

# Environmental Review



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## Environmental Review

### OUR VISION

To support an environmentally sustainable and commercially viable forest products industry providing economic and social benefits to the people of Western Australia.

### POLICY

In setting objectives and implementing strategies to achieve its vision the Commission, in conjunction with other relevant authorities, private land owners, will:

- Apply the principle of sustainable forest management in all native forest operational activities in accordance with appropriate State and National standards;
- Apply the principle of sustainable plantation management, including contributing to global carbon cycles, in accordance with appropriate State and National standards;
- Seek opportunities where plantations can be used as a tool for the enhancement of the environment by abating environmental problems;
- Provide opportunities for producing renewable energy sources;
- Participate in activities that contribute to regional natural resource management.
- Comply with all relevant laws, regulations and other external and internal prescribed requirements in management operations;
- Implement and maintain comprehensive environmental management systems, compatible with internationally recognised standards, that include a continuous improvement approach, a monitoring and audit system, regular reviews of environmental performance and an effective reporting system;
- Identify the environmental impacts of its operations and set objectives and standards to keep potentially significant impacts to acceptable levels, including the prevention of pollution, minimising waste and reducing energy consumption;
- Clearly define environmental responsibilities and train staff and contractors in good environmental management practices; and
- Communicate with internal and external stakeholders on environmental issues and performance.

### ENVIRONMENTAL MANAGEMENT

The Commission's focus in relation to environmental outcomes is to ensure that products are grown, extracted and developed in an environmentally sustainable manner.

The Commission was awarded the WA Timber Industry Award for Excellence in Forest Management in 2003 in recognition of its commitment to Environmental Management System ISO 14001 (EMS).

With the Commission's Operations division certified under ISO 14001 for three years, the Commission will undertake recertification in 2004 and apply to extend certification to other divisions.

## Environmental Review *cont'd*

### ENVIRONMENTAL INCIDENTS

Internal and external quarterly audits are conducted to ensure the Commission monitors environmental impact, has objectives to manage this, is effective in implementing its environmental systems and monitors and reviews its performance.

The most significant incidents last year were:

#### **Bridgetown wildfire**

This represented a huge logistical exercise covering fire containment, safety, environmental management (continuing) in a very sensitive area, especially mitigation against erosion of the exposed soils on steep slopes draining into the Blackwood River.

Emergency response to Fire 18 near Bridgetown was effective and is still being monitored. An emergency recovery plan has been successfully implemented.

#### **Insect Incursion**

The quarantine pest European house borer, a destructive pest of untreated seasoned pine, confirmed for the first time in WA.

As a result, a State incident management team was established involving Department of Agriculture and the Commission, action coordinated with national Forest Health Committee, other agencies and industry. Surveillance strategy and delimiting survey implemented with a view to eradication. Surveillance will be necessary for up to 15 years.

#### **Planting failures**

Approximately 40 per cent of the plantings from the winter of 2003 had to be replanted or infilled.

This was primarily due to a dry hot season, which particularly affected two-year-old seedlings less adaptable to drought conditions.

A review of seedling specifications has been undertaken to minimise the risk of this occurring in the future.

#### **Boundary breach**

A harvesting contractor went outside the marked boundary into a Comprehensive and Representative (CAR) river reserve in the Manjimup area adjacent to coupe MWH0203.

The definition and recognition of boundaries and training requirements of contractors have been reviewed.

#### **Unauthorised burn**

A contractor burnt windrows at Cooke plantations without notifying the Commission or gaining approvals from the Department of Conservation and Land Management (CALM) creating a smoke hazard.

An internal investigation was conducted and the contractor sent a breach of contract notice.

#### **Internal Processes**

An internal audit found issues relating to internal record management, communication and environmental objectives not meeting EMS standards.

Executive undertook a review of environmental policy and objectives, approved new record system policies and prepared a comprehensive communication plan.

All EMS incidents were reviewed and closed on schedule.

## Environmental Review *cont'd*

### ENVIRONMENTAL SERVICES

During 2003/04 a new Technical Services Branch was established to increase the research, development and monitoring capacity within the Commission.

A high priority will be monitoring the impact on soil water stores and groundwater levels of our Infinitree commercial and integrated tree crops in the low to medium rainfall zones.

New programs coordinated by Technical Services Branch will track the impact of both plantations and integrated tree plantings on water tables in these areas to demonstrate the benefits of revegetation in ameliorating dryland salinity. It is planned that intensive monitoring will occur on two of the properties purchased by the Commission in 2003/04. These will demonstrate the effectiveness of trees in salinity amelioration at the local and sub-catchment level.

### WATERTABLE MANAGEMENT OF THE GNANGARA MOUND

Ground water levels have declined across the Gngangara area. Both the extended dry period and abstraction of water for private and public use are likely major contributors to the decline in the groundwater levels. The removal of the 21,500 hectares of pine plantations of Gngangara, Pinjar and Yanchep may assist in addressing this decline.

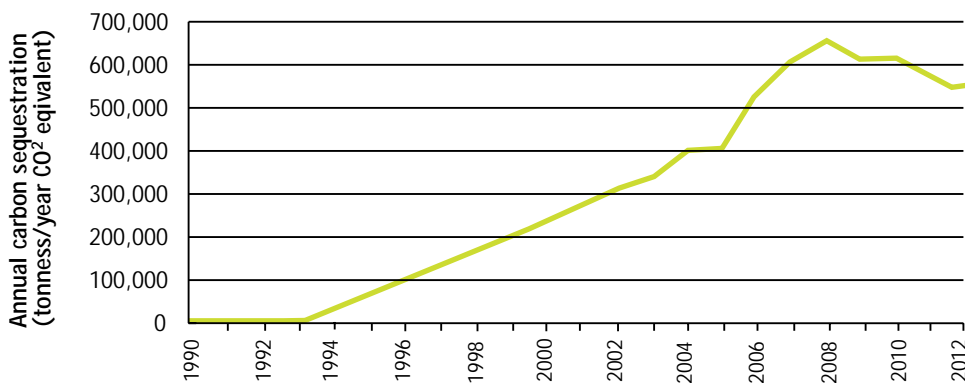
Since January 2003 the plantation harvesting strategy has been based on the need to optimise the water recharge whilst meeting our commitments to supply a new laminated veneer lumber (LVL) plant under the *LVL State Agreement Act*.

Ongoing work by the Gngangara vegetation technical team, made up of representatives from Watercorp, Department of Environment, CSIRO, Edith Cowan University and the Commission, is investigating the gaps in knowledge on water recharge rates.

The outcomes of this work will assist the environment by providing options to maximising water recharge as well as optimising the level of timber resource to meet contractual commitments.

### CARBON SEQUESTRATION

The Commission has undertaken considerable research, both independently and as a member of the Co-operative Research Centre for Greenhouse Accounting, to develop best practice techniques for sampling and estimation of carbon sequestration in farm plantations and forecasting future carbon sequestration.



Estimated annual carbon sequestration in Commission-owned plantations established 1990-2003 and model projections of future carbon sequestration in those plantations.

## Environmental Review *cont'd*

### PROTECTING BIODIVERSITY VALUES

Tree crops for water table control and biodiversity enhancement are gaining acceptance being included in Regional Catchment Plans during 2003/04.

No areas of native vegetation of environmental value have been cleared for the establishment of plantations.

### RENEWABLE ENERGY

As part of the Commission's objective to provide opportunities for developing renewable energy resources, two successful applicants of a Request for Proposal are conducting trials to develop a business plans for biomass energy plants using pine harvest residues.

### SUSTAINABLE FORESTRY

Sustainability is one of the key elements underpinning the strategic directions of the Commission and underpins the principles on which it is required to act.

We are committed to delivering a sustainable forest products industry in WA; maximising the sustainable use of forest residues, including waste reduction and value adding; and being a recognised provider of environmental services and benefits. These services include watertable/salinity control; carbon sequestration; biodiversity enhancement and erosion control/farm enhancement.

### QUANTITY OF NATIVE FOREST HARDWOOD LOG TIMBER HARVESTED<sup>1</sup> COMPARED TO SUSTAINABLE LEVELS AND TARGETS

The sustainable level is the average quantity of timber available for harvest each year, which can be continued in the long term (sustainable yield level).

Forest areas available for timber harvesting are measured using specifically designed inventory plots to determine the quantity of timber available and the rate at which it is growing.

Based on independent analysis of this information, the estimated sustainable yield level of annual bole volume for jarrah, karri and marri is determined for the term of each Forest Management Plan. During this financial year the Forest Management Plan 1994/2003 expired on 31 December 2003 and a new Forest Management Plan commenced on 1 January 2004 for a 10-year period commencing from 2004 to 2013.

- (A)(i) For the period 1994/2003 the annual sustainable yield of total bole volume for jarrah, karri and marri was 1,360,000m<sup>3</sup>, 417,000m<sup>3</sup> and 559,000m<sup>3</sup> respectively and,
- (ii) For the period 2004/2013 the annual sustainable yield of bole volume (including first and second grade sawlogs) for jarrah and karri is 665,000m<sup>3</sup> and 171,000m<sup>3</sup> respectively and for all marri bole logs is 196,000m<sup>3</sup>.
- (B)(i) For the period 1994/2003 the annual sustainable yield of first and second grade sawlogs for jarrah, karri and marri, as modified by the 1999 Regional Forest Agreement and Government policy, was 324,000m<sup>3</sup>, 149,000m<sup>3</sup> and 78,000m<sup>3</sup> respectively.
- (ii) For the period 2004/2013 the annual sustainable yield of first and second grade sawlogs for jarrah and karri is 131,000m<sup>3</sup> and 54,000m<sup>3</sup> respectively. Marri sawlogs is part of the 196,000m<sup>3</sup> identified for marri bole logs.

<sup>1</sup> 'Harvest' means the commercial extraction and sale of log timber for processing and value adding.

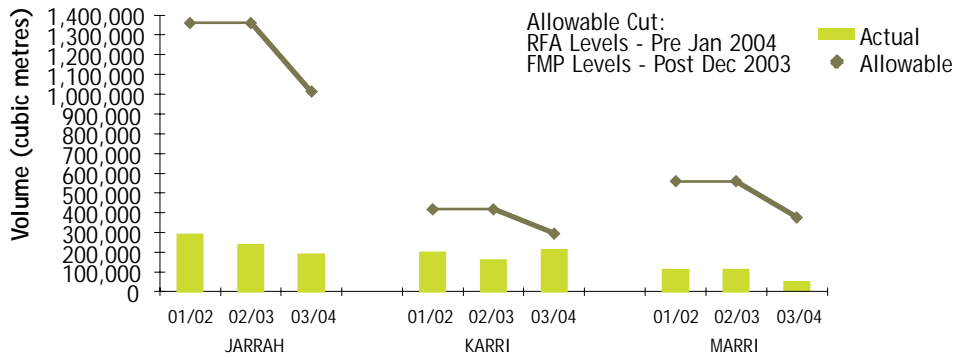
Audited key performance indicator

## Environmental Review *cont'd*

Measure: A: Total bole-volume log timber harvest does not exceed allowable cut.

### OUTPUT A (i) and (ii)

#### TOTAL BOLE-VOLUME LOG TIMBER HARVEST



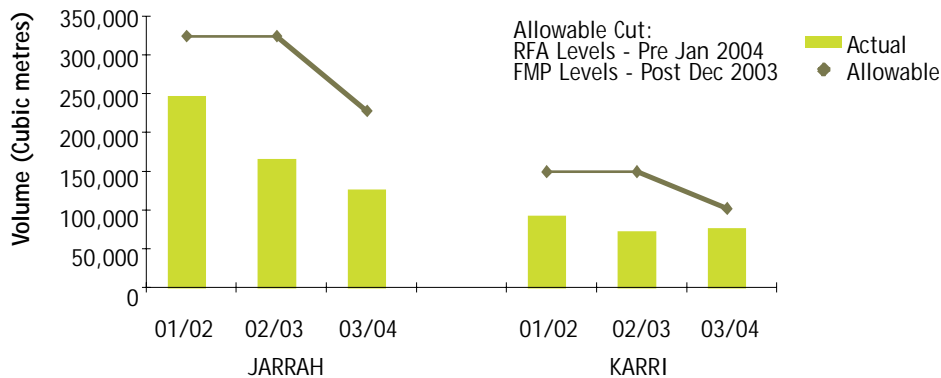
Note: The 2004 targets are an aggregation of harvest activity of the last six months under the 1999 Regional Forest Agreement and the first six months of the Forest Management Plan 2004/2013.

- A (i) Actual quantity of total bole volume harvest of native forest hardwood log timber for the period July to December 2003 for jarrah was 83,371m<sup>3</sup>, for karri 114,174m<sup>3</sup> and marri 41,931m<sup>3</sup>
- (ii) Actual quantity of the total bole volume harvest of native forest hardwood log timber for the period January to June 2004 for jarrah was 102,118m<sup>3</sup> for karri was 94,389m<sup>3</sup> and marri 6,327m<sup>3</sup>

Measure B: Total first and second grade sawlog timber harvest does not exceed allowable cut .

### OUTPUT B (i) and (ii)

#### TOTAL FIRST AND SECOND GRADE SAWLOG TIMBER HARVEST (Jarrah & Karri)



Note: The 2004 targets are an aggregation of harvest activity of the last six months under the 1999 Regional Forest Agreement and the first six months of the Forest Management Plan 2004/2013.

Audited key performance indicator

## Environmental Review *cont'd*

- B (i) Actual quantity for July to December 2003 of first and second grade jarrah was 55,772m<sup>3</sup>, karri sawlog 44,264m<sup>3</sup> and marri sawlog 7,334m<sup>3</sup>
- (ii) Actual quantity for January to June 2004 of first and second grade jarrah was 69,188m<sup>3</sup>, karri sawlog 30,614m<sup>3</sup> and marri sawlog 3,103m<sup>3</sup>

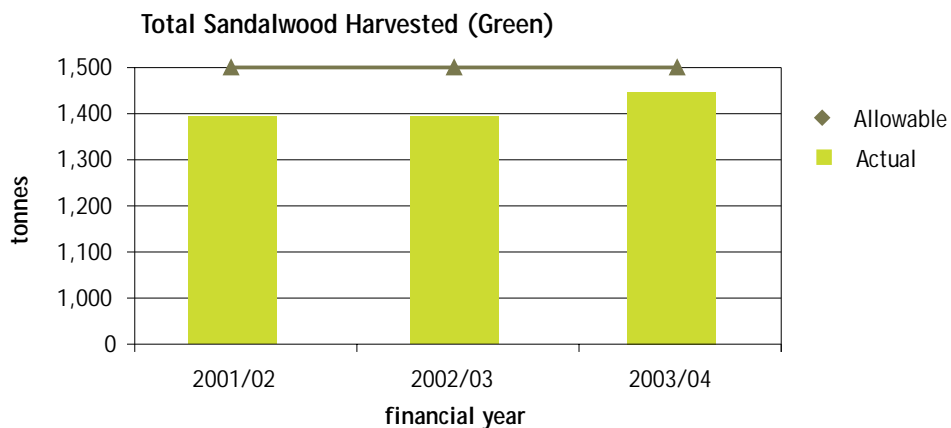
### THE HARVEST OF 'GREENWOOD' SANDALWOOD WILL BE MAINTAINED AT A SUSTAINABLE LEVEL .

#### Quantity of 'greenwood' sandalwood harvested.

The annual sustainable level of harvest for green sandalwood is set in accordance with relevant legislation and ISO 14001. (In addition to the sustainable green sandalwood harvest, deadwood is also harvested.)

#### Measure:

Green sandalwood quantities harvested comply with permissible green harvest level of 1,500 tonnes per annum .



The above graph does not include roots extracted, as root volume did not form part of the sustainable limit.

The harvested volumes are: green 1,444 tonnes; dead 581 tonnes and roots 120 tonnes which demonstrates the Commission's endeavour to maximise resource utilisation.

#### Percentage of sandalwood roots and butts recovered

The recovery of 8.6 per cent of butts and roots during 2003/04 exceeded the target of five per cent set in the SCI.

SCI Indicator

Audited key performance indicator

## Environmental Review *cont'd*

### REGENERATION

Natural regeneration, supplemented by an appropriate planting regime, is the primary outcome of the Commission's silvicultural program in all previously harvested forest areas.

### AREA OF NATIVE FOREST HARDWOOD REGENERATED

Regeneration treatments applied in any one year may include parts of areas harvested over a number of preceding years. On an annual basis the area regenerated may fluctuate above or below the area harvested due to unsuitable field conditions.

**The area of native forest hardwood regenerated compared with the area harvested for regeneration.**

**The figures being reported cover the 2003 calendar year, with the comparatives covering the 2002 calendar year.**

**The area of native forest harvested for regeneration was 5,825 hectares (2002/03 8,250 hectares). All areas were proposed for follow-up silvicultural treatments. Treatments to achieve regeneration were completed for 2,995 hectares from this or previous years cutting.**

### Percentage of karri regenerated to required standards

Regeneration success rate is measured in late December. The seedling survival count for karri regeneration since July 2003 of clearfell area harvested from 1999 to 2002 showed a 97 per cent survival rate against a target of 98 per cent. The 35 hectare area below the required stocking rate is included in the winter 2004 seedling infill program.

### Western Australian Sandalwood

The Commission's continued commitment to researching the recruitment of sandalwood in its natural distribution has provided significant ecological breakthroughs.

Collaborative research between the Commission and Murdoch University is revealing the extent of the relationship between the almost extinct woylie and sandalwood regeneration. Results have assisted with developing substantial changes to sandalwood silvicultural techniques, these techniques now provide for greater levels of sandalwood regeneration above that of the existing natural level.

For each sandalwood tree harvested, 12 new sandalwood seeds are buried in the same area, to mimic the function of the woylie. Field trials within harvested areas are indicating higher levels of regeneration are now occurring than previously recorded.

Eighty-five inspections conducted from July 2003 to mid-June 2004, covered 15 harvesting contractors and confirmed that the silvicultural prescription, i.e. sowing of sandalwood seed (nuts), has been complied with and that each contractor has adequate seed supplies.

SCI Indicator

Audited key performance indicator

## Environmental Review *cont'd*

### IMPLEMENTATION OF THE REGIONAL FOREST AGREEMENT

The Commission is responsible for the implementation of four of the commitments made under the Regional Forest Agreement (RFA) between the Western Australian and Federal Governments signed in May 1999.

The following have been completed:

- Development of a Memorandum of Understanding for a Forest Industry Structural Adjustment Program;
- Review of timber harvesting documents with a view to improving understanding by field operatives and field staff
- Legislative review and competitive neutrality review regarding wood based businesses.

Progress continues on the outstanding commitment in relation to:

- Pre-logging fauna assessment.

The Forest Management Plan 2004/2013 requires this to be addressed by 1 January 2005.

### ENERGY MANAGEMENT

The Commission has committed to an energy management program under the Energy Smart Government Policy. Being a Government Trading Enterprise, the Commission is a voluntary subscriber to the program that requires government agencies to reduce their stationary energy consumption by 12 per cent over the period 2001/02 to 2006/07. The energy reduction target for the 2003/04 financial year is 1 per cent - providing a total energy reduction of 6 per cent since 2001/02.

Table 1

Energy Smart Government Program	2001/02 Baseline Data	2002/03 Actuals	2003/04 Actuals
<b>Energy</b>	<b>Energy Consumption (GJ)</b>		
• Electricity	2,839	3,682	2,841
• Natural Gas	2,330	736	2
• LPG	825	916	691
• Industrial Diesel	472	704	708
Total Energy Consumption	6,467	6,038	4,242
Total Energy Cost	\$173,032	\$171,084	\$159,385
<b>Greenhouse Gas Emission in tonnes of CO<sup>2</sup></b>			
Emissions	930	1,114	841

## Environmental Review *cont'd*

**Table 2**

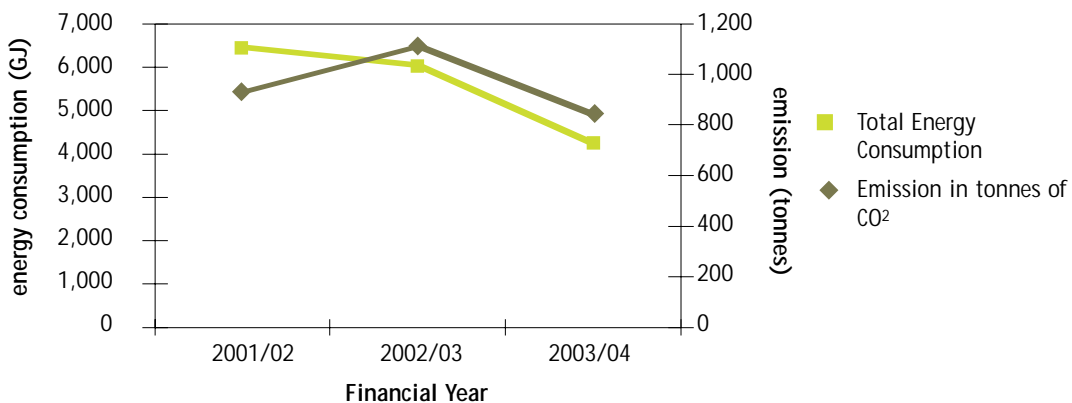
Performance Indicators by End Use category	2001/02 Baseline Data	2002/03 Actuals	2003/04 Actuals
1) Office buildings - tenant services			
• MJ/person/annum	9,322	8,880	9,888
• MJ/m <sup>2</sup> /annum	269	283	377
2) Office buildings - combined services			
• MJ/person/annum	5,355	5,760	6,683
• MJ/m <sup>2</sup> /annum	540	475	210

Note:

Table 2.1 is electricity consumption per person per annum at the Rivervale, Kalgoorlie and Guildford offices.

Table 2.2 is electricity consumption per person per annum at the Harvey, Manjimup, Nannup, Bunbury and Collie offices.

### Total Energy Consumption (GJ) & Greenhouse Gas



The Commission has achieved a total reduction in energy consumption of 34 per cent compared to the baseline data set in 2001/02.

### Explanation of significant variances for the 2003/04 financial year

Significant reductions in energy consumptions over the 2003/04 financial year can be attributed to two major factors:

- 1 The Timber Technology Centre in Harvey recorded a significant reduction in electricity and natural gas usage due mainly to the Commission commencing to phase out its commercial timber drying facility in the 2002/03 year.
- 2 The Manjimup Nursery reported a 50 per cent or 806 GJ reduction in electricity consumption over the 2003/04 year due to a decrease in nursery production by almost one million units, which resulted in reduced operational usage of the equipment and cool room.

Offsetting these significant decreases were increases in electricity consumption due to the commissioning of a new building for the Manjimup Seed Centre and occupying additional floor space at the Rivervale Office.

## Environmental Review *cont'd*

### Commission's Energy Management Policy

The Commission has implemented an Energy Management Policy, which aims to:

- Reduce dependence on fossil fuels by reducing energy use;
- Reduce expenditure on energy by investing in cost effective plant and equipment; and
- Reduce pollution, particularly carbon dioxide emissions by sourcing energy that is low in greenhouse emissions.

An energy management team has been established to implement the Policy, develop an energy management program and communicate energy awareness and initiatives to all staff. Staff are also encouraged to identify energy saving ideas.

The Commission is to undertake an energy audit of its Rivervale office premises in order to initiate its energy management program. This audit will be funded by a grant from the Sustainable Energy Development Office (SEDO) under the Energy Smart Government program.

Staff are encouraged to conserve energy wherever possible and to be active in identifying energy saving ideas.

### WASTE PAPER RECYCLING INITIATIVES

Staff are actively encouraged to recycle paper and the Commission uses accredited contractors for paper recycling.

For the year 2003/04, the Commission provided approximately 2,800 kilograms of paper to be recycled under the State Government's waste paper recycling program.

The Commission has implemented a Recycling and Waste Management Policy and established a management team to implement the Policy and to develop and promote recycling and waste management procedures.

The Commission's nursery obtained access to a plant that will ensure full recycling of all waste from planting trays and packaging.

