

FORESTS NSW

SEEING REPORT

SUPPLEMENT

2007-08



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Introduction

This document provides background and contextual information relating to the Forests NSW Seeing Report 2007-08. This document was updated on the 16th of December, 2008.

1. Forests NSW Reporting Context

Forests NSW has a range of voluntary and statutory reporting commitments at the state, national and international levels.

The organisation has been producing public reports on environmental and social values through the Seeing Report (formerly known as the Environment and Social Values Report) since 1997/98. The report is part of our commitment to communicate with the community, staff and other stakeholders and to monitor our performance in managing public forests for a range of values identified as being of particular importance to Forests NSW and our customers and stakeholders.

The Seeing Report, as Forests NSW annual sustainability report on our Ecologically Sustainable Forest Management (ESFM), became part of our requirements under the NSW Forest Agreements, when these agreements were signed in 1999 and 2002.

Sustainability Reporting

Seeing Report

Over the past eleven years Forests NSW has developed its reporting framework along the lines of sustainability reporting. The report addresses three key areas of sustainability - social, environmental and economic.

- 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 sustainable management of native and planted forests to protect and enhance environmental and conservation values and to help meet the demands of future markets for environmental services.
- Economic – ensuring an adequate return to the Government and public of NSW from the marketing of a range of values from the State's native forests and plantations; developing innovative products, services and mechanisms to facilitate investment in new planted forests and environmental values of forests.
- Sustainability – managing State forests for the

long-term and retaining opportunities for future generations to meet their needs and expectations, while providing for the present.

Within each performance area a number of forest values have been identified as fundamental to the sustainability of the organisation and the forests we manage. Each forest value is described using a number of specific indicators.

While each performance area, forest value and indicator is presented separately, the framework recognises that each indicator may relate to one or more performance area.

To demonstrate our performance symbols are used in the Seeing Report to reflect progress towards meeting the stated objectives. In addition our performance in meeting these objectives in relation to the last reporting period is also shown through symbols used in the appendices.

The Seeing Report is closely aligned to the Global Reporting Initiative Guidelines (GRI 3).

Other Reports

Forests NSW also produces an Annual Report. Since the last reporting period a proportion of Forests NSW research scientists have moved to NSW DPI Science and Research, and a combined report entitled: *Science & Research & Forests NSW Research & Development Annual Report 2007-08* has been produced. In addition DPI has adopted the 'Facts and Figures' booklet format for five of the divisions from Forests NSW and this year the Forests NSW 'Facts and Figures' booklet will be produced as part of that series.

The Annual Report provides details of Forests NSW financial and corporate performance as required under the Public Finance and Audit Act, 1983 and the Annual Reports (Statutory Bodies) Act 1984.

Forests NSW reports its performance on implementing both Regional Forest Agreements and NSW Forest Agreements by contributing to a range of state level reports:

- Regional Forest Agreement annual reports;
- Forest Agreement annual reports;
- Forest Agreement Criteria and Indicator reports;
- IFOA (Integrated Forestry Operation Approvals) reports;
- New South Wales State of the Environment report;

At a regional level, all Forests NSW Regions will produce an ESFM (Ecologically Sustainable Forest Management) plan annual report.

These reports are publicly available at the websites of the NSW Department of Environment and Climate Change.

At a national level, Forests NSW contributes to the State of the Forests Report and internationally to the

Montreal Process. These reports are downloadable from Australian Government Department of Agriculture, Fisheries and Forestry website.

Data Management

Forests NSW developed a social, environmental and economic data storage (SEEDS) system during the 2001/02 reporting period. The system was developed to streamline and integrate the collection and collation of data required for Forests NSW reporting requirements, as outlined above. The system has enhanced data consistency, accuracy in data collation and provides regions with data entry facilities and improved access to all levels of the data.

2. Forest Values and Indicators

SOCIAL

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

Forest Value – Community benefits

State forests are managed by Forests NSW on behalf of the people of NSW. Regional communities are particular beneficiaries of forestry, mainly through employment and income generation through timber processing and value-adding. Providing secure access for all forest users to pursue and enjoy a range of activities - small business, recreation and education activities - is important to Forests NSW. Managing such a large and geographically widespread resource provides many opportunities to form constructive community partnerships and to build our stakeholder relationships.

Indicator 1: Social responsibility

One way Forests NSW tries to improve its performance as a good corporate citizen is through facilitating Volunteer Programs. Forests NSW particularly recognises the contribution of community volunteers who donate their time and efforts to assist Forests NSW in undertaking various activities.

This indicator includes the number and value of sponsorships, donations and waived fees provided to communities, schools, local councils, local Aboriginal Land Councils and other groups. We also include the number of volunteer programs undertaken and recognise the role of both community and staff volunteers in making these successful ventures.

Indicator 2: Public participation

Different communities have different values and expectations about forest management. Community engagement is necessary to better understand the range of local and general attitudes in relation forest management. Forests NSW is committed to involving the public in management decisions about State forests and the landscapes in which they occur. Our employees often organise and/or attend meetings and community forums related to land and forest management issues. The number of meeting and forums demonstrates our commitment to listening to and involving the public and contributing to the decision making process.

Indicator 3: Recreation and tourism

Forests NSW recreation and tourism policy and strategy entitled *Living, working, playing...forests 2005-2009* sets the direction for access to forests and facilities for a wide range of activities for community benefit. Almost all State forests are available to the public year-round for a range of recreational activities. State forests have an extensive road network, maintained primarily for harvesting operations and fire management. However, this road network means that State forests are also accessible for a range of recreational pursuits. Many activities, such as mountain bike riding, horse riding, camping and four-wheel driving can be undertaken in State forests free of charge and often with greater flexibility than on other public lands. Organised groups can use State forests under a permit system that allows for public notification and orderly management of events, forest access and safety.

Monitoring the number and type of recreational facilities and the area of forest zoned primarily for recreation indicates our performance in meeting these needs. The management of recreational facilities is also a useful indicator of our commitment to managing forests for these values.

Indicator 4: Research and education

Many management decisions are influenced by the findings of Forests NSW program of research and development. In conjunction with our contribution to education on forest management, Forests NSW takes part in many collaborative research programs with universities and cooperative research centres within Australia and around the world. Monitoring our expenditure on research and education helps track our commitment to, and improve the scientific basis for, forest management and public awareness as well as understanding of forest ecosystems and sustainable management. Since the last

reporting period a proportion of Forests NSW research scientists have moved to NSW DPI Science and Research, and a combined report entitled: *Science & Research & Forests NSW Research & Development Annual Report 2007-08*, where you will find more information on forestry related research in NSW.

Forests NSW research goals currently focus on maintaining and expanding the State's planted forests and marketing the environmental benefits to be derived through the strategic location of planted forests in the landscape and the relationship between forests and climate change. Research emphasis has included investigation of the issues that impact on the establishment, management and quality of products from sustainable planted forests in lower rainfall areas as well as the traditional higher rainfall zones. Significant work has been directed at establishing the benefits of planted forests for such purposes as carbon sinks, identifying effective mine-site rehabilitation techniques, biodiversity enhancement and the development of sustainable land use practices for salinity-prone areas.

The Cumberland Forest Centre at West Pennant Hills in Sydney 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 and information for the general public about NSW public forestry.

Indicator 5: Regional employment

Forest management activities are an important source of employment in regional communities in NSW. It is useful to measure employment in forest related industries to monitor the social and economic benefits it brings to these communities and, more broadly, the NSW economy.

In this indicator direct employment refers to employment in traditional forest industries (e.g. forestry and logging and wood and paper products), forest management in government and industry, and other forest contact industries (e.g. eco-tourism and beekeeping). Indirect employment related to employment that is generated within a community as a result of direct forest employment (i.e. the multiplier effect from direct forest employment such as employment in service-based industries including shops, schools and hospitals)" (Montreal Process Implementation Group for Australia, November 2001). The multiplier used to calculate this is for every job generated in forest based industries in NSW, another 1.88 indirect jobs are generated at the State level.

Definitions, assumptions and examples

- Harvesting/Haulage - includes harvesting and haulage (timber transportation) contractors
- Primary processing - includes processing undertaken at a site where the input is raw material supplied by Forests NSW.
- Apiary - includes employment related bee-keeping sites leased in State forest.
- Grazing - includes that portion of grazing related industry accessing State forest, relates to leases and permits over State forest.
- Eco-tourism - includes employment related to eco-tourism ventures accessing State forest.
- Other - includes plantation establishment contractors, gravel extraction, forest product removal (leaves, seeds, and plants), commercial fire wood collectors and other timber harvesting such as sleepers, fencing and landscape materials.

Indicator 6: Other forest products

Forests provide many products and services other than timber that is processed in sawmills. Monitoring the supply and sale of specific products from forests helps us understand the extent to which forests remain an important multiple-use resource, supplying products sought by the community. Products may be for personal use or as part of a commercial enterprise.

Definitions, assumptions and examples

- Grazing - hectares which have been leased for grazing of sheep and cattle
- Leaf/oil - harvested for products such as tea tree oil
- Seed - for nurseries, and revegetation programs
- Bark - for nurseries and landscaping (typically from pine plantation residues)
- Firewood - collected by individuals and commercial firewood collectors
- Broombush – *Melaleuca uncinata* used for the construction of fences
- Charcoal - for nurseries, particularly orchid production
- Craft timber - small quantities of specialist and unique timber products for furniture and craft
- Miscellaneous native plants pieces - small quantities of live plants such as ferns, for domestic use
- Burls - abnormal outgrowth from trunk highly prized by wood turners for its decorative woodgrain
- Wood blocks - for wood turning and craft
- Film/documentary - feature films, advertisements and documentaries requiring a natural setting;
- Communication sites - transmission towers for mobile phone reception;
- Other structures - such as dams, water towers etc
- Power lines/cables/pipelines - linear features such

as power lines, cables, water and gas pipelines that require access through State forest

- Gravel/sand/rock - provided through Forests NSW quarries
- Research - permits issued to research organisations or individuals by Forests NSW for programs undertaken in State forest
- Nursery seedlings to public - seedlings grown and sold through Forests NSW amenities nurseries. This does not include seedlings grown for Forests NSW plantations
- Advanced plants sold to the public - Plants, other than seedlings sold through Forests NSW amenities nurseries.

Forest Value – Staff

Forests NSW employee relations policies are reflected in the following objectives contained in the charter of the Human Resources Branch:

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

Indicator 7: Quality of management

Forests NSW aims to provide a safe, productive and progressive work environment in each workplace where staff are located. The number of staff directly employed by Forests NSW is used as an indicator of the size of the task of human resources management and our ability to recruit and retain employees. This in turn is a reflection of the quality of management and the way in which working for Forests NSW is valued by its staff.

Indicator 8: Management and training

Employee skill and competency development is an investment in people and essential to the continued success of Forests NSW and the career growth of employees. The quality of personnel management is reflected in opportunities provided to employees for development and training. Indicators include expenditure on human resource management and training opportunities provided for staff.

Definitions, assumptions and examples

- Management skills – Supervisor development, managing staff performance, management development, time management
- Communication skills – Basic communication, conflict resolution, effective meetings, written communication
- Computer Skills - Arcview, computer based training, Forests NSW systems training
- Cultural heritage - Working within Cultural Heritage Requirements
- Environmental - Working within environmental constraints
- Fire - Aerial observer, basic fire fighter, crew leader, incendiary machine operator, rural prescribed burning, tanker operator, tower operator, incident management training
- Flora and fauna identification and management - Certificate of wildlife identification, certificate of wildlife survey techniques, wildlife management
- Operator training - Forest harvest operator, plantation establishment operator, chainsaw operator, plant operator
- Forest management, inventory and silviculture - Advanced diploma of forestry management, bachelor of applied science, inventory training, permanent growth plot measurement; silviculture training
- Human resource management - Continuous improvement, people skills for supervisors, staff selection
- Induction - Workplace induction
- Authorised officer training – Under the *Forestry Act 1916*
- OHS legislation and awareness – Harassment/ Bullying, OHS legislation and safety management systems awareness, safety warden
- Map reading and aerial photo interpretation - Aerial photograph interpretation, map reading;
- Occupational health and safety - Aircraft awareness (safety), back care and manual handling, brushcutting, chainsaw (basic, intermediate and advanced), designated safety officer training, first aid, four wheel drive, OHS committee training, OHS & recovery supervisor training, workplace trainer and assessor
- Pest and Weed Control - Feral Animal Management
- Product identification and assessment - Sawlog measurement & defect assessment
- Roding and road survey - Road survey
- Soil and water - Forest soil and water course

Indicator 9: Health and safety

Forests NSW aims to achieve a safety and rehabilitation record which is the best in the Australasian 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.

Health and safety in forests has become a priority issue for the wider forestry community following a number of deaths and many serious injuries among forest industry workers in the last few years.

Forest Value – Cultural Heritage

Cultural heritage encompasses the qualities and attributes of places that have aesthetic, historic, spiritual, 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.

Forests NSW is committed to continuing to improve our understanding, appreciation, management and conservation of Aboriginal and non-Aboriginal cultural heritage values in our forests. In particular, Aboriginal cultural places retain special values recognised by Forests NSW. These places may hold additional significance that is defined by the Aboriginal communities themselves.

Indicator 10: Management of cultural heritage

The number of cultural heritage surveys undertaken on State forests and the area managed for cultural heritage are indicators of the level to which Forests NSW incorporates considerations of cultural heritage values into landscape management. The number of corporative arrangements with Aboriginal groups is a further indicator of Forests NSW recognition of cultural heritage values. To ensure the management and protection of cultural heritage Forests NSW employees and external contractors employed in forestry operations are trained in cultural heritage awareness.

Definitions, assumptions and examples

- Natural features - water-holes, rock shelters, mountain tops
- Sites of historic importance - contact sites, massacre sites, mission sites, walk-off sites, etc
- Art and ceremonial sites - rock engravings, art, bora rings, stone arrangements, ceremonial sites, etc
- Sites associated with tools, artifacts and hunting - quarries, stone artifact scatters, scarred trees, grinding grooves, fish traps, etc
- Sites associated with traditional Aboriginal life - camp sites, middens, burial grounds, etc
- Number of cultural heritage surveys - surveys

undertaken prior to timber harvesting to ensure cultural heritage sites are found and protected

- Area managed for cultural heritage - Forest Management Zone with a Special Value 'Indigenous', land subject to custodianship or land with recognised native title
- Agreements for Co-management of Land - agreement made between Forests NSW and Local Aboriginal Land Councils and community groups to undertake co-management practices that provide mutual benefits

Cultural heritage training

Forests NSW Aboriginal staff have actively developed an innovative cultural heritage awareness program designed to give their fellow co-workers an insight into Aboriginal culture dealing with both contemporary and traditional issues that affect Aboriginal people. This indicator measures the number of Forests NSW staff and forest workers trained annually on the program.

ENVIRONMENT

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

Forest Value – Biodiversity

A key objective of ecologically sustainable forest management is to maintain and/or enhance natural levels of biodiversity. The forests of NSW have high biodiversity that must be managed in a way that is mindful of the variety of forest ecosystems and the different ways that these respond to different management practices.

Forests NSW is committed to the management and conservation of the biodiversity in 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 rare 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.
- Undertaking research and monitoring programs to

improve understanding of species and ecosystems, ecological processes and ecosystem functions and develop tools for assessment and management.

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 (Forest Management Zones) and management prescriptions being applied during harvesting or the areas being excluded from harvesting altogether.

Forests NSW has in place an environmental policy through which it is recognised that planted and native forests represent a wide range of values and uses to the people of New South Wales. Our goal is to conserve and protect forest values ranging from biodiversity, ecosystem functions, forest productivity and the ability of forests to provide environmental services such as by acting as carbon sinks, as well as for the many recreational and cultural values they provide.

Indicator 11: Extent of forest type

To properly manage State forests, we need to know and understand the types of forest ecosystems, their management history and resultant structure of the forests, as well as other environmental factors. Forests NSW employs a range of specialist staff with expertise and training in silviculture (the science of forestry), ecology, botany, hydrology, soil science, geography, conservation and fire management. This knowledge allows us to determine the appropriate management practices that should be applied if different part of the forest estate. Employees also undertake training in certain areas to ensure their knowledge remains up to date and their skills adequate for forests we manage. To find out more about Forests in Australia visit www.australianforests.org.au

Native forest

The native forest estate managed by Forests NSW comprises over 200 recognised forest ecosystem types, which are organised into broad forest types below. Each type has a unique combination of flora, fauna and other characteristics. Monitoring changes in the area and nature of these forests over time helps us make decisions about resource utilisation, silviculture, conservation and other issues relating to forest management.

Definitions, assumptions and examples

- Alpine Ash forest - Highland/Tableland Forest types including Alpine ash, Mountain gum and Manna gum
- Blackbutt forest - Forest that is dominated by

- Blackbutt with sub-dominant species such as Spotted gum, Bloodwood, Angophora species, Sydney blue gum, Bangalay, Scribbly gum and Sydney peppermint
- Blue gum forest - Typically moist forest dominated by Sydney blue gum and may include Bangalay, Flooded gum, Tallowwood, Brush box, Dunn's white gum and Turpentine
- Messmate forest - Forest dominated by Messmate or Brown barrel often with Peppermints and Stringybarks as sub-dominant species
- Mixed coastal eucalypt forest - a broad forest classification including the Grey gum - grey Ironbark league, Grey box, Ironbark and Forest red gum
- Other inland eucalypt forest types - a very broad forest classification including Yellow box, White box, Black box, Bimble box, Western box, various Ironbark species and Black cypress pine
- Rainforest - all rain forest types including dry and depauperate rainforest, subtropical rainforest, cool temperate rainforest and warm temperate rainforest
- River red gum forest - Forest types dominated by River red gum
- Snow gum woodland - forest types dominated by Snow gum and may include Black sallee Candlebark, Mountain gum and Manna gum as sub-dominant species
- Spotted gum forest - Forest dominated by Spotted gum often with Blackbutt, Grey box, Bangalay, Ironbark, Grey gum, Sydney blue gum, Yellow stringybark or White stringybark
- Stringybark forest - Forest dominated by stringybark species (Yellow, White, Red, Blue-leaved, Needlebark, Silvertop) and may also include Silvertop ash, Scribbly gum, Brittle gum and some box species
- White cypress pine forest - forest dominated by White cypress pine which may also include Ironbark, Bloodwood, Redgum and Box forests
- Non-eucalypt forest - Includes forests dominated by species such as wattle, Swamp oak, River oak, Paperbark, Mangroves, Bull oak and Swamp mahogany
- Non forest - areas of cleared land, heath community, broom, mallee, saltbush, swamps, other water bodies, natural grassland, rock, sand, herb or shrub dominated communities
- Un-classified - areas for which the forest type has not been classified and assigned to one of the broad forest types listed above

Planted forest

The area and percentage of plantation managed by Forests NSW is an indicator of our commitment to

meet both domestic and international markets in wood supply as well as in energy, carbon sequestration and third party investment.

The size of the plantation estate managed by Forests NSW continues to increase. There has been continuing public and private investment in the establishment of new forests for timber as well as other environmental services such as carbon sinks and combating salinity. Significant progress has also been made in gaining commitments to establish plantations in partnership with private landholders and via third party funding of plantings for environmental services.

Definitions, assumptions and examples

- Hardwood plantation - planted forests of native hardwood species such as Blackbutt (*Eucalyptus pilularis*), Flooded gum (*Eucalyptus grandis*) and Spotted gum (*Corymbia maculata*)
- Softwood plantation - planted Forests of (typically) exotic softwood species such as Radiata pine (*Pinus radiata*) and Southern pine but may also include native softwoods such as Hoop pine (*Araucaria cunninghamii*) and Bunya pine (*Araucaria bidwillii*)
- Retained vegetation and infrastructure - the area of the planted forest estate that has not been planted and which may include native forest types, water sources etc
- Land for future planting - land that has been recently harvested or recently purchased but which has not yet been planted
- Other exclusions - roads, infrastructure etc

Indicator 12: Native forest structure

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

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.

Rainforest is also included because it has high conservation value and may have a proportion of the canopy dominated by Eucalyptus species.

Areas identified as high conservation value old growth forest are not available for harvesting or silvicultural improvement. 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.

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

Definitions, assumptions and examples

- High conservation value old growth - Eucalyptus forest that, through the Regional Forest Agreement process, has been mapped and agreed as Old Growth (which is forest dominated by trees that are over-mature or senescent (aging) and which are of a forest ecosystem type that is of special conservation importance)
- Rainforest - a type of tropical forest that is dominated by closely spaced trees forming an unbroken canopy
- Mature - Eucalyptus forest that is dominated by trees that are healthy, vigorous, mature trees;
- Regrowth - Eucalyptus forest that is dominated by trees that are young, vigorous and still growing;
- Un-assigned - forest for which structure cannot be determined because they are not Eucalyptus dominated forest ecosystems or for which structural assessment has not been undertaken.

Source: 1 - National Forest Inventory www.brs.gov.au/nfi

Indicator 13: Flora and fauna

During the planning phase of forestry operations flora and fauna surveys are undertaken to determine the presence of native species or their preferred habitat.

Forests NSW routinely compiles a list of sightings and recordings of targeted species of fauna and flora on State forest as part of pre-harvest planning or pre-hazard reduction burning. Special wildlife surveys are also carried out for research purposes. Sightings, past or new, trigger species-specific protocols as prescribed in the IFOA that are adopted in harvesting plans.

Forests NSW also undertakes a range of projects and programs to improve our understanding of how flora and fauna respond to management.

Selection of targeted fauna species

Target species	Latin Name	NSW Threatened Species Act
Arboreal mammals		
Brush-tailed Phascogale	<i>Phascogale tapoatafa</i>	Vulnerable
Greater Glider	<i>Petauroides volans</i>	Endangered population
Koala	<i>Phascolarctos cinereus</i>	Vulnerable
Squirrel Glider	<i>Petaurus norfolcensis</i>	Vulnerable
Yellow-bellied Glider	<i>Petaurus australis</i>	Vulnerable
Ground mammals		
Broad-toothed Rat	<i>Mastacomys fuscus</i>	Vulnerable
Brush-tailed Rock-wallaby	<i>Petrogale penicillata</i>	Endangered
Eastern Pygmy-possum	<i>Cercartetus nanus</i>	Vulnerable
Hastings River Mouse	<i>Pseudomys oralis</i>	Endangered
Long-footed Potoroo	<i>Potorous longipes</i>	Endangered
Long-nosed Potoroo	<i>Potorous tridactylus</i>	Vulnerable
Parma Wallaby	<i>Macropus parma</i>	Vulnerable
Red-legged Pademelon	<i>Thylogale stigmatica</i>	Vulnerable
Rufous Bettong	<i>Aepyprymnus rufescens</i>	Vulnerable
Smoky Mouse	<i>Pseudomys fumeus</i>	Endangered
Southern Brown Bandicoot	<i>Isodon obesulus obesulus</i>	Endangered
Spotted-tailed Quoll	<i>Dasyurus maculatus</i>	Vulnerable
White-footed Dunnart	<i>Sminthopsis leucopus</i>	Vulnerable
Western Pygmy-possum	<i>Cercartetus concinnus</i>	Endangered
Frogs		
Southern Corroboree Frog	<i>Pseudophryne corroboree</i>	Endangered
Northern Corroboree Frog	<i>Pseudophryne pengilleyi</i>	Vulnerable
Davies' Tree Frog	<i>Litoria daviesae</i>	Vulnerable
Giant Barred Frog	<i>Mixophyes iteratus</i>	Endangered
Giant Burrowing Frog	<i>Heleioporus australiacus</i>	Vulnerable
Glandular Frog	<i>Litoria subglandulosa</i>	Vulnerable
Green and Golden Bell Frog	<i>Litoria aurea</i>	Endangered
Green-thighed Frog	<i>Litoria brevipalmata</i>	Vulnerable
Littlejohn's Tree Frog	<i>Litoria littlejohni</i>	Vulnerable
Peppered Frog	<i>Litoria piperata</i>	Vulnerable
Pouched Frog	<i>Assa darlingtoni</i>	Vulnerable
Red-crowned Toadlet	<i>Pseudophryne australis</i>	Vulnerable
Sphagnum Frog	<i>Phyllorhina sphagnicolus</i>	Vulnerable
Stuttering Frog	<i>Mixophyes balbus</i>	Endangered
Bats		
Beccari's Freetail-bat	<i>Mormopterus beccarii</i>	Vulnerable
Eastern Bent-wing Bat	<i>Miniopterus schreibersii oceanensis</i>	Vulnerable
Eastern Cave Bat	<i>Vespadelus troughtoni</i>	Vulnerable
Eastern False Pipistrelle	<i>Falsistrellus tasmaniensis</i>	Vulnerable
Eastern Long-eared Bat	<i>Nyctophilus bifax</i>	Vulnerable
Eastern Freetail Bat	<i>Mormopterus norfolkensis</i>	Vulnerable
Golden-tipped Bat	<i>Kerivoula papuensis</i>	Vulnerable
Greater Broad-nosed Bat	<i>Scoteanax rueppellii</i>	Vulnerable
Greater Long-eared Bat	<i>Nyctophilus timoriensis</i>	Vulnerable
Grey-Headed Flying Fox	<i>Pteropus poliocephalus</i>	Vulnerable
Hairy-nosed Freetail bat	<i>Mormopterus "sp 6"</i>	Endangered
Hoary Wattled Bat	<i>Chalinolobus nigrogriseus</i>	Vulnerable
Inland Forest Bat	<i>Vespadelus baverstocki</i>	Vulnerable
Large-footed Myotis	<i>Myotis adversus</i>	Vulnerable

Bats cont.		
Little Pied Bat	<i>Chalinolobus picatus</i>	Vulnerable
Little Bent-winged Bat	<i>Miniopterus australis</i>	Vulnerable
Yellow-bellied Sheath-tail Bat	<i>Saccolaimus flaviventris</i>	Vulnerable
Raptors		
Barking Owl	<i>Ninox connivens</i>	Vulnerable
Masked Owl	<i>Tyto novaehollandiae</i>	Vulnerable
Powerful Owl	<i>Ninox strenua</i>	Vulnerable
Red Goshawk	<i>Erythrorchis radiatus</i>	Endangered
Sooty Owl	<i>Tyto tenebricosa</i>	Vulnerable
Square-tailed Kite	<i>Lophoictinia isura</i>	Vulnerable
Non raptor birds		
Brown Treecreeper (eastern subsp.)	<i>Climacteris picumnus victoriae</i>	Vulnerable
Bush-stone Curlew	<i>Burhinus grallarius</i>	Endangered
Cotton Pygmy-Goose	<i>Nettapus coromandelianus</i>	Endangered
Double-eyed Fig-parrot	<i>Cyclopsitta diophthalma coxeni</i>	Endangered
Gang-gang Cockatoo	<i>Callocephalon fimbriatum</i>	Vulnerable
Glossy Black-cockatoo	<i>Calyptorhynchus lathami</i>	Vulnerable
Grey-crowned Babbler (eastern subsp.)	<i>Pomatostomus temporalis temporalis</i>	Vulnerable
Major Mitchell's Cockatoo	<i>Cacatua leadbeateri</i>	Vulnerable
Marbled Frogmouth	<i>Podargus ocellatus</i>	Vulnerable
Olive Whistler	<i>Pachycephala olivacea</i>	Vulnerable
Pink Robin	<i>Petroica rodinogaster</i>	Vulnerable
Purple-crowned Lorikeet	<i>Glossopsitta porphyrocephala</i>	Vulnerable
Red-tailed Black-cockatoo	<i>Calyptorhynchus banksii</i>	Vulnerable
Regent Honeyeater	<i>Xanthomyza phrygia</i>	Endangered
Regent Parrot (eastern subsp.)	<i>Polytelis anthopeplus monarchoides</i>	Endangered
Rufous Scrub-bird	<i>Atrichornis rufescens</i>	Vulnerable
Scarlet-chested Parrot	<i>Neophema splendida</i>	Vulnerable
Speckled Warbler	<i>Pyrrholaemus sagittatus</i>	Vulnerable
Spotted-tailed Quoll	<i>Dasyurus maculatus</i>	Vulnerable
Superb Parrot	<i>Polytelis swainsonii</i>	Vulnerable
Swift Parrot	<i>Lathamus discolor</i>	Endangered
Turquoise Parrot	<i>Neophema pulchella</i>	Vulnerable
Wompoo Fruit Dove	<i>Ptilinopus magnificus</i>	Vulnerable
Reptiles		
Broad-headed Snake	<i>Hoplocephalus bungaroides</i>	Endangered
Rosenberg's Goanna	<i>Varanus rosenbergi</i>	Vulnerable
Pale-headed Snake	<i>Hoplocephalus bitorquatus</i>	Vulnerable
Stephens' Banded Snake	<i>Hoplocephalus stephensii</i>	Vulnerable

Definitions, assumptions and examples

- Arboreal mammals - Mammals that dwell in trees, such as koalas, gliders, possums;
- Ground mammals - Mammals that dwell on or in the ground such as potoroos, rats, wallabies, bandicoots, wombats and quolls;
- Amphibians - Frogs and toadlets;
- Bats - Bats and flying foxes;
- Raptors - Birds of prey such as owls, hawks, kites and eagles;
- Non raptor birds - Such as robins, whistlers, parrots, doves, cockatoos;
- Reptiles - Lizards and snakes.

Forest Value - 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 the effects of pest animals and weeds, conserving site fertility, reducing the impact of damaging insect and fungal pests and managing fire risks and bushfires are critical components of our forest management practices.

The conservation of biodiversity and opportunities for social and economic development are enhanced by healthy and stable forest ecosystems, across all tenures. Forests NSW has produced Ecologically Sustainable Forest Management Plans (ESFM) plans for all Regions. ESFM plans address such essential areas as: fire management, insect and disease management, forest regeneration, feral and introduced predator control, weeds management and forest research projects.

The NSW DPI Forest Health Management Program has corporate knowledge of the potential damage agents, pests and diseases, of forests. Techniques to detect and accurately measure the extent of disease using remote sensing such as multi-spectral imagery are currently being developed.

Fire is an important component of healthy forests and many Australian forest ecosystems depend on fire for regeneration and renewal. However the frequency of large and intensive fires must be managed and controlled. Bushfire risk and bushfire suppression management plans have been developed in conjunction with local communities and agencies, and hazard reduction and fire suppression programs have been implemented to protect forests, plantations and the nearby community from the effects of severe wildfire.

Indicator 14: Pests and weeds

Tracking expenditure on programs to control pest animals and weeds is an indicator of the effort made to maintain the health and vitality of forest ecosystems. Information about the extent of control efforts is also presented, particularly where significant outbreaks have occurred or have been controlled. Forests NSW is working closely with other land managers and local landholders to develop effective joint management strategies for the control of wild dogs and foxes.

Definitions, assumptions and examples

- Weeds - Bathurst burr, Blackberry, Blue heliotrope, Boxtorn, Camphor laurel, Crofton weed, Galvanised burr, Giant Parramatta grass, Golden dodder, Gorse, Groundsel bush, Horehound, Lantana, Lippia, Mother of millions, Nodding thistle, Pampas grass, Patterson's curse, Prickly pear, Salvinia, Scotch broom, Serrated tussock, Spiny burr grass, St Johns wort, Sweet briar, Thistle, Tiger pear, Tree of Heaven, Tree pear and Willow
- Pests - Possums and wallabies
- Feral Animals - Carp, deer, horses, cattle, goats and rabbits
- Introduced predators - Cats, dogs, foxes and pigs

Indicator 15: Plantation affected by insect and disease

Forests NSW invests significantly in the establishment of new planted forests and replanting of harvested areas. In order to protect these plantations, the DPI Forest Health Survey Unit monitors for the presence of threatening biological agents and critical nutrient deficiencies and undertakes appropriate control or remedial measures.

The indicator for this forest value is the percentage of planted forest affected by selected agents that are severe enough to potentially cause a deleterious affect on plantation health and vitality. Surveys are undertaken over all or part of the plantation estate. For hardwood plantations surveys focus on that portion of the estate that was established after 1994.

Indicator 16: Fire fighting and fire prevention

Fire can be either beneficial or detrimental to forest ecosystems depending on a variety of factors. Most eucalypt forests are dependent upon fire for regeneration and renewal but some species, such as River Red Gum (*Eucalyptus camaldulensis*), are fire-intolerant.

Wildfires occur every year in the forests of NSW. They may threaten life, property and/or assets and Forests NSW places a high priority on suppressing wildfires and on preventing wildfires from occurring. Planted forests are particularly vulnerable as softwood plantations and to a lesser extent hardwoods are threatened with destruction by severe or frequent fire events. This can result in significant financial losses for Forests NSW as these plantations represent a significant long term financial investment.

Forests NSW aims to reduce the frequency and size of wildfires by early intervention and by undertaking fuel management activities. Regional Fuel Management Plans are developed in conjunction with other fire-fighting agencies and local councils. Strategies are customised for the forest types being managed and the natural and climatic features of the areas in which they are to be implemented.

A program of hazard reduction burning of targeted areas is undertaken each year to reduce fuel loads and thus the potential impact of wildfires and make fire suppression safer and more effective. Areas of forest identified as 'high-risk' should wildfire occur are intentionally burnt by low intensity fire of a manageable size, under controlled conditions.

Small scale, localised burning is often undertaken after timber harvesting to promote regeneration or during the establishment of planted forests to remove residual groundcover.

Grazing is also effective for managing fuel loads because it reduces the amount of fine fuel in forests without using fire. Grazing is particularly suited to forests with fire-intolerant species such as River red gum (*Eucalyptus camaldulensis*) and Cypress pine (*Callitris glaucophylla*). Forests NSW has management plans in place to address specific fire reduction issues relating to these species

Forests NSW maintains a lightning strike detection system, numerous fire towers to detect fire out-breaks and an extensive network of road and fire trails to rapidly gain access to fires. Extensive training is also undertaken annually to make sure that all employees who are involved in fire suppression and management have the relevant skills to be safe and effective.

Forest Value - Soil and Water

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.

Through our Forest Practices Codes, operational manuals and guidelines, Forests NSW is committed to

using world's best practice to ensure that soil and water quality are not adversely impacted by roading and timber harvesting operations. Our forest management also aims to maintain the soils in State forests to support natural forest ecosystems and ecosystem processes.

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 within NSW Department of Environment and Climate Change). The EPA monitors the implementation of licence conditions. Forests NSW also undertakes a program of water quality sampling and monitoring.

Indicator 17: Protection of soil and water

Prior to the establishment of any roads in forests that are scheduled for timber harvesting, a soil survey is undertaken, by an accredited officer, to identify areas that may be susceptible to soil erosion. These surveys represent a systematic assessment for soil erosion hazard and help determine which water pollution prevention measures are put in place before harvesting commences.

The entire Forests NSW estate is managed for catchment protection. However this indicator reports on the area of land that is zoned 'catchment' as the primary special value in our Forest Management Zoning system (i.e. 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 zone 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.

Definitions, assumptions and examples

- Land primarily assigned for catchment protection - Excludes substantial tracts of land otherwise zoned primarily for natural and cultural protection which also provide a catchment protective function
- Fully protected land - includes wetlands, filter strips reserved from harvesting and areas with extreme risk of erosion or water pollution hazard
- Partly protected land - Includes Forest Management Zone 3b, special value "Catchment" and filter strips protected in areas where modified harvesting methods are permitted

Forest Value – Compliance

All harvesting operations conducted by Forests NSW are subject to various regulatory regimes. In the native forests of eastern NSW, the regulatory regime is explicitly documented in legislation and detailed in such documents as the *Integrated Forest Operations Approvals* (IFOA) under the NSW Forest Agreements and the Regional Forest Agreements with the Commonwealth. In other parts of the state harvesting is undertaken in accordance with conditions agreed between Forests NSW and other government agencies.

The plantation areas are covered by a comprehensive Code of Practice under the *Plantations and Reafforestation Act*. This Code specifies the conditions associated with soil and water management to be implemented for all planted forests operations. Although planted forests do not have flora, fauna and cultural heritage issues to the same extent as the native forests, the code addresses management actions in case these where protection of these attributes are required.

During harvest planning and licensed harvesting operations, Forests NSW and external harvesting contractors are required to comply with conditions set out in this Code or under the IFOAs and established best practice standards. To ensure that these requirements are met, Forests NSW supervises, checks and audits the work of contractors and is, in turn, subject to audit and inspection by the independent regulatory agencies.

FNSW also complies with the Environment Protection Licence issued to Forests NSW by DECC. The conditions implemented are consistent with the risk associated with the each operation.

Following the completion of four Forest Agreements in New South Wales, a large proportion of forests managed by Forests NSW are regulated under IFOAs. These IFOAs reflect the policy of the NSW Government to promote an ecologically sustainable, value added and secure native forest timber industry while establishing clear, consistent and strong environmental protections for areas available for timber harvesting.

Indicator 18: Regulatory compliance

The number of audits undertaken and the number of fines and breaches reported are used to monitor compliance with both the Code of Practice and external licence conditions. Forests NSW undertakes routine monitoring for compliance and orders

corrective action by contractors where necessary.

The number of compliance check sheets completed by Forests NSW staff is proportional to the number of harvesting operations during the year, and also depends on the type and duration of each harvesting operation as checks are undertaken every two weeks of each operation. The number of detected incidents is reported as compared with potential incidents, providing us with a compliance rate. Each compliance check sheet covers 85 potential non-compliance incidents.

Forest Value – Environmental services

Environmental services is a term given to the benefits generated for society by the existence and dynamic development of natural resources, in this case with a particular focus on forests.

Forests are key ecosystems for the planet's long term sustainability. They produce oxygen and remove CO₂ from the atmosphere. They regulate the surface and underground flow of water. They smooth out peaks and troughs in water availability and provide very effective filtration systems for higher water quality. They support a wide range of native flora and fauna species. And they provide many valuable goods and services, ranging from timber rights through to pleasure knowing that they simply exist.

Regrettably, many of the services or benefits provided by forests either were not recognised or were accorded little value. As a consequence, the true value of these services only became widely known when the services themselves were lost through historical removal of the forest. Examples include soil erosion, loss of nutrients, floods, poor quality water, salinity, flora and fauna extinction, climate change and low resilience to stress in resulting farming systems.

Planted forests have the potential to act as carbon sinks to absorb some of the greenhouse gases that have been building up in the atmosphere, particularly over the last century, as a consequence of land clearing and burning fossil fuels. Timber products also store carbon, which would otherwise be released back into the atmosphere as dead and dying trees decompose.

During 07-08 Australia became a signatory to the Kyoto Protocol. Progress was made toward the implementation of a national Carbon Pollution Reduction Scheme with the publication of a white paper in July 2008. These are important steps towards recognising forests role in climate change mitigation.

Indicator 19: Carbon sequestration

This indicator expresses the total annual carbon sequestration within our existing planted and native forests. The calculations are affected by changes in the net stocked area, assume estate-wide mean annual increments (growth rates) for softwood and hardwood plantations and assume region wide mean annual increments (growth rates), based on native forest valuation data supplied to the NSW Auditor General's Office.

The carbon accounting models used to estimate the total sequestered CO₂ each year over the last few years from the total planted forest estate is a very simplified one. The calculation is based on the net area of plantation (i.e. after any final harvesting). 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 carbon accounting system is used for the subset of the total plantation estate that is consistent with Article 3.3. This refined system underpins the number of certificate creates under the NSW Greenhouse Gas Abatement Scheme.

This is the first year Forests NSW has reported on carbon sequestration in native forests. The assumptions used are the best available to date and may change in subsequent reporting periods, as we invest resources in developing better methods of calculating this information. The model used reports the amount of carbon stored in forest products, along with emissions associated with harvesting and forest fire emissions.

Definitions, assumptions and examples

The quantum of atmospheric carbon sequestered in Forests NSW plantations is determined using the following formula which has been developed by Forests NSW through work undertaken with the CRC for Greenhouse accounting:

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

CO₂ sequestered (tonnes CO₂ e) = net plantation area x MTBI x CP x CCF where:

MTBI = SBI + CBI + RBI where:

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

TSVI (Total Stem Volume increment) - softwood = 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 0.1765

RBI (Root Biomass Increment) = (SBI + CBI) x 0.2

CP (Carbon Proportion) = 0.5

CCDF (Carbon to CO₂ factor) = 3.667

The quantum of atmospheric carbon sequestered in Forests NSW native forests is determined using the mean figure derived from using following formula (a) along with the AGO model (b):

model a

CO₂ sequestered (tonnes CO₂ e) = net plantation area x MTBI x CP x CCF where:

MTBI = SBI + CBI + RBI where:

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

TSVI (Total Stem Volume increment) native forest average = 5m³/ha/yr

BD (Basic Density) = 0.325t/m³ (source AGO 2006)

CBI (Canopy Biomass Increment) = SBI x 0.1765

RBI (Root Biomass Increment) = (SBI + CBI) x 0.2

CP (Carbon Proportion) = 0.5

CCF (Carbon to CO₂ factor) = 3.667

model b is based on Weighted Average Growth rates in the AGO methodology 2006 (refer table A1) for the estimation of GHG emissions and sinks for the broad forest types within State forest

Indicator 20: Energy consumption

As an organisation Forests NSW is committed to reducing its contribution to atmospheric carbon during the process of managing and harvesting forests. Forests NSW subscribes to the NSW Government Energy Management Policy (GEMP) objectives and the Australian Government Greenhouse Energy program as an integral part of our business.

Indicator 21: Material consumption and recycling

Forests NSW participates in the NSW Waste Strategy 2007. This strategy contains targets and proposes priority areas and actions to guide the work of all key groups in NSW in contributing to the minimisation of environmental harm from waste disposal and the conservation and efficient use of our resources.

ECONOMIC

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

Forest Value - Marketing and Sales

The marketing and sale of timber is included as a forest value in recognition of its importance to the organisation and the community. 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 Planted Forests Operations Branch Inventories of how much and what type of trees are in the forest are undertaken and are used to develop 3-year plans of operations for individual compartments that range in size from tens to hundreds 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 telegraph poles and treated posts or into veneer for plywood. Sawmill residue and pulpwood logs are used for pulp and paper and reconstituted timber products (e.g. particle board, medium density fibre-board (MDF)).

The Commercial Services Branch of Forests NSW, with support from industry groups, assesses the markets for timber products, timber end-use prices 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.

Indicator 22: Volume of timber harvested

Change in the volumes of logs and other products harvested reflects both the market fluctuations in the building industry and more importantly demand for different timber products. Trends in timber supply volumes and the mix of harvested products is of interest to many of our key stakeholders and therefore the data is reported here.

Indicator 23: Sawlog product mix of timber harvested

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 reinforces our focus on value-added products.

Indicator 24: Carbon Accounting compliant with NSW Greenhouse Gas Reduction Scheme

The NSW Greenhouse Gas Reduction Scheme (GGAS) commenced on 1 January 2003. It is one of the first mandatory greenhouse gas emissions trading schemes in the world. GGAS aims to reduce greenhouse gas emissions associated with the production and use of electricity.

Forests NSW, in consultation with the regulator, IPART now includes all areas of plantation established since 1990 on land that was already cleared in 1990. The inclusion of these additional plantations will result in the creation of additional NSW Greenhouse Abatement Certificates annually throughout the life of the plantations.

Each certificate accredited represents one tonne of CO₂ removed from the atmosphere.

Forests NSW has been actively contributing to the development of forestry emissions trading policy through the Garnaut Review and the Commonwealth Government's emission trading consultation process. The role of forestry in a national emissions trading scheme is expected to be determined in late 2008.

Forests NSW preference is to see inclusion and recognition of reforestation activities from the commencement of the scheme and recognition for carbon stored in harvested wood products.

Forests NSW is also seeking smooth and equitable transition arrangements for abatement certificate providers operating under the NSW Greenhouse Gas Abatement Scheme. The NSW Greenhouse Gas Abatement Scheme is due to be replaced by the national scheme in 2010.

Recognition for the above issues will allow significant opportunity for Forests NSW to expand its carbon trading business.

SUSTAINABILITY

Managing State forests for the long-term and retaining opportunities for future generations to meet their needs and expectations, while providing for the present

Forest Value - 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 disturbed native forests are properly regenerated.

Managing forests is a long-term process. The impact of decisions and actions in our management today may not be readily visible in the forest for many decades. New management practices need to be researched over long time and practices implemented often take many years before they have an effect on forest growth and productivity. Monitoring and maintaining the forest's productive capacity is critical to the continued ability to provide, in perpetuity, the range of products and services demanded by society.

Indicator 25: Forest management

Within the estate managed by Forests NSW, an important sustainability indicator is the proportion of the forest estate that 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 raw timber products to the timber processing industry.

Definitions, assumptions and examples

The forest estate is classified according to management intent. Known as Forest Management Zones (FMZ) each area is managed according to a range of primary values, which also determine whether the forest will be made available for harvesting.

FMZ 1: Dedicated Reserve/Special Protection -
Management to maximise protection of very high natural and cultural conservation values.
Not available for timber harvesting

FMZ 2: Informal Reserve (Special Management) -
Specific management and protection of natural and cultural conservation values where it is not possible or practical to include them in zone 1.
Not available for timber harvesting

FMZ 3a: Informal Reserve (Harvest Exclusion) -
Management for conservation of identified values and/or ecosystems and their natural processes. Areas where harvesting is excluded but other management and production activities not permitted in zone 1 or 2 may be appropriate (e.g. grazing or mineral exploration)

FMZ 3b: Special Prescription - Management for conservation of identified values and/or ecosystems and their natural processes. The zone is available for timber harvesting but minimised in design and implementation to maintain or enhance the values that the area is zoned to protect

FMZ 4: General Management Native Forest -
Management of native forests for timber production utilising the full range of silvicultural options as appropriate; and conservation of broad area habitat and environmental values which are not dependent on the structure of the forest. Available for timber harvesting

FMZ 5: Hardwood planted forest estate - Management of hardwood plantations to maximise sustainable timber production on a continuing cyclical basis

FMZ 6: Softwood planted forest estate - Management of softwood plantations to maximise sustainable timber production on a continuing cyclical basis

FMZ 7: Non forestry use - Management of cleared (non-forested) areas, such as those used for special developments such as infrastructure

FMZ 8: Land for further assessment - An interim zoning of areas where field investigation is required to determine final Forest Management Zone classification. Field investigation will be undertaken as part of pre-harvest planning. Management will be for protection under the same requirements as zone 3a until field investigation has taken place.

The area included in this indicator will include areas of forest that are managed by Forests NSW but which may not be dedicated State forest. Forest Management Zoning may be determined over areas such as Western Lands Leases prior to timber harvesting.

Indicator 26: Plantation establishment and survival

This indicator tracks the area of new ("first rotation") plantation and harvested and replanted ("second or

third rotation”) plantations established during the year. New planted forests are only established on land that was cleared in the past for agricultural purposes that is either purchased by Forests NSW or by contractual arrangements (i.e. joint ventures or annuities) with private land owners.

The establishment of new planted forest and re-establishment of existing planted forest after final harvesting contributes to the development of a sustainable timber supply in NSW. The final productivity of a newly planted forest depends on achieving vigorous growth in the first few years. Forests NSW 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. Forests NSW does not clear land for the purpose of establishing plantations.

Survival surveys are undertaken annually (on a calendar year basis) one year after planting.

Indicator 27: Mean annual growth in plantations

High productivity in our planted forests is essential to achieving long term supplementation of timber from native regrowth forests. Monitoring the mean annual volume change in planted forests tells us whether we need to be seeking to improve productivity through additional attention to forest health, maintenance of soil fertility, improvement in genetic stock and/or improvement in silvicultural practices.

Definitions, assumptions and examples

- Annual increment - Annual increment is the change in volume of the planted softwood estate
- Net stocked area - Net stocked area is the area of the estate where trees are planted (i.e. does not include roads, environmental exclusion areas, area awaiting regeneration etc) as at the end of the financial year
- Mean annual increment - Mean annual increment (MAI) is an indication of the productive potential of an average hectare within the estate. The MAI is derived for a species, for example radiate pine, or for a management area, for example Central region. 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 28: Native forest regeneration

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. In adverse conditions, restocking is undertaken by Forests NSW to ensure adequate regeneration occurs.

Forest Value - Maintainability

Indicator 29: Sustainable yield

The volume of high quality veneer logs and sawlogs that can be harvested each year is set at a sustainable level to maintain productive forest ecosystems in the long term. For native forests in eastern NSW, this level has been established through the Regional Forest Agreement process and is reflected in timber supply agreements with industry. Elsewhere, the level of production in native forests is based on forest type, yield history and the advice of Forests NSW operational, resources, marketing and research. Harvesting in plantations is measured against commitments to industry.

The harvesting of lower quality logs and other wood products is integrated with 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.

Indicator 30: Forest Certification

In December 2006 Forests NSW was certified as compliant with the Australian Forestry Standard {(AFS) AS 4708} by NCS International (NCSI), which is accredited by JAS-ANZ to audit against this internationally recognised forest management standard.

The standard is based on criteria for sustainable forest management agreed on by the PEFC Council (Programme for the Endorsement of Forest Certification schemes), which is an independent, non-profit, non-governmental organisation, that promotes sustainably managed forests through independent third party certification. PEFC is a global umbrella organisation for the assessment of and mutual recognition of national forest certification schemes, such as the Australian Forestry Standard.

Indicator 31: Trading Profit

The trading profit of the Forests NSW reflects the efficiencies of the organisation in undertaking our primary function of providing a commercial and sustainable supply of timber to NSW. As a trading enterprise, Forests NSW also looks to other markets to ensure the best value is derived from the State forests prime product, timber.

3. Governance

Forests NSW is the public trading enterprise within the New South Wales (NSW) Department of Primary Industries (DPI).

The Honorable Ian McDonald MLC is the Minister responsible for the Primary industries portfolio (his other portfolios include Natural & Mineral Resources) and the Department is headed by the Director General, Mr. Richard Shelldrake.

DPI Corporate Planning

The DPI Corporate Plan (2008 – 2011) articulates the vision, values and strategic directions. The vision of 'profitable, adaptive and sustainable primary industries building vibrant communities' will be achieved through focusing on the following Key Result Areas:

- Strong economic performance of primary industries
- Appropriate access to and wise management of natural resources
- Safe, healthy and biosecure industries
- A strong voice for primary industries
- Excellence in people, innovation and service delivery.

The Structure of DPI

The CEO of Forests NSW, Mr. Nick Roberts sits on the DPI Board of Management along with eight other DPI Directors, each of whom heads a Division within the Organisation. The structure reported below is current as of November 2008 and reflects changes made after the 2008 NSW mini-budget.

- Nick Roberts, Deputy Director General: Forests NSW - *Forests NSW* operates as a public trading enterprise within NSW DPI. It manages the forests estate to provide timber now and into the future.
- Wendy Stamp, Executive Director: *Strategy, Policy & Communication* - Plays a lead role in translating government priorities and industry needs into the Department's policy and corporate agenda. Coordinates whole-of-government approaches and

manages strategic and contentious issues. Facilitates strategic communications and promotes the work of the department and primary industries.

- George Davey, Deputy Director General: *Agriculture, Biosecurity & Mine Safety* - Works with industry to improve the sustainability and profitability of the agriculture sector. Manages biosecurity risks impacting on NSW primary industries, responds to emergencies and disasters, and promotes safety in the mining industry.
- Brad Mullard, A/Executive Director: *Minerals Resources* - Leads the stewardship of the state's mineral resources to facilitate profitable and sustainable development, effective environmental management, and safe and responsible mining.
- Renata Brooks, Executive Director: *Science and Research* - Undertakes strategic science and research that underpins the growth, sustainability and biosecurity of primary industries in NSW.
- Doug Hocking, Executive Director: *DPI Reform* - Identifying efficiencies and opportunities for changes in the way NSW DPI does business, and preparing a blueprint for the way forward
- Jeannine Biviano, Executive Director: *Corporate Services* - Develops, manages and advises on systems, infrastructure, policies and standards to provide services to NSW DPI in the areas of finance and administration, human resources, assets, information technology and legal services.
- George Davey, Executive Director: *Fisheries, Compliance and Regional Relations* - Manages the development and sustainability of the state's fisheries resources and the aquaculture industry, and conserves aquatic biodiversity. Ensures compliance with legislation, and fosters strong relationships with regional organisations.

Forests NSW Corporate Business Strategy

To achieve the above DPI vision FNSW has developed a Corporate Business Strategy (2008 – 2011) identifying the strategic business directions for the coming years. These are:

(i) Focus on excellence in profitable and sustainable forest management including:

- Safety
- Environmental sustainability
- Customer service and customer satisfaction
- Inventory and resource modelling

- Critical review and selection of activities and ventures we undertake
- Innovation and technical capability
- Protection of assets
- Operational efficiency
- Profitability

(ii) Commitment to making optimal use of our assets through organisational efficiency:

- Training, developing and motivating our people
- Clearly defined roles and expectations
- Performance management and benchmarking
- Tools and systems that deliver results

(iii) Increase revenue by focusing on:

- Market pricing
- Value recovery and increasing long term value
- New business and product diversity
- Forest management services

(iv) Reduce costs through:

- Continued re-evaluation of our business and operational practices
- Planning and process improvement
- Benchmarking and adoption of best practice

(v) Simplify the way we work including:

- Management systems
- Organisational structure and functions
- Integration of systems
- Sales and pricing
- Regulation and compliance
- Reduction in overheads
- Better procurement
- Operational improvement

Forests NSW Corporate Structure

To deliver on this Forests NSW structure is along six operational lines:

- Planted Forests Operations
- Native Forests Operations
- Financial and Operational Business Services
- Human Resources
- Land Management and Forestry Services
- Commercial Services

Within each branch there are number of units and programs designed to address a particular aspect of

Forests NSW business and operational activities. Each branch is lead by a director, who also sits on the Senior Management Team for Forests NSW.

4. Legislative and Policy Context

Forests NSW and State forests are administered in accordance with the *Forestry Act 1916* and its regulations. Forest NSW develops and implements a range of policies as guided by the objects of this legislation, in accordance with the principles of ecologically sustainable forest management.

Within this policy context Forests NSW determines management of the areas under its control, with innovative approaches to forest management, silviculture, biodiversity conservation and other values. The decision making process is also influenced by a regulatory regime, which provides a number of the parameters to be accommodated in management.

The regulatory regime under which Forests NSW operates is in accordance with a number of Acts and regulations including:

- *Forestry Act 1916*,
- *Environmental Planning and Assessment Act 1979*;
- *National Parks and Wildlife Act 1974*;
- *Protection of the Environment Administration Act 1991*;
- *Protection of the Environment Operations Act 1997*;
- *Fisheries Management Act 1994*;
- *Plantations and Reafforestation Act 1999*;
- *Timber Marketing Act 1977*,
- *Threatened Species Conservation Act 1994*;
- *Native Vegetation Act 2003*
- *National Parks and Forestry Estate Act YEAR?*
- *Brigalow and Nandewar Community Conservation Area Act 2005*;

How these are implemented varies for different region and forests.

Regional Forest Agreements

For many State forests, particularly on the east coast, assessments were conducted as part of the State-Commonwealth Regional Forest Agreement (RFA) process. RFAs are one of the principle means of implementing the *National Forest Policy Statement* of 1992 under which the Commonwealth and all State and Territory Governments agreed to work towards a shared vision for Australia's forests. NSW RFAs are agreements between the Commonwealth and the NSW Governments on the future use and management

of the State's coastal native forests. A RFA is a 20-year agreement with three main objectives:

- to protect environmental values in a world class Comprehensive, Adequate and Representative (CAR) Reserve system of dedicated and informal reserves and areas protected by prescription;
- to encourage development of an internationally competitive timber industry;
- to manage native forests in an ecologically sustainable way.

They are the result of years of scientific study, consultation and negotiation covering a diverse range of interests. RFAs are in place for Eden, North East (Upper North East and Lower North East) and Southern (South Coast and Tumut) NSW. Copies of NSW RFAs can be downloaded from this web page: www.daff.gov.au

The *Forestry and National Parks Estate Act* formalised the identified conservation reserves through the transfer of certain State forest and other Crown land to the national park estate. The Act also provides for the making of NSW Forest Agreements.

A NSW forest agreement is one means by which NSW implements the obligations and undertakings arising from an RFA for a region. A forest agreement contains provisions that promote ecologically sustainable forest management, sustainable timber supply, community consultation on forestry operations and arrangements concerning native title rights and interests or land claims, as well as other provisions the Ministers consider appropriate. Forest agreements establish a co-operative framework at a strategic, rather than operational, level for the management of forested areas across all tenures, including national parks.

Forest agreements were prepared for all regions now covered by an RFA. These agreements were signed 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 May 2005 the NSW Government announced the outcomes from the Western Regional Assessments (WRAs) for the Brigalow and Nandewar Bioregions in May 2005, covering Forests NSW's Western Region. An entirely new land tenure was created as part of this decision, by creating a community conservation area which will provide for conservation outcomes, sustainable timber, minerals and other industries and is underpinned by strong community involvement. The

Brigalow and Nandewar Community Conservation Area Act 2005 provides the legislative basis for this tenure.

Forests NSW plantations are regulated by the *Plantations and Reafforestation Act 1999* and its Regulations (Code of Practice). This Act and Code are administered by the Department of Primary Industries. They aim to promote and encourage the establishment of plantations by both the public and private sectors and provide a uniform "one stop shop" regulatory environment for both sectors across the whole of New South Wales. The Act also provides for the development of equitable arrangements for road funding to service the needs of the plantation timber processing industry.

Forests NSW Policies and Codes of Practice

A suite of policies has been implemented to help guide sustainable forest management practices. While not explicit in their stated objectives several policies seek outcomes that contribute to sustainable forest management. These policies are listed in the Forests NSW Statement of Affairs on our web page and copies are be made available if you contact the FOI Coordinator on telephone (02) 9872 0111 Fax (02) 9873 1048, or email lalw@sf.nsw.gov.au.

These include:

Compensation

- Compensation for Loss or Damage of Personal Property of Forests NSW Employees and Volunteers

Financial

- Accounts Payable Policy
- Corporate Credit Cards Policy
- Credit Management Policy
- Procurement of Goods and Services Policy
- Tendering Policy

Fire Management

- Fire Management Policy

Fleet Management

- Fleet Insurance Policy and Procedures
- Forests NSW Light Fleet Replacement and Ordering Policy
- Forests NSW Vehicle Use and Care Policy
- Light Fleet Selection and Accessorisation Policy
- ME&FS Equipment Maintenance and Engineering Change Policy
- ME&FS External maintenance Approval Policy

- Motor Vehicle Policy
- Salary Package Motor Vehicle Accessories
- Salary Packaged Vehicle Replacement & Insurance Excess Policy

Forest Management

- Forest Codes of Practice
- Environmental Policy
- Forest Operator and Contractor Licences
- Forest Roads, Legal Access for Private Use (Right-of-Way or Easement)
- Forest Recreation Policy and Strategy

Information Management:

- Privacy and Personal Information Protection Policy
- Public Access to Planning Information
- Records Management Policy

Occupational Health & Safety:

- Health and Safety Policy
- Safe Driving Policy

Human Resources

- Drug and Alcohol Policy
- Forests NSW Scholarship Policy
- Forests NSW Study Assistance Policy
- Harassment Policy
- Managing Reasonable Adjustment and Employment for People with a Disability Policy
- Volunteer Policy

Strategic Management

- Commitment to Ethical Practices
- Equity Policy
- Ethnic Affairs Priority Statement
- Forest Management Zoning in NSW Forests Policy
- Participation in International Project Policy
- Reasonable Adjustment During Pregnancy Policy
- Residual Forest Biomass Policy

Note: Forests NSW Policies are under constant review and may vary as Government policy or circumstances dictate.

Forest NSW has developed a number of *Forest Practice Codes* to identify non site specific terms and conditions for forestry activities that have the potential to impact on environmental values. These include codes for:

- Timber harvesting in Forests NSW plantations;
- Timber harvesting in native forests;
- Plantation establishment and maintenance; and
- Forest roads and fire trails.

5. Forests NSW Major Customers

Manufacture Area	Customer	Main species used	Products/Services
Plywood	Norply Big River Timbers Ausply Carter Holt Harvey	Mixed hardwoods	Plywood Flooring & stairs, structural bracing, Formply (concrete construction), external cladding
Major softwood sawmillers	Weyerhaeuser Carter Holt Harvey Hyne & Son Boral Timber, Integrated Forest Products Auswest Penrose Pine Mesray Colenden Willmott Forest products Summers	Radiata pine	Structural softwood timber for dwelling construction and renovation markets, internal joinery (eg windows and architraves) and furniture timbers, landscape timbers, treated softwood poles, treated decking, etc.
MDF and particleboard	Carter Holt Harvey Monsbent	Radiata pine	Medium Density flooring and particleboard products such as flooring, cabinets, benchtops, furniture components, etc
Softwood preservation	Wilmott Timbers Penrose Pine Blayney Treated Pine Pacpine	Radiata pine	Treated timber for outdoor applications such as decks, pergolas, landscape timbers, etc.
Pulp and paper	Norske Skog Visy	Mixed hardwoods	Newsprint, writing paper, cardboard, personal hygiene paper products, etc
Export woodchip	South East Fiber Exports, Midway Sawmillers Export Limited	Mixed hardwoods	Newsprint, writing paper, cardboard, personal hygiene paper products, etc
Major hardwood saw millers	Boral Koppers Blue Ridge Hardwoods Baradine Sawmills Coffs Harbour Hardwoods Ford Timbers Hurfords Big River Timbers Thora Davis & Herbert, Hardwood Resources Australian Solar Timbers ITC timber Baradine Sawmilling Co	Mixed hardwoods Coastal and Tablelands (including native Cypress pine)	Kiln dried and green structural timber, strip flooring, furniture and joinery timber, bridge and engineering timber products, power poles, plywood products, external cladding decking, etc.

Manufacture Area	Customer	Main species used	Products/Services
Investors	Rothschild ST Microelectronics TEPCO	Radiata pine	Plantation Investment, Carbon Credit
Utilities and Infrastructure	Optus Vodafone Telstra Crown Castle Country Energy		Telecommunications, Electricity supplier.