of NSW are managed for a range of values including timber production, conservation, recreation, amenity and socio-economic benefits. In many multiple use forests, timber and other wood products are harvested in some areas while other areas are maintained for biodiversity, community uses, water quality, research and education. The area of State forest managed for timber production equates to less than 2.2% of the State. On average less than 0.1% of the State's public forests are actually harvested each year.

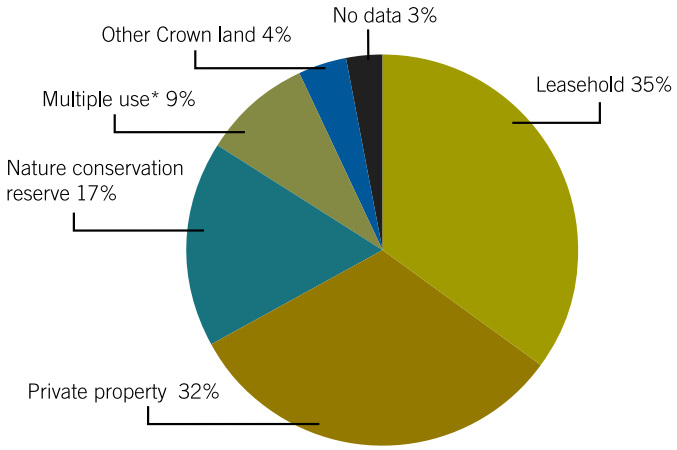
Figure 1 and Figure 2 provide further detail of the relationship between State forest and the area of forest under different tenures in NSW.

FIGURE 1: PERCENTAGE OF NATIVE FOREST UNDER DIFFERENT MANAGEMENT IN NEW SOUTH WALES



1	NSW	100.0%
2	Forest and woodland*	34.2%
3	State forest	3.4%
4	Total area available for harvesting on State forest	2.2%
5	Average gross area planned for harvesting each year	0.5%
6	Average net area actually harvested each year	0.09%

FIGURE 2 TENURES AS A PERCENTAGE OF TOTAL FOREST AND WOODLAND IN NSW



* as defined by the National Forest Inventory

Regulation

The activities carried out by State Forests are governed by laws, standards and conditions agreed by State and Federal governments. Forest assessments conducted as part of the Regional Forest Agreement (RFA) process have identified and protected natural, cultural and indigenous values and formalised the high conservation reserves in parts of the State forest and national park estate.

Authorisation for harvesting activities in RFA areas is granted under an Integrated Forestry Operations Approval (IFOA). The IFOA integrates the conditions of the *Threatened Species Conservation Act,* the *Fisheries Management Act* and the *Protection of the Environment and Operations Act.*

In areas that are not covered by Forest Agreements, such as in western NSW, our harvesting is undertaken according to various guidelines jointly developed by the Department of Land and Water Conservation (DLWC) and State Forests.

During harvest planning and licenced harvesting operations, State Forests and external harvesting contractors are required to comply with conditions set out under these licences and guidelines. To ensure that these requirements are met, State Forests and contractors are subject to both internal and external compliance checks and audits.

These approvals are regulated by other Government agencies including the NSW National Parks and Wildlife Service, PlanningNSW, the Environment Protection Authority and NSW Fisheries.

All forestry activities undertaken on State forest must comply with Forest Practices Code for Timber Harvesting. This code provides clear guidelines on all aspects of timber harvesting on State forests. For example, it specifies the legislation and protocols which dictate:

- environmental protection measures for soil and water;
- protection of flora and fauna;
- occupational health and safety measures;
- planning for harvesting operations; and
- standards for measuring, tallying and removal of timber.

See Forest Value 7 for more information about IFOAs and compliance.

Policies and codes of practice

State Forests' has a suite of policies and codes of practice that shape the way we undertake our business. A number of these were reported last year in some detail. For a list of publicly accessible corporate policies go to www.forest.nsw.gov.au.

A CORPORATE COMMITMENT TO SUSTAINABILITY

Sustainable forest management is the key to the continued success of State Forests as a commercial forestry organisation. As a GTE responsible for managing natural resources for a large number of values, it is a huge challenge to adequately measure and report our performance on an annual basis.

An increasing trend has been measuring and reporting performance against what has been called the Triple Bottom Line or TBL. A catch phrase for what is ultimately sustainable management, a balanced TBL is one which successfully maintains economic prosperity, environmental quality and social responsibility.

In 2001 State Forests implemented a program to investigate the TBL and determine ways for integrating the underlying concepts into a corporate sustainability framework and every-day management decision making. Progress in this area is reflected in the structure of the organisation and the recognition that the TBL is about more than social, environmental and economic indicators but requires active management through good governance, for the long-term public good.

Corporate plan 1998–2003

The corporate plan sets our key result areas, management objectives and sets targets for each performance indicator for the period of the plan. The current corporate plan is for the five year period 1998–2003 and embodies the following key result areas, vision, mission and values.

Key result areas

The four key result areas in the current corporate plan are:

1. Ecologically sustainable forest management
2. Sustained financial performance
3. Accountability to the community
4. Our people.

The Seeing Report satisfies the objective of the third of these, 'accountability to the community', which aims to publicly report against objective indicators of social, environmental, and economic management performance of State Forests.

Vision

More people benefiting from the diversity of State Forests' products and services more often.

Mission

We manage native and plantation forests for the widest possible range of benefits to current and future generations of people in New South Wales.

Values

– Open and accountable to the people of New South Wales;

– Innovative and responsive in achieving commercial and environmental goals;

– Demonstrating integrity in how we deal with people both inside and outside of State Forests; and

– Meeting our commitments to our people, the community and the Government.

For more information about the corporate plan and the related performance indicators see State Forests' Annual Report.

social

Building partnerships and generating economic and social benefits within the community, especially for rural and regional communities. Developing and valuing our staff.

FOREST VALUE 1 – COMMUNITY BENEFITS

State forests are managed for the people of NSW, particularly regional communities. Maintaining equitable access for all forest stakeholders is an important commitment made by the organisation. Providing security for all forest users in terms of opportunities for a range of activities including small business, recreation and education activities, is important to State Forests and managing such a large and widespread resource provides many opportunities to form constructive community partnerships and to build our stakeholder relationships.

State forests, a great place to take the family.

Indicator 1. Social responsibility

Description

In managing the forests of NSW State Forests aims to be a good corporate citizen. Different communities have different values and expectations about forest management and as a result the ways in which our staff contribute to these communities vary. To try and better understand this relationship the voluntary contributions and initiatives made by State Forests' staff are reported. This includes corporate sponsorship and donations, voluntary activities and community partnerships as well as charities that staff choose to support through their own fund-raising initiatives. State Forests stresses that charitable donations made by staff is the result of actions by staff rather than corporate policy. However, State Forests would like to publicly applaud the efforts of those staff. State Forests also recognises the invaluable role of community volunteers who donate their time and efforts to assisting State Forests in undertaking various activities, particularly at Cumberland and Strickland State Forests.

Trends

In the past year the number of initiatives, activities and contributions made by State Forests and staff have increased overall (Table 1). Corporate sponsorships and donations include a range of activities and initiatives including sponsorship of local sporting rallies and events, tree planting rehabilitation, landcare activities and donation of prizes for competitions held by schools and other organisations. State Forests also makes a significant contribution to local councils and other organisations by providing access to resources at no cost. For example, various Regions choose to waive fees for the provision of gravel to local councils, fencing timber to neighbours, chainsaw and four wheel drive training for the Rural Fires Service and State Emergency Service, timber to Local Aboriginal Land Council projects and occupation permits for local botanical gardens. In March 2002, the staff of State Forests' Western Region raised over $6,000 for the Leukaemia Foundation in the World's Greatest Shave.

TABLE 1: SOCIAL RESPONSIBILITY

	Number		Amount ($)	
	2000/01	2001/02	2000/01	2001/02
Corporate sponsorship and donations	>50	135	97,924	105,905
Charitable donations made by staff	10	5	9,099	11,031

Indicator 2. Regional opportunities for public participation

Cumberland Forest Centre provides a valuable resource for the community to learn about forests.

Description

State Forests is committed to involving the public, particularly key stakeholders, in forming management decisions about the public forests of NSW. Our staff attend meetings and community forums during the course of the year, where land and forest management issues are raised and discussed. The attendance level indicates our commitment to listening to and involving the public in the decision making process.

Trends

Figure 3 summarises the range and number of community forums attended by State Forests at the regional level (full details are presented in Appendix 1). The number of community forums attended during the year reflects the continuation of the community consultation process during the Western Forest Agreement process (see Text Box below). State Forests' involvement in the development of community bushfire management strategies, opportunities for industry and stakeholders and educational opportunities for schools and community groups continue to be important vehicles for the expression of community interest in matters relating to the management of State forests. An area of particular improvement this year was an increase in the number of meetings to discuss the management and protection of flora and fauna, which increased from 47 in 2000/01 to 149 in the past year.

WESTERN REGIONAL ASSESSMENT

The NSW Government initiated a regional assessment of western NSW to guide future planning and to encourage partnerships to protect the environment. The Resource and Conservation Assessment Council is coordinating the assessment which involves local and regional stakeholders as well as State Forests of NSW, National Parks and Wildlife Service, Department of Land and Water Conservation and Department of Mineral Resources.

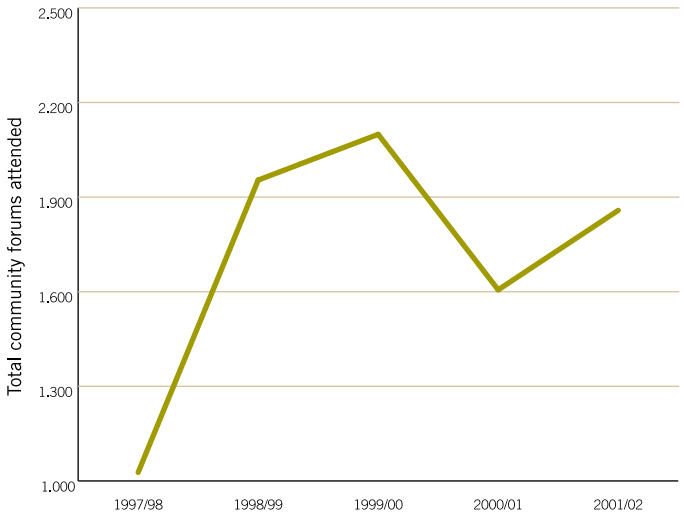
The Western assessment is considering environmental, economic and social values of forest and non-forest land systems focusing on conservation, land management and regional planning.

The aim of the Western Regional Assessment is to deliver the following outcomes:

- adequate core data layers to inform regional land use planning (including the collaborative regional framework being developed by PlanningNSW), and conservation and resource management.
- enhanced partnerships between core agencies and interest groups concerned with natural resources and ecological sustainability, to increase sharing of information and to reduce duplication.
- the identification of a comprehensive, adequate and representative network of protected and managed areas for the Central and Western Divisions.
- value adding and viable timber industry.

The first region to be assessed in the Western Regional Assessment is the Brigalow Belt South Bioregion. The results of these assessments are now being considered in different options for future land management. For more information go to www.racac.nsw.gov.au.

FIGURE 3: NUMBER OF REGIONAL COMMUNITY FORUMS ATTENDED BY STATE FORESTS



Indicator 3. Recreation

Description

Almost all State forests are available for recreational activities. Providing access to forests for a wide-range of activities through the maintenance of facilities as well as a suitable forest environment is an important contribution by State Forests to the community because many activities can be undertaken in State forests that are restricted on other public lands. Monitoring change in the number of these facilities, as well as the area of forest zoned primarily for recreation, are good indicators of how well State Forests is meeting the requirements of communities. The expenditure on managing recreational facilities is also a useful indicator of our commitment to managing this value. Examined in conjunction, these indicators tell us how effective our management is in meeting the needs of the communities.

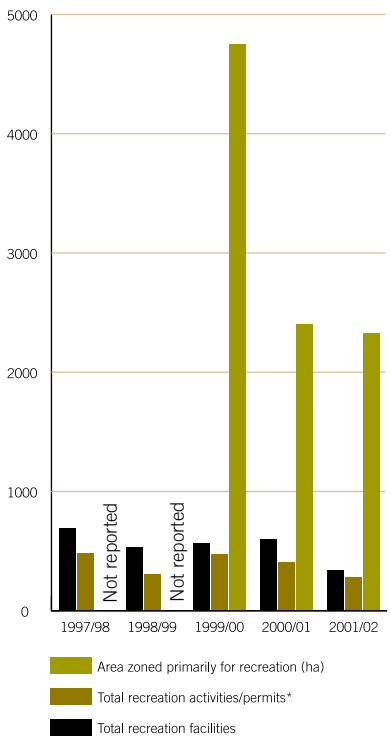
Trends

Figure 4 and Appendix 2 show the number of recreational facilities and permits issued for organised recreation activities during the last five years.

While there has been a reduction in the number of specific facilities provided for recreation and the number of organised activities undertaken, the area of State forest zoned primarily for recreation has remained relatively stable compared to previous years. The significant reduction in the number of permits issued to organised events is a reflection of community reaction to the increasing cost of public liability insurance required for such activities. Actual use of the forest for activities that do not require a permit such as casual bike riding, bushwalking, remote camping or birdwatching is still difficult to track.

Camping in State forest, healthy, fun and free.

FIGURE 4: RECREATION FACILITIES PROVIDED AND ORGANISED EVENTS



*These figures refer to Regional events only

Funding for the provision of recreational facilities in State forests is partially provided through Community Service Obligation (CSO) grants from the State Government. However, because State Forests is committed to developing recreational opportunities for the community an additional $1.3 million has been spent over the past year on specific management to support recreational activities within forests. A significant component of this goes towards the maintenance of roads and bridges in areas other than those being harvested for timber, providing ongoing access to visitors and local residents.

Indicator 4.
Research and education

Inquiring minds learning about forests.

Description

Many management decisions are underpinned by the findings of an extensive program of research and development, covering a wide array of issues. In conjunction with our contributions to progressing education on forestry and forest management, State Forests is participating in many collaborative research programs with universities and cooperative research centres around Australia and the world. Monitoring our expenditure on research and education helps monitor our commitment to and improving the scientific basis for forest management and public awareness and understanding of forest ecosystems and sustainable management.

The Cumberland Forest Centre continues to be the focal point of our education program providing hands on experience for a range of school and community groups in and around Sydney.

Trends

This indicator details expenditure on public education and research for the whole organisation. Expenditure by State Forests' Research and Development Division has remained relatively stable for the last four years. This expenditure allows us to continue a long history of active research into native and planted forests in NSW. Growth of research into environmental services will support future management decisions in these areas, particularly with respect to forest carbon, salinity and plantations establishment.

The number of people participating in education programs at Cumberland was not available for this report, but will be reported next year.

TABLE 2 ANNUAL EXPENDITURE ON RESEARCH AND EDUCATION

	Research ($M)*	Education ($M)
1998/99	7.2	not previously reported
1999/00	7.1	2.8
2000/01	7.1	4.6
2001/02	7.2	3.9

* This figure includes CSO funding and research grants from external organisations.

TABLE 3: NUMBER OF PEOPLE PARTICIPATING IN PROGRAMS AT CUMBERLAND STATE FOREST

Activity	1998/99	1999/00	2000/01
School –lower primary	1,197	962	993
School – upper primary	1,585	1,979	2,059
School – secondary	753	834	906
At-school visits	180	1,805	1,054
School holiday activities	1,008	1,288	1,112
Community forest activities	1,065	1,282	1,268
Community groups	782	801	1,150
Other childrens' activities	1,235	2,107	2,369
Community bush care	257	200	729
Information services –by phone	n/a	n/a	2,730
Information services –by email	n/a	n/a	1,823

Indicator 5. Indirect employment through forest dependent industries

Description

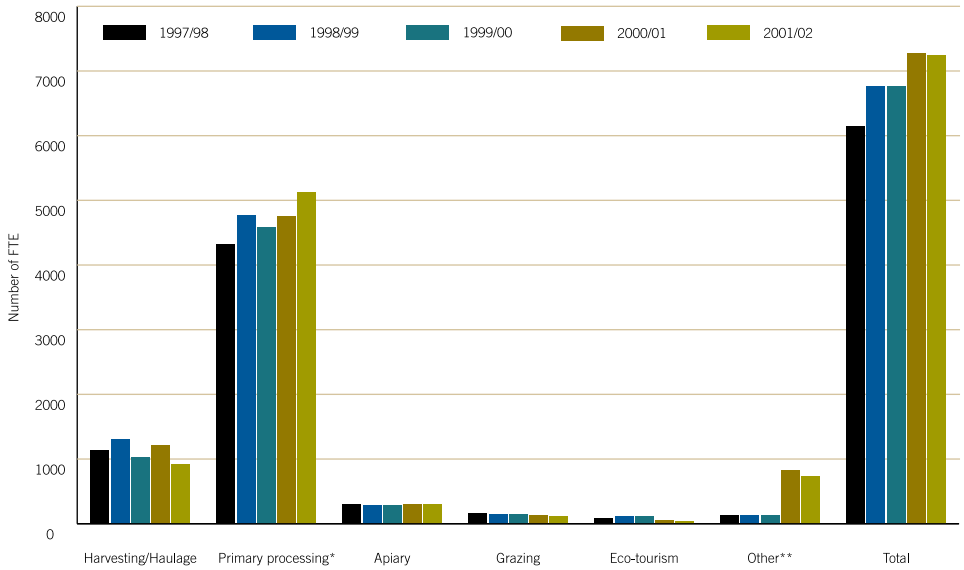
Forest management activities are an important source of employment in Regional NSW. Tracking changes in this value helps us determine how well State Forests is providing a source of employment to the regions in which we operate and helps us understand the ways in which people derive income through employment in industries that depend on forest resources.

Trends

Figure 5 demonstrates an increase in employment in primary processing in NSW. It also suggests that forest products and miscellaneous timber operations continue to be an important source of regional employment. The numbers of individuals employed in industries directly dependent on the sustained supply of timber from State forests has remained relatively stable over the last four years. Employment in harvesting/haulage and primary processing has fluctuated between 5,500 to 6,000 Full Time Equivalent (FTE) jobs, with an increase this year to over 6,000. This reflects the success of our ongoing commitment to growing and supporting the timber industry around NSW.

The numbers employed through the apiary industry, dependent on State forests, increased in the past year but did not return to the levels experienced in 1999/2000. Last year an unexplained reduction in the number of people employed in eco-tourism in State forests was identified. This trend has again continued and is supported by a similar decline in the number of eco-tourism tours (Appendix 2) for which permits were issued. This decline may be in part due to the increased cost of public liability insurance.

FIGURE 5: INDIRECT EMPLOYMENT FROM STATE FORESTS BY MAJOR CATEGORIES



*Processing undertaken at a site where the input is raw material supplied by State Forests.

** Includes plantation establishment contractors, gravel extraction, forest product removal and miscellaneous timber harvesting.

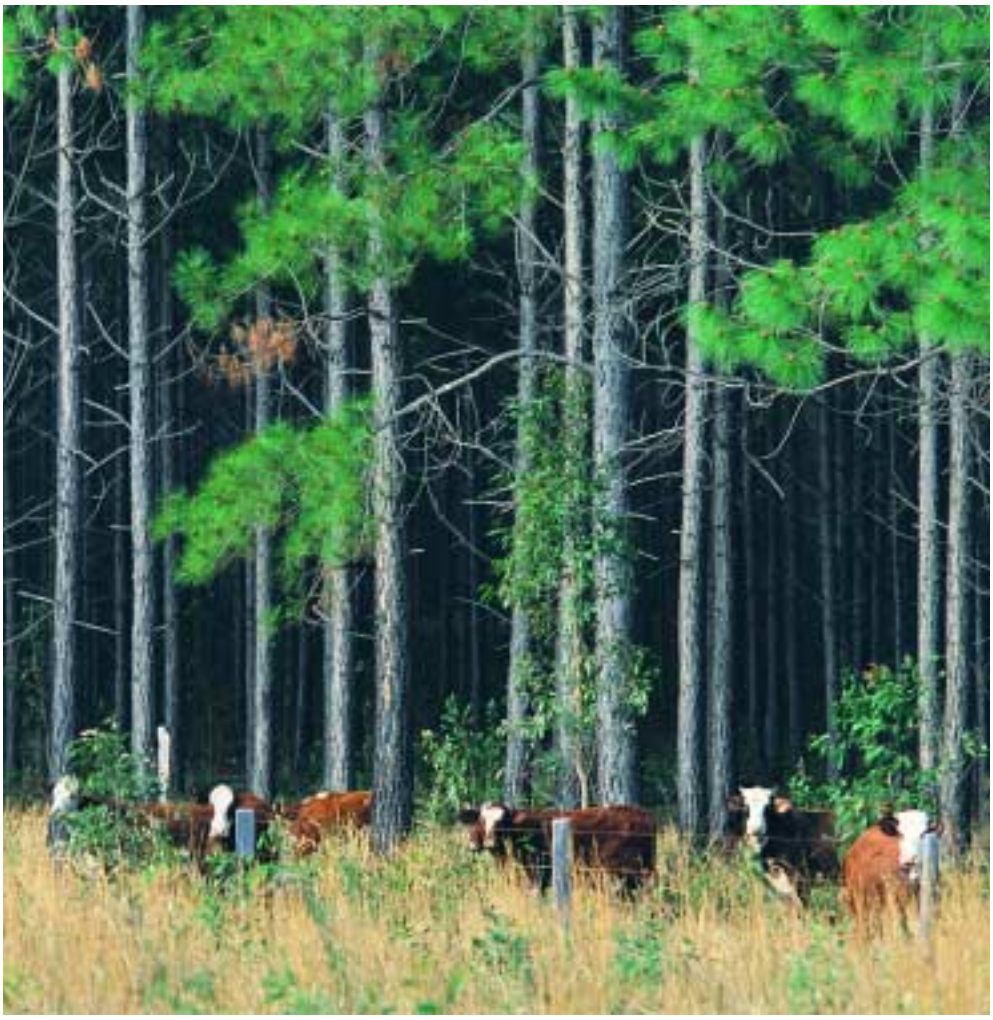
Indicator 6. Provision of 'other' forest products

Description

Forests provide many products and services other than timber, which may help support local small businesses. Monitoring the sale of specific products from forests helps to determine the extent to which they remain an important multiple-use resource. This indicator summarises the range and quantity of the forest products other than timber supplied to sawmills, provided over the last five years. Our objective is to ensure our forests continue to provide a diversity of products and benefits to the community.

Trends

Appendix 3 shows the quantities of forest products, other than timber, purchased from State Forests in communities around NSW. Demand for the majority of products has remained relatively stable with only minor fluctuations, most likely due to seasonal variation in resources resulting in changes in demand. This year, for example, the number of permits for apiary sites increased with many bee farmers seeking sites in forests on the coast, due to dry conditions inland. The area of land available for grazing decreased by a further 66,500 hectares this year due to further forest management zone changes. While it appears that the sale and supply of firewood permits diminished considerably, this decrease is as a result of change in accounting practices which sees firewood counted under volumes of timber products sold (see Indicator 31 and Appendix 13).



Grazing cattle in State forest provides relief during drought and helps manage fire.

FOREST VALUE 2 – STAFF

State Forests recognises that our staff are our most valuable resource. Some staff indicators have been drawn out of our Annual Report, while additional ones such as wage standards and expenditure on human resources management and training have been included to measure the Quality of Management provided by the organisation to staff.

The Human Resources Division within State Forests is responsible for the management and well being of staff within the organisation. The fundamental purpose of the Division is to:

- promote strategic leadership and a best practice professional advisory service on human resources issues.
- promote and develop a corporate environment where both the organisational structure and the skills held by staff enable the achievement of professional and technical excellence.
- contribute to continuous improvement in customer and community awareness and satisfaction.
- nurture a corporate culture which includes a safe, rewarding, equitable and ethical working environment with high morale where staff achievements are recognised.
- achieve excellence in the management of safety and rehabilitation that aims to be the best in the Australian forest industry.

State Forests values the continued contribution and growth of its employees and this has been recognised through the continued implementation of a new formal Staff Development Program (SDP). The program was introduced last year in response to an employee attitude survey undertaken in 1998 with the aim of developing an effective performance management system to support leaders in creating a positive work environment for employees.

A well educated workforce results in well managed forests.

Indicator 7. Quality of management

Description

State Forests aims to provide a safe, productive and progressive workplace for its staff. The quality of management is assessed using a number of indicators. The number of staff directly employed by State Forests is used as an indicator of the organisation's ability to recruit and retain employees. This in turn is a reflection of the quality of management and nature of the organisation as a workplace.

It is also recognised, although hard to measure, that maintaining ethical practices amongst staff is an important workplace value. An employee attitude survey undertaken in 2002 has helped identify areas in which management is performing well and other areas which need improvement. These are reported in Text Box on page 19.

This year data is again provided against the key areas of representation of Equal Employment Opportunity (EEO) groups within levels, representation and recruitment of Aboriginal employees and employees with disability. State Forests' wages are also compared to the national legal minimum wage and the national average weekly earnings for the public sector.

Trends

The number of staff directly employed by State Forests has fluctuated over the last few years but overall has remained relatively consistent at approximately 1,100 full time equivalents. Within the overall wage groups represented in the organisation, there has been relatively little change in the representation of men while the number of women in the workforce slightly decreased. However, there was an upward movement of women between pay scales which indicates the promotion of women in State Forests. The proportion of staff identifying themselves as from Racial, Ethnic and Ethno/Religious Minority Groups also remained stable (see Appendix 4). The percentage of Aboriginal/Torres Strait Islander employees remained stable at 2.6% against the total staff number which is in excess of the NSW Government's target (2%).

The continued commitment to and promulgation across the organisation of the Equity Program includes ongoing operation of the strategic Equity Advisory Committee. This Committee recently undertook a review of Recruitment Practices throughout State Forests' with recommendations to Senior Management developed. The EEO Management Plan (2001 to 2004) remains current and includes a number of initiatives to enhance both employment and promotional opportunities for EEO group members within State Forests (Table 4).

Negotiated increases in salaries and wages during the year included a 3% increase awarded to salaried employees in January 2002 as part of a Public Service wide Industrial Relations Commission decision. This increase was under the Crown Employees Public Sector Salaries 2002 Award. As a result the staff employed by State Forests continue to enjoy an above average wage level, with the lowest employee wage ($478 per week (pw)) comparing favourably to the national legal minimum wage ($423pw). The trend estimates for the average weekly earning over the financial year ranged from $962 to $992 pw for full time adults in the public sector across Australia (ABS data, August 2001–May 2002 quarterly figures). The average weekly earnings for State Forests' permanent staff for the financial year was $983 pw.

There were no major industrial disputes during the year. Industrial relations policies and practices are determined by either the Public Employment Office, award negotiations or by enterprise bargaining conducted throughout State Forests with relevant unions.

TABLE 4: REPRESENTATION OF EEO GROUPS WITHIN LEVELS

	Total staff	Women	REERM*	Persons with Disability	Aboriginal and Torres Strait Islanders
1999/00	1,218	253	45	74	26
2000/01	1,130	212	51	73	30
2001/02	1,095	206	51	76	29

* Racial, Ethnic and Ethno/Religious Minority Groups

EMPLOYEE ATTITUDE SURVEY

State Forests conducted an Employee Attitude Survey in February/March 2002. This survey was undertaken as a follow-up to a previous survey conducted in late 1998. In 2002 a 50% response rate was achieved as compared to a 70% response rate in 1998.

The overall aim of the 2002 survey was for the Chief Executive and his management team to gain a 'snapshot' of employee attitudes as they are today and in comparison to those during the 1998 survey. As such the same general categories were surveyed and reported on. These categories included communication, conditions, staff development, equity, management, safety, job perception, performance management and recognition, remuneration and benefits, resources, teamwork, ethics (2002 survey only) and staff development program (2002 survey only).

The most strongly positive feedback was in the following categories –

2002	1998
Safety	Teamwork
Conditions	Conditions
Ethics	Development
Equity	Safety

The categories where feedback indicates development is required are –

2002	1998
Remuneration & Benefits	Remuneration & Benefits
Communication	Communication
Performance Management and Recognition	Resources
Staff Development	Performance

These results highlight some priority areas for further consideration. In particular those areas that have obtained poor results for a second time running and that have been nominated by staff as important to them. The most obvious areas of concern are communication, management and performance management.

Having regard to these indications, the Chief Executive has agreed that further investigation should be undertaken with a view to developing remedial strategies for presentation and/or approval by the Chief Executive and the Senior Management Team.

The results of the survey have been made available to all staff.

Indicator 8. Human resource management and staff training

Description

The quality of management is also reflected in opportunities provided to staff for development and training. To examine this issue expenditure on human resources management is examined in conjunction with training opportunities provided for staff.

Trends

In the past financial year State Forests expended almost $2.7 million on human resource management services, a slight reduction when compared to last year. This includes all activities associated with the management of personnel, including policy, recruitment and general administration of staff.

The organisation recognises that employee skill and competency development is an investment in people and essential to the continued success of State Forests and the career growth of employees. State Forests spent over $2.6 million on providing opportunities from training and career development. In 2001/02, over 2,600 staff and forest contractors received training during the year, primarily in the areas of occupational health and safety, first aide, working within environmental and cultural heritage constraints and soil and water training as part of the 'Forest Harvesting Operator' course for forest workers. In addition five staff completed the Advanced Diploma of Forestry Management, an opportunity provided to them through scholarships from State Forests.

Indicator 9. Health and safety

Description

State Forests aims to achieve a safety and rehabilitation record, which is the best in the Australian forestry industry. Continuous improvement will be measured through a reduction of the accident frequency rate, the lost time severity rate and days lost due to workplace accidents.

Trends

Health and safety in forests has become a broad priority issue for the wider forestry community with the deaths of several forest industry workers over the over the last few years, at various locations around the State. The incidents resulted in the establishment of a Forest Safety Task Force in August 2000 to make recommendations to improve safety in the timber harvesting industry.

A number of initiatives were undertaken by all Regions during the year to improve the health, safety and fitness of staff (Table 5). The success of these initiatives, in conjunction with increased awareness of health and safety issues, communicated through more safety meetings, has helped to reduce the lost time accident frequency rate when compared to last year (Figure 6).

The John O'Rourke Safety Award is presented to the Region/Division that records the lowest Lost Time Frequency Rate for the financial year. This year five workplaces did not record a lost time incident: Research & Development Division

(also awarded last year), South East Region, Riverina Region (also awarded last year), Future Forests and Nurseries.

TABLE 5: INITIATIVES TO IMPROVE STAFF HEALTH AND SAFETY

Initiatives to improve staff health and safety	Number
Provision of health or fitness services	15
Provision of specialised equipment or clothing	367
Risk assessments	241
Training	194
Voluntary audits	72
Total	**889**

FIGURE 6: OH&S STATISTICS

OH&S Issue	2000/01	2001/02
Number of safety meetings held	76	83
Number of lost time accidents	42	36
Lost time accidents frequency rate	18.6	16.4
Number of workers compensation claims finalised	19	29
Cost of workers compensation claims finalised ($)	$1,007,195	$1,960,001
Number of new workers compensation claims lodged	14	11

A safe working environment results in happy and productive staff

STORY 1: NEW FORESTRY TRAINING INITIATIVES UNDERWAY

More than 1,200 forestry workers will benefit from training and assessment in environmental awareness, safety and production skills as part of a $1.2 million Forest Harvesting Sector Training project. The initiative will train and assess workers in the skills needed to obtain a competency-based Forest Operator's licence, now mandatory for anyone working in State forests or on timbered Crown lands.

Training comprises five components covering soil and water protection, log grading, assessment of log truck drivers and machine operators, assessment of operator skills, and workplace supervisor training and assessment. The forest soil and water protection component will involve 700 operators, boosting their knowledge of environmental management procedures to minimise disturbance during harvesting.

Two hundred operators will be trained in the log-grading program, and another 500 operators who have already undertaken a course will be assessed. Better log grading will enable optimum value to be gained from sawlogs. The project also covers the training and assessment of more than 200 log truck drivers and 300 logging machinery operators. Training will formally recognise the skills of drivers and operators and reinforce environmental awareness and safe working practices.

The workplace supervisor training and assessment component will increase the skills of 100 harvesting supervisors in safety, planning and problem solving.

Managed by the Department of Education and Training, the project comes under the training strategy for the NSW Forest Industry, part of the State and Commonwealth Government's Forest Industry Structural Adjustment Package.

State Forests' staff and contractors learn about safety at the log dump.

FOREST VALUE 3 – CULTURAL HERITAGE

Cultural heritage encompasses the qualities and attributes of places that have aesthetic, historic, scientific or social value for past, present or future generations. These values may be seen in a place's physical features, but importantly can also be intangible qualities such as people's association with, or feelings for a place. State Forests is committed to protecting and managing significant cultural heritage values on State forest in co-operation with the local community. Aboriginal cultural places retain special values, which are being increasingly recognised in land management. These places may hold additional significance that is defined by the Aboriginal communities themselves.

State Forests is committed to growing our recognition, management and conservation of Aboriginal cultural heritage values in our forests. An officer is employed in our head office to help develop and implement cultural heritage policy. Aboriginal cultural heritage officers are also employed regionally to assist in identification and protection of Aboriginal sites in the forests and to liaise with the local Aboriginal community.

State Forests maintains a Heritage and Conservation Register that identifies sites and objects of heritage significance. Pre-operational planning processes identify places with cultural heritage significance and the protection measures necessary to safeguard heritage items.

Heritage values are protected through the incorporation of site-specific prescriptions in operational plans to avoid disturbance, and in the case of Aboriginal sites following consultation with local Aboriginal communities. Cultural Heritage Guidelines for Eden and our north coast forests are now in place through State Forests' draft ESFM (Ecologically Sustainable Forest Management) Plans for native forests.

In addition, State Forests is implementing processes for the management of forests or parts of forests where local Aboriginal communities share responsibilities for cultural heritage management. As an example, in Eden, the Aboriginal community and State Forests have jointly progressed arrangements for consultation to:

- conserve Aboriginal culture, heritage and resources;
- facilitate the achievement of Aboriginal cultural, social and economic aspirations;
- protect Aboriginal cultural rights and intellectual property; and
- manage State forests for the benefit of the people of NSW.

State Forests continues to monitor our performance against the same indicators as previous years. In future years it is planned to incorporate additional indicators relating to site management through staff training and the implementation of specific management plans.

Part of the water wheel at Lowden Forest Park, managing cultural heritage for future generations.

Indicator 10. Protection of cultural heritage

Description

The number of cultural heritage sites identified and protected on State forests is monitored as a performance indicator of the extent to which State Forests incorporates considerations of cultural heritage values into landscape management. To ensure the management and protection of cultural heritage State Forests' staff and external contractors employed in forestry operations are trained in cultural heritage awareness.

Trends

Table 6 shows a steady increase in the identification and protection of Aboriginal sites within State forest. In the past year, 51 new sites were identified on State forest (Table 6). State Forests discusses the protection of sites with local Aboriginal communities and advises NPWS of their occurrence. Responsibility for the maintenance of a register of Aboriginal sites in NSW rests with the National Parks and Wildlife Service (NPWS) under the *National Parks and Wildlife Act 1974*.

To ensure the protection of these sites, 239 State Forest staff and forest workers contractors were trained in cultural heritage awareness during the year.

State Forest Regions are currently developing 15 business partnerships with local Aboriginal communities, including the contracting of pre-harvest cultural heritage site inspections and the development of a native plant nursery. Several arrangements for co-management of land between State Forests and local Aboriginal communities are also under negotiation, providing community groups with specific access to forest for traditional activities.

TABLE 6: NUMBER AND TYPE OF HERITAGE OR CULTURAL SITES PROTECTED ON STATE FOREST

	1997/98		1998/99		1999/00		2000/01		2001/2002	
Sites of cultural, spiritual or heritage value	Total No. of Sites[1]	No. of Sites found or registered by State Forests[2]	Total No of Sites[1]	No. of Sites found or registered by State Forests[2]	Total No. of Sites[1]	No. of Sites found or registered by State Forests[2]	Total No of Sites[1]	No. of Sites found or registered by State Forests[2]	Total No. of Sites[1]	No. of Sites found or registered by State Forests[2]
Aboriginal site										
Natural features	NA	99	90	1	84	2	588	20	488	1
Sites of historic importance	NA	172	2	1	1	1	14	0	13	0
Art and ceremonial sites	NA	68	66	0	69	5	139	3	93	0
Sites associated with tools, artifacts and hunting	NA	968	808	155	693	84	2,008	393	1,767	44
Sites associated with traditional Aboriginal life	NA	614	1,022	17	1,340	27	1,654	55	1,332	6
Not classified	NA	25	0	0	26	0	113	69	88	0
Total Aboriginal sites	NA	1,946	1,988	174	2,213	119	4,516	540	3,781	51
Non-Aboriginal sites		Not assessed	509	not assessed	509	not assessed	482	not assessed	554	not assessed

1. Includes sites located on State forest during surveys undertaken by State Forests and other agencies or organisations.

2. Sites found by State Forests during the course of pre-harvest surveys

Source: NPWS Aboriginal Site Register, Heritage Register and State Forests' Regional records

STORY 2: LINKS CONTINUE TO GROW BETWEEN THE ABORIGINAL COMMUNITY AND STATE FORESTS' HUNTER REGION

Managing Aboriginal cultural heritage is a hands on experience for Aboriginal Cultural Heritage Officers.

Aboriginal Community Liaison Officer, Dawn Townsend provides a vital link between State Forests Hunter Region and the Aboriginal community. She not only facilitates the increased use of forest resources by the Aboriginal community but also ensures an Aboriginal perspective to forest management.

Dawn has assisted in the formation of Aboriginal Women's Networks where members have been encouraged to participate in cultural heritage committees, assume responsibility for gender specific cultural heritage sites and develop protocols for their management and visitation. The Darkinjung Aboriginal Women's Network has secured a 'Care for Country' grant for the management and protection of an important Aboriginal women's site on State Forest. Darkinjung Aboriginal Land Council has also obtained a grant to assist in the protection of Aboriginal cultural heritage sites on Mc Pherson State Forest.

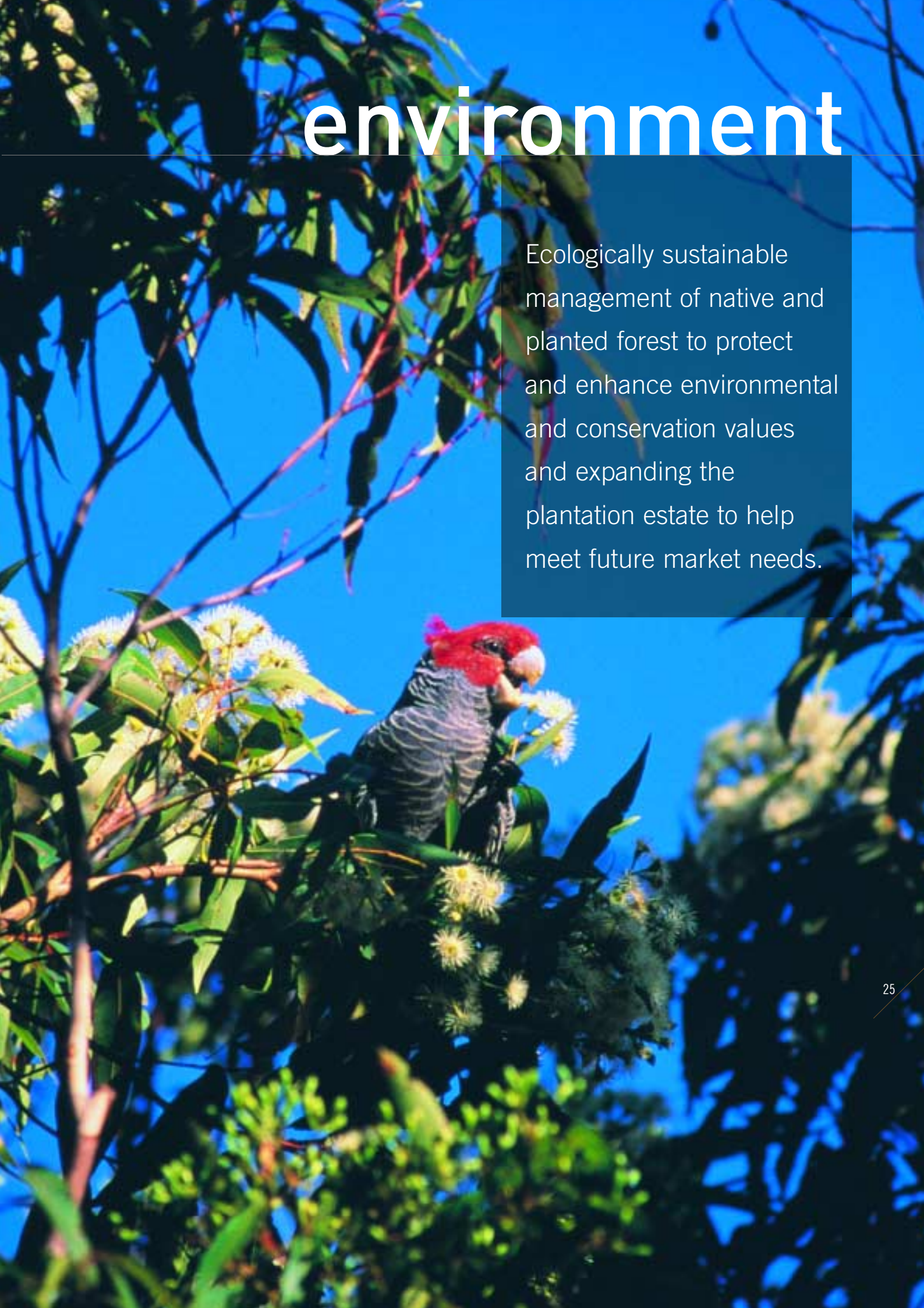
State Forests has assisted the Darkinjung Community Development Employment Program by training Aboriginal participants in Aboriginal site identification and recording and chainsaw use as part of the land management stream. This has involved Aboriginal Cultural Heritage Officer (ACHO), Gabby Duncan and chainsaw experts Ray Burns, Steve Upton and Paul Williams.

Consultation with all sections of the Aboriginal community has ensured that administrative boundaries and community concerns are overcome and that decision-making is inclusive. Elders and knowledge holders have been brought together in the forest and encouraged to take their rightful place in the community. Aboriginal Elders have recently approached Hunter ACHO, Gabby Duncan, about significant sites in the State Forests behind Newcastle and now propose to use this area to ensure their heritage survives, is dynamic and is passed on to future generations. The community has also secured funding for a 'Helping Hands' project where the Elders will use these forest sites to give young Aboriginal people a sense of identity.

Aboriginal staff have been involved in Aboriginal cultural heritage identification, recording and management, fire management, forest inventory, education, recreation, timber harvest planning and harvesting supervision. They have also been active in developing policy and cultural heritage awareness programs, which will be run in 2002/3, and beyond.

environment

Ecologically sustainable management of native and planted forest to protect and enhance environmental and conservation values and expanding the plantation estate to help meet future market needs.



STATE FORESTS OF NSW ENVIRONMENTAL POLICY

State Forests of NSW recognises that planted and native forests represent a wide range of values and uses to the people of New South Wales. It is a goal of State Forests to conserve and protect forest values ranging from biodiversity and forest productivity to the ability of forests to act as carbon sinks and for the many recreational and cultural values they provide.

This environmental policy statement reflects international, national, and State commitments, policies and programs to ensure that State Forests operates its business and manages forests in a way that is environmentally sensitive, socially beneficial and economically viable.

State Forests is committed to ensuring ecologically sustainable forest management (ESFM) in NSW by:

- managing forests to maintain and enhance the full suite of forest values for the benefit of current and future generations,
- working to ensure that our management is complementary to forest management on other tenures, and by
- working with others to ensure the development and operation of a sustainable forest industry.

To implement ESFM the organisation is committed to:

- measuring and publicly reporting corporate performance concerning the:
  - conservation of biodiversity
  - protection of soil and water quality;
  - protection of cultural heritage; and
  - provision of social and economic benefits
- developing, implementing and continuously improving its Environmental Management Systems for both planted and native forests to achieve improvements in its environmental performance.
- meeting or exceeding regulatory requirements and government policy.
- implementing the outcomes of the NSW Forest Agreements by working with other land managers and stakeholders.
- being open and transparent to the community in undertaking its operations.
- adapting forest management practices and systems in the light of auditing, monitoring and research information, changing expectations, regulatory requirements, and government policy;
- implementing world's best practice in forest management by State Forests' staff and contractors, including the provision of training, professional development, and accreditation processes.
- adequately resourcing the organisation to achieve ESFM.
- developing and implementing efficient energy use and waste management measures in all its activities.

State Forests will be actively seeking global business opportunities relating to environmental services and environmental enhancement.

Signed by Bob Smith CEO State Forests, 4/3/2001

FOREST VALUE 4 – BIODIVERSITY

It is well recognised that maintaining natural levels of biodiversity is essential for ecologically sustainable forest management. The forests of New South Wales contain considerable biodiversity, in a variety of forest ecosystems, which respond in various ways to different management practices.

State Forests is committed to the management and conservation of the biodiversity of the forests we manage. This commitment includes:

- Maintaining the extent and range of forest types, their distribution and abundance.
- Maintaining a range of all forest structural classes across the landscape including the protection of high conservation value old growth forests, rainforest and unique ecosystems.
- Maintaining the diversity of flora and fauna in forests, with particular attention to threatened species and their habitats.
- Undertaking relevant management practices based on sound research and scientific understanding of ecological characteristics of forest types.

Many areas of State forest have been recognised as having particular importance for the maintenance of biodiversity values. These areas are protected and managed for these values which often results in special zoning and management prescriptions being applied during harvesting (see Indicator 25 for more information).

The habitats of threatened species such as the Giant Barred Frog are protected during harvesting.

Indicator 11. Extent of forest type

Mountain Gum and Alpine Ash forest in Riverina Region.

The State Forests' estate is managed on the basis of a number of important factors. Understanding the types of forest ecosystem, the management history and resultant structure of the forests, as well as other environmental factors helps determine the appropriate silvicultural or other management practices that should be applied.

Native forest

Description

The native forest estate managed by State Forests is comprised of a wide range of forest ecosystems. More than 200 forest ecosystem types are recognised, each containing a unique combination of flora, fauna and other characteristics. Tracking changes in the area of these forests helps us make decisions about resource utilisation, silviculture, conservation and other issues relating to forest management (see Indicator 25). The majority of hardwood products are harvested from native forests (see Indicator 31).

Trend

The area of native forest managed as State forest has steadily reduced between 1998 and 2001, as a result of the Regional Forest Agreement process. In these four years, several tens of thousands of hectares of native forest were transferred from State forest to national park.

In 2001/02, there has been a decrease in the size of the native forest estate that is managed by the Native Forest Division of the organisation. This decrease is as a result of the transfer of large tracts of land surrounding plantations to management by the Planted Forest Division. Overall the actual area of native vegetation managed by State Forests increased as a result of new land acquisitions, particularly in the northern part of the State. These additions will help sustain the supply of timber to mills in these Regions, for the future. The size of the native forest estate is now at 2,541,098 hectares, 141,666 hectares of which is included within the planted forest estate as retained native forest. Appendix 6 shows details of the area and percent of various Broad Forest Groups within the native forest estate.

Planted forest

Description

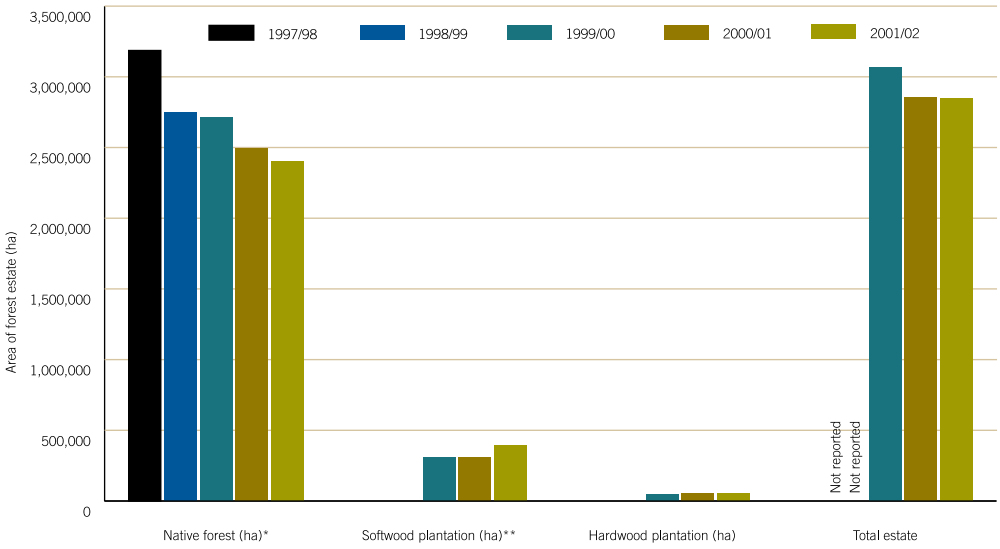
The plantation estate managed by State Forests continues to grow, with significant investment in the establishment of new forests for timber as well as other environmental services such as salinity, carbon, biodiversity and land rehabilitation. The planted forest estate includes native hardwood (*Eucalyptus and Corymbia spp*), native softwood (*Araucaria spp*) and exotic softwood (primarily *Pinus spp*) species. The area and percentage of plantation managed by State Forests is an indicator of our commitment to meet both domestic and international opportunities in wood supply as well as in energy, carbon sequestration and third party investment.

Trend

The area zoned planted forest has continued to increase to around 443,000 hectares, with a total *planted* area of 259,429 hectares. Appendix 7 reports the area and percentage of plantation in different species. Significant progress has also been made through joint venture plantations and third party plantings for environmental services.

Additional increases to the planted forest zone are a result of the transfer of a large area of native forest for management with the planted forest estate. This area, 141,666 hectares, is retained as native forest as a protective buffer for the planted area from fire.

FIGURE 7: TOTAL AREA OF FOREST ESTATE BY FOREST TYPE



*Does not include native forest managed by Plantation Division.

**Includes planted area and areas for future planting within State forest, joint ventures and annuities.

The forest mosaic – softwood plantation and native forest provide a range of values.

Indicator 12. Extent of native forest structure

Description

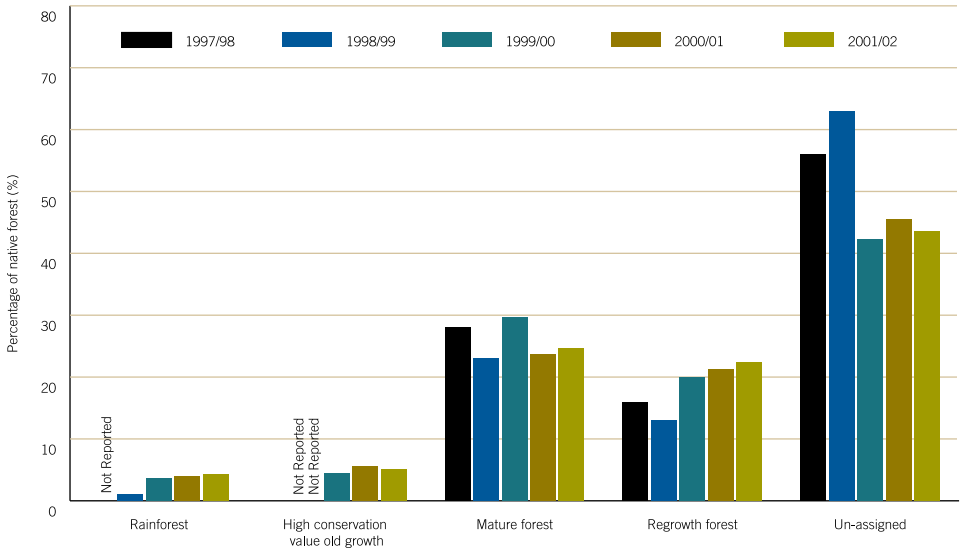
Forest structure refers to the features of forest ecosystem which reflect the natural environment and management history of forests. Largely determined by forest type, age and past disturbance forest structure is an important consideration when planning future management, including harvesting, of forests. For comparative analysis and management purposes, three forest structure classes are referred to in eucalyptus forests: regrowth forest, mature forest and high conservation value old growth. The proportion of older trees increases progressively through these categories. While areas identified as high conservation old growth forest are unavailable for harvesting, areas identified as regrowth or mature forest may have specific silvicultural practices applied to enhance their productive capacity. A stable forest landscape requires a balanced range of forest structures in all forest types.

Trends

Due to the long life-cycle of forests, measuring changes in forest structure on an annual basis is difficult. Major impacts on the distribution of structure classes across the landscape include silviculture, timber harvesting and fire.

The class of forest that shows most change is that portion of the estate that is classified as mature forest. This forest structure class comprises the majority of the harvestable area of the native forest estate and is therefore mostly likely to show variation from year to year. This year a change in the area of high conservation value old growth forest is also reported. This variation is as a result of a change in accounting procedures.

FIGURE 8: PERCENTAGE OF NATIVE FOREST ESTATE WITHIN EACH FOREST STRUCTURE CLASS



Indicator 13. Record of surveyed species

Description

The presence or absence of threatened species, which are those forest dwelling species identified under the NSW *Threatened Species Conservation Act 1995*, can be used as an indicator of adverse and beneficial impacts of management activities on forest ecosystems. During the planning phase of forestry operations flora and fauna surveys are undertaken to determine the presence of threatened species or their primary habitat, in accordance with conditions of Threatened Species Licences.

A suite of species which are of particular interest to community groups are reported here. Appendix 9 provides a full list of sightings and recordings of targeted species of fauna for the past four years. In 2003 it is planned to include a list of threatened flora.

Trends

The number of sightings of threatened species (Figure 9) is directly dependent on the surveys undertaken in areas of forest scheduled for harvesting, which contain different forest types and therefore different species and habitat. The number of sightings determines the area of forest to be available for, or excluded from, harvesting. For example, following the sighting of particular species during pre-harvest surveys, areas of habitat are reserved from the area planned for harvesting. It should be noted that different prescriptions apply to each of the species listed under the Threatened Species Conservation Licence for each Forest Agreement Region. During the year, 3,500 threatened species were located.

Research and development

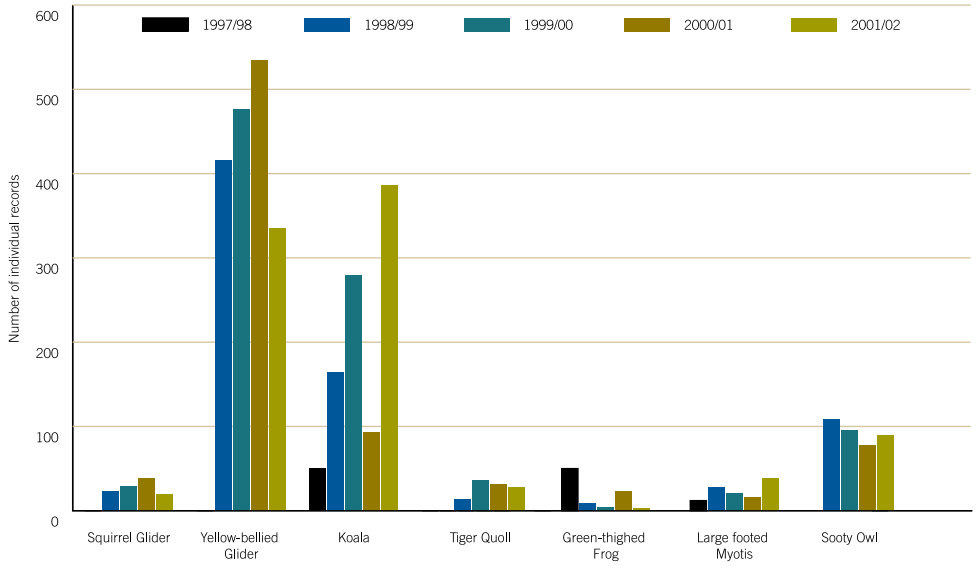
Forest biodiversity research was mainly directed at threatened species ecology, wildlife response to disturbance, forest indicator species and biodiversity in eucalypt plantations.

Long-term studies are indicating that bats can be efficiently monitored over time using either banding techniques or infra-red counters at known roosts. The information gathered from long-term monitoring is extremely valuable, for example riparian buffers have been demonstrated to be effective in mitigating the immediate effects of logging on the Large-footed Myotis.

Continuing monitoring of frogs in the Dorrigo area has demonstrated that frog populations around permanent dams/ponds are relatively stable in the area after eight years. The latest information on the impacts of fire on pond breeding frogs indicates that they are relatively robust in the face of regular fire regimes. A study on the impacts of logging on pond-breeding frogs is under way. Surveys were undertaken of 40 ponds in the Watagans to determine what species are present at the different sites. Habitat data have also been collected for these sites and analysis is being undertaken to determine what makes a “good frog pond”.

In terms of survey effort, State Forests expended over $1.6 million on undertaking pre-harvest surveys covering approximately 121,000 hectares of forest.

FIGURE 9: SIGHTINGS OF SURVEYED ANIMALS IN NATIVE FORESTS



Indicator 14. Habitat level of representative species

Description

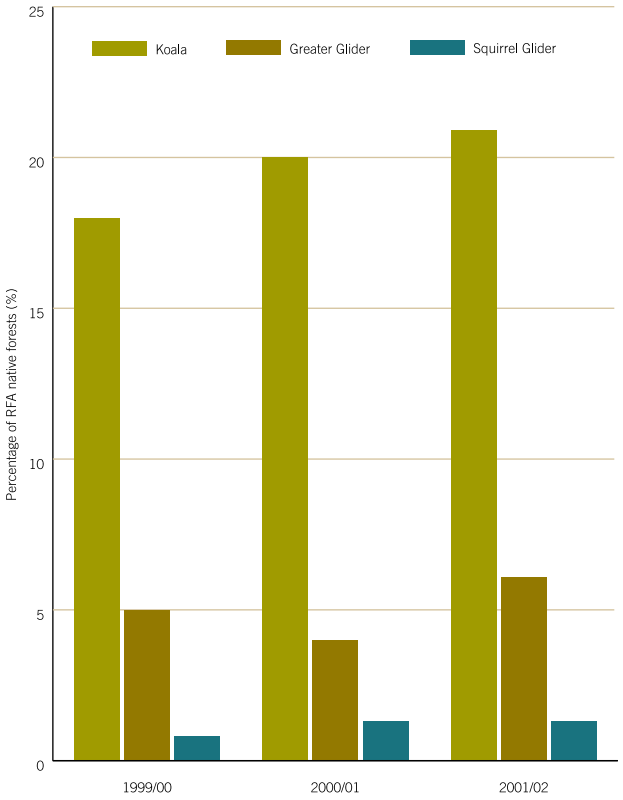
An objective of our forest management is to preserve habitat critical for the survival of native species in our forests, particularly for threatened species. To determine our performance in this area, the area of habitat for three species of arboreal mammal is measured: *Phascolarctos cinereus* (Koala), *Petauroides volans* (Greater Glider) and *Petaurus norfolcensis* (Squirrel Glider). These species were selected because of their dependence on a mature or over-mature forest structure and therefore possibly susceptibility to change as a result of forest management practices.

Trends

Figure 10 presents the area of available habitat in State Forests' RFA native forests (ie Eden, Upper North East, Lower North East and Southern) for representative species for the last three reporting periods. The data for the previous two reporting periods (ie 1997/98 and 1998/99) has not been included as that data did not only relate to RFA areas and a comparison with those years would therefore be meaningless. The data in Figure 10 is based on forest typing and forest structure information that has been finalised with the completion of regional assessments.

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 State Forests must ensure that the full range of forest types and structure classes are retained, in proportion to the total estate area. In the past four years the size of the native forest estate managed by State Forests has reduced significantly with the transfer of forests to NPWS. Overall, the area of available habitat as a percent of the total State forest in RFA region has remained relatively stable. In addition, Threatened Species Licences implement management practices designed to protect threatened species.

FIGURE 10: AVAILABLE HABITAT FOR REPRESENTATIVE SPECIES AS A PECENTAGE OF RFA NATIVE FORESTS



STORY 3: FLORA MONITORING PLANS IMPLEMENTED

The broad-leaved pepperbush is being monitored on State forest.

With its wide, dark green leaves and purple berries, the broad-leaved pepperbush (*Tasmannia purpurascens*) is a distinctive plant found on the Barrington Tops Plateau in the northern tablelands of NSW. Although restricted to the plateau, 95 per cent of this threatened species is protected within local national parks and Crown reserve, with small populations also occurring in Barrington Tops and Stewarts Brook State Forests.

Listed as a threatened species due to its limited geographical distribution, the broad-leaved pepperbush is common-to-abundant on the plateau, sometimes occurring as the most common understorey shrub. In areas that have been disturbed through harvesting operations, the plant regenerates vigorously. This pepperbush is now one of a number of threatened plant populations being monitored in the State's north to observe the impacts of timber harvesting.

Monitoring plans are being applied to threatened species that are locally very common; and have either been observed colonising disturbed areas or appear to be otherwise resilient to disturbance.

For each of these threatened plants, a monitoring plan is written in consultation with the NPWS. Plant populations are monitored before and after timber harvesting to determine the potential impacts or benefits.

Monitoring plans have been written and approved for five species, with another two plans in preparation. The data collected will lead to a better understanding of the ecology of these species and improved forest management practices.

FOREST VALUE 5 – FOREST HEALTH

A healthy and vital forest promotes biodiversity and productivity and also provides a greater range of possible community uses, products and benefits. Controlling populations and effects of introduced predators, feral animals and weeds, conserving site fertility, controlling insect and fungal pests and managing the effect of wildfire are critical components of our forest management practices.

Biodiversity conservation as well as social and economic development relies on maintaining healthy and stable ecosystems and this is best implemented at a landscape level. State Forests has implemented Ecologically Sustainable Forest Management plans in Upper North East, Lower North East and Eden Forest Agreement Regions that address fire management, insect and disease management, forest regeneration, feral and introduced predator control, weeds management and forest research and development.

Our forest management includes a significant effort to protect the health of our forests. For example:

- All State Forest Regions actively undertake programs to control weeds, introduced predators, feral animals and pests on the forest estate (Indicator 15);
- Our Forest Health Unit monitors planted forests for disease, insect attack and nutrient deficiency (Indicator 16);
- Co-operative bushfire risk and bushfire suppression management plans have been developed in conjunction with local communities and agencies have been developed, and hazard reduction and fire suppression programs implemented to protect our forest from the effects of severe wildfire (Indicator 17);
- Techniques to detect and accurately measure the extent of disease using remote sensing such as multi-spectral imagery are being developed (Story 4).

For further information about Forest Health, readers should refer to the Annual Report from State Forests' Research and Development Division's Annual Report on the State Forests' website – www.forest.nsw.gov.au.

Indicator 15. Expenditure on introduced predators, feral animal and weed control

Description

Tracking expenditure on programs to control feral animals, weeds and native pests and introduced predators provides a simple indicator of the effort made to maintain the health and vitality of forest ecosystems. Information about the extent of control efforts is also provided. In future years the success of eradication measures will also be reported.

Trends

Table 7 presents expenditure on the control of introduced predators, feral animals, native pests and weeds. Expenditure in 2001/02 increased when compared to previous years. The most notable increase was in expenditure to control introduced predators which almost doubled when compared to the previous year. Expenditure on activities to control the presence of blackberry and other significant weed infestations continue to be undertaken during the year. Expenditure on rabbit control as well as possum control increased, particularly in the southern plantation areas.

During 2001/02, feral animal abatement was undertaken over more than 200,000 hectares of forest, 2.4 million hectares were managed for introduced predators and weed eradication was undertaken over 424,000 hectares.

Research and development

Active management and control of wild dogs is a significant issue for many State Forest Regions. In the Riverina Region, State Forests' staff are assisting the South East NSW/ACT Wild Dog Control Management Project in the trapping and monitoring of wild dogs to provide information on wild dog numbers and behaviour. It is hoped the research will help the region tackle the wild dog problem and reduce future livestock losses.

TABLE 7: EXPENDITURE ON INTRODUCED PREDATOR, FERAL ANIMAL AND WEED CONTROL

Year	1997/98	1998/99	1999/00	2000/01	2001/02
Weeds	$1,325,000	$630,000	$552,000	$562,608	$689,831
Introduced predators, native pests and feral animals	$328,000	$409,000	$369,000	$466,127	$525,560
Total	$1,653,000	$1,039,000	$921,000	$1,028,735	$1,215,391

Indicator 16. Percent of planted forest affected by agents that may change ecosystem health and vitality

Description

State Forests invests a significant amount in the establishment of planted forests each year. In order to protect this asset State Forests annually collects data on the occurrence of the main threatening biological agents and critical nutrient deficiencies and undertakes appropriate eradication and control measures. Data collection is undertaken by State Forests' Research and Development Division, as part of the plantation establishment program.

Trends

Table 8 presents the percentage of newly planted (1994–2002) hardwood forest affected by selected agents that are severe enough to potentially cause a deleterious affect on plantation health and vitality.

Insects, including herbivorous and sap-sucking insects, continue to remain the major agents impacting hardwood plantations. Several large plantations were severely affected this year. Insects particularly impacting this year were the chrysomelid leaf beetles with Christmas beetles and sap-sucking psyllids less significant than in previous years. Stem borers remain a small but common problem in plantations older than three years of age. Damage from leaf and shoot fungi is reported for the first time this year, with significant defoliation in a number of plantations, while there was only minor damage from soil pathogens.

TABLE 8 PERCENTAGE OF NEW HARDWOOD PLANTATION* THAT MAY BE ADVERSELY AFFECTED BY SELECTED AGENTS

Agent	1997/98	1998/99	1999/00	2000/01	2001/02
Herbivorous and sap-sucking insects	n/a	23.8%	25.8%	2.8%	5.8%
Stem borers (insects)	n/a	7.5%	0.5%	0.3%	0.14%
Soil pathogens (fungi)	n/a	1.0%	0.0%	0.0%	0.01%
Leaf and shoot fungi	n/a	n/a	n/a	n/a	2.4%
Unaffected		67.8%	73.7	96.9	91.7%

* Planted hardwood forest post 1994

Table 9 illustrates the percentage of planted softwood forest affected by selected agents that are severe enough to potentially cause a deleterious affect on softwood plantation health and vitality. Some agents manifest themselves over large areas of forest, such as Dothistroma needle blight, whilst other agents affect individual trees (eg Sirex wood wasp, Sphaeropsis fungus, possum damage). Dothistroma needle blight reached high levels in several areas, including the northern tablelands, this year. Sphaeropsis was lower than last year, whilst possum damage continued to occur at similar levels to previous years. Boron deficiency remains a concern in young trees planted on ex-agricultural lands.

Research and development

In NSW, as elsewhere in Australia, surveillance of pine plantation health has relied on manual ground and aerial surveys. However, recent advances in remote sensing technologies and image analysisprovide a potential alternative to this approach. This year a project commenced, in collaboration with CSIRO Forestry and Forest Products and with financial support from Forest and Wood Products Research and Development Corporation, to provide recommendations for the acquisition, processing and incorporation of multispectral imagery of canopy condition into an operational GIS.

TABLE 9: PERCENTAGE OF SOFTWOOD PLANTATION* THAT MAY BE ADVERSELY AFFECTED BY SELECTED AGENTS

Agent	1997/98	1998/99	1999/00	2000/01	2001/02
Dothistroma (Needle blight)	n/a	1%	2.3%	2%	1.3%
Sphaeropsis (fungus)	n/a	3%	0.1%	0.5%	0.13%
Boron deficiency	n/a	4%	3.8%	0.5%	0.03%
Sirex (insect)	n/a	0%	0.0%	0.02%	0.01%
Possum damage	n/a	0%	0.2%	0.23%	0.20%

* Based on the planted area of the softwood plantation estate

Indicator 17. Fire fighting and prevention

Description

Fire can be both beneficial and detrimental to forest ecosystems. Eucalyptus forests are dependent upon fire for regeneration and renewal while other forest types, such as softwood plantation, are threatened by severe or frequent fire events.

Wildfire events, which are unplanned and sometimes catastrophic, occur every year in the forests of NSW. Wildfires may threaten life, property and/or assets and significant effort is undertaken by State Forests, often in conjunction with other fire-fighting agencies, to prevent wildfire from occurring.

State Forests aims to reduce the impact of wildfires by undertaking fuel management activities, which are outlined in Regional Fuel Management Plans. These strategies vary according to the forest types being managed and the natural and climatic features of the areas in which they area to be implemented. Some of State Forests' fuel management strategies are outlined below.

Hazard reduction burns are undertaken each year to reduce the potential impact of wildfires and to provide opportunities for safe and effective control. Following extensive planning and preparation, areas of forest that may cause a threat should wildfire occur are intentionally burnt by low intensity fire, under controlled conditions.

Post harvest burns and other prescribed fires are small and localised events that take place before or after a forestry operation. They are undertaken to ensure adequate regeneration of the forest after it has been harvested (see Indicator 25) or are undertaken during the establishment of planted forests.

Grazing is a fuel management practice that reduces the amount of fine and heavy fuel in forests without using fire.

Recording and monitoring the extent of fire each year helps track both the benefits and effects on forest ecosystems. For the first time this year we are able to report on the implementation of fuel management plans on State forest. This indicator is still under development and will evolve as more data becomes available.

Trend

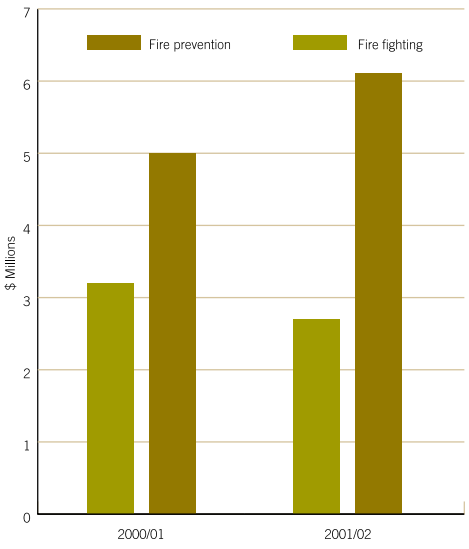
Figure 12 indicates that the 2001/02 fire season was an above average year for wildfire in many parts of NSW. Fires were experienced in all coastal Regions of NSW, culminating in the severe fires experienced in the southern part of the State over Christmas and early in the New Year. While more than 84,000 ha of native forest were burnt by wildfire and 33% of the forest affected experienced greater than 70% crown scorch and had less area burnt than other tenures in the State.

In 2001/02, the fuel loads on approximately 2% of all State forest were managed through the implementation of hazard reduction, post log or establishment burns. In addition, 22.7% was leased for grazing, with the effect of reducing the fine fuel load in those areas of forest (see Table 10).

Research and development

The Eden Burning Study Area, which was first proposed in 1984 to provide information on the combined effects of timber harvesting and fire, continues to be managed, with ongoing data collection, analysis and reporting. The study was established to improve understanding of the impacts of fire and logging on the population dynamics of forest trees and understorey plant species. Results are expected to provide improved understanding of fuel build-up following hazard reduction burning, and regeneration characteristics following logging and burning. Data will underpin the development of appropriate hazard reduction burning regimes in dry coastal eucalypt forests of southern NSW in the future.

FIGURE 11:EXPENDITURE ON FIRE FIGHTING AND PREVENTION



Hazard reduction burning in the cooler months helps reduce the threat of wildfire.

FIGURE 12 PERCENT OF STATE FOREST BURNT BY WILDFIRE

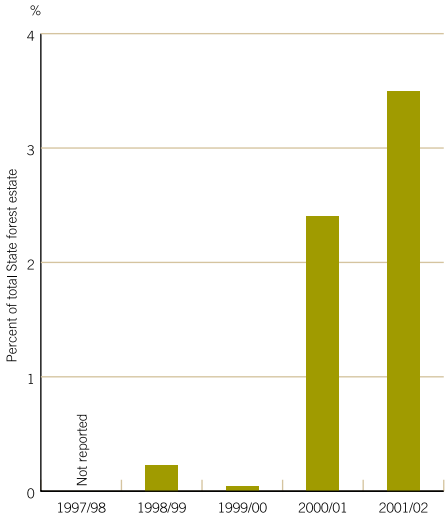
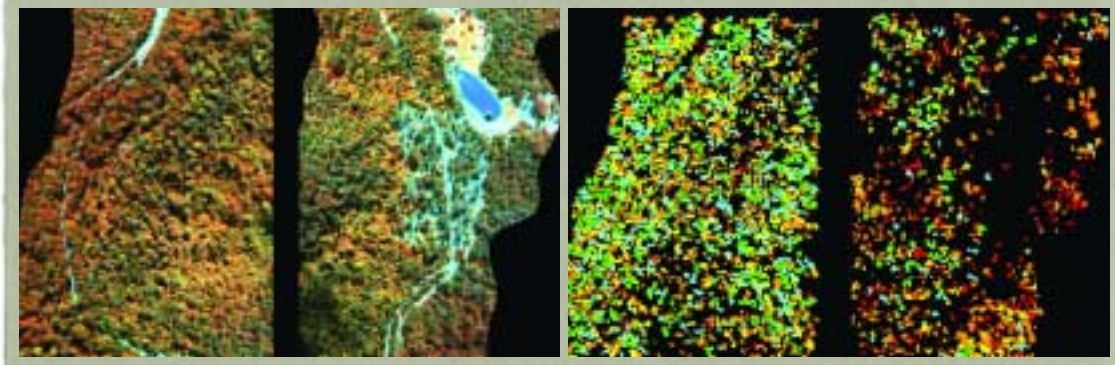


TABLE 10: AREA OF FUEL MANAGEMENT

Fuel management strategy	2001–2002
Hazard reduction (ha)	35,053 (1.2%)
Post log burn (ha)	23,840 (0.8%)
Grazing (ha)	644,966 (22.7%)

STORY 4: FOREST HEALTH

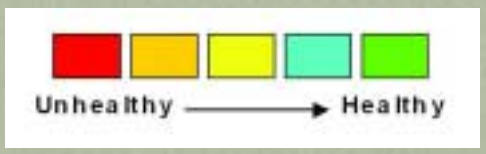
Healthy plot **Unhealthy plot** **Healthy plot** **Unhealthy plot.**



Above left: The original imagery obtained by the spectrographic imager during a flyover.

Above right: The same areas with the ECCI applied.

Source: Collaborative CSIRO FFP and SFNSW research project using hyperspectral imagery to monitor crown condition in native regrowth forest.



State Forests' researchers are using cutting edge technology to develop better ways to manage and conserve native and planted forests. Currently, State Forests' Dr Christine Stone is working with a small group of Australian scientists in developing a method of assessing forest health using remote sensing technology.

Just over three years ago, Christine started to discuss with colleagues the potential uses of imagery obtained from planes or satellites for monitoring forest health. She has collaborated with experts in the use of remote sensing technology from the CSIRO Division of Forestry and Forest Products and the University of Wollongong with an aim to develop a reliable and robust indicator of the health of eucalypt forests that is both cost-effective and able to be integrated into forest management.

As many symptoms of poor forest health are invisible to the human eye, the researchers have been working on a way to detect these symptoms of early canopy decline using remote sensing. Variations in the canopy can be detected by measuring reflected light within narrow regions of the electromagnetic spectrum. As it is digitised, this information can be mathematically evaluated.

A study site was established in a mixed-age, moist regrowth eucalypt forest within Olney State Forest, south of Newcastle. Trees on the site were exhibiting a range of symptoms associated with canopy dieback.

The next step was to obtain high resolution imagery from the air and then match the imagery with identified trees on the ground. The imagery obtained from a spectrographic imager during a flyover was processed and found to be correlated with specific ground tree and leaf measures relating to the structural and physiological status of the vegetation.

An algorithm was then developed to give the Eucalypt Canopy Condition Index (ECCI) – a world-first measure of eucalypt forest health. Although it is yet to be tested across a range of forest types, the index will enable early detection and accurate monitoring of declining health in the type of forest found in the study area.

Christine says the work will highlight areas that need on-site investigation. "Forest health is an important indicator of sustainable forest management. While in the past it has been easy to detect the presence of unhealthy trees by analysing aerial photographs, the ECCI provides the capacity to quantify the severity of the problems.

"The ECCI won't reveal the reasons causing the tree to decline, but it will allow for immediate assessment and continued monitoring and comparison over time of key forest or plantation areas. The ECCI is ground-breaking in that it is the first in the world to be of this complexity and robustness. This collaborative research team has commenced a new project that is applying a similar approach to classifying the health and condition of *Pinus radiata* plantations in the Hume Region.

FOREST VALUE 6 – SOIL AND WATER QUALITY

Forests play an essential role in the protection and maintenance of soil and water resources. Conservation of soil and water contributes to the catchment health and biodiversity values of the landscape.

Conservation and maintenance of soil and water resources are fundamental aims of the management of State forests. The mechanisms for achieving this are incorporated into our Codes of Practice.

Through our Codes of Practice, State Forests is committed to using world's best practice to ensure that soil and water quality are not adversely impacted by our operations. Our forest management also aims to maintain the capacity of our soils to support natural forest ecosystem processes.

The practices that State Forests uses are documented in our Forest Practices Code for field operations, which specifies amongst other things, the operational standards required to deliver clean water and meet current regulatory requirements.

Effective implementation of soil and water protection is further assisted through the regulatory conditions prescribed in Environment Protection Licences, issued by the Environment Protection Authority (EPA). The EPA monitors the implementation of licence conditions. State Forests is also undertaking a program of water quality monitoring, part of which is prescribed in the licences issued for harvesting.

Beyond our regulatory requirements, State Forests is playing a key role in the delivery of the NSW Government's Salinity Strategy, including a project in the Liverpool Plains Region to determine the viability of large scale tree planting to manage salinity. More information on State Forests' involvement with the salinity initiative is provided in our Annual Report.

Two indicators are used to monitor our impact on soil and water, which articulate the level of harvesting and protective measures applied in State forest.

Indicator 18. Soil erosion assessment – area and percent of forest harvested

Description

Prior to the establishment of any roads in forests scheduled for timber harvesting, a soil survey is undertaken, by an accredited officer, to identify areas that may be susceptible to soil erosion. Consequently the area planned for harvesting can be used as a measure of the land systematically assessed for soil erosion hazard and for which water pollution measures are put in place before harvesting commences.

Trend

In 2001/02, 121,000 hectares or 4.3% of the total forest estate were planned for harvesting and therefore assessed for soil erosion hazard. State Forests' undertook a total of 275 surveys in relation to soil and water quality assessment to ensure that forestry operations met with conditions of the EPA licences.

Research and development

State Forests is required to implement a Water Quality Monitoring Program as a condition of the Environmental Protection Licence. Data generated by the program will enable the efficacy of measures taken to prevent sediment pollution of forest streams during harvesting to be assessed. Two reports, covering the 2000 and 2001 calendar years, were completed and submitted to the EPA in early 2002. The reports contained comprehensive site descriptions for all sites, including the new Kangaroo River sites near Coffs Harbour.

Indicator 19. Catchment protection

Description

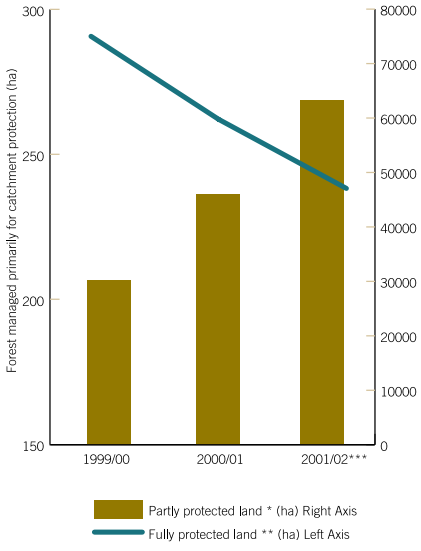
The entire State Forests' estate is managed for catchment protection. However this indicator reports on the area of land that is zoned 'catchment' as the first special value in our Forest Management Zoning system (ie has a special emphasis for catchment protection). It also includes the current estimate of the extent of stream-side reserves and extreme soil erosion hazard land that is protected within the 'general management' native forest area and the current estimate of the extent of filter strips in planted forest.

The indicator does not include land that has been primarily zoned for other ecological purposes, but for which catchment protection is also an important objective. Consequently, Informal Reserves that are managed primarily for flora or fauna are not included in this indicator.

Trend

Figure 13 illustrates that 301,435 hectares, representing 10.6% of the total forest estate, is managed for catchment protection. While overall the number of hectares managed for this value have decreased in association with overall reductions in the estate area (see Indicator 11), State Forests has increased the area of the estate set aside for protecting water catchments under the forest management zoning system.

FIGURE 13 AREA OF FOREST MANAGED PRIMARILY FOR CATCHMENT PROTECTION



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

* Includes Forest Management Zone "Catchment" and filter strips protected in areas where modified harvesting is permitted.

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

FOREST VALUE 7 – COMPLIANCE

All harvesting operations conducted by State Forests are carried within the framework of a regulatory regime. In the native forests of eastern NSW, the regulatory regime is explicitly documented in legislation. Elsewhere, State Forests is subject to the regulatory requirements applicable to any other person or organisation in NSW, conducting activities that produce a similar level of impact.

Explanation of legislation and licences

Following the completion of four Forest Agreements in New South Wales, a large proportion of forests managed by State Forests are regulated under Integrated Forestry Operations Approvals (IFOAs). These approvals reflect the policy of the Government of NSW to develop an ecologically sustainable, value added and secure native-forest timber industry, and establish clear, consistent and strong environmental regulation of forestry operations.

IFOAs are issued and administered by the PlanningNSW and are granted under Part 4 of the *Forestry and National Park Estate Act 1998*. The approvals are granted jointly by the Ministers administering the *Environmental Planning and Assessment Act 1979*, the *Forestry Act 1916*, the *National Parks and Wildlife Act 1974*, the *Protection of the Environment Administration Act 1991*, and the *Fisheries Management Act 1994*.

In areas that are not covered by Forest Agreements, such as in western NSW, our harvesting is undertaken according to various guidelines jointly developed by the Department of Land and Water Conservation (DLWC) and State Forests.

During harvest planning and licenced harvesting operations, State Forests and external harvesting contractors are required to comply with conditions set out under these licences and guidelines. To ensure that these requirements are met, State Forests and contractors are subject to both internal and external compliance checks and audits.

Indicator 20. Regulatory compliance

Description

The number of audits undertaken and the number of fines and breaches reported are used to monitor compliance with both internal Codes of Operation and external licence conditions. State Forests undertakes routine monitoring for compliance and undertakes corrective action where necessary.

Trends

Table 11 summarises the number of non-compliance incidents recorded by our own supervision and the actions taken by regulators over the last two years (see Appendix 10 for full details). The majority of the non-compliance incidents recorded in the past two years relate to accidental tree felling into filter strips and stream exclusion zones, which have relatively minor environmental impacts.

The number of compliance check sheets completed is determined by the number of contractors undertaking harvesting operations during the year, and the type and duration of each harvesting operation (checks are undertaken every two weeks). There was an increase in the number of checksheets conducted as well as an overall increase in the number of compliance breaches reported internally. The number of fines received reduced.

The expenditure throughout the year on meeting our environmental regulatory requirements was in excess of $5.5 million.

TABLE 11 SUMMARY OF REGULATORY COMPLIANCE DURING HARVESTING

Compliance items	1999/00	2000/01	2001/02
Number of compliance check sheets conducted	5,848	3,424	3,573
Number of non-compliance incidents recorded by State Forests' supervision for corrective action	2,039	1,538	2,242
Number of fines issued to State Forests by regulators	3	5	3
Number of prosecutions recorded against State Forests	1	0	0

Indicator 21. Efficient harvest planning and operational compliance in native forests

Description

Our harvest planning includes a number of processes undertaken to comply with internal codes of conduct and external licence conditions. State Forests expends considerable time and resources meeting these obligations, so it is important to monitor the efficiency of these activities.

During the course of day-to-day operations, our staff develop new and frequently cost-saving innovations that not only improve compliance performance but also add value to the organisation and the broader environment. Individual regions also undertake a range of activities beyond those required under the condition of the licence through which State Forests operates. Such initiatives are referred to as 'beyond compliance initiatives'.

Trends

The expenditure on and outcomes of activities undertaken during the harvest planning process remained relatively constant during the 2001/2 reporting period, when compared with the previous year (see Table 12). Increase in expenditure during the harvest planning phase is as a result of the increase in the total area planned for harvesting. The successful implementation of protocols as a result of survey effort is reflected in the reduction of the number of non-compliance incidents and fines reported under Indicator 20.

The Native Forest Management System provides both the policy direction and the comprehensive operational systems for forest management, including harvest planning. The NFMS also provides a system for improving our performance in complying with internal codes and external licence conditions.

TABLE 12: HARVEST PLANNING AND OPERATIONAL COMPLIANCE IN NATIVE FORESTS

Harvesting activity	Outcome	2000/2001	2001/02
Desktop and field planning	Expenditure on harvest planning	$ 4,632,409	$5,634,045
Pre-harvest surveys – soil and water			
	Number of soil and water surveys undertaken	261	189
	Area assessed for soil and water	64,166	105,433
Pre-harvest surveys – flora and fauna			
	Number of fauna surveys undertaken	2,082	2,277
	Number of flora surveys undertaken	638	723
	Number of species protocols invoked	496	475
Expenditure on pre-harvest surveys	Expenditure on pre-logging survey and assessment costs for factors such as Aboriginal sites, flora, fauna etc.	$ 1,641,363	$1,605,375
Harvesting compliance	Expenditure on harvesting supervision and environmental compliance	$5,560,205	$5,503,854

Surveying bat colonies helps forest planners protect them during harvesting.

FOREST VALUE 8 – FORESTS AS CARBON SINKS

The term 'eco-efficiency' expresses the efficiency with which ecological resources are used to meet human needs. A key component of eco-efficiency is the re-engineering of production processes to include a reduction in the use of resources, and a reduction in pollution, including greenhouse gases.

State Forests is addressing eco-efficiency in two ways:

- Through promoting the establishment of a carbon market and promotion of the planting of trees for a number of positive environmental outcomes including carbon sequestration, dry land salinity, water quality and biodiversity enhancement; and
- By employing eco-efficient processes to diminish production of greenhouse gases and other pollutants.

Forests are recognised as an important carbon dioxide sink and State Forests has been playing a key role in the development of a strategy to address the impacts of greenhouse gas emissions and actions to offset them. State Forests is developing a full set of carbon accounts for those parts of its existing planted forest estate that are compliant with Article 3.3 of the Kyoto Protocol. This component of the planted forest estate will underpin State Forests' carbon trading activities, whether for Kyoto Protocol purposes or under the NSW Greenhouse Benchmarks scheme due for implementation from 1 January 2003. The accounts will be consistent with AS4978.1(Int.), a carbon accounting standard for afforestation and reforestation (in general, Article 3.3 compliant planted forests) released by Standards Australia in June 2002. To be consistent, the accounts must include a calculation of uncertainty around sequestered carbon estimates. The carbon accounting system used for Article 3.3 forests can then be extended to assess the quantum of sequestered carbon in all of State Forests' planted estate.

The establishment of areas of new plantation for the provision of environmental services, including carbon sequestration, salinity control and biodiversity intensified this year and results will be reported in future reports.

Indicator 22. Annual carbon sequestration in planted forests

Description

This indicator expresses the total annual carbon sequestration within our existing planted forests. The calculations are affected by planted area and any change in the mean annual increment (growth rate) of timber.

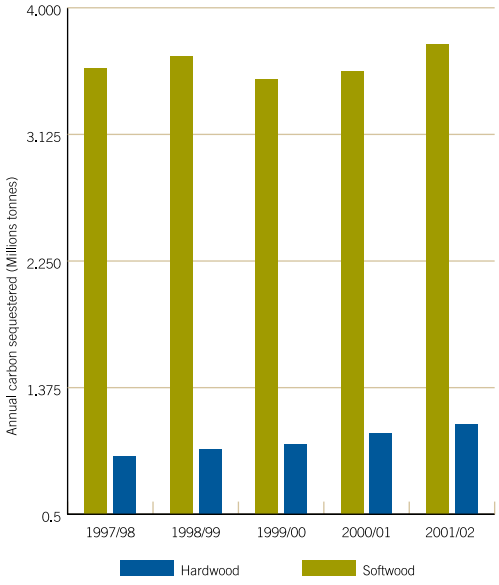
Trends

Prior to the preparation of a full set of compliant carbon accounts, a preliminary carbon accounting model developed by State Forests has been used to estimate the total sequestered carbon dioxide each year over the last few years in the total planted forest estate, of which the area compliant with Article 3.3 is only a subset (Table 13). The calculation is based on the net area of plantation (i.e. after any harvesting). The method for accounting for sequestered carbon was improved during the year and now includes

Sampling the roots of trees helps researchers understand the amount of carbon stored in forests.

estimates for changes in canopy biomass and root biomass. This new method has been applied to this and previous years' data. This method may change again as the models are further refined to include, for example, carbon sequestered in the undergrowth, litter and soil which have been excluded from this calculation. A more comprehensive model for selected sites is used for carbon trading activities, and this is being further developed to enable more general application across the total planted forest estate.

TABLE 13 ANNUAL TONNES* OF CARBON SEQUESTERED IN PLANTED FOREST



*Assumptions:

CO_2 sequestered (tonnes CO_2e) = 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 = 16m³/ha/year and hardwood = 15m³/ha/yr

BD (Basic Density) – softwood = 0.42 t/m³ and hardwood = 0.55t/m³

CBI (Canopy Biomass Increment) = SBI x .1765

RBI (Root Biomass Increment) = (SBI + CBI) x .2

CP (Carbon Proportion) = 0.5

CCDF (Carbon to Carbon dioxide factor) = 3.667

Research and development

Major research activities undertaken by State Forests' Research and Development Division have centred around the Co-operative Research Centre (CRC) for Greenhouse Accounting, the NSW Salinity Strategy, and research into the rehabilitation of mine sites through reforestation and forestry options for the targeted beneficial use of wastes.

Research to benchmark salinity control and carbon sequestration in low rainfall areas is continuing in collaboration with NSW Agriculture and DLWC. The project is still in an early phase and as yet does not have results suitable for developing forest management strategy or policy. However, the results will provide information about likely growth rates of trees in the low rainfall zone and an indication of which species are most suited to the region. It will also supply information about water use of various tree species, which is required to develop sustainable farming systems in the area prone to dryland salinity.

Trees planted to help control salinity in Western NSW.

Indicator 23. Energy consumption

Description

The quantity and type of electricity and fuel consumed in the process of managing and harvesting forests are recorded to monitor our contribution to atmospheric carbon. State Forests has made a voluntary decision to participate in the Government Energy Management Policy. The Policy expresses the Government's commitment and responsibilities under the National Greenhouse Strategy. By pursuing measures within its own operations, State Forests is demonstrating leadership in its commitment to reducing greenhouse gas emissions.

State Forests' activities in this area are focused on management of energy and fuels consumption. The organisation undertakes pro-active management aimed at reducing use of electricity, petrol and diesel as well as general materials.

Trends

Figure 14 shows consumption of greenhouse gas producing substances for the whole organisation and the amount of atmospheric carbon released as a consequence. Further details are provided in Appendix 11.

Based on the data collected, electricity and fuel consumption remained stable, when compared to 2000/01 data, accounting for 35% and 65% of CO_2 emissions respectively. State Forest's fleet significantly effects the quantity of fuel the organisation consumes. During 2001/02, State Forests maintained a fleet of 660 vehicles and 249 trucks and light and heavy plant equipment (see Appendix 12 for details). This represents a reduction in the number of fleet vehicles from the previous year. With respect to electricity consumption over the last three years, State Forests maintained the proportion of 'Green Power' purchased to 12.5% of all electricity consumed.

FIGURE 14 ENERGY CONSUMPTION AND CO_2 EMISSIONS

Year	Electricity (kWh)	Green power as % of electricity consumed	Fuel consumption (kWh)	Total energy (kWh)	CO_2 emissions (tonnes)*
1998/99	15,588	7.6%	96,304	111,893	10,419
1999/00	15,265	12.6%	95,509	110,774	10,066
2000/01	14,898	12.5%	95,841	110,740	10,032
2001/02	14,898	12.5%	95,841	110,740	10,032

*The NSW Minister for Energy and Utilities workbook is used to convert energy and fuel consumption to CO_2 emissions.

Indicator 24. Material consumption and recycling

Description

Recording the consumption and disposal of paper goods and other office products by the offices of State Forests helps us to track our contribution to landfill and monitor programs to increase recycling and reduce office waste.

Trends

A noticeable component of our paper consumption is the very low amount containing re-cycled paper. This is due to requirements of printers and copiers installed by the organisation. Almost 79% of photo-copier paper and 5.9% of other paper products are recycled by the organisation.

Research and development

The Life Cycle Analysis of Wood Products research program is one project within the CRC for Greenhouse Accounting that is being undertaken by State Forests. The aim of the project is to develop data to support an accounting system for carbon that is stored in wood products For more information about this project see the Story on Life Cycle Assessment.

TABLE 14 MATERIAL CONSUMPTION*

Product	Total quantity purchased	% purchased with recycled content	Total quantity waste generated (tonnes)	% recycled
Copy paper (reams)	12,131	0.2%	38.5	78.9%
Other paper products **(items)	75,970	7.4%	125.82	5.9%
Toner cartridges	752	44.7%	471	71.3%

*This indicator is reported on a calendar year basis. This data is for the year 2001.

** Consists of envelopes, files, binder covers, note pads, manilla folders and other minor office products.

STORY 5: LIFECYCLE ASSESSMENT

Sydney's rubbish, a valuable resource in understanding the carbon balance.

State Forests' Research and Development Division spent a good part of 2001 considering rubbish – all in the name of greenhouse research. The researchers have completed the first in a series of excavations to determine the fate of carbon stored in buried wood products in Sydney's landfill sites. The research is all part of the work being undertaken by State Forests as members of the national Cooperative Research Centre for Greenhouse Accounting.

Currently, international guidelines (from the Intergovernmental Panel on Climate Change) for carbon accounting assume a constant rate of decay for carbon contained in wood, with it being ultimately released back into the atmosphere as a greenhouse gas. These assumed decay rates vary according to the wood product itself. Short-term products like paper are assumed to store carbon for three years, medium-term products like furniture to store carbon for 25 years, and long-term wood products like those used to build houses having an assumed life of 50 years.

The project was initiated to determine whether these assumptions were accurate, and to establish the rate at which wood products sent to landfill released their carbon.

A Landfill Research Steering Committee consisting of representatives from State Forests, Waste Services NSW, Waste Boards, the Cooperative Research Centre for Waste Management and the Environment Protection Authority was formed to select the first three sites for the research.

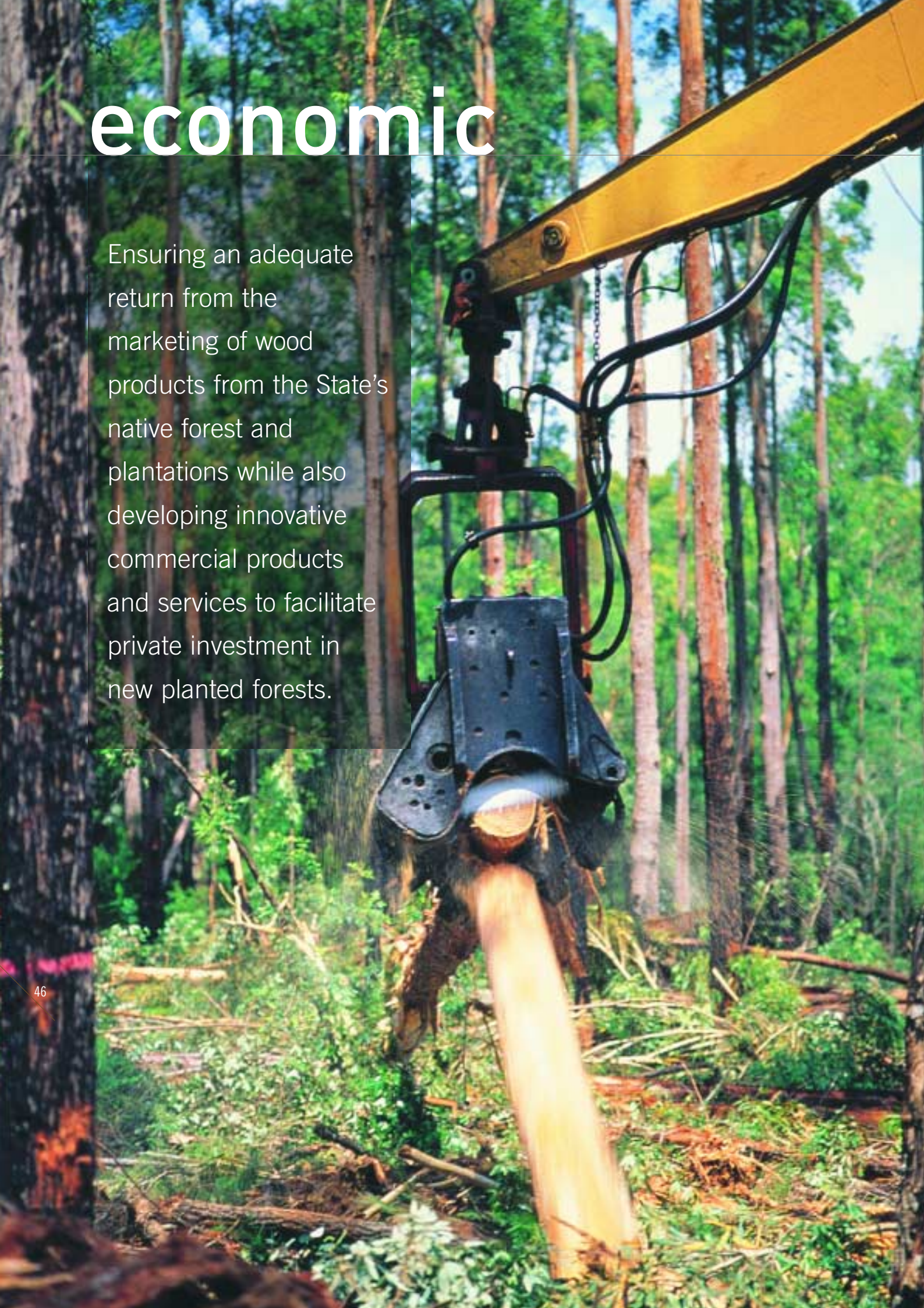
The first site chosen was a refuse tip covered in 1979, the second a sealed site with reticulated leachate used in 1971–1972, while the third was an engineered site, now with methane extraction, used as landfill from 1981–1982. The sites were chosen as they represent different landfill designs and treatments. The results provided some ground-breaking information on the storage of carbon in wood, and also gave us a revealing archaeological insight into the Sydney of 20 to 30 years ago.

The wood products are being analysed to determine the timber species and chemical composition – carbon, nitrogen, cellulose, hemicellulose and lignin content. While final laboratory results are still being compiled, preliminary observations are that there is a carbon depletion rate of less than one per cent per annum for wood products.

The research, the first of its kind in Australia, could have far-reaching implications.

economic

Ensuring an adequate return from the marketing of wood products from the State's native forest and plantations while also developing innovative commercial products and services to facilitate private investment in new planted forests.



FOREST VALUE 9 – PRODUCTIVITY

One of our main forest management objectives is to ensure our forest practices, including timber harvesting, are undertaken in a manner which provides for a perpetual supply of forest products in line with community expectations and to ensure all native forests are regenerated to their original forest ecosystem type.

Managing forests is a long-term process. The impact of decisions and actions in our management today may not be visible in the forest for many decades. New management practices can take decades to implement and to have an effect on forest growth and production. Implementing good silvicultural practices is a key component for long-term forest productivity. Monitoring and maintaining the forest's productive capacity is critical to maintaining its ability to provide, in perpetuity, a vast range of products and services.

Measuring the sustainable production capacity is not an easy task, as the true productivity of a forest must be modelled over several centuries rather than in just a few short years. In this report, five indicators have been used across the forest to monitor productivity. The timber productive capacity of the forest has been targeted, as harvesting is a key issue highlighted by our stakeholders.

Indicator 25. Forest available for timber production

Description

Within the estate managed by State Forests an important sustainability indicator is how much of the forest has a special management focus on conservation and how much of the forest has a management focus on timber production, subject to IFOA prescriptions to protect other forest values. The area available for timber production is a major determinant of the sustainable supply of timber products by the organisation to the timber industry.

Trends

Overall there has been no significant change to the area of native forest available for timber production or managed for conservation or special values in 2001/02.

Minor variations have occurred as a result of newly purchased areas or minor transfers from State forest to national park or other Crown tenures.

Table 15 illustrates the area zoned as available for timber production. Currently, the nominal level of land available for harvesting within native forests is 61% of the total native forest estate. In reality, not all the area zoned for general forest management is harvested. In our planted forest estate, 60% of the total planted forest estate is available for harvesting.

Of the total estate, 2.2% was actually harvested, a reduction of 0.7% compared with the previous year (Table 16). This area, 63,622 hectares, constitutes 3.7% of the forest available for harvesting.

The area of forest zoned as plantation that is not available for harvesting has increased significantly in the past year. This is due to the transfer of native forests around the plantations in the Macquarie Region, from Western Region, to Planted Forests Division and management for fire protection purposes.

TABLE 15 AREA OF FOREST ZONED AS AVAILABLE FOR TIMBER PRODUCTION

	Non harvest land			Land available for harvesting		
Forest Management Intent	1999/00	2000/01	2001/02	1999/00	2000/01	2001/02
Dedicated Reserve	33,500	34,581	27,275	0	0	0
Informal Reserve – Special Management	322,500	303,338	287,852	0	0	0
Informal Reserve – Harvest Exclusion	199,000	239,277	234,271	0	0	0
Special Prescription	54,500	8,552	15,690	13,500	21,728	13,305
General Management Native Forest	387,500	382,701	363,224	1,368,000	1,190,416	1,186,699
Hardwood planted forest estate*	0	0	0	46,000	49,493	52,690
Softwood planted forest estate*	102,600	103,653	184,311	201,720	204,817	206,739
Non forestry use	8,000	10,914	10,097	0	0	0
Land for further assessment	0	0	0	326,500	304,040	261,451
Total forest estate	1,107,600	1,083,017	1,122,270	1,965,720	1,770,494	1,720,885

* Includes State Forest, Joint Venture and Annuities

TABLE 16 AREA AND PERCENTAGE OF FOREST HARVESTED

	Percentage of forest harvested					Area of forest harvested (ha)
Forest type	1997/98	1998/99	1999/00	2000/01	2001/02	2001/02
Native forest	Not reported	Not reported	2.1%	2.6%	2.1%	50,351
Planted softwood forest	Not reported	Not reported	4.6%	5.4%	3.0%	13,271
Planted hardwood forest	Not reported	Not reported	4.6%	4.1%	0%	0
Total estate	2.1%	2.4%	2.4%	2.9%	2.2%	63,622

Indicator 26. Plantation establishment

Description

This indicator tracks the area of new plantation and second or third rotation plantations established during the year. The area planted to hardwood species is mostly new planted forest. About half of the recently planted softwood trees are in new plantation areas, while the other half are planted as second and third rotation crops onto existing plantation estate. New planted forests are established on former agricultural land that is either purchased by State Forests or by contractual arrangement with private land owners.

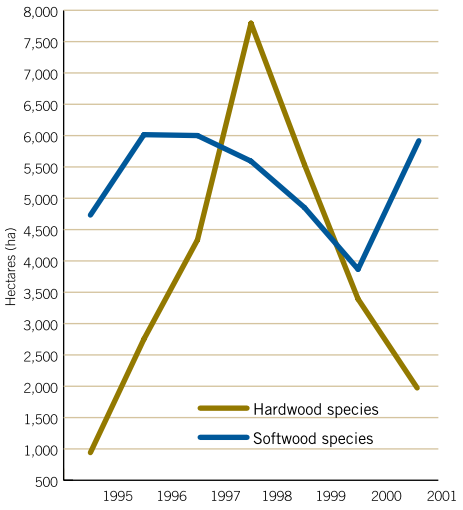
Trends

Figure 15 records the area of forest planted during the last seven years. This shows a stable trend for both softwood and hardwood. High rates of hardwood plantation establishment in 1998–1999 were driven by Government policy to rapidly establish a substantial resource to supplement industry reliance on native forests. Direct State Government intervention in this area has since been overtaken by funding arrangements under Regional Forest Agreements on the north coast and a recognition that the private sector is now taking up an increasing role in this area. A significant investment in plantation establishment, approximately $7.36 million in 2001/02, will help secure this resource and meet the corporate objective to expand the plantation estate to meet domestic and international opportunities.

Research and development

State Forests' softwood plantation program has focused on radiata pine as the primary species for decades. The low site productivity of areas available for planting has seen significant impacts and losses that affect the commercial viability of such planting. A strategy to test alternative species and genotypes will provide opportunity to broaden State Forests timber marketing base by increasing the range of species/timbers available to the market place.

FIGURE 15 AREA OF PLANTED FOREST ESTABLISHED ANNUALLY SINCE 1995



Indicator 27. Percent of planted forest effectively stocked

Description

The establishment of new planted forest and re-establishment of existing planted forest after final harvesting is contributing to the development of a sustainable timber supply in NSW. To enhance the productivity of a newly planted forest it is vital to achieve vigorous growth in the first few years. State Forests monitors the effectiveness of the establishment of newly planted forest by undertaking surveys of seedling survival in the first year after planting. If survival rates are generally low or low in specific locations, the failed areas are replanted. Secondary survival counting is sometimes undertaken if plant health, disease or adverse weather conditions warrant further examination.

Trends

Table 17 shows that forest planted in 2001/02 attained a similar level of establishment to previous years, however, it is expected that that drought and frost affects may well kill some of this years plantings, the effects of which are not yet fully evident. Survival surveys for hardwood plantations had not been undertaken at the time this report was written and cannot be reported this year.

TABLE 17 PERCENT OF NEWLY PLANTED FOREST EFFECTIVELY STOCKED

Plantation type	1998	1999	2000/01	2001/02
Hardwood planted forest	94%	100%	95%	n/a
Softwood planted forest	97%	98%	96%	95%

Indicator 28. Mean annual growth of planted forest

Description

A mechanism for offsetting the continuing timber trade deficit is to maintain high productivity in our planted forests. By monitoring the mean annual volume of planted forests, management is able to focus on maintaining and improving productivity through maintaining forest health, maintaining soil fertility, improving genetic stock and improving silvicultural practices.

Trends

As our data and management systems have improved over recent years we are now able to provide a calculation of mean annual increment across the softwood planted forest estate (Table 18). The indicator is calculated by dividing the annual increment (change in timber volume) for the next 15 years across the estate by the net stocked area to reflect the sustainability of the softwood planted resource over time.

Data is in the process of being collated for the hardwood plantation estate and should be available in the next reporting period.

Research and development

During the year a number of research projects were undertaken or progressed that will assist in the future enhancement of our Planted Forest estate. Specific tools for predicting the intrinsic wood quality of young trees and wood property improvement were developed with an emphasis on “end-use” and “value adding”. Research on clonal testing and trait-by-site and product were also undertaken during the year. A series of family (genotype) by trait-by-site trials were established in Hume and Macquarie Regions to gauge the impact of varying site conditions on trait performance.

TABLE 18 CURRENT GROWING STOCK IN PLANTED SOFTWOOD FOREST

	2000/01	2001/02
Annual increment* (m^3)	3,464,571	3,450,809
Net stocked area** (ha)	204,817	206,739
Mean annual increment*** (m^3/ha/yr)	16.9	16.7

* Annual increment is the change in volume of the planted softwood estate.

** Net stocked area is the area of the estate where trees are planted (ie does not include roads, environmental exclusion areas, area awaiting regeneration etc) as at the end of the financial year.

*** Mean annual increment (MAI) is an indication of the productive potential of an average hectare within the estate. The silvicultural and harvesting regimes adopted can influence this figure considerably, so calculating MAI over a 15 year timeframe gives a more balanced figure.

Indicator 29. Removal of sawlogs compared to allowable volume

Description

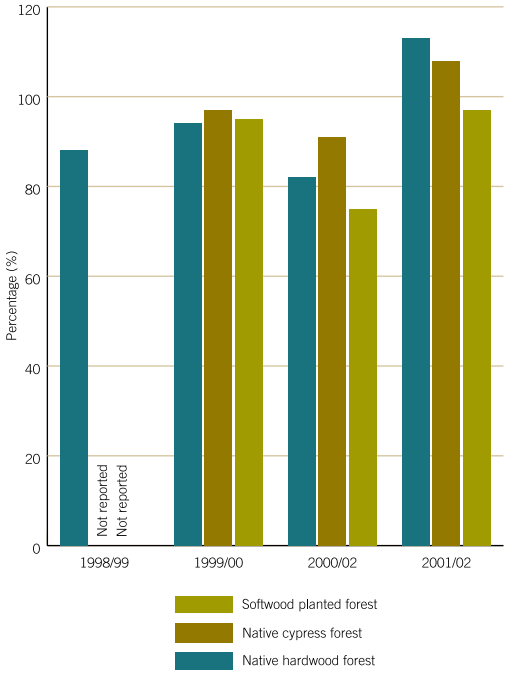
The volume of high quality veneer logs and sawlogs that can be cut from the forest each year is set at an agreed level. For native forests in eastern NSW, this level of production has been established through the Regional Forest Agreement process. The Forest Agreements prescribe the allowed volume of logs harvested in these native forests. Elsewhere, the sustainable level of production is established through our Marketing, Resource, Planning and Operational Divisions.

The harvesting of lower quality logs is associated with the ability to maintain the harvesting of high quality logs. In the longer term it is important that the level of actual harvest does not exceed the agreed sustainable level of production. In future reports, the committed volumes for these lower quality products will also be reported.

Trends

Figure 16 shows the percentage of committed volume actually harvested for high quality veneer logs and sawlogs. Growth in the timber industry, following an increase in demand for new homes as result of low interest rates, resulted in improved sales of timber during 2001/02. This trend increased the percentage of products harvested when compared to the allowable volume and reflects taking of previous undercut allowances (there was an under cut of 18%, for native forests, in the 2000/01 financial year). This is a significant improvement in comparison to last year, and is reflected in the operational profit achieved in this financial year.

FIGURE 16 PERCENTAGE OF HIGH QUALITY LOGS HARVESTED COMPARED TO COMMITTED VOLUME



Harvesting forests sustainably ensures a long term supply of timber.

Indicator 30. Percentage of native forest regenerated

Description

This indicator monitors the maintenance of the productive capacity of our native forests through regeneration. Regeneration of native forests after harvesting is the source of future forests and the key to maintaining future timber supplies as well as other ecological values within forest ecosystems. The nature of eucalypt and cypress pine forests allows for the natural regeneration of seedlings following a logging operation or restocking by State Forests.

Trends

In the 2001/02 reporting period, State Forests conducted four regeneration surveys, one in South Coast Region and three in Riverina Region, covering 3,125 hectares of logged native forest (Table 19). These surveys are usually conducted from nine to twenty four months after logging is complete. The surveys determined that 68% of the areas harvested and surveyed contain effective regeneration that is likely to develop into vigorous regrowth stands. However further interpretation of the results is difficult due to the limited geographic coverage of the data. State Forests is currently developing a process for routine post-harvest monitoring, including regeneration surveys and retained tree surveys to efficiently monitor silviculture outcomes following harvesting.

Research and development

The Silvicultural Systems Group, which aims to develop forest management systems which meet international benchmarks of productivity and sustainability has developed the computer software Reden. This system provides a user-friendly interface for forest managers in the South-East Region to obtain growth and yield estimates of the regrowth forests at different levels of resolution. The output from this system has already been linked with GIS and used for short-term management planning and long-term strategic yield scheduling of the regrowth forests in the Region.

Regeneration, the source of future forests.

TABLE 19 PERCENTAGE OF RECENTLY HARVESTED NATIVE FOREST EFFECTIVELY REGENERATED*

Regeneration surveys	1997/98	1998/99	1999/00	2000/01	2001/02
No. of regeneration surveys undertaken	n/a	63	28	24	4
Area surveyed (ha)*	n/a	3,942	3644	2,157	1,325
Percent of harvesting with effective regeneration	n/a	n/a	98%	95%	68%

* This indicator does not report regeneration surveys undertaken in cypress forests.

FOREST VALUE 10 – MARKETING AND SALES

Marketing and sale of timber is included as a forest value in recognition of its core value to the organisation and the community. State Forests take this opportunity to answer some common questions about the timber production process. The steps involved in the timber production life cycle, are harvest planning, harvesting operations and processing into the end product at the mills, monitoring of regeneration and growth for future harvest.

In NSW, timber is harvested from trees that grow either in native forest areas or in plantations. Inventories of how much and what type of trees are in the forest are undertaken and are used to develop plans of operations for individual compartments that range in size from 10s to 100s of hectares.

Once the timber has been harvested, it is transported to mills for further processing. Most timber goes to sawmills which produce various sawn timber products such as house framing, fencing, floorboards, decking and furniture. Some logs are processed into round timber such as poles and treated posts or into veneer for plywood. Sawmill residue and pulpwood logs are used for pulp and paper and reconstituted timber products (eg particle board, medium density fibreboard (MDF) etc.

State Forests undertakes post harvesting assessments and silvicultural treatments to ensure the regrowth of a productive forest.

The Marketing Division of State Forests, with support from industry groups, assesses the markets for timber price and volume trends over time. This helps the industry understand how the timber market is performing, where there will be short falls in supply to domestic markets and what products and species need to be planted, managed and cut in the future.

Flooring, one of the many high value uses for timber products.

FIGURE 17 OPERATING PROFIT

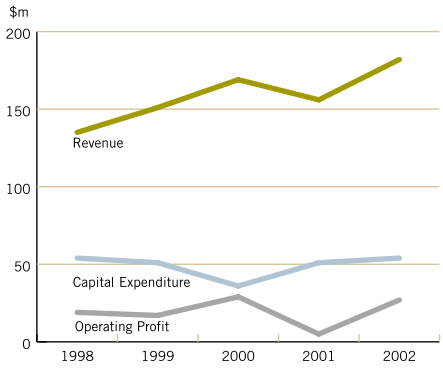


FIGURE 18 TIMBER SALES PER EMPLOYEE ($)

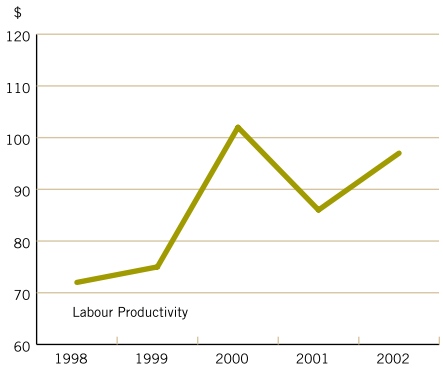
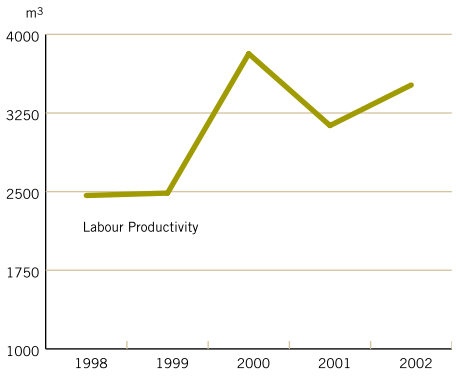


FIGURE 19 TIMBER SALES PER EMPLOYEE (M³)



Indicator 31. Volume of timber harvested

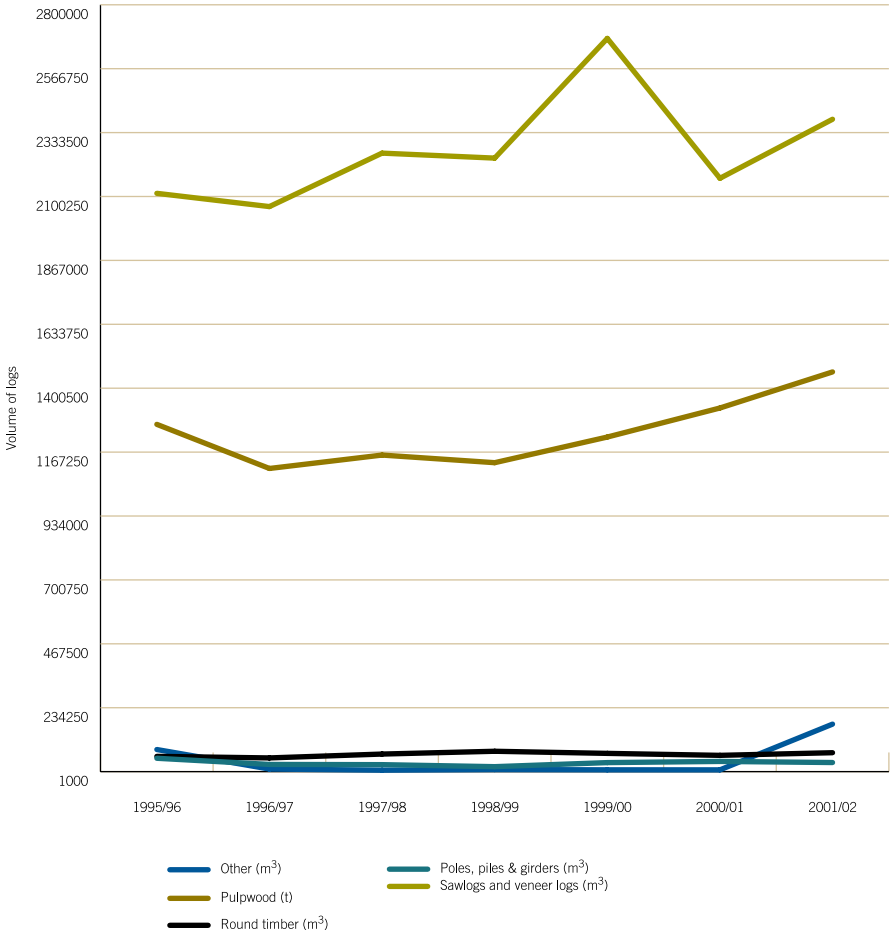
Description

A core management objective of State Forests is the sustainable supply of timber and wood products to our community and economy. Change in the volumes of logs harvested reflects both the market fluctuations in the building industry and more importantly demand for different timber products. Timber supply is therefore a very important measure of our performance for many of our key stakeholders.

Trends

Figure 20 and Appendix 13 show the volumes of timber sold during the last seven years. Total sales of logs for planted and native forests have fluctuated during this period, reflecting the swings in the housing market. The increase in volume harvested during 2001/02, particularly of sawlogs, can be attributed to a small upswing in the building industry, in response to relatively low interest rates and the first home-owners grant.

FIGURE 20 VOLUME OF LOGS HARVESTED IN PLANTED AND NATIVE FOREST



Indicator 32. Sawlog product mix of volume harvested

Description

Market demand for sawn timber contributes significantly to the type and volume of timber that is removed from different forest types. As market demand for sawn products changes so does the type, volume and quality of timber removed from forests. Monitoring change in product mix helps us plan our harvesting operations to make sure market demands can be met and confirms our focus on value-added products.

Trend

Because market demand changes slowly, data is presented for a 24 month period, in comparison with a benchmark taken at 1995/96.

Figure 21 shows that hardwood products continue to move into higher value markets and softwood increases its competitive advantage in producing low cost framing material. While Figure 22 suggests a reduction in the demand for softwood house frames, the amount of house framing material actually increased by approximately 60,000 m^3. However, this was masked by a substitution from hardwood to softwood framing, as has been a trend for the last 10 years or so. The increase in output mostly originated from softwood and this was a result of record increases in house construction over 2001/02. The first home-owners grant resulted in increased demand for new house construction with dwelling commencements rising 47% during 01/02.

Research and development

During 2001/02 a major project was undertaken by the Silvicultural Systems Group to quantify the variation in wood density of *Pinus radiata* grown in New South Wales in relation to probable causes, ie., site, silvicultural, and genetic factors. The work so far has demonstrated that outerwood density can vary significantly between sites, which may impact on wood quality and consequently monetary value to the grower and processor. Part of the work, to develop relationships between outerwood density at breast-height and whole tree and tree component densities in the Hume and Monaro Regions has produced significant and promising results, but in some cases site-specific relationships may need to be developed

FIGURE 21 SAWLOG PRODUCT MIX FROM HARDWOOD FORESTS (NATIVE AND PLANTATION)

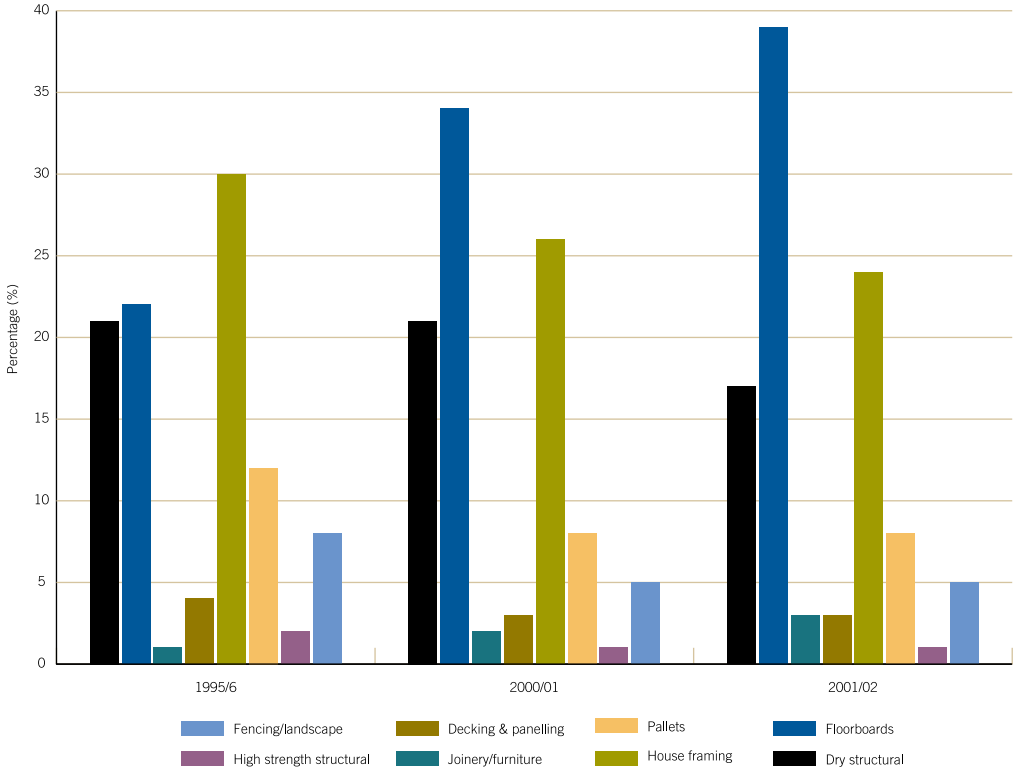
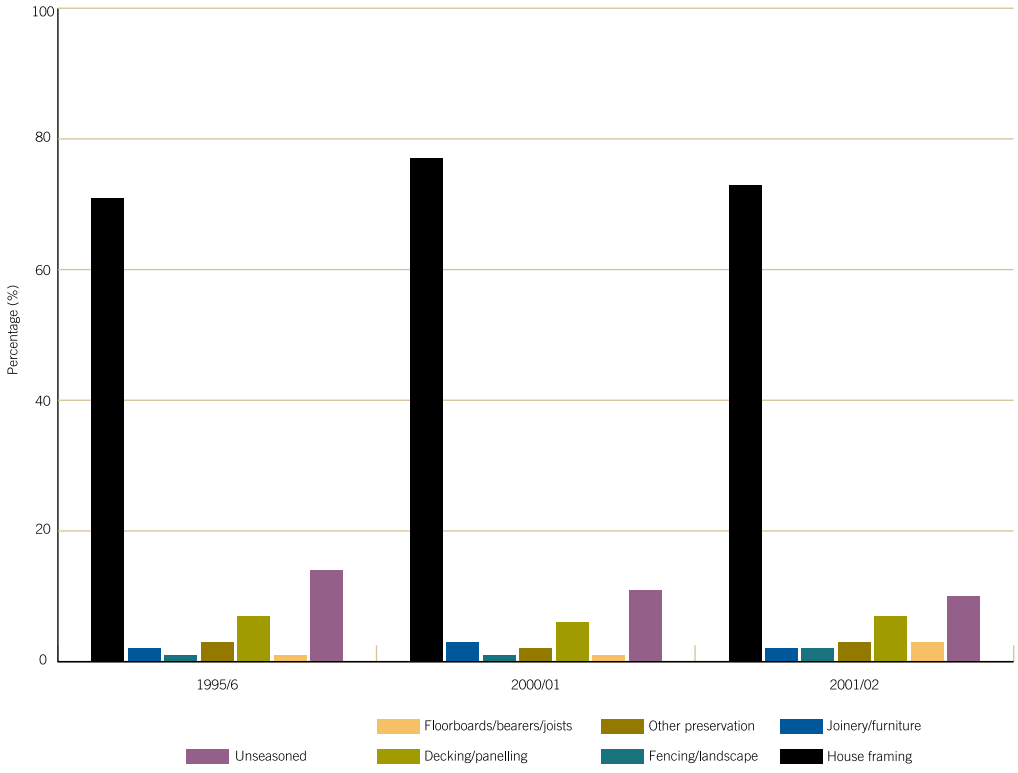


FIGURE 22 SAWLOG PRODUCT MIX FROM SOFTWOOD PLANTATION



Softwood timber from State Forests' plantations is an important resource for the building industry.

STORY 6: A VISIONARY PARTNERSHIP TURNS RIVER RED GUM INTO A SHOWROOM STAR

Glen Gray and Mardie Rowe showing the beautiful yet versatile timber of the River Red Gum.

Timber aficionados with foresight have been snapping up fine river red gum furniture as the vibrant timber rapidly gains popularity and value.

A visionary partnership between a sawmiller and a furniture maker at Barham in the Riverina is turning the once humble river red gum timber into highly-prized works of furniture. Owner of Bonum Sawmills, Gavin Rowe, and furniture maker, Glen Gray, joined forces through Glen Gray Furniture to promote locally grown river red gum (Eucalyptus camaldulensis) at the high-end of the furniture market.

"Not long ago red gum was only used for sleepers, garden landscaping and fence posts. But now it is recognised as a high-grade furniture timber in both Australia and internationally," Glen said. "In fact, we are currently working on a king-size bed to go to Texas plus a table and eight chairs." Furniture on display in a new showroom ranges from chairs, tables, sideboards and mirrors, to a huge boardroom table valued at about $25,000.

Glen and Gavin share a lifelong fascination with river red gum. Seeds for the partnership were sown in 2000 when Gavin entered Glen's joinery showroom at Edenhope, Victoria. Glen had won numerous awards and Gavin saw the opportunity to add value to his existing mill operations by featuring Glen's work in a showroom he intended to build at Barham. As time went on, and Gavin purchased more and more of Glen's work, it was decided to entirely relocate Glen's joinery and skilled craftsmen to Barham.

Production went into full swing and in October 2001 the showroom and veneer workshop opened.

The business now employs eight furniture makers using river red gum from nearby State forests. Across the two businesses, more than 30 people are employed in addition to contractors.

The Rowe family began harvesting river red gum in 1906 in Victoria. Four generations later they continue to operate their multi-faceted timber business, which includes a sawmill and drying kiln at Barham. They have found that feature-grade veneer is showing considerable promise for flooring, in addition to successfully using veneer in furniture production. The company is committed to maximising the value of each sawlog. For example, one inch of red gum timber can produce up to 40 slices of veneer. Or take the humble red gum dropper (small fence post). Four droppers valued at about 80 cents each can become a chopping board worth $80 at the hands of skilled craftsmen.

"We know we have a valuable product and we are going to make the very best use of this beautiful resource," Glen said.

Achievements over the past year

This past year State Forests continued to improve and integrate the management of data and the way it reports the management of its Triple Bottom Line (TBL); that is the organisation's social, environmental and economic performance.

In April 2001, State Forests hosted the second TBL NSW Forum that discussed the role of the public sector in advancing the TBL. The forum included speakers from the Community Business Partnership, NSW Premier's Department, State Forests, Integral Energy and Sydney Water. At the forum, the Minister for Forestry officially launched State Forests' inaugural sustainability report, the Seeing Report 2000/01.

The Seeing Report 2000/01, in conjunction with the Annual Report and Research and Development Division Report, was assessed in the Australia and New Zealand Sustainability and Environmental Reporters Benchmarking Program 2001/2002 undertaken by SIRIS and SMEC. The report was benchmarked against the 2000 Revised UNEP 50 Corporate Sustainability Reporting Ingredients. The report was placed 8th out of the Top 50 international reporters (SustainAbility 2001) and 8th of the 14 sustainability reports benchmarked in Australia and New Zealand. "This is a strong positive result for State Forests of New South Wales. This is also the first time the Company has submitted its report for external benchmarking against stakeholder reporting standards. The result is a reflection of the significant commitment to, and effort expended in, progressing towards sustainability" (SIRIS and SMEC 2002).

Significant advances have also been made this year with the development of State Forests' social, environmental and economic data storage (SEEDs) system. The new SEEDs database has been developed to stream line the collection and collation of data required for Montreal Process Reports, State of the Environment Reports, State of the Forests Reports, Forest Agreement and related reports and the Seeing Report. This new database enhances data consistency, accuracy in data collation and provides Regions with improved access to all levels of the data.

Over the past year, State Forests has also been asked to present the organisations' TBL progress at various forums, including the CEO Institute and the 11th International Congress on Social and Environmental Accounting Research. State Forests has recently been invited to be a member of the TBL Senior Officer's Group convened by NSW Premier's Department. The Group will examine options to enhance the role of NSW Government agencies in delivering and facilitating TBL outcomes in communities across NSW.

During the year, State Forests was also invited to take part in a TBL case study profiling exercise that was included in the publication Best Practice in Financial Management Volume 5 (Benchmark Communication, 2002). The case study highlighted that "There is every indication that State Forests' development of TBL is a significant vehicle for 'breathing life' into the organisation's core values. As a result, State Forests is being recognised as an innovative and responsive organisation that demonstrates integrity in the way it deals with its stakeholders."

Future developments

Over the coming year, State Forests plans to progress the integration of research programs with operational requirements aimed at examining social, environmental and economic changes over time. It is intended this will be reflected next year through the production of one annual "Sustainability" report which will combine the currently separate Annual Report, Seeing Report and Research and Development Report.

State Forests values your feedback

State Forests hope you found our Seeing Report valuable, informative and easier to read. Your feedback on our report is valued and State Forests encourages you to let us know your views. In the 2000/01 report, a feedback form was included report for the first time. Some limited comments were received on the report. This year, to increase accessibility, a feedback form is available on our website: www.forest.nsw.gov.au. To access the form click, on "managing forests", then "reporting", then "social, environmental and economic" and scroll down to feedback. Your feedback will be received anonymously and we appreciate the time you take to complete the form.

APPENDICES

APPENDIX 1 NUMBER OF COMMUNITY FORUMS ATTENDED

Community forum categories	1997/98	1998/99	1999/00	2000/01	2001/02
Community bushfire management	252	470	363	375	353
Catchment management	213	153	126	104	75
Local emergency management	14	23	14	17	30
Community/school/education	63	255	752	239	236
Local government	46	55	72	93	90
Flora and fauna management	47	52	30	47	149
Cultural management	116	285	214	137	197
Feral animals/noxious weed control	44	99	72	145	140
Industry/stakeholders	67	155	110	188	268
Recreation/tourism	17	53	64	52	37
Regional planning/RFA	79	83	94	43	91
Conservation/environmental	40	105	104	80	62
Forestry/forest practices	29	79	47	35	114
Other	n/c	73	37	51	16
Total	**1,027**	**1,954**	**2,099**	**1,606**	**1,858**

Source: Records from minutes, files, personal diaries

APPENDIX 2 RECREATIONAL FACILITIES PROVIDED AND ORGANISED EVENTS

Recreational facilities provided	1997/98	1998/99	1999/00	2000/01	2001/02
Roadside rest areas/picnic areas	160	123	119	87	64
Forest drives (marked)	30	34	31	24	19
Forest walks (marked)	90	61	61	46	48
Lookouts	84	71	49	33	30
Camping areas	308	225	266	115	160
Camps/huts /cottages	17	15	25	23	17
Other*	2	3	16	273	0
Total facilities	**691**	**532**	**567**	**601**	**338**
Permits for organised recreation activities					
Eco tourism/4x4 tours	54	42	87	50	41
Horse, trail and endurance rides	32	32	32	45	32
Car rallies /go carts	38	36	36	34	30
Motor bike rallies	6	8	6	5	6
Mountain bike rallies	30	6	5	20	17
Orienteering/mountain runs/triathalon	37	37	34	21	16
Bushwalking	23	9	8	21	2
Bowhunting/archery	60	5	20	14	1
Other	22	13	29	28	55
Education/outdoor education schools	27	45	272	575	20
Training/exercises	152	77	84	79	68
Total activities	**481**	**310**	**613**	**892**	**283**
Area zoned primarily for recreation (ha)	**not reported**		**4,754**	**2,406**	**2,329**

APPENDIX 3 QUANTITIES OF OTHER FOREST PRODUCTS

Forest product	Unit	1997/98	1998/99	1999/00	2000/01	2001/02
Grazing	Ha's	768,946	727,206	764,377	711,537	644,966
Apiculture	Sites	3,843	4,249	4,022	3,467	3,606
Leaf /oil	Kg's	8,013	5,465	6,874	911	1,100
Seed	Kg's	969	214	688	2,460	70
Bark	Tonnes	1,109	18	1,035	10	8
Firewood	Tonnes	75,615	66,970	77,628	77,203	26,090
Broombush	Tonnes	1,977	2,303	2,442	2,523	2,625
Charcoal	Tonnes	119	1,333	1,805	1,183	10,200
Craft Timber	Cubic metres	33	38	4,127	519	927
Misc native plants pieces	Number	1,219	8,179	23,449	9,873	4,446
Burls	Tonnes	44	16	13	12	8
Wood blocks	Number	0	435	7,045	4,550	4,090
Film /documentary	Permits	3	5	6	3	3
Communication sites	Permits	126	141	135	122	130
Other structures	Permits	227	203	486	97	177
Powerlines/cables/pipelines	Km's	2,886	853	1,461	2,904	1,333
Gravel / sand / rock	Tonnes	69,495	99,448	103,275	80,212	269,548
Research	New research permits	215	260	100	105	86
Nursery seedlings to public	Number	1,148,000	1,032,151	1,500,000	1,141,000	n/a
Maps sold to public	Items	5,491	5,152	19,945	19,143	n/a

APPENDIX 4 REPRESENTATION OF EEO GROUPS WITHIN LEVELS

Group	2000/01			2001/02		
	Total staff	Women	REERM*	Total staff	Women	REERM*
Below C.O.1. (<$27,606 p.a.).	17	11	2	11	3	0
C.O.1.- <Gd 1 ($27,606–$36,258 p.a.)	354	34	3	324	27	5
A&C Gds 1–2 ($36,259–$40,535 p.a.)	134	43	0	202	42	4
A&C Gds 3–5 ($40,536–$51,293 p.a.)	273	75	12	205	80	8
A&C Gds 6–9 ($51,294–$66,332 p.a.)	197	37	20	201	40	21
A&C Gds 10–12 ($66,333–$82,914 p.a.)	72	10	11	73	12	11
Above A&C Gd 12 (>$82,914 p.a.)	83	2	3	79	2	2
Total	**1,130**	**212**	**51**	**1,095**	**206**	**51**

* Racial, Ethnic and Ethno/Religious minority groups

APPENDIX 5 REPRESENTATION AND RECRUITMENT OF ABORIGINAL EMPLOYEES AND EMPLOYEES WITH A DISABILITY AS AT 30 JUNE 2002

	1999/2000			2000/01			2001/02		
	Total staff	Aboriginal & Torres Strait Islanders	Persons with Disability	Total staff	Aboriginal & Torres Strait Islanders	Persons with Disability	Total staff	Aboriginal & Torres Strait Islanders	Persons with Disability
Total employees	1,218	26 (2.1%)	74 (6.1%)	1,130	30 (2.6%)	73 (6.5%)	1,095	29 (2.6%)	76 (6.94%)
Entry level	13	2	0	17	0	1	3	0	0
Recruited year ending 30 June	139	5	0	64	2	0	31	1	2

APPENDIX 6: AREA AND PERCENT OF VARIOUS BROAD FOREST GROUPS WITHIN THE NATIVE FOREST ESTATE*

Broad Forest Group	Area (ha)					Percentage of total native forest				
	1997/98	1998/99	1999/00	2000/01	2001/02	1997/98	1998/99	1999/00	2000/01	2001/02
Rainforest	116,429	63,768	71,869	72,903	75,114	3%	2%	2.60%	2.90%	3%
Blue Gum forest	245,499	166,471	159,735	154,516	152,565	7%	6%	5.90%	6.20%	6%
Blackbutt forest	186,388	139,415	139,346	128,905	129,591	5%	5%	5.10%	5.20%	5%
Messmate forest	343,328	261,052	260,464	244,550	250,403	10%	9%	9.60%	9.80%	10%
Stringybark forest	403,164	427,660	373,190	237,416	218,849	12%	16%	13.80%	9.50%	9%
Spotted Gum forest	227,357	209,241	209,178	198,238	199,007	7%	8%	7.70%	7.90%	8%
Mixed coastal eucalypt	257,915	180,427	202,116	192,901	197,087	8%	7%	7.50%	7.70%	8%
Alpine Ash forest			17,806	17,361	17,833			0.70%	0.70%	1%
Snow Gum woodland	37,085	33,774	33,763	25,758	28,090	1%	1%	1.20%	1.00%	1%
River Red Gum forest	91,024	100,263	102,360	93,225	94,798	3%	4%	3.80%	3.70%	4%
other inland eucalypt types	76,916	212813	276,444	284,776	186,940	2%	8%	10.20%	11.40%	8%
White Cypress Pine forest	36,153	285,541	236,764	246,173	206,997	1%	10%	8.70%	9.90%	9%
non eucalypt forest	70,137	90,303	13,939	12,873	14,301	0%	3%	0.50%	0.50%	1%
non forest			89,288	117,377	269,536		3.30%	4.70%	12%	11%
un-classified	1,094,879	578,704	526,225	468,574	358,321	38%	21%	19.40%	18.80%	15%
Total	**3,186,274**	**2,749,432**	**2,713,000**	**2,495,548**	**2,399,432**	**100%**	**100%**	**100%**	**100%**	**100%**

* Classification into broad forest groups utilises forest types and leagues identified in State Forests Research Note 17. Variation may occur on the basis of new and/or improved classification.

APPENDIX 7 AREA AND PERCENT OF PLANTED FOREST* BY SPECIES

Species	1999/00 area	1999/00 %	2000/01 area	2000/01 %	2001/02 area	2001/02 %
Pinus radiata (Radiata Pine)	190,217	54	190,870	53	192,933	44
Other softwood species	11,503	3	13,947	4	13,805	3
Eucalyptus grandis (Flooded Gum)	8,775	3	9,088	3	9,348	2
Eucalyptus pilularis (Blackbutt)	13,407	4	13,908	4	14,221	3
Corymbia maculata (Spotted Gum)	6,480	2	7,436	2	8,118	2
Other hardwood species	17,404	5	19,061	5	21,004	5
Total planted area	**247,795**	**71**	**254,310**	**71**	**259,429**	**59**
Retained vegetation and infrastructure	74,634	21	75,084	21	158,759	36
Land for future planting	28,030	8	28,570	8	25,552	5
Total planted forest estate	**350,459**	**100**	**357,964**	**100**	**443,740**	**100**

* Note: this figure includes State Forest, Joint Venture and Annuities. Areas for hardwood plantation include pre-1994 plantations that may or may not be accredited.

APPENDIX 8 AREA AND PERCENTAGE OF NATIVE FOREST IN FOREST STRUCTURE CLASSES

Forest structure class	1997–1998 Area (ha)	1997–1998 % of native forest	1998–1999 Area (ha)	1998–1999 % of native forest	1999–2000 Area (ha)	1999–2000 % of native forest	2000–2001 Area (ha)	2000–2001 % of native forest	2001–2002 Area (ha)	2001–2002 % of native forest
Rainforest	0	–	20,382.62	1%	98,000	3.6%	100,709	4.0%	102,287	4.3%
High conservation value old growth	n/a	n/a	n/a	n/a	122,000	4.5%	138,537	5.6%	122,767	5.1%
Mature forest	1,061,693	28%	622,894.2	23%	807,000	29.7%	590,093	23.6%	590,416	24.6%
Regrowth forest	622,499	16%	363,273.4	13%	541,000	19.9%	530,954	21.3%	538,908	22.5%
Un-assigned*	2,124,581	56%	1,742,882	63%	1,145,000	42.2%	1,135,255	45.5%	1,045,839	43.6%
Total	**3,808,773**	**100%**	**2,749,432**	**100%**	**2,713,000**	**100.0%**	**2,495,548**	**100.0%**	**2,400,217**	**100.0%**

* Un-assigned forest are areas of forest that have not been subject to assessments for structure class of for which classification of this type is not appropriate (eg Cypress forest)

APPENDIX 9 FAUNA SURVEY RECORDS

Target species	No. of individual records 1997/98	1998/99	1999/00	2000/01	2001/02	Cumulative no. of individual records 1997–2002
Arboreal mammals						
Squirrel Glider	0	23	29	38	19	109
Greater Glider	218	1241	320	483	837	3099
Yellow-bellied Glider	0	416	477	535	335	1,763
Brush-tailed Phascogale	0	1	14	11	18	44
Koala	50	164	280	93	386	973
Ground mammals						
Long-nosed Potoroo	0	7	3	2	7	19
Southern Brown Bandicoot	0	0	0	9	10	19
Parma Wallaby	43	5	7	5	2	62
Red-legged Pademelon	94	4	0	1	0	99
Rufous bettong	0	35	4	28	36	103
Brush-tailed Rock-wallaby	8	0	0	6	4	18
Long-footed Potoroo	0	0	0	0	0	0
Tiger Quoll	0	14	36	32	28	110
Broad-toothed Rat	0	0	0	0	0	0
White-footed Dunnart	0	0	0	1	1	2
Smoky Mouse	0	0	0	5	1	6
Hastings River Mouse	50	1	14	10	22	97
Frogs						
Giant Burrowing Frog	1	3	9	11	34	58
Heath Frog	n/a	n/a	n/a	7	0	7
Glandular Frog	n/a	n/a	n/a	7	35	42
Stuttering Frog	0	132	60	83	123	398
Green-thighed Frog	50	9	4	23	3	89
Giant Barred Frog	8	49	10	39	88	194
Red-crowned Toadlet	94	118	30	2	10	254
Corroboree Frog	8	185	240	350	284	1,067
Pouched Frog	43	0	0	0	70	113
Green and Golden Bell Frog	0	0	0	0	1	1
Sphagnum Frog	0	11	6	51	38	106

APPENDIX 9 FAUNA SURVEY RECORDS (continued)

Target species	No. of individual records 1997/98	1998/99	1999/00	2000/01	2001/02	Cumulative no. of individual records 1997–2002
Bats						
Eastern False Pipistrelle	8	12	11	12	20	63
Golden-tipped Bat	16	39	42	45	70	212
Large-footed Myotis	12	28	21	16	38	115
Greater Broad-nosed Bat	16	10	5	8	7	46
Little Bent-winged Bat	17	64	167	25	62	335
Common Bent-winged Bat	8	82	156	44	76	366
Eastern Cave Bat	8	0	20	2	0	30
Eastern Mastiff Bat	8	0	0	0	1	9
Eastern Mastiff Bat	8	0	0	0	1	9
Yellow-bellied Sheathtail Bat	0	1	0	1	0	2
Raptors						
Powerful Owl	43	91	84	96	66	380
Masked Owl	43	49	34	50	59	235
Sooty Owl	0	109	95	78	90	372
Barking Owl	n/a	1	2	13	35	51
Square-tailed Kite	0	4	7	51	10	72
Red Goshawk	0	0	0	17	0	17
Non raptor birds						
Marbled Frogmouth	n/a	n/a	n/a	72	1	73
Glossy Black-cockatoo	16	399	642	227	420	1,704
Regent Honeyeater	0	0	0	0	0	0
Turquoise Parrot	0	0	0	0	2	2
Bush-stone Curlew	8	2	1	0	1	12
Pink Robin	43	0	0	1	2	46
Olive Whistler	43	5	12	28	14	102
Wompoo Fruit Dove	0	5	4	10	33	52
Swift Parrot	0	0	0	0	1	1
Rufous Scrub-bird	0	6	0	3	0	9
Superb Parrot	0	160	330	210	99	799
Regent Parrot	0	200	250	120	0	570
Reptiles						
Broad-headed Snake	n/a	n/a	n/a	0	0	0
Heath Monitor	n/a	n/a	n/a	4	0	4
Pale Headed Snake	n/a	n/a	n/a	0	0	0
Stephens Banded Snake	n/a	n/a	n/a	4	2	6

APPENDIX 10 SUMMARY OF REGULATORY COMPLIANCE DURING HARVESTING

Compliance items	1999/00	2000/01	2001/02
Number of compliance check sheets conducted			
– 1st tier supervision checks	5,428	3,122	3,192
– 2nd tier supervision checks	420	302	378
– 3rd tier supervision checks			2
– 4th tier supervision checks			1
Total	**5,848**	**3,424**	**3,573**
Number of non-compliance incidents (NCI) recorded by State Forests' supervision for corrective action			
– NCI's related to soil erosion & water quality	1,255	860	1,304
– NCI's related to flora and fauna	469	399	689
– NCI's related to fish habitat & passage	1	7	0
– other NCI issues (eg safety)	314	272	249
Total	**2,039**	**1,538**	**2,242**
Number of fines issued to State Forests by regulators			
– Fines to NPWS	0	0	0
– Fines to EPA	3	5	3
– Fines NSW Fisheries	0	0	0
Total	**3**	**5**	**3**
Number of prosecutions recorded against State Forests			
– Prosecutions by NPWS	1	0	0
– Prosecutions by EPA	0	0	0
– Prosecutions by NSW Fisheries	0	0	0
Total	**1**	**0**	**0**

APPENDIX 11 ENERGY EFFICIENCY

Forest structure class	1998–1999 Total GJ	1998–1999 CO_2 Tonnes	1998–1999 % of (ha)	1999–2000 Total GJ	1999–2000 CO_2 Tonnes	1999–2000 % of (ha)	2000–2001 Total GJ	2000–2001 CO_2 Tonnes	2000–2001 % of (ha)	2001–2002 Total GJ	2001–2002 CO_2 Tonnes	2001–2002 % of (ha)
Electricity (kWh)	14,400	3,825	37%	13,331	3,541	35%	13,039	3,463	35%	13,039	3,463	35%
Green power (kWh)	1,188	0	0%	1,933	0	0%	1,860	0	0%	1,860	0	0%
Natural gas (MJ)	466	24	0%	590	30	0%	291	15	0%	291	15	0%
LPG (kg)	1,446	86	1%	2,491	148	1%	2,069	123	1%	2,069	123	1%
Petrol (L)	25,240	1,666	16%	25,411	1,677	17%	22,246	1,468	15%	22,246	1,468	15%
Auto distillate (diesel) (L)	66,940	4,666	45%	65,350	4,555	45%	67,270	4,689	47%	67,270	4,689	47%
Kerosene (L)	0	0	0%	0	0	0%	315	22	0%	315	22	0%
Aviation gasoline (L)	474	32	0%	544	37	0%	1,566	107	1%	1,566	107	1%
Aviation turbine fuel (L)	1,738	121	1%	1124	78	1%	2,084	145	1%	2,084	145	1%
Total	**111,893**	**10,419**	**100%**	**110,774**	**10,066**	**99%**	**110,740**	**10,032**	**100%**	**110,740**	**10,032**	**100%**

APPENDIX 12 FLEET SIZE

Fleet	Fuel Type	2000–2001	2001–2002
Light vehicles	Number diesel vehicles	573	490
	Number petrol vehicles	239	170
	Total number vehicles	812	660
Trucks and light plant	Number diesel fleet trucks and light plant	139	138
	Number petrol fleet trucks and light plant	11	7
	Total number fleet trucks and light plant	150	145
Heavy plant	Number diesel fleet heavy plant	86	103
	Number petrol fleet heavy plant	0	1
	Total number fleet heavy plant	86	104

APPENDIX 13 VOLUME OF LOGS HARVESTED

Product	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02
Sawlogs and veneer logs (m^3)							
Native forest hardwood sawlogs	980,149	844,349	744,583	662,336	786,774	664,183	694,909
Hardwood plantation sawlogs				34,445	55,466	33,601	36,863
Cypress pine sawlogs	95,105	98,278	99,127	100,879	101,881	96,430	108,229
Plantation softwood sawlogs	978,621	1,050,554	1,337,540	1,351,798	1,648,790	1,306,614	1,449,940
Plantation softwood veneer logs	40,413	53,092	60,412	74,765	70,919	51,784	84,068
Native forest hardwood veneer logs	17,513	17,121	16,882	12,074	10,600	12,890	8,153
Hardwood plantation veneer logs				4,068	2,819	1,173	44
Total sawlogs and veneer logs	**2,111,801**	**2,063,394**	**2,258,544**	**2,240,365**	**2,677,249**	**2,166,675**	**2,382,206**
Poles, piles and girders (m^3)							
Native forest hardwood	49,752	27,226	26,448	15,804	28,432	34,039	26,428
Plantation hardwood				3,290	5,479	4,175	3,141
Total poles, piles and girders	**49,752**	**27,226**	**26,448**	**19,094**	**33,911**	**38,214**	**34,174**
Round timber (m^3)							
Preservation plantation softwood	49,752	47,240	63,274	71,314	56,422	57,780	69,749
Preservation native forest hardwood				2,201	11,169	2,633	291
Mining timber hardwood*	6,955	3,794	1,834	1,805			0
Total round timber	**56,707**	**51,034**	**65,108**	**75,320**	**67,591**	**60,413**	**70,040**
Pulpwood (tonnes)							
Native forest hardwood pulpwood	768,191	605,254	614,623	472,970	503,546	533,113	391,340
Plantation hardwood pulpwood				81,751	82,660	66,498	42,631
Plantation softwood pulpwood	500,427	502,258	541,824	573,907	636,058	728,652	1,025,993
Total Pulpwood	**1,268,618**	**1,107,512**	**1,156,447**	**1,128,628**	**1,222,264**	**1,328,263**	**1,459,964**
Other							
Fencing/landscape/sleepers/firewood (m^3)	81,676	10,379	6,218	8,485	7,575	7,444	174,369
Total other	**81,676**	**10,379**	**6,218**	**8,485**	**7,575**	**7,444**	**174,369**

Acknowledgment

This report is produced by the Sustainability Group within Forest Policy and Resources Division. However, the report represents a combined effort across all State Forests' operations in terms of data collection and advice during report preparation.

Thank you to all staff who contributed to this report.

IMPRESSDESIGN for design and production

science

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